

A·S·ALOE COMPANY
CATALOGUE OF
SUPERIOR SURGICAL INSTRUMENTS
AND
PHYSICIANS' AND SURGEONS' SUPPLIES
ST LOUIS

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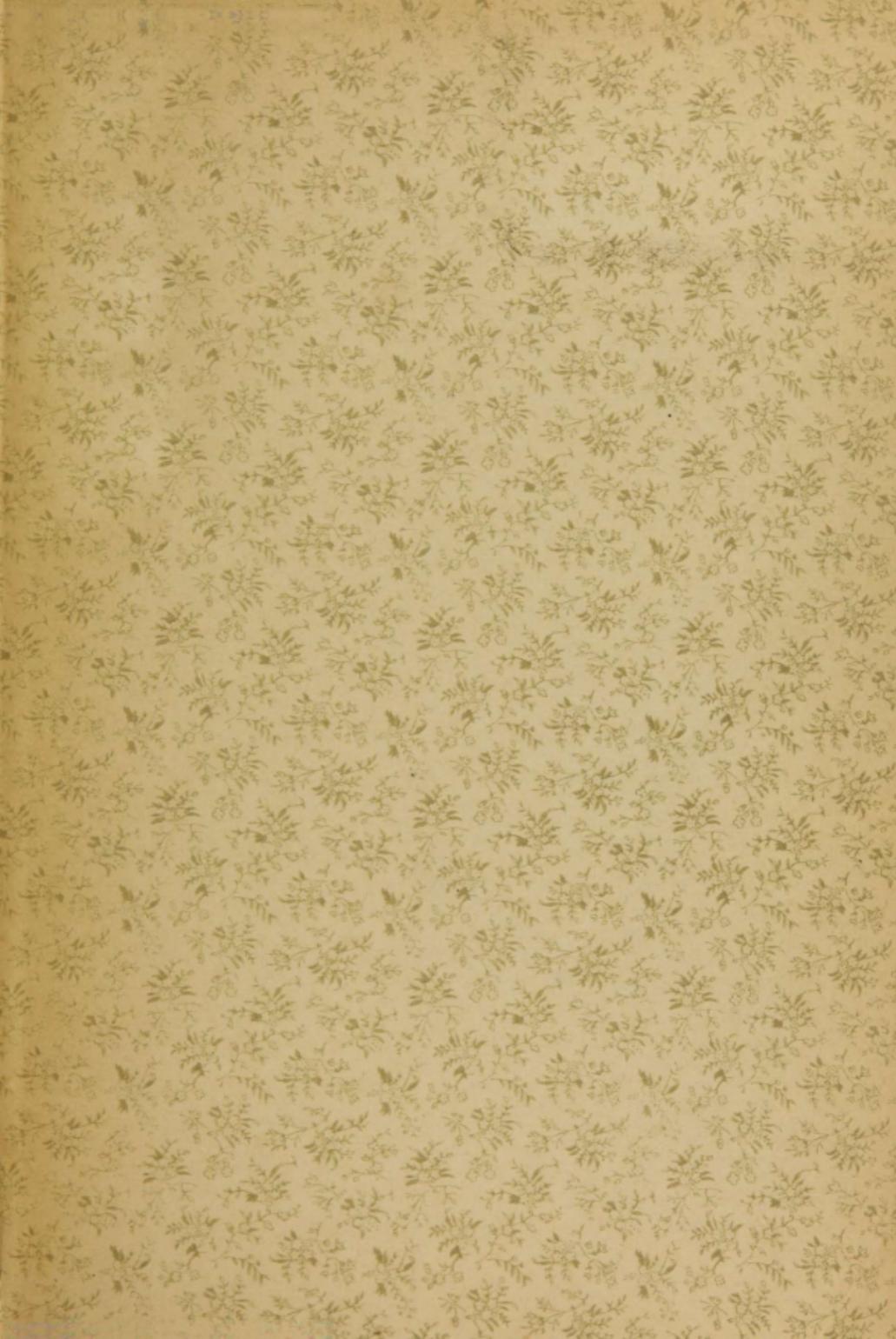
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Aloe's

. . ILLUSTRATED AND PRICED . .

CATALOGUE

— OF —

Superior Surgical Instruments,

Physician's Supplies

. . AND . .

Hospital Furnishings.

SIXTH EDITION.

A. S. ALOE COMPANY,

(INCORPORATED)

415 North Broadway,

ST. LOUIS.

PURVEYORS TO

ST. LOUIS CITY HOSPITAL, ST. LOUIS FEMALE HOSPITAL, ST. LOUIS SURGICAL HOSPITAL, ST. LOUIS POLYCLINIC
AND EMERGENCY HOSPITAL, ST. LOUIS BAPTIST HOSPITAL, ST. LOUIS MULLANPHY HOSPITAL,
MISSOURI PACIFIC RAILROAD HOSPITAL, PROTESTANT HOSPITAL, REBEKAH HOSPITAL,
PIUS HOSPITAL, ST. JOHN'S HOSPITAL, HENRIETTA STREET HOSPITAL,
ST. LUKE'S HOSPITAL, CALEDONIA HOSPITAL, ETC.

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Sending us clippings therefrom will not make your order any plainer to us, for by mentioning the numbers of the pages and the numbers of individual articles, we will always be able to understand what parties writing us desire to refer to.



PREFACE.

We take great pleasure in presenting to the medical profession this, the Sixth Edition of our Illustrated Catalogue. In the compilation of this work we have spared neither time or expense to make it one of the most complete of its kind ever issued in this country. We have introduced all the latest and most improved forms of instruments, and have thrown out such as are almost obsolete.

Our stock is larger, more varied and complete than ever before, and our aim has been so to arrange and classify this list as to enable our customers to see in detail the varieties and price of any article they may desire. It is our determination to fully meet the wants of the profession in every department of our business.

Owing to the increasing demand for "Aseptic" Instruments, we are making up all the new models of instruments with metal handles and separable joints, and, wherever possible, we have modified the older patterns of instruments to conform to the requirements of Antiseptic Surgery. More especially is this true of operating instruments—Amputating Sets, Pocket Cases, Etc. We beg to call attention to the fact that we do not (as is customary with other houses) make an additional charge for these "Aseptic" Instruments; to the contrary, the prices on these new goods will be found lower in a majority of cases than on the old style.

Our intention is always to supply goods of the best quality only. Instruments which on trial prove to be defective, or imperfect from any cause, we ask to have returned promptly, and goods of proper quality will be returned in their place. Bearing this fact in mind, it is evident that we cannot sell goods of the quality we handle as low as those who buy and sell without regard to the quality of the goods. Our aim is to furnish the best goods at reasonable prices, and our terms will be found as favorable as those of any other first-class house in the country. The length of time our house has been in existence, one-third of a century, and the cordial relations which have always existed between ourselves and our friends, is, we think, evidence that our manner in doing business has been uniformly satisfactory to our patrons.

We beg to assure our patrons that the quality will, in no instance, be sacrificed to price, as we aim to excel, and shall still continue to maintain the standard of excellence we have reached in the manufacture of Superior Surgical Instruments. Our patrons can rely that all goods made by us are unsurpassed in their line.

With thanks for their many past favors, and hoping for a continuance of previous pleasant relations, we remain,

Respectfully yours,

A. S. ALOE COMPANY.

DIRECTIONS FOR ORDERING GOODS.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD FACED FIGURES.

1. Write the name of your town, county and state, and your own name plainly.
2. Parties not having a credit already established will understand the necessity of sending reliable references, or enclosing remittance to cover amount of purchase; such orders as are unaccompanied by either references or cash will be declined or sent by express C. O. D., including the charges for returning the money. However, no goods are sent C. O. D. to parties unknown to us without a remittance of three dollars as security against any risk of goods not being taken on arrival, which in such cases are returned to us at our expense. In case of bulky goods or large orders, we request a further remittance of about one-third of the entire value of the goods ordered. In remitting with the order, you will save the expense of collection.
3. Remittances can be made without risk by Express Money Orders, Postal Money Orders, Checks or Drafts to our order.
4. State carefully how you wish your goods forwarded, by mail, express, freight, or otherwise.
5. Goods not exceeding four pounds may be sent by mail, at the cost of one cent per ounce, when the remittance is made with the order.
6. State distinctly the name of the article desired, and its Catalogue number. Do not mutilate the book by cutting out the illustrations. In ordering special instruments or apparatus not mentioned in this Catalogue, reference should be made to some work on surgery, or other publication containing an illustration of the instrument desired, not neglecting to mention edition and page.
7. When you re-order an article do not say "same as last," but refer to your invoice and word your order the same as the invoice, and in referring to back invoices give the date.
8. Instruments can be ordered by Catalogue of any manufacturer or dealer in Surgical Instruments, and will be furnished at advertised rates. Care being taken to designate the edition of Catalogue.
9. All goods will be carefully packed, and if carefully handled, can be safely transported to any part of the country; therefore, for all delays or damages, the purchaser must look to the transporters of the goods, who alone are legally responsible for their prompt and safe delivery.
10. All goods sent by mail are at purchaser's risk.
11. Claims for overcharges, etc., must be made within ten days after receipt of bill. Should there be any mistake or overcharge on our part in filling an order, it will afford us much pleasure to correct it, as it is our desire to give entire satisfaction in every transaction.
12. When Instruments for repairing, sharpening or polishing are sent to us, the name and address of the person sending them should accompany the package, to enable us to return them to their owner.
13. The privilege of changing the prices in this Catalogue is reserved, as the fluctuations in the cost of materials and wages may require.

Attention to the foregoing directions will enable us to fill all orders, large or small, as satisfactorily to the purchaser as though he were present to make his own selections.

GENERAL SUGGESTIONS

FOR MUTUALLY FACILITATING THE TRANSACTION OF BUSINESS.

In sending instruments for alteration or repairs, please observe the following provisions governing the mailing of such articles and called third-class matter.

Postage must be fully prepaid, by stamps affixed thereto, at the rate of one cent for each ounce or fraction thereof.

Packages weighing more than four pounds are not mailable.

All packages must be so wrapped that the contents may be readily examined by Postmasters without destroying the wrapper.

Please do not seal, sew up, paste with or without adhesive plaster any package sent to us by mail.

Do not enclose writing in any mail packages, but inform us by separate letter or postal card what you wish altered or repaired on the articles mailed to us.

Articles having sharp edges or points (knives, needles, etc.), as also such composed wholly or in part of glass (Hypodermic Syringes, etc.) must be packed in light wooden or tin boxes with sealed wrappers, and postage prepaid thereon at letter rates, two cents per half ounce or fraction thereof.

All packages, whether of first or third-class matter, can be registered for an additional cost of ten cents per package. Greater security in transmission is secured thereby.

As we frequently receive similar articles on the same day, all packages or parcels sent to us by mail or express must have the name or address of the sender plainly written on the outside thereof, with the word "from" above the same. This will enable us to return the articles to the proper place and person.

SPECIAL NOTICE.

Having our Factory, with steam power, ample machinery, and experienced workmen, connected with our store, we can promptly make to order, in the best manner, and from almost any material, new Instruments and apparatus, and supply new Inventions on favorable terms.

Orders for Special Instruments, and new articles, should be accompanied with drawings, dimensions and careful description.

Instruments of other manufacturers furnished at their Catalogue prices.

Articles of European origin, when not on hand, will be promptly supplied by importation through the assistance of our Agents in the prominent manufacturing cities of Europe.

Educational Apparatus, for Colleges and Public Schools, imported free of duty.

PRICES.

Our prices will be found favorable to the purchaser. In manufacturing, it will be our constant endeavor that our productions shall be fully worth their price, judged both with reference to market value and to intrinsic usefulness.

As a matter of convenience, we have made all prices in this Catalogue **NET**, except on certain lines of goods and on a number of single articles which the physician frequently has occasion to order for his patient. On these we allow discounts as indicated below:

+ 15⁰/₁₀₀ † 20⁰/₁₀₀ | 25⁰/₁₀₀ § 33¹/₃⁰/₁₀₀

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GENERAL SURGICAL NECESSITIES—	Anæsthetic. Antiseptic Sundries. Antiseptics. Drainage. Suturing. Dressing. Bandage Rollers. Bandage Shears. Emergency Bags.
GENERAL OPERATING—	Amputating and General Operating. Arterial. Hæmostatic. Osteotomy. Mastoid. Celiotomy—Laparotomy. Trepning. Bullet Probing—Bullet Extracting. Paracentesis. Aspiration. Operating Instrument Sets. Pocket Instrument Cases. Pocket Case Instruments.
DISSECTING AND POST MORTEM—	
OPHTHALMIC—	Optical. Examining. Applicating. Operating.
AURAL—	Examining. Applicating. Operating.
NASAL—	Microphonous. Examining. Applicating. Operating.
MOUTH AND THROAT—	Dental. Hairlip. Staphylorrhaphy—Uraniscoplasty. Oral. Tonsillar. Uvular. Tracheal. Laryngeal—Pharyngeal—Examining. Applicating. Operating. Intubation of the Larynx.
ALIMENTARY—	Esophageal. Stomachal. Anal and Rectal.
THORACIC—	Cardiac—Hæmal. Pectoral—Pleural—Pulmonary—Respiratory. Pulmonary—Respiratory.
HERNIAL—	Varicocele.
GENITO—URINARY—	Orchitis. Hydrocele. Meatic. Preputial. Penile—Urethral. Urethral. Urethral Stricture. Vesico—Urethral. Vesical. Prostatic. Vesical Calculi—Examining. Perineal Lithotriety. Litholapaxy—Lithotriety. Lithotomy. Urethral Instrument Sets. Lithotomy Instrument Sets.

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GYNÆCOLOGICAL—	Examining. Applicating—Dressing—Douching—Irrigating. Mal—Position. General Operating. Urethral. Uro—Cystic. Vesico—Vaginal Fistula. Ovarian. Abdominal Hysterectomy. Vaginal Hysterectomy. Obstetrical. Perineorrhaphy. Trachelorrhaphy. Gynæcological Instrument Cases. Obstetrical Instrument Cases. Gynæcological and Obstetric Bags.
SURGICAL PUMP, TRAUX'S—	Cupping—Dry Cupping—Leeching.
PHLEBOTOMY—	
TRANSFUSION—	
VACCINATION—	
DERMIC—	Skin Grafting. Counter Irritation. Mercurial Fumigation.
HYPODERMIC—	
DIAGNOSTIC—	Clinical. General. Urinary.
CHEMICAL GLASSWARE	AND APPARATUS—
ANTHROPOMETRIC—	
OFFICE FURNITURE—	
BATTERIES—	Electrolytic. Electro-Magnetic. Electro-Scopic. Electro-Surgical. Electro-Therapeutic.
CAUTERIUM—	Actual Caутery—Thermo-Cautery.
MEDICINE CASES—	Physicians' Hand—Buggy—Satchel and Vial Cases. Saddle Bags.
DISLOCATION—	
FRACTURE APPARATUS—	
ORTHOPÆDIC APPARATUS—	
PROSTHETIC—	Artificial Eyes—Ears—Noses—Limbs.
VARICOSE—	
TRUSSES—	
ABDOMINAL SUPPORTERS—	
SUSPENSORY BANDAGES—	
SHOULDER BRACES—	
INVALID FURNISHINGS—	Beds—Back Rests—Bed Trays. Carrying Chairs. Rolling Chairs. Crutches. Supplies.
ANATOMICAL PREPARATIONS—	
OSTEOLOGICAL—	
HOSPITAL FURNISHINGS—	Beds. Cots. Invalid Lifter. Stretchers. Ward Carriage. Wheel Table. Supplies—Granite Ironware.
APPARATUS FOR HUMANE RESTRAINT—	
REPAIRING.	

THE ORGANIZATION OF AN OPERATION.

PROCEDURE AND ANTISEPTIC TREATMENT.

Antisepsis and Asepsis have assumed important places in surgical procedure. The principles which underlie this cannot be successfully controverted.

"Aseptic Wound Treatment refers to treatment of a fresh wound to prevent its becoming infected. Antiseptic Wound Treatment is that applied to wounds already infected, to limit aseptic processes already established, and prevent further extension."—GERSTER.

The practice of Tait, the strongest opponent of Listerism, is as follows:

1. The highest degree of cleanliness and sterilization of rooms, patients, instruments, sponges and dressings.
2. Rigid attention to details by assistants, nurses, patients, securing the most perfect environment.
3. The use of large quantities of water, becoming antiseptics by quantity and force.
4. Short duration of operation, and in minimum exposure.
5. Exposure reduced by minimum of assistants and instruments.
6. Thorough drainage.

"Practically, we are compelled to use antiseptics in order to produce a condition of asepsis. Moreover, the most important role which antiseptics play in surgery, lies, not in their direct application to wounds, but it is found in their use as sterilizers of the surgeon's hands, and of his instruments and dressings."—BERNAYS (St. Louis).

Those who depreciate the fussiness of Antiseptic Surgery are those who operate under the most favorable conditions of environment with the most rigid asepsis, or else, whose limited practice seldom or never includes an important operation. The general practitioner is unable to secure the aseptic surroundings, skilled assistants, trained nurses and other conditions available to the specialist.

Simplification of details and improved appliances have rendered it possible to extend the principles of aseptic and antiseptic surgery to all conditions; to grave and minor injuries, in emergencies, and among unfavorable surroundings. The means may require modification, but the principles need not be deviated from.

Antiseptics must be used both in aseptic and antiseptic wound treatment. Cleanliness cannot be attained, much less maintained, without the aid of cleansing agents or antiseptics—"angels of cleanliness." Perfect asepsis, unaided, is a myth. Perfect aseptic wound treatment, by the use of antiseptics, is an established fact.

SUPPLIES AND STORES.

These are best kept in a separate room, closet, drawer or case. Of these we list several very desirable styles, the Aseptic Instrument Cabinets listed, being, of course, preferable, they being arranged so as to be easy of access for use and ready cleansing.

Supplies should be in containers that will not allow of change or deterioration, and which will admit of the removal of just such a portion as may be needed from time to time, and no other portion touched. For this purpose the Museum Jars listed on page 25 are admirable.

THE OPERATING ROOM.

Any room may be prepared to fulfill the conditions by the removal of all useless furniture and fabrics, the carpet not disturbed, but covered with oil cloth or moist sheets.

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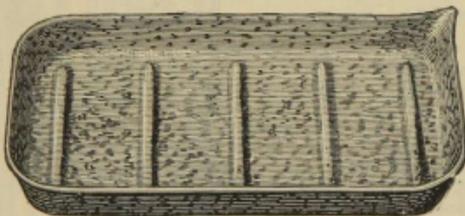
PROCEDURE AND ANTISEPTIC TREATMENT.

ARTICLES NEEDED IN MODERN SURGERY.

Earthen bowls and dishes may be cleansed and utilized as receptacles for instruments, etc., as follows:

Washbowl for rinsing sponges or preparing towels; soup tureen for rinsed sponges; large platter for large instruments, small platter for small instruments; small bowl for artery forceps; saucers for needles, ligatures, sutures and drainage tubes.

For permanent use, Granite Ware is serviceable, cheap and readily cleansed. The Lipped Instrument Tray depicted below is without doubt the most convenient. This pan is 9 x 15 x 1 $\frac{3}{4}$ inches deep, and, being ridged, the instruments can be more readily picked up than if they lay flat upon the bottom of the pan.



LIPPED INSTRUMENT TRAY. PRICED ON PAGE 24.

THE OPERATING TABLE.

The ordinary kitchen table will generally answer; if not, there is a table in every house that will. Bricks or wooden blocks can be placed under two legs of the table in order that the irrigating liquids may drain off to the pail used for catching them. Krug's Operating Frame is an admirable device for the general surgeon. It can be conveniently carried in the surgeon's carriage, and is readily adjusted to any ordinary kitchen or dining table. By means of this frame the patient can be placed in the Trendelenburg position, the most favorable one for all abdominal work. In Hospital work the glass top tables are decidedly superior, and when it is possible to obtain them they should be given the preference over wood top tables.

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THE IRRIGATOR.

A Glass Irrigator of the percolator pattern, with a capacity of from two to five gallons, with Esmarch's or Culot's cut-off and nozzle, makes an admirable outfit for hospital or office. For emergency purposes and for carrying around in emergency bag, the four-quart Fountain Syringe Bag may be improvised into a good irrigator.

The floor of the operating room should be kept moist, so that the dangerous particles from suppurating wounds or other infectious matter will not rise into the air. No microbes rise from a moist surface. Spectators should be fenced from operating portion of room.—VON BERGMANN.

Abdominal work can be executed as well in the home of patients as in private hospitals. A thoroughly cleansed and airy room is the ideal location.—L. S. McMURTRY.

I do not believe in general hospitals for this work, nor in the necessity of special hospitals in order to reach success. It has been demonstrated that it can be successfully done in courts and alleys of our large cities. If the home of the patient only contains two rooms, and one can be prepared and the operation done in a proper way under care, the result will be as good as in a hospital prepared for the purpose.—WM. WARREN POTTER.



BICHLORIDE SOLUTIONS.

Compressed tablets of Corrosive Sublimate and Ammonium Chloride are most convenient for preparing Bichloride solutions. These tablets are prepared so as to make, when dissolved in a pint of water, a solution of 1-1000. When the tablets are not used, the solution should be as follows:

Bichloride of Mercury	gr. 7.50
Ammonium Chloride	gr. 7.50

which, added to a pint of water, makes a solution of 1-1000.

Do not put Bichloride solutions in metallic vessels.

Dr. N. Senn prefers tablets of Corrosive Sublimate and Chloride of Sodium, each 15 grains, stained with Aniline Blue.

Ammonium Chloride is used to prevent the precipitation of calomel and the formation of albuminate of mercury when the fluid comes in contact with the living tissues.

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CARBOLIC SOLUTIONS.

"Corrosive Sublimate has the advantage over Carbolic Acid, in that carbolic acid provokes oozing, softens and dissolves blood clots; corrosive sublimate does not do this, and oozing stops by natural means. Carbolic acid irritates the Vaso Motor Nerves; Corrosive sublimate does not. The wound surface is thus given a rest at needed periods."—GERSTER.

Liquefied Carbolic Acid in a small bottle is the most convenient form for use. One ounce in thirty ounces of water makes a 1-30 solution which is suitable for instruments.

The water used in solutions and for washing should be purified, a ready method being to boil, add from 2 to 5 grains of alum, and filter through absorbent cotton.

DRESSINGS.

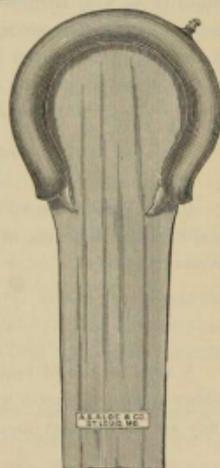
These dressings include absorbent cotton and absorbent gauze, both plain and antiseptically treated, gutta percha tissue, oil silk, oil paper, gauze and muslin bandages.

The antiseptic cottons and gauzes principally used are sublimated, carbolated and iodoform, and the gauze bandages may also be had impregnated with any antiseptic.

RUBBER DRAINAGE SHEET.

Kelly's Surgical Cushion is the most convenient means of draining the irrigating fluid into the catch pail. They are especially adapted for laparotomies, ovariectomies, and all perineal, cervical, and rectal operations. They can be used just as readily on the chair as on the table, or on a bed, and without danger of soiling the clothes or bedding, at the same time permitting constant irrigation.

See article by Dr. Hunter Robb, late assistant to Dr. Kelly. Page 30.



LIGATURES.

For the purpose of tying blood vessels the only materials recommended, at the present day, are silk and catgut, although silkworm-gut and Kangaroo tendon are quite extensively used. The catgut is prepared in the same manner as the silk suture. Unless catgut be prepared with great care, minute precautions being taken to render it aseptic, it will defeat the object of antiseptic operations. Recent experiments conducted by prominent surgeons have demonstrated that the dark colored or unbleached catgut ligatures are stronger and more reliable than the light colored, finely finished ones, for

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which reason unbleached catgut only should be used for ligature purposes. As the gelatinous matter of which catgut is largely composed is impermeable to oils, including oil juniper, the usual method of preparing catgut is considered inadequate to insure its sterility. The method now pursued is to sterilize the strings by subjecting them to a temperature of 175 degrees F. and placing them, while at that temperature, in bottles or packages containing oil juniper with corrosive sublimate, carbolic acid or other antiseptics.

SPONGES.

The sponges are always a source of anxiety.—**TAIT.**

Kummel's plan of washing reef sponges in green soft soap and water, then placing them in carbolic solution 1-30, or bichloride solution 1-1000, is a good one.—**HUNTER MCGUIRE.**

Selected reef sponges are generally used in hospitals, but need considerable preparation to make them fit for use. Unclean sponges are a prolific source of wound infection. Sponge tissue is a most delicately woven web of fluffy fibre, and in its meshes are lodged dirt, shells, seaweed and the gelatinous slime flesh of the living sponge. No ordinary washing will remove these. Following the suggestion of such authority as Von Bergmann, our bleached and sterilized sponges are subjected to repeated processes of beating and washing; shells and calcareous matter are removed by acid baths, and, finally, all organic matter by oxidation, leaving only the sponge tissue, which being sterilized by heat, is saturated with an antiseptic solution and placed in an aseptic package.

GUTTA PERCHA TISSUE.

Gutta Percha is used to prevent the dressings on small wounds from drying too quickly; it allows the adhering of cutaneous margins before the discharge of serum from the deeper tissues has ceased.

IODOFORM.

A small bottle of iodoform and an iodoform sprinkler are often required. A small, hard, rubber iodoform duster will be found the most convenient means of applying the iodoform. They are small, neat and inexpensive, and can be conveniently carried in an emergency bag.

DRAINAGE TUBES.

As Drainage Tubes are used to allow the escape of blood, pus and serum from wounds and abscesses, they should be of as large a size as can be conveniently employed. They are made of decalcified bone, rubber or glass, and latterly of aluminium.

The bone tubes are said to be completely absorbed in the wound in about ten days, which allows the wound to heal without removing the dressing. However, the experience of the majority of surgeons is against bone drainage tubes. The glass and rubber tubes are deemed the best.

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The Rubber Drainage Tubes should be made of pure gum, not vulcanized rubber.

Catgut drains are used for small wounds, and are made by bunching strands of catgut together. Horse hairs from the mane or tail, having first been thoroughly sterilized, are also used for this purpose by some surgeons.

TOURNIQUET.

Esmarch's Bandage, an elastic rubber bandage, usually $2\frac{1}{2}$ inches wide and 5 yards long. It is used for the stoppage of hemorrhage and the depletion of a part of blood. In amputations it is wound spirally about the limb, beginning at the distal extremity, each turn overlapping the preceding turn by one-half an inch. To retain this bandage in position Esmarch's soft rubber Strap and Chain or Aloe's Handy Tourniquet may be conveniently employed.

NECESSARY REQUISITES.

Potash Soap should be used exclusively, as it penetrates the epidermis more deeply than ordinary soap, and is thus better adapted for securing an aseptic condition of the skin.—SENN.

Other essential accessories are a narrow, sharp razor for shaving off the hairs around a wound; a nail brush, cake of soap, assorted gauze bandages, towels, heavy bandage scissors, binder and safety pins.

IMPORTANT GENERAL DIRECTIONS AND PRECAUTIONS.

Before beginning an operation, see that all things required are ready.

"You cannot take too many precautions."—TAIT.

"Scrub the arms with potash soap and water to the elbow, and immerse in a solution of bichloride of mercury to the elbow."—STEPHEN SMITH.

"Scrape the finger nails with a knife, rinse in alcohol, finally immerse in bichloride solution."—FURBINGER.

Hair and beard should be short, and moistened with bichloride solution.—GARRE.

"All heads should be covered."—ERILE.

"Nail brushes should not remain on washstand, but be kept in antiseptic solution, otherwise they are full of bacteria."—VON BERGMANN.

An aseptic operation requires the disinfecting of all persons engaged in the operation, of the operative region and its environments, of the instruments and accessories, and finally of the wound.

See that the table or tables for holding instruments, etc., are placed near the operating table and covered with towels, wrung out in a 1-2000 bichloride solution or a 1-30 carbolic solution.

On this should be placed the instrument trays for holding the instruments, needles, etc.; these should be filled with a 1-30 carbolic solution, in which the instruments, needles and sutures should be placed at least half an hour before being used.

For instruments and other accessories, moist heat is an efficient sterilizer, and before and after each operation they should be sterilized in a steam sterilizer. Syringes and hollow instruments filled with water, large instruments separately wrapped in gauze, small ones placed in gauze bags completely covered with water, the vessel covered and kept boiling for five minutes before coming to the operating table. They can be handled with gauze and dropped in trays under water or solutions, during the operation.

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Hang the irrigator high enough above the operating table to make it convenient for use, and fill it with the solution you are going to use.

SOME SURGICAL DON'TS.

"Don't do any operations with suspicious hands. Hot water, soap, nail brush and penknife should be carefully used by the principal and his assistants before any operation.

Don't, just before or during an operation, put the fingers about your nose, eyes or ears, or use a handkerchief, or shake hands with anyone.

Don't pick up or allow an assistant to touch any instrument, sponge or suture that has fallen to the floor during the operation.

Don't bite off the end of a suture.

Don't put a knife or other instrument in the mouth or behind the ear.

Don't cough or sneeze over the operative field.

Don't fail to have the patient bathed, the field of the operation thoroughly cleansed, and, if necessary, shaved before operation.

Don't allow visitors to handle the field of operation after the patient is prepared, unless they are aseptic."—A. MORGAN VANCE.

a piece of antiseptic gauze should be laid on the immediate field of operation, and removed just before the initial incision is made.

Sponges, dressings, instruments, etc., should be handled with great care by the surgeon and his assistants.

Disinfected safety pins are used to prevent drainage tubes from disappearing beneath the skin.

After inserting a tube, the part projecting above the skin should be cut off and the safety pin passed through the end at the surface.

Care should be taken to bring the parts into accurate apposition, also to avoid tension, especially of the edges of the wound of damaged or unhealthy tissues.

While the wound is open, it should be kept wet with the irrigator controlled by an assistant.

A dressing should not be changed because serum has oozed through it. Place carbolyzed or other antiseptic cotton over the moist places and allow it to dry.

Two or three gallons of bichloride solution will generally be required, and should be prepared. Instruments are not placed in bichloride solution, as it dulls them.

The hands of the operator and his assistants should be thoroughly washed in a 1-1000 bichloride solution before the operation begins, and rewashed when any unprepared object is touched accidentally or otherwise during the operation.

The region to be operated on must have all dirt and foreign matter removed, and for quite an area beyond the operative field thoroughly cleansed, the table rests and the clothing of the patient covered, and limbs not necessarily exposed, done up in antiseptic cloths. With a nail brush thoroughly scrub the field of operation with soap and water, shave the same area, then apply ether to dissolve the fatty substance and to remove the epidermis; now scrub with a 1-1000 solution of bichloride, and finally cover that part of the patient, table or clothing that might be touched with hand or instrument, with towels or Lintine strips wrung out of bichloride solution;

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IODOFORM.

"In a general way I believe the great value of iodoform as a dressing lies in its extremely slow solubility, and that iodoform poisoning is far less common than generally supposed. The danger now lies in this very valuable agent being discarded on this account; the medical press repeating the statement that germs will grow in dry iodoform, without comment. This is of course true, but equally so of dry bichloride of mercury, the most powerful of all germicides. All the preparations used as antiseptics, to be of value, must be in solution."—HENRY O. MARCY.

ACTION OF IODOFORM.

"Iodoform exerts a great formative influence on the smaller vessels, and these soon begin to grow out and multiply in an extraordinary manner by constant production of offshoots and capillary loops. The energetic growth of living tissue seems to rob the microbes of their nourishment. In the struggle for existence they succumb to the growing cells of the vessel walls."—BILLROTH.

ETHEREAL SOLUTION OF IODOFORM.

"Iodoform should be used very cautiously on the young, and on granulating surfaces. Instead of dusting iodoform in a wound, it is better to spray the surface with an ethereal solution of iodoform."—LEWIS A. STIMSON.

Dressings, in some cases, are not interfered with until the wound heals. They are, however, changed before the wound heals, in the following cases: first, to remove drainage tubes; second, when high temperatures show that some antiseptic rule has been violated; third, when plastic operations are done; fourth, when secondary hemorrhage occurs, or when the patient suffers severe pain.

A temperature of 101 deg. F. will frequently follow an operation and remain for a few hours. Hence it is not advisable to change a dressing, unless this temperature is shown 36 hours after an operation. If marked inflammation about the wound then exists, the antiseptic dressing must be changed daily, or even oftener. The main point to be observed in renewing dressings is, give the patient absolute rest as far as possible, not changing oftener than required.

Iodoform is used to dust about the mouths of drainage tubes and over the surfaces of wounds that are to remain open; also along the line of sutures. It is not dangerous, unless too much is used. In open wounds, enough should be used to barely cover the surface, and no more.

When a rubber or glass drainage tube is used, it should be gotten out in one or two days and the wound re-dressed.

When dressings are changed, the second dressing should be applied with the same care as the first, following the same general rules.

The patient's general health should be attended to. A supply of good food and fresh air should be given, in this way promoting and assisting the healing power of the tissues.

INSTRUMENTS DEMANDED BY MODERN SURGERY.

What kind of instruments are demanded by modern surgery? This is an important question: for the Israelites could no more make brick without straw than we can meet the requirements of the surgery of to-day with the old-style instruments. I refer particularly to the "style" of instruments, *e. g.*, I do not mean that in modern surgery we do not need a scalpel as heretofore, but that the old fashioned scalpel, with a horn or wooden handle, will not "pass muster." It is not the instrument itself, but the way in which it is made that I desire to call special attention to in this paper. We hear a great deal about chemical antiseptics and aseptic methods—and properly so, for these things are opening up possibilities that astonish even the most sanguine; at the same time we overlook, to a great extent, the absolute necessity of having the tools with which we work in harmony with the end to be attained. In striving for aseptic results we use non-aseptic instruments. We abuse midwives for carrying around old, dirty catheters, conveying septic matter hither and thither; we sometimes have septic fever after an operation, and blame our assistants or the nurse; while, if we would look into our operating cases, we would find scarcely a single instrument that could be rendered thoroughly aseptic. I do not think this state of things is universally so, for all along the front line of operators are men who are wide awake to the importance of this matter, and are striving continually for perfection.

But I believe it to be true that the rank and file of the profession do not appreciate the necessity of aseptic instruments as they should. The ideal instrument is one that can be used in a septic case and afterward easily cleaned, so that it may be used in a non-septic case without fear of contamination. I emphasize "easily cleaned," because an instrument that is troublesome to clean is generally not cleaned at all; for we have not time to sit down and spend a great while taking an instrument apart and putting it together for the purpose of cleaning it.

With these introductory remarks, let us proceed to enter into details concerning the way an instrument should be made.

[Extract from an article in Medical Bulletin, by J. W. Long, M. D.]

INSTRUMENTS DEMANDED BY MODERN SURGERY.

HANDLES.

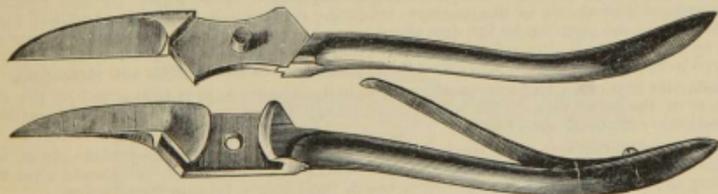
For years it has been the custom to provide all surgical instruments with either shell, horn or wooden handles; all three being equally objectionable. Now, however, metal handles are almost universally employed. Metal handles are the best, provided they are smooth and easily cleansed. Instruments with metal handles can be thoroughly sterilized by means of steam or dry heat without damaging the instrument, and this can not truthfully be said of the hard rubber, "baked on" handles so extensively advertised.

Nor do we continue to embellish the handles with checkered designs; to the contrary, the instruments are now made with perfectly smooth handles, or, if necessary to secure the operator a firmer hold, they are grooved or fluted as shown in the illustration of Ferguson's Sequestrum Forceps.

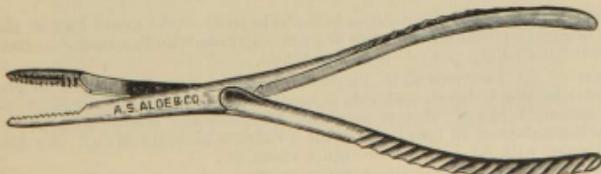
JOINTS.

There is perhaps no class of instruments more difficult to thoroughly clean than the ordinary forms of Forceps. Nearly all forms of Bone and Tooth Forceps have heretofore been constructed with closed joints, that not only afforded a safe deposit for disease germs, but furnished a good medium for conveying them from one patient to another. Charrière's separable "French lock" is a very satisfactory method of uniting the two blades of a pair of scissors or light forceps. For heavier instruments, Collin, the Parisian instrument maker, has designed an open box joint, illustrated below.

Collin's open box joint is not only thoroughly aseptic, but it is as strong as the ordinary pattern. It may be unjointed in a second or two and as quickly put together. It combines all the necessary requisites of a perfect-working desirable instrument. In the heavier instruments it is made with two overlapping edges, as shown in the cut of Liston's Bone Cutting Forceps, while in scissors and the lighter patterns of forceps one overlapping edge suffices. See Ferguson's Sequestrum Forceps.



LISTON'S STRAIGHT BONE CUTTING FORCEPS, WITH DETACHABLE SPRING.



FERGUSON'S SEQUESTRUM FORCEPS.

The above points substantially cover the field, and if you have an instrument that conforms to this description, you have one that with a degree of care can easily be rendered aseptic.

GENERAL SURGICAL NECESSITIES.

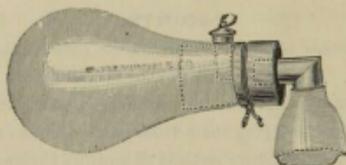
ANÆSTHETIC.

A NEW ETHER INHALER.

By J. C. HUTCHISON, M. D., LL. D., Brooklyn.

The ether inhaler, to which I beg leave to call attention, consists of three essential parts:

1. A tin tube for holding a sponge for the ether.
2. A rubber hood, such as is used by dentists and others in administering nitrous oxide gas; it is soft and pliable, fits accurately over the mouth and nose, and may be so adapted to any face as to completely exclude the air.
3. A muslin bag, similar to the one advised by Dr. Squibb; it should be made of close material, and, when it is wet with water, it is impervious, or nearly so, to air or ether vapor.



3009.

MODE OF USING THE INHALER.

When about to be used, the large tube is filled with a piece of *coarse* sponge of proper size and shape, which has been previously wet with water and thoroughly squeezed. The bag is then wet and squeezed, so that it does not drip, and secured over the mouth of the tube. The sponge will hold two ounces of ether, which should be poured upon it through the opening on top of the tube containing the sponge. In most operations the first charge of ether is all that is required, and in many, half the quantity mentioned is quite sufficient. The rubber hood is applied accurately over the mouth and nose, but the opening through which the anæsthetic is poured is left uncorked and the patient, holding the instrument himself, is directed to make twenty or thirty deep and rapid respirations, as suggested by Bonwill. By this means, tolerance or partial anæsthesia of the mucous membrane is established and coughing and strangling prevented; then the opening in the top should be closed, and the hood applied closely to the face so as to exclude all atmospheric air until complete anæsthesia is produced. If the patient is allowed to apply the instrument at first he has less fear of suffocation and strangling.

Headaches and other bad effects of re-breathed carbonic acid is prevented by the stimulating effects of the ether vapor with which it is mingled, and the carbonic acid contributes to the anæsthetic effects of the ether.

The bag ordinarily lies upon the upper part of the chest, but, in operations about the neck and upper part of the body, it may be placed to one side or the other, or upward over the face, by turning the sponge-holder on the rubber hood, the latter retaining its position.

THE ADVANTAGES OF THE INHALER.

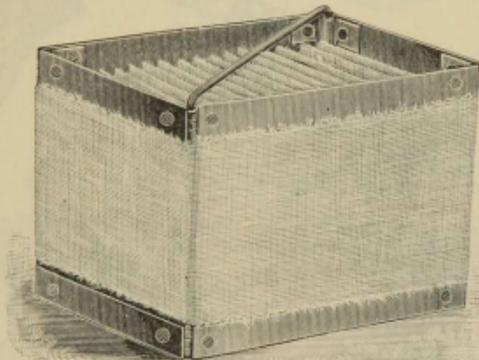
1. The mechanical act of respiration is entirely free—"the lower end of the bag rises and falls with the respiration without offering any practical obstruction to the mechanical process" (Squibb), and the breathing can be closely watched.
2. No part of the instrument is liable to become soiled by expectorated or vomitted matters, except the rubber hood, and this is easily cleaned—an advantage of no small importance for the antiseptic days. But it is better to throw the whole apparatus into a basin of water after each inhalation, to free it from the products of respiration. *No inhaler* should be used a second time without being thoroughly cleansed.
3. The apparatus economizes ether, the first charge (two ounces), being usually sufficient for a long operation; it prevents, in a great measure, the vapor from permeating the apartment, and affecting the comfort of the operator and his assistants, and especially the anæsthetizer, who often suffers from inhaling a large quantity of the vapor.
4. It is simple in its construction, having no valves, and is inexpensive and portable.

GENERAL SURGICAL NECESSITIES. ANÆSTHETIC.

A FOLDING ALLIS' ETHER INHALER.

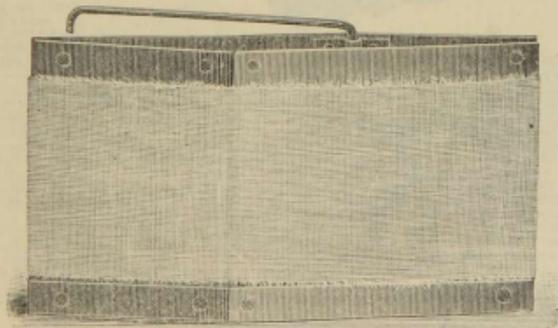
BY GEORGE R. FOWLER, M. D., Brooklyn, N. Y.

Although many surgeons still prefer the ordinary folded napkin or improvised cone method of administering ether, yet there can be no doubt as to the advantages to be derived from the use of a specially devised apparatus like the Allis Inhaler. In it are combined simplicity of construction, ease of manipulation, rapidity of etherization, economy of ether and a free ingress of atmospheric air charged with ether and egress of expired air. It is open to the objection, though, to a less extent than other instruments of its class, of being somewhat cumbersome when carried about, and of occupying, therefore, considerable space in the operating



3008.

satchel. My attention was forcibly directed to this point when devising an emergency operating bag recently. I have, therefore, endeavored to overcome this objectionable feature by slightly altering the shape of the Inhaler in such a manner as to allow of its being folded flatwise. The accompanying cuts will show how this is accomplished. The figure below represents the Inhaler folded, ready for placing in the pocket or satchel, in which shape it occupies about as much room in the pocket or satchel as an ordinary visiting list. By a very simple movement, provided for by bringing together the corners of the metal sides, the two long sides are made to separate from each other, until the shape shown above is formed, in which position it is securely held by a little bar which swings over from one corner to the one diagonally opposite, and fastened, by its bent extremity, into a socket provided for the purpose.



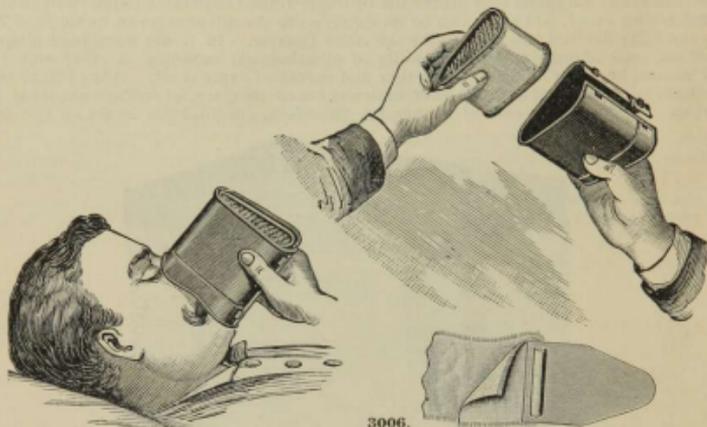
3008. Folded.

The only covering needed for an Allis Inhaler is a simple towel folded lengthwise, in which the instrument is enclosed just prior to its use. This can be procured at the patient's house, and, after the operation, unpinning and thrown aside.

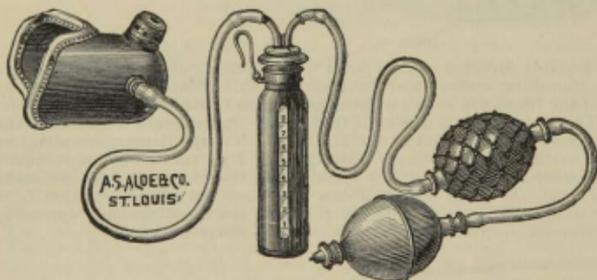
[Extract from the Medical Record, July 2nd, 1887.]

GENERAL SURGICAL NECESSITIES. ANÆSTHETIC.

The great difficulty in refilling Allis inhalers with the absorbing bandage is now overcome. There accompanies each one of these Aseptic Allis Inhalers a metal needle, in which the muslin is threaded as shown in cut. It can then be drawn through the inhaler frame with ease.



JUNKER'S METHYLENE INHALER.



coat or vest. To guard against being easily broken, as well as for protecting the methylene against the action of light, it is covered with leather, leaving only the graduated scale free for observation. Dr. John H. McIntyre, St. Louis, writes in *The St. Louis Med. and Surgical Journal*: "I have now used it in nearly four hundred operations, without a single untoward symptom, and, while I have seen nausea many times less than would be occasioned by ether or chloroform, I have witnessed vomiting less than a dozen times."

When using the inhaler, the graduated bottle has put into it from four to six drachms of methylene, according to the expected duration of the operation; it is then suspended from the button-hole of the coat of the administrator. By pressure of the bellows, 4.332 cubic inches of fresh air are forced through the long tube into the fluid, and escape (impregnated with the vapor) through the short tube into the face-piece, from whence the vapor is inhaled—the quantity of supply being regulated by the quantity of pressure of the bellows and the amount of fluid in the bottle. Or, in other words, the less fluid there is in the bottle, the greater is the dilution with air from a given amount of pressure of the bellows.

It will be observed that the patient is not made to breathe air which has been already expired. By correctly timing the compression of the bellows with each inspiration the patient gets fresh air impregnated with fresh vapor, and at each expiration that which was taken into the lungs escapes through the valve and at the sides of the face-piece. After full anesthesia is induced it is easily maintained by only now and then compressing the bellows when signs of returning consciousness are noticed.

With my experience in the use of bi-chloride of methylene administered in a Junker's inhaler, I venture to sum up its advantages as follows:

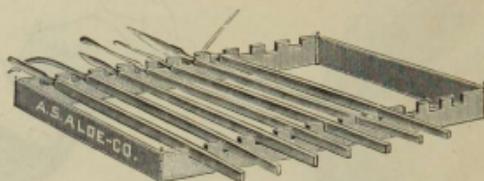
1. Nearest approach to safety of any method yet devised.
2. By giving the anæsthetic vapor in small, known quantities at each inspiration, the minimum of risk is incurred.
3. By allowing the free ingress and egress of air, the second or struggling stage is frequently avoided.
4. Over rapid narcotism is almost impossible.
5. Vomiting is almost always avoided.
6. The administrator has complete control over the anæsthetic.
7. At each inspiration, the patient is furnished with fresh air and fresh vapor.
8. Rapid return of consciousness, when the anæsthetic is discontinued.
9. Economy in the use of the anæsthetic.

GENERAL SURGICAL NECESSITIES.

ANTISEPTIC SUNDRIES.



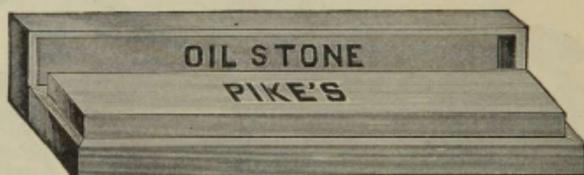
3017.



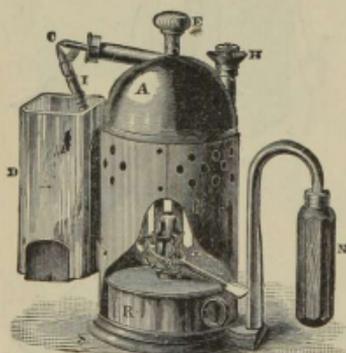
3039.



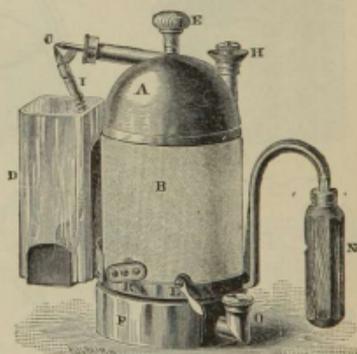
3039. Metal Instrument Rack, Folded for Transportation.



3038.

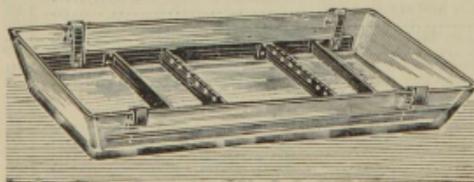


3022.

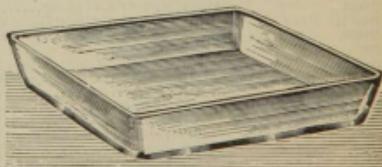


3024.

Fig. 3024 differs from Fig. 3022 principally in having the lamp jacket "B" which confines the heat under the boiler and protects the flame from air currents. The atomizer is so fitted and arranged in all its parts that fire can not possibly be communicated from the lamp flame to the anæsthetic vapor.



3046.



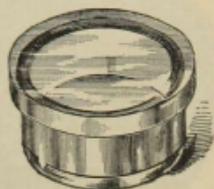
3044.

GENERAL SURGICAL NECESSITIES.

ANTISEPTIC SUNDRIES.



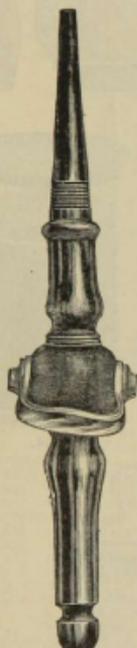
3030.



3034.



3019.



3031.

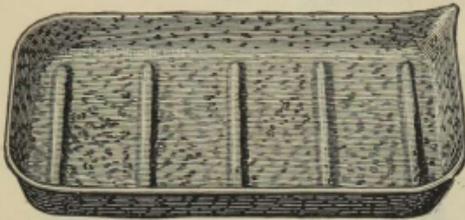


3028.

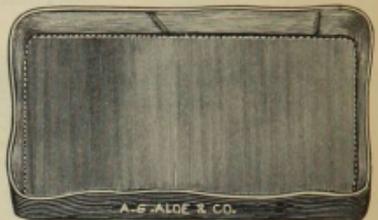
3017.	Apron, Baxter's Surgical,	39 in.....	\$ 5 00
3018.	" " " "	47 in.....	5 50
3019.	" " Trippe's " "	58 in.....	6 00
	Gowns, Bergman's Operating.	See Index.	
3020.	Atomizer, Hank's Antiseptic.....		12 00
3021.	" " Heuels' " "		5 00
3022.	" " Lister's " "	capacity 15 oz.....	12 00
3023.	" " " " "	" " 26 oz.....	15 00
3024.	" " " " Latest " "	" " 15 oz.....	25 00
3025.	" " " " Weirs' " "		12 00
3026.	Bottle, 1 oz., Metal covered.....		50
3027.	" " 2 " " " "		65
3028.	" " 4 " " " "		75
3029.	" " 8 " " " "		1 00
3030.	Cut-Off, Culot's.....		1 50
3031.	" " Esmarch's.....		1 00
3032.	Glass Box, with Lid Cover, for Needles, Pins, Shot, etc. 2 in. diameter.....		50
3033.	" " " " " " 3 1/2 " "		75
3034.	" " " " " " 4 1/2 " "		1 00
3035.	" " " " Knob Cover, 4 in. high x 4 in. diameter.....		1 75
3036.	" " " " " " 6 " " 6 " "		2 75
3037.	" " " " " " 8 1/2 " " 8 1/2 " "		2 75
3038.	Instrument Hone, 2x5 inches, in neat wood case.....		75
3039.	" " Rack, Folding Aluminium, large.....		2 50
3040.	" " " " " " small.....		2 00
3041.	" " Tray, Glass, 6 1/2 x 5 1/2 inches.....		1 00
3042.	" " " " " " 8 1/2 x 6 1/2 " "		1 25
3043.	" " " " " " 9 1/2 x 7 1/2 " "		1 50
3044.	" " " " " " 10 1/2 x 8 1/2 " "		1 75
3045.	" " " " " " 12 1/2 x 9 1/2 " "		2 00
3046.	" " " " " " with Metal Racks, 10 1/2 x 4 1/2 inches.....		3 50
3047.	" " " " " " " " 6 1/2 x 3 1/2 " "		2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL SURGICAL NECESSITIES.
ANTISEPTIC SUNDRIES.

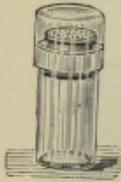


3055.

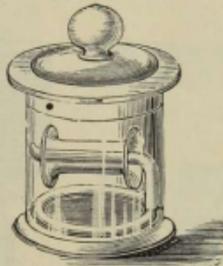


A. S. ALOE & CO.

3062.



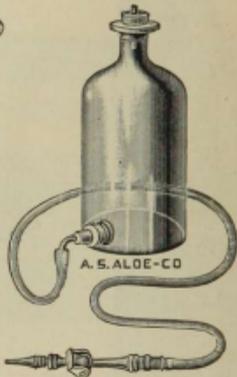
3066.



3079.



3064.

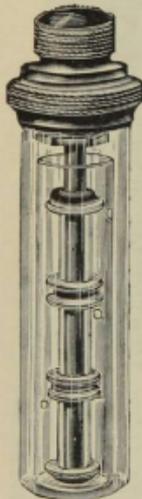


A. S. ALOE - CO

3071.



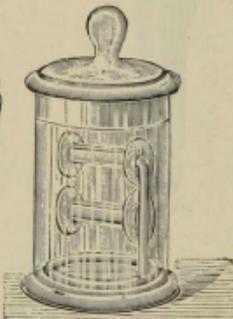
3091.



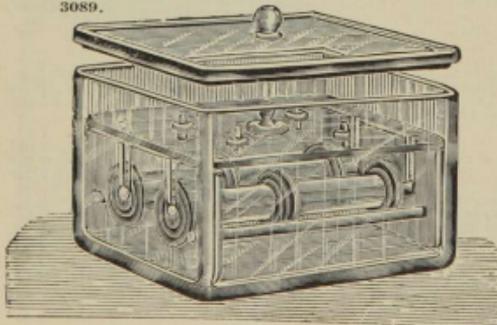
3089.



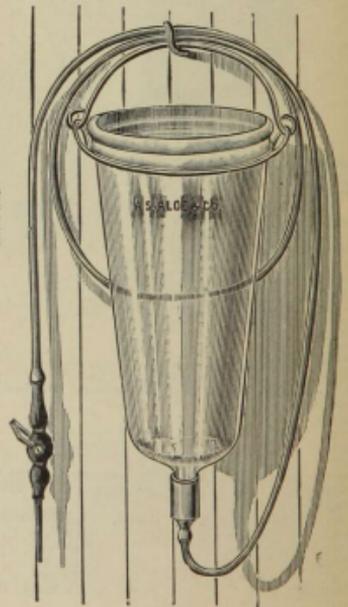
3068.



3078.



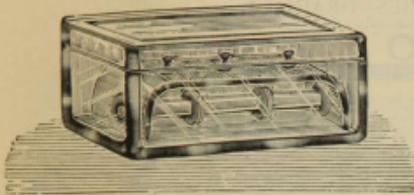
3085.



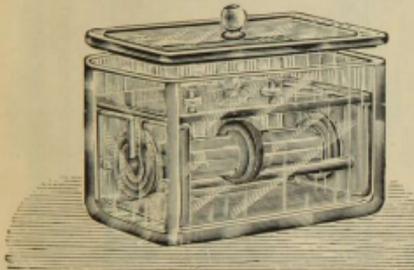
A. S. ALOE - CO

3076.

GENERAL SURGICAL NECESSITIES.
ANTISEPTIC SUNDRIES.



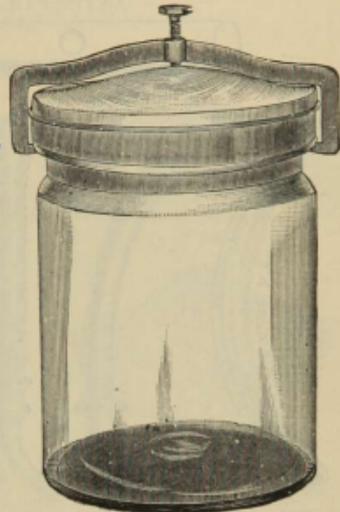
3083.



3084.



3090.

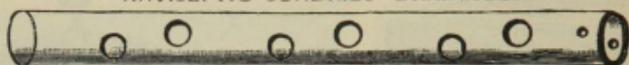


3096.

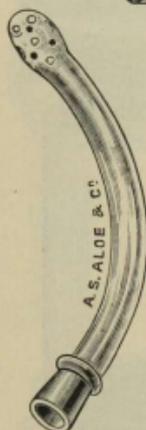
3048.	Instrument Tray, Granite, with handles on end,	9 x13 in.	\$ 90
3049.	" " " " " " " "	11 x16 in.	1 25
3050.	" " " " " " " "	12½x18 in.	1 55
3051.	" " " " Hard Rubber,	8½x10½ in.	1 75
3052.	" " " " " " " "	10½x12¾ in.	2 00
3053.	" " " " " " " "	12 x15 in.	2 50
3054.	" " " " " " " "	15 x18 in.	5 00
3055.	" " " " Lipped, Enameled,	9x15x1½ in.	2 50
3056.	" " " " Papier Mache,	9 x11 in.	1 25
3057.	" " " " " " " "	12½x15 in.	1 75
3058.	" " " " Porcelain,	8 x10 in.	1 00
3059.	" " " " " " " "	10 x12 in.	1 75
3060.	" " " " Soft Rubber, Bryant's,	11 x14 in.	2 50
3061.	" " " " " " " "	8 x10 in. (Can be rolled up and carried con-)	2 00
3062.	" " " " " " " "	9 x12 in. (veniently in Emergency Bag.)	2 50
3063.	" " " " " " " "	10 x16 in.	3 00
3064.	Iodoform Duster, Gerster's, Hard Rubber, Large,		1 00
3065.	" " " " Glass, with ground glass cover, Large,		1 50
3066.	" " " " " " " " Small,		75
3067.	" " " " " " " " Medium,		50
3068.	" " " " Hard Rubber, Medium,		75
3069.	" " " " " " " "		75
3070.	Irrigator, Bottle,	1 Gallon, complete with Esmarch's Cut-Off and 6 feet Tubing.	2 50
3071.	" " " " " " " "	2 " " " " " " " "	3 50
3072.	" " " " " " " "	3 " " " " " " " "	4 50
3073.	" " " " " " " "	5 " " " " " " " "	7 00
3074.	" " Hospital,	1 " " " " " " " "	2 50
3075.	" " " " " " " "	2 " " " " " " " "	3 50
3076.	" " " " " " " "	5 " " " " " " " "	4 50
3077.	" " " " " " " "	5 " " " " " " " "	7 00
3078.	Ligature Bottle, with 2 Glass Spools,		1 25
3079.	" " " " " 1 Large Spool,		1 00
3080.	" " Box, Glasgow's (St. Louis) Metal, Round, 4 Spools, Small,		1 50
3081.	" " " " " " " " Large,		2 00
3082.	" " " " Glass, with Ground Edge Cover,	3 " " " " " " " "	2 50
3083.	" " " " " " Lid,	3 " " " " " " " "	3 00
3084.	" " " " " " Knob on,	2 Large Spools,	3 50
3085.	" " " " Hagedorn's, with Extra Inside Box, 4 Small Spools,		6 00
3086.	" " " " " " " " 4 Large		9 00
3087.	" " " " St. Luke's Hospital, with Extra Inside Box, 6 Large Spools,		12 00
3088.	" " Reel, Hard Rubber Fittings, 2 Spools,		50
3089.	" " " " " " " " 3 " " " " " " " "		75
3090.	" " " " " " " " 4 " " " " " " " "		1 00
3091.	" " " " Esmarch's,		75
3092.	Museum Jar, for Specimens, Sponges, etc.,	3 x 4 in. Approximate Capacity,	40
3093.	" " " " " " " "	1 Pint.	50
3094.	" " " " " " " "	1 Quart.	75
3095.	" " " " " " " "	½ Gallon.	1 00
3096.	" " " " " " " "	1 "	1 25
3097.	" " " " " " " "	1½ "	1 50
3098.	" " " " " " " "	2 "	2 50
3099.	" " " " " " " "	2½ "	3 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

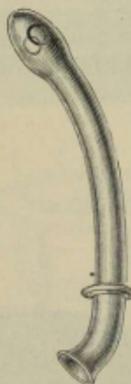
GENERAL SURGICAL NECESSITIES.
ANTISEPTIC SUNDRIES—DRAINAGE.



3113.



3111.



3114.



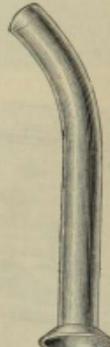
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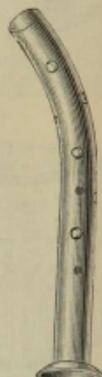
3116.



3117.



3118.



3119.



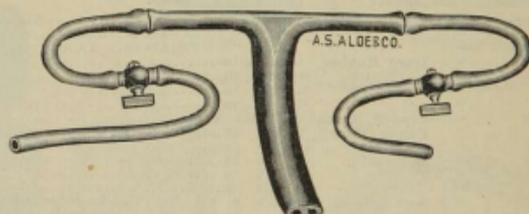
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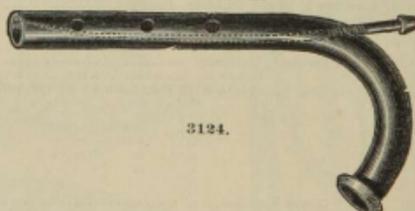
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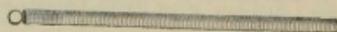
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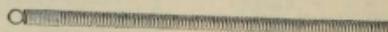
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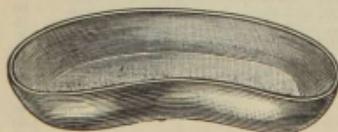
3124.



3131.



3132.



3137.



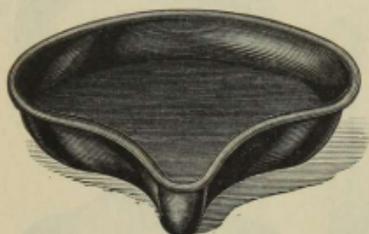
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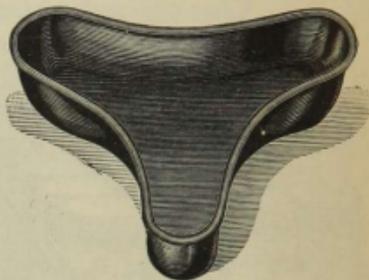
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GENERAL SURGICAL NECESSITIES.

DRAINAGE.

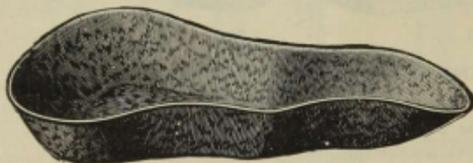


3152.



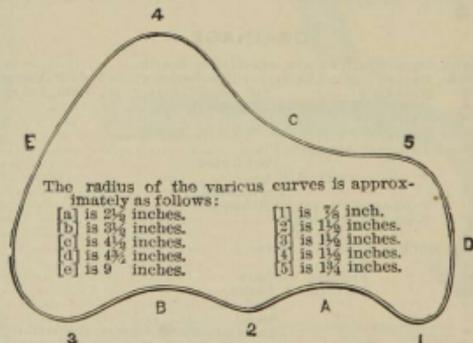
3157.

SMITH'S ENAMEL PUS BASIN.



3158.

Made of sheet iron, pressed into shape and coated with a pure vitreous enamel, which, for tenacity and power of resisting the action of acids, has no equal. The surface is smooth, and as easily cleaned as china, while the article is light and practically indestructible.



It has been found in practice that the various curves will fit the parts of the body most perfectly as follows:

- [A]—Side of forehead, lip, chin, front and side of neck, arm, forearm, leg.
- [B]—Side and back of head, back of neck, shoulder, thigh.
- [C]—Side of head, side of face, under breast, chest, abdomen, loin, under buttock, under scapula, upper part of thigh.
- [A, 2, B]—Below ear, with [2] behind angle of jaw, in the axilla, with the arm raised, in the fold of the nates, in either the knee-chest or lithotomy position.
- [E]—In loin, when patient is lying on back, on back between scapulae.

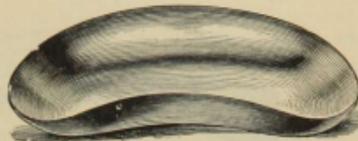
The small curves, 1, 2, 3, 4 and 5, serve to fit into depressions in various parts of the body.

GENERAL SURGICAL NECESSITIES.

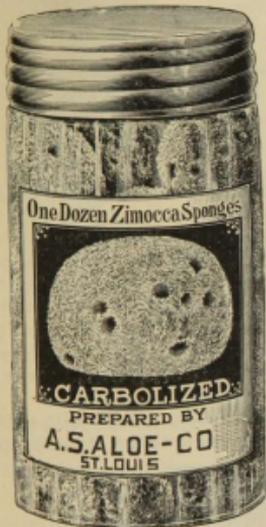
DRAINAGE.



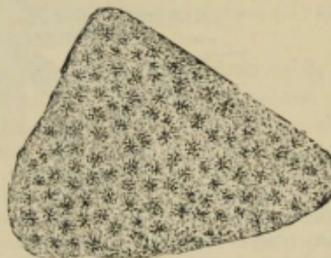
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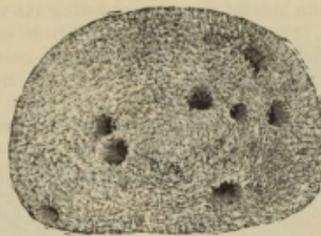
3150.



3161.



3171.



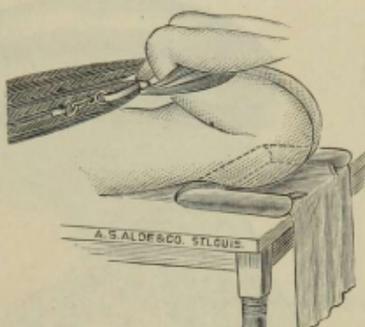
3165.

3143.	Pus Basin, Hard Rubber, Fan Shape,	10 1/2 inches	\$2 00
3144.	" " " " " " " " " " " "	6 x 2 1/2	" " " " " " " " " " " "	1 00
3145.	" " " " " " " " " " " "	8 1/2 x 4 1/2	" " " " " " " " " " " "	1 50
3146.	" " " " " " " " " " " "	10 1/2 x 5 1/2	" " " " " " " " " " " "	1 75
3147.	" " " " " " " " " " " "	12 1/2 x 7 1/2	" " " " " " " " " " " "	2 00
3148.	" " " " " " " " " " " "	Triangular,	9	1 50
3149.	" " " " " " " " " " " "	Nickel Plated, Large	.....	1 25
3150.	" " " " " " " " " " " "	Medium	.....	1 00
3151.	" " " " " " " " " " " "	Small	.....	75
3152.	" " " " " " " " " " " "	Papier Mache, Fan Shape,	10 1/2	1 00
3153.	" " " " " " " " " " " "	" " " " " " " " " " " "	6 x 2 1/2	35
3154.	" " " " " " " " " " " "	" " " " " " " " " " " "	8 1/2 x 4 1/2	35
3155.	" " " " " " " " " " " "	" " " " " " " " " " " "	10 1/2 x 5 1/2	75
3156.	" " " " " " " " " " " "	" " " " " " " " " " " "	12 1/2 x 7 1/2	1 00
3157.	" " " " " " " " " " " "	Triangular,	9	1 00
3158.	" " " " " " " " " " " "	Smith's Granite	.....	1 25
3159.	" " " " " " " " " " " "	Papier Mache	.....	1 00
3160.	" " " " " " " " " " " "	Warren's Soft Rubber	.....	3 00
3161.	Sponges, Carbolized, one dozen in bottle,		per bottle,	75
3162.	" " " " " " " " " " " "	(dry) in box	.....	50
3163.	" " " " " " " " " " " "	Dry, Small	.....	60
3164.	" " " " " " " " " " " "	Medium	.....	1 00
3165.	" " " " " " " " " " " "	Large	.....	2 00
3166.	" " " " " " " " " " " "	Extra Large	.....	3 00
3167.	" " " " " " " " " " " "	Fine, Large	.....	6 00
3168.	" " " " " " " " " " " "	Superfine	.....	25
3169.	" " " " " " " " " " " "	Flat, Abdominal, No. 1, Extra Fine Zimocca, Average 6 to 9 square inches	.....each,	60
3170.	" " " " " " " " " " " "	" " " " " " " " " " " "	2	1 00
3171.	" " " " " " " " " " " "	" " " " " " " " " " " "	3	1 40
3172.	" " " " " " " " " " " "	" " " " " " " " " " " "	4	1 40
3173.	" " " " " " " " " " " "	" " " " " " " " " " " "	5	2 25

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL SURGICAL NECESSITIES.

DRAINAGE.



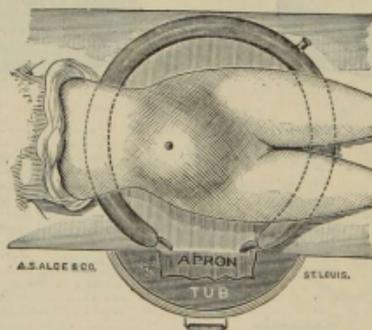
3176. Showing Application.



3176.

The Perineal Cushion should first be stiffly inflated with air, and then placed on the end of the table, with the full length of the apron hanging vertically from the edge with its lower extremity lying in the bucket on the floor. The patient is placed upon the cushion, as shown in Fig. 3176, in the lithotomy position, with the buttocks brought to the edge of the table, and with the clothes drawn well above the small of the back; enough air is then allowed to escape from the inflated rim by unscrewing the valve, to make it slightly flaccid, when it fits the back neatly, thus preventing the patient from suffering any painful effects from prolonged pressure. All fluid now used on the buttocks or genitals must of necessity run down on the cushion and be directed by the rim, which keeps the clothing and linen dry, onto the little flaps at the edge of the table, which turn it on to the apron and thus into the bucket.

To clean the cushion, it should be douched under a faucet and wiped dry with a clean cloth immediately after use, giving especial attention to the folds under the edges of the inflatable rim.



3175.

The Ovariotomy Cushion should be placed so as to drain off the side of the table nearest the operator. It thus drains at right angles to the patient's body. The apron must not lie on the table at all, but hang vertically at the side from the edge of the table, carrying fluids into the tub beneath. When inflated and properly placed, as in Fig. 3175, the patient's abdomen lies in the middle of a large circle built up by the inflated rim on all sides, except the narrow opening at the edge of the table allowing the escape of fluid. Place the patient on the cushion as shown, with the clothes drawn well up under the shoulders, and the apron hanging vertically, and not diagonally or running the length of the table; there will then be no difficulty in using the cushion.

[Extract from article by Dr. Hunter Robb in The Medical News, Dec. 29, 1888.]

GENERAL SURGICAL NECESSITIES.

DRAINAGE.

The Obstetrical Cushion in use at the time this article was written, having been improved upon by Dr. Kelly, we would refer readers to the description of the Improved Obstetrical Cushion. See index.

THE GENERAL SURGICAL CUSHION.

In addition to the cushions already mentioned, Dr. Kelly has devised another which he speaks of as follows:

have found a fourth form of very great service in general surgical work which I call the General Surgical Cushion. This is made with the rim inflatable around three-fourths of a circle, open on the remaining fourth, and draining as in the others on to an apron which conducts all fluids into the bucket on the floor.

It has somewhat the shape of the Ovariotomy Pad, but is smaller and has a wider opening into the apron, and a higher rim when inflated, answering better the purpose of general surgery.

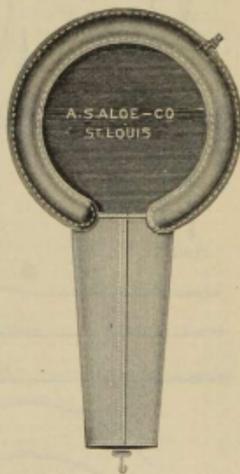


3174.

KELLY'S IMPROVED CUSHION.

The distinguishing feature in these new cushions is the covered apron for conducting the fluids into the bucket or tub.

The cushion is furnished with a stout spring at the mouth of the apron which insures its being always open so as to allow an unobstructed flow, and at the lower end a hook is securely fastened which can be snapped over the spring by folding back the tube. In this way a pocket is formed and the tube is thus made a receptacle for receiving the fluid, which is found very convenient in many cases. The tube thus folded also admits of a cleanly way of removing the cushion at the close of an operation.

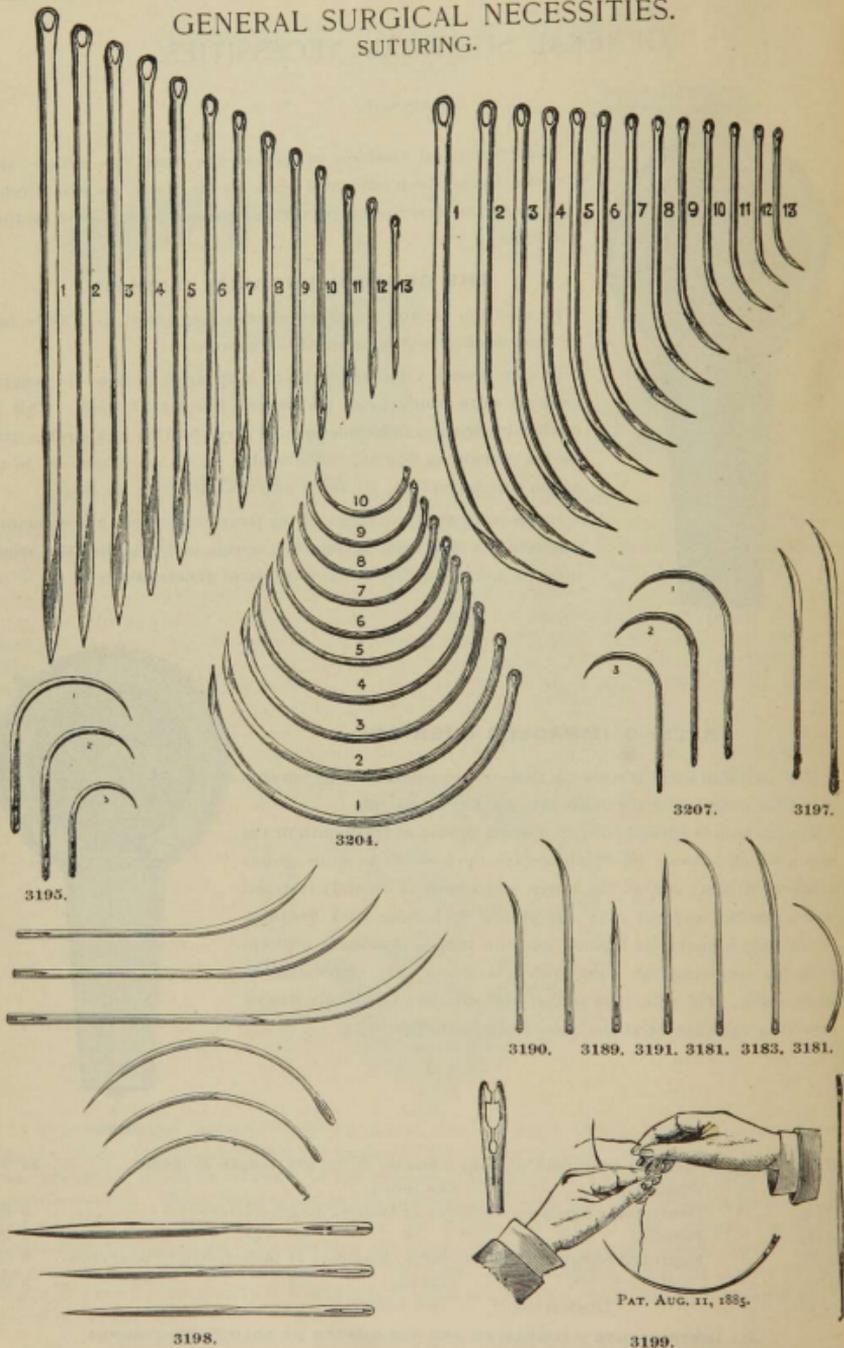


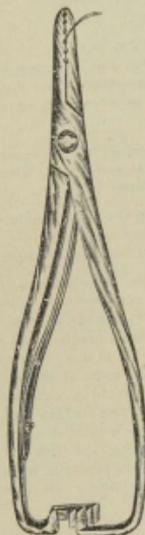
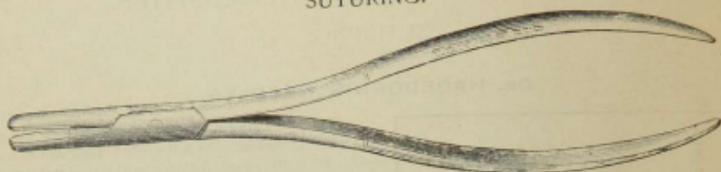
3177.

- | | | |
|--------------|---|--------|
| 3174. | Kelly's General Surgical Cushion, diameter 20 inches, length 25 inches..... | \$4 00 |
| | “ Obstetrical “ “ See index. | |
| 3175. | “ Ovariotomy Cushion, diameter 24 inches, length 25 inches..... | 5 00 |
| 3176. | “ Perineal “ “ 14 “ “ 25 “ | 3 00 |
| 3177. | “ Improved Surgical Cushion, large, diameter 24 inches, length 25 inches.. | 6 50 |
| 3178. | “ “ “ “ small, “ 20 “ “ 25 “ .. | 5 00 |
| | “ “ “ “ Obstetrical “ “ See index. | |

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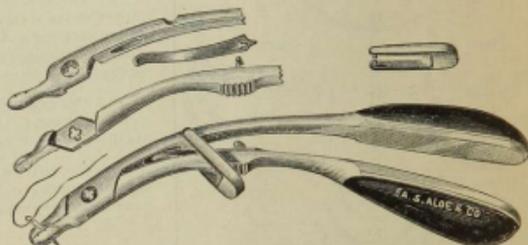
GENERAL SURGICAL NECESSITIES.
SUTURING.



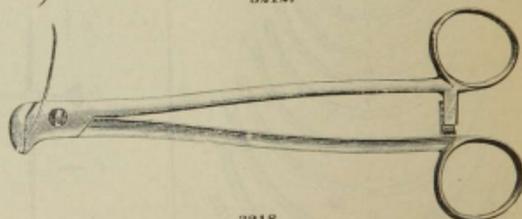
GENERAL SURGICAL NECESSITIES.
SUTURING.

3211.

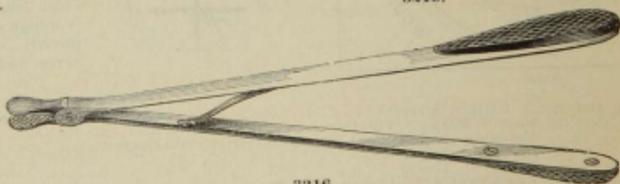
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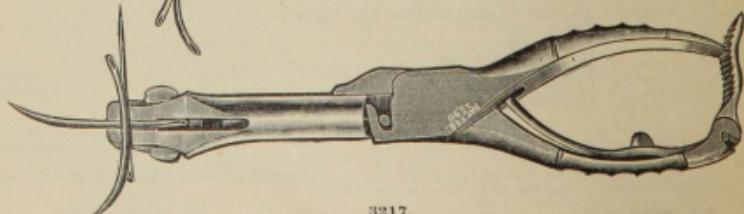
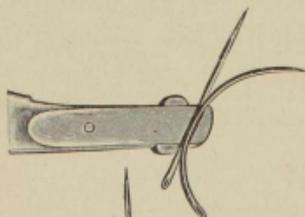
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3218.

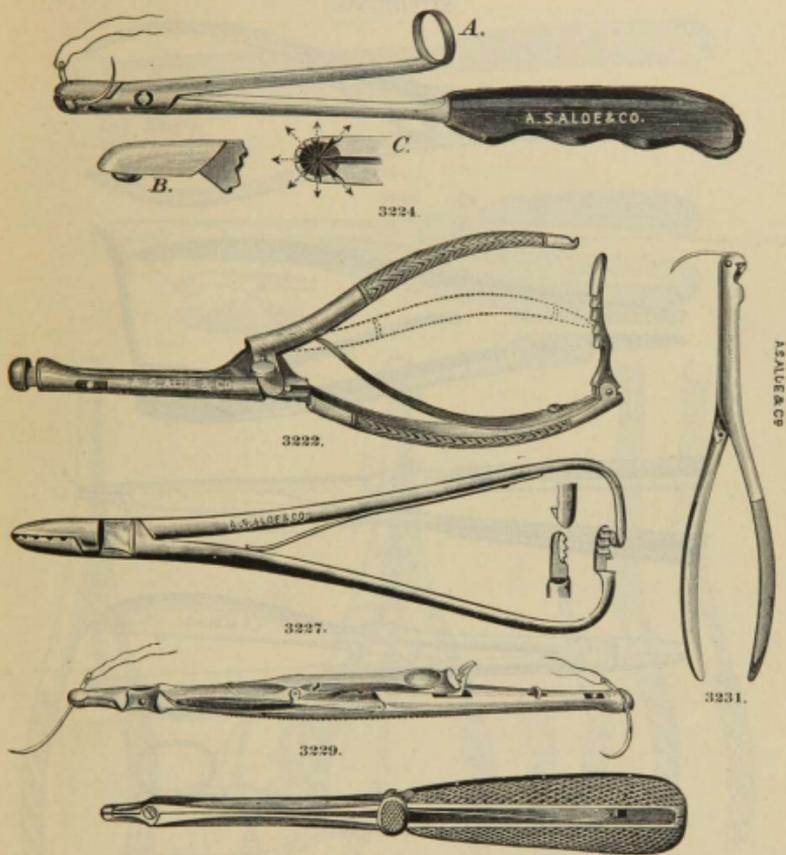


3216.



3217.

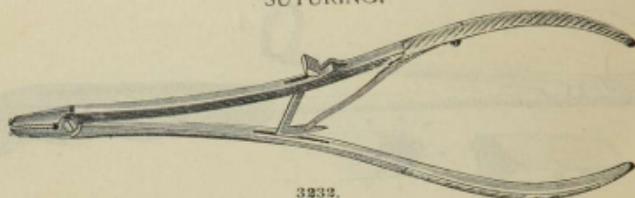
GENERAL SURGICAL NECESSITIES.
SUTURING.



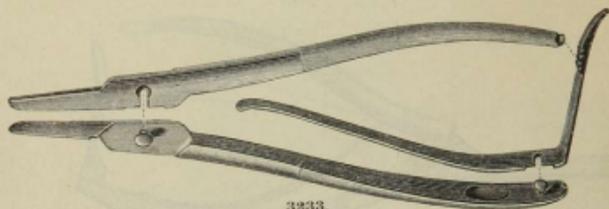
3208.	Needle Holder, Abbe's Long, (8-inch).....	\$ 2 50
"	" " Short, 4½ in. See Pocket Case Instruments, Page 143.	
3209.	" " Ady's.....	7 50
3210.	" " Collin's Latest.....	5 00
3211.	" " Crosby's.....	3 50
3212.	" " Dawbarn's.....	5 25
3213.	" " Dawson's.....	2 75
3214.	" " Dieffenbach's.....	1 75
3215.	" " Edebohl's.....	3 00
3216.	" " Emmet's.....	2 25
3217.	" " Ferges's.....	7 50
"	" " Short, Scissor Handle. See Page 143.	
3218.	" " Fowler's.....	2 00
3219.	" " Fritche's.....	3 00
3220.	" " Goodell's.....	4 50
3221.	" " Hagedorn's, Large, 8 in.....	6 00
3222.	" " " Medium, 7 in.....	5 00
3223.	" " " Small, 5¼ in.....	4 50
3224.	" " Hank's.....	3 00
3225.	" " Heuel's.....	3 00
3226.	" " Keen's.....	2 75
3227.	" " Mathieu's.....	3 00
3228.	" " McBurney's.....	2 50
3229.	" " Otis'.....	6 00
3230.	" " Parrot's (Philadelphia Needle Holder).....	4 00
3231.	" " Pozzi's.....	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

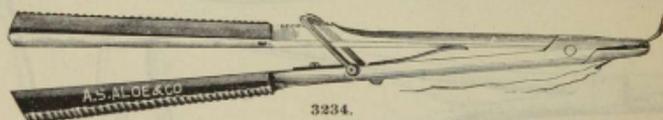
GENERAL SURGICAL NECESSITIES.
SUTURING.



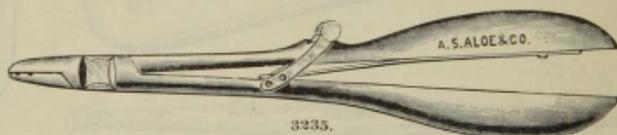
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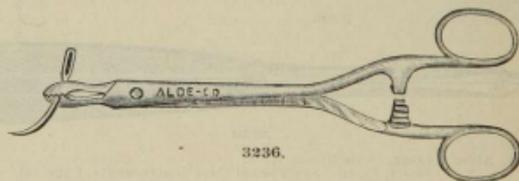
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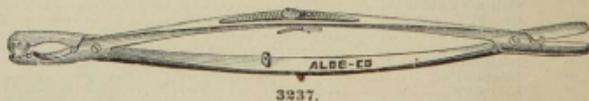
3234.



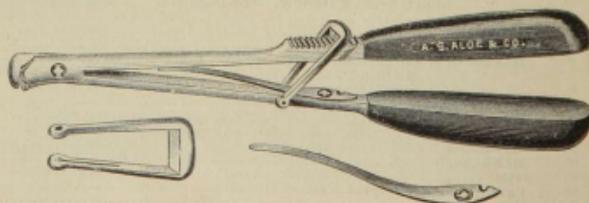
3235.



3236.

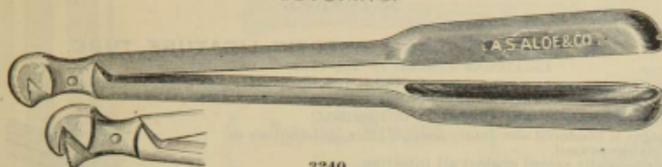


3237.

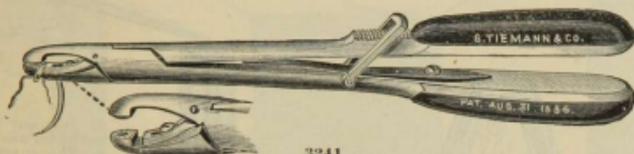


3239.

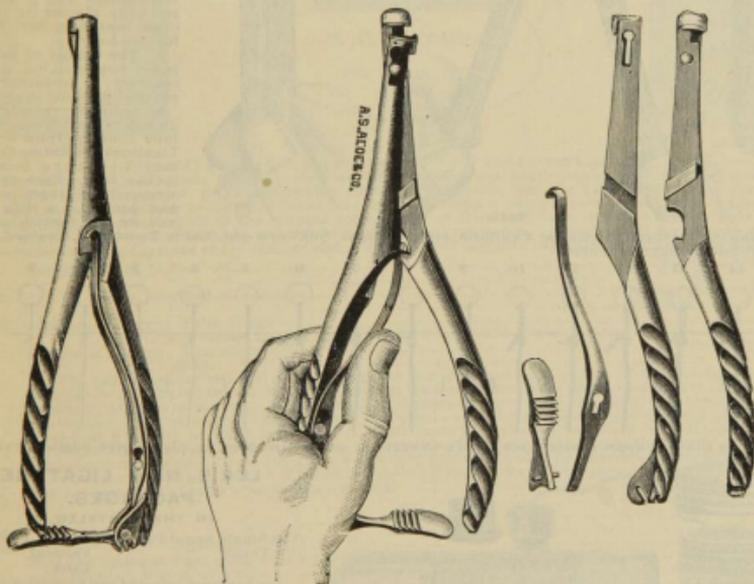
GENERAL SURGICAL NECESSITIES.
SUTURING.



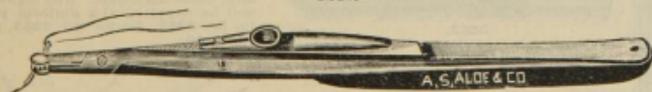
3240.



3241.



3243.



3244.

3232.	Needle Holder, Reiner's.....	\$3 00
3233.	" " Roser's.....	2 50
3234.	" " Russian.....	3 00
3235.	" " " Improved.....	3 50
3236.	" " Sim's Latest (with Catch).....	2 50
3237.	" " Skene's.....	4 00
3238.	" " Stimson's Combined, with Pin Cutter.....	2 75
3239.	" " Thallon-Fowler's.....	2 75
3240.	" " Tiemann's (Disjointing).....	5 25
3241.	" " Van Arsdale's.....	6 00
3242.	" " Weber's.....	4 50
3243.	" " Wyeth's.....	3 50
3244.	" " ".....	3 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL SURGICAL NECESSITIES.
SUTURING.

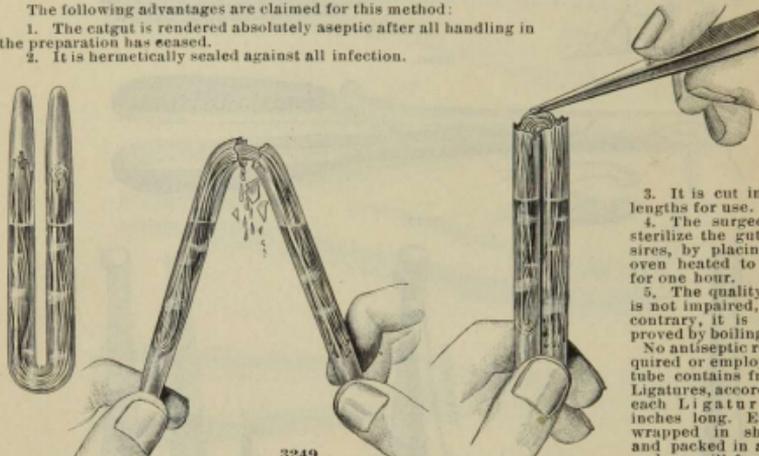
DR. G. R. FOWLER'S ASEPTIC LIGATURE TUBE.

LIGATURES BOILED IN ALCOHOL UNDER PRESSURE.

"The Ligatures by this method are rendered absolutely aseptic after being hermetically sealed, and after all handling in the preparation has ceased."

The following advantages are claimed for this method:

1. The catgut is rendered absolutely aseptic after all handling in the preparation has ceased.
2. It is hermetically sealed against all infection.



3. It is cut into suitable lengths for use.

4. The surgeon may sterilize the gut, if he desires, by placing it in an oven heated to 200° Fahr. for one hour.

5. The quality of the gut is not impaired, but, on the contrary, it is rather improved by boiling in alcohol.

No antiseptic remedies required or employed. Each tube contains from 4 to 10 Ligatures, according to size, each Ligature being 12 inches long. Each tube is wrapped in sheet cotton and packed in a slide box, and we will furnish any of

the following Ligatures desired at a uniform price: Catgut, Silkworm-gut, Cable Twist Silk, Braided Silk, Twisted Silk, Kangaroo Tendon.

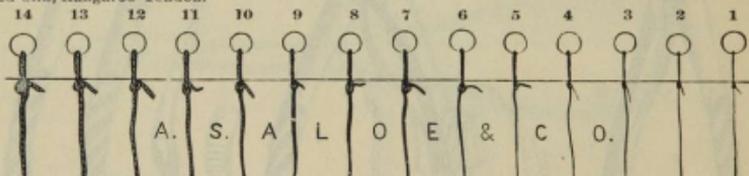
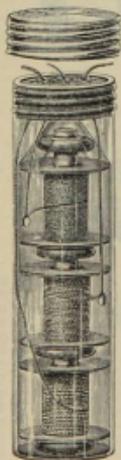


Illustration showing approximate sizes of silk we carry in stock. In ordering, please give number wanted.

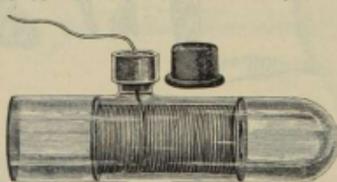
LEE'S NEW LIGATURE
PACKAGES.
IN THREE STYLES.

The Single Spool Patented Tank Package.
" Three " " Vertical " " " Tank " "

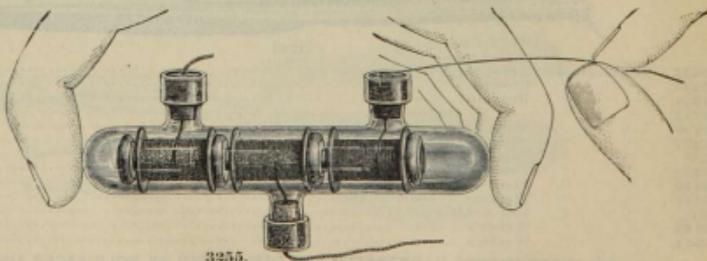
Any Ligature selected can be wound on the spoils, such as Catgut, Braided and Twisted Silk, Cable Twist, etc. Any Ligature wanted will be supplied at a uniform price of 75c for No. 3253; 75c for No. 3255, and 50c for No. 3256.



3256.



3253.



3255.

GENERAL SURGICAL NECESSITIES.

SUTURING.

A NEW KNOT TIER.

By A. H. CORDIER, M. D., of Kansas City, Mo.

In doing abdominal and pelvic surgery much valuable time is often expended in tying sutures and ligatures in the recesses found in these localities. Feeling the necessity of some device to minimize the time in doing this difficult part in this class of surgery I have devised an instrument known as the "Cordier Knot Tier." The working of this instrument has proved to fill in every respect my greatest expectations. Its application has a wide range and will, I trust prove to be as invaluable to others as it has been serviceable to me.

I will briefly mention a few of the many operations in which this instrument can be used to good advantage in saving time and doing good execution.

In a vaginal hysterectomy where the uterus is fixed and it is impossible or unadvisable to drag the organ down within easy reach and where the operator is using ligatures on the broad ligaments or even in the vaginal vault, where the sutures are introduced to slit the peritoneum to the cut edge of the vagina as is recommended by Martin, the application of the tier here is indispensable.

If an artery is divided in an inaccessible locality, to tie with the hands, the tier will quickly secure the vessel and permit of the forceps being removed at once. In vesico-vaginal fistula the sutures can be tied in an incredibly short period by the aid of the tier.

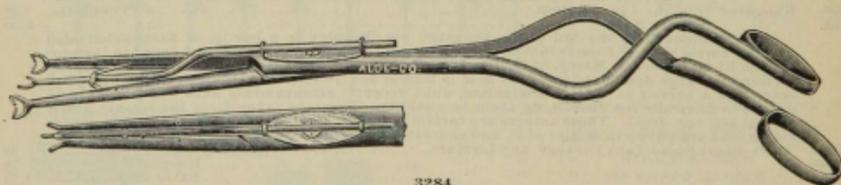
In performing an Emmet's operation on the cervix in a small vagina or on a cervix that is not within easy reach and where the operator is using silk or catgut or even silver wire or silk-worm gut, the knot can be run up and tightened as quickly as if on the surface of the body.

In performing the Eastman operation or total abdominal hysterectomy, the instrument is indispensable as a time saving device.

In supra-public cystotomy for the removal of tumors or an enlarged prostate if ligatures or sutures are to be used, the operator is certainly working to a great disadvantage without an instrument of this kind to do the tying quickly.

Where the surgeon is operating to remove an impacted gall stone in the cystic or common duct and it is found necessary to split the duct over the side of the stone, the tier will aid him very much in tightening the sutures when he comes to closing the opening made in this canal.

In the small capillary bleeding hæmorrhoids where the hæmorrhage may be so great as to endanger the life of the patient, the quickest and surest procedure is to ligate the small rasp-



3284.

berry like tumor; the tier here is of much service, making a tedious procedure very quickly and easily performed. This variety of hæmorrhoidal tumors is usually situated high up in the rectum. Allingham has well said, "The secret of the well being of your patient (in ligating internal hæmorrhoids) depends greatly on this tying—a part of the operation by no means easy as all practical men know, to effect."

Of 29 cases of splenectomy 14 died directly from hæmorrhage and 3 from shock. The difficulty in tying the vessels and the great shock produced by dragging on the pedicle can be avoided by the use of the tier. The application of the instrument has a wide range.

The tier as the reader will see by the cut has the same arrangement governing the movements of the blades as is used in Nott's Uterine Dilator. The carriers have automatic threading ends, this permits the ligatures to be quickly placed in position to be tightened as soon as the handles are closed. Between the blades (see cut) is the loop carrier, which carries the loop down to the exact place where the surgeon desires the knot to be tightened, this carrier holds the loop or knot stationary while the blades are being separated and the knot tightened. The ends of the ligatures are held in the left hand of the surgeon. As soon as the knot is tightened down on the vessel or the suture is so secure that it will hold its place the carrier automatically retracts. The sutures may be tightened even with more force than it is possible for the hands to stand without the ligature cutting the fingers.

These are a few only of its many applications.

Kansas City, Mo., 1024 Walnut St.

[Reprinted from Journal American Medical Ass'n, Feby. 11th, 1893.]

GENERAL SURGICAL NECESSITIES.

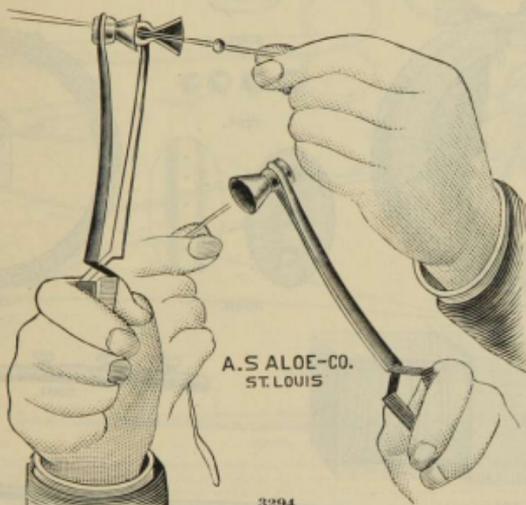
SUTURING.

MORTON'S SHOT FEEDER.

More than a year has elapsed since Dr. Morton devised and described* this useful little instrument. In this time it has proved its worth in the hands of some of the best surgeons and gynecologists of this and other cities, many out of town practitioners, and in the practice of at least one London specialist.

Having so well stood this practical test of use and time, we now feel justified in thus urging its claims upon the profession at large. This we do with perfect confidence that everything claimed for it will be more than realized. Its object, as the caption signifies, is to replace by mechanical means the former clumsy manual procedure of placing perforated shot upon sutures.

Any one who has performed or witnessed this seemingly simple operation knows how often the shot are dropped either by the operator or the assistant; how, when the operator's hands are moist he can not grasp the shot, or, having gotten it between his fingers, the difficulty of finding the perforation—of rotating it, and the greater difficulty of getting the two ends of the suture through the perforation, or, having



accomplished this much, the aggravation of finding the perforation incomplete. Thus far very large shot and very large perforations have been used in the attempt to obviate these difficulties, but both these and other make-shifts are all, of themselves, objectionable.

The "Feeder" not only overcomes all of these difficulties, but combines many other obvious advantages which will be mentioned. It consists of a hollow metal cone one-half inch in diameter at base, and one-half inch in height, having at its apex a perforation (sufficiently large to admit two strands of any suture likely to be used) which opens into a chamber the exact size of the shot intended for use. Directly opposite this entering opening is a corresponding exit. The cone is made in two pieces, and each carefully mounted on one arm of a pair of crossing forceps. Then, having a number of shot (which are specially prepared to secure uniformity) strung upon the pin provided for this purpose, the force arms are separated, a shot placed in its receptacle in one of the separated halves of the shot chamber, and the forceps allowed to close, thus embracing the shot and pin, which latter is now withdrawn, leaving the axis of the shot perforation in correspondence with that of the shot chamber, and the instrument is ready to be presented to the suture ends (lower figure).

These ends are guided by the converging interior of the cone to the perforation at its apex, pass through the shot and out behind, where they are grasped. Upon again separating the force arms, the shot is well upon the suture ends, ready to be run down and compressed (upper figure)—an assistant meanwhile places another shot in the chamber ready for the succeeding stitch.

Chief among the advantages of this instrument may be mentioned: the shot require no handling, and, after loading, can not be dropped into the wound or elsewhere, or be mislaid, and, being bored, must be pervious, sound and uniform, also shot with a finer perforation can be used, and thus a small shot be equal in strength to a much larger one as now used; the wires do not require to be twisted and cut, and if the ends presented to the cone be not more than a half inch apart they are bound to pass into the cone, and through the center of the enclosed shot; the operator's fingers do not obstruct his view, and if a known number of shot be upon the pin previous to an operation the number of sutures introduced can be ascertained by those missing.

Each instrument can of course only be used for the size of shot for which it is made. We make them for any desired size, but would recommend those made for No. 18 shot (with a fine perforation) as having proved by far the most useful and satisfactory. Although especially intended for use with wire, the "Feeder" can be used with many other suture substances, especially silk-worm gut.

Directions.—In charging "Feeder" with shot it should always be fed from base, and not through cone of instrument. In ordering extra shot please mention registered numbers on instrument.

* "An instrument for placing shot upon wire sutures." By Thomas S. K. Morton, M. D.—Philadelphia Medical Times, P. 389. February 23, 1884.

GENERAL SURGICAL NECESSITIES.
SUTURING.

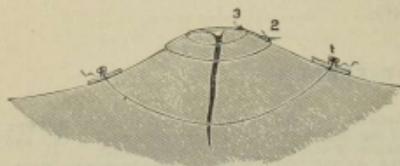
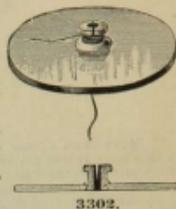


Diagram showing course through a wound of (1) a relaxation suture, (2) an approximation suture, (3) a coaptation suture.

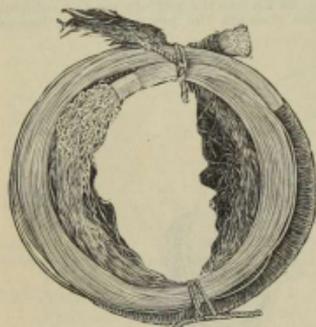
In using these Buttons the wire or thread is passed through from below, bent into the slot, wound two or three times around the post, and then carried across the post through the slot again.

POWELL'S SUTURE
BUTTONS.

They are equally well-adapted for use with silk-worm or catgut, silk or wire. They can be sterilized by boiling, and used indefinitely. They can be bent to fit irregular surfaces. They can be instantly fastened, unfastened, tightened or relaxed, and cannot slip or break.



3302.



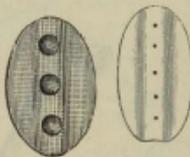
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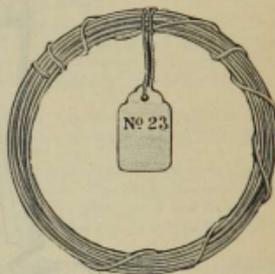
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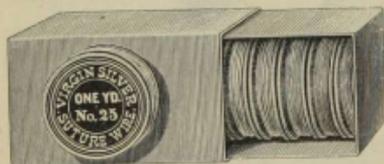
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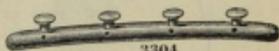
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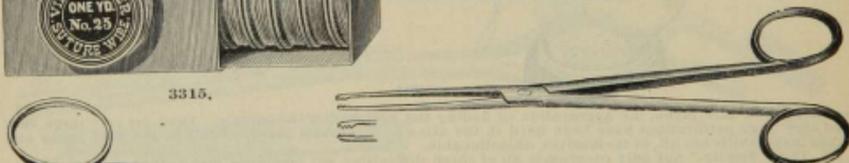
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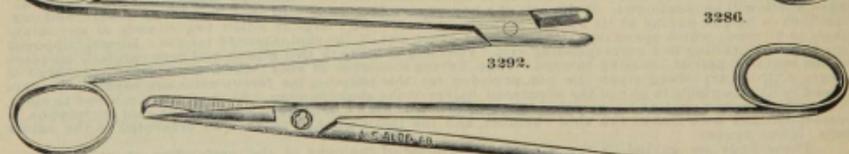
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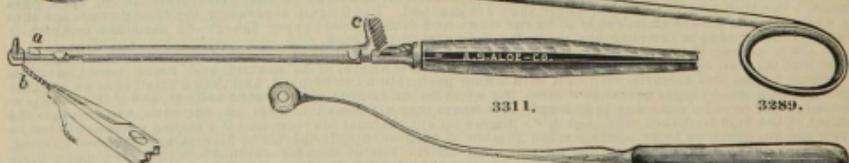
3304.



3286.



3292.

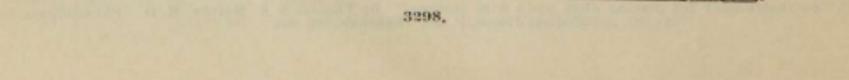


3311.

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3306.

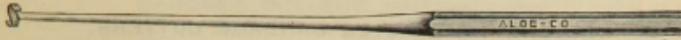


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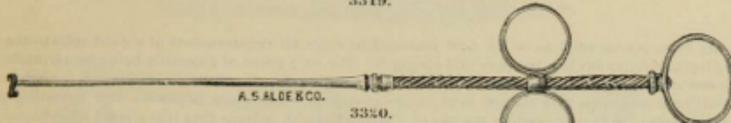
GENERAL SURGICAL NECESSITIES.
SUTURING.



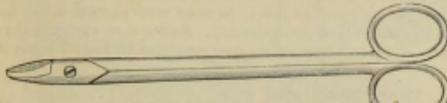
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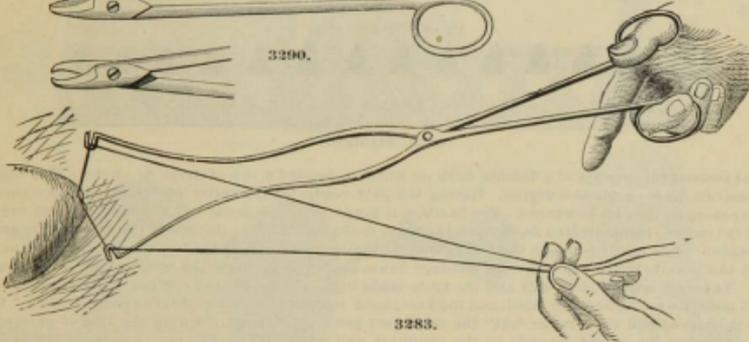
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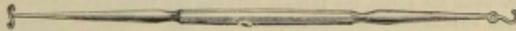
3320.



3290.



3283.



3308.

3283.	Knot Tier, Carroll's.....	\$1 50
3284.	" " Cordier's.....	6 00
3285.	" " Scudder's.....	1 00
3286.	Ligature Forceps, Keith's.....	1 15
3287.	" " Cleveland's.....	3 50
3288.	" " Scissors, Gussarov's.....	3 00
3289.	" " Skene's.....	3 00
3290.	" " Smith's.....	2 50
3291.	Perforated Shot, Nos. 6, 7, 8, 9, American Scale.....	per 100, 50
3292.	Shot Compressor.....	2 00
3293.	" " (and Ligature Cutter combined), Miller's.....	4 50
3294.	" " Feeder, Morton's.....	3 75
3295.	" " Perforator.....	2 50
3296.	Silk-Worm Gut, Bundle of 100 strands.....	75
3297.	" " " 1 dozen in solution.....	50
3298.	Suture Button Adjuster, Bozeman's.....	1 75
3299.	" " Shaper.....	2 75
3300.	Suture Buttons, Bozeman's.....	per dozen, 1 00
3301.	" " Getchell's.....	" 40
3302.	" " Powell's.....	" 1 25
3303.	" " Spirals, Wilson's.....	" 75
3304.	" " Stay, Munson's.....	per pair, 60
3305.	Whale Tendon, Ishiguro's.....	per coil, 40
3306.	Wire Adjuster, Bozeman's.....	1 50
3307.	" " Sim's.....	1 00
3308.	" " and Twister, Agnew's.....	1 50
3309.	" " Cutter, Abbot's.....	4 50
3310.	" " Perry-Abbot's.....	4 50
3311.	" " Tucker's.....	3 00
3312.	Suture, Iron, Annealed.....	per coil, 25
3313.	" " Lead.....	" 25
3314.	" " Silver, 1-yard spools.....	15
3315.	" " " six 1-yard spools in box.....	75
3316.	" " " 3/4-ounce spool.....	1 00
3317.	" " " 1-ounce coils.....	40
3318.	" " " Finlher's for Bone Wiring.....	each, 1 00
3319.	" " Twister, Bozeman's.....	3 00
3320.	" " Classen's.....	3 00
3321.	" " Dawson's.....	1 90

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL SURGICAL NECESSITIES.

DRESSING.

HANCHETT'S PLASTER BANDAGE CUTTERS.

Plaster Paris is conceded to be the best material to meet all requirements of a good splint—the essentials being lightness, immobility, porosity and strength. The only point of objection being immovability.

To overcome this objection a new instrument for opening Plaster Paris casts is here brought to your notice. Cutting a cast open with shears, saws, or gouging with a knife, are laborious and irritating to both surgeon and patient; in fact, it renders the use of Plaster Paris so tedious that it is almost abandoned.

The merits of Plaster will now be brought forward, as it may be used with perfect safety as the initial dressing of fractures, even if swelling should take place subsequently. Suffice it to say that the range and adaptability of this material will be greatly widened—making its use practical in almost every description of splint.

Patent June 2, 1891.



3322.—Straight.

The instrument consists of a flexible back on which is erected a row of teeth or spines. The working of the instrument is simple to a degree. Having the part ready, lay the cutter on the bared skin where the line of opening in the cast is wanted. The bandage is prepared in the usual way and wound about over the teeth of the cutter—being pressed down upon the teeth so that most of the threads of the bandage are cut. A few threads are left uncut between the teeth, thus facilitating the work by holding the bandage for the next bout. A sharp knife is used to press the bandage down, upon and between the teeth, which really does the cutting. The teeth may be quite dull and the knife made to do all the cutting. When parts are very sensitive, this must always be borne in mind, and the knife used instead of direct pressure upon the teeth. When the cast is finished and the Plaster "set" the teeth just prick up through, showing the line of perforation. The time required for setting depends on the condition and quality of the Plaster. Generally the cast will be set in 30 minutes. To open the splint, the threads between the teeth are cut by drawing a sharp knife along the side of the teeth, cutting clear down upon the back of the instrument, which protects the skin and parts beneath. The instrument is then drawn out endwise. The cast will then open and must be bound together with a roller bandage used over the cast. An instrument may be used on either side of the limb, thus enabling the cast to be divided into halves. This is not necessary as the cast can be sprung off very readily if it is opened in only one place. After 24 hours or less the cast will be fully dry and can be taken off without injury to itself or pain to patient.

Should swelling supervene during the first day, the roller bandage may be loosened and the splint pressed open a little, enough to take off the pressure. The splint may be taken off within 30 minutes, as soon as the Plaster is fully set, but it is much stronger if left till dry.

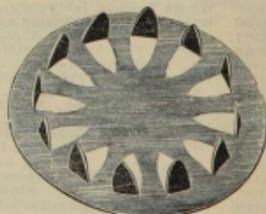
The special features brought forward are named thus:

- 1st—The advisability of examining the parts without destroying the cast.
- 2nd—Plaster may be used in first dressing of fractures. As splint is open, there is no danger from swelling or strangulation.
- 3rd—Pads may be used with ease and accuracy in approximating and conforming fragments that are often found a little out of line when swelling subsides.
- 4th—The cast can be made smaller by shaving off a strip along the opening with bandage shears, thus keeping a perfect fit as swelling goes down, (especially needed in cases of chronic synovitis of knee).
- 5th—The part may be bathed and treated topically by nurse or patient, as the cast can be so readily placed back in position.
- 6th.—In compound fractures an opening is made at seat of skin injury by use of a circular cutter shown in the cut, so that drainage can be carried outside the cast.

The benefits of open splints are patent to all, and especially in the

- a) Pistol splint for Colle's fracture.
- b) Pott's fracture.
- c) Plaster jacket.
- d) Plaster shoes for club feet.
- e) Fracture of femur and humerus.
- f) Chronic synovitis.

Hanchett's set of Plaster Bandage Cutters consists of one 20-inch, one 15-inch, one 10-inch Straight Cutters and 1 Circular Cutter,



3322.—Circular.

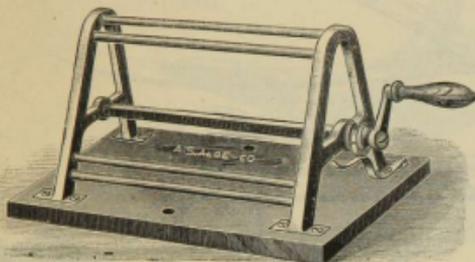
GENERAL SURGICAL NECESSITIES.

DRESSING.

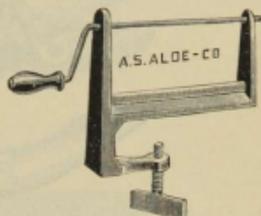
BANDAGE ROLLERS, SHEARS, ETC.



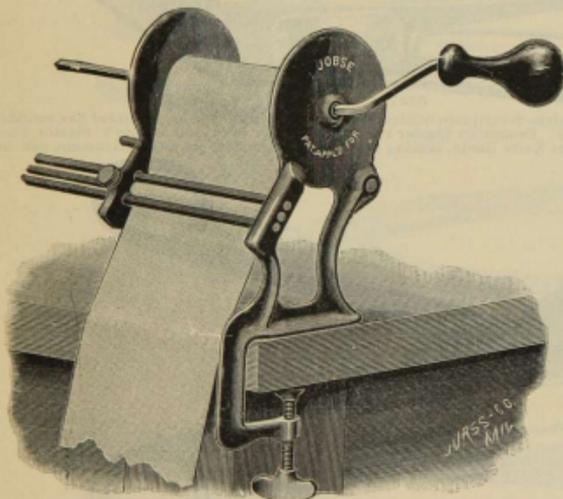
3323.



3327.



3326.



3325.



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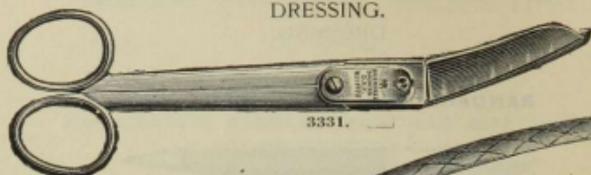
The "Jobse" Bandage Roller is superior to any bandage roller in the market. It is made of solid brass, heavily nickel plated, and is arranged in such a manner that you can roll bandages of any quality or size, medicated or plain.

Full instructions for rolling and medicating bandages, method used for packing to prevent evaporation of medication used, etc., enclosed in every case.

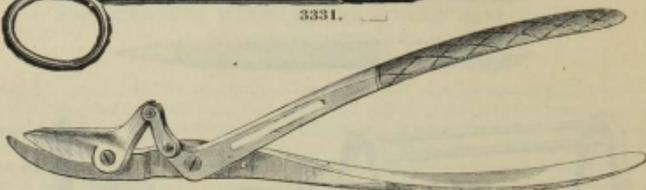
3322.	Bandage Cutters, Hanchett's, set of 4.....	\$ 1 50
3323.	" Knife and Wedge, Esmarch's.....	2 00
3324.	" Roller, Crocker's.....	4 50
3325.	" " Jobse.....	3 00
3326.	" " Plain.....	75
3327.	" " Nickel Plated.....	2 25
3328.	" Saw, Engel's.....	3 00
3329.	" " Hunter's.....	2 00
3330.	" " Fowler's.....	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

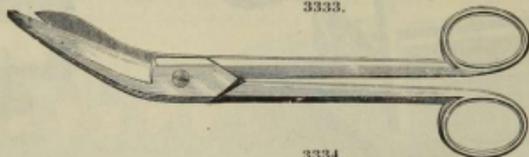
GENERAL SURGICAL NECESSITIES.
DRESSING.



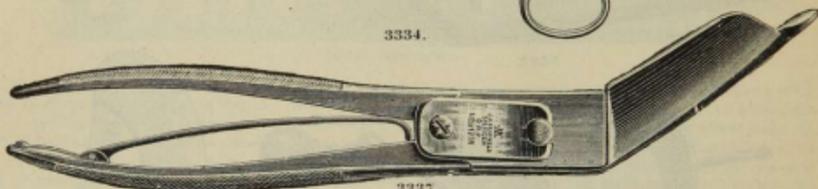
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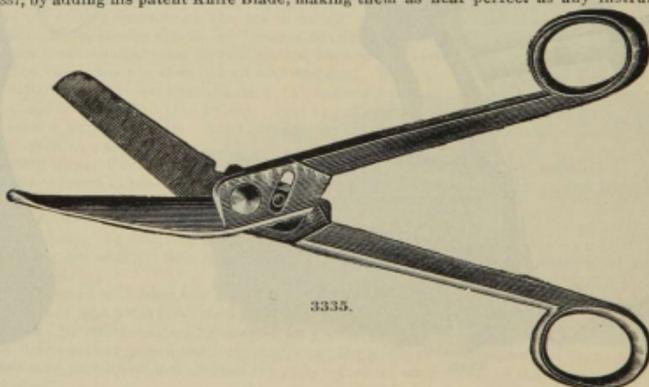


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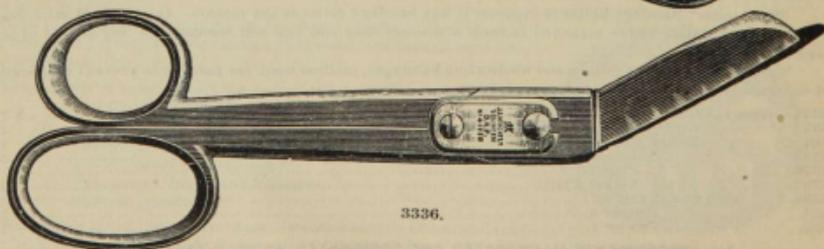


3337.

On page 60 will be found a complete description of Henckel's Patent Knife-Scissor. Henckel has modified Lister's Bandage Scissor, Fig. 3331; Esmarch's Plaster Paris Shear, Fig. 3336; and Seutin's Plaster Paris Shear, Fig. 3337, by adding his patent Knife Blade, making them as near perfect as any instrument can be.



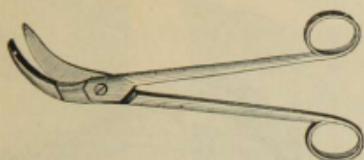
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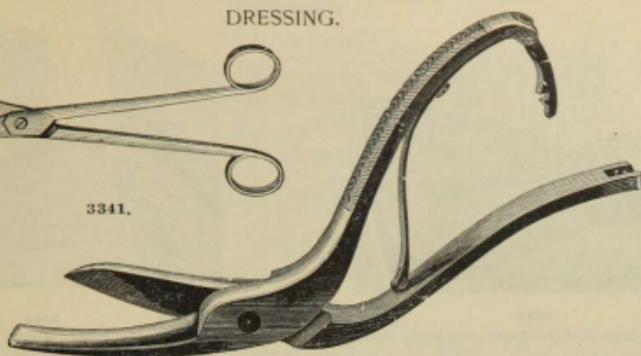
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GENERAL SURGICAL NECESSITIES.

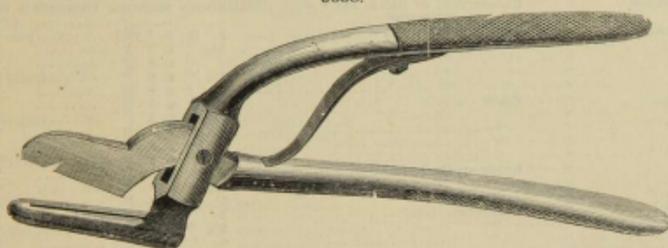
DRESSING.



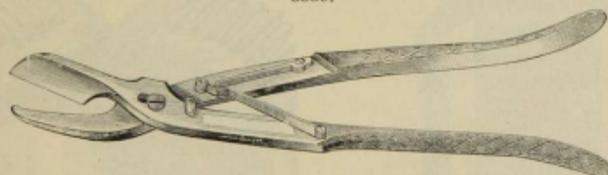
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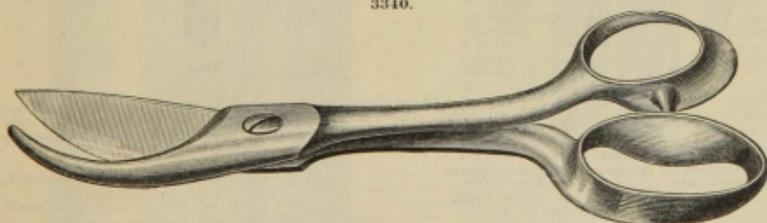
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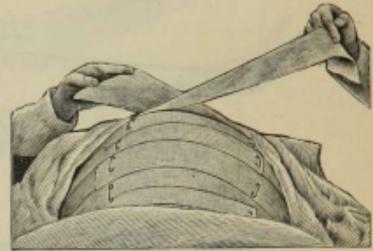


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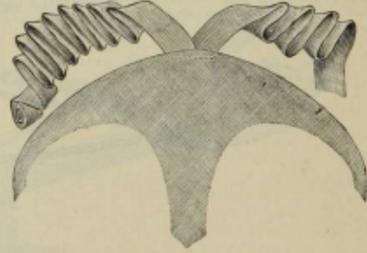
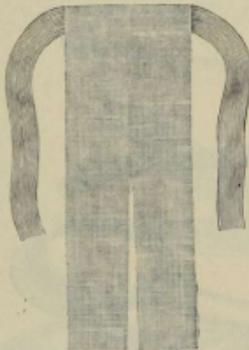
3331.	Bandage Scissor,	Henckel's-Lister's, 7-inch	\$2 75
3332.	"	Lister's	1 50
3333.	"	Brun's	7 50
3334.	"	Shear, Esmarch's	3 00
3335.	"	" Henckel's, 8-inch	3 75
3336.	"	" Henckel's-Esmarch, 9½-inch	5 00
3337.	"	" Henckel's-Sentin's	7 00
3338.	"	" Henry's	5 50
3339.	"	" Sayre's	5 00
3340.	"	" Szymanowski's	6 75
3341.	"	" Wackerhagen's	4 50
3342.	"	" Wight's	2 75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL SURGICAL NECESSITIES.
DRESSING.



3345.		BANDAGES.		3343.	
3343.	Abdominal Bandages, Goodell's, Many Tail's	14	in. x 2 yds.	Muslin	each, \$ 35
3344.	"	14	" x 2 "	Wool	1 00
3345.	Binder " Bett's, for Abdominal Section	14	" x 45 inches	Muslin	20
3346.	"	14	" x 45 "	Wool	65
3347.	Fracture " Esmarch's, in pairs, each with illustrations showing Esmarch's method of application	2	in. x 3 yds.	per pair,	40
3348.	Flannel " Red or White	2 1/2	" x 3 "	per dozen,	2 00
3349.	"	2 1/2	" x 8 "	"	2 25
3350.	"	2 1/2	" x 8 "	"	5 00
3351.	"	3	" x 8 "	"	6 00
3352.	"	3	" x 8 "	"	7 50
3353.	Gauze Plain	2	" x 3 "	"	35
3354.	"	2 1/2	" x 3 "	"	45
3355.	"	2	" x 8 "	"	90
3356.	"	2 1/2	" x 8 "	"	1 10
3357.	"	2 1/2	" x 8 "	"	1 30
3358.	"	2	" x 10 "	"	1 00
3359.	"	2 1/2	" x 10 "	"	1 10
3360.	"	3	" x 10 "	"	1 15
3361.	"	2	" x 10 "	"	2 00
3362.	"	2 1/2	" x 10 "	"	2 50
3363.	"	3	" x 10 "	"	2 75



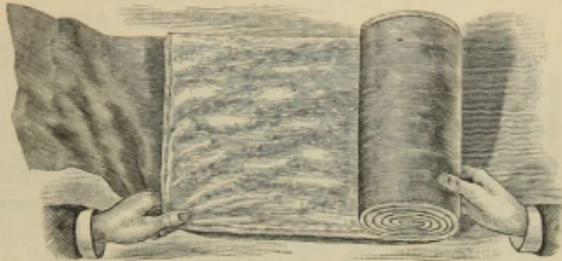
3365.

These Gauze Dressing Bandages will be found very convenient. The Perineal Bandage will be found just the thing for Perineal Lithotomy, Perineorrhaphy, External Urethrotomy, etc.

3364.		Hydrocele Bandages, Martin's, Gauze <th colspan="2">each, \$ 40</th>		each, \$ 40	
3365.	Perineal " "				35
3366.	Plaster Paris	2	in. x 3 yds	per dozen,	90
3367.	"	2 1/2	" x 3 "	"	1 00
3368.	"	2	" x 6 "	"	1 25
3369.	"	2 1/2	" x 6 "	"	1 40
3370.	"	3	" x 6 "	"	1 50
3371.	"	3	" x 6 "	"	1 50
3372.	Roller	1/2	in. to 4 in.	per pound,	75
3373.	"	1 1/2	" x 3 yds	per dozen,	35
3374.	"	2	" x 3 "	"	45
3375.	"	2 1/2	" x 3 "	"	55
3376.	"	2 1/2	" x 8 "	"	1 20
3377.	"	3	" x 8 "	"	1 45
3378.	"	3	" x 8 "	"	1 65
3379.	"	3 1/2	" x 8 "	"	1 80
3380.	"	4	" x 8 "	"	2 10
3381.	"	3	" x 4 "	"	90
3382.	"	3 1/2	" x 5 "	"	1 25
3383.	"	4	" x 6 "	"	1 65

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL SURGICAL NECESSITIES.
DRESSING.

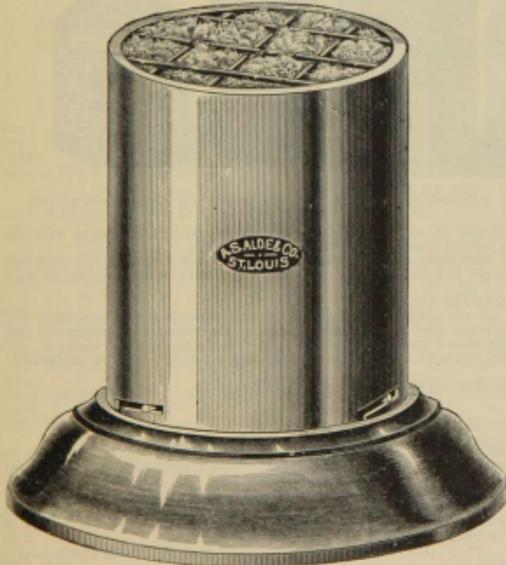


3384.

ABSORBENT COTTON.

Tissue Paper between layers. Plain and Medicated. Our Absorbent Cottons are carefully made from fine selected staple, having the longest fiber, rendered thoroughly absorbent, and the percentage of the medicant is guaranteed.

3384.	Absorbent Cotton,	1-pound packages	per pound,	\$0 40
3385.	"	"	"	50
3386.	"	"	"	60
3387.	Borated	" 1 "	"	45
3388.	"	" 1 "	"	60
3389.	"	" 1 "	"	80
3390.	Carbolated	" 1 "	"	45
3391.	"	" 1 "	"	60
3392.	"	" 1 "	"	80
3393.	Salicylated	" 1 "	"	70
3394.	"	" 1 "	"	75
3395.	"	" 1 "	"	80
3396.	Sublimated	" 1 "	"	45
3397.	"	" 1 "	"	60
3398.	"	" 1 "	"	80
3399.	Iodized	" 1-ounce bottles	per bottle,	20
3400.	"	" 1 "	per dozen bottles,	2 00
3401.	Iodoform	" 1 "	per bottle,	20
3402.	"	" 1 "	per dozen bottles,	2 00
3403.	Styptic	" 1 "	per bottle,	20
3404.	"	" 1 "	per dozen bottles,	1 75



3405.

3405. Cotton Reservoir, Phillips'..... \$1 50

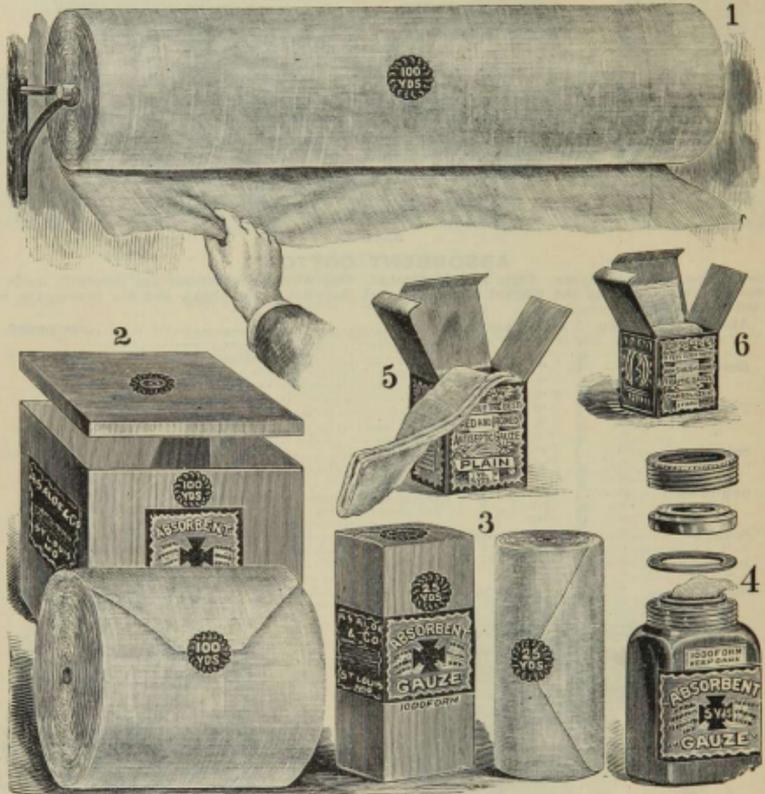
**PHILLIP'S
COTTON RESERVOIR.**

This Reservoir is a labor-saving and convenient device for office or dispensary use. The base is solid and of sufficient weight to hold the Reservoir down while cotton is being withdrawn from any one of the spaces at the top. To the base a strong wire coil spring, surmounted by a flat metal plate, is attached. The remaining section is simply a metal cylinder, divided at the top into spaces, through which any amount of cotton desired can be drawn. At the lower end of the cylinder are grooves which catch upon pins at the base and hold it in position. When using this appliance the probe or applicator can be retained between the thumb and forefinger of the right hand ready for use, while with the left hand the exact amount of cotton required can be withdrawn and applied directly to the probe, thus saving fully one-half of the time required when the mass of cotton is held in the left hand or an ordinary receptacle which necessitates the use of both hands. By the use of this appliance the cotton is kept clean and none is wasted, which will be especially appreciated in hospital and dispensary practice, where there is always so much waste in materials of this kind. Since this cup was made I have arranged to have covers made to keep the dirt and dust out when not in use.

W. C. PHILLIPS, M. D.

GENERAL SURGICAL NECESSITIES.

DRESSING.



We have designed the above cut to show the different styles of packages in which our Gauzes are put up.

No. 1 shows a 100-yard roll, rolled full width, 36 inches. For institutions that are provided with an aseptic dressing case in which this roll can be placed this is the most convenient style.

No. 2 shows a 100-yard roll folded twice, thus making roll 12 inches wide. This is a convenient style for those surgeons whose practice demands a large supply of gauze, yet who must have it in convenient and portable form.

No. 3 shows a 25-yard roll folded and packed as No. 2.

No. 4 shows a 5-yard roll in screw top square glass jar. This makes the most practical package for the general practitioner. The glass top is furnished with rubber washer and as much gauze as is desired can be removed, the cover replaced and the balance of the gauze is kept air-tight, free from dust and aseptic.

No. 5 shows a 5-yard roll in neat carton, or supplied in a neat tin can (which is much to be preferred) at same price.

No. 6 shows a 1-yard roll in neat carton (put up to order only).

GAUZES.

3406.	Carbolated Gauze, 1 yard x 5 yards in	can	.....	\$ 50
3407.	" " 1 " x 5 "	glass jar	.....	60
3408.	" " 1 " x 25 "	cartoon	.....	1 60
3409.	" " 1 " x 100 "	"	.....	Write for price.
3410.	Iodoform " 1 " x 5 "	can	.....	1 15
3411.	" " 1 " x 5 "	glass jar	.....	1 25
3412.	" " 1 " x 25 "	cartoon	.....	5 25
3413.	" " 1 " x 100 "	"	.....	Write for price.
3414.	Sublimated " 1 " x 5 "	can	.....	50
3415.	" " 1 " x 5 "	glass jar	.....	60
3416.	" " 1 " x 25 "	cartoon	.....	1 60
3417.	" " 1 " x 100 "	"	.....	Write for price.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL SURGICAL NECESSITIES.

DRESSING.

GUTTA PERCHA TISSUE.

3418.	Gutta Percha Tissue, Medium, 1 yard x 1 yard.....	per roll, \$	50
3419.	" " " " " " 1 " x 5 ".....	" "	2 00

JUTE.

3420.	Hospital Jute, 50 pound bales.....	per pound, \$	20
3421.	Plain " 1 " package.....	" "	25
3422.	Tarred " 1 " ".....	" "	30
3423.	Borated " " ".....	" "	35
3424.	Carbolated " " ".....	" "	35
3425.	Sublimated " " ".....	" "	35

LINT.

3426.	Absorbent Lint, 1 pound package.....	per pound, \$	60
3427.	" " " " " " ".....	" "	60
3428.	" " " " " " 1 ounce ".....	" "	75

LINTINE.

3429.	Lintine, 1 pound packages.....	per pound, \$	60
3430.	" " 1 ounce ".....	" "	75

MACKINTOSH CLOTH.

3431.	Mackintosh Cloth, 1 yard x 1 yard.....	per roll, \$	1 00
3432.	" " " " " " 1 " x 5 ".....	" "	4 50

OAKUM.

3433.	Hospital Oakum, 50-pound bales.....	per pound, \$	12
3434.	Plain " 1 " packages.....	" "	18
3435.	Carbolated " " ".....	" "	25
3436.	Sublimated " 1 " ".....	" "	25

OILED MUSLIN.

3437.	Oiled Muslin, 1 yard x 1 yard.....	per roll, \$	50
3438.	" " " " " " 1 " x 5 ".....	" "	2 50

OILED SILK.

3439.	Oiled Silk, 28 inches x 1 yard.....	per roll \$	70
3440.	" " " " " " 28 " x 5 ".....	" "	3 50

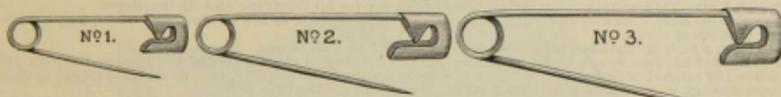
OILED SILK PROTECTIVE-GREEN.

3441.	Oiled Silk Protective, 28 inches x 1 yard.....	per roll, \$	1 50
3442.	" " " " " " 28 " x 5 ".....	" "	7 00

PAPER.

3443.	Mead's Surgical Dressing Paper, 24 in. x 25 yards.....	per roll, \$	75
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PINS.



3444.	Surgical Safety Pins, Large.....	per dozen, \$	12
3445.	" " " " Medium.....	" "	10
3446.	" " " " Small.....	" "	08
3447.	Ward Cousins Safety Pins, Ring Handle.....	" "	35

PLASTERS.

3448.	Adhesive Plaster, on spools, 1/2 inches x 10 yards.....	per spool, \$	30
3449.	" " " " " " 1 " x 10 ".....	" "	35
3450.	" " " " " " 1 1/2 " x 10 ".....	" "	40
3451.	" " " " " " 2 " x 10 ".....	" "	50
3452.	" " " " " " 2 1/2 " x 10 ".....	" "	60
3453.	" " " " " " 3 " x 10 ".....	" "	75
3454.	" " " " spread on Linen, 7 inches x 1 yard.....	per roll	60
3455.	" " " " " " " " " " " " ".....	" "	60
3456.	" " " " " " Moleskin, 7 " x 1 ".....	" "	2 75
3457.	" " " " " " " " " " " " ".....	" "	2 75
3458.	" " " " " " " " " " " " Maw's (Genuine).....	" "	1 50
3459.	Belladonna " Plain or Perforated, 7 " x 1 ".....	" "	65
3460.	" " " " " " " " " " " " ".....	" "	2 50
3461.	Isinglass " spread on Moleskin, 7 " x 1 ".....	" "	45
3462.	" " " " " " Silk, 7 " x 1 ".....	" "	50
3463.	Lead " " " " " " " " " " " ".....	" "	50

RUBBER SHEETING. (NURSERY SHEETING.)

3464.	White Rubber Sheeting, 36 in. x 1 yard.....	per yard, \$	1 00
3465.	" " " " " " 54 in. x 1 ".....	" "	1 50

TAMPONS.

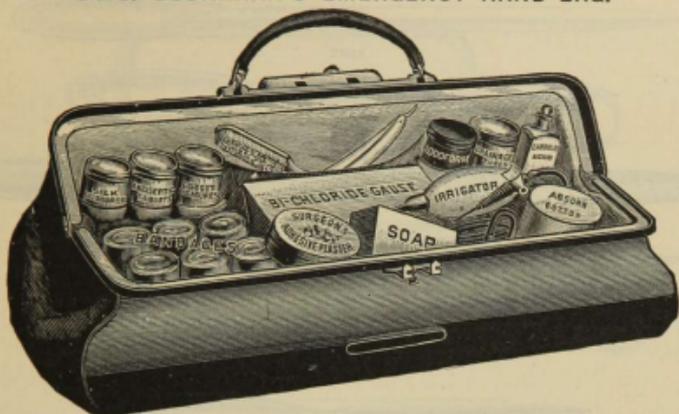
3466.	Wood's Wool Tampons.....	per dozen, \$	1 25
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WOOL.

3467.	Cotton Wool, 1-pound package.....	per pound, \$	35
3468.	Lambs " 1 " ".....	" "	1 75
3469.	" " " " " " ".....	" "	2 00
3470.	" " " " " " ".....	" "	2 00
3471.	Pine Wood Wool, 1-pound package.....	" "	25

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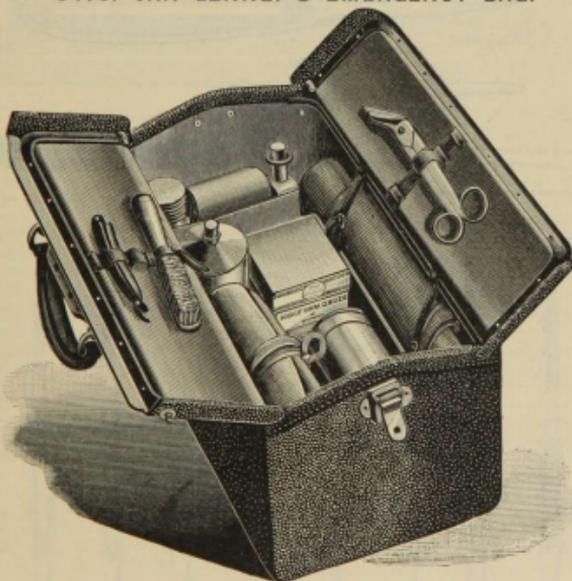
GENERAL SURGICAL NECESSITIES.
3478. BUCHANAN'S EMERGENCY HAND BAG.



The antiseptic satchel here shown is one which has been in use in general practice for several years, and we have no hesitation in saying that it contains all the appliances necessary for the antiseptic treatment of any capital, accidental or operation wound. It has also the advantages of lightness and portability. It contains the following items:

Two one-ounce jars Carbolic Acid, crystals; 1 bottle Corrosive Sublimate Tablets; 5 yards Sublimated Gauze in tin case; 6 Roller Bandages, assorted; 1 bottle Assorted Catgut, on reels; 1 bottle Assorted Silk, on reels; 1 Tin Flask for Anesthetics; 1 Bottle Carbolized Rubber Drainage Tubes; $\frac{1}{2}$ Ounce Iodoform in Hard Rubber Sprinkler; 1 Razor; 1 Nail Brush; 1 Cake Soap in case; 1 Improved Hard Rubber Irrigating Apparatus; 1 Roll 1-inch Rubber Plaster, 10 yards; 2 Ounces Absorbent Cotton; 1 Leather Bag, 16-inch frame; made of Fine Grain Leather, Nickel-plated Lock and Key.....price, \$12 00

3479. VAN LENNEP'S EMERGENCY BAG.



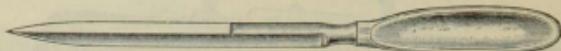
CONTENTS OF THE VAN LENNEP EMERGENCY BAG.

One Emergency Bag, 14-inch; 2 Tin Trays; Instrument Roll; Cotton Can; Rubber Tissue; Soft Catheter; 4 yards Rubber Drainage Tubing; Kelley's Pad; Case of Tubes; Bottle Sponges; Iodoform Gauze; 2 Glass Pots; Etherizer's Case; Alcohol Lamp; Levis' Mouth Gag; Nail Brush; Razor; Bandage Shears and Syringe..... \$32 50
3480. Van Lennep's 16-inch Emergency Bag, contents same as No. 3479..... 33 50

AMPUTATING AND GENERAL OPERATING.

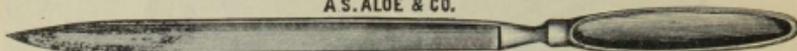


3482.

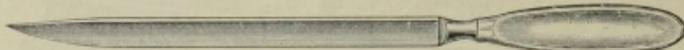


3483.

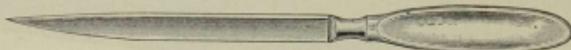
A. S. ALOE & CO.



3484.



3485.



3486.



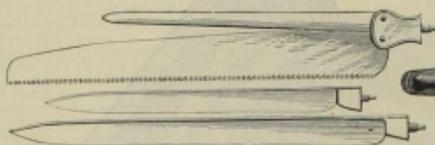
3491.



3489.

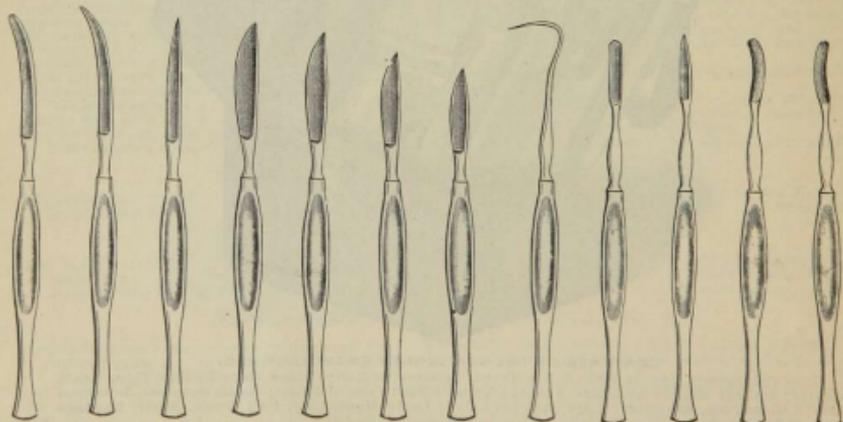


3490.



3488.

A. S. ALOE - CO.



3492.

3493.

3495.

3496.

3497.

3498.

3499.

3501.

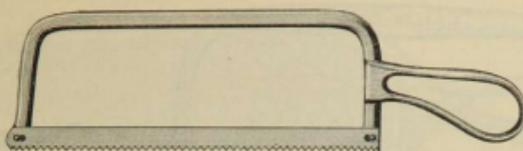
3502.

3503.

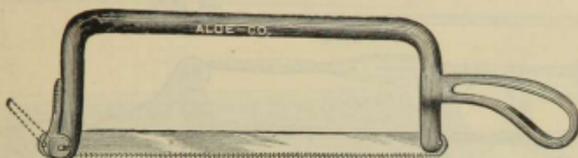
3504.

3505.

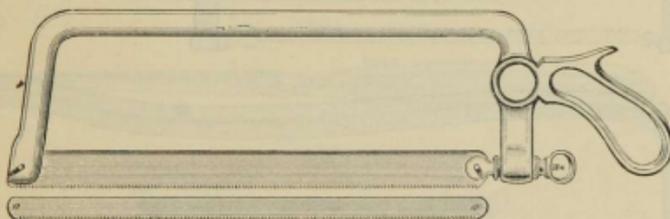
AMPUTATING AND GENERAL OPERATING.



3507.



3508.

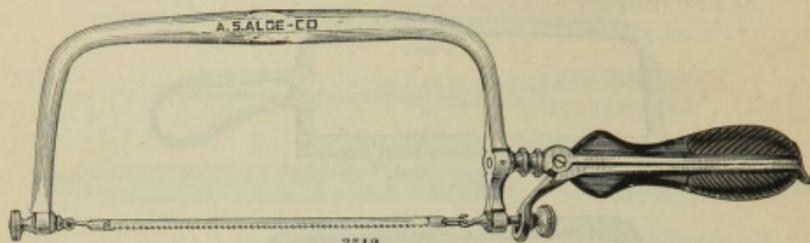


3506.

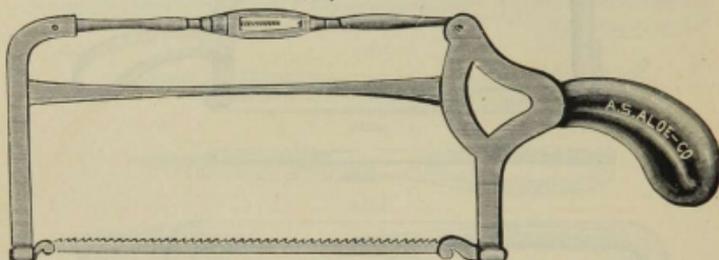
3481.	Amputating Catling, Liston's, Long.....	\$3 25
3482.	“ “ “ Medium.....	2 75
3483.	“ “ “ Short.....	2 25
3484.	“ Knife “ Long.....	3 25
3485.	“ “ “ Medium.....	2 75
3486.	“ “ “ Short.....	2 25
3487.	“ “ Parker's.....	4 00
3488.	“ Knives and Saw, Conant's.....	7 00
3489.	“ Scalpel.....	1 25
3490.	“ Tenaculum.....	1 25
3491.	French Finger Knife.....	1 25
3492.	General Operating Bistoury, Curved Probe Point.....	1 00
3493.	“ “ “ “ Sharp “.....	1 00
3494.	“ “ “ “ Straight Probe “.....	1 00
3495.	“ “ “ “ Sharp “.....	1 00
3496.	“ “ Scalpel, Extra Large.....	1 00
3497.	“ “ “ Large.....	1 00
3498.	“ “ “ Medium.....	1 00
3499.	“ “ “ Small.....	1 00
3500.	“ “ “ Straight Edge.....	1 00
3501.	“ “ Tenaculum.....	1 00
3502.	“ “ Tenotome, Blunt Point.....	1 00
3503.	“ “ “ Sharp “.....	1 00
3504.	“ “ “ Concave Edge.....	1 00
3505.	“ “ “ Convex “.....	1 00
3506.	Saw, Amputating Bow, Charrière's.....	6 00
3507.	“ “ “ Plain.....	4 00
3508.	“ “ “ Reiner's.....	5 00

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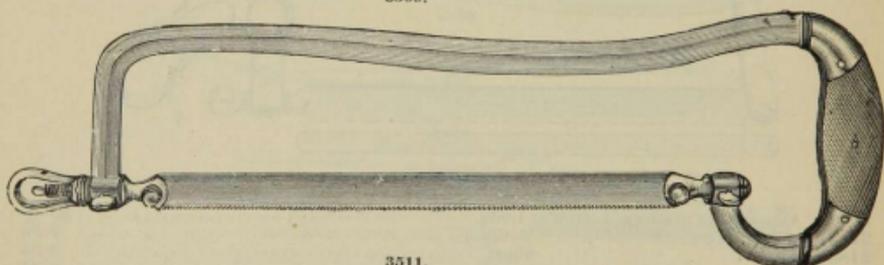
AMPUTATING AND GENERAL OPERATING.



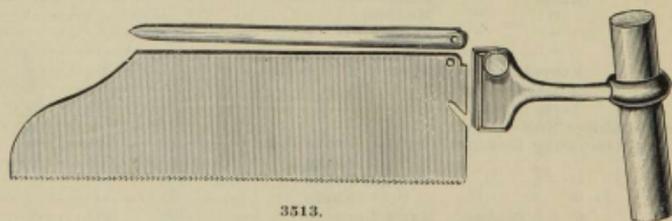
3512.



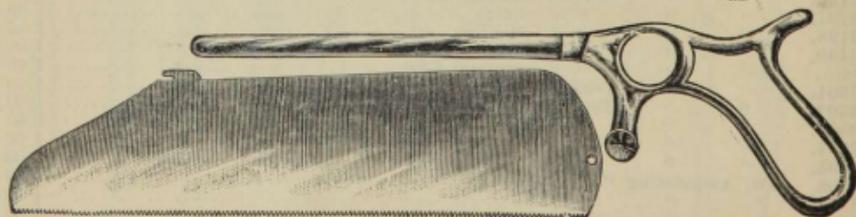
3509.



3511.

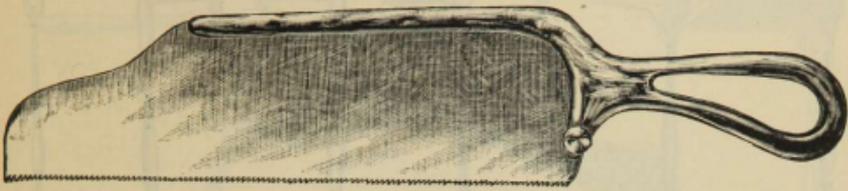


3513.

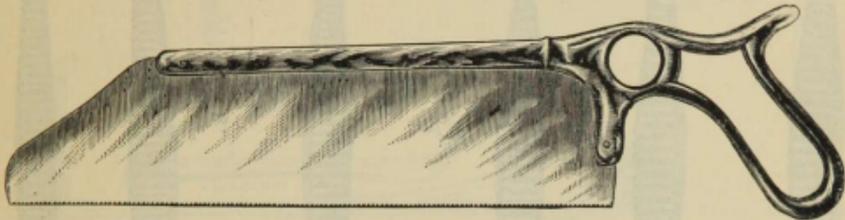


This illustration shows Satterlee's Saw, Figure 3517, with handle and back detached for the purpose of cleaning and sterilizing.

AMPUTATING AND GENERAL OPERATING.



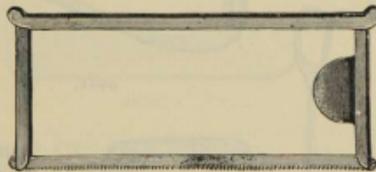
3516.



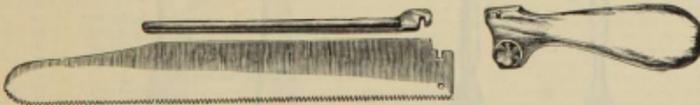
3517.



3522.



3524.



3519.

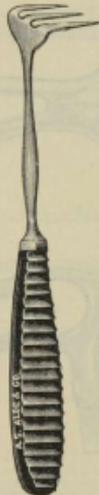
3509.	Saw, Amputating and Exsecting, Butcher's.....	\$ 7 50
3510.	" " " " Maw's	12 00
3511.	" " " " Rust's	10 00
3512.	" " " " Szymanowski's Improved	15 00
3513.	" Capital, Leonard's	3 50
3514.	" " Parker's	3 50
3515.	" " Piarre's	3 00
3516.	" " Plain	3 50
3517.	" " Satterlee's	2 50
3518.	" Metacarpel, Charrière's, Lifting Back, Large	2 00
3519.	" " " " " " Medium	1 75
3520.	" " " " " " Small	1 15
3521.	" " Detmold's.....	1 25
3522.	" " Langenbeck's	1 75
3523.	" " Sliding Back	1 15
3524.	" " Lewis' Folding. The saw blade can be readily removed and the frame folded for carrying in Pocket Case.....	1 50

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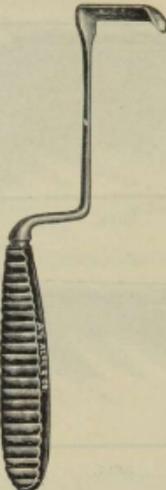
GENERAL OPERATING.



3531.



3532.



3538.



3540.



3541.



3549.



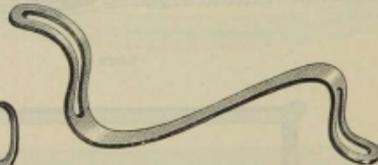
3554.



3545.



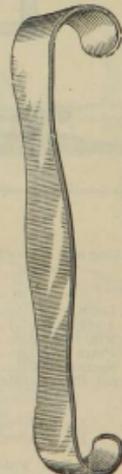
3547.



3551.



3548.

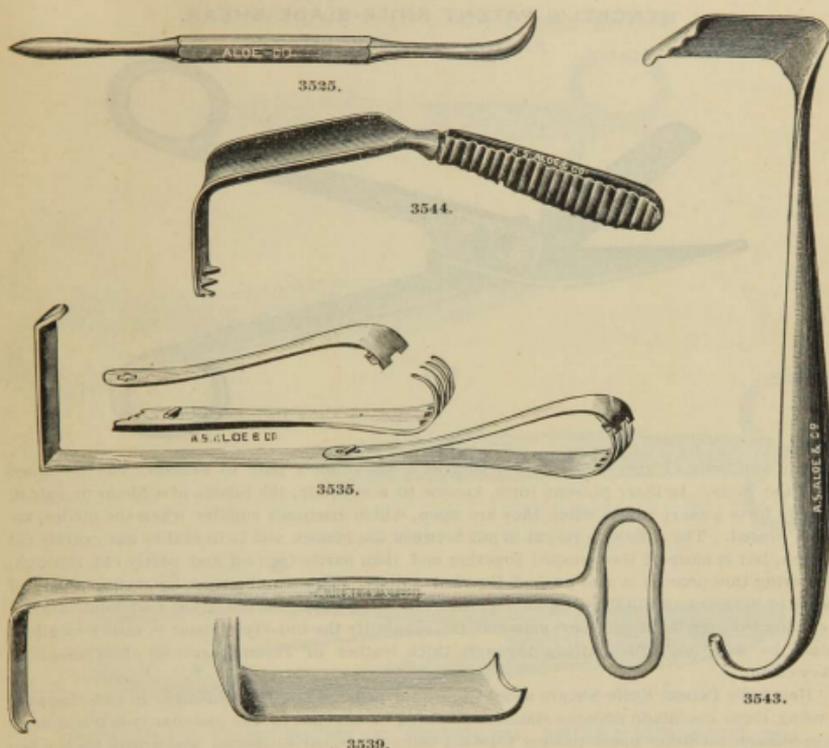


3550.



3558.

GENERAL OPERATING.

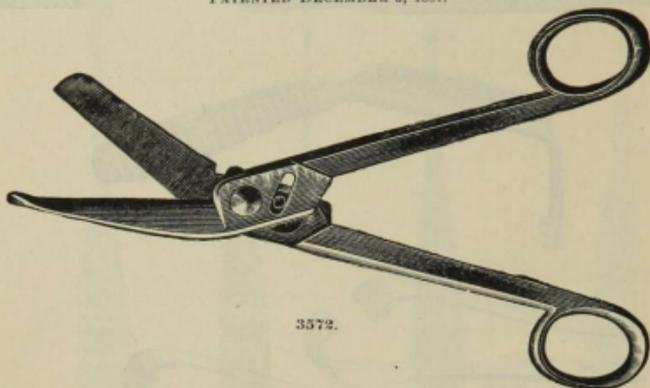


3525.	Dry Dissector, Allie'.....	\$1 00
3526.	" " Hamilton's, Broad, Blunt End.....	1 00
3527.	" " " " Pointed ".....	1 00
3528.	" " " " Narrow, ".....	1 00
3529.	" " " " Curved, ".....	1 00
3530.	" " Post's Tissue Separator.....	1 00
3531.	Retractor, Billroth's, 2-Prong.....	1 75
3532.	" " " " ".....	2 00
3533.	" " Blackman's ".....	2 25
3534.	" " Beck's Wire.....	1 00
3535.	" " Bull's.....	2 50
3536.	" " Collins', Plain.....	1 85
3537.	" " " " Fenestrated.....	1 85
3538.	" " Durham's.....	2 25
3539.	" " Hagedorn's.....	2 50
3540.	" " Langenbeck's, Blunt.....	1 75
3541.	" " " " Sharp.....	1 75
3542.	" " Lange's, Large.....	2 00
3543.	" " " " Small.....	1 50
3544.	" " " " Angular.....	2 00
3545.	" " Little's.....	1 25
3546.	" " McCurdy's Flap.....	3 00
3547.	" " Middendorf's.....	2 00
3548.	" " Moti's..... per pair,	1 75
3549.	" " Olier's, 2-Prong.....	2 00
3550.	" " Parker's..... per pair,	75
3551.	" " Roberts'.....	1 15
3552.	" " Volkmann's, Blunt, 2-Prong.....	1 75
3553.	" " " " ".....	2 00
3554.	" " " " ".....	2 25
3555.	" " " " ".....	2 50
3556.	" " " " Sharp, ".....	1 75
3557.	" " " " ".....	2 00
3558.	" " " " ".....	2 25
3559.	" " " " ".....	2 50

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GENERAL OPERATING.
HENCKEL'S PATENT KNIFE-BLADE SHEAR.

PATENTED DECEMBER 6, 1887.

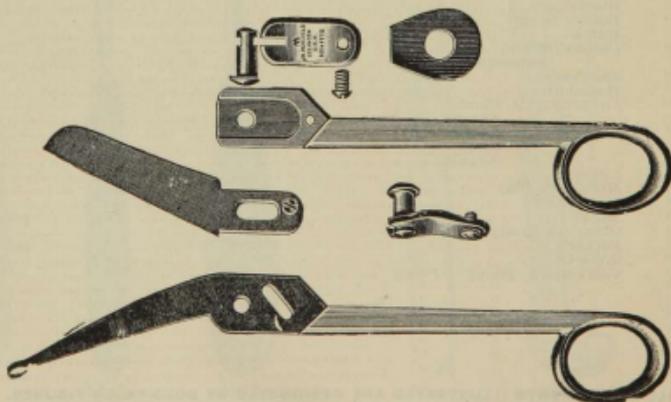


3572.

For hundreds of years the construction of a Shear or a pair of Scissors has remained about the same. In their present form, known to everybody, the blades of a Shear or pair of Scissors form a sharp angle when they are open, which becomes smaller when the blades are slowly closed. The article to be cut is put between the blades, and is in reality not exactly cut through, but is more or less pressed together and then partly torn off and partly cut through, and during this process is also pushed forward a little. This can be seen by trying a pair of Shears or Scissors on thick, soft goods or leather. On account of the great resistance offered in cutting through thick and hard material, the capability the old-style Shear is rather small; it cannot be used well for cutting through thick leather or through several thicknesses of heavy cloth.

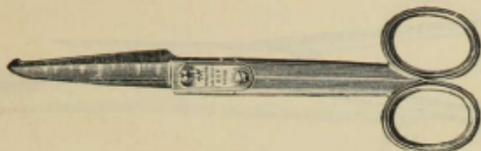
Henckel's Patent-Knife-Shears upset the whole principle of the old-style Shears, because in using them one blade remains stationary, while, on account of the peculiar construction of these Shears, the other blade pushes forward when the Shear is opened and draws back when the Shear is closed, thus acting like a knife.

On account of this new patented construction, the trouble of partly cutting and partly tearing off the goods and pushing them forward is at once removed, and the wonderful capacity of these new Shears in cutting through such heavy thicknesses of goods will astonish all.

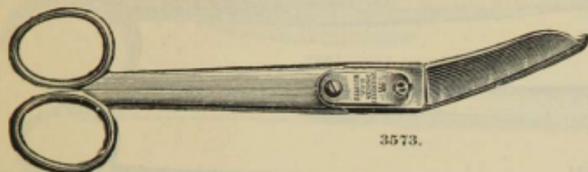


GENERAL OPERATING.

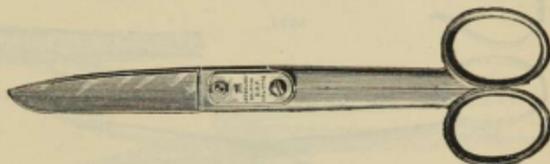
HENCKEL'S PATENT KNIFE-BLADE SHEAR.



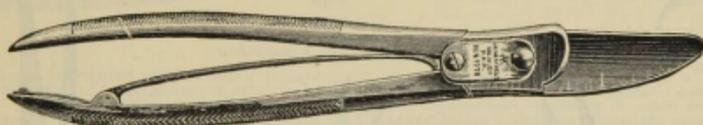
3574.



3573.



3575.



HENCKEL'S BONE-CUTTING SCISSORS, PRICED ON PAGE 81.

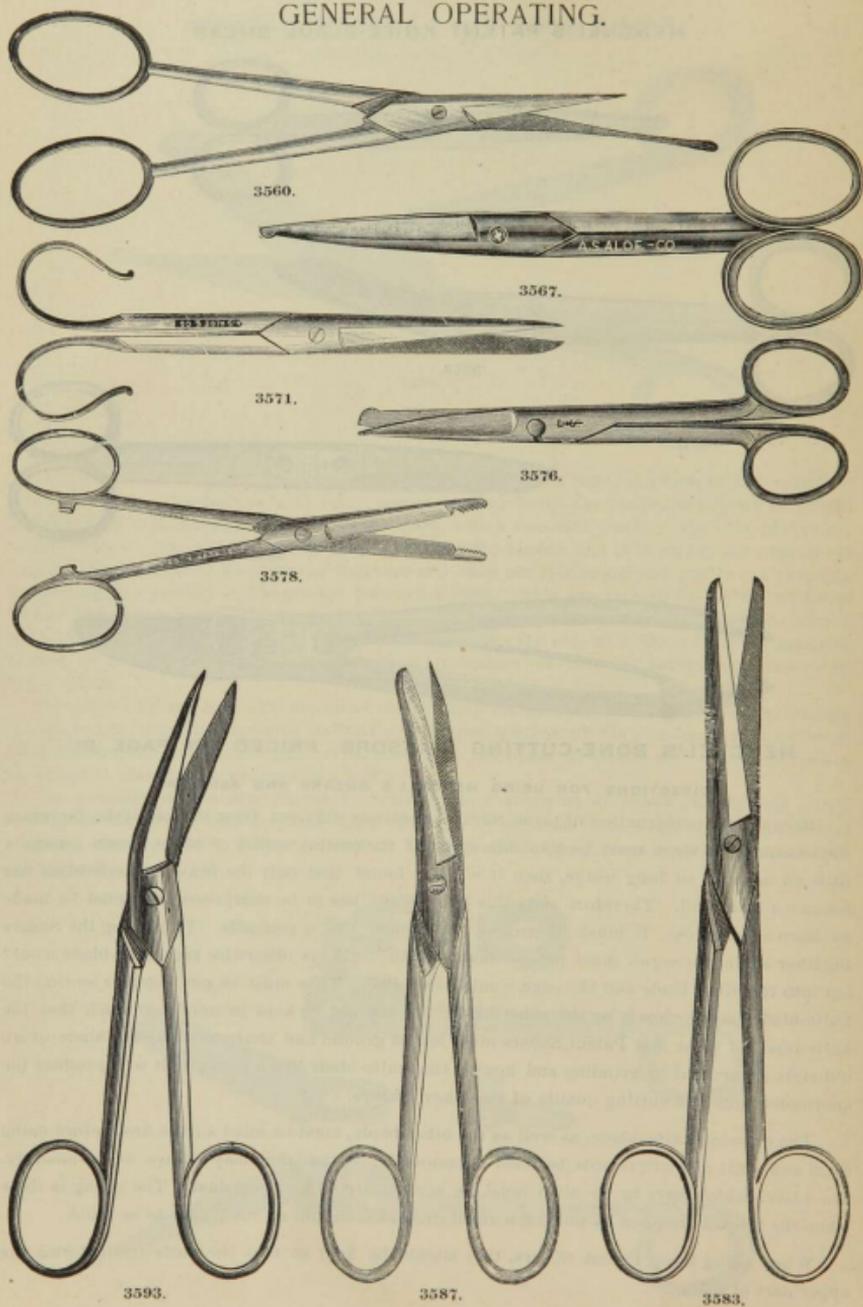
DIRECTIONS FOR USING HENCKEL'S SHEARS AND SCISSORS.

Because the construction of these Shears is entirely different from the old style, therefore the treatment of them must be also different. If the cutting ability of these Shears lessens a little on account of long usage, then it will be found that only the drawing knife-blade has become a little dull. Therefore only this knife-blade has to be sharpened and must be made as sharp as possible. It must be ground and honed like a penknife. In putting the Shears together again, the screw must not be fastened too tight, as otherwise the knife-blade would cut into the other blade and the edge would be spoiled. They must be put together so that the knife-blade passes closely by the other blade. It can not be kept in mind too much that the knife-blade of these new Patent Shears must not be ground and sharpened like the blade of an old-style shear; but by grinding and honing this knife-blade like a penknife it will produce the enormous force and cutting quality of these new Shears.

The drawing knife-blade, as well as the other blade, must be oiled a little first before using them and must also afterwards be oiled occasionally, so that they may always work smoothly. The places which have to be oiled must be kept entirely free from dust. The oiling is done when the Shears are open by putting a small drop of sweet oil on the places to be oiled.

When using these Patent Shears, they should be held so that the knife-blade forms the upper part of them.

GENERAL OPERATING.



GENERAL OPERATING.

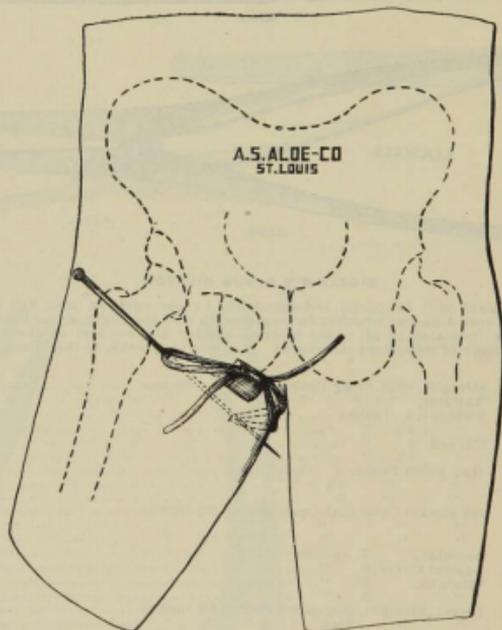
ARTERIAL—HEMOSTATIC.

A MODIFICATION OF WYETH'S METHOD OF BLOODLESS AMPUTATION AT THE HIP JOINT.

By STEWART LEROY McCURDY, M. D., Dennison, Ohio,
PROFESSOR OF ORTHOPEDIC AND CLINICAL SURGERY, OHIO MEDICAL UNIVERSITY, COLUMBUS, OHIO;
LECTURER ON TOPOGRAPHICAL ANATOMY AND LANDMARKS, WESTERN PENNSYLVANIA
MEDICAL COLLEGE, PITTSBURGH, PA.; SURGEON, P. C. C. AND ST. L. RY. CO.

The advance made in amputations at the hip joint, as suggested by Professor John A. Wyeth, must be considered one of the principal ones in modern operative surgery. The operation is described by Wyeth in a recent number of the Medical Record.

I have some hesitation in even presenting a modification of an operation devised by so eminent a surgeon, and one that has been so extensively used by surgeons throughout the country. It has occurred to me, however, that the disadvantage of even having it necessary under extreme circumstances to subject a patient to a second operation should be avoided if possible.



Some have been content with what is known as Jordan's operation, which is performed by making an incision from over the greater trochanter to the end of the stump and down to the bone. The head of the bone is then disarticulated and the soft parts are dissected from the trochanters and shaft down to a line with the lower edge of the flap. The head of the bone thus liberated is swung out so as to admit the assistant's hand into the cavity, pressure being made internally upon the femoral with one hand and externally with the other hand. With the assistant still at his task of controlling the vessels, the surgeon proceeds to make the flaps, ligate the femoral, etc.

To perform this operation well, one must have a skillful, trusty, and, above all, muscular assistant. The task of controlling the femoral artery with the fingers while the hip joint is opened and the head and neck of the femur are dissected from the dense soft structures surrounding it, with the making of the flap and the ligating of the vessels, is, to say the least, trying.

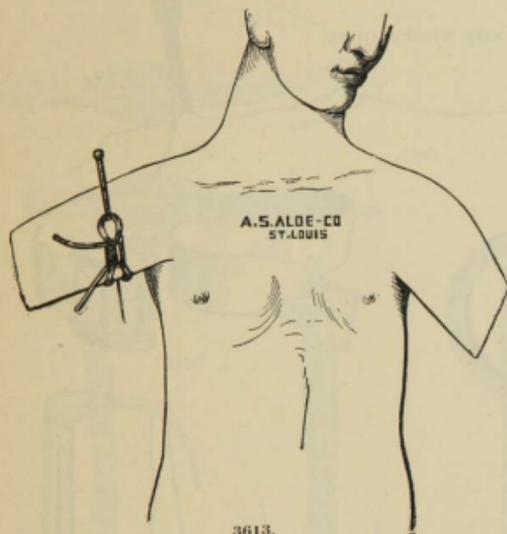
An effort has been made to combine what appears to be the advantages of both the above-described methods, and at the same time make the operation as bloodless as Wyeth's and as rapid as Jordan's. As is shown in the accompanying drawing, the Wyeth operation is so modified as to be performed with but one needle instead of two, and always at one sitting.

GENERAL OPERATING.

ARTERIAL—HÆMOSTATIC.

A MODIFICATION OF WYETH'S METHOD OF BLOODLESS AMPUTATION
AT THE HIP JOINT.—CONTINUED.

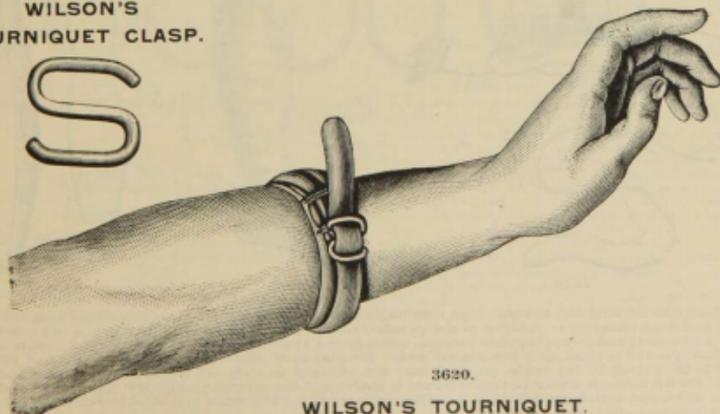
First draw a line from the most prominent point of the greater trochanter to the perineum. The needle is entered on this line at a point just internal to the femur, and is passed directly through the thigh so as to make its exit just below the *tuber ischii*. Passed through at this point the needle will be external to all the important blood-vessels, and the only hæmorrhage possible will be from the smaller vessels upon the external aspect of the thigh. A figure of 8 is now made by throwing a round rubber tourniquet (Fig. 3615, Page 66) around the projecting ends of the needle, over the internal aspect of the thigh, sufficiently tight to destroy femoral pulsation beyond the tourniquet. The flaps are now made, which is followed by disarticulation.



final dressing. The point of the needle should be guarded, as Wyeth suggests, with a cork.

The above cut is prepared in view of carrying out the same idea of a bloodless amputation at the shoulder joint. The steps in such an operation are at once suggested to the surgeon, after having studied the rules laid down for the hip operation.

[Reprinted from the New York Medical Journal for May 7, 1892]

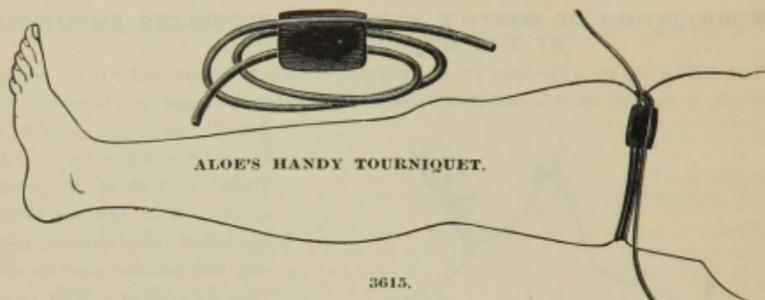
WILSON'S
TOURNIQUET CLASP.

3620.

WILSON'S TOURNIQUET.

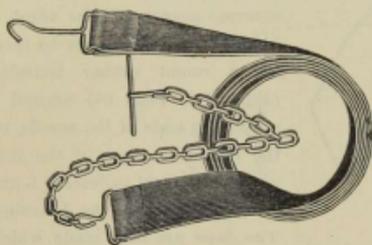
GENERAL OPERATING.

ARTERIAL.

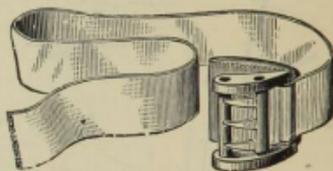


ALOE'S HANDY TOURNIQUET.

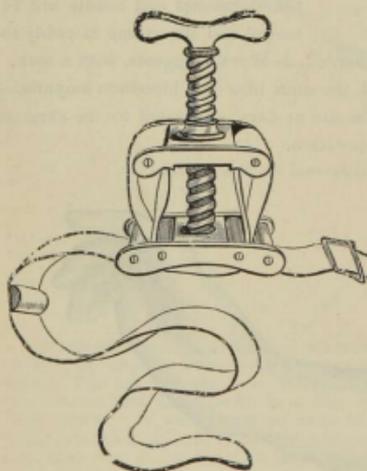
3615.



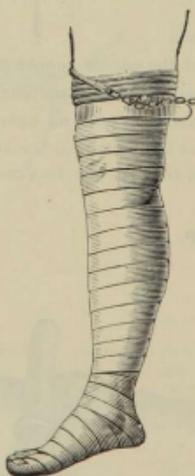
3622.



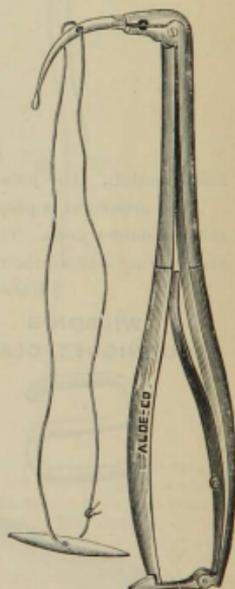
3619.



3618.



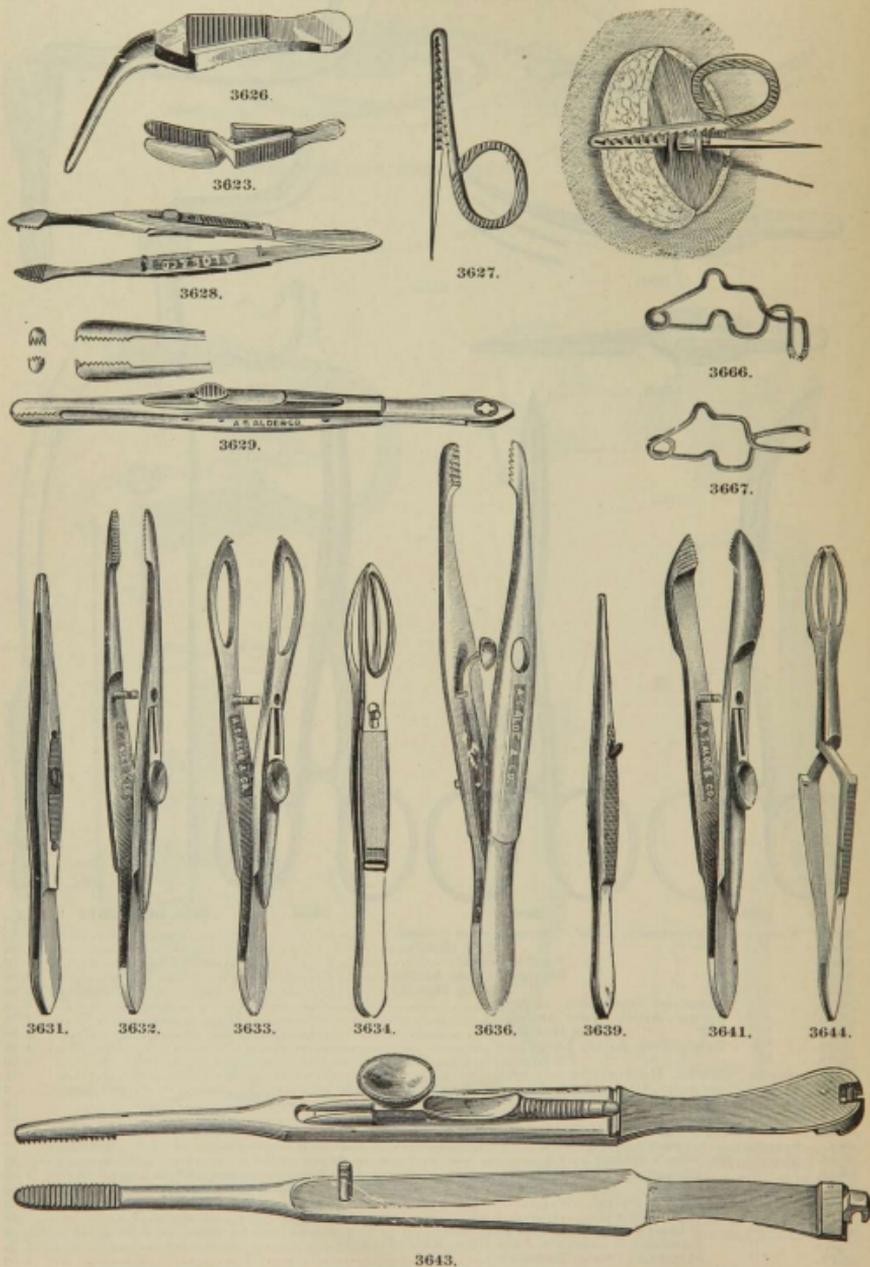
3616.



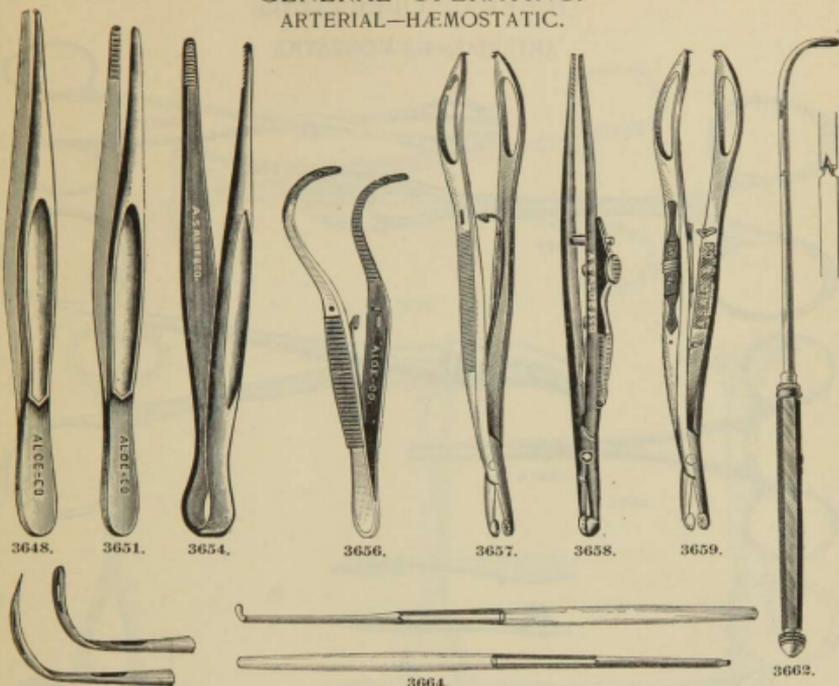
3604.

Thiersch's Spindle and Forceps is an invaluable apparatus for applying mass ligatures to dense tissues in difficult and deep situations. A blunt probe-pointed curved needle and a straight ivory spindle, armed with stout silk or catgut and an appropriate forceps, make up the apparatus. The probe-pointed needle is grasped by the forceps, and is cautiously insinuated under the plexus or mass to be tied off. Veins and arteries are not apt to be injured by the probe point as they are inclined to slide off from it. As soon as the ligature thread is drawn through under the mass a knot is made, and the spindle and needle serving as solid handles, it can be tightened with a great deal of firmness and security. The mass can be safely divided between two of these ligatures—Gerster—Aseptic and Antiseptic Surgery.

GENERAL OPERATING.
ARTERIAL—HÆMOSTATIC.



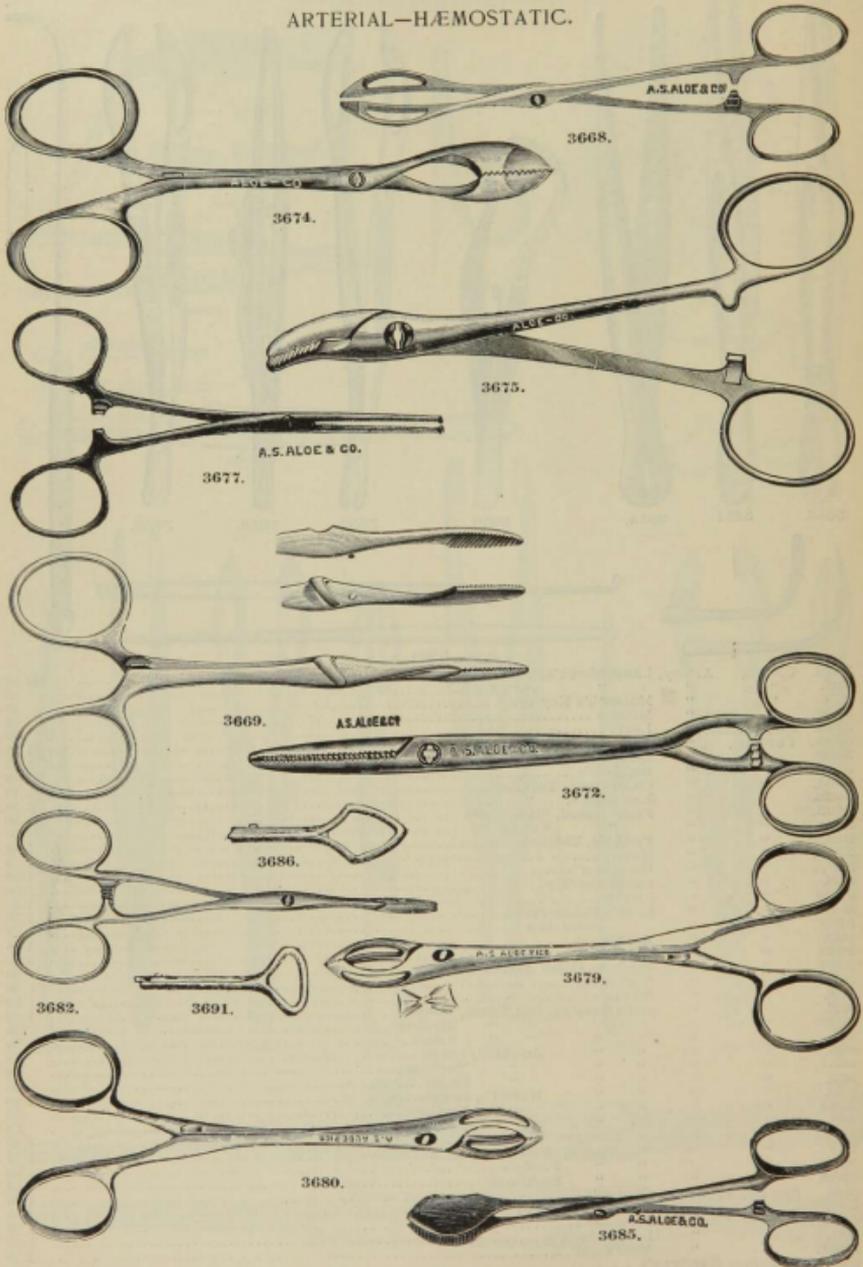
GENERAL OPERATING.
ARTERIAL—HÆMOSTATIC.



3623.	Clamp,	Artery,	Langenbeck's, Curved	.....	\$0 35
3624.	"	"	" Straight	.....	35
3625.	"	"	Mattock's Key Ring	.....	35
3626.	"	"	Milne's	.....	75
3627.	Compressor,	"	Levis'	.....	25
3628.	Forceps,	"	Andrew's	.....	1 75
3629.	"	"	Bergman's	.....	1 50
3630.	"	"	Bigelow's	.....	2 75
3631.	"	"	Charriere's, Torsion	.....	1 75
3632.	"	"	Esmarch's,	.....	1 50
3633.	"	"	Fenestrated, Slide Catch	.....	1 50
3634.	"	"	" Spring	.....	1 50
3635.	"	"	Fricke's, Torsion	.....	1 50
3636.	"	"	Hahn's	.....	1 75
3637.	"	"	Hamilton's	.....	1 50
3638.	"	"	Langenbeck's	.....	1 50
3639.	"	"	Liston's	.....	1 50
3640.	"	"	Luer's Fenestrated	.....	1 75
3641.	"	"	" Solid Jaw	.....	1 75
3642.	"	"	Mathieu's	.....	1 75
3643.	"	"	Schwabe's	.....	2 00
3644.	"	"	Shield's, Cross Action	.....	1 50
3645.	"	"	Walcher's	.....	2 00
3646.	"	"	Wyeth's	.....	1 50
3647.	"	"	and Dressing, Rat Tooth, Large	.....	1 00
3648.	"	"	" " " " Medium	.....	75
3649.	"	"	" " " " Small	.....	60
3650.	"	"	" " " " Serrated, Large	.....	75
3651.	"	"	" " " " " Medium	.....	50
3652.	"	"	" " " " " Small	.....	40
3653.	"	"	" " " " Hartel's, Large	.....	1 00
3654.	"	"	" " " " " Medium	.....	75
3655.	"	"	" " " " " Small	.....	60
3656.	"	"	" Ligature, Wight's	.....	1 25
3657.	"	"	" Needle, Old's	.....	1 75
3658.	"	"	" Parke's	.....	1 50
3659.	"	"	" Stohman's	.....	1 50
3660.	Needle, Aneurism,	Cooper's	.....	.....	1 50
3661.	"	"	Deschamp's, bent to the right and left, sharp or blunt points, each	.....	1 00
3662.	"	"	Fletcher's	.....	2 25
3663.	"	"	Langenbeck's	.....	1 50
3664.	"	"	Mott's Set	.....	2 25
3665.	Serrefine, Garrigue's		.....	.....	15
3666.	"	Vidal's, Angular	.....	.....	15
3667.	"	" Straight	.....	.....	15

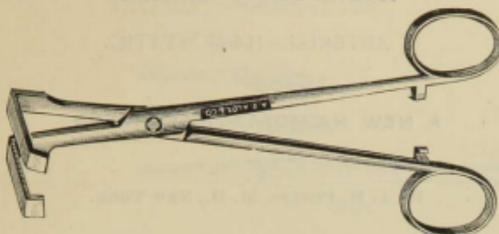
GENERAL OPERATING.

ARTERIAL—HÆMOSTATIC.

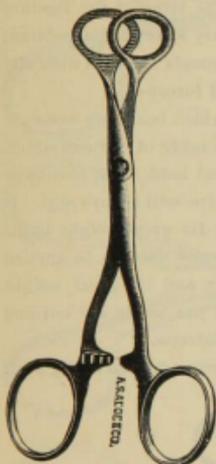


GENERAL OPERATING.

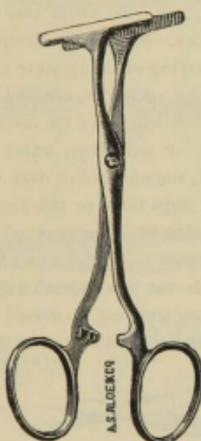
ARTERIAL—HEMOSTATIC.



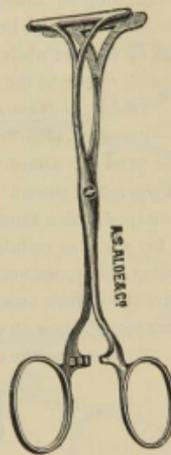
3678.



3688.



3689.



3690.

Hemostatic Forceps, Allis'. See page 67.

3668.	"	"	Bottini's.....	\$2 00
3669.	"	"	Collin-Pean, 4½ inches.....	1 25
3670.	"	"	" " 5 ".....	1 25
3671.	"	"	Ethridge's, 4½ ".....	1 50
3672.	"	"	" " 6 ".....	2 00
3673.	"	"	" " 8 ".....	2 50
3674.	"	"	Forbes'.....	2 25
3675.	"	"	Halstead's.....	1 75
3676.	"	"	Jones' Collin Lock.....	1 75
3677.	"	"	Koerberle's.....	1 50
3678.	"	"	Leonard's Retracting.....	2 75
3679.	"	"	Little's.....	1 75
3680.	"	"	Outten's (St. Louis).....	2 00
3681.	"	"	Pean's, 3¾ inches.....	75
3682.	"	"	" " 4¾ ".....	1 00
3683.	"	"	" " 5 ".....	1 00
3684.	"	"	" " 6 ".....	1 75
3685.	"	"	" Heart Shape.....	2 00
3686.	"	"	" " Fenestrated.....	2 25
3687.	"	"	" Oblique "T" Shape, Fenestrated.....	2 50
3688.	"	"	" Oval, Fenestrated.....	2 25
3689.	"	"	" "T" Shape.....	2 25
3690.	"	"	" "T" " Fenestrated.....	2 25
3691.	"	"	" Triangular, ".....	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL OPERATING.

ARTERIAL—HÆMOSTATIC.

A NEW HÆMOSTATIC FORCEPS.

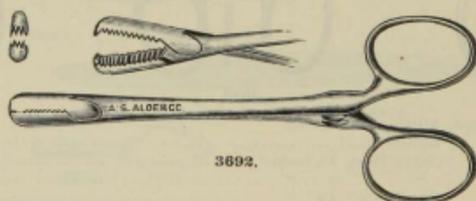
BY A. M. PHELPS, M. D., NEW YORK.

Some of the serious objections to the artery forceps in general use are: 1. The difficulty of clamping an artery in dense inflammatory or fibrous tissue. 2. The tying of the ligature around the forceps instead of the artery. To avoid this in the ordinary forceps the assistant tilts up the end while the operator ties. 3. Arteries clamped in deep wounds are with difficulty ligated, owing to the almost certain tying of the ligature around jaws of forceps.

To obviate these defects, Bergman, of Berlin, advised the forceps which bears his name.

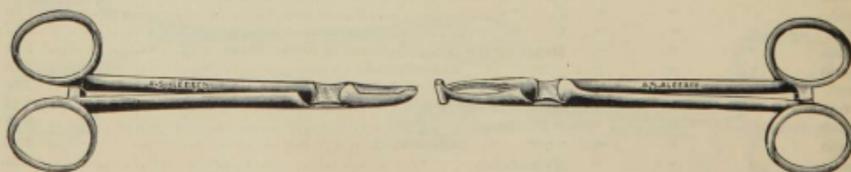
Fig. 3629, page 68, furnishes a correct idea of the instrument. It is made of German silver. The jaws are armed with fine teeth or serrations, which will grasp and hold hard, fibrous or inflammatory tissue. It has a blunt, rounded point, over which a ligature will always slip. It is clasped with a thumb slide. The objections to this forceps are: 1. Its great weight unfits it for work in cellular tissue or in small operations, when many forceps need to be applied during the operation. So much timber is in the way of the operator, and its great weight tears the tissues away. 2. The slide catch is objectionable, for when the hands are covered with blood it is with difficulty that the slide can be moved to clasp the forceps.

To overcome the objections in the Bergman forceps, I devised the forceps figured in Fig 3692.



They have the jaws of the Bergman, a modified hinge of the French, and the clasp of the ordinary forceps. These forceps will catch dense tissue and hold. They are suitable for operating in deep wounds, because the operator cannot tie on to them, and they are as light as the lightest forceps. There is a forceps in the market similar, but it differs in not having the wide blades, which prevents the possibility of tying on to them.

A half-dozen pairs of these forceps, together with other forceps, will be found of great service in certain operations.

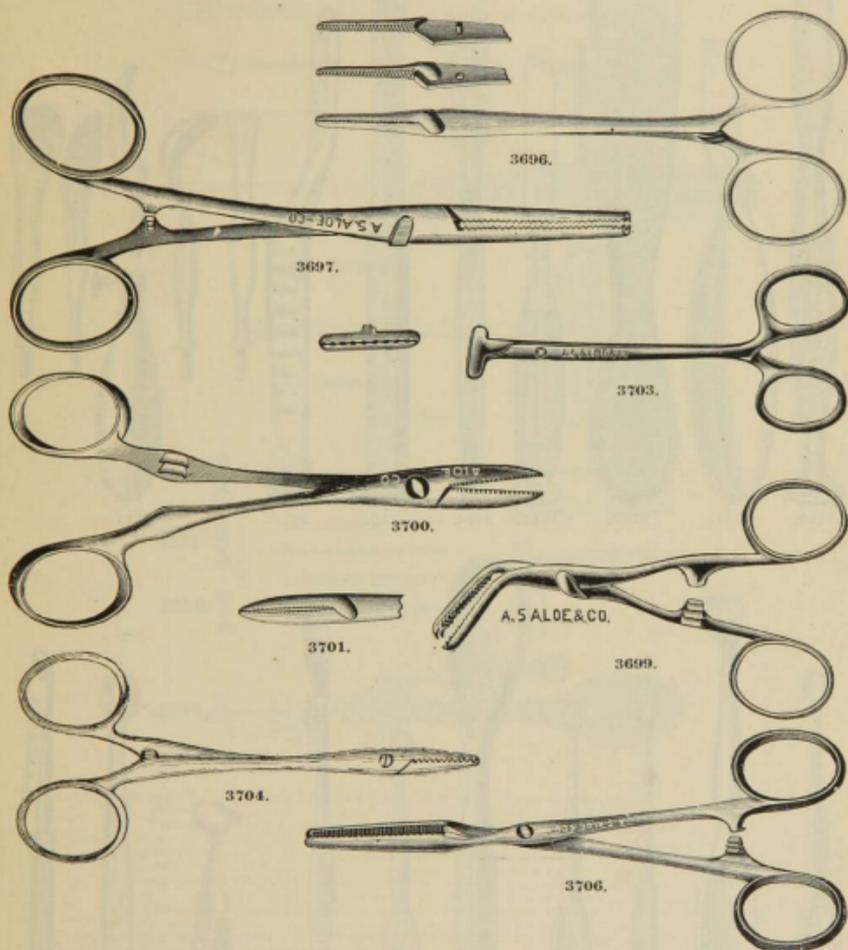


3694.

3695.

GENERAL OPERATING.

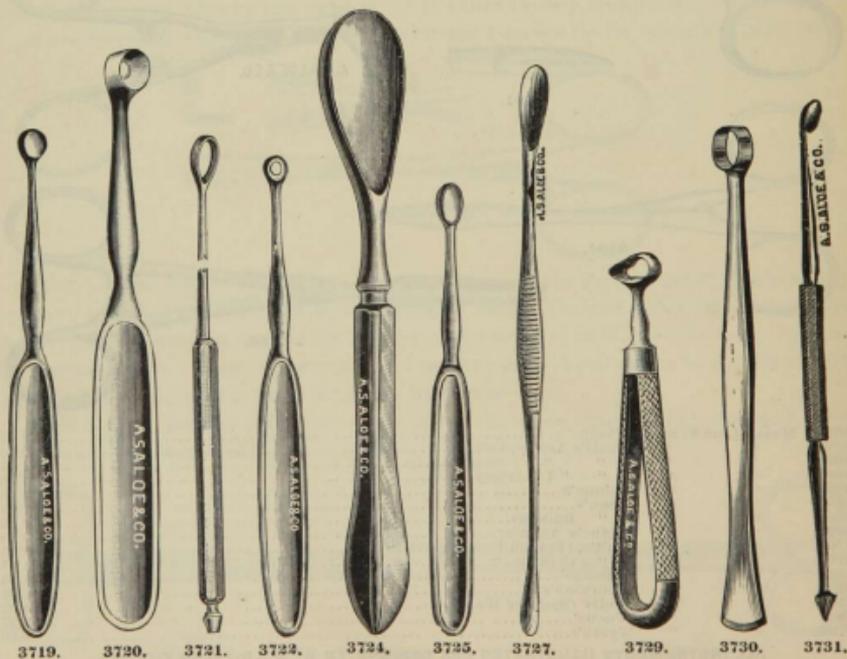
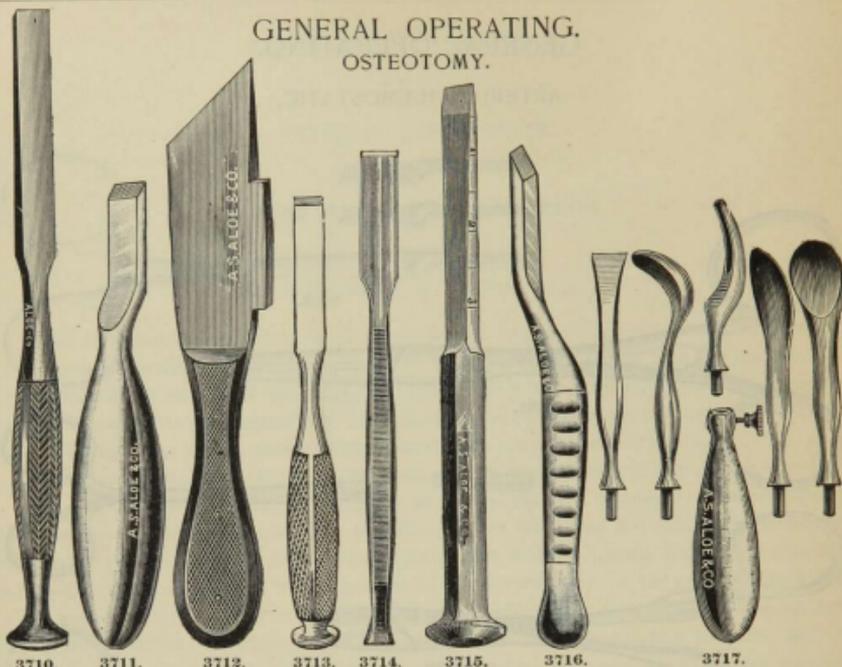
ARTERIAL—HÆMOSTATIC.



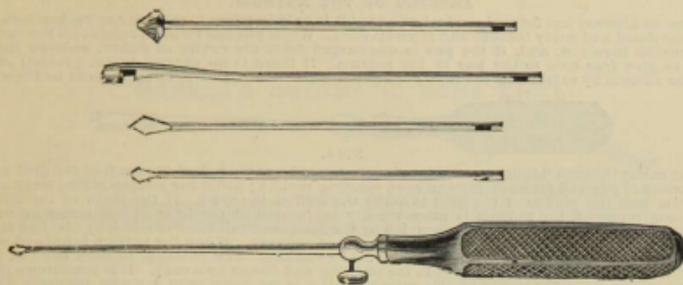
3692.	Hæmostatic Forceps, Phelps'.....	\$2 00
3693.	" " Pratt's Artery, Long.....	2 50
3694.	" " " " Short.....	1 75
3695.	" " " " T" Artery.....	2 50
3696.	" " Sabine's.....	2 00
3697.	" " Senn's.....	1 75
3698.	" " " Bulbous.....	2 25
3699.	" " Skene's Angular.....	2 00
3700.	" " Tait's, (French Lock Charrière's).....	1 25
3701.	" " " Collin ".....	1 25
3702.	" " Thomas.....	1 75
3703.	" " Thornton's.....	2 25
3704.	" " Wells' (Spencer Wells).....	1 50
3705.	" " Woods'.....	1 25
3706.	" " Wyeth's.....	1 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

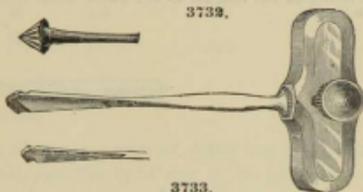
GENERAL OPERATING.
OSTEOTOMY.



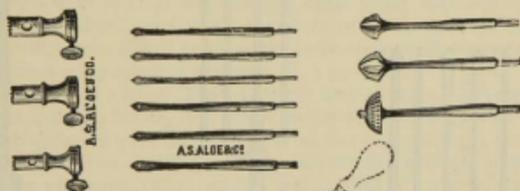
GENERAL OPERATING.
OSTEOTOMY.



3739.



3733.



3735.

3707.	Bone Chips, Senn's Carbolized, Assorted Sizes, in $\frac{1}{2}$ -pint jar.....	per jar, \$1 00
3708.	Staff, Blandin's.....	2 25
3709.	Prince's.....	2 50
3710.	Chisel, Brun's.....	1 50
3711.	Legouet's.....	2 00
3712.	Linhardt's.....	1 15
3713.	Little's (Ebony Handle).....	1 50
3714.	Plain.....	75
3715.	MacEwen's.....	2 25
3716.	Mason's.....	1 50
3717.	Chisel, Gouges and Levators, Darby's set of.....	5 00
3718.	Curette, Boeckel's, with 3 Spoons, in case.....	3 50
3719.	Brun's.....	1 75
3720.	Hebra's.....	1 75
3721.	Leonard's Rinsing.....	2 00
3722.	Luer's.....	1 75
3723.	Schede's.....	1 75
3724.	Senn's.....	3 00
3725.	Volkmann's.....	1 75
3726.	Double End, $\frac{1}{4}$ inches long.....	75
3727.	" " $\frac{3}{4}$ " ".....	1 25
3728.	Willard's Irrigating.....	3 00
3729.	Willard's.....	1 50
3730.	Curette and Periosteotome, Leonard's.....	2 00
3731.	Curette and Trepine Drill.....	1 50
3732.	Drill, Brainard's set of 5 points, in case.....	4 00
3733.	Buck's.....	3 00
3734.	Collins', with 3 Drill Points.....	10 00
3735.	" " 6 " " 3 Trepine Drills and 4 Guards.....	22 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL OPERATING.

OSTEOTOMY.

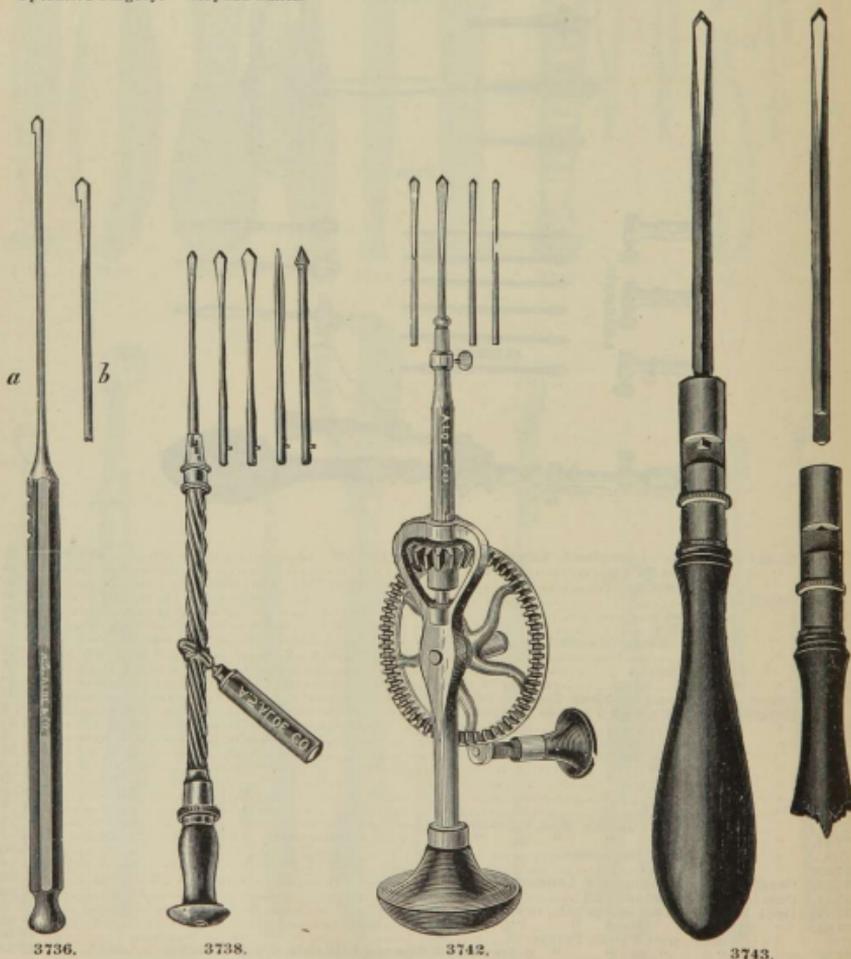
ABSCESS OF THE ANTRUM.

"Before an abscess has formed, and when as yet it is only imminent, remove any carious tooth or teeth in the neighborhood and apply leeches and fomentations. When pus has formed, extract all the carious teeth from the maxilla involved, and, if the pus is discharged from the cavity of either, enlarge the opening sufficiently to give free exit to the pus in the antrum. If there is no carious tooth, proceed as follows: Perforate the antrum by extracting the first permanent molar tooth, and passing a trocar or Pope's Antrum



3741.

Drill into the cavity through its socket; the forefinger should be extended on the shaft of the drill as a guard, and the instrument pressed forward with an even rotating motion; avoid the sudden giving away of the wall of the antrum and the plunge of the drill through the wall of the orbit. If the teeth of the affected side have been long removed, the antrum is more readily perforated at the base of the molar process of the maxillary bone, over the region formerly occupied by the second or third molar tooth, by dividing the mucous membrane and employing a large trocar or a strong pair of scissors. When the antrum is opened wash it out thoroughly with warm water, followed by carbolic acid solutions. The entrance of food must be prevented by plugs of hard rubber, or by a plate fitted to the opening and closed by a cork. It is sometimes practicable to open the passage from the cavity of the antrum to the nasal fossæ with a probe, properly directed."—
"Operative Surgery." Stephen Smith.



3736.

3738.

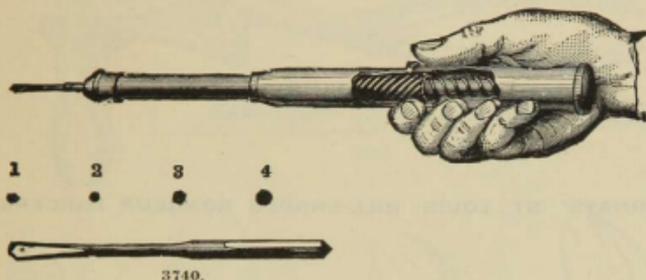
3742.

3743.

GENERAL OPERATING.

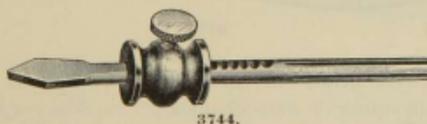
OSTEOTOMY.

MARSEE'S AUTOMATIC BONE DRILL.



The objection to almost all other forms of drills has been that it took both hands of the operator to operate the drill, and the bone had to be held by the assistant, who in case of emergency was often more in the way than he was of assistance. Also, that the drill points of almost all other drills were of such size that the drills could only be used in wiring together the femur or patella, or other large bones. By referring to the cut which gives a cross-section of the size of the drill points, it will be seen that there are several very small drill points which may be used in a great many minor operations.

If one of the bones of the finger, hand, wrist or arm is badly fractured or splintered, as is often the case in railroad accidents, it is only a matter of a moment's time to hold the pieces in a strong bone-holding forcep with one hand, drilling fine holes through them in desired places, to wire them together with any desirable suture, and proceed with the dressing of the wounded or crushed tissue in the conservative way in which almost hopeless injuries are now being treated to preserve the injured member. This drill is, at the present time, being used by quite a number of orthopædic and railway surgeons, many of whom have expressed themselves as being delighted with its working. We furnish with the drill stock one dozen drill points, assorted sizes and lengths, made of the best forged steel.



We have recently added to above set of drills an adjustable guard, as shown in cut, which can be set on the drill any given distance from its point, thus making it entirely safe for opening the antrum or mastoid cells.

3736.	Drill, Fluhner's.....	\$1 50
3737.	“ Gaillard's.....	2 00
3738.	“ Hamilton's.....	3 00
3739.	“ Howard's.....	5 25
3740.	“ Marsee's.....	5 00
3741.	“ Pope's Antrum.....	2 25
3742.	“ Tiemann's.....	5 25
3743.	“ Wyeth's.....	4 00
3744.	“ Guard, Adjustable.....	1 00

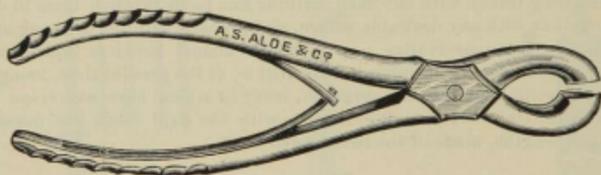
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL OPERATING.

OSTEOTOMY.

BERNAYS' (ST. LOUIS) BILL-SHAPED RONGEUR FORCEPS.

The illustration herewith, Fig. 3783, shows an entirely new form of Bone Gnawing Forceps. The jaws are made V-shape and come together in a manner resembling the bill of a bird. This makes it especially adapted for cranial work, and should occasion require it, an opening of any size can be made into the skull with the use of this instrument alone, first gnawing a groove into the skull, which can readily be done owing to the peculiar shape of the jaws. Having penetrated the skull one jaw can be gently introduced, and by successively biting out small pieces the opening can be enlarged to any size that occasion may require.



3783.

The "Groover," as Prof. Bernays calls his instrument, is one that should be in every bone instrument set, for it will answer the purpose of almost every other style of bone forceps, and is therefore a most useful instrument for carrying in an emergency bag, as it does away with the necessity of carrying several different styles of bone forceps.

No. 3770. BERNAYS' OSTEO-SARCOMA FORCEPS.

Dr. Bernays has also devised what he calls an Osteo-Sarcoma Forceps. This Forceps is the same general style as Fig. 3775, Luer's Bone Gnawing Forceps; Dr. Bernays' instrument, however, being curved on the flat, nor does the illustration give an adequate idea of the size of the jaws. These are nearly an inch in diameter and it is possible, for instance, to remove an epulis or giant cell Sarcoma of the alveolar process as large as a scaly back hickory nut at a single application of the instrument.

GENERAL OPERATING.

OSTEOTOMY.

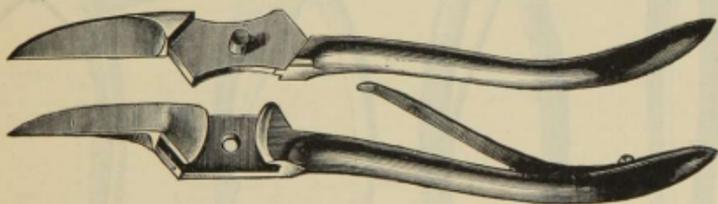
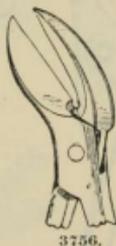
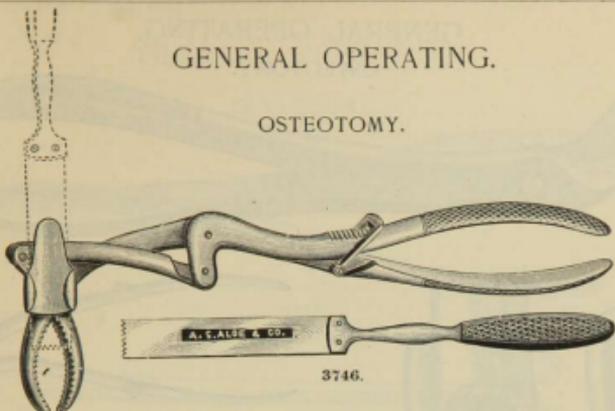
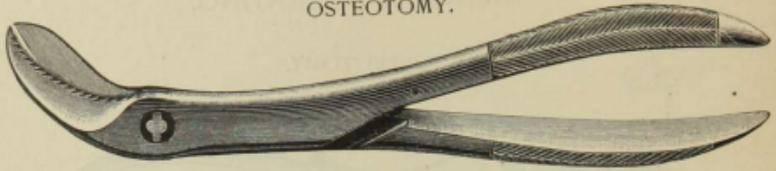


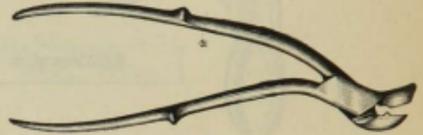
Fig. 3758 shows Liston's Straight Bone Forceps with Spring, with the blades separated to more clearly show the construction of Collin's Aseptic Articulation. All of our bone-cutting Forceps are made with this separable lock.

Forceps made on this principle are as strong and firm as though made in the old manner, and offer this advantage that the blades can be readily separated, the instrument cleaned and rendered thoroughly aseptic. The springs are also separable, thus offering no possible place of lodgment for septic matter.

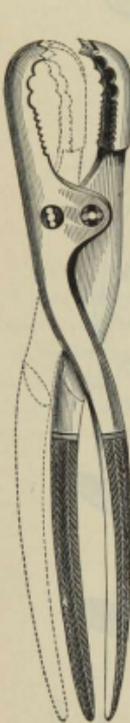
GENERAL OPERATING.
OSTEOTOMY.



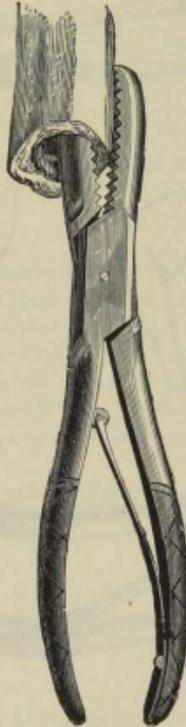
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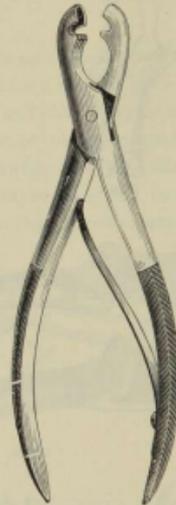
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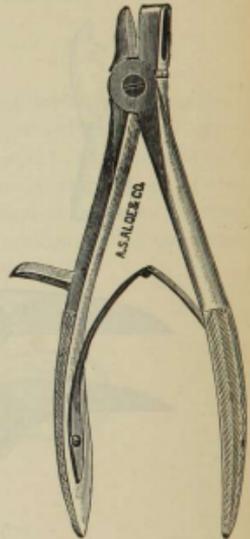
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3767.



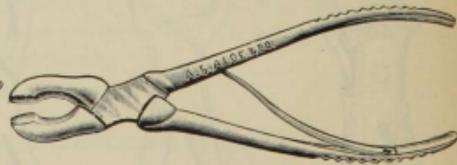
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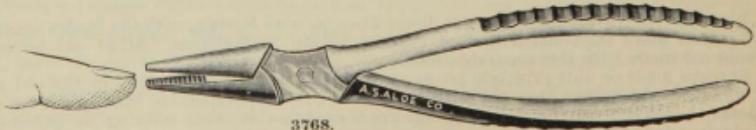
3772.



3773.

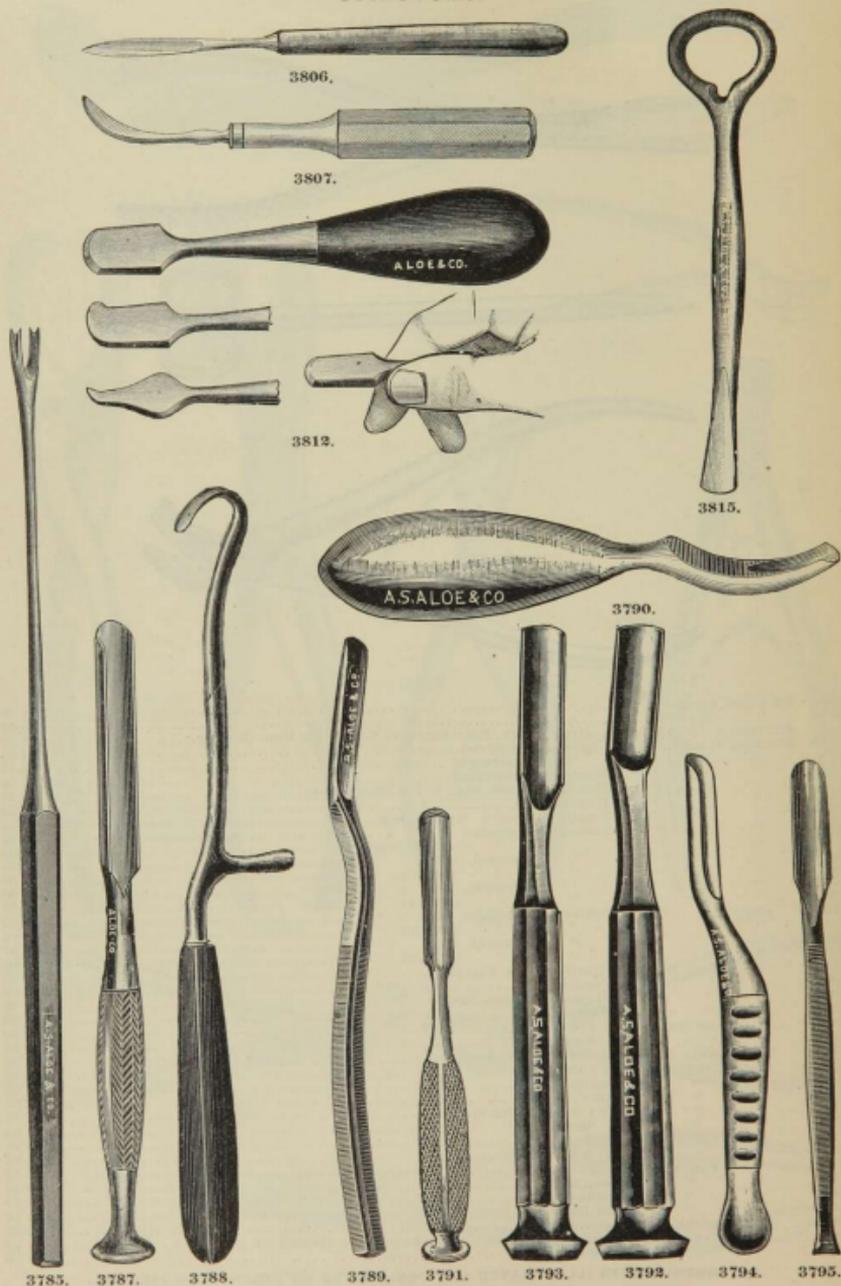


3775.



3768.

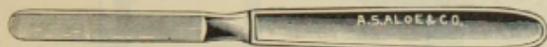
GENERAL OPERATING.
OSTEOTOMY.



GENERAL OPERATING.
OSTEOTOMY.



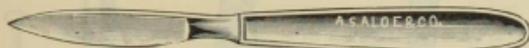
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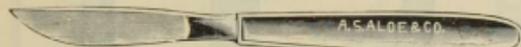
3799.



3800.



3801.



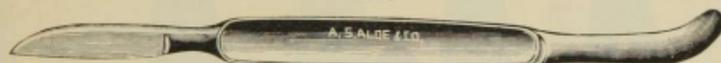
3802.



3803.



3804.



3805.

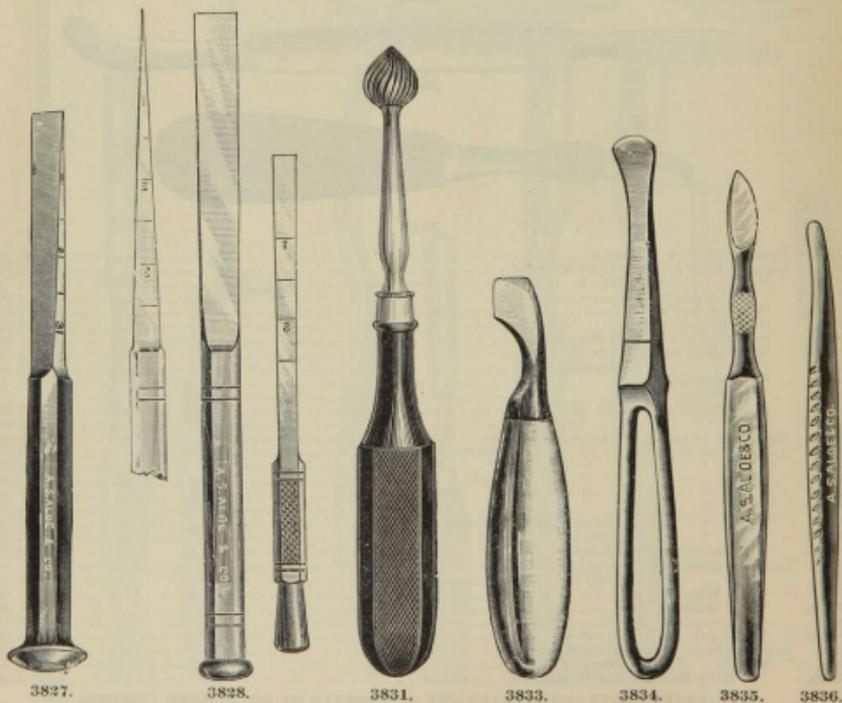
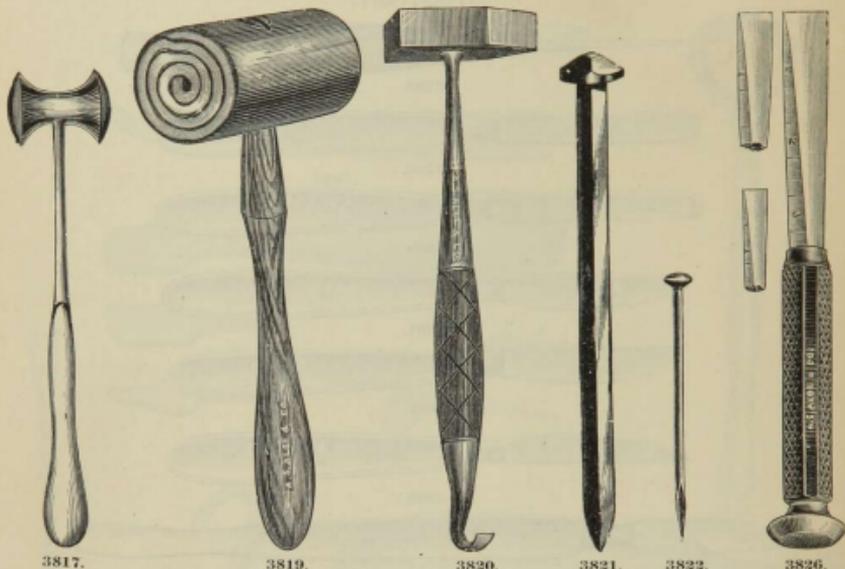


3810.

3785.	Fork, Fluhrer's Wiring.....	\$2 25
3786.	Gouge, Brun's, Curved (or Angular).....	2 00
3787.	" " Straight	1 75
3788.	" Dolore's	3 00
3789.	" Gerber's.....	1 00
3790.	" Legoues's.....	2 00
3791.	" Little's (Ebony Handle)	1 50
3792.	" MacEwen's, Curved.....	2 75
3793.	" " Straight.....	2 50
3794.	" Mason's	1 50
3795.	" Plain	75
3796.	" Trelat's, Oblique, Right.....	2 00
3797.	" " " Left.....	2 00
3798.	Hook and Levator, Langenbeck's, Bone	1 35
3799.	Knife, Resection, " " Bistoury, Blunt Point.....	1 50
3800.	" " " " " Probe	1 50
3801.	" " " " " Scalpel	1 50
3802.	" " " " " " Convex.....	1 50
3803.	" " " " " " Linear.....	1 50
3804.	" " " " " " and Straight Elevator, Brun's.....	2 00
3805.	" " " " " " " Curved	2 25
3806.	" " " " " " Subcutaneous, Adams'.....	1 15
3807.	Levator, Goodwillie's, Curved.....	1 50
3808.	" " " " Half Curved	1 50
3809.	" " " " Hamilton's	1 15
3810.	" " " " Mathieu's.....	1 50
3811.	" " " " Sayre's.....	1 25
3812.	" " " " Van Arsdale's, Set of 3.....	4 50
3813.	Lever, Langenbeck's, Broad	1 75
3814.	" " " " Narrow	1 75
3815.	" " " " Ring Handle, Periosteum.....	1 50

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GENERAL OPERATING.
OSTEOTOMY.



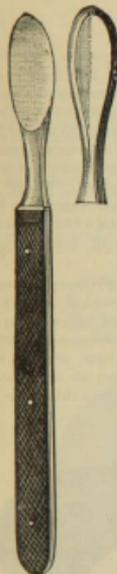
GENERAL OPERATING.
OSTEOTOMY.



3842.



3845.



3843.



3838.



3839.



3840.



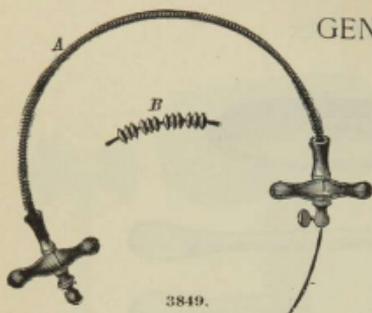
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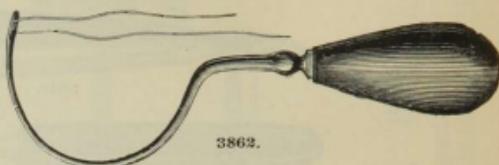
3844.

3816.	Mallet, Gerster's	\$0 40
3817.	" Lead Filled	1 50
3818.	" MacEwen's, Lignum Vile	75
3819.	" Rawhide	.....	75
3820.	" Steel	.....	1 75
3821.	Nail, Gerster's, Square	.....	35
3822.	" Hahn's, Round	.....	35
3823.	" Ivory	.....	15
3824.	Osteophor, Farabeuf's	.....	5 00
3825.	" Hamilton's	.....	3 00
3826.	Osteotome, Hutchison's	.....	4 50
3827.	" MacEwen's	.....	3 00
3828.	" Poore's, 3 sizes	..... each,	4 50
3829.	" Robert's Electro	.....	.....
3830.	" Smith's	.....	4 50
3831.	Osteotrite, Marshall's	.....	1 75
3832.	Pegs, Ivory, for ununited fractures	..... per dozen,	1 50
3833.	Periosteotome, Buck's	.....	1 75
3834.	" Leonard's	.....	1 75
3835.	" Sand's	.....	1 75
3836.	" Sayre's	.....	1 25
3837.	Raspatory, Langenbeck's	.....	1 50
3838.	" Mathieu's Concave	.....	2 00
3839.	" " Convex	.....	2 00
3840.	" " Curved	.....	2 00
3841.	" " Linear	.....	2 00
3842.	" Ollier's Knife	.....	1 50
3843.	" " Round	.....	1 50
3844.	" " Sharp	.....	1 50
3845.	" Sedillot's	.....	1 50

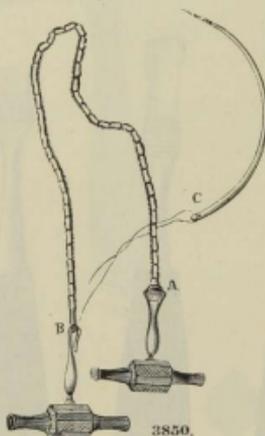
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL OPERATING.
OSTEOTOMY.

3849.



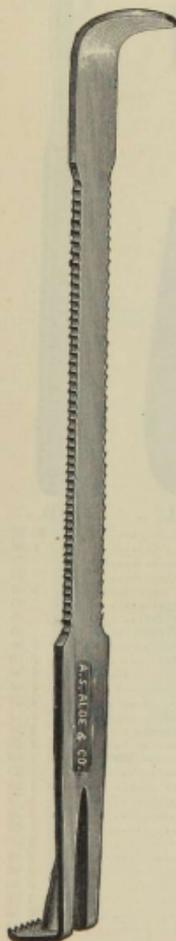
3862.



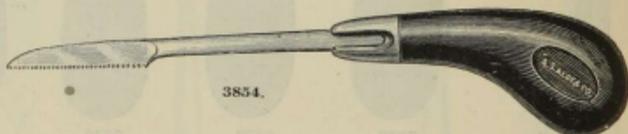
3850.

To use this saw, Fig. 3850, one end is removed from the Hooked Handle, B, and the needle, C, armed with a strong thread, is attached to this end; the needle is passed under the bone, and the Saw drawn into position, with the cutting edge upwards, and the handle re-attached. The operator, grasping the handles, draws the Saw alternately from side to side until the bone is divided. There is great danger of breaking a Chain Saw if it be worked carelessly; it should be drawn from side to side steadily, at an angle of 45° to the long axis of the bone.

The handle of this Saw is an improvement on the old style. It rotates around the Socket, A. This Socket is made in two halves, held together by a ring. Into one of the halves, depressions, corresponding to a link of the Chain Saw, are cut, so that if the Saw should break during an operation the first sound link may be placed into this socket, and the operation proceed.



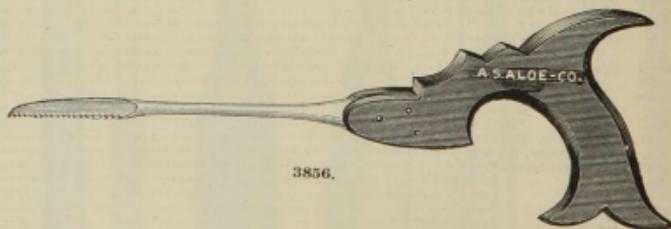
3846.



3854.



3855.

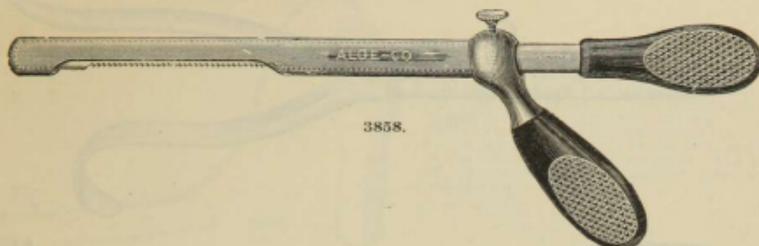


3856.



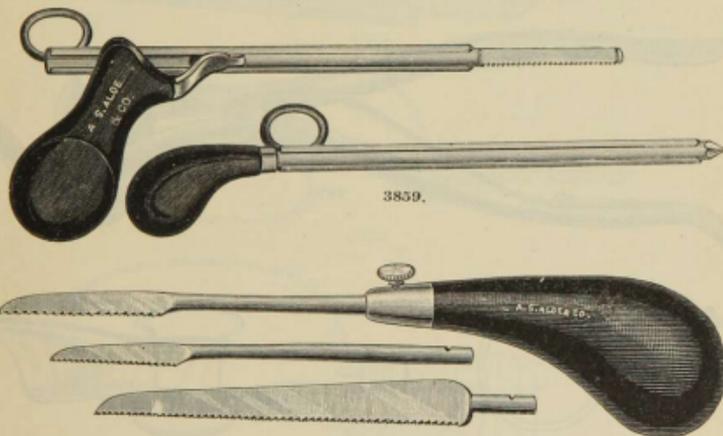
3857.

GENERAL OPERATING. OSTEOTOMY.



3858.

The Subcutaneous saw (Fig. 3859) is believed to be an improvement on the one presented by me to the profession some time ago. The principle is essentially the same, but its application as compared with the former instrument much wider and its construction much less complicated. It is now made in three parts: 1, a long, strong, blunt-pointed instrument, with limited saw-edge and fixed handle; 2, a trocar and handle; and 3, a canula or sheath, open on one side throughout its entire length, and made to fit both saw and trocar. The trocar and canula are used as guides for the saw. They are first introduced to the bone to be divided by thrusting them through the skin and intermediate soft parts. The trocar is then withdrawn, and in its place the saw is introduced, guided by the canula. The canula is then in its turn withdrawn, leaving only the saw with its teeth in contact with the bone. The bayonet-bend of the saw near its handle allows the canula or sheath to slide back and forth over the saw-blade and past the deflected handle with the greatest ease. After the saw has done its work, and while it is still in the wound, the canula is slipped over its blade and the latter withdrawn in its turn. Finally, the canula itself is removed, leaving only the wound caused by the original track of trocar and canula. By these means it will be seen that the introduction and withdrawal of the saw are effected without the possibility of any tearing of the soft parts by the teeth of the saw.



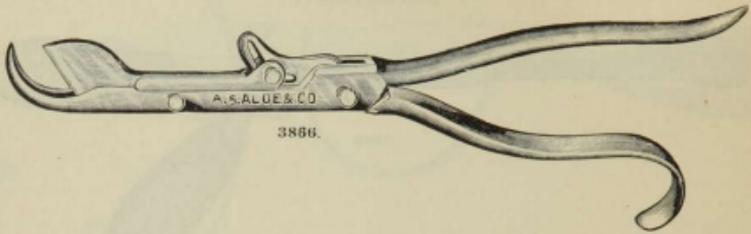
3859.

3860.

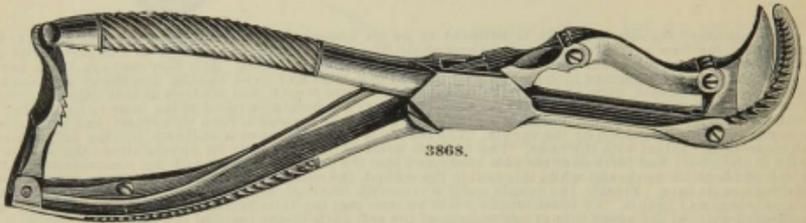
3846.	Retractor, Fluhrer's Exsecting.....	\$1 90
3847.	" McCurdy's Flap.....	3 00
3848.	" Roberts' Protecting.....	1 15
3849.	Saw, Bead, Stohman's.....	4 50
3850.	" Chain, Jeffray's.....	7 00
3851.	" " " in Polished Wood Case.....	8 00
3852.	" Circular, Graefe's.....	15 00
3853.	" " " Tiemann's.....	9 00
3854.	" Interosseous, Dawbarn's.....	3 50
3855.	" " " Lente's.....	1 15
3856.	" Subcutaneous, Adams', Large.....	3 00
3857.	" " " Small.....	2 50
3858.	" " " Shrady's, Angular Handle.....	5 25
3859.	" " " Improved.....	6 00
3860.	" " " Wyeth's, set of 3.....	6 00
3861.	Chain Saw Carrier, Buck's.....	2 25
3862.	" " " Jeffray's.....	1 50
3863.	" " " Post's.....	3 00
3864.	" " " Prince's.....	2 70
3865.	" " " Needles, Jeffray's, Fig. 3860 C.....	20

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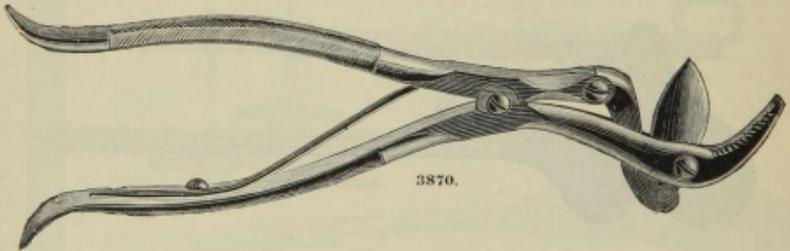
GENERAL OPERATING.
OSTEOTOMY.



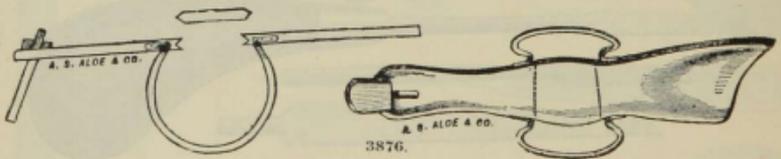
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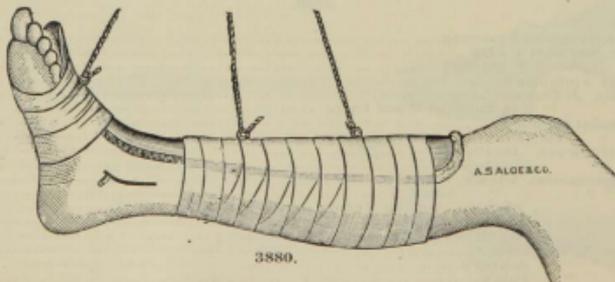
3868.



3870.



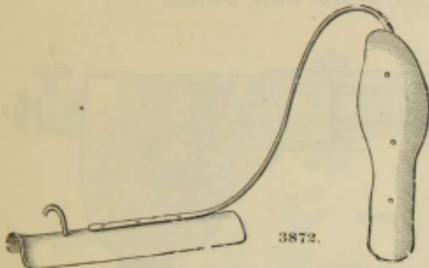
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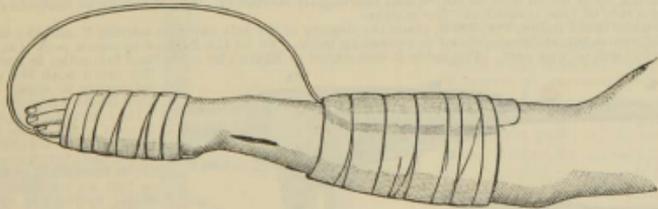
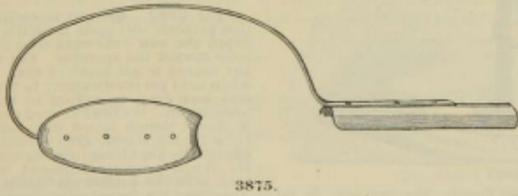
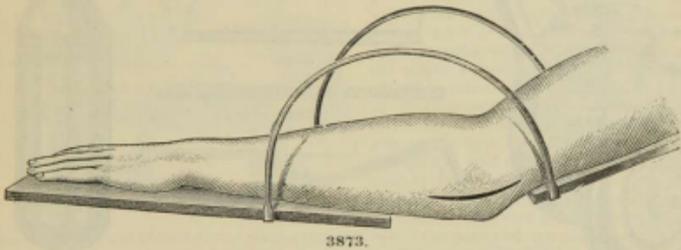
3880.

"Volkman's dorsal splint is made of wood. It is fixed to the foot and leg by plaster of Paris bandages, or moist gauze bandages. It gives good support to the excised joints."—ESMARCH.

GENERAL OPERATING.
OSTEOTOMY.



"My Ankle Bracket consists of a splint for the sole of the foot and a narrow dorsal splint for the leg, both made of tinned iron and connected with one another by a dorsal wire bracket. The foot is fastened by strapping and a plaster of Paris bandage to the splint for the sole of the foot, and the leg in like manner to the dorsal splint. The heel can be supported by a triangular handkerchief."
—ESMARCH.



3875.—Applied.

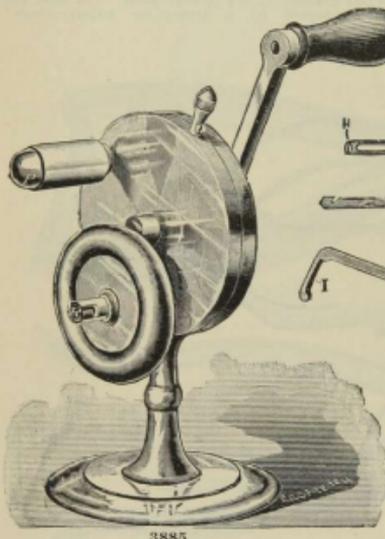
"Esmarch's interrupted splint, for excision of the wrist (Fig. 3875), consists of a piece of sheet iron for the hand and a tin splint for the dorsal surface of the forearm, which are connected with one another by a strong iron bar, shaped like a bow. As the wrist remains exposed for some distance, this apparatus is especially suitable for the antiseptic treatment of wounds." — "Surgeon's Hand-book." Esmarch.

3866.	Shear, Rib Cutting, Dennison's.....	\$12 00
3867.	" " " " Hencke's.....	5 50
3868.	" " " " Lucke's.....	10 00
3869.	" " " " Plain, see Fig. 4238, page 145.....	4 00
3870.	" " " " Streisguth's.....	9 00
3871.	" " " " Volkman's.....	6 50
3872.	Splint, Excision, Esmarch's for Ankle.....	.....
3873.	" " " " Elbow.....	.....
3874.	" " " " Knee.....	.....
3875.	" " " " Wrist.....	.....
3876.	" " " " Packard's " Knee.....	.....
3877.	" " " " Stillman's " Ankle.....
3878.	" " " " " " Elbow.....
3879.	" " " " " " Wrist.....
3880.	" " " " Volkman's for Ankle.....
3881.	" " " " Watson's " Knee.....

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GENERAL OPERATING.
OSTEOTOMY.
THE DEVILBISS POWER SAWS AND DRILL.

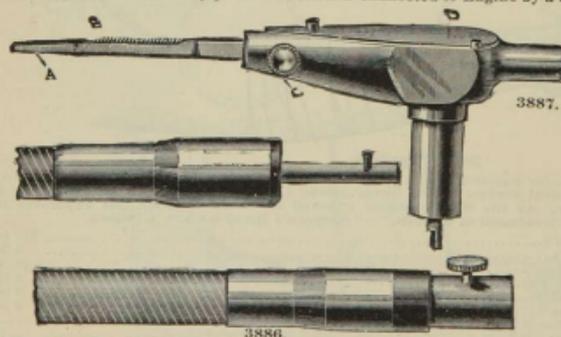
This Saw is especially adapted for making excisions, trephining, opening mastoid cells, cutting away portions of the maxillary bones, ribs, etc. If you do this class of work you can not afford to be without it. Anyone with a little mechanical ingenuity can use it after thirty minutes practice on a piece of board or bone.



3885.

inch by the thumb and finger. The saw may be taken apart and put together in about one minute, is easy to clean, and being all of metal may be boiled and thoroughly sterilized. The saw may be made to run over end of carrier at a rate of 2,000 revolutions per minute.

To operate the Engine, Fig. 3885, place the fingers of the left hand on handle P, and the thumb around post O, resting it on the abdomen, stand or operating table. To oil the Engine unscrew post O and put oil in the hole, which will oil any part. The cable is connected to Engine by a bayonet fastening R, and to the saw

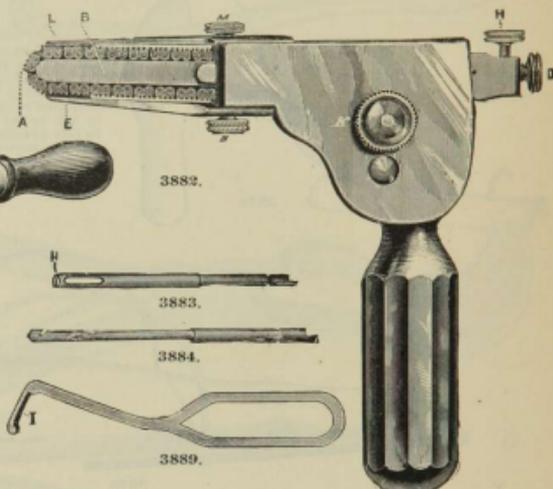


3886.

3887.

3882.	DeVilbiss Power Saw.....	\$25 00
3883.	" Nasal Cutter.....	2 00
3884.	" Drills, three sizes.....	each, 3 00
3885.	" Improved Engine.....	20 00
3886.	" Flexible Cable Shaft.....	12 00
3887.	" Nasal Saw.....	15 00
3888.	" Mastoid Drill, with Gauge for opening Mastoid cells.....	3 00
3889.	" Trephining Director.....	3 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.



3882.

3883.

3884.

3889.

Fig. 3882. A shows its cutting point. E is a shield that protects soft parts from the saw and regulates the depth the saw cuts each time it is carried across the bone toward the operator. Cut what the shield allows, but repeat to get depth of cut. The saw cuts deepest when held perpendicularly to that which is being cut, and less deep according to the incline you hold it toward you. B shows slotted carrier for chain saw A. N shows thumb screw that holds shield E to handle. D, a thumb screw, gives tension to saw, and when adjusted is kept from rotating loose by tightening screw H. When properly adjusted the chain should snap back into the carrier (B) when raised off one-quarter inch by the thumb and finger. To oil the Engine unscrew post O and put oil in the hole, which will oil any part. The cable is connected to Engine by a bayonet fastening R, and to the saw the same with the addition of a set-screw to make it fast and to hold drills when they are used.

In operations upon the skull bone it is advisable to first cut a hole with a trephine (or saw) sufficiently large to admit the foot (I) of the shield or director 3889, as you go carrying the director along under the cutting end of saw and beneath the bone, thus separating the dura from the bone and protecting it from the saw.

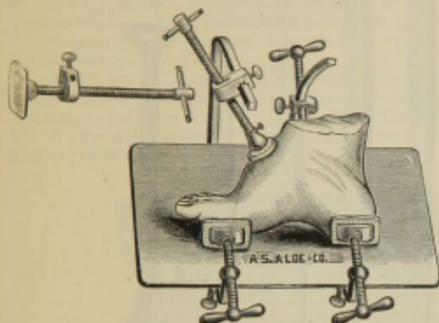
Nasal Saw 3887 is intended for intra nasal work. The Saw moves in carrier A, runs steady, no danger of injuring tissue back of where it cuts. Can be reversed so as to cut either up or down. By loosening screw C carrier A can be taken out, then turn cover D to right, take out saw B to clean or reverse. It is simple in construction and easy to operate.

GENERAL OPERATING.

OSTEOTOMY.

3890.—BRADFORD'S TARSO CORRECTOR,

FOR OPERATING ON OBSTINATE CASES OF CLUB-FOOT.



3890.

The object of the appliance is to exert pressure under control of the operator in three directions, and also to enable him to twist and raise the front of the foot.

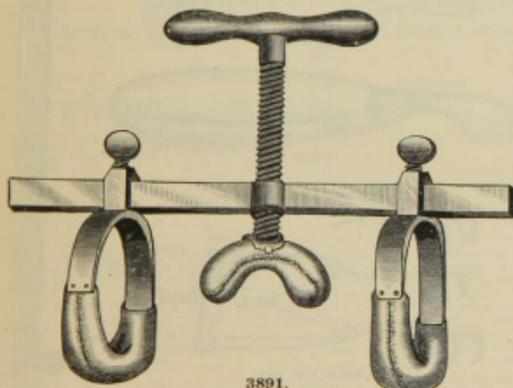
The apparatus consists: 1. Of a plate large enough for any foot. 2. Of three steel buffers, or padded plates, which are attached at the ends to steel screw-rods playing through sockets with a female screw thread at the sides of the large plate. By turning the screws, which is done by the handles, the plates or buffers are pushed forward. They should be placed so as to press (1) upon the side of the first metatarsal; (2) on the side of the os calcis just beneath the inner malleolus; (3) on the outer side of the foot over the projecting head of the astragalus. The female screw through which the male screw plays is adjustable upon an arm, curved, so that pressure can be applied when it may be found necessary. The socket and arms are arranged so

that they can be shifted and placed at any point along the side of the large plate, or can be shifted from side to side, so that the appliance can be used for either foot. A straight rod, extended in the plain of the plate, gives increased power in raising the front of the foot. This is not always needed and is not shown in the cut.

Price.....\$30 00

3891.—RIZZOLI'S OSTEOCLAST.

The object of osteoclasis is to produce a simple fracture; the limb is then kept fixed by plaster in a corrected position, until firm union has been established.



3891.

Osteoclasis, by means of an apparatus by which considerable power can be applied, has been advocated by all writers upon surgery, and many instruments have been devised for this purpose. The earlier operations were restricted to the correction of fractures of the long bone united at an angle, but later surgeons have extended the operation to deformities of the limbs due to other causes. Bush, Louvier, Maisonneuve, and others, have invented instruments for this purpose. In 1846 Rizzoli devised the Osteoclast, which is figured above, with the modification of Dr. Poore, who has had three threads cut upon the upright bar which forms the screw, in order to increase the rapidity with which the force can be applied.

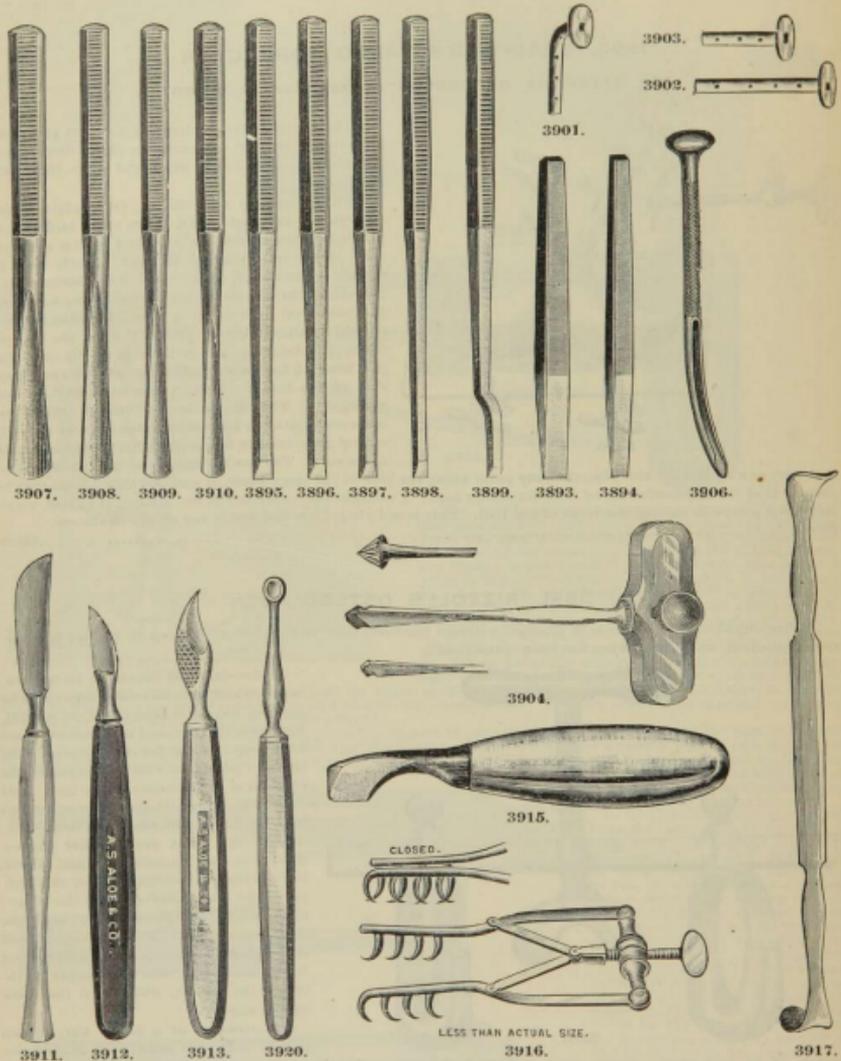
It consists of a heavy bar, fifteen inches long, one inch wide and three-

eighths of an inch thick; being much thicker in the center, which is pierced for the female portion of a screw. Into this is fitted a round steel bar, one-half an inch in diameter, on which is cut a thread corresponding to the nut on the long bar, and furnished at its upper portion with a handle; at its lower extremity is a strong, well-padded steel plate or crutch, forming a segment of a circle. The portion of steel forming the male part of the screw turns in a socket on the upper side of this crutch. Two steel rings, five inches in diameter, one inch wide and one-fourth of an inch thick, having at their upper portion a slot into which the large bar slides, and to which they are fixed in any desired position by binding screws. The lower segments of these rings are well padded with flannel and covered with chamois.

Price.....\$25 00

GENERAL OPERATING.

MASTOID.



A MASTOID RETRACTING SPECULUM, BY FRANK ALLPORT, M. D., MINNEAPOLIS, MINNESOTA.

In making a mastoid operation, it is desirable that the two flaps made by the incision be forced widely open in order that the work upon the bone may be kept well under observation. In the instrument presented, Fig. 3916, the hooks are made to interlock nicely, so that they can be introduced into quite a small aperture. The hooks have sharp but not cutting points, and the whole instrument is made strong and short, in order that considerable force may be used in opening the blades, which may become necessary in case of great thickening or swelling of the tissues over the mastoid process. When introduced and widely expanded, and the parts wiped as dry as possible, a fine view of the underlying bone may be obtained, and the ease of the operation much facilitated. The wide expansion of the blades renders the operation practically bloodless.

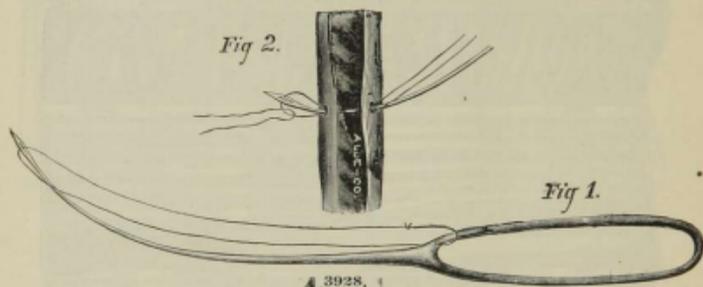
[If interested read article in Medical Record, May 28, 1892, from which this extract is taken.]

GENERAL OPERATING. COELIOTOMY—LAPAROTOMY.

CROFFORD'S NEEDLE.

By T. J. CROFFORD, M. D., Memphis, Tenn.

* * * A long needle invented by myself for putting in the stitches through both sides at once, has been used. I am satisfied that in closing a long incision, ten, twenty or thirty minutes can be saved. Time, at this juncture, is very valuable in obviating, as far as possible, the oncoming shock. The needle loosely threaded (Fig. 1), is pushed down through from the side next the operator; then, with the aid of the assistant, up through the opposite side, carefully including skin, fascia and peritoneum, as with any other needle. Upon withdrawing it one-quarter inch the thread will slack and open, as in Fig. 2. A suture is placed in the loop (also shown in Fig. 2), by the assistant. The needle is then quickly withdrawn, bringing with it the suture. This needle differs from all others in having a length and curve adapted to putting in a stitch through both sides of the abdominal walls at one stroke or movement. All the sutures, one after another in rapid succession, are introduced in the manner described. The handle is large, admitting a firm grasp. Whilst it is intended for the closure of the incision of a laparotomy, it is well adapted for putting in the stitches after amputation, and the suturing of large incised wounds generally. It is an excellent pedicle needle adapted to all size ligatures. The author has not for more than twelve months used any other needle in abdominal work. * * *



With the exception of the spray, the most thorough antiseptics outside, and asepsis inside the abdomen, has been observed.

It is perhaps worth stating that antiseptics, with me, is only valuable as it conduces to asepsis. I believe in the use of the spray before the operation, not that the carbolic acid in it is of value in killing germs, not that it is so important to kill germs; not this at all—but I do believe by increasing the humidity of the atmosphere, it will cause the organic matter floating in the room to settle down, and there is consequently less likelihood of it being deposited in the open wounds.

It is gratifying to me to relate the fact that I have never had a case of peritonitis to follow an abdominal operation, nor has a ventral hernia ever ensued.

(From "Memphis Journal of the Medical Sciences," September, 1891.)

STITCHING THE ABDOMEN AND SOFT PARTS WITH THE LAMBLIN ABDOMINAL NEEDLE.

By J. W. SMITH, M. D., St. Louis, in Medical Fortnightly.

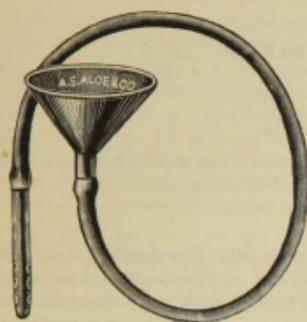


"This needle needs no manipulation other than its thrust through the tissue and its withdrawal after it is threaded, as it is self-adjusting. It is provided at the posterior arch of the eye with a little fly, which is caught by the tissue as the needle passes through, thereby opening the eye to receive the ligature. It is then threaded and withdrawn; in so doing the little fly is again caught by the tissue and made to close over the ligature, by which it not only prevents the ligature from slipping out of the eye of the needle, but also acts as a guard for the tissue from the spear point."



GENERAL OPERATING.

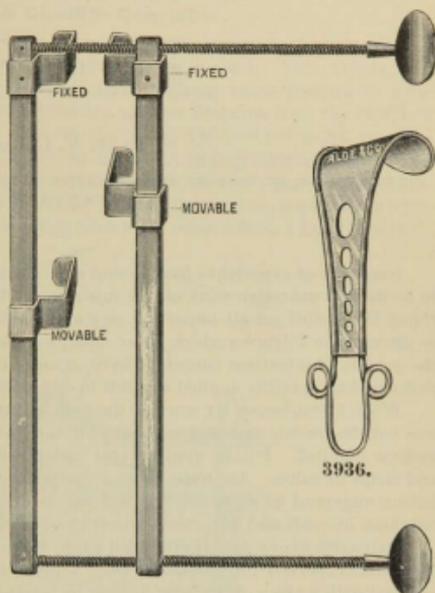
COELIOTOMY—LAPAROTOMY.



3924.

BERNAYS' (ST. LOUIS) FLUSHING TUBE.

Fig. 3924 shows the Abdominal Flushing Tube made for Dr. Bernays. The principal advantage it presents over other patterns is the soft rubber funnel. As the Doctor operates at a half-dozen different hospitals in the city, he felt the need of a portable abdominal irrigator, and we have therefore substituted a soft rubber funnel for the customary granite iron one. The hard rubber tube is 9 inches long, and only the lower three inches is perforated. The end of the tube is closed and rounded, and the holes drilled in the side are of such numbers and size that the sterilized water used in flushing and washing out the abdominal cavity will flow through the perforated end as fast as the water can be poured into the funnel. Dr. Bernays uses this tube only in cases where the cavity is invaded by septic matter, either from pus sacs or from the intestines, bladder, etc. He desires it distinctly understood that he does not use it where only blood or aseptic cyst fluid, etc., have escaped. As a general law, the Doctor has laid down the rule that where flushing is resorted to, a glass drain, or drainage by means of the Miculicz method, with gauze packing, must be used during the after treatment.



3935.

3936.

3921.	Button, Murphy's Anastomosis.....	....
3922.	Clamp, Brokaw's (St. Louis) Intestinal. Illustrated, next page.....	2 00
3923.	“ Wathen's Intestinal Forcep.....	2 75
3924.	Flushing Tube, Bernays' (St. Louis) Abdominal.....	4 00
3925.	“ “ Price's Abdominal.....	3 00
3926.	Hook, Adams' Peritoneum.....	1 50
3927.	Lamp, Somoff's Abdominal, for exploring the abdominal cavity by means of electric light. See Electro-Scopic Instruments.	
3928.	Needle, Crofford's Abdominal.....	1 50
3929.	“ Hall's “.....	1 00
3930.	“ Keith's “.....	05
3931.	“ Lamblin's “.....	3 00
3932.	“ Pean's “.....	2 00
3933.	“ Reverdin's “.....	4 50
3934.	Plates, Davis' Catgut Anastomosis.....	per pair, 1 00
3935.	Retractor, Keen's Abdominal.....	5 50
3936.	“ Pean's “.....	1 75
3937.	Truss, Carson's (St. Louis) Laparotomy.....	3 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENERAL OPERATING.

COELIOTOMY—LAPAROTOMY.

A NEW INTESTINAL CLAMP.

By A. V. L. BROKAW, M. D.

DEMONSTRATOR OF ANATOMY AND OPERATIVE SURGERY, MISSOURI MEDICAL COLLEGE, SURGEON TO ST. JOHN'S HOSPITAL, ETC., ST. LOUIS.

Surgeons of experience have found a necessity for a thoroughly practical and simple clamp to be used in operative work on the intestines. The rapid and safe application of an intestinal clamp is a simple yet all-important step and one which is fraught with much annoyance owing to the many deficiencies which most clamps present. In my experimental and actual work in the domain of intestinal surgery, I have on more than one occasion felt the sore need of a clamp that could be speedily applied and left in situ with some assurance of security.

When I first began my work in the field of intestinal surgery, I tried numerous means, but was not thoroughly satisfied with any of the various appliances which our local instrument makers supplied. I have used several varieties of clamps and such devices as rubber tubing and strips of gauze. In some cases I was even fortunate enough to procure the "soft, dexterous fingers of an assistant" to aid me in my work; but often the last mentioned aid was anything but soft and dexterous, sometimes, on the contrary sublimely rude and awkward.

Extensive experimental study led me to the conviction that a clamp, made after the following manner, served its purpose well. A piece of No. 12 copper wire, 6 or 8 inches long, is covered with a piece of drainage tubing by forcing the wire through its lumen. The rubber is left to overlap, and its ends are ligated to prevent denudation of the wire and disengagement of the tubing. The rubber covered wire is now evenly flexed upon itself, until it presents two perfectly parallel blades of equal length, and the completed clamp is ready for use, and is applied in the same manner as the clamp to be described further on. While this clamp is simple and inexpensive, it answers admirably, and has been used by me since 1889; but it is devoid of that mechanical finish which, although not necessary, is more in harmony with the surgical nicety of this age. Furthermore, this clamp has one marked disadvantage, *i. e.*, it can not be as thoroughly cleansed as modern antisepsis demands.

For these reasons the clamp to be described and illustrated has been devised. Such improvements have been made as to cancel all objectionable features, affording us a perfect means of compressing the intestine.



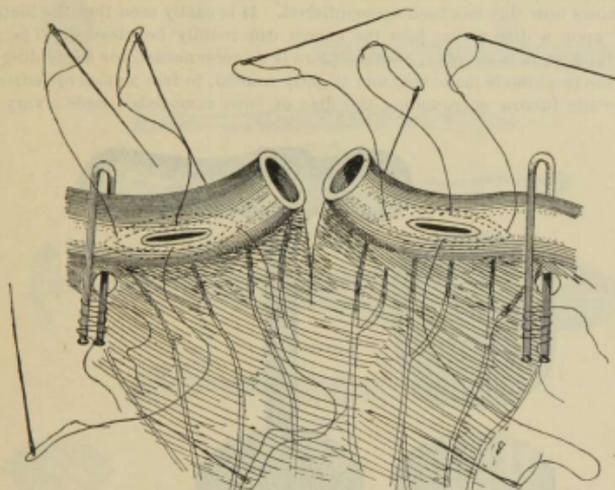
3922.

From drawings furnished my instrument makers (A. S. Aloe Company), the instrument shown in the cut was made. It consists of two parallel blades or limbs, A and B, held in position by a wide piece of spring metal; the spring being so tempered as to give a tendency to separation of the blades. The limbs are made of soft steel, which may be bent with the fingers should occasion demand. Upon the ends of either blade is fitted an acorn tip, which may be screwed on or off when necessary; each blade is covered with rubber tubing (drainage tubing), or, what is more desirable, with a soft rubber catheter.

GENERAL OPERATING.
COELIOTOMY—LAPAROTOMY.

A NEW INTESTINAL CLAMP—CONTINUED.

After covering the blades, the acorn tips are screwed on, the tubing approximated well under the shoulders of the tips, and the instrument is ready to be applied. This, briefly, is a description of the clamp; as to the manner of its application, nothing could be simpler. One blade of the clamp is pushed through the mesentery within a short distance from the attached surface or concavity of the intestine. The ends of the clamp are pressed together sufficiently to compress the gut, and a ligature (figure of eight) is rapidly thrown round the extremities of the blades. It is evident at a glance that the operator can regulate to a certainty the amount of compression upon the gut and no danger can accrue from undue constriction. All other spring clamps, which have fallen under my observation, have a tendency



Showing Brokaw's Intestinal Clamp Applied.

to compress too strongly, and thereby give rise to the danger of pressure gangrene, or the spring is too weak and does not accomplish its object. In the clamp figured in the illustrations, the surgeon regulates with the greatest ease and exactness the amount of pressure brought to bear upon the gut, a consideration of the greatest importance. The length of the parallel blades admits of an assistant holding them, while the operator is engaged.

This clamp has not been presented for theoretical reasons but has repeatedly been employed in intestinal work; and those who have used it testify to its absolute superiority over other contrivances.

The advantages claimed for the clamp are these;

1. Simplicity of mechanism and the ease with which it is applied.
2. Absolute uniform compression of the bowel.
3. Rapidity with which applied and removed.
4. Precise regulation of the amount of compression.
5. Readiness with which the parts are separated and sterilized.

The clamps that are most popular and most generally used are not favored with these advantages; they are, as a rule, expensive, and with a few exceptions, present such a complicated arrangement, that the aim attempted is not entirely attained. The less complicated instruments have a more grievous disadvantage—they are incapable of accurate adjustment and regulation in the amount of pressure, and hence are absolutely worthless if not directly harmful.

[Extract from "The St. Louis Medical and Surgical Journal," October, 1890.]

GENERAL OPERATING.

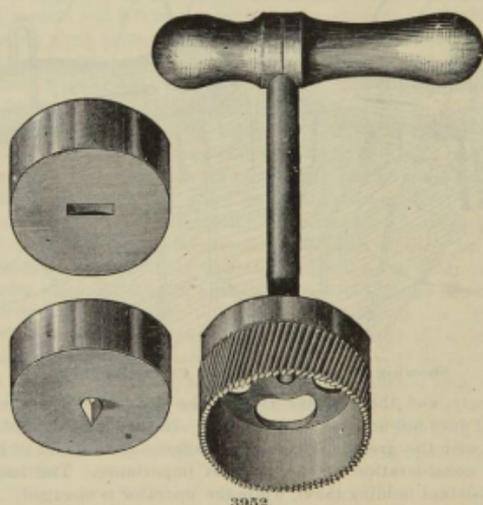
TREPHING.

ROBERTS' ASEPTIC TREPINE.

All surgeons, probably, have experienced difficulty in keeping the Trephines aseptic during operations, and preserving them free from rust subsequent to use, particularly at the present time, when solutions are so largely used during operative procedures.

To remedy this difficulty Dr. John B. Roberts has devised an "Aseptic Trephine," which is so made as to avoid the necessity of a sliding centre-pin and hollow stem, which afford such a convenient place for accumulation of septic material and rust.

The cut shows how this has been accomplished. It is easily seen that the instrument with its centre-pin upon a disc fitting into the crown can readily be cleaned. The necessity of having a very thick stem is avoided, because there is no tube needed for the sliding centre-pin. The crown of the trephine is made thin and slightly conical, in fact almost cylindrical; because in this manner the furrow surrounding the disc of bone removed is made a very narrow one.

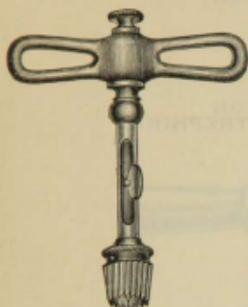


The operator who desires to replace the button of bone can do so and even suture it to the periosteum of the surrounding bone without leaving a very wide intervening groove. A slight degree of concity is desirable, because otherwise the trephine is apt to become jammed in the osseous wound when the thickness of the bone is very slight, and especially if the portion of the bone cut out by the trephine varies in thickness at different points in its circumference.

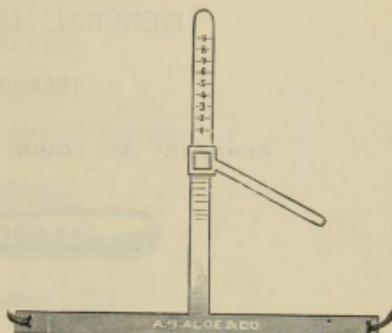
The hand piece is placed eccentrically as in some English instruments, because to drive a large trephine requires a considerable degree of power. This is better obtained by making the hand piece long at the extremity, which is grasped by the hypothenar eminence of the surgeon's hand.

We also manufacture Dr. Roberts' "Segment Trephine," which is a convenient instrument with which to enlarge the first opening made in the skull, in operations for removing tumors of the brain. It is also valuable when it is desired to deepen a portion of the groove surrounding the button of bone to be removed in trephining, without cutting around the entire circumference. This necessity not infrequently arises when larger discs are removed from regions of the skull of irregular thickness.

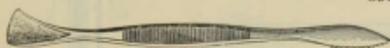
GENERAL OPERATING. TREPHINING.



3951.



3939.



3940.



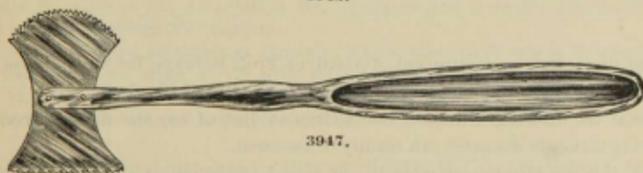
3941.



3945.



3942.



3947.



3948.

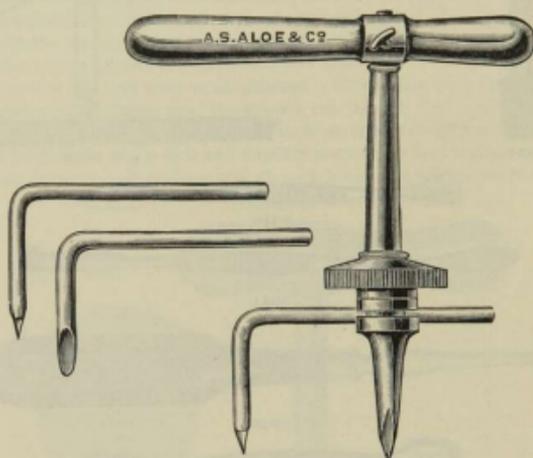
3938.	Brush, Trephining.....	50
3939.	Cyrtometer, Wilson's.....	3 00
3940.	Elevator, Trephining, Plain.....	75
3941.	" " and Lenticular Knife.....	1 50
3942.	" " Raspatory.....	1 00
3943.	Fissure Meter, Horsley's (Illustrated on page 101).....	18 00
3944.	Knife, Lenticular.....	1 25
3945.	Raspatory, Trephining.....	1 50
3946.	Saw, Skull, Cowgill's-Hey's.....	2 75
3947.	" " Hey's.....	1 50
3948.	Scalpel and Raspatory.....	1 25
3949.	Tirefond (Bone Screw).....	2 00
3950.	Trephine, Bernay's (St. Louis). Illustration next page.....	7 50
3951.	" Galt's.....	3 00
3952.	" Roberts'.....	5 00
3953.	" " set 3 sizes, in case.....	12 00
3954.	" " Segment.....	7 00
3955.	Trephining, Case No. 1, containing 1 Galt's Trephine, 1 Crown Trephine, 1 Trephine Handle, 1 Trepanning Scalpel and Raspatory, 1 Trepanning Elevator, 1 Hey's Skull Saw, 1 Brush for cleaning Trephine and Saw, 1 Mahogany Case lined with Leather.....	13 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FEATURES.

GENERAL OPERATING.

TREPHINING.

BERNAYS' (ST. LOUIS) ASEPTIC TREPHINE.



3950.

Fig. 3950 illustrates an instrument, devised by Prof. Bernays, for the purpose of cutting round, crescent shaped or oblong pieces out of the convexity of the skull.

A glance at the drawing will show that a circular disc of any size desired from $\frac{1}{4}$ inch in diameter to $2\frac{1}{2}$ inches in diameter can readily be removed.

However, it is not always desirable to cut round pieces out of the skull; in fact, oblong defects are much more frequently indicated, and here is where the advantage this instrument possesses over all others of its kinds presents itself, for with it, it is easy to make two ditches shaped as is shown here ().

A chisel should then be employed to unite the ends of the two grooves. The instrument in the hands of a dexterous operator will cut down to the dura mater in an astonishingly short time.

Two or three bits should be used in each operation, a narrow, sharp pointed one being used to make the first few scratches into the external table and this should be followed by the broader and more round edged ones.

If a broad round edged bit is used when approaching the dura mater there is no likelihood of this membrane being injured.

GENERAL OPERATING.

TREPHINING.

HORSLEY'S FISSURE METER.



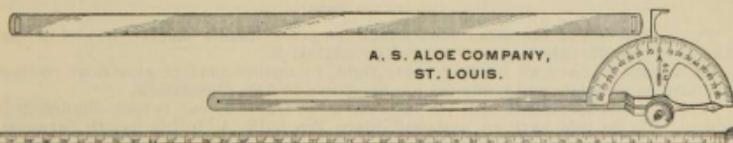
A. S. ALOE CO.

Extract from paper read before the NEW YORK STATE MEDICAL ASSOCIATION,
By W. W. KEEN, M. D., Philadelphia.

"I desire to show to the Association Mr. Horsley's new Rolandic Fissure Meter which I have lately obtained through his courtesy.

"Heretofore we have assumed, as shown by Thane that the fissure of Rolando runs downward and forward at an angle of 67° with the middle line. Mr. Horsley's observations have convinced him that the angle varies with the shape of the head, that is to say, with the cranial index. The higher the cranial index, the greater the angle; the lower the index, the lower the angle.

"Mr. Horsley assumes a standard for the cranial index of 75 as established by the caliper of Broca, and for the angle of the fissure of Rolando 69° , instead of 67° , and for every two integers of variation in the cranial index he assumes one degree of variation in the angle of the Rolandic fissure.

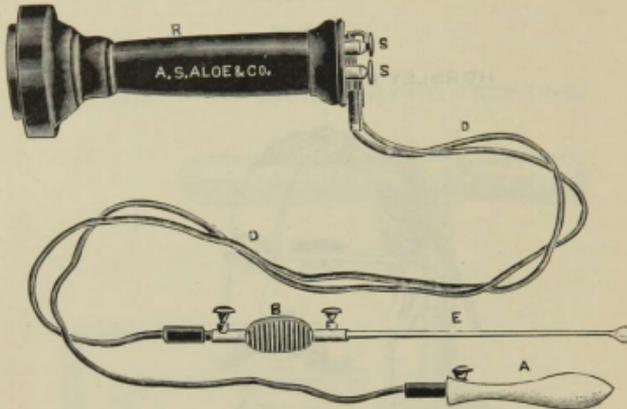


3943.

"Hence, if the cranial index is 77, instead of 75, the angle for the fissure would be 70° , instead of 69° , and if the cranial index is 73, the angle for the fissure would be 68° and so on. Based upon this, he has devised the instrument which I show you, and which differs from the ordinary fissure meters or cyrtometers, in being provided with means for rotating the arm representing the fissure of Rolando."

BULLET EXTRACTING.

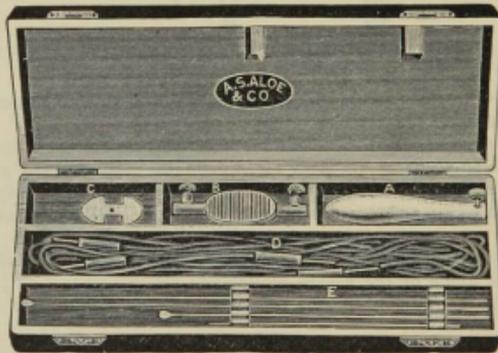
DR. GIRDNER'S TELEPHONIC BULLET PROBE.



Girdner's Telephonic Bullet Probe—Instrument Complete.

Detach the receiver or hand piece, R, from any ordinary telephone by loosening the screws in its binding posts, marked SS.

To each of these binding posts attach one end of each of the conducting wires marked D, and to the free end of one of these conducting wires attach the aluminium bulb, A, by means of the binding screw at its end.



3974.

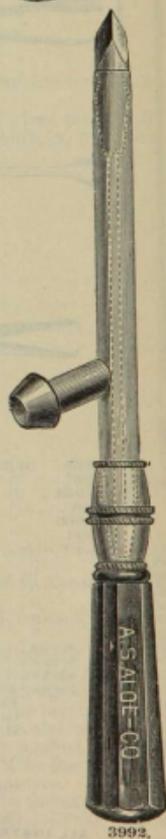
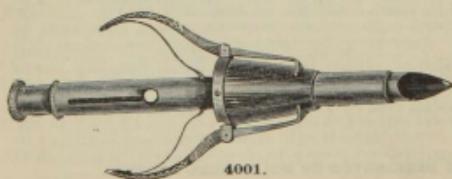
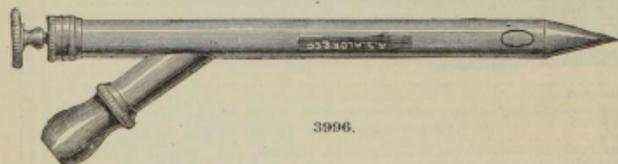
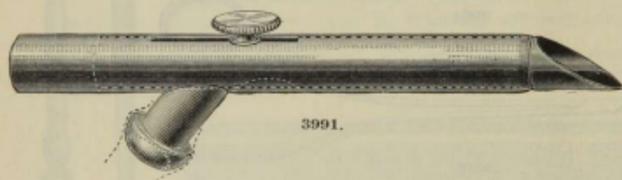
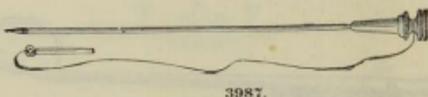
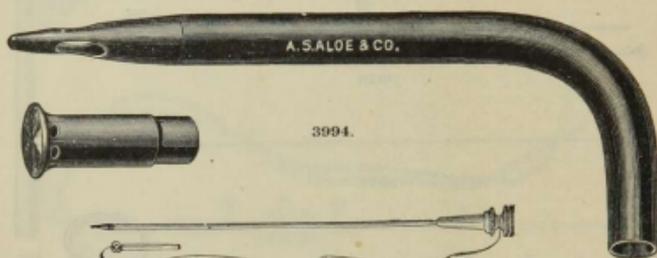
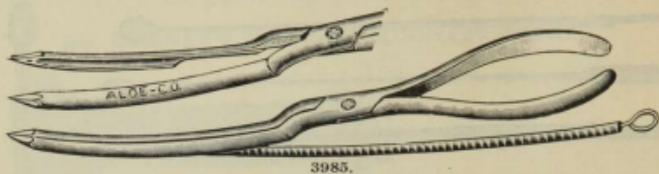
To the free end of the other wire attach the probe handle marked B, and in the other end of the probe handle insert one of the probes marked E.

Be certain to have all binding posts tight, to ensure perfect electrical contact, and the instrument is complete and ready for use as shown in first illustration.

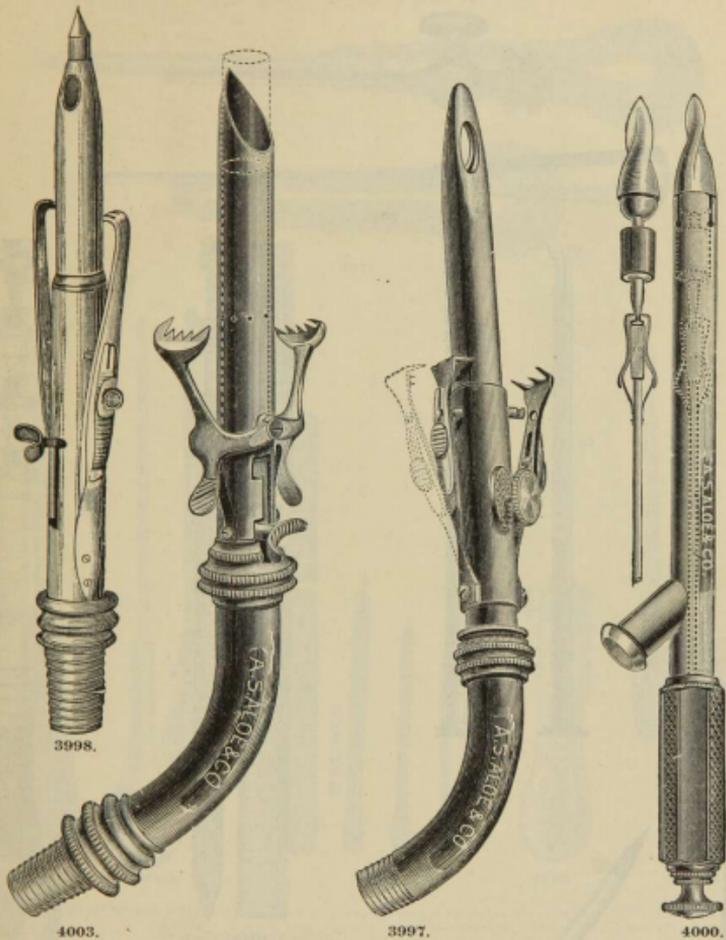
It is well to experiment with the instrument to train the ear before employing it in actual practice. To do this have an assistant place the bulb, A, in his mouth between the teeth and the cheek, *i. e.* in the buccal cavity; then have him thoroughly wet one of his hands, and firmly grasp in it a bullet or small piece of lead. The operator now places the receiver R, to his ear with one hand, and with the other he takes the handle B of the probe and probes for the lead held in the assistant's hand, and each slightest touch of the probe against the lead produces a rasping, clicking sound in the receiver held to his ear. Contact with the flesh, the nails or with a piece of bone held in the hand will produce no sound in the receiver.

In actual practice the bulb is of course placed in the patient's mouth as in the experiment, but instead of probing for lead placed in the hand, the probe is made to pass into the wound made by the bullet.

PARACENTESIS.



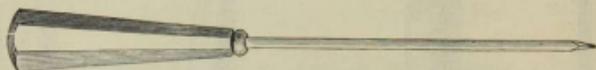
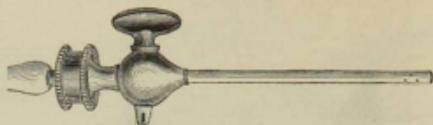
PARACENTESIS.



3982.	Trocar, Aspirating, see page 113.	
3983.	" Anasarca, Southey's, set of four.	\$ 3 75
3984.	" Catheter, Fitch's, Dome	4 50
3985.	" Dilating, Lewinthal's	4 50
3986.	" Drainage, Emmet's	3 50
3987.	" Empyema, Phelps'	1 00
3988.	" Exploring, Plated	1 50
3988.	" " Silver	2 00
3989.	" Dome, Fitch's	1 00
3991.	" Hydrocele, Graefe's	4 50
3992.	" Ovarian, Dunster's	3 50
3993.	" " Emmet's	10 00
3994.	" " Fitch's	3 50
3995.	" " Hank's	5 00
3996.	" " Koeberle's	4 50
3997.	" " Pean's	13 50
3998.	" " Tait's Latest	10 50
3999.	" " Straight	15 00
4000.	" " Thomas'	11 25
4001.	" " Warren's	7 50
4002.	" " Wells' Curved	8 25
4003.	" " " Latest	15 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

PARACENTESIS.



4022.



4015.



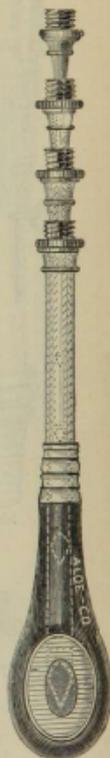
2



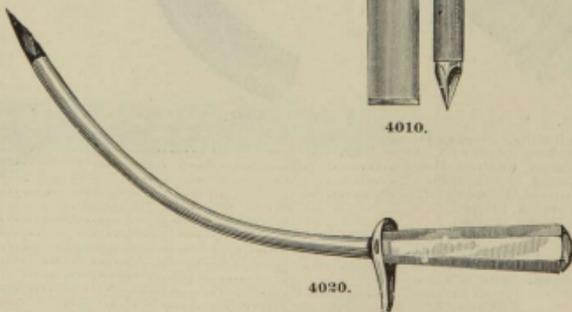
3



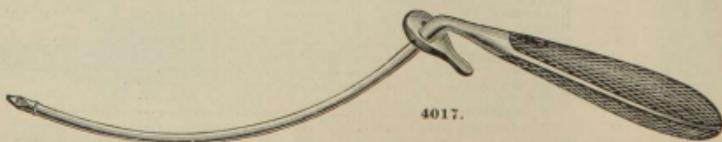
4010.



4009.



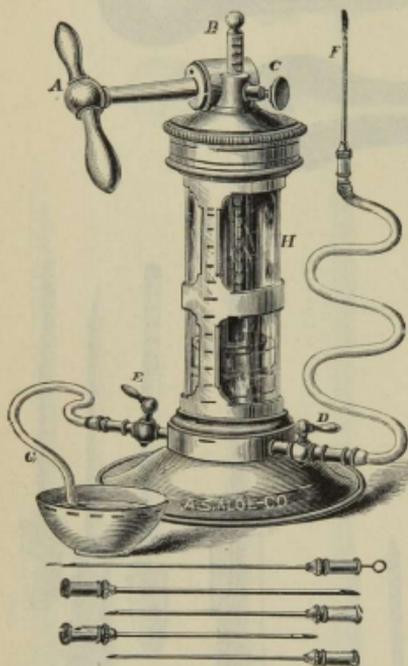
4020.



4017.

ASPIRATION.

DIEULAFOY'S ASPIRATOR.



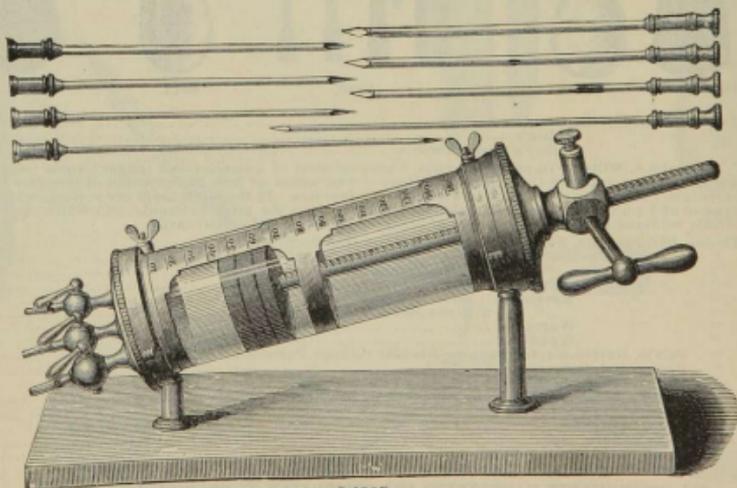
This instrument consists of a glass cylinder, H, about seven inches in height and two in diameter, with a tight-fitting piston. The cylinder is partly covered with a brass casing, nickel-plated. In front is a graduated scale, showing the amount of contained fluid in grammes.

The piston, B, is raised or lowered by turning the handle A. Near the bottom of the cylinder are two taps, with stop-cocks, D and E. To these are fitted two rubber tubes, as seen in the cut.

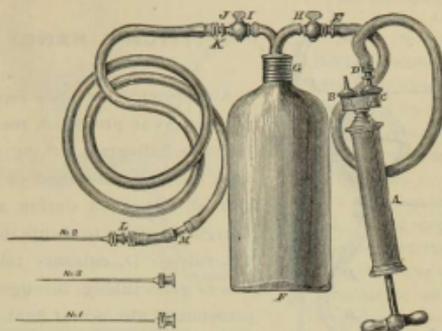
To the extremity of the one, connected with D, a capillary trocar may be attached. About four inches from this end of the tube is inserted a piece of glass tubing about three inches in length, so as to allow the fluid to be seen passing to the cylinder.

The contents of the cylinder are discharged through the rubber tube attached to the tap, E.

The capillary tubes, or trocars as they are called, represented below the instrument, are six in number, sharp-pointed, and of different sizes, the smallest being about the calibre of the tube of the hypodermic syringe, or one-third of a millimetre in diameter; the largest one-and-a-half millimetre, all of them about four inches in length.



ASPIRATION.

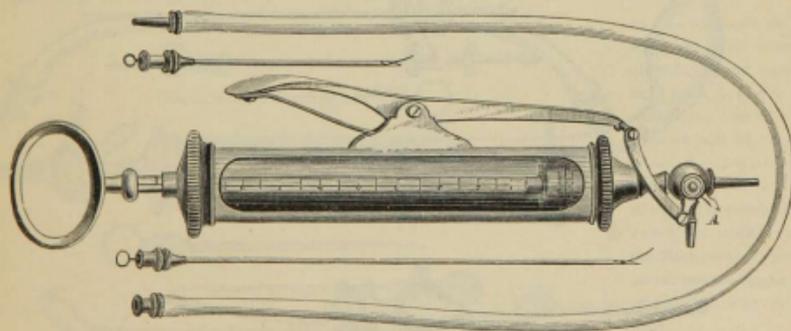


4023.

ALOE'S MODIFIED POTAIN'S ASPIRATOR.

DESCRIPTION.

A, Brass Air Pump. B, C, Chambers containing Valves. The Pump may be used at will as an Exhaust or as a Force Pump, by connecting the Coupling D with the proper Coupling B or C. Arrows embossed upon the metal of the Valve Chambers indicate at a glance the direction of the air current, and suggest the mode of connecting for either action of the Pump. D, E, Metallic Joints or Couplings, either of them fitting the Couplings B, C, or the air-cock H. F, Glass Receiver of sixteen ounces capacity, having a coarse screw-thread cast into the glass of the neck so as to screw into a corresponding thread in the brass cap G, making an airtight joint by means of rubber-packing. I, Fluid Cock. K, L, Metallic Couplings. M, Short piece of Glass Tube to give early notice if fluid has passed the needle. Nos. 1, 2 and 3, Aspirator Needles, steel, hardened and tempered at cutting point and plated with platinum.



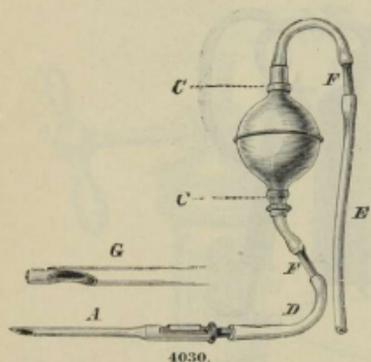
4028.

4023.	Aspirator, Aloe's Mod. Potain's.....	\$12 00
4024.	“ Collin's.....	45 00
4025.	“ Dieulafoy's Hospital, Horizontal Stand.....	45 00
4026.	“ “ Large, Upright Stand.....	37 50
4027.	“ “ Small, “ “.....	30 00
4028.	“ Emmet's.....	9 00
4029.	“ Excelsior, Combined Aspirator, Stomach Pump and Enema Syringe..	15 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

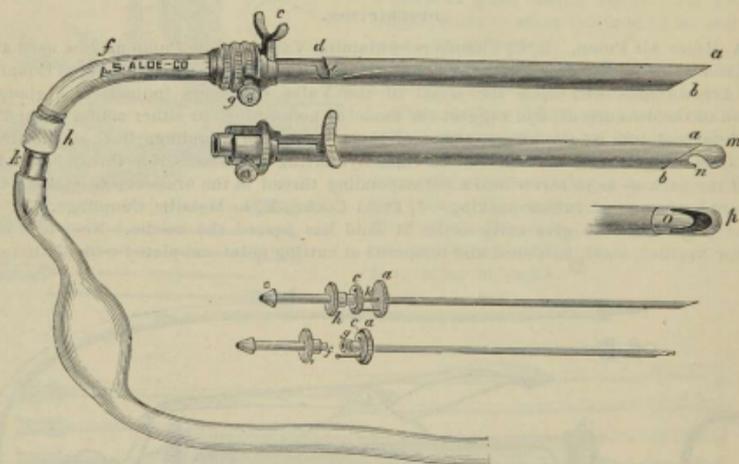
ASPIRATION.

FITCH'S HANDY ASPIRATOR.

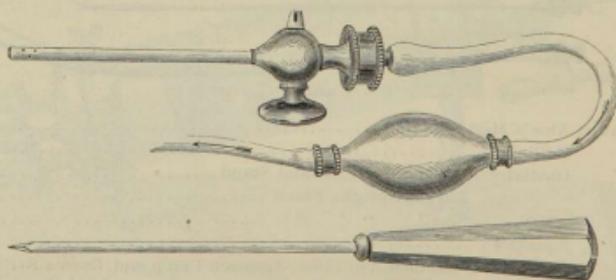


4030.

A represents the dome aspirator needle, with the cutting point projected, ready for puncture; G, a magnified diagram of the same, after insertion, with the dome advanced so as to protect the interior of the cavity during aspiration; E, bulb in upright position, to insure the best action of valves; CC, valves; D, entrance tube; E, exit tube; FF, bits of glass tubing, through which to observe the presence or absence of fluid.



4031



4032.

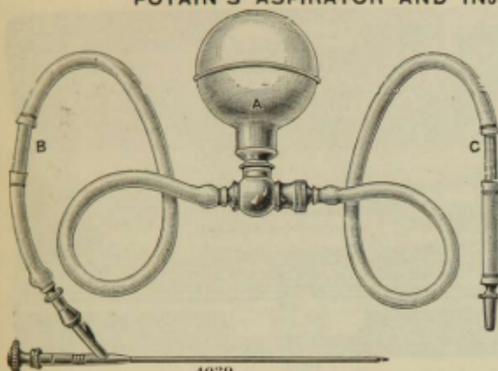
ASPIRATION.

POTAIN'S ASPIRATOR AND INJECTOR. FIG. 4041.

DIRECTIONS FOR USING AS AN ASPIRATOR.

Insert the stopper firmly into a strong bottle, (a clear glass one preferred), then attach the short elastic tube to the stop-cock, B, of the tube projecting from stopper, attach the other end of same elastic hose to the exhausting or inward flowing chamber of the pump.

Next attach one end of the longer elastic tube to the stop-cock, A, projecting from stopper, and the other end to the needle. Care should be taken that all the fittings or attachments are placed firmly into their respective places. Now close the stop-cock, A, and open the stop-cock B, and by giving

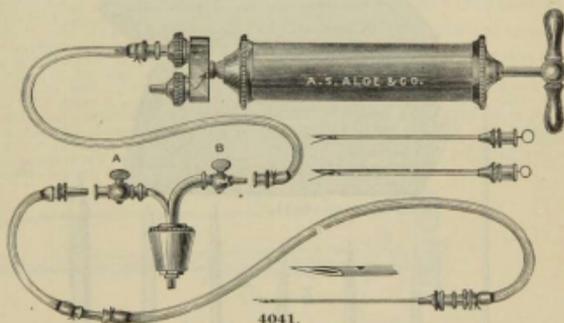


4039.

from thirty-five to fifty strokes of the pump you can produce sufficient vacuum to fill a bottle holding from one pint to a quart. After having formed the vacuum, close the stop-cock, B, and the instrument is ready for use.

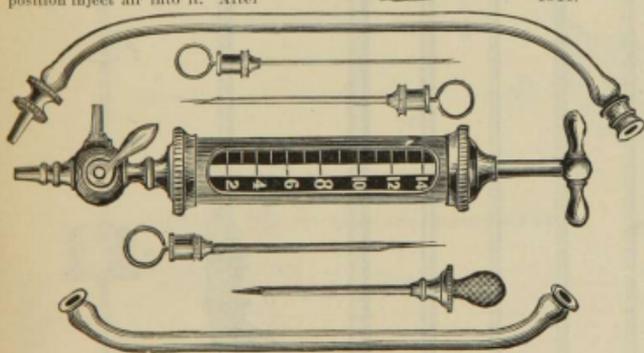
TO INJECT WITH SAME INSTRUMENT.

Connect the air-tube with the outward flow chamber of the pump as directed by the arrows; put the desired liquid in the bottle, then fasten or tie the stopper securely to the bottle, and while holding the receiver in a reverse position inject air into it. After



4041.

having obtained the desired pressure, close the air-cock, B, and open the fluid-cock, A, and with it control the flow of liquid. Care should be taken to close the fluid-cock in time to prevent the escape of air. The pump should never be worked while the fluid-cock is open, as an air bubble might pass with the out-flowing fluid.



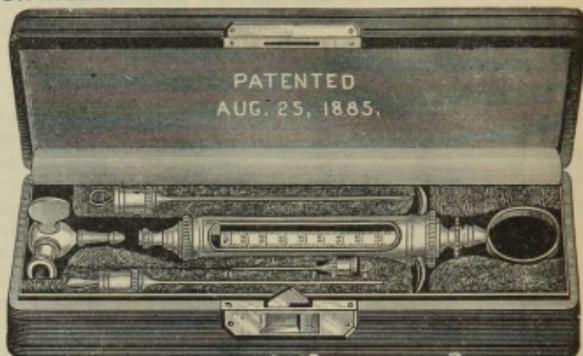
4038.

4030.	Aspirator, Fitch's Handy.....	\$ 3 75
4031.	" " Ovarian.....	10 50
4032.	" Flint's.....	3 75
4033.	" Getz's (See No. 4056, Page 113).....	5 00
4034.	" Miller's.....	5 25
4035.	" Munde's.....	10 00
4036.	" Peaslee's, Large.....	9 00
4037.	" " Medium.....	7 50
4038.	" " Small.....	3 50
4039.	" Perfect.....	21 00
4040.	" Phelps'.....	10 00
4041.	" Potain's Aspirator and Injector.....	25 25
4042.	" Steiner's.....	

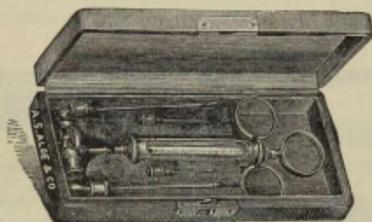
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ASPIRATION.
ASPIRATOR NEEDLES—SYRINGES—TROCARS.

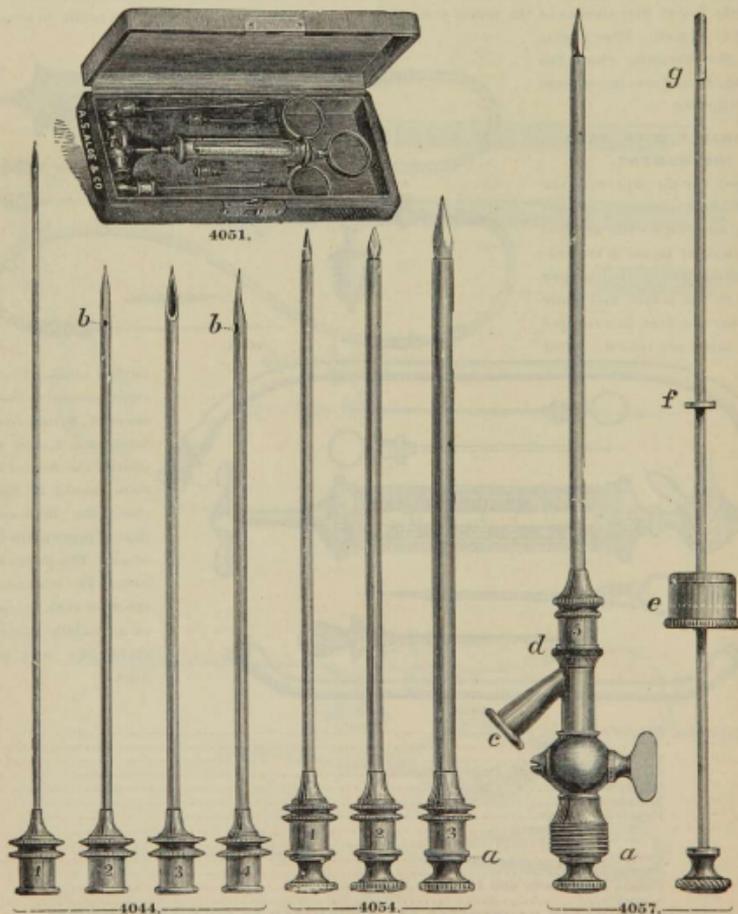
Tag's Patent Aspirator Syringe. Capacity 65 minims, with stopcock, two small hypodermic needles, one aspirating needle and one aspirating trocar, in a morocco-covered leather-lined case.



4053.



4051.



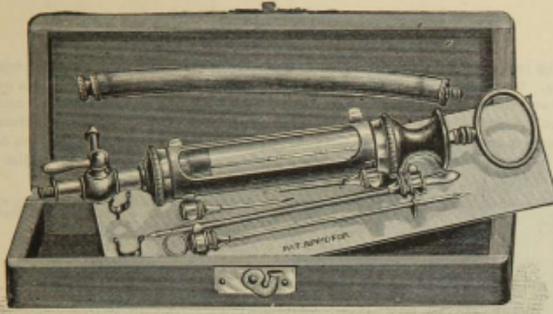
4044.

4054.

4057.

ASPIRATION.

ASPIRATOR NEEDLES—SYRINGES—TROCARS.



4052.

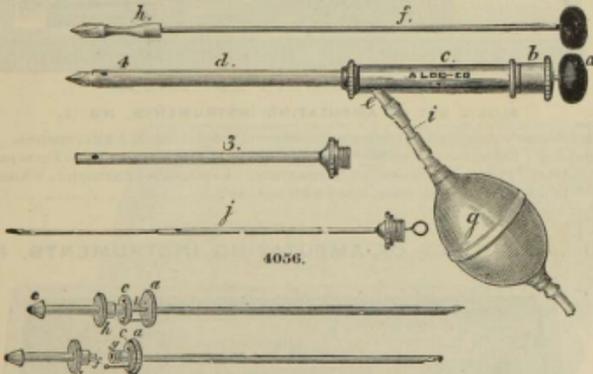
HASLAM'S ASPIRATOR SYRINGE.

This apparatus consists of a syringe holding 1½ drachms, with depression for the fingers to facilitate its use with one hand, instead of the bulky rings heretofore used. The packing is made with oil cup between, which serves to keep the leather moist and pliable.

With the syringe is furnished a stop-cock with tip for both ingress and egress of fluids, so that syringe, during aspiration, may be filled and emptied without uncoupling.

1 Aspirating Trocar, 1 Aspirating Needle and 2 Hypodermic Needles are also included, and these may any of them be used without the intervention of the stop-cock, if desired.

We have also made an addition which will be appreciated by every one who has attempted to use the small aspirators heretofore offered. We refer to a short connecting rubber tube, to connect the stop-cock with the aspirating needle. When the needle is screwed directly to the stop-cock, it is impossible to work the syringe or turn the stop-cock without considerable movement of the needle, which must be highly objectionable. This arrangement does away with any movement of the needle while in the tissues. A short rubber tube for outflow is also added. All the parts are mounted on a metal plate, which may be removed entire from the case, which is of polished wood 6¼x2¼ inches, and 1½ inches thick.



4056.

4046.

4043.	Aspirator Bottle, Graduated.....	\$ 75
4044.	" Needle, Dieulafoy's Nickel-Plated.....	75
4045.	" " " Platinum-Plated.....	1 20
4046.	" " " Fitch's.....	1 75
4047.	" " " Heuel's.....	1 00
4048.	" " " Phelps's.....	4 50
4049.	" " " Warren's.....	2 25
4050.	" " Stopcock.....	1 25
4051.	" " Syringe, Aloe's Oil Well.....	2 75
4052.	" " " Haslam's.....	6 00
4053.	" " " Tag's Patent.....	4 00
4054.	" " Trocar, Dieulafoy's Nickel-Plated.....	1 25
4055.	" " " " Platinum-Plated.....	1 50
4056.	" " " Getz's.....	5 00
4057.	" " " with Stopcock, Billroth's, Nickel-Plated.....	2 75
4058.	" " " " " Platinum-Plated.....	5 25
4059.	" " " " " Set of 3, Nickel-Plated.....	5 00
4060.	" " " " " Flint's.....	2 50
4061.	" " Valves for Potain's Aspirator and Injector.....	per pair, 50
	Stomach Pump Attachment for Aspirator and Injector. See Index.	

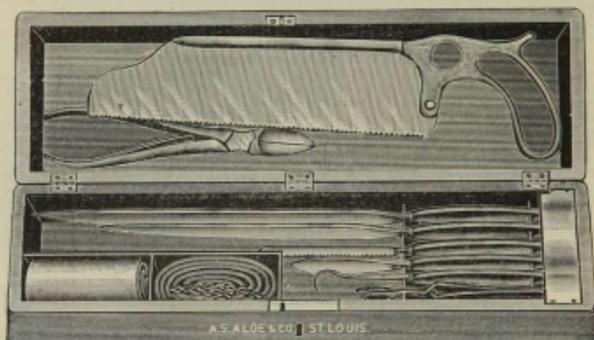
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

AMPUTATING, TREPHINING AND GENERAL OPERATING CASES.

The following cases will be furnished at the prices quoted, only when taken complete and without change of contents. They are manufactured in large quantities and priced at less than our regular catalogue rates for contents and cases when figured separately. Instruments contained in them and not wanted cannot be credited at regular prices. Customers desiring special cases should write for estimates. Those having instruments, whether in cases or not, can have them put in first-class order, add to them any new instruments wanted and have all put into a new case. The old instruments will look as well as the new ones, and considerable expense saved.

NOTE.—With this issue of our price list we discontinue the use of Pettit's Tourniquet in operating cases of our own design, substituting in its place an Esmarch's Rubber Bandage with an Esmarch's Soft Rubber Strap and Chais as shown by Fig. 3622.

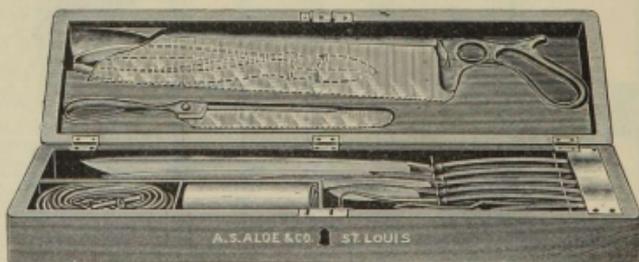
4062. ALOE'S SET OF AMPUTATING INSTRUMENTS, No. 1.



ALOE'S SET OF AMPUTATING INSTRUMENTS, NO. 1.

Containing 1 Liston's Amputating Knife, large; 1 Liston's Amputating Knife, medium; 1 Langenbeck's Metacarpal Saw; 1 Satterlee's Capital Saw, solid blade; 1 pair Liston's Bone Forceps; 1 Cross-action (Shield's) Artery Forceps; 1 Scalpel; 1 Tenaculum; 1 Esmarch's Tourniquet; 6 Needles; Silk Silver Wire, etc. In a neat Mahogany Case, lined with leather \$20 00

4063. ALOE'S SET OF AMPUTATING INSTRUMENTS, No. 2.

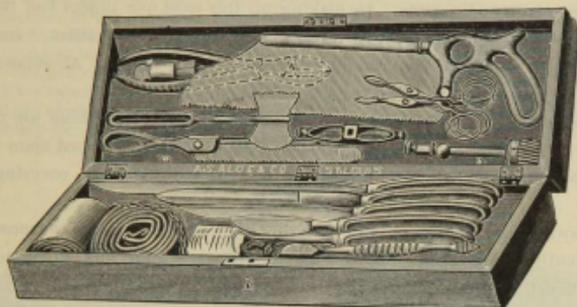


ALOE'S SET OF AMPUTATING INSTRUMENTS, NO. 2.

Containing 1 Liston's Amputating Knife, large; 1 Liston's Amputating Knife, medium; 1 Liston's Amputating Catling, large; 1 Charriere's Metacarpal Saw, lifting back; 1 Satterlee's Capital Saw, solid blade; 1 pair Liston's Bone Forceps; 1 Cross-action (Shield's) Artery Forceps; 1 Scalpel; 1 Tenaculum; 1 Spiral Tourniquet; 6 Needles; Silk, Silver Wire, etc. In a neat Mahogany Case, lined with leather \$22 00

AMPUTATING, TREPHINING AND GENERAL OPERATING CASES.

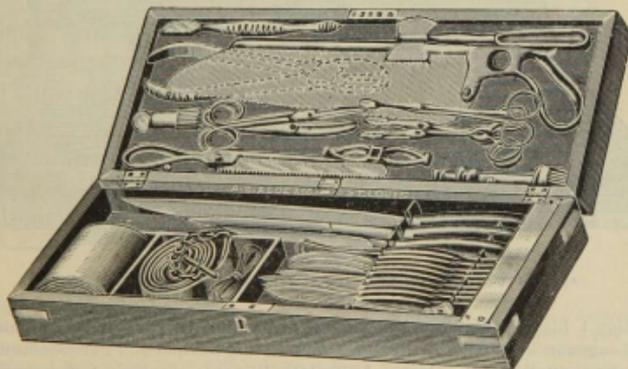
4064. ALOE'S SET OF AMPUTATING AND TREPPANNING INSTRUMENTS, No. 3.



ALOE'S SET OF AMPUTATING AND TREPPANNING INSTRUMENTS, NO. 3.

Containing 1 Liston's Long Knife, hip and thigh; 1 Liston's Medium Knife, leg and arm; 1 Liston's Medium Catling, foot and hand; 1 Tenaculum; 1 Scalpel; 1 Elevator and Raspator; 1 Brush; 1 Hey's Saw; 1 Capital Saw; 1 Metacarpal Saw, lifting back; 1 Galt's Conical Trephine and Handle; 2 pair Péan's Hemostatic Forceps; 1 Esmarch's Tourniquet; 1 pair Liston's Bone Forceps; 12 Needles; Silk, Silver Wire, etc. Mahogany Case, lined with leather..... \$ 30 00

4065. ALOE'S SET OF AMPUTATING, TREPPANNING AND GENERAL OPERATING INSTRUMENTS, No. 4.



ALOE'S SET OF AMPUTATING, TREPPANNING AND GENERAL OPERATING INSTRUMENTS, NO. 4.

Containing 1 Liston's Long Amputating Knife, hip and thigh; 1 Liston's Medium Catling, leg and arm; 1 Liston's Small Amputating Knife, hand and foot; 2 Scalpels; 1 Tenaculum; 1 Aneurism Needle; 1 Curved Sharp Point Bistoury; 1 Curved Probe Point Bistoury; 1 Finger Knife; 1 Tenotomy; 1 pair Liston's Bone Forceps, straight; 1 Satterlee's Capital Saw; 1 Metacarpal Saw, lifting back; one Hey's Saw; 1 Galt's Trephine; 1 Trephine Brush; 2 pairs Pean's Hemostatic Forceps; 1 pair Straight Vulsellum Forceps; 1 pair Straight Scissors; 1 pair Curved Scissors; 1 Elevator and Raspator; 1 Grooved Director and Tongue Tie; 1 Esmarch's Tourniquet; Needles, Silk, Silver Wire, etc. In fine Mahogany Case, leather lined..... \$ 37 50

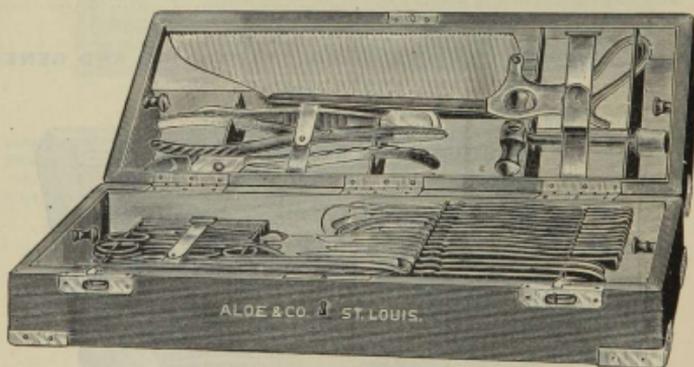
GENERAL OPERATING CASES.

4066. ALOE'S SET OF GENERAL OPERATING INSTRUMENTS, No. 5.

There are special advantages to be found in this case that are not to be found in any other. Not only is the selection of instruments good, but the arrangement is such as to make each and every instrument readily accessible. In making up this case our object has been to furnish a strictly aseptic set of instruments and with this end in view, have substituted for the customary (Galt's) Trephine, a Robert's Trephine, fully described on page 98. All scissors and forceps are also provided with Walcher's new aseptic joint.

The instruments are arranged in two German Silver trays, and these are fitted into a fine Mahogany case. These metal trays are readily removed and being placed upon the table beside the operator, the antiseptic solution used can be poured into the trays, covering the knives on the racks.

This does away with the necessity of carrying special pans for this purpose, which are at best inconveniently transported. These metal lined cases offer this advantage over the all metal ones, in that they retain their shape and are infinitely more durable. The all metal cases while very neat when new, soon become dented and twisted out of shape, and in course of time the hinges are so sprung that it is almost impossible to close and lock the case. While German Silver makes an admirable pocket case, the weight of a set of operating instruments is such as to preclude the possibility of satisfactorily casing them in it or any other of the lighter metals.



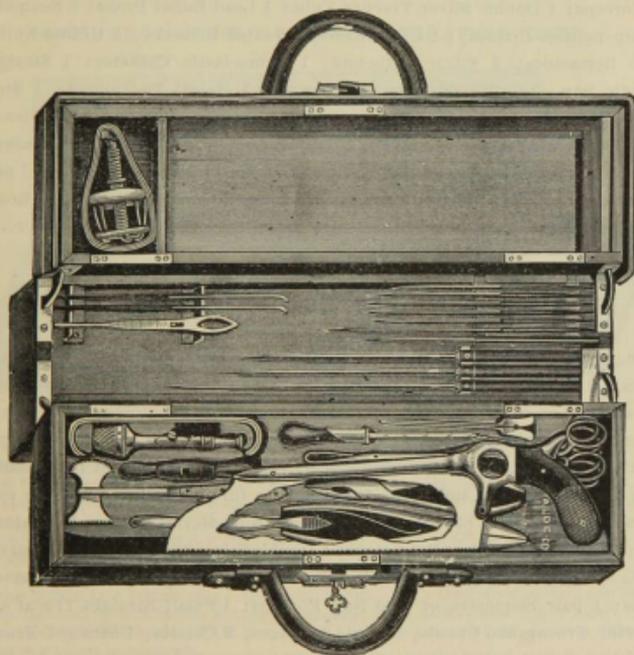
ALOE'S SET OF GENERAL OPERATING INSTRUMENTS, NO. 5.

Containing 1 Liston's Medium Amputating Knife; 1 Liston's Short Amputating Catling; 1 Langenbeck's Metacarpal Saw; 1 Amputating Scalpel and Periosteotome; 3 Scalpels; 1 Straight Bistoury, sharp; 1 Straight Bistoury, probe; 1 Tenotome; 1 Curved Bistoury, sharp; 1 Curved Bistoury, probe; 1 Cooper's Hernia Knife; 1 Aneurism Needle; 1 Tenaculum; 1 Robert's Trephine; 1 Liston's Straight Bone Cutting Forceps; 1 Ferguson's Sequester Forceps; 1 Elevator and Raspatory; 1 Satterlee's Amputating Saw; 1 Esmarch's Tourniquet; 1 Esmarch's Artery Torsion Forceps; 1 Grooved Director and Tongue Tie; 1 Straight Scissors; 1 Curved Scissors; 2 Péans Hemostatic Forceps; 1 Tait's Hemostatic Forceps; 1 Outton's Hemostatic Forceps; 1 Set Hamilton's Probes. Fine Mahogany case, removable metal trays, with name plate, lock and key; corners bound with German Silver, nickel-plated..... \$ 60 00

GENERAL OPERATING CASES.

4067. ALOE'S EMERGENCY OPERATING AND DRESSING CASE, No. 6.

In presenting to the profession our New Emergency Operating and Dressing Case, we have met, and we think, overcome some of the objections found with all those in use. The accompanying sketch gives a faithful representation of the case opened, and conveys a much better idea of it than any lengthy description could give. It is 17 inches long, 4½ inches wide, and 6½ inches high when closed. It is covered with fine black leather, has slide bolt catches, and lock and key; solid leather covered flaps protect both instruments and dressings, and the case is lined throughout with solid leather. When in the case the knives are always in one position and can never be thrown upon their edges. The case is arranged so compactly, that, while not exceeding the ordinary size, still a large space, as shown in cut, is saved for dressings.



1 Amputating Saw; 1 Amputating Knife, long; 1 Amputating Knife, medium; 1 Amputating Catling, medium; 1 Amputating Scalpel; 1 Bone Gouge; 1 pair Bone Forceps, cutting; 1 pair bone Forceps, sequestrum; 1 Bullet Probe; 1 Galt's Trepine; 1 Hey's Saw; 1 Trepine Elevator; 1 pair Parker's Retractors; 1 Metacarpal Saw; 1 Fine Scalpel; 4 fine Bistouries; 1 pair Bullet Forceps; 1 Hydrocele Trocar; 1 Director and Tongue-Tie; 1 Aneurism Needle, with either hard rubber handled or all steel instruments; 1 fine Tenaculum; 1 pair Scissors; 1 pair Péan's Hemostatic Forceps; 1 pair fine Artery Forceps; 1 pair Bulldog Artery and Needle Forceps, combined; 1 Spiral Tourniquet; ½ yard Oiled Silk; 3 yards Gauze; ¼ yard Gutta Percha Tissue; Silver and Silk Suture Needles; Harelip Pins; 8 Roller Bandages; 1 Tin of Plasters \$55 00

NOTE—An Esmarch's Bandage for bloodless operations may be substituted for the Spiral Tourniquet if desired.

Our friends in the profession will readily see the advantage offered in having in one case everything they are likely to need, of having a case easily carried, aseptic, strong and durable, and not readily marred as are the polished woods in common use.

GENERAL OPERATING CASES.

4068. BLACKBURN'S GENERAL OPERATING SET.

Containing 1 Liston's Long Knife, handle to unscrew; 1 Liston's Medium Knife; 1 Catling; 1 Straight Finger Knife; 1 Capital Saw; 1 Aneurism Needle; 1 Tenaculum; 1 Narrow Finger Saw; 1 Lead Mallet; 1 Lithotomy Staff; 1 Chisel; 1 Gouge; 1 Rongeur, with spring; 1 pair Liston's Bone Forceps; 1 Elevator and Raspator; 1 Sequestrum Forceps; 1 Ferguson's Lion Jaw Bone-Holding Forceps; 1 American Bullet Forceps; 1 Universal Forceps; 1 Double Silver Trachea Tube; 1 Lead Bullet Probe; 2 Scalpels; 1 Curved Sharp-pointed Bistoury; 1 Curved Probe-Pointed Bistoury; 1 Hernia Knife; 2 Blackman's Retractors; 2 Silver Catheters; 1 Gum-elastic Catheter; 1 Straight Trocar; 1 Chain Saw; 1 Galt's Trepine and Handle; 1 Spiral Tourniquet; 1 Steel Director; 2 Silver Probes; 1 Eye Needle and Scoop, on one handle; 1 pair Strabismus Forceps; 1 pair Dressing Scissors; 1 pair Dressing Forceps; 1 Wire Eye Speculum; 1 Double-current Catheter, silver; 1 Nélaton's Probe; 1 Hard Rubber Oral Screw; 1 pair Slide-catch Artery Forceps; Needles, Silk, Plastic Pins, Silver Wire, etc. In Rosewood Case, brass-bound, lined with leather, with patent leather water-proof cover.... \$102 50

4069. BUCK'S GENERAL OPERATING SET.

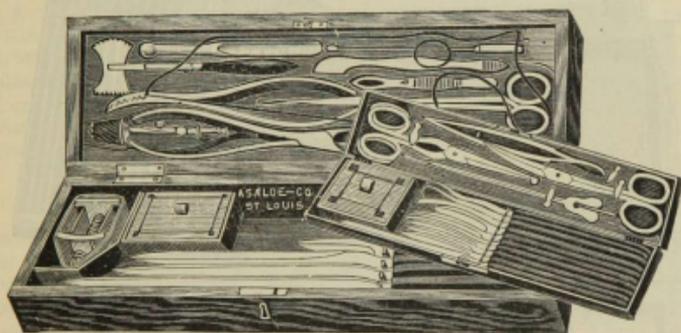
Containing 1 Liston's Long Knife, hip and thigh; 1 Liston's Medium Knife, leg and arm; 1 Metacarpal Knife, large; 1 Straight Bistoury; 1 Curved Bistoury, sharp-pointed; 1 Curved Bistoury, probe-pointed; 1 Hernia Bistoury; 1 Tenotome; 4 Scalpels, assorted sizes; 1 Tenaculum; 1 pair Crampton's Artery Needles; 1 Double-pronged Hook; 1 Beer's Cataract Knife; 1 Desmarre's Scarifying Knife; 1 Straight Eye Needle; 1 Curved Eye Needle; 1 Gouge and Spud, for removing foreign bodies from the eye; 1 Folding Probang, with silver bucket; 1 Long Bullet Probe, German silver; 1 Nélaton's Bullet Probe; 1 pair German Silver Retractors; 1 Double Silver Trachea Tube; 1 Curved Rongeur, with spring; 1 Ferguson's Bone-Holding Forceps, lion jaw; one pair Liston's Bone Forceps; 1 pair Sequestra or Toe Nail Forceps; 1 Small Straight Trocar and Canula; 1 Rectal Trocar and Canula, curved; 2 Gouges; 2 Chisels; 1 Straight Trocar and Canula, large size; 1 pair Lithotomy Forceps; 1 Silver Ear Speculum; 1 Tourniquet; 4 Silver Catheters, Nos. 3, 6, 9 and 12; 1 American Bullet Forceps; 1 Steel Director; 1 pair Coxeter's Forceps; 2 Vulsellum Forceps; 1 pair Eye Scissors, curved on the flat; 1 pair Heavy Scissors, angular curve; 1 Lithotomy Bistoury; 1 Wire Ecraseur; 1 pair Spring Catch Artery Forceps, fenestrated; 1 pair Buck's Throat Forceps; 1 pair Polypus Forceps; 1 pair Strabismus Forceps; 1 Buck's Hernia Director; 1 Capital Saw; 1 Chain Saw, best; 1 Trepine and Handle; 1 Metacarpal Saw, movable back; 1 Finger Saw, narrow blade; 3 Lithotomy Staffs; 3 Steel Bougies; 1 Symes' Staff; 1 Buck's Sponge Holder; 1 German Silver Eye Speculum; 1 Oedema Glottis instrument; 2 coils Suture Wire and 4 coils Iron Wire; 3 Silver Probes; 6 Serrefines; Needles, Silk and Plastic Pins. Mahogany or Rosewood Case, brass-bound, good French lock, lined with leather, with patent leather water-proof cover..... \$152 50

GENERAL OPERATING CASES.

4070. DETMOLD'S GENERAL OPERATING SET.

Containing 1 Finger Saw, narrow blade; 1 American Bullet Forceps; 1 pair Polypus Forceps; 1 Steel Director; 1 Elevator and Raspatory, or Lenticular Knife; 2 Probes, silver; 1 Acupressure Needle; 1 Trepanning Brush; 1 Bullet Probe, lead; 1 Capital Saw; 1 pair Dressing Scissors; 1 Small Hone; 1 Long Amputating Knife, handle to unscrew; 1 pair Parker's Retractors; 1 Galt's Trepine and Handle; 1 pair Liston's Bone Forceps; 1 pair Artery Forceps, spring catch, fenestrated; 2 Serrefines, steel, plated; 2 Catheters, silver, Nos. 5 and 9; 1 Bullet Probe, whalebone; 1 Catling, long; 1 Catling, small; 1 Trepanning Scalpel; 1 Finger Knife, sharp-pointed; 1 Curved Bistoury, sharp-pointed; 1 Curved Bistoury, probe-pointed; 1 Hernia Knife; 3 Scalpels, assorted; 1 Tenotome; 1 Tenaeculum; 1 Aneurism Needle; 1 Tourniquet; 12 Needles; Silk, Wire and Plastic Pins. Rosewood case, lined with leather, patent leather waterproof cover \$ 56 00

4071. LEONARD'S GENERAL OPERATING CASE.



Containing 1 Liston's Long Amputating Knife; 1 Liston's Medium Amputating Knife; 1 Liston's Medium Catling; 1 Amputating Scalpel; 1 Petit's Spiral Tourniquet (Esmarch's substituted if desired); 1 Galt's Conical Trepine; 1 Bone-Cutting Forceps, Double Concave, Leonard's; 1 pair American Bullet Forceps; 1 Trepine Elevator and Raspatory; 1 Hey's Saw; 1 Nélaton's Bullet Probe; 1 Fenestrated Artery Forceps; 1 Steel Round-head Chisel; 1 Sequestrum Forceps; 1 Amputating Saw. The minor instruments are fitted into a neat, light, leather-covered and leather-lined case that can be removed from the case and carried separately if desired. Size of case, 8¼x2x¾. Minor case contains: 1 Metacarpal Saw; 3 Scalpels; 1 Curved Sharp-pointed Bistoury; 1 Curved Probe-pointed Bistoury; 1 Finger Knife; 1 Hernia Bistoury; 1 Tenaeculum; 1 Aneurism Needle; 1 pair Curved Scissors; 1 pair Straight Scissors; 1 Allis Haemostatic and Needle Forceps, combined; 1 Thumb Forceps; 1 pair Silver Probes; 1 Director. All enclosed in Mahogany Case, lined with leather throughout. Price, with either hard rubber handled or all steel instruments..... \$ 45 00

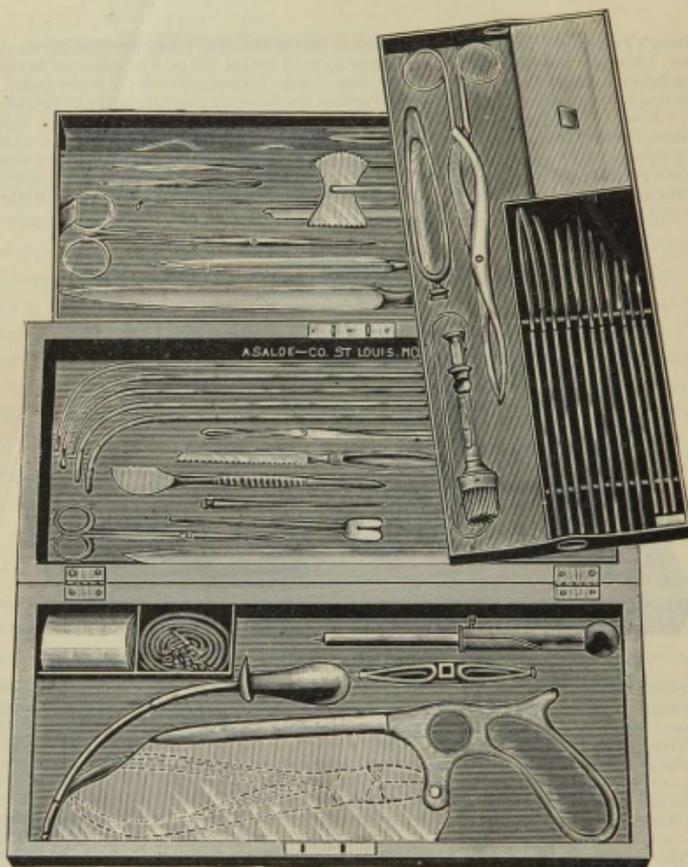
Cut shows case with knives having hard rubber handles. Unless specially ordered with hard rubber handles we shall always send "all steel" instruments, as we consider them far preferable to those having hard rubber handles.

4072. MOTT'S GENERAL OPERATING SET.

Containing 1 Mott's Knife, large; 1 Mott's Knife, medium; 1 Small Catling; 1 Capital Saw; 1 Metacarpal Saw; 1 Tourniquet; 1 Tenaeculum; 1 pair Artery Forceps, plain; 1 pair Artery Forceps, spring catch, plain; 1 American Bullet Forceps; 1 Liston's Bone Forceps; 1 Galt's Trepine and Handle; 1 Trepanning Elevator and Raspatory; 1 Tenotome; 1 Curved Bistoury, sharp-pointed, 1 Curved Bistoury, probe-pointed; 1 Steel Director; 2 Silver Probes; 1 pair Polypus Forceps; 1 pair Scissors, straight; 1 pair Scissors, angular curve; 2 Mott's Retractors; 1 Finger Knife; 3 Scalpels; 1 Double Hook; 1 Hey's Saw; 1 Trocar and Canula; 12 Needles; Silk, Wire and Plastic Pins. Rosewood Case, lined with leather..... \$ 55 00

GENERAL OPERATING CASES.

4073. PARKER'S GENERAL OPERATING SET.



Containing 1 Liston's Amputating Knife, screw handle; 1 Liston's Amputating Knife, medium size; 1 Small Catling; 1 Capital Saw; 1 Langenbeck's Metacarpal Saw; 1 Wire Eye Speculum; 1 Hey's Skull Saw; 1 Trepanning Elevator and Raspatory; 1 Galt's Trepine and Handle; 1 Finger Knife; 1 Curved, Probe-pointed Bistoury; 1 Sharp-pointed Bistoury; 1 Cooper's Hernia Knife; 3 Scalpels; 1 Beer's Cataract Knife; 1 Parker's Lachrymal Needle; 1 Exploring Trocar; 1 Director, steel; 1 pair Silver Probes; 1 American Bullet Forceps; 1 Tenotome; 1 pair Parker's Retractors; 1 Small Trocar, straight; 1 Rectal Trocar, curved; 1 pair Artery Forceps, plain; 1 pair Polypus Forceps; 1 Steel Sound; 2 Lithotomy Staffs; 1 Lithotomy Bistoury; 1 pair Lithotomy Forceps; 1 pair Liston's Bone Forceps; 1 pair Eye Scissors, curved on the flat; 2 Silver Catheters; 1 Spiral Tourniquet; 1 Eye Needle, curved; 1 set Parker's Aneurism Needles; 1 pair Strabismus Forceps; 1 pair Artery Forceps, spring-catch, plain; 12 Needles; Silk, Silver Wire, Plastic Pins, etc. In a fine Rosewood Case, brass-bound, lined with leather and patent leather waterproof cover.....

\$72 00

GENERAL OPERATING CASES.

4074. SEYMOUR'S GENERAL OPERATING SET.

1 pair American Bullet Forceps; 1 pair Polypus Forceps; 1 Trepanning Elevator and Raspatory; 1 Exploring Trocar; 1 pair Artery Forceps, plain; 1 Steel Director; 1 Metacarpal Saw; 1 Bow Saw, 2 blades; 1 Hey's Saw; 1 Trepanning Brush; 2 Blackman's Retractors; 1 Double Trachea Tube, silver; 3 Skeins Silk; 12 Needles; 6 Double Bougies, s. s., Nos. 1 to 12, nickel-plated; 3 Silver Catheters, Nos. 3, 6, 9; 3 Gum Elastic Catheters, best English; 1 Lithotomy Staff; 1 pair Harelip Scissors, straight, heavy; 1 pair Scissors, curved on the flat; 1 set Mott's Artery Needles; 4 Serrefines; 2 coils Silver Wire, Plastic Pins; 1 Liston's Knife, long; 1 Long Catling; 1 Screw Handle, for both; 1 Liston's Knife, medium; 1 Catling, narrow; 1 Finger Knife, long, narrow; 1 Cartilage Knife, heavy, ebony handle; 1 Tenaculum; 1 pair Artery Forceps; 1 pair Artery Forceps, self-closing, bulldog; 1 Chain Saw, best; 2 Silver Probes; 1 Bullet Probe, lead; 1 Bullet Probe, whalebone; 1 Nélaton's Bullet Probe; 3 Scalpels, assorted; 1 Curved Bistoury, sharp-pointed; 1 Curved Bistoury, probe-pointed; 1 Hernia Knife; 1 Spud and Gouge, for removing foreign bodies from the eye; 1 pair Gullet Forceps; 1 Galt's Trepphine; 1 Bone Trepphine; 1 Trepphine Handle; 1 Trocar and Canula, straight; 1 Rectal Trocar and Canula; 1 Lead Mallet; 1 Chisel; 1 Gouge; 1 set Brainard's Bone Drills; 3 Ear Specula, silver; 1 pair Liston's Bone Forceps, with spring, extra large; 1 pair Sequestrum Forceps, with spring; 1 Rongeur, with spring; 1 pair Satterlee's Bone Forceps, small; 1 Tourniquet; 1 Horn Jaw Screw; 1 Rosewood Case, lined with leather; 1 Patent-leather Water-proof Cover..... \$132 50

4075. WOODS' GENERAL OPERATING SET, No. 6.

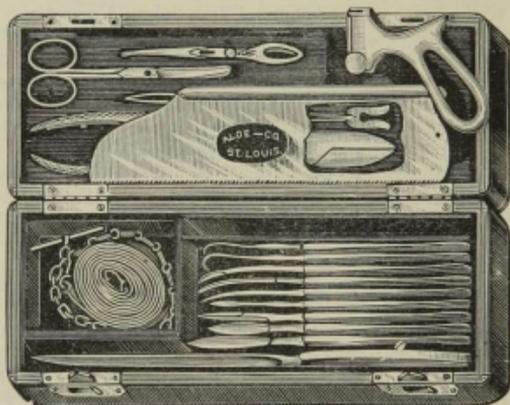
Containing 1 pair Silver Probes; 2 Steel Sounds; 1 Long Amputating Knife; 1 Circular Knife; 1 Catling; 1 Trepanning Scalpel, with Raspatory; 1 Spiral Tourniquet; 1 Trepanning Brush; 1 Metacarpal Saw; 1 American Bullet Forceps; 1 pair Straight Dressing Scissors; 1 pair Curved Eye Scissors; 1 Hey's Saw; 1 Silver-plated Catheter; 1 Gum-elastic Catheter; 2 Gum-elastic Bougies; 1 Capital Saw; 1 pair Liston's Bone Forceps; 1 Galt's Trepphine and Handle; 1 pair Spring-catch Artery Forceps, plain; 1 Trepanning Elevator; 1 Director, steel; 1 Beer's Cataract Knife; 1 Curved, Sharp-pointed Bistoury; 1 Curved, Probe-pointed Bistoury; 2 Scalpels; 1 Plain Aneurism Needle; 1 Tenaculum; 1 Strabismus Blunt Hook; 1 Straight Eye Needle; 1 Curved Eye Forceps, Strabismus; 12 Needles; Silk, Wire and Plastic Pins. Fine Rosewood, Brass-bound Case, lined with leather..... \$56 00

4076. WRIGHT'S GENERAL OPERATING SET.

In Patent Folding Rosewood Case, compact, lined with leather. 1 Amputating Knife, medium; 1 Satterlee's Amputating Saw; 1 Bistoury, sharp point; 1 Bistoury, probe point; 1 Straight Finger Knife; 1 Cooper's Hernia Bistoury; 2 Scalpels, large and small; 2 Tenotomes, straight, sharp and blunt-point; 1 Tenaculum; 1 set Mott's Aneurism Needles; 1 Straight Scissors, large; 1 Coxeter's Thumb Forceps; 1 Fenestrated Artery Forceps, spring-catch; 3 Wright's Artery Compressing Forceps; 1 Grooved Director and Tongue-tie; 1 Galt's Trepphine; 1 Wright's Bone Trepphine; 1 Curved Rongeur; 1 Elevator and Raspatory; 2 Silver Probes; 1 Liston's Bone Forceps; 1 Ferguson's Sequestrum Forceps; 1 Detmold's Metacarpal Saw, narrow blade; 1 American Bullet Forceps; 1 nest (4) Trocars, silver canulas; 1 Double-end Bone Scoop, all metal; 1 Little's Bone Chisel, to use with hand or mallet; 1 Little's Bone Gouge, to use with hand or mallet; 2 Szymanowsky's Bone Gouges; 1 set Brainard's Drills, short; 1 Prostatic Catheter, No. 10, Plated; 1 Tourniquet; 2 Hard Rubber Trachea Tubes; 1 Curved Polypus Forceps; 1 pair Parker's Retractors; 1 Russian Needle Forceps, small; 1 Vulsellum Forceps, long; 1 Henry's Circumcision Clamp; 1 Levis' Hernia Director; Needles, Silk, Silver Wire, Plastic Pins, etc..... \$85 00

COMPACT OPERATING CASES.

4077. ALOE'S (IMPROVED ASEPTIC PARTRIGE'S) COMPACT OPERATING CASE, No. 10.



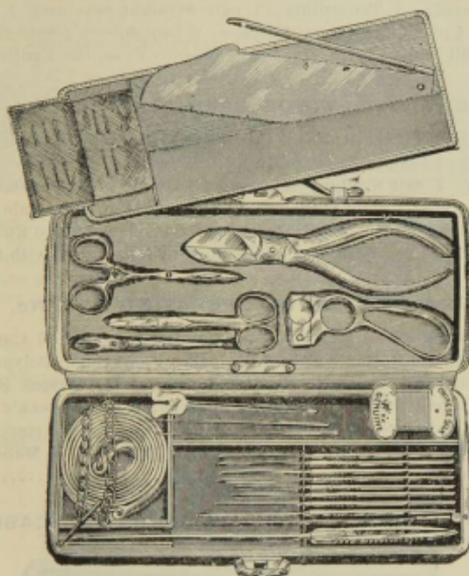
Aloe's Compact Operating Case contains 1 Satterlee's Amputating Saw, adjustable handle; 1 Liston's Amputating Knife; 2 Scalpels; 1 Finger Knife; 1 Tenotome; 1 Curved Sharp Bistoury; 1 Cooper's Hernia Knife; 1 Tenaculum; 1 pair Curved Scissors; 1 Stohman's Artery and Needle Forceps; 1 pair Péan's Haemostatic Forceps; 1 Liston's Bone Forceps; 1 Esmarch's S. R. Strap and Chain; 1 Director and Aneurism Needle; 1 pair Probes; Needles, Silk, Silver Wire, etc. The above instruments are put up in a fine leather case, with Nickel trimmings, lined with leather, and has extra space for Trephine and Elevator, if desired. With the sixteen instruments contained in this case any ordinary operation may be performed. Size, 11 inches long, 4 inches wide, 2 inches high. Price..... \$ 20 00

4078. ALOE'S COMPACT OPERATING CASE, No. 11.

Contents same as above, with the addition of one Galt's Trephine and one Trephining Elevator and Raspatory. Price..... \$ 23 50

COMPACT OPERATING CASES.

4079. ALOE'S COMPACT OPERATING CASE, No. 15.



Contents as follows: 1 Amputating Blade, 6 inches, 1 Catling Blade, 6 inches, fitting one interchangeable aseptic handle; 1 Satterlee's Capital Saw, lifting back; 1 Stohlman's Combined Needle and Artery Forceps; 1 Liston's Bone Forceps, slightly curved; 1 Scalpel, large; 1 Scalpel, medium; 1 Finger Knife; 1 Tenotome; 1 pair Scissors, curved on flat; 1 pair Scissors, straight; 1 Director and Tongue Tie; 1 Esmarch S. R. Strap and Chain; 1 Sharp Curved Bistoury; 1 Blunt Curved Bistoury; 1 Tenaculum; 1 Finger Saw; 1 Tait's Hæmostatic Forceps; 1 Péan's Hæmostatic Forceps; 1 pair Probes; Needles, Silk, Silver Wire, etc. Case covered with leather, made with handle, convenient and compact. The instruments are of the latest improved separable patterns, thoroughly aseptic and strictly first quality.

Dimensions: 11 inches long, $4\frac{1}{2}$ inches wide, $2\frac{1}{2}$ inches deep.

Price..... \$ 30 00

4080. ALOE'S COMPACT OPERATING CASE, No. 16.

Contents same as above with the addition of 1 Galt's Trepine and 1 Raspatory and Elevator. Price..... \$ 33 50

MINOR OPERATING CASES.

4081. ALOE'S MINOR OPERATING SET, No. 1.

Containing 1 Straight Finger Knife; 1 Curved Probe-pointed Bistoury; 1 Curved Sharp-pointed Bistoury; 1 Cooper's Hernia Knife; 3 Scalpels, assorted sizes; 1 Tenotome; 1 Aneurism Needle; 1 Tenaculum; 1 pair Straight Scissors; 2 pair Péan's Hæmostatic Forceps; 1 pair Plain Artery Forceps; 2 Langenbeck's Serrefines; 1 Steel Director; 6 Needles, Silk, Silver Wire, etc. In Mahogany Case, lined with leather. . . . \$ 16 50

4082. ALOE'S MINOR OPERATING SET, No. 2.

Containing 1 Straight Finger Knife; 1 Curved Probe-pointed Bistoury; 1 Curved Sharp-pointed Bistoury; 1 Cooper's Hernia Knife; 3 Scalpels; 1 Tenotome; 1 Aneurism Needle; 1 Tenaculum; 1 pair Straight Scissors; 2 pair Péan's Hæmostatic Forceps; 1 pair Plain Artery Forceps; 1 Steel Director; 1 Compound Catheter, male and female; 1 pair Spring-catch Artery Forceps, fenestrated; 2 Silver Probes; 1 Hard Rubber Caustic Holder; 6 Needles, Silk, Silver Wire, etc. In Mahogany Case, lined with leather. . . . 20 00

4083. ALOE'S MINOR OPERATING SET, No. 3.

Containing 1 Double Hook; 1 Curved Sharp-pointed Bistoury; 1 Curved Probe-pointed Bistoury; 1 Cooper's Hernia Knife; 4 Scalpels; 1 pair Small Polypus Forceps; 1 Tenotome; 1 Tenaculum; 1 Aneurism Needle; 1 narrow Metacarpal Saw; 1 pair Plain Artery Forceps; 2 pair Péan's Hæmostatic Forceps; 3 Langenbeck's Serrefines; 1 Small Trocar; 1 pair Angular Curved Scissors; 1 pair Slide-catch Artery Forceps; 1 Steel Director; 2 Silver Probes; 6 Needles, Silk, Silver Wire. In a Mahogany Case, lined with leather 30 00

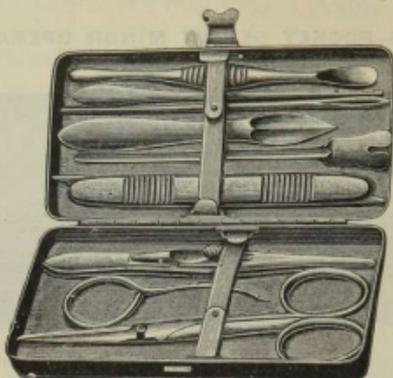
4084. LEONARD'S MINOR OPERATING CASE.



Containing 1 Metacarpal Saw; 2 Scalpels; 1 Finger Knife; 1 Curved Sharp-pointed Bistoury; 1 Curved Blunt-pointed Bistoury; 1 Hernia Bistoury; 1 Tenotomy Knife; 1 Aneurism Needle; 1 Tenaculum; 1 pair Péan's Hæmostatic Forceps; 1 pair Straight Scissors; 1 pair Curved Scissors; 1 Bone Cutting Forceps; 1 Fenestrated Artery and Needle Forceps, combined; 1 Director; 1 pair Silver Probes, Needles and Silk. All fitted into leather-lined and leather-covered case, $8\frac{1}{2} \times 1\frac{1}{2}$ inside measurements. . . . 20 00

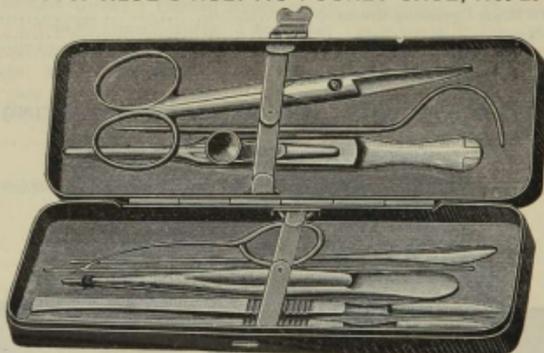
POCKET CASES.

4089. ALOE'S ASEPTIC POCKET CASE, No. 1.



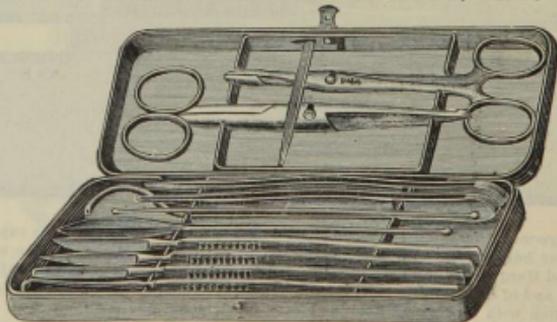
Containing 1 Aseptic Double Slide Knife, with 2 Scalpels; 1 Fricke's Artery Torsion Forceps; 1 Straight Scissors; 1 Volkmann's Double-End Curette; 1 Moij's Suture Needle; 1 Abscess Lancet; 1 pair Probes; 1 Director and Tongue Tie; 1 German Silver Case, Nickel-Plated..... \$8 00

4090. ALOE'S ASEPTIC POCKET CASE, No. 2.



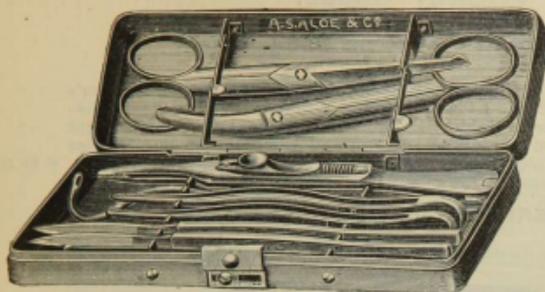
Containing 2 Dieffenbach's Scalpels; 1 Schwabe's Artery Forceps; 1 Dressing Forceps, Mouse Tooth; 1 Straight Scissors; 1 pair Probes; 1 Director and Aneurism Needle; 1 German Silver Case, Nickel-Plated, \$9 00

4091. ALOE'S ASEPTIC POCKET CASE, No. 3.



Containing 2 Dieffenbach's Scalpels; 1 Dieffenbach's Straight Probe Bistoury; 1 Dieffenbach's Tenaculum; 1 Straight Scissors; 1 Pean's Haemostatic Forceps; 1 Plain Dressing Forceps; 1 Mouse-Tooth Dressing Forceps; 1 pair Probes; 1 Director and Aneurism Needle; 1 German Silver Case, Nickel-Plated..... \$10 00

POCKET CASES.

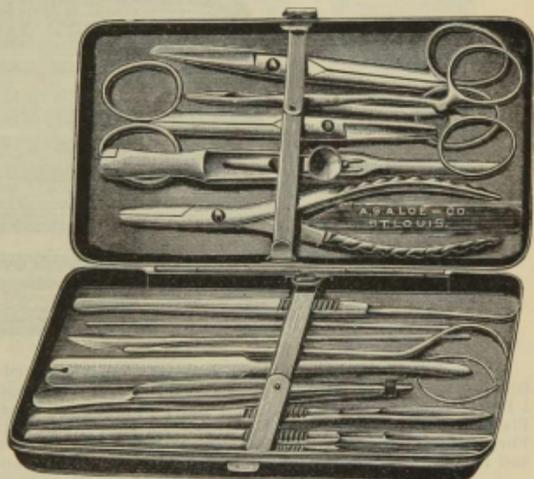


**4092. ALOE'S ASEPTIC
POCKET CASE, No. 4.**

Containing 2 Dieffenbach's Scalpels; 1 Schwabe's Artery Forceps; 1 Straight Scissors, probe-pointed; 1 Curved Scissors; 1 Plain Dressing Forceps; 1 Mouse Tooth Dressing Forceps; 1 pair Probes; 1 Director and Aneurism Needle; 1 German Silver Case, nickel-plated..\$10 50

**4093. ALOE'S ASEPTIC
POCKET CASE, No. 5.**

Containing 3 Dieffenbach's Scalpels; 1 Dieffenbach's Tenaculum; 1 Schwabe's Artery Forceps; 1 Mouse-Tooth Dressing Forceps; 1 Péan's Hæmostatic Forceps; 1 Langenbeck's Needle Holder; 1 Straight Scissors; 1 Curved Scissors; 1 Spatula, with scoop and tongue-tie; 1 Director and Aneurism Needle; 1 pair Probes; Needles and Silk; 1 German Silver Case, nickel plated.....\$13 50



**4094. ALOE'S
ASEPTIC POCKET
CASE, No. 6.**

Containing 2 Dieffenbach's Scalpels; 1 Dieffenbach's Straight Probe Bistoury; 1 Dieffenbach's Tenaculum; 1 Volkmann's Double Curette; 1 Schwabe's Artery Forceps; 1 Mouse Tooth Dressing Forceps; 1 Gotz's Suture Instrument with Needles and Silk; 1 Straight Scissors; 1 Curved Scissors; 1 Péan's Hæmostatic Forceps; 1 pair Probes; 1 Director and Aneurism Needle; 1 German Silver Case, nickel-plated.....\$18 00

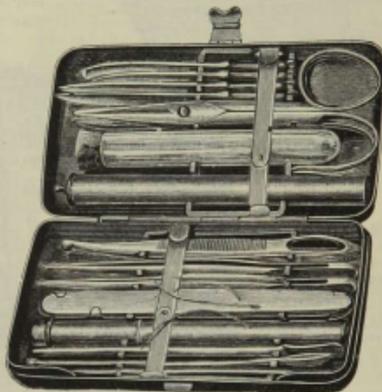


POCKET CASES.

4095. BERGMAN'S ASEPTIC POCKET CASE.

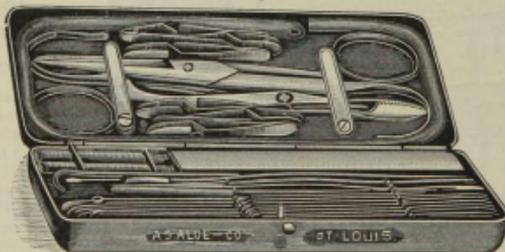
Containing 3 Dieffenbach's Scalpels; 1 Dieffenbach's Tenaculum; 1 Bellocoq's Canula; 1 Schwabe's Artery Forceps; 1 Plain Dressing Forceps; 1 Mouse Tooth Dissecting Forceps; 1 Bergman's Needle Holder; 1 Péan's Haemostatic Forceps; 1 Straight Scissors, probe-pointed; 1 Curved Scissors; 1 Director and Aneurism Needle; Needles and Silk; 1 German Silver Case, nickel-plated \$ 18 00

4096. CZERNY'S ASEPTIC POCKET CASE.



Containing 1 Scalpel, large; 1 Scalpel, small; 1 Curved Bistoury, probe; 1 Curved Bistoury, sharp, fitting into 1 Esmarch Handle; 1 Straight Scissors, with open ring; 1 Polypus and Dressing Forceps, with open ring; 1 German Silver Caustic Holder; 1 Plain Dressing Forceps; 1 Mouse Tooth Dissecting Forceps; 1 Stohlman's Artery Forceps and Needle Holder; 1 Clinical Thermometer, in case; 1 pair Probes; 1 Director and Tongue Tie; Needles and Bottle Silk Suture; 1 German Silver Case, nickel-plated, \$ 18 00

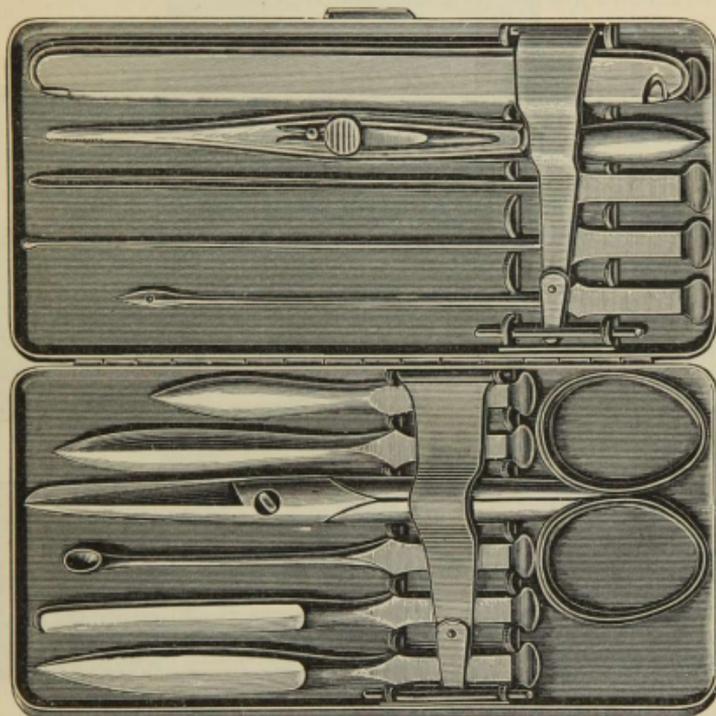
4097. DAWBARN'S ASEPTIC POCKET CASE.



Containing 6 Langenbeck's Artery Clamps (Serrefines); 1 pair Straight Scissors, French lock; 1 Needle Holder, French lock, serves also as a Dressing Forceps and Sequestrum Forceps; 1 Scalpel, narrow bladed; 1 Straight Bistoury, probe-pointed; 1 pair Two-prong Retractors; 1 Peasle's Needle (long, with handle, eye in point); 2 pairs Dissecting Forceps; 1 Metacarpal Saw; 1 Volkman's sharp Curette; 1 Grooved Director and Aneurism Needle; 2 Silver Probes (one with eye); 1 Silver Caustic Holder; assortment of Needles and a few bi-chloride tablets in small metal box; 1 Small Bottle Silk; 1 Small Bottle Catgut; 1 Soft Rubber Catheter, medium size; 1 German Silver Case, nickel-plated, $3x2\frac{1}{4}x\frac{3}{4}$ inches..... \$ 18 00

POCKET CASES.

4098. ESMARCH'S ASEPTIC POCKET CASE.



Containing 1 Esmarch's Slide Catch Artery Torsion Forceps; 1 Straight Scissors, French lock; 1 Esmarch's Set of Pocket Case Knives and Handle; Scalpel; Straight Bistoury, probe point; Straight Bistoury, sharp point; Double-edge Bistoury, sharp point; Spatula; Bone Scoop; Suture Needle; Grooved Director; Probe; 1 German Silver Case, nickel-plated..... \$12 00

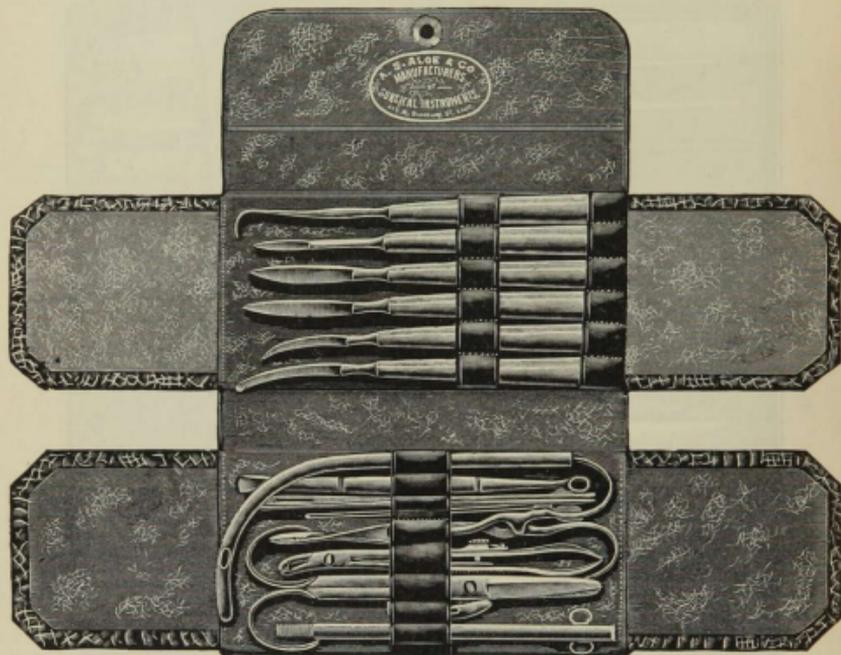
4099. WEIR'S ASEPTIC POCKET CASE.

Containing 1 Scalpel; 1 Sharp-curved Bistoury; 1 Probe-curved Bistoury; 1 Straight Scissors, French lock; 1 Needle Holder, French lock; 1 pair Plain Dressing Forceps; 1 Grooved Director and Aneurism Needle; 1 pair Probes; 1 Small Bottle Silk; 1 Small Bottle Catgut; assortment of Needles, in small compartment; 1 German Silver Case, nickel-plated..... \$18 00

POCKET CASES.

4100. ALOE'S ASEPTIC POCKET CASE, No. 10.

We would call especial attention to this, our "Leader," in Pocket Cases. The case is of the finest grain leather, stamped in imitation of Alligator, and is lined throughout with American Kid. The knives (handle and blade) are made of one piece of steel, and are therefore easily made perfectly aseptic. The Scissors and Forceps are provided with the French Lock—easily separated and cleansed.



Containing 1 Scalpel; 1 Tenotome; 1 Straight Bistoury or Finger Knife; 1 Sharp Curved Bistoury; 1 Probe Curved Bistoury; 1 Tenaculum; 1 Combined Male and Female Catheter; 1 Straight $4\frac{1}{2}$ -inch Scissors; 1 Stohman's Artery Forceps and Needle Holder; 1 Péans Hemostatic Forceps; 1 Wright's Curette and Dry Dissector; Probes, Director and Tongue Tie, Needles and Silk..... \$ 10 00

4101. ALOE'S ASEPTIC POCKET CASE, No. 11.

Same contents as No. 10, but Black Morocco Case..... \$ 10 50

4102. ALOE'S ASEPTIC STUDENT'S POCKET CASE, No. 12.

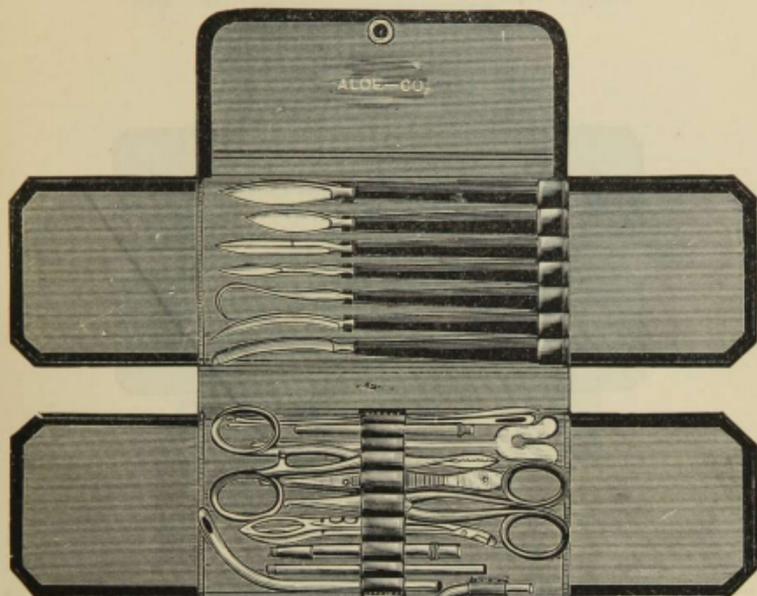
Containing 1 Scalpel; 1 Straight Bistoury, sharp point; 1 Curved Bistoury, sharp point; 1 Tenaculum; 1 pair $4\frac{1}{2}$ -inch Straight Scissors; 1 Péans Hemostatic Forceps; 1 Plain Dressing Forceps; 1 Combined Male and Female Catheter; 1 pair Probes; 1 Director and Aneurism Needle; Needles and Silk; 1 Morocco Case, leather lined..... \$ 7 50

4103. CLAPP'S ASEPTIC VEST POCKET CASE.

Containing 1 Double Slide Metal Knife, Scalpel and Sharp Curved Bistoury; 1 Péans Hemostatic Forceps; 1 4-inch Straight Scissors; 1 pair Probes; Needles and Silk; 1 Morocco Case, leather lined... \$ 6 00

POCKET CASES.

4104. EVE'S ASEPTIC POCKET CASE.



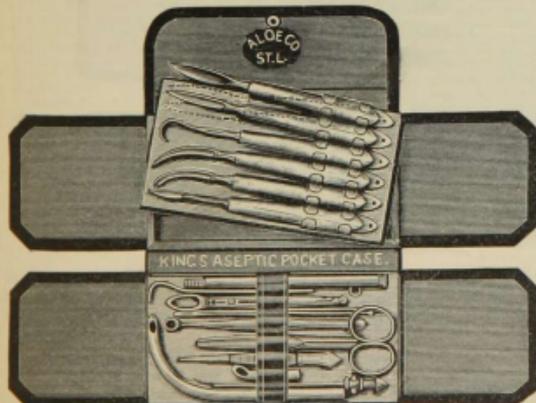
Containing 1 each Curved Sharp and Curved Blunt Bistoury; Tenaculum; Tenotome; Straight Double-Edge Bistoury; Large and Small Scalpel, either with hard rubber or metal handles; Parker's Combined Male and Female Catheter, with Caustic Holder; Stohman's Artery and Needle Forceps; Esmarch's Artery Torsion Forceps; Péan's Hemostatic Forceps; Probe-Pointed Scissors; Grooved Director and Tongue Tie; Metal Exploring Needle; 1 pair Probes; Alligator Case, leather lined. \$15 00

4105. HAYWARD'S ASEPTIC POCKET CASE.

Containing 2 Scalpels; 1 Finger Knife; 1 Sharp-Curved Bistoury; 1 Probe-Pointed Curved Bistoury; 1 Gum Lancet; 1 Tenaculum; 1 Post's Exploring Needle; 1 Metacarpal Saw, fitting into 2 Patent-Catch Hard Rubber Handles; 1 pair Gay's Open Ring Scissors; 1 pair Péan's Hemostatic Forceps; 1 Stohman's Artery and Needle Forceps; 1 set Hamilton's Probes and Director; six Needles; Suture Silk and Plastic Pins. In a neat, compact case, made of Turkey Morocco. \$15 00

4106. HELMUTH'S ASEPTIC POCKET CASE.

Price..... \$20 00

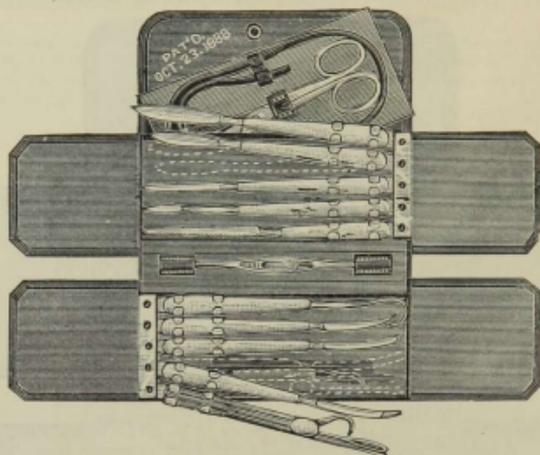


4107. KING'S ASEPTIC POCKET CASE.

Containing 1 Scalpel; 1 Curved Bistoury, sharp point; 1 Curved Bistoury, probe point; 1 Straight Bistoury, sharp point; 1 Tenotome; 1 Tenaculum, with our patent clip arranged on a metal plate which can be placed in aseptic solution with the knives held in their place; 1 pair Straight Scissors; 1 pair Péan's Hemostatic Forceps; 1 pair Thumb Forceps; 1 pair Stohman's Artery and Needle Forceps; 1 Periosteotome and Curette; 1 Male and Female Catheter; 1 Aspirating Needle; 1 Director and Aneurism Needle; 1 pair Probes; Needles and Silk, Case of Alligator, leather lined. \$15 00

POCKET CASES.

4108. LEONARD'S ASEPTIC POCKET CASE, No. 1.

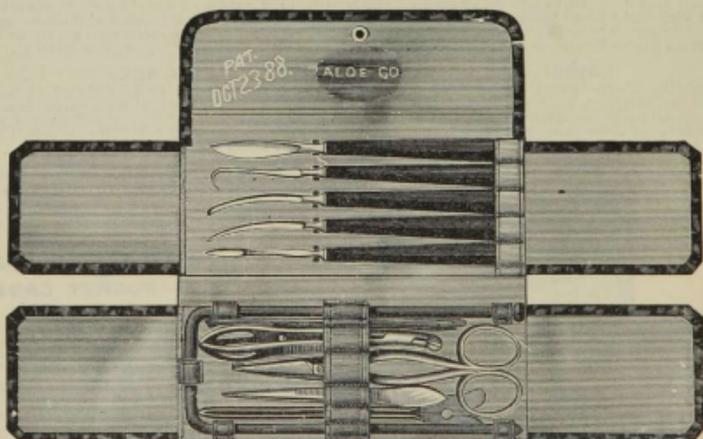


Containing 2 Scalpels; 1 Curved Sharp Bistoury; 1 Curved Probe-pointed Bistoury; 1 Leonard's Hernia and Fistula Bistoury; 1 Finger Knife; 1 Tenotome; 1 Tenaculum; 1 Metacarpal Saw; 1 Exploring Needle; 1 Parke's Thumb, Artery and Needle Forceps, combined; 1 Director and Aneurism Needle combined; 1 pair Silver Probes; 1 pair Straight Scissors; 1 Silk Catheter, in pocket of case; Needles and Silk. Case made of light Alligator leather; leather lined..... \$ 18 00

4109. LEONARD'S ASEPTIC POCKET CASE, No. 2.

Price..... \$ 20 00

4110. MARSH'S ASEPTIC POCKET CASE.

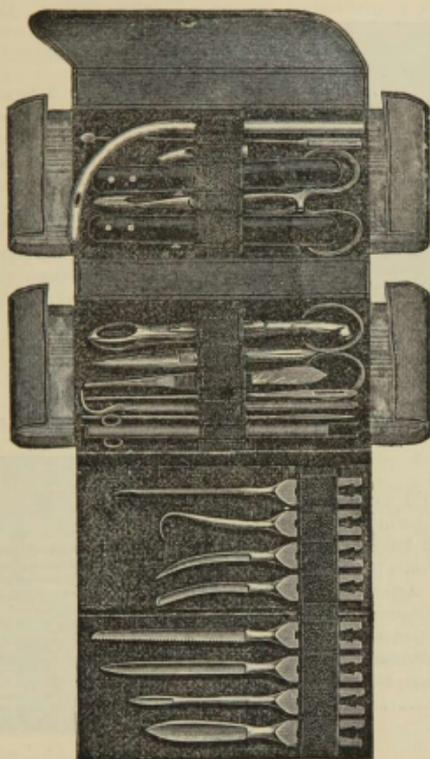


This case is made of Imitation Alligator, leather lined, and the instruments with vulcanized hard rubber aseptic handles. Everything is of the latest pattern, with improved patent catches for the knives and aseptic locks on the scissors and forceps. The case is constructed with metal plate on each side, to guard the instruments from injury, or from protruding through the ends of the case.

Containing 1 Scalpel; 1 Curved Probe point Bistoury; 1 Curved Sharp point Bistoury; 1 Tenotome; 1 Tenaculum; 1 Nélaton's Soft Rubber Catheter; 1 Stohman's Artery and Needle Forceps; 1 Director and Tongue Tie; 1 pair Straight Scissors, with one point probed; 1 pair Spring Dressing Forceps; 1 pair Probes; Needles and Silk..... \$ 12 00

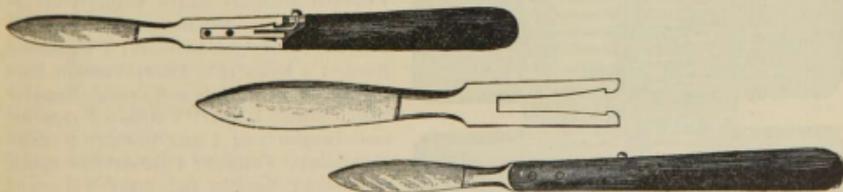
POCKET CASES.

4111. NONPAREIL ASEPTIC POCKET CASE.



The accompanying cut represents the new Aseptic "Nonpareil" Pocket Case, which is made of the finest morocco, and contains the following instruments: 2 Hard Rubber Handles; 1 Large Scalpel; 1 Curved Sharp-pointed Bistoury; 1 Curved Probe-pointed Bistoury; 1 Metacarpal Saw; 1 Exploring Needle; 1 Finger Knife; 1 Tenaculum; 1 Tenotome; 1 Artery and Needle Forceps, combined; 1 pair of Straight Scissors; 1 pair of Dressing Forceps; 1 pair of Péan's Hemostatic Forceps; 1 Grooved Director and Aneurism Needle; 1 pair of Small Silver Probes; 1 Nélaton's Ballet Probe; 1 Combined Catheter, male and female. The case has also a pocket to hold silk needles, etc. The mechanism by means of which the blades are attached is shown in the following illustrations. Both blades and handles can be readily cleansed as there are no exposed rivets as in all other constructions

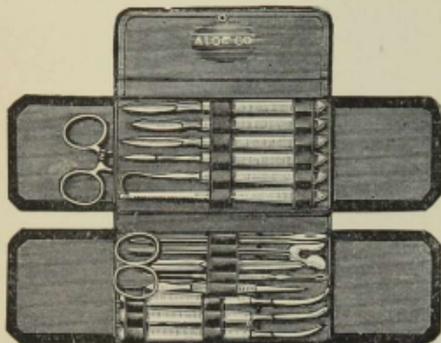
\$18 00



The above cuts show the object of the invention, viz.: To provide an improved means of detachably fitting to a handle different blades or similar instruments, whereby one handle may answer for a number of different instruments. These handles have the simplest and most durable lock-mechanism of any detachable knife in existence, and the blades are made of the best Sheffield steel and are all hand-forged.

POCKET CASES.

4112. SUMNER'S ASEPTIC POCKET CASE, No. 1.



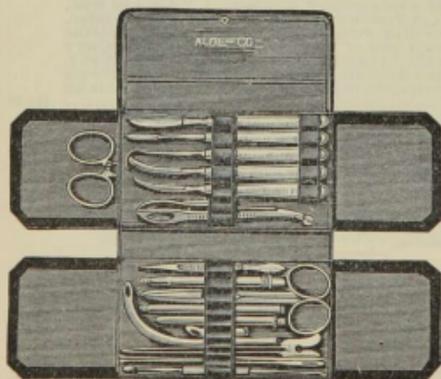
Containing 2 Scalpels; 1 Tenotome; 1 Straight Bistoury, sharp point; 1 Curved Bistoury, sharp point; 1 Curved Bistoury, probe point; 1 Cooper's Hernia Knife; 1 Tenaculum; 1 Metacarpal Saw; 1 Pèan's Hæmostatic Forceps; 1 Esmarch's Artery Torsion Forceps; 1 Straight Scissors; 1 Director and Tongue Tie; 1 pair Probes; 1 Gross' Ear Spoon and Hook; Needles and Silk; 1 Morocco Case, leather lined, \$13 50

4113. SUMNER'S ASEPTIC POCKET CASE, No. 2.

Containing 1 Scalpel; 1 Tenotome; 1 Curved Bistoury, sharp point; 1 Curved Bistoury, probe point; 1 Parke's Artery and Needle Forceps; 1 Pèan's Hæmostatic Forceps; 1 Esmarch's Artery Torsion Forceps; 1 Straight Scissors; 1 Gross' Ear Spoon and Hook; 1 Groved Director and Tongue Tie; 1 pair Probes; Needles and Silk; 1 Morocco Case, leather lined \$9 00



4114. WILLIAMS' ASEPTIC POCKET CASE.



Containing 1 Scalpel; 1 Tenotome; 1 Tenaculum; 1 Curved Bistoury, probe point; 1 Curved Bistoury, sharp point; 1 Stohman's Artery and Needle Forceps; 1 Thumb Lancet; 1 Straight Scissors; 1 Exploring Needle; 1 Esmarch's Artery Torsion Forceps; 1 Parker's Male and Female Catheter with Caustic Holder; 1 Grooved Director and Tongue Tie; 1 pair Probes; 1 Pèan's Hæmostatic Forceps; 1 Gross' Ear Spoon and Hook; Needles and Silk; 1 Morocco Case, leather lined, \$12 00

POCKET CASES.

4115. ALOE'S TWO-FOLD POCKET CASE, No. 1.

Containing 1 Scalpel; 1 Sharp-pointed Bistoury; 1 Tenaculum; 1 Gum Lancet; 1 Thumb Lancet; 2 Probes; 1 pair Scissors; 1 Director and Tongue Tie; Needles and Silk; 1 Morocco Case, leather lined; Hard Rubber Handles on Knives.....	\$ 4 50
4116. Same as 4115, with Tortoise-shell Handles on Knives.....	5 00

4117. ALOE'S TWO-FOLD POCKET CASE, No. 2.

Same as No. 4115, with Combined Male and Female Catheter, Hard Rubber Handles,	\$ 5 00
4118. Same as 4117, with Tortoise-shell Handles on Knives.....	6 00

4119. ALOE'S THREE-FOLD POCKET CASE, No. 3.

Containing 1 Scalpel; 1 Finger Knife; 2 Bistouries, sharp and probe-pointed; 1 Gum Lancet; 1 Tenaculum; 1 Thumb Lancet; 1 pair Straight Scissors; 1 pair Péans Hemostatic Forceps; 1 pair Liston's Artery Forceps; 1 Spatula; 2 Probes; 1 Director; 1 Combined Male and Female Catheter; Needles and Silk; 1 Morocco Case, leather lined; Hard Rubber Handles on Knives	\$ 9 00
4120. Same as 4119, with Tortoise-shell Handles on Knives.....	10 50

4121. ALOE'S FOUR-FOLD POCKET CASE, No. 4.

Containing 1 Scalpel; 2 Bistouries, sharp and probe-pointed; 1 Gum Lancet; 1 Tenaculum; 1 Abscess Lancet; 1 Thumb Lancet; 1 Finger Knife; 2 Probes; 1 Director; 1 pair Straight Scissors; 1 pair Angular Scissors; 1 pair Péan's Hemostatic Forceps; 1 pair Artery Forceps; 1 Spatula; 1 Porte Caustic; 1 Combined Catheter, male and female; Needles and Silk; 1 Morocco Case; Hard Rubber Handles on Knives.....	\$ 10 00
4122. Same as 4121, with Tortoise-shell Handles on Knives.....	12 00

4123. ALOE'S VEST POCKET CASE, No. 5.

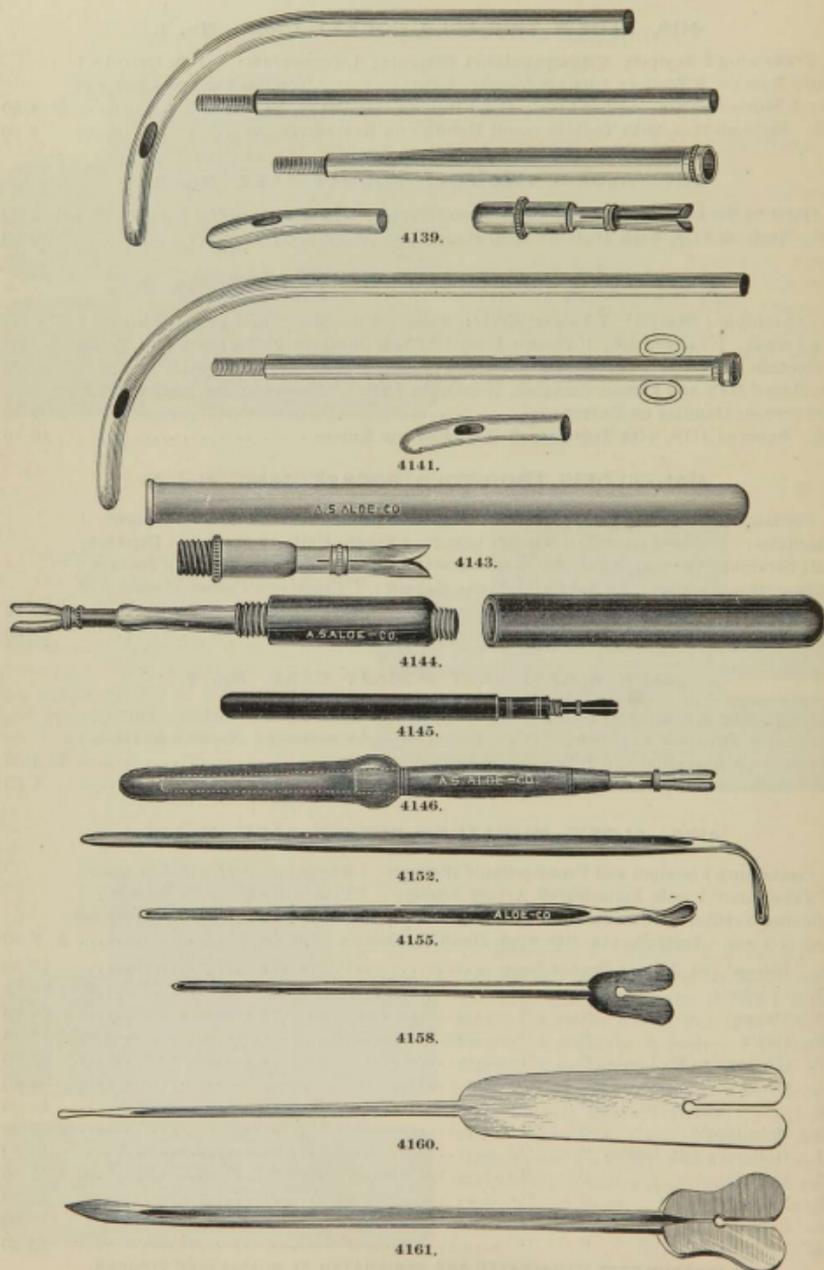
Containing 1 Scalpel; 1 Sharp-pointed Bistoury; 1 Péan's Hemostatic Forceps; 2 Probes; 1 Director and Tongue Tie; 1 pair Straight Scissors; Needles and Silk; 1 Morocco Case, leather lined; Shell Handles	\$ 5 00
4124. Same as 4123, with Hard Rubber Handles on Knives.....	4 00

4125. ALOE'S MINIATURE POCKET CASE, No. 20.

Containing 1 Scalpel and Probe-pointed Bistoury; 1 Sharp-pointed Curved Bistoury and Tenotome; 1 pair Fenestrated Artery Forceps; 1 Péan's Hemostatic Forceps; 1 Exploring Needle; 1 Director with Tongue Tie; 2 Probes; Needles and Silk. In a neat Morocco Case. Instruments with Shell Handles, Double Slide Lock	\$ 7 50
4126. Briggs' (St. Louis) Pocket Case.....	12 00
4127. Crosby's " "	10 50
4128. Dugas' " "	40 00
4129. Gay's " "	15 75
4130. Gregory's (St. Louis) " "	27 00
4131. Gross' " "	13 50
4132. " Improved " "	16 00
4133. Hamilton's " "	18 00
4134. Hodgen's (St. Louis) " "	10 50
4135. Little's " "	15 00
4136. Parker's " "	12 00
4137. Sayre's " "	18 00
4138. Van Buren's " "	13 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

POCKET CASE INSTRUMENTS.



POCKET CASE INSTRUMENTS.



4163.



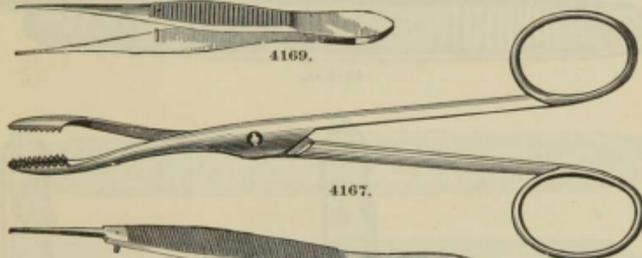
4165.



4166.



4169.



4167.

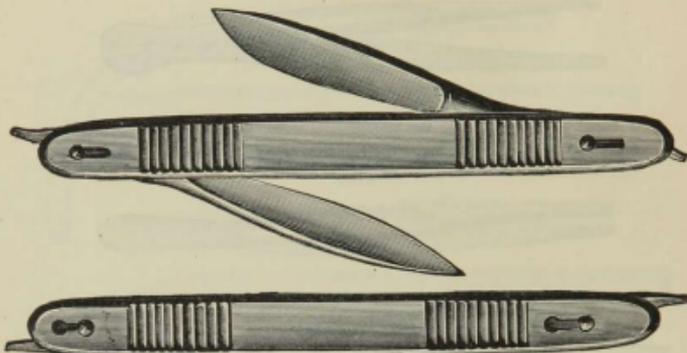


4170.

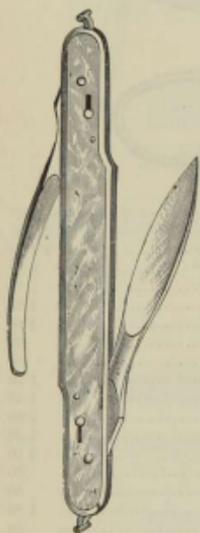
4139.	Catheter, combined Male and Female, Parker's	Plated, with Silver Caustic Holder.....	\$ 1 50
4140.	" " " " " "	Silver, " " " "	3 00
4141.	" " " " " "	Van Buren's Plated	1 00
4142.	" " " " " "	Silver	1 75
4143.	Caustic Holder, Aluminium.....		1 00
4144.	" " Ebony, with Silver Burner		75
4145.	" " Hard Rubber, with H. E. Burner.....		50
4146.	" " " " " Silver		1 00
4147.	" " Silver, " " " "		1 25
4148.	" " Child's, combined with Brush Holder.....		2 00
4149.	" " Wassiege's, " " Sponge "		2 50
4150.	" " " " Telescopic		2 00
4151.	Director and Aneurism Needle, Aluminium		50
4152.	" " " " Plated		50
4153.	" " " " Silver		1 00
4154.	" " Scoop, Aluminium.....		50
4155.	" " " Plated		50
4156.	" " " Silver		1 00
4157.	" " Tongue Tie, Aluminium		50
4158.	" " " " Plated		50
4159.	" " " " Silver		1 00
4160.	" " " " Probe-point		1 00
4161.	" " " " Spear "		75
4162.	Forceps, Dressing, Hartel's, Large, made of one piece of steel, without joint or rivet.....		1 00
4163.	" " " " Medium, " " " " " " " "		75
4164.	" " " " Small, " " " " " " " "		60
4165.	" " " " Rat Tooth, 4 or 4½ inches long		50
4166.	" " " " Serrated, 4 or 4½ " "		50
4167.	" " Polypus and Dressing, plain... ..		75
4168.	" " " " with catch		1 00
4169.	" " Splinter, Adams'		85
4170.	" " " Little's		75
4171.	" " " Regular, 4-inch		50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

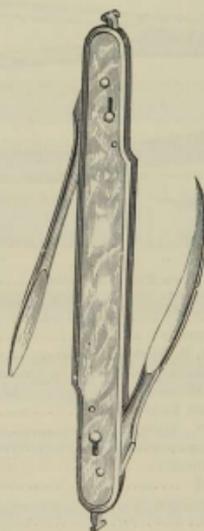
POCKET CASE INSTRUMENTS.



4172-G.



4174-E.



4174-D.



4174-K.

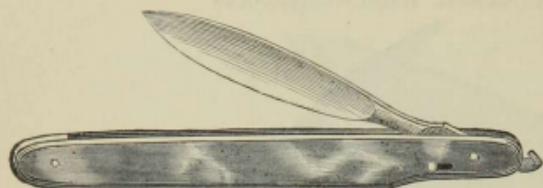


4184.

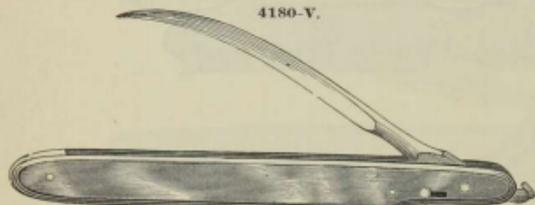


4187.

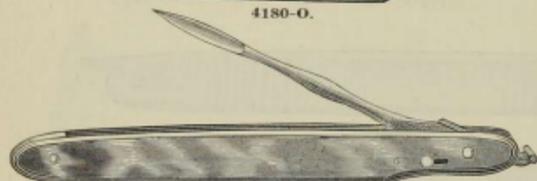
POCKET CASE INSTRUMENTS.



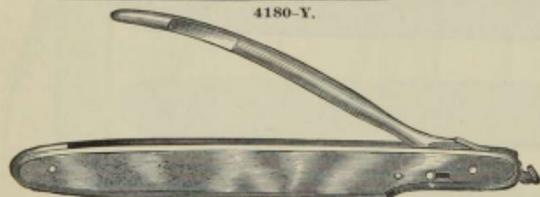
4180-V.



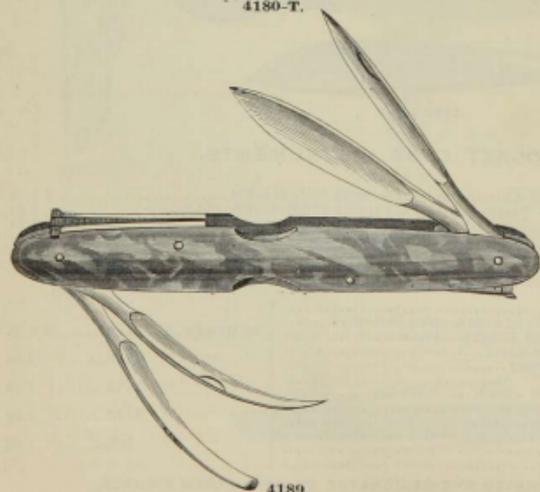
4180-O.



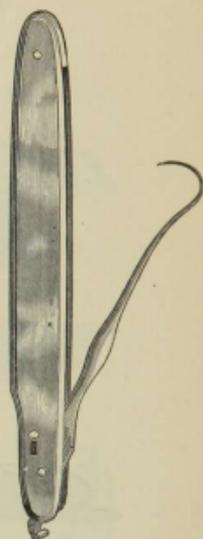
4180-Y.



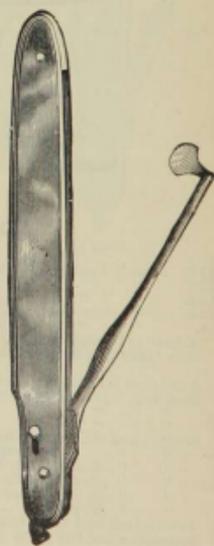
4180-T.



4189.

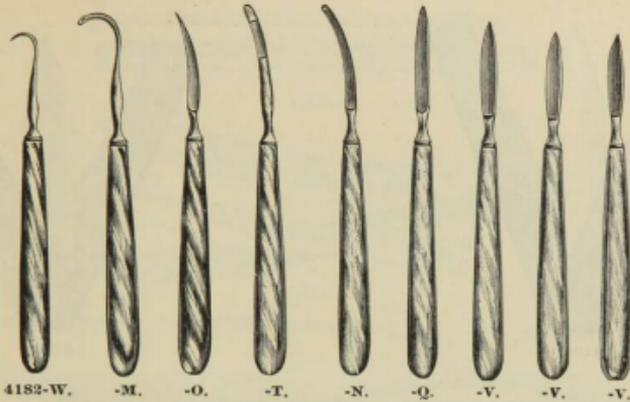


4180-W.



4180-S.

POCKET CASE INSTRUMENTS.



SINGLE POCKET CASE INSTRUMENTS, FOLDING HANDLES.

4177.	Single Pocket Case Instrument, in Aluminium Handles, with Slide Catch.....	\$1 25
4178.	“ “ “ “ German Silver Separable Handles, with Slide Catch.....	1 35
4179.	“ “ “ “ Hard Rubber Handles, without Catch.....	50
4180.	“ “ “ “ Shell Handles, with Slide Catch.....	1 00
4181.	“ “ “ “ without “.....	75

EITHER OF THE FOLLOWING INSTRUMENTS FURNISHED FROM STOCK:

Any Special Pattern of Instrument Made to Order on Short Notice.

M.	Aneurism Needle.....	} In Handle, No. 4177, 1 25	
N.	Bistoury, Curved, Probe Point.....		
O.	“ “ Sharp “.....		
P.	“ “ Straight, Probe “.....		
Q.	“ “ Sharp “.....		
S.	Gum Lancet.....		“ “ “ 4178, 1 35
T.	Hernia Knife, Cooper's.....		“ “ “ 4179, 50
V.	Scalpel, Large, Medium or Small.....		“ “ “ 4180 , 1 00
W.	Tenaculum.....		“ “ “ 4181, 75
X.	Tenotome, Probe Point.....		
Y.	“ “ Sharp “.....		

SINGLE POCKET CASE INSTRUMENTS, FIXED HANDLES.

4182.	Little's Pocket Case Instruments, all Steel.....	75
4183.	“ “ “ “ Hard Rubber Handled.....	1 00

EITHER OF THE FOLLOWING LITTLE'S INSTRUMENTS FURNISHED FROM STOCK:

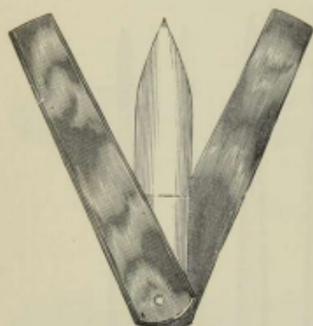
M.	Aneurism Needle.....	} With Steel Handle, No. 4182, 75	
N.	Bistoury, Curved, Probe Point.....		
O.	“ “ Sharp “.....		
P.	“ “ Straight, Probe “.....		
Q.	“ “ Sharp “.....		
R.	Curette (Volkmann's Pattern, Oval Spoon).....		
T.	Hernia Knife, Cooper's.....		With Hard Rubber Handle, No. 4183..... 1 00
U.	Metacarpal Saw.....		
V.	Scalpel, Large, Medium or Small.....		
W.	Tenaculum.....		
X.	Tenotome, Probe Point.....		
Y.	“ “ Sharp “.....		

SPECIAL POCKET CASE INSTRUMENTS.

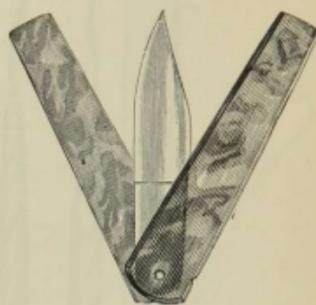
4184.	Cleborne's Hollow Suture Needles and Wire Twister, Shell Handles, Slide Catches. Page 138....	5 00
4185.	Metacarpal Saw, Shell Handle, Slide Catch.....	1 50
4186.	McLaine's Pocket Amputating Knife, Shell Handle, Spring Catch.....	2 00
4187.	Reverdin's Needle and Collins' Hollow Suture Needle, Shell Handles, Slide Catches. Page 138..	5 00
4188.	“ “ Shell Handle, Slide Catch.....	3 75
4189.	4-Bladed Pocket Instrument—Scalpel; Straight Bistoury, sharp point; Curved Bistoury, sharp point; Curved Bistoury, probe point—Shell Handles, Spring Catches.....	3 75
4190.	4-Bladed Pocket Instrument—Scalpel, Aneurism Needle, Reverdin's Needle, Cooper's Hernia Knife—Shell Handles, Spring Catches.....	5 00
4191.	6-Bladed Pocket Instrument, Shell Handles, Spring Catches, any combination of blades desired..	6 00
4192.	Esmarch's Pocket Instrument, 12 instruments in one handle.....	9 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

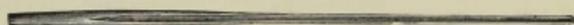
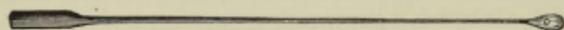
POCKET CASE INSTRUMENTS.



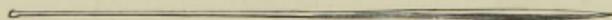
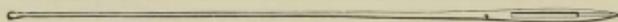
4198.



4195.



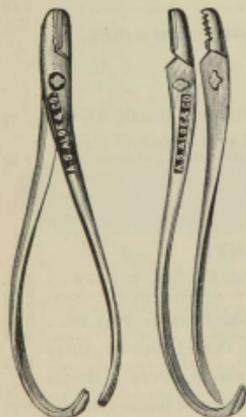
4222.



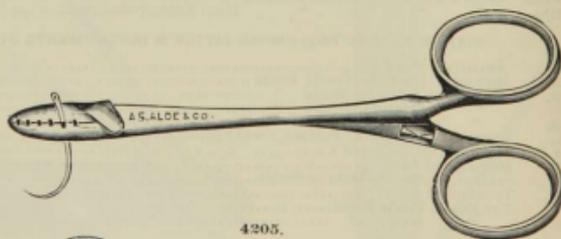
4214.



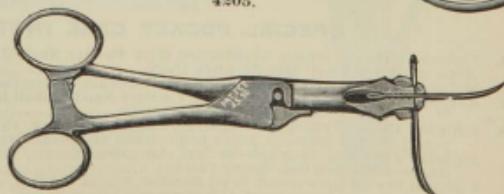
4208.



4206.

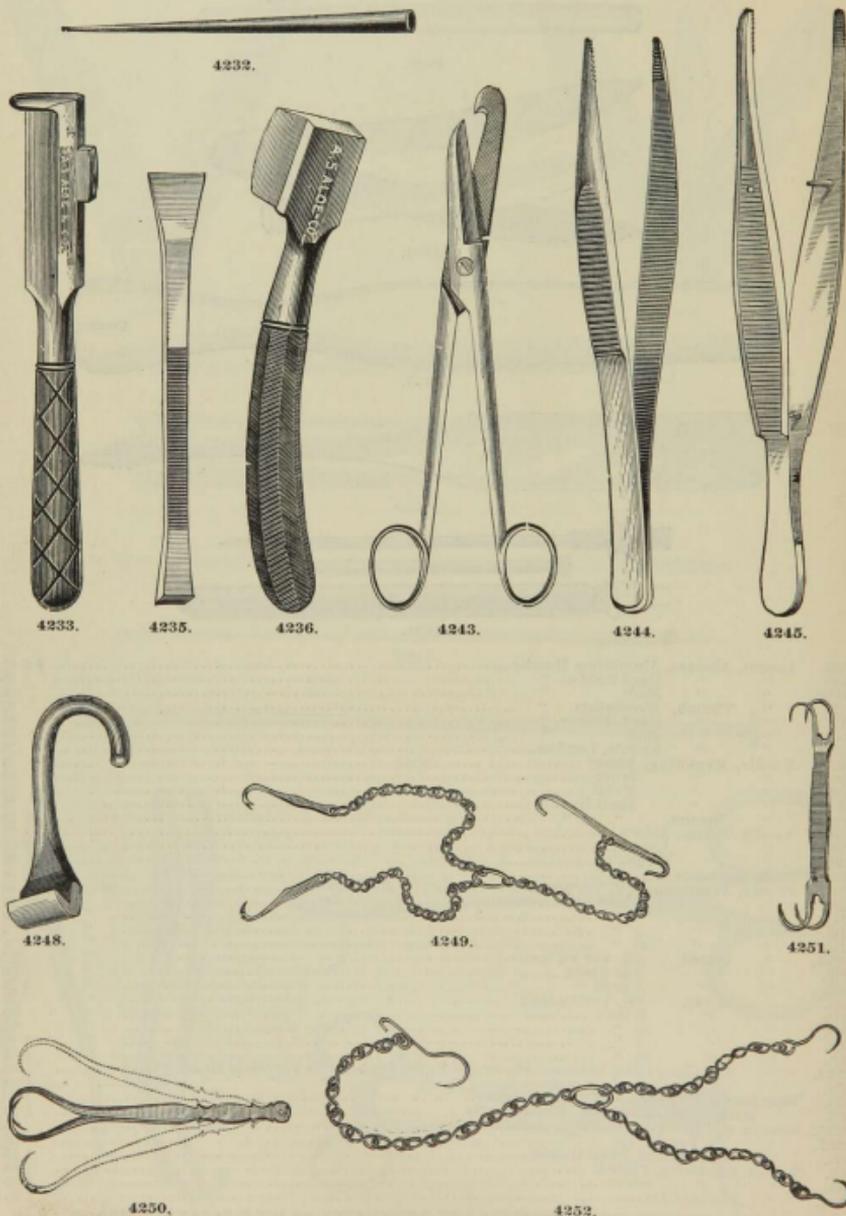


4205.

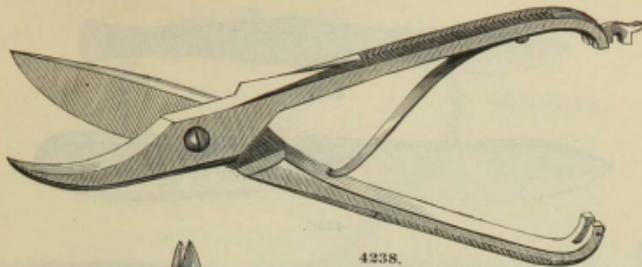


4207.

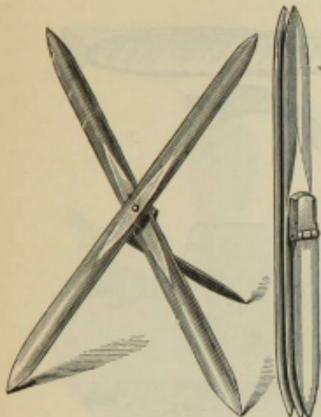
DISSECTING AND POST MORTEM.



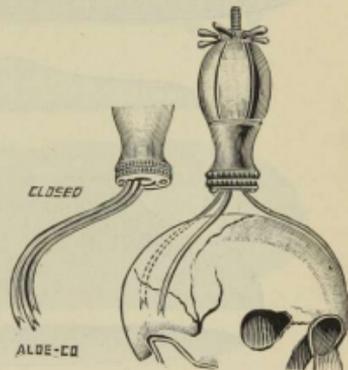
DISSECTING AND POST MORTEM.



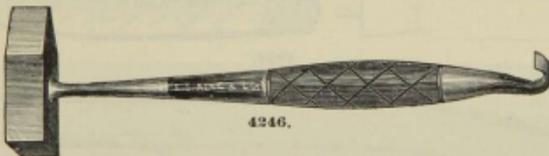
4238.



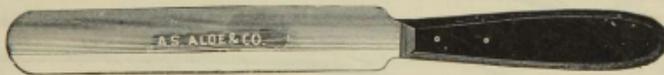
4247.



4237.



4246.



4253.

4232.	Blowpipe, German Silver (with Wood mouth-piece not shown in cut).....	\$	15
4233.	Chisel, Costatome.....		1 15
4234.	" Dissecting.....		50
4235.	" Fimmel's.....		75
4236.	" Rachitome.....		1 50
4237.	Clamp, Satterthwaite's Calvarian.....		4 00
4238.	Costatome—Rib Shears.....		4 00
4239.	Dissecting Apron, Gossamer Rubber.....		3 00
4240.	" Gown, Cotton Drilling.....		2 50
4241.	" " Linen.....		3 50
4242.	" Sleeves, Gossamer Rubber.....	per pair,	75
4243.	Enterotome.....		75
4244.	Forceps, Coxeter's Dissecting.....		1 75
4245.	" Plain.....		85
4246.	Hammer, Steel Post Mortem.....		1 50
4247.	Head Rest, Folding Tripod.....		2 25
4248.	Hooks, Calvarian.....		1 00
4249.	" Darling's Chain.....		40
4250.	" Double Dissecting.....		40
4251.	" Grappling.....		50
4252.	" Plain Chain.....		20
4253.	Knife, Virchow's Brain.....		1 25

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

DISSECTING AND POST MORTEM.



4254.



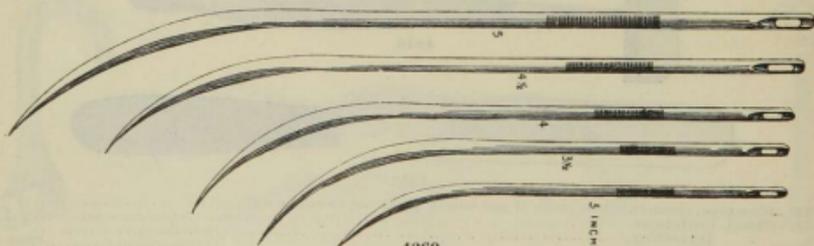
4255.



4257.

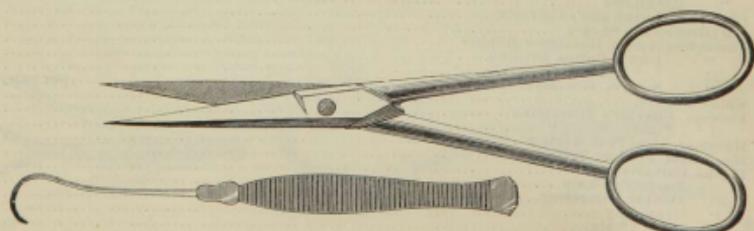


4258.



4260.

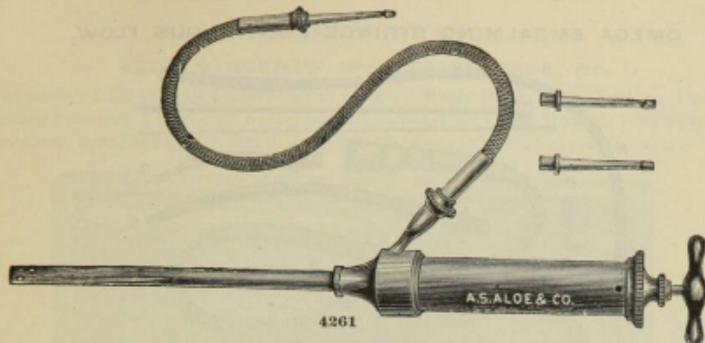
5 INCHES



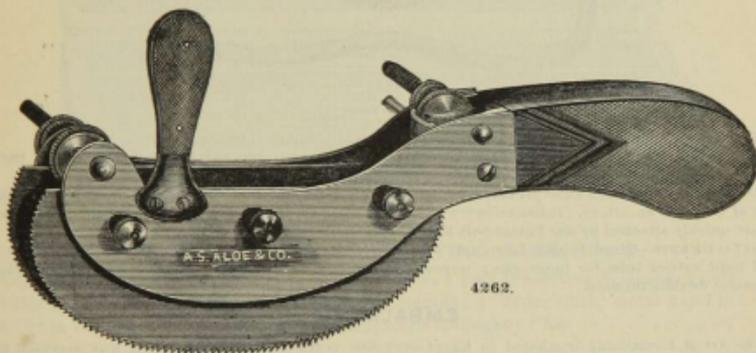
4272.

4269.

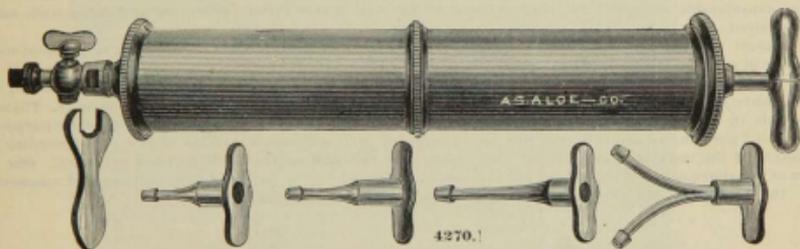
DISSECTING AND POST MORTEM.



4261



4262.



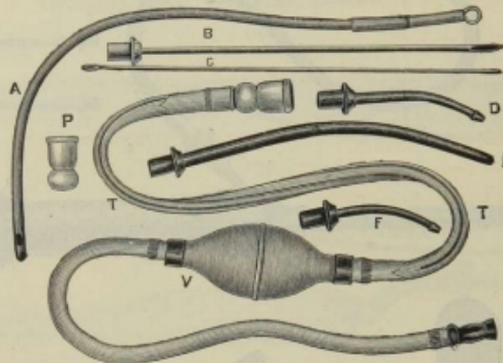
4270.

4254.	Knife, Cartilage, all Steel	\$ 0 75
4255.	" " Extra Heavy	1 50
4256.	" Demonstrating, Warren's	1 00
4257.	" and Saw, Finnel's	3 50
4258.	" " Post Mortem	4 00
4259.	Needles, Post Mortem, Finnel's	each, 15
4260.	" " Half Curved	2 for 25
4261.	Pump, Tiemann's Embalming	17 50
4262.	Rachitome, Double Saw	10 25
4263.	" Satterthwaite's	3 75
4264.	Reamer, Post Mortem	75
4265.	Scalpel, all Steel, Dissecting	40
4266.	" Darling's "	60
4267.	Scissors, Artery	1 50
4268.	" Dissecting, Curved	75
4269.	" " Straight	50
4270.	Syringe, Anatomical	21 00
4271.	" Embalming, Omega. See illustration, next page.	3 00
4272.	Tenaculum, all Steel, Dissecting	40

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

DISSECTING AND POST MORTEM.

OMEGA EMBALMING SYRINGE—CONTINUOUS FLOW.



4271.

Priced on Page 147.

This Syringe produces a continuous flow, and is especially adapted for embalmers.

It is the easiest Syringe in the world to operate, never tiring the hand. It saves one-half the time usually required in embalming.

The Patent Collapsible Tube prevents any back action, return of fluid, or injection of air. It obviates all danger of bursting an artery. It has no screw threads or washers, therefore it can not leak. The injection tubes are quickly attached by our Patent Soft Rubber Slip Joint Socket.

ATTACHMENTS.—Hard rubber large and small curved arterial tubes; nickel-plated long trocar; long curved hard rubber tube for lungs, etc.; improved long flexible tube for stomach, etc.; plated clearing wire, patent flexible thimble.

EMBALMING.

The Art of Embalming originated in Egypt over 3000 years ago. The invention was ascribed by the Egyptians to Anubis, the son of Osiris, who is said to have performed the office for his father. In recent times, considerable attention has been devoted to the subject and various processes and compounds have been devised.

Gaural injected the veins with sulphate of alumina. Falconi injected into the body sulphate of zinc. Chloride of zinc and sulphate of soda are also sometimes used.

THYMOL has been found to be a most excellent Embalming agent, eligible not only on account of its preservative qualities, but also in view of its pleasant aromatic odor and comparative innocuousness. Thymol is soluble in 1 part alcohol, 120 parts glycerine, 1200 parts water. For disinfecting and antiseptic purposes alone 1 or 2 parts in 1000 are sufficient, but the strength of solution for Embalming should vary according to condition of the cadaver, time elapsed since death and the particular object of each operation. One or more of the above solvents being used pro rata, aided if desired by one-half part light carbonate of magnesia.

Dr. Wywodzoff, of St. Petersburg, Russia, recommends the following formula:

R. Thymolis	sc. ij.
Glycerini	lbs. iv.
Aqua	lbs. ij.

GERMAN PROCESS.—The dead bodies of human beings and animals are said to fully retain their form, color, and flexibility by this process. Even after a period of years such dead bodies may be dissected for purposes of science and clinical jurisprudence. Decay and the offensive smell of decay are completely prevented. Upon incision the muscular flesh shows the same appearance as in the case of a fresh dead body. Preparations made of the several parts, such as natural skeletons, lungs, entrails, etc., retain their softness and pliability.

The liquid used is prepared as follows: in 3000 grams of boiling water are dissolved 100 grams of alum, 25 grams of cooking salt, 12 grams saltpetre, 60 grams potash, and 10 grams arsenious acid. This solution is then allowed to cool and filter; to 10 litres of this neutral, colorless, odorless liquid, 4 litres glycerine and 1 litre methylic alcohol are to be added. The process of preserving or embalming dead bodies by means of this liquid consists as a rule in saturating and impregnating the bodies with it. From 1½ to 5 litres of liquid are used for a body, according to its size.

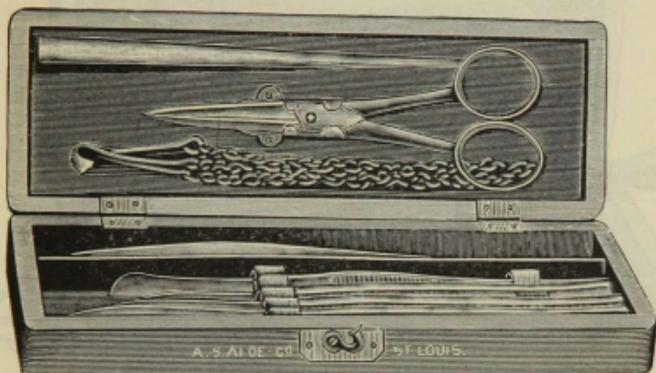
Anatomical preparations that are to be preserved dry are immersed in the fluid from six to twelve days, according to their size; then taken out and dried in the open air. Hollow organs, such as the lungs, etc., must be filled with the preserving liquid, then laid in a vessel containing the same fluid, and afterwards distended with air and dried. Small animals, such as crabs, beetles, lizards, frogs, etc., if the natural colors are to be preserved, are not to be dried, but put immediately into the preparation.

DISSECTING AND POST MORTEM.

DISSECTING CASES.

4273. STUDENTS' DISSECTING CASE, No. 1.

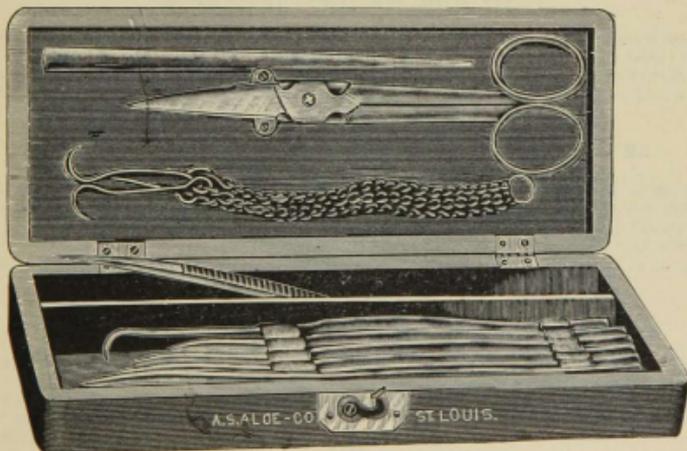
Containing 1 Dissecting Scalpel, metal handle; 1 pair Dissecting Scissors; 1 pair Dissecting Forceps; 1 Cartilage Knife, metal handle; 1 set Chain Hooks; 1 Blowpipe; 1 Tenaculum, metal handle; 1 Finely Polished Mahogany Case..... \$2 25



4274.

4274. STUDENTS' DISSECTING CASE, No. 2.

Containing 2 Dissecting Scalpels, metal handles; 1 pair Dissecting Scissors; 1 pair Dissecting Forceps; 1 Cartilage Knife, metal handle; 1 Tenaculum, metal handle; 1 Set Chain Hooks; 1 Blowpipe; 1 Finely Polished Mahogany Case..... \$2 75



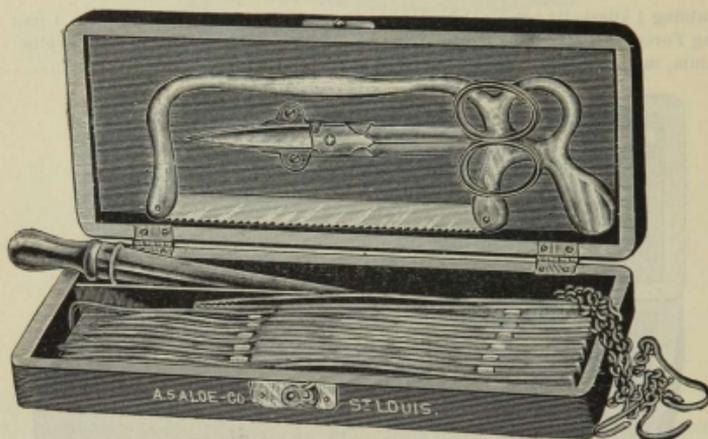
4275.

4275. STUDENTS' DISSECTING CASE, No. 3.

Containing 3 Dissecting Scalpels, metal handles; 1 pair Dissecting Scissors; 1 pair Dissecting Forceps; 1 Cartilage Knife, metal handle; 1 Tenaculum, metal handle; 1 set Chain Hooks; 1 Blowpipe; 1 Finely Polished Mahogany Case..... \$3 00

DISSECTING AND POST MORTEM.

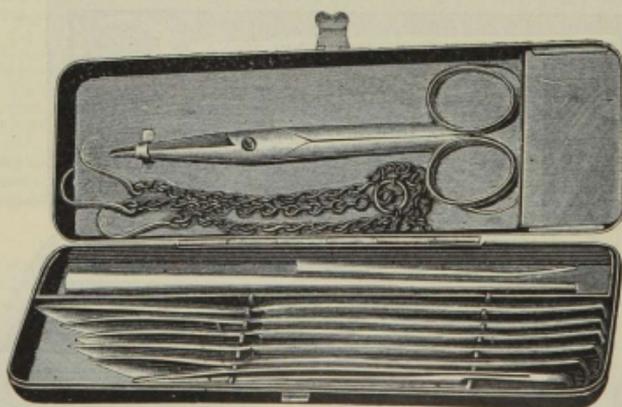
DISSECTING CASES.



4276.

4276. STUDENTS' DISSECTING CASE, No. 3, WITH SAW.

Containing 1 Dissection Saw; 4 Dissection Scalpels, metal handles; 1 pair Dissection Scissors; 1 pair Dissection Forceps; 1 Cartilage Knife; 1 Tenaculum; 1 set Chain Hooks; 1 Blowpipe; 1 Finely Polished Mahogany Case..... \$4 00



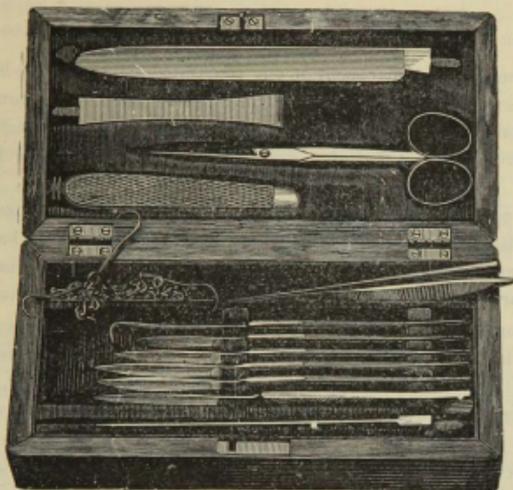
4277.

4277. ASEPTIC DISSECTING CASE, No. 4.

Containing 1 Cartilage Knife, metal handle; 4 Dissection Scalpels, metal handles; 1 pair Dissection Forceps; 1 pair Dissection Scissors, straight; 1 Blowpipe; 1 set Chain Hooks; 2 Suture Needles; 1 Fine German Silver Case, nickel-plated..... \$6 00

DISSECTING AND POST MORTEM.

POST MORTEM INSTRUMENT SETS.



4281.

4278. POST MORTEM SET, No. 1.

Containing 1 Hammer; 1 Costotome (Rib Shears); 1 Heavy Cartilage Knife; 2 Dissecting Scalpels assorted; 1 Steel Handle Dissecting Hook; 1 pair of Coxeter's Dissecting Forceps; 1 Enterotome; 1 Set of Heavy Chain Hooks; 1 pair of Straight Scissors; 1 Saw; 1 Amputating Knife; 1 Handle to fit the Saw and Knife; 1 Chisel; 1 Reamer; 2 Post Mortem Needles; Silk, Wire and Wax; 1 case..... \$21 00

4279. POST MORTEM SET, No. 2, HUTCHISON'S.

Containing 1 Amputating Knife; 1 Saw; 1 Handle to fit the above; 1 Chisel; 1 pair of Straight Dissecting Scissors; 1 Set of Chain Hooks; 1 pair of Dissecting Forceps; 1 Aneurism Needle; 1 Metacarpal Saw; 3 Dissecting Scalpels, assorted; 1 Steel Director; 1 Probe-pointed Bistoury; 1 Hammer; 1 Steel Handle Dissecting Hook; 1 Heavy Cartilage Knife; 1 German Silver Blowpipe; 2 Post Mortem Needles; Silk, Wire and Wax; 1 Case..... \$18 00

4280. POST MORTEM SET, No. 3.

Containing 1 Hammer; 1 Costotome Chisel; 1 Steel Handle Cartilage Knife; 3 Dissecting Scalpels, assorted; 1 Steel Handle Dissecting Hook; 1 pair of Plain Dissecting Forceps; 1 Enterotome; 1 Set of Heavy Chain Hooks; 1 German Silver Blowpipe; 1 Plain Chisel; 1 pair of Straight Dissecting Scissors; 1 Amputating Knife; 1 Saw; 1 Handle to fit the Knife and Saw; 2 Post Mortem Needles; Silk, Wire and Wax; 1 Case..... \$17 50

4281. POST MORTEM SET, No. 4, FINNELL'S.

Containing 1 Finnell's Knife; 1 Finnell's Saw; 1 Finnell's Chisel; 1 Handle to fit the above; 3 Dissecting Scalpels, assorted; 1 Steel Handle Cartilage Knife; 1 pair of Straight Dissecting Scissors; 1 Steel Handle Tenaculum; 1 Set of Heavy Chain Hooks; 1 German Silver Blowpipe; 1 pair of Dissecting Forceps; 2 Post Mortem Needles; Silk, Wire and Wax; 1 Case..... \$ 9 00

OPHTHALMIC.

OPTICAL.

In compiling the Optical Department of our Illustrated Catalogue, we have endeavored to be as concise as possible, and have arranged, in a limited space, the various classes of goods together, in order that our customers may have no difficulty in ordering by numbers, thus avoiding the vexatious mistakes that often occur through incorrect or misunderstood descriptions.

We take this opportunity of calling attention to the fact that we have been constantly adding to our facilities for the accurate grinding of every form of lens known to the trade. All our lenses are ground on the premises, from extra fine glass specially made for the purpose and of extraordinary hardness and purity, enabling us to produce a very superior lens.

Our manufacturing facilities have also been greatly augmented, and we are now in a position to execute orders for all kinds of Spectacles, Eyeglasses, Ophthalmoscopes, Trial-cases, and other Optical Instruments and Apparatus in the finest possible manner, and, as we employ only experienced hands we can confidently guarantee our goods as the best that knowledge and skill can produce.

The filling of Oculists' Prescriptions has long been our specialty, and we are happy to say we have succeeded in winning the confidence of the best oculists of this country. Every possible care is exercised in the execution of such orders, and nothing is neglected to insure accuracy in the work and comfort to the wearer.

This important branch of our business is under the charge of one of the best manufacturing opticians in the United States, and a corps of skilled assistants, who have that most important of all requisites to the proper filling of oculists' orders, viz.: Experience. We realize how important it is to have lenses accurately ground and centered and frames properly adjusted to the face, in order to get the best possible results from the prescribed lenses. We grind every lens, and do not use the ready ground lenses.

We beg to state that our metric lenses are not inch lenses marked with focus in dioptrics, but ground on tools especially made for metric work.

It is our earnest desire to meet the demands of our patrons in a satisfactory manner in all our transactions, thus enabling us to sustain our reputation as dealers in the best goods in our line. Hence, we are in a position to place in evidence an acknowledged distinction extending over a period of thirty years.

Finally, we have acquired an enviable reputation for honorable dealing, which we shall always endeavor to maintain; and if, through error, any goods should be furnished otherwise than as represented, we shall always be pleased to rectify the error and give full satisfaction.

Hoping to be favored with your esteemed orders, which will be executed with exactitude and dispatch, we beg to remain,

Yours very respectfully,

A. S. ALOE COMPANY.

OPHTHALMIC.

OPTICAL.

DIRECTIONS FOR WRITING PRESCRIPTIONS FOR LENSES AND FRAMES.

Lenses are numbered by two systems; first, according to their focal strength in English inches. Second, according to their refracting power with a lens of one metre focal length as a unit.

THE INCH SYSTEM OF NUMBERING.

In this system lenses are numbered according to their focal length, measured in inches. Thus a lens which will focus parallel rays of light at 1 inch distance from its center is numbered 1. A lens focusing parallel rays at 40 inches is numbered 40, and so on. The defects of this system are, that the inch varies in length in different countries so that, for instance, lenses accurately ground in France, according to French inches, would not focus exactly by English inches; and that to add or subtract one lens from another requires considerable figuring. These defects led to the invention of

THE DIOPTRIC SYSTEM OF NUMBERING.

In which a lens of one metre focal length is taken as a unit, and the lenses are numbered according to their strength in relation to that unit. The numbers are written decimally. Thus the lens of one metre focal length being the unit is numbered 1.00 (one dioptre), a lens twice as strong is numbered 2.00 (two dioptries). A lens once and a half as strong is numbered 1.50 (one and a half dioptries), one, three-quarters as strong is numbered 0.75 (three-quarters of a dioptre). The metre being of one length in all countries there is no variation in the measurement of lenses numbered by this system, and to add or subtract one lens from another is a simple mental operation.

The two systems compare as follows, approximately:

Inches.....	160	80	60	54	48	40	36	32	26	22	20	18	16
Dioptries.....	0.25	0.50	0.65	0.75	0.85	1.00	1.15	1.25	1.50	1.75	2.00	2.25	2.50
Inches.....	14	13	12	11 $\frac{1}{4}$	10 $\frac{1}{2}$	10	9	8	7	6 $\frac{1}{2}$	6	5 $\frac{1}{2}$	5
Dioptries.....	2.75	3.00	3.25	3.50	3.75	4.00	4.50	5.00	5.50	6.00	6.50	7.00	8.00
Inches.....	4 $\frac{1}{2}$	4	3 $\frac{1}{2}$	3 $\frac{1}{4}$	3	2 $\frac{3}{4}$	2 $\frac{1}{2}$	2 $\frac{1}{4}$	2				
Dioptries.....	9.00	10.00	11.00	12.00	13.00	14.00	16.00	18.00	20.00				

The Inch System is always written as whole numbers or fractions; the Dioptric System always decimally. In ordering by the latter system, therefore, the numbers should always be written with a point, thus, 10., or to be still more safe, thus, 10.00.

Convex is expressed by the sign, +; concave by the sign, -; "combined with" is expressed by the sign, \circ .

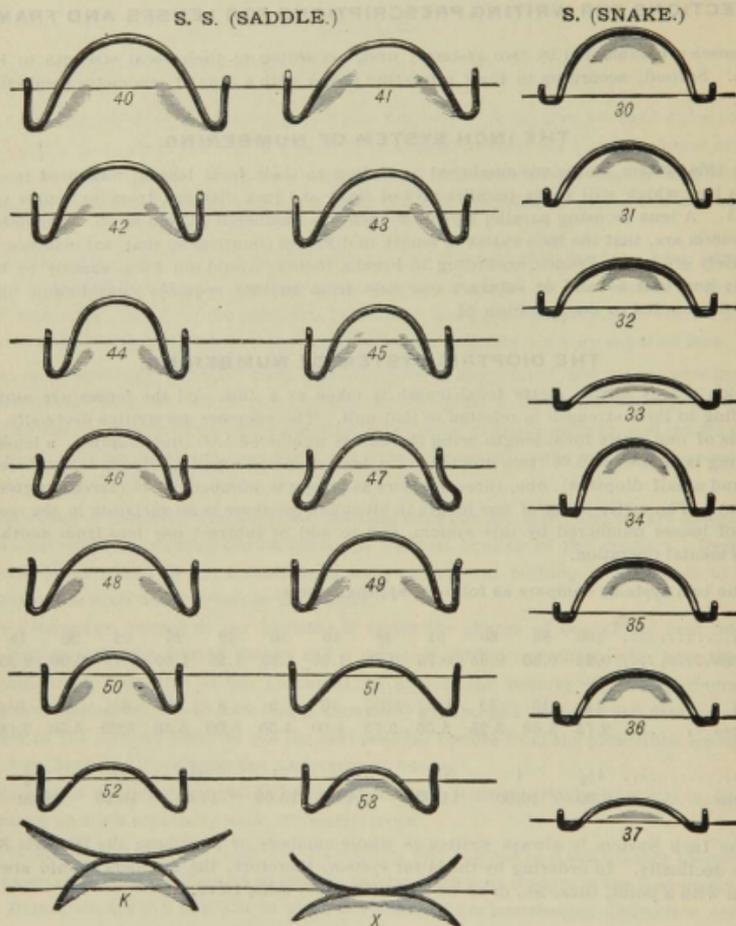
The following order, therefore, + 2.00 \circ - 0.50 cyl. @90°, means a compound lens, number 2.00 convex spherical, combined with a number 0.50 concave cylinder, axis 90 degrees.

Frames should be ordered according to the following rules: State 1st, style of frame; 2d, size of eye; 3d, style of nose piece; 4th, width between pupils; 5th, height of nose on plane of pupils; 6th, width of bridge at base; 7th, if crest of nose-piece is forward or back of plane of lenses.

We supply prescription blanks with printed spaces, giving the above dimensions ready to be filled out.

OPHTHALMIC.
OPTICAL.

PRINCIPAL FORMS OF NOSE-PIECES.



In selecting the proper form of Nose-piece, the following hints may be of service: In riding frames for constant use the Saddle Nose-piece is always preferable, except in the following cases: 1st, where the nose is high and prominent, when it is best to use a "C" Nose-piece; 2d, where the crest of the nose is above the pupillary line, but recedes backwards, near the frontal bone, so that a high bridge back of the plane of lenses is needed, in which case a Snake Nose-piece like Nos. 30, 34, 35 and 36 is best.

When the nose is thick and the eyes close together, leaving but little space between the arch of the nose and the edge of the eye, a Saddle Nose-piece with the corners bent in under the lenses, like L' is required.

K NOSE-PIECE.

This Nose-piece as shown above has double braces, giving extra strength for heavy lenses. The crest of the nose sets forward at plane of lenses, and the pupillary distance can be ordered as desired.

X NOSE-PIECE.

X nose is especially designed for heavy lenses, and is used frequently after cataract operations, where but one eye has been operated upon, and in this case a lens can be inserted in one side of the frame for reading, in the other for seeing off, and either one brought in front of the eye as desired, by simply turning the frame over, as it sets equally well on both sides. It should, in such cases, be ordered with straight temple, or with turn pin temples.

OPHTHALMIC.

OPTICAL.

PRINCIPAL FORMS OF NOSE-PIECES.

The following cuts illustrate the principal varieties of our line of Saddle Nose-Pieces, the frames being represented as No. 1 size of eye. These nose-pieces are numbered according to the following system. Pupillary distances are indicated by letters and the height of nose-piece above the pupillary line by figures following the letters, as shown in the following table:

NUMBERS OF NOSE-PIECES.

	L	L ¹	M	M ¹	M ²	N	N ¹	N ²	N ³	O ¹	O ²	P ²	P ³
Pupillary width.....	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{3}{8}$	2 $\frac{3}{8}$	2 $\frac{3}{8}$	2 $\frac{3}{8}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{5}{8}$	2 $\frac{5}{8}$
Height of nose above pupillary line.....	0	$\frac{1}{8}$	0	$\frac{1}{8}$	$\frac{1}{4}$	0	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{3}{8}$
Width of nose at base...	$\frac{10}{16}$	$\frac{11}{16}$	$\frac{12}{16}$	$\frac{11}{16}$	$\frac{11}{16}$	$\frac{14}{16}$	$\frac{15}{16}$	$\frac{14}{16}$	$\frac{14}{16}$	$\frac{15}{16}$	$\frac{15}{16}$	1 in.	$\frac{3}{8}$
Inclination, with short shanks.....	0	+ $\frac{1}{16}$	0	+ $\frac{1}{16}$	0	0	+ $\frac{1}{16}$	+ $\frac{1}{8}$	+ $\frac{3}{16}$	+ $\frac{1}{16}$	+ $\frac{1}{8}$	+ $\frac{1}{8}$	+ $\frac{1}{8}$
Inclination, with long shanks.....	- $\frac{9}{16}$	- $\frac{1}{8}$	- $\frac{1}{8}$	- $\frac{1}{16}$	- $\frac{9}{32}$	- $\frac{1}{32}$	- $\frac{1}{32}$	- $\frac{1}{16}$	0	0	- $\frac{1}{32}$	- $\frac{1}{16}$	- $\frac{1}{16}$

In the table of "inclinations" + means in front of plane of lenses, and - indicates back of plane of lenses.

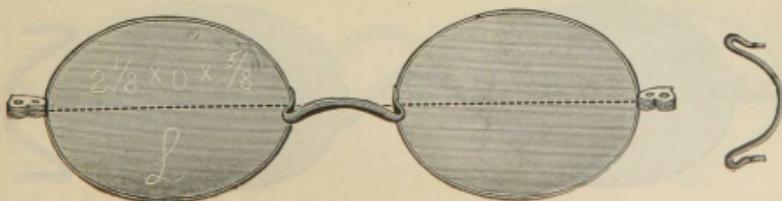
By way of explanation, it will be seen that an L frame will be 2 $\frac{1}{8}$ inch P. D., with a saddle bridge, the top of which is on line with centre line of lenses, or 0 high. L¹ would be 2 $\frac{1}{8}$ inch P. D., with a saddle bridge $\frac{1}{8}$ inch high above centre line of lenses, and so on through each letter. All the L's are 2 $\frac{1}{8}$ inch P. D., the M's are 2 $\frac{1}{4}$, the N's are 2 $\frac{3}{8}$, the O's are 2 $\frac{1}{2}$ and the P's are 2 $\frac{5}{8}$ inch P. D. Where no numeral is added to letter (L) the bridges will always be 0 high; where the numeral 1 is added (L¹) the bridge is $\frac{1}{8}$ inch high, where 2 is added (L²) it is $\frac{1}{4}$ inch high, where 3 is added (M³) it is $\frac{3}{8}$ inch high, and where 4 is added (O⁴) it is $\frac{1}{2}$ inch high. All the above measurements are based on frames with a No. 1 size eye, but can be used on No. 2 eye, as the difference would not be noticeable. Where all the different dimensions are not carried in stock, they can be made by bending the bridge. For example, an N¹ is 2 $\frac{3}{8}$ P. D. and $\frac{1}{8}$ inch high, and by bending the bridge $\frac{1}{8}$ inch shorter (which will make it $\frac{1}{8}$ inch higher), it will be made into an M², which is 2 $\frac{1}{4}$ P. D. and $\frac{1}{4}$ inch high, and by bending the bridge on N¹ to make it $\frac{1}{8}$ inch longer (which will make it $\frac{1}{8}$ inch lower), it will be made into an O., which is 2 $\frac{1}{2}$ inch P. D. and 0 high, and in like manner an N² can be made into an M³, O¹ and P.

The nose-pieces, as illustrated here, are made with short "shanks." In addition to these, we carry a line of frames, in gold and steel, with the shank of the nose-piece $\frac{1}{8}$ inch longer, while the rest of the nose-piece is exactly the same, thus throwing the nose-piece further back in relation to the plane of the lenses, as shown in above table.

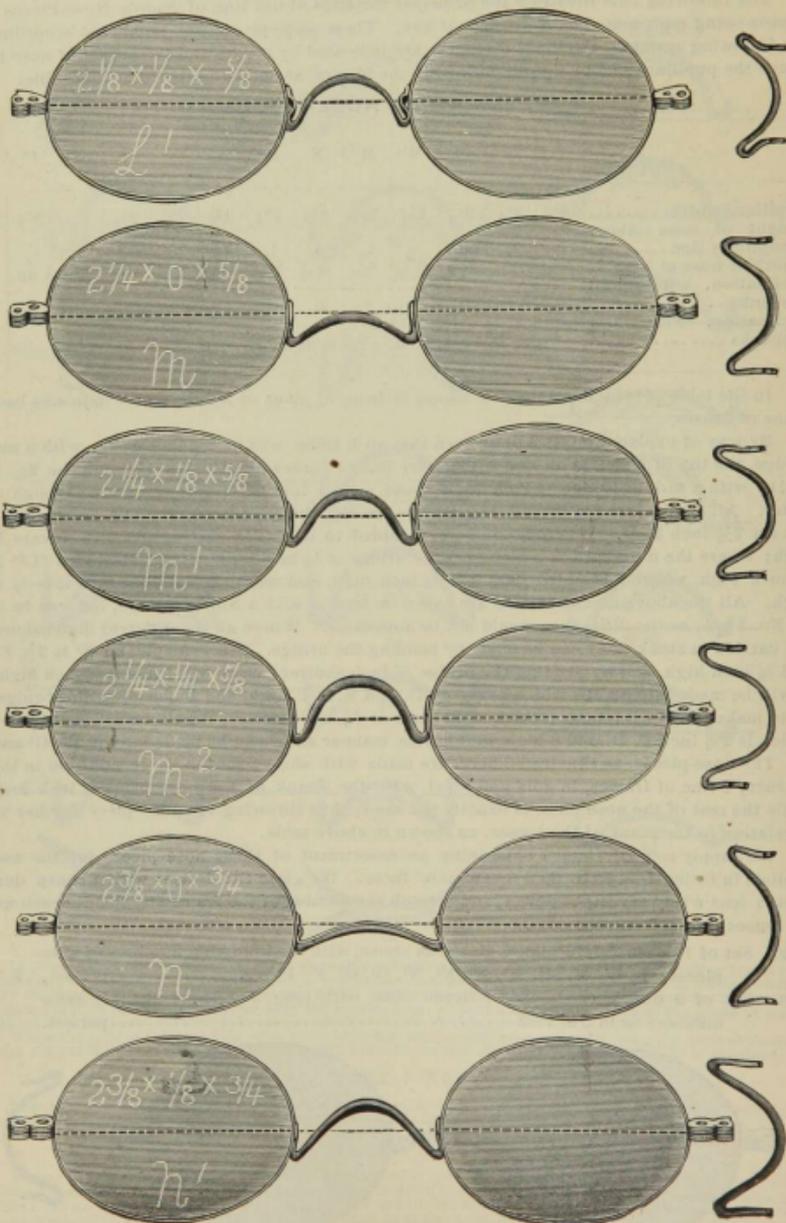
We supply sets of frames containing an assortment of these nose-pieces for the use of oculists in fitting frames to their customers' faces. We glaze the frames with a cheap double convex lens with very slight power, and scratch the number of the frame and the dimensions on the lenses, as shown in the cuts.

4282. Set of 1 dozen Trial Frames, glazed as above, with the following numbers of nose-pieces: L, L¹, M, M¹, M², N¹, N², N³, O¹, O², P², P³.....per set, \$ 5 00

4283. Set of 2 dozen, containing 1 dozen each, with long and short shanks, same numbers as in No. 4282.....per set, 10 00



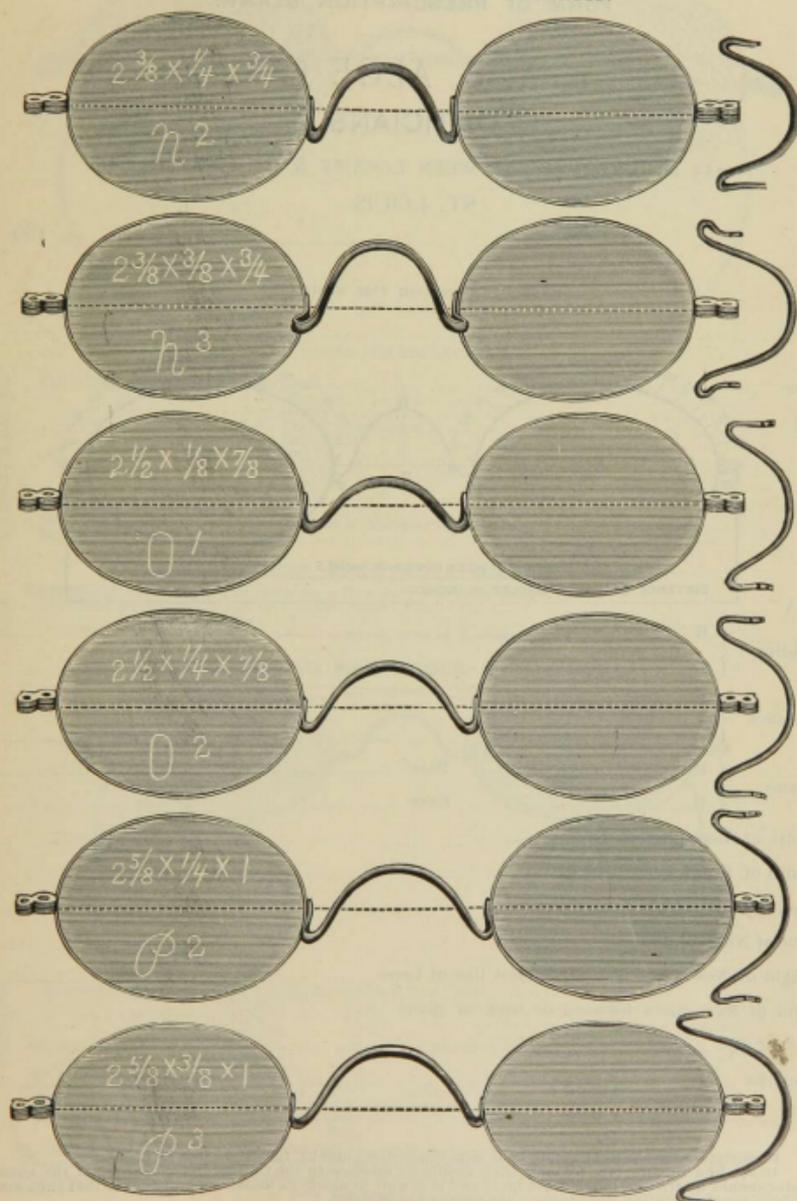
OPHTHALMIC.
OPTICAL.
SET OF TRIAL FRAMES.



OPHTHALMIC.

OPTICAL.

SET OF TRIAL FRAMES—CONTINUED.



OPHTHALMIC.
OPTICAL.

FORM OF PRESCRIPTION BLANK.

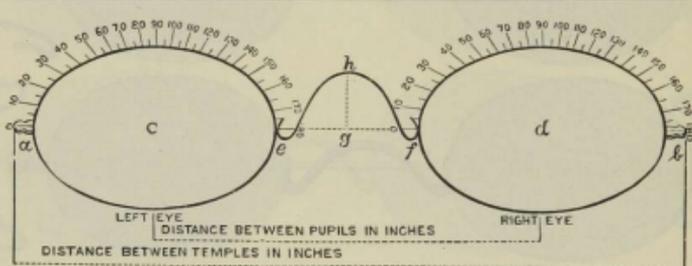
TO A. S. ALOE CO.,
OPTICIANS.

415 N. BROADWAY, BETWEEN LOCUST & ST. CHARLES STS.
ST. LOUIS.

189

R
M

PRESCRIPTION FOR THE SIGHT OF



Reading { R _____
 { L _____

Distance { R _____
 { L _____

Prisms { R _____ ° Base _____
 { L _____ ° Base _____

Width of Nose-piece at base _____

Width of Front from a to b _____

Pupillary distance c to d _____

Style of Nose-piece _____

Height of Nose-piece above or below line of Lens _____

Crest of Nose-piece forward or back of plane _____

Size of Eye _____

Remarks _____

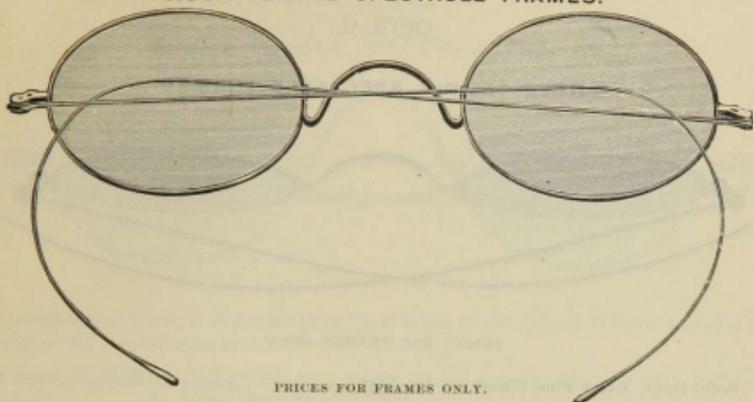
M. D.

Prescription Blanks as above, in book with duplicating blanks, furnished free to customers.
In sending repairs, etc., by mail, they should be directed to the Optical Department, and the name of sender should be written outside the box; and it is well to notify us under separate cover that such article has been sent and stating what repairs are required to be done.

OPHTHALMIC.

OPTICAL.

HOOK TEMPLE SPECTACLE FRAMES.



PRICES FOR FRAMES ONLY.

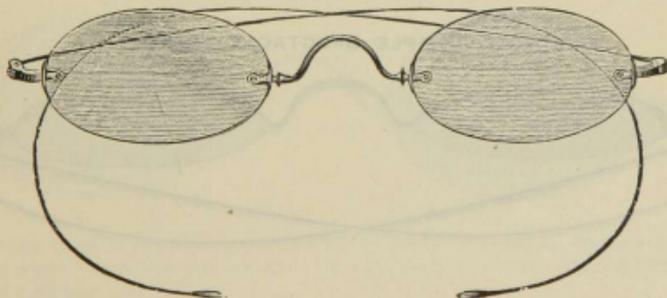
4284.	Solid Gold, finest make,	8-k.,	Light	.....	\$ 1 60
4285.	" " " "	8-k.,	Regular	.....	2 00
4286.	" " " "	8-k.,	Heavy	.....	2 25
4287.	" " " "	10-k.,	Light, Broad Nose	.....	2 00
4288.	" " " "	10-k.,	Regular, "	.....	2 50
4289.	" " " "	10-k.,	Heavy, "	.....	2 85
4290.	" " " "	14-k.,	Light, "	.....	2 90
4291.	" " " "	14-k.,	Regular, "	.....	3 40
4292.	" " " "	14-k.,	Heavy, "	.....	4 00
4293.	Coin Silver, finest make.			.....	1 00
4294.	Steel, first quality, light.	Blue, Bronze or Nickel-Plated		.....	75
4295.	Aluminium			.....	80

COMBINATION SPECTACLE AND EYE-GLASS.

Particularly well adapted to persons with a very flat nose bridge.

4296.	Combination Spectacle and Eye-Glass, Solid Gold,	10-k.	.....	\$ 3 50
4297.	" " " " " "	14-k.	.....	5 00
4298.	" " " " " "	Steel, Blue or Nickel-Plated.	.....	1 00

FRAMELESS SPECTACLE MOUNTINGS.



4299.	Solid Gold, finest finish.	Hook Temples,	10-k.,	Broad Nose	.....	\$ 2 50
4300.	" " " "	Straight	10-k.,	"	.....	3 00
4301.	" " " "	Hook	14-k.,	"	.....	3 50
4302.	" " " "	Straight	14-k.,	"	.....	4 00
4303.	Steel,	Hook	"	Bronze or Nickel-Plated	.....	75
4304.	" " " "	Straight	"	"	.....	75
	Extra for Spiral Temple or Spiral Tip, Gold,				.....	75
	" " " " " " Steel				.....	25
	Extra 10-k. Gold Nose-Piece on Steel or Silver Frame.				.....	40
	Extra for Cable or Twisted Temples, Gold				.....	50
	" " " " " " Steel				.....	25

Unusual forms of eye or styles of nose or lengths of shank will be charged extra.

We do not recommend the 8-k. Frames. We quote them for comparison.

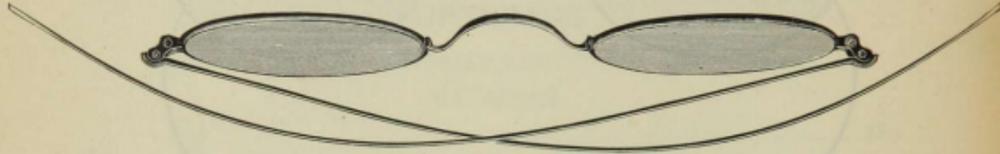
NOTE.—We quote prices for Frames and Lenses separately, to facilitate ordering.

FOR LENSES SEE PAGE 165.

OPHTHALMIC.

OPTICAL.

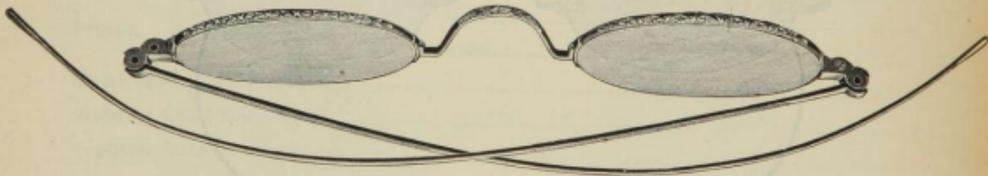
SINGLE TEMPLE SPECTACLE FRAMES.



PRICES FOR FRAMES ONLY.

4305.	Solid Gold, Extra Fine Finish, 8-k., Light	\$2 50
4306.	“ “ “ “ “ 8-k., Medium.....	3 00
4307.	“ “ “ “ “ 8-k., Heavy	3 50
4308.	“ “ “ “ “ 10-k., Light	3 00
4309.	“ “ “ “ “ 10-k., Medium.....	3 50
4310.	“ “ “ “ “ 10-k., Heavy	4 50
4311.	“ “ “ “ “ 14-k., Light	4 25
4312.	“ “ “ “ “ 14-k., Medium....	5 00
4313.	“ “ “ “ “ 14-k., Heavy	6 00
4314.	“ Silver, “ “ “	1 00
4315.	Steel, First Quality, extra light, Blue, Bronze or Nickel-plated	1 00
4316.	“ “ “ light, “ “ “	75

SINGLE TEMPLE SPECTACLE FRAMES.



HAMMERED OR FACETED EYE WIRE, OR ENGRAVED.

4317.	Solid Gold, Finest Make, 10-k., Medium.....	\$4 00
4318.	“ “ “ “ 10-k., Heavy	4 50
4319.	“ “ “ “ 14-k., Medium.....	5 50
4320.	“ “ “ “ 14-k., Heavy	6 75

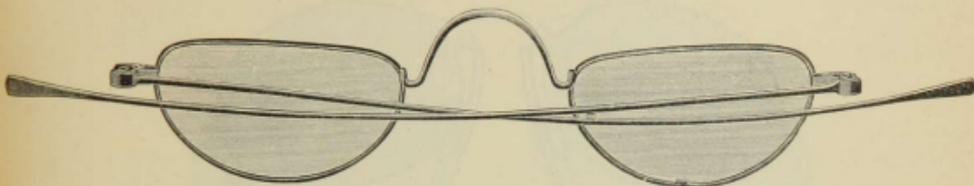
NOTE.—We quote prices for Frames and Lenses separately, to facilitate ordering.

FOR LENSES SEE PAGE 165.

OPHTHALMIC.

OPTICAL.

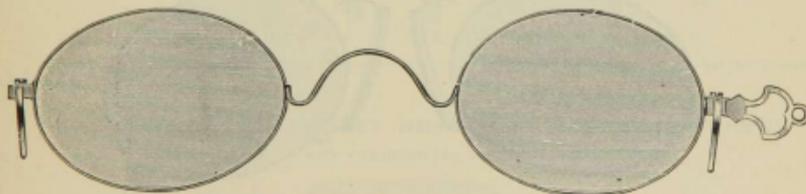
SINGLE TEMPLE SPECTACLE FRAMES.



Pantoscopic or Clerical Form, particularly adapted to the use of Clergymen, Orators and others who only need glasses for near work.

4321.	Gold, finest make,	8-k.,	Light	.....	\$ 3 00
4322.	"	"	"	8-k., Regular.....	3 50	
4323.	"	"	"	8-k., Heavy.....	4 00	
4324.	"	"	"	10-k., Light.....	3 25	
4325.	"	"	"	10-k., Regular.....	4 00	
4326.	"	"	"	10-k., Heavy.....	4 75	
4327.	"	"	"	14-k., Light.....	4 75	
4328.	"	"	"	14-k., Regular.....	5 50	
4329.	"	"	"	14-k., Heavy.....	6 50	
4330.	Solid Silver, finest make	.....			2 00
4331.	Steel, first quality, extra light, Blue, Bronze or Nickel-plated.....				1 25	
4332.	"	"	light,	"	"	1 00

EXTRA READING OR GRAB FRONTS.



The extra front is intended to obviate the necessity of removing distance-glasses and putting on others for seeing near objects. They are made to coincide with the former and to hook on as occasion requires.

4333.	Gold, best finish, 10-k., Regular.....	\$ 3 00			
4334.	"	"	14-k., ".....	4 00	
4335.	"	"	frameless mountings, 10-k.....	3 25	
4336.	"	"	"	14-k.....	4 25
4337.	Steel, first quality, Blue, Bronze or Nickel-plated.....	50			
4338.	"	Frameless Mountings, Bronze or Nickel-plated.....	75		

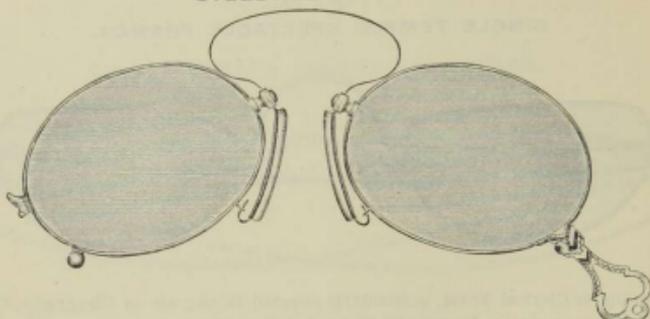
NOTE.—We quote prices for Frames and Lenses separately, to facilitate ordering.

FOR LENSES SEE PAGE 165.

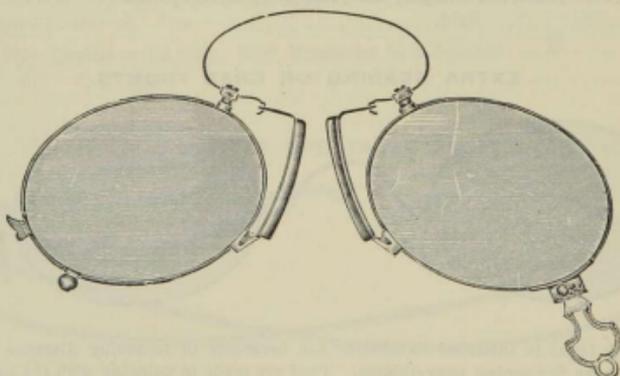
OPHTHALMIC.

OPTICAL.

EYE GLASSES, RIMLESS AND IN GOLD, SHELL, HARD RUBBER, ALUMINIUM,
STEEL AND ZYLONITE.



4339.	Solid Gold Frames, 8-k., Medium Weight	\$2 00
4340.	“ “ “ 10-k., “ “	2 50
4341.	“ “ “ 14-k., “ “	3 00
4342.	“ “ “ 10-k., Heavy “	3 00
4343.	“ “ “ 14-k., “ “	5 00
4344.	Hard Rubber Frames, Cork Lined Guards, Well Finished.....	30
4345.	Shell “ “ “ “ “ “	75
4346.	Steel “ “ “ “ “ “ Nickel Plated or Blue... ..	50
4347.	Zylonite “ “ “ “ “ “	40
4348.	Frameless, With or Without Handle or Catch, Cork Lined Nose-Piece, 10-k. Gold	2 50
4349.	“ “ “ “ “ “ “ “ “ “ 14-k. “	3 00
4350.	“ “ “ “ “ “ “ “ “ “ Nickel	40
	Plated Steel.....	40



4351.	Solid Gold Frames, Oscillating Nose-Pieces, 8-k., Medium Weight.....	\$2 50
4352.	“ “ “ “ “ “ 10-k., “ “	3 00
4353.	“ “ “ “ “ “ 14-k., “ “	4 00
4354.	“ “ “ “ “ “ 10-k., Heavy “	3 75
4355.	“ “ “ “ “ “ 14-k., “ “	5 00
4356.	Aluminium “ “ “ “ Cork Lined Guards, Well Finished.....	1 50
4357.	Hard Rubber Frames, “ “ “ “ “ “	35
4358.	Shell “ “ “ “ “ “	85
4359.	Steel “ “ “ “ “ “ “ “ Blue or	85
	Nickel-plated	60
4360.	Zylonite Frames, Oscillating Nose-Pieces, Cork Lined Guards, Well Finished.....	45

NOTE.—We quote prices for Frames and Lenses separately, to facilitate ordering.

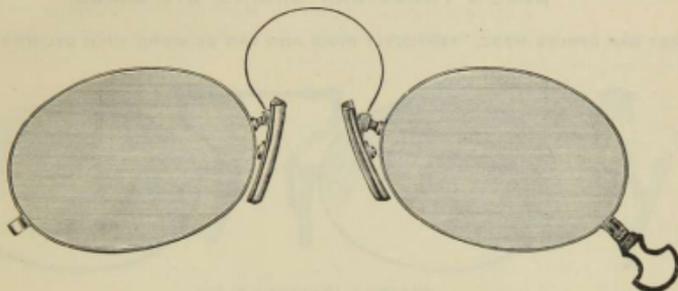
FOR LENSES SEE PAGE 165.

OPHTHALMIC.

OPTICAL.

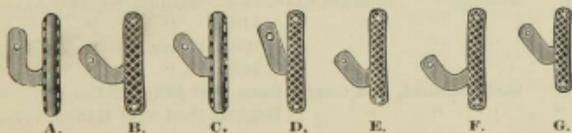
THE IMPROVED OFF-SET NOSE-PIECE EYE-GLASS FRAME.

COMBINING COMFORT AND STABILITY.



4361.	Gold Frame, Highly Finished, Light Weight, 10-k	\$2 50
4362.	" " " " " " " " 14-k	3 50
4363.	" " " " " " Medium " 10-k	3 00
4364.	" " " " " " " " 14-k	4 00
4365.	" " " " " " Heavy " 10-k	3 50
4366.	" " " " " " " " 14-k	4 50
4367.	Steel Frame, Best Quality, with Handle or Ring.....	60
4368.	Frameless, with or without Handle, 10-k., Gold	2 50
4369.	" " " " " " 14-k., "	3 50
4370.	" " " " " " or Catch, Steel, Nickel-plated.....	75

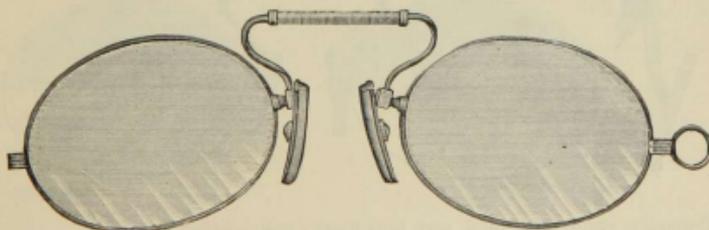
THE IMPROVED OFF-SET NOSE-PIECE.



We always furnish Style "C" unless otherwise specified in the order. All other patterns furnished with Shell Linings only.

THE BAR SPRING OFF-SET NOSE-PIECE EYE-GLASS FRAME.

FOR CYLINDRICAL LENSES.



4371.	Gold Frames, with Bar Spring and Off-set Nose Guards, 10-k	\$5 00
4372.	" " " " " " " " " " 14-k	5 75
4373.	Steel " " " " " " " " " " Nickel-plated.....	75

NOTE.—We quote prices for Frames and Lenses separately, to facilitate ordering.

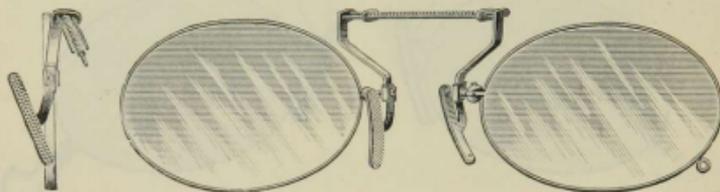
FOR LENSES SEE PAGE 165.

OPHTHALMIC.

OPTICAL.

ALOE'S THREE-BAR SPRING EYE-GLASS.

THE BEST BAR SPRING MADE. PERFECTLY RIGID AND CAN BE WORN WITH CYLINDRICAL LENSES.

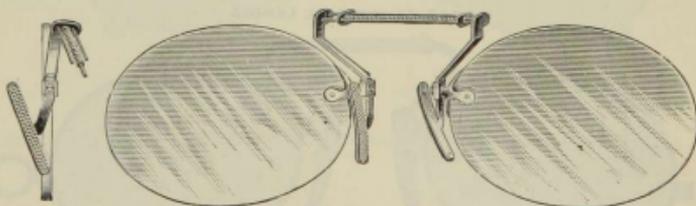


PATENTED DECEMBER 22, 1891.

In this patented Bar Spring is offered one which has received the approval of the leading Oculists; the main objections raised against Bar Springs are herein entirely overcome; neatness and durability are combined in a marked degree and a trial will convince even the most exacting of its merit.

4374.	Gold Frames, with handle, 10-k., Medium Weight.....	\$ 5 00
4375.	“ “ “ “ 14-k., “	6 50
4376.	“ “ “ “ 10-k., Heavy “	6 50
4377.	“ “ “ “ 14-k., “	7 50
4378.	“ “ without “ Ring for Cord, 10-k., Medium Weight.....	5 00
4379.	“ “ “ “ “ 14-k., “	6 50
4380.	“ “ “ “ “ 10-k., Heavy “	6 50
4381.	“ “ “ “ “ 14-k., “	7 50
4382.	Steel “ finely finished, Fox Guard, Open Post Ring for Cord.....	1 50
4383.	“ “ “ “ “ Regular Post with Handle.....	1 50

ALOE'S THREE-BAR SPRING FRAMELESS EYE-GLASS.



4384.	Frameless Gold Mountings, very best finish, 10-k.....	\$ 4 50
4385.	“ “ “ “ “ 14-k.....	5 50
4386.	“ Nickel “ “ “	1 00

NOTE.—We quote prices for Frames and Lenses separately, to facilitate ordering.

FOR LENSES SEE PAGE 165.

OPHTHALMIC.

OPTICAL.

PRESCRIPTION WORK TO ORDER.

We grind to order only and do not carry any of the ready-made Compound Lenses in stock. Our facilities are unequalled and we guarantee strictly first-class work.

Lenses made of the finest quality of Crown Glass and accurately ground and centered.

PRICES QUOTED ARE FOR LENSES ONLY, FITTED.	PRICE PER PAIR.			
	Plano.	Spherical.	Cylindrical.	Sphero Cylindrical.
White Crown Glass, any size, .25 to 4.D	.....	\$ 25	\$ 50	\$ 75
4.50 to 8.D .....	.....	25	50	1 00
8.50 to 10.D .....	.....	35	75	1 50
10.50 to 13.D.....	.....	50	1 25	2 00
14.00 to 16.D .....	.....	75	1 75	2 50
18.00 to 20.D .....	.....	1 00	2 25	3 00
Prisms, $\frac{1}{8}^{\circ}$ to 3°	\$ 75	1 25	1 00	1 60
“ $3\frac{1}{2}^{\circ}$ to 7°	1 00	1 50	1 75	1 75
Rimless, .25 to 8.D.....	.....	50	85	1 25
“ Cemented, .25 to 8.D.....	.....	1 25	1 75	2 25
“ Plano, Smoke or Blue.....	40	.....	.....	.....
“ Ground Coquille, Smoke or Blue	1 50	.....	.....	.....
Blue Tint Lenses.....	.....	50	1 00	1 50
Smoke Tint Lenses.....	.....	60	1 25	1 75
Ground Coquille, Blue or Smoke.....	1 25	.....	.....	.....
Plano, White, “ “ “	25	.....	.....	.....
Cement Bifocals.....	.....	1 00	1 25	1 75
Split “ .....	.....	50	1 25	2 00
Pebble Lenses, .25 to 8.D. ....	.....	90	.....	.....
Cross Cylinders, per pair, \$3.50.				
Extra for Grooved Lenses, Glass.....	25	40	75	.....
“ “ “ Pebble.....	1 10	1 50	2 00	.....
“ Octagon “ Glass.....	20	30	40	.....
“ “ “ Pebble.....	40	60	75	.....

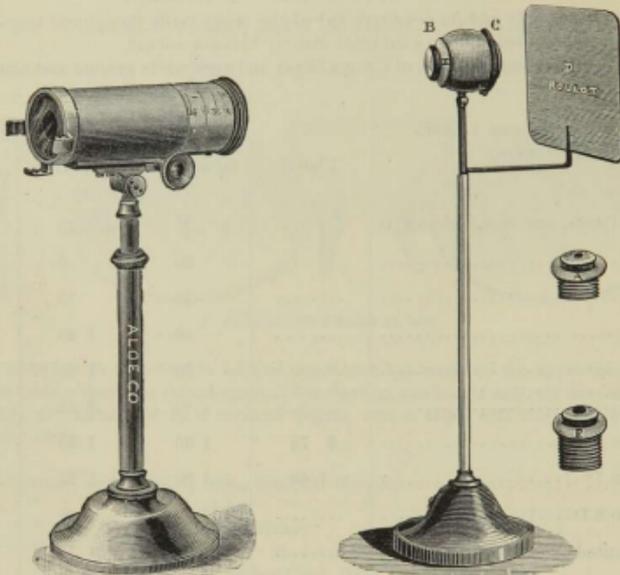
Extra for other sizes and shapes than those mentioned, in proportion to time required.

Job and repair of Lenses charged at above rate except on Single Lenses, where we will charge 10c extra. Our Lens Grinding Department is in charge of first-class workmen, and each Lens is tested three times before it leaves our place, making it almost impossible for any errors to occur.

OPHTHALMIC.

OPTICAL.

AMETROMETERS—ARTIFICIAL EYES.



4488.

4492.

4487. Thomson's Ametrometer. A practical and rapid method for the diagnosis of refraction with an instrument, complete with description, in case..... \$11 00

ARTIFICIAL EYES, FOR DEMONSTRATING AND FOR OPHTHALMIC PRACTICE, ETC.

4488. Emerson's Schematic Eye. For teaching the direct method of ophthalmoscopic examination, practicing retinoscopy and demonstrating the principles of refraction. Consists of two telescoping tubes, moved by rack and pinion. In one end is a +3-inch lens representing the refractive media and a metal diaphragm for the iris. In the other end is placed a ground glass upon which the image may be focused, or a card with minute test letters representing the fundus. There is also a cylindrical lens illustrating the effects of astigmatism, and a clip to hold test lenses. In case..... \$15 00

4489. Kühne's Artificial Eye. Consists of a box with glass sides, to be filled with water. A curved surface at one end represents the cornea. Back of it is suspended a double convex lens. There is a movable screen for the retina and an iris; a cap to neutralize the curvature of the cornea, and a cylindrical lens to represent astigmatism are also furnished. In case..... 30 00

4490. Landolt's Artificial Eye. For demonstrating the principles of refraction and practicing the use of the ophthalmoscope. Complete, in case.... 40 00

4491. Parent's Artificial Eye. Has the optical proportions of the real eye, and, as in the real eye, hypermetropia and myopia are produced by varying the distance from the lens to the shell used to represent the retina. Regular astigmatism of all kinds and different degrees is produced by two cylindrical lenses placed in front of the spherical lens. The degree of any anomaly of refraction is shown upon two circular scales on the front of the eye. There are five retinal shells, one representing the normal fundus, another showing excavation of the nerve entrance as in glaucoma, a third, swelling of the nerve entrance, as in optic neuritis or choked disc. The fourth shell exhibits minute characters, that the student may learn to focus accurately by the refraction ophthalmoscope, and so become skillful in the measurement of refraction with that instrument. The fifth shell permits the study of images formed on the retina, as to their size, clearness, relative position, etc.—these five making a more generally useful collection than the twelve shells of Perrin's Eye..... 50 00

4492. Perrin's Artificial Eye. For practicing the use of the ophthalmoscope. Complete, in case, with 12 shells showing normal and diseased conditions of the fundus of the eye, and how the different errors of refraction may be corrected. In case..... 25 00

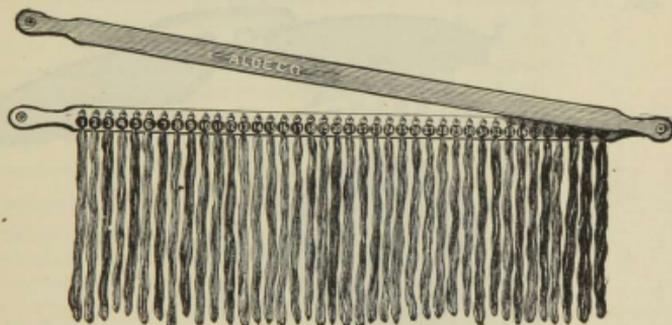
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.

OPTICAL.

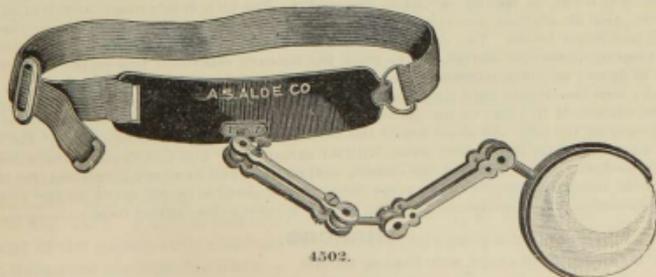
COLOR TESTS—KERATOSCOPES—LENS HOLDERS.

4493. Daae's set of Colored Berlin Wools.....	\$ 1 50
4494. Holmgreen's Test for Color Blindness. A complete set of 60 worsted skeins of correct colors and shades, such as were arranged by request for the use of the American Ophthalmological Society.....	2 50
4495. Holmgreen's Test for Color Blindness; set of 100 skeins	6 00
4496. Oliver's Test for Color Blindness is a modification of the Holmgreen test wools. There are five principal test skeins, all pure colors of equal intensity, and designated by their Latin names. These are larger than the other skeins, of which there are four to match each color, two lighter and two darker, and seventy-two confusion match skeins. Each skein has attached to it a bangle bearing letters and numbers which indicate its color, or colors, if it be a confusion skein, and the tint or shade. The wools are wrapped in black muslin, and inclosed in a box, with full directions for using them.....	10 00
4497. Roberts'. The detection of Color Blindness and imperfect eyesight, Charles Roberts, London. A cloth-covered portfolio, containing selections from Snellen's type, Dr. Daae's table of Berlin wools, with brief instructions on their use, the whole such as was arranged for the use of the Anthropometric Committee of the British Association.....	1 50
4498. Snellen's Test for Simulating Blindness. Consists of a series of alternately red and green transparent letters, mounted in a frame, accompanied by spectacles of red and green glass.....	6 00
4499. Snellen's Cardboard Color Test. A series of colored letters on cardboard, together with colored glasses.....	2 00



4500.

4500. Thomson's Stick of Colored Worsted, numbered from 1 to 40, and arranged in three sets, A, B, C, of which the odd numbers correspond to the color of the test-skeins, while the even numbers are different or confusion colors.....	10 00
4501. Placido's Keratoscope (or Astigmatic Disc). This instrument provides a rapid method for the detection of astigmatism. Its circles are reflected in the cornea by holding the disc at a distance of ten inches from the eye of the patient. Distortion of the circles in the reflection indicates astigmatism.....	4 00

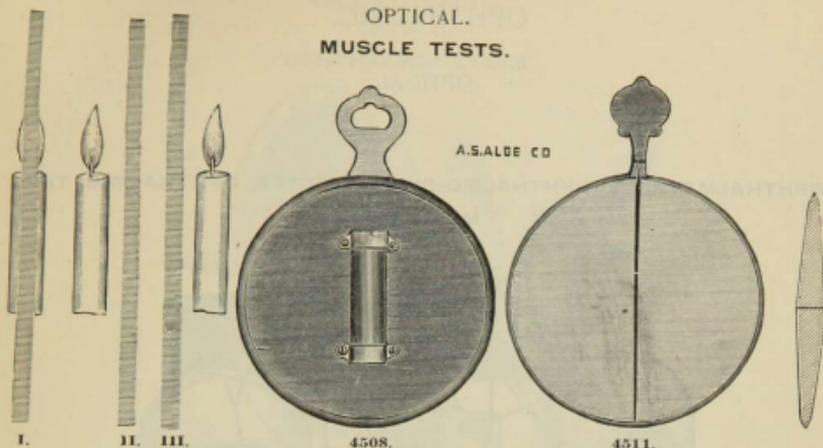


4502.

4502. Loring's Lens Holder, with head band	6 00
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ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.
OPTICAL.
MUSCLE TESTS.

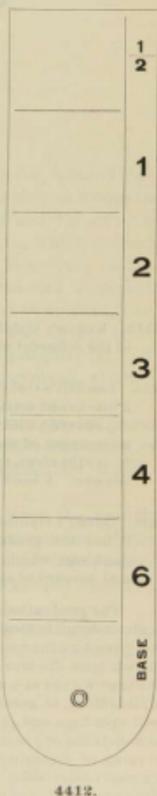


- 4508.** Maddox Muscle Test. For testing insufficiency of recti muscles. In use the cylinder is placed horizontally before one eye, and to that eye a flame will appear, elongated to a bar of light, and if there is no insufficiency the flame seen by the other eye will appear directly in the path of the bar of light as shown by Fig. I. Where there is any insufficiency the flame will appear to one side or the other of the bar of light as shown in Figs. II and III.each, \$ 0 50
4509. Prentice's Perfect Muscle Test..... 20 00
4510. Savage's Muscle Test..... 1 50

4511. Maddox's Double Prism, consisting of a double prism, bases together as shown in cuts. Dr. Ernest E. Maddox's Double Prism, for testing the ocular muscles, consists of two prisms with their bases together, and is usually set in a trial rim, as illustrated. In use it is placed in the trial frame, or held in the hand in front of the right eye, so that the dividing line between the two prisms is horizontal. Direct the attention of the patient to any bright object or spot (a white doorknob or candle flame) fifteen or twenty feet away. There will, apparently, be three objects seen; the upper and lower one by the right eye and the middle one by the left eye. If the middle object seen is in a straight line with the two others, as shown in Fig. I, the internal and external muscles are normal. If the bar of light is to the right, as in Fig. II, it shows insufficiency of the internal muscle; if to the left, as in Fig. III, it shows insufficiency of the external muscle. To make corrections, use prisms over the left eye with their apex in the direction it is desired to move the bar of light until the flame will appear to be directly in its path. This prism will be the measure of the insufficiency.....each, 1 50

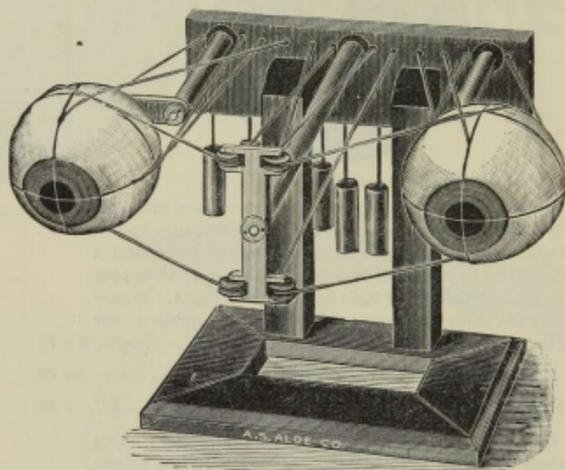
In using this test the prisms from your trial case can be used, but for greater accuracy and convenience we have devised a little bar of prisms, as shown in Fig. 4412. This bar contains prisms from $\frac{1}{2}^\circ$ to 6° and can be held in front of the muscle test, starting with the $\frac{1}{2}^\circ$ and running it up until the bar of light runs through the flame.

- 4512.** Maddox's Prism Bar, containing six prisms, bases downward, from $\frac{1}{2}^\circ$ to 6° \$2 00



OPHTHALMIC.

OPTICAL.

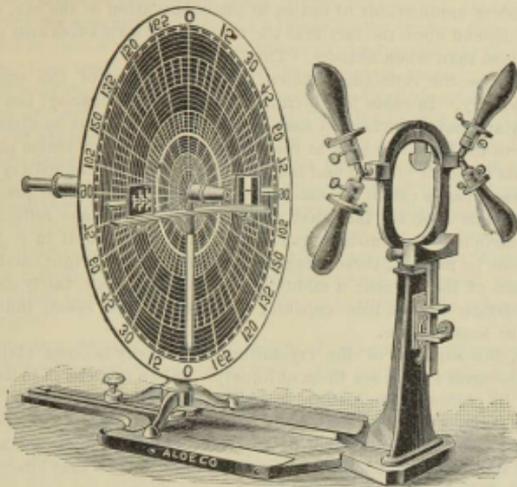
OPHTHALMETROPE-OPHTHALMO-DYNAMOMETER-OPHTHALMIC TAPE
MEASURE.

4513.

4513. Knapp's Ophthalmetrope, an apparatus for demonstrating the movements of the eye and action of the different muscles which produce them.....\$12 00
4514. Landolt's Ophthalmalmo-Dynamometer, for determining the near point of convergence; consists of a blackened metallic cylinder of the proper size to fit over a candle, in one side of which is a narrow slit covered with a piece of ground glass. On another side is a row of dots used for testing the adjustment of accommodation and convergence. With it is a tape measure graduated on one side to centimetres, on the other to dioptric focal lengths, to measure the distance between the slit and the eye. A hook below the slit gives attachment to the measure, which is wound up by a spring.... 10 00
4515. Queen's Ophthalmic Tape Measure. This measure is similar to an ordinary tape measure in that it has the graduations usually found on all such measures, and, in addition, certain especial markings which will be found of great service to any one who wishes to determine the character and amount of any error of refraction, accommodation or convergence. In case, with spring..... 1 25

The graduations are: (1) The metric scale (in millimeters); (2) The inch scale (in sixteenths); (3) The scale of dioptric focal lengths; (4) The scale of tangents. Scales Nos. 1 and 2 require no explanation. Scale No. 3 renders the calculation of the focal length of any dioptric lens unnecessary, as such focal length is shown upon the tape. The equivalent focus in inches is also instantly shown. For example, as we look at the tape we see at a glance that a 3.50 "D" lens has a focal length of 285mm. or 11 3-16 inches. Such a scale is, therefore, of great service in calculating and recording states of refraction, and by its use the physician will save time and avoid errors in writing formulae. Scale No. 4 shows the length of the tangent of any angle, at a distance of 1 metre from that angle. This scale is of similar advantage in the measurement of the converging or diverging strengths of the eyes, and affords an easy and accurate method for determining the amount of deviation in strabismus (see Mr. Priestly Smith's article in Ophthalmic Review for December, 1888). This scale is also of use in determining the deviation produced by any prism, and the number by which it is known according to current standards (see Maddox, Ophthalmological Prisms).

OPHTHALMIC.
OPTICAL.
OPHTHALMOMETERS.



4518.

JAVAL-SCHIÖTZ OPHTHALMOMETER.
(AMERICAN MODEL.)

This instrument is intended for measuring the corneal curvature after the method described by Helmholtz in his *Physiological Optics*. The front of the cornea acting as a convex mirror reflects the images of two targets, one representing a parallelogram and the other a series of steps equivalent to diopters, attached to each arm of the revolving arc, which is fixed to the body of the telescope. These images are greatly magnified by the telescope, in the center of which are Prisms of Iceland spar, so that the images seen are doubled and displaced in the meridian of the arc. The targets are set so as to be seen to be each just in contact with the other, and if these two images so remain as the arc is revolved about the axis of the telescope, the curvature of the cornea is the same in all meridians and there is no astigmatism. If there is astigmatism the parallelogram will overlap the steps as the arc is revolved, and the exact amount can be measured in diopters by the number of steps covered.

The large disc with radiating lines reflected in the cornea enables the operator to designate with accuracy the angle at which the correcting glass is to be placed, the whole examination occupying less than a minute's time; and there is no method of estimating astigmatism, which, for rapidity and accuracy, can approach the use of this instrument.

The American Model has several important mechanical improvements over the French instrument. Chief among these are the introduction of a rack and pinion movement of the mires on the graduated arc, the broad 20° circle on the large disc and a firm, handsomely finished metal base in place of the wooden board, whose propensity to warp greatly hindered the accurate manipulation of the Ophthalmometer.

A complete description of the optical and mechanical construction of the instrument and fully illustrated instructions for using the same are given in the last chapter of the new edition of "Dr. F. Valk's Errors of Refraction."

4516.	Javal-Schiötz Ophthalmometer, American Model, with Sliding Target.....	\$75 00
4517.	Javal-Schiötz Ophthalmometer, American Model, with Rack and Pinion Movement for Target.....	80 00
4518.	Javal-Schiötz Ophthalmometer, American Model, with Rack and Pinion Movement for Target and 4 Incandescent Lamps for Electric Illumination.....	90 00
4519.	Javal-Schiötz Ophthalmometer, French Model.....	125 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.

OPTICAL.

THE USE OF THE OPHTHALMOSCOPE.

Some of the simplest applications of optics to the observation of the eye, and detection of diseased conditions, depend upon the fact that the transparent structures still reflect some light, and more when diseased than when healthy. Thus:

Firstly.—We examine the reflecting efficiency of the surface of the cornea, in order to determine its transparency. In cases in which there is no large opacity, but simply a general steaminess caused by an uneven surface, it may be difficult to detect it by direct inspection, but if we expose the eye to the light and look at the image of the window frame produced, we shall see distinctly that this image is blurred and indistinct, like that from a greasy mirror.

Secondly.—We use what is called the catoptric test to determine the presence or absence of the lens. This depends upon the fact that the surfaces of the lens reflect images. Dilate the pupil well with atropia. Hold a small taper in front of the pupil in a dark room. You will observe, if the lens be present, three images: an anterior one, bright, distinct and erect—from the front surface of the cornea; a middle one, inverted, small, fairly distinct—from the concave posterior surface of the lens capsule; a posterior one, erect, indistinct—from the anterior surface of the lens capsule.

Thirdly.—Again, the surfaces of the crystalline lens easily become visible, by the light which they reflect, whenever we can see them obliquely. When the lens is in its normal position it is difficult, unless by oblique illumination, to see its surface; but if it is misplaced, as we sometimes find it, by congenital imperfection, or from injuries, then its surfaces, being oblique, become easily visible. Any one not aware of this fact would at once declare that the misplaced lens was also slightly opaque, and erroneous observations to that effect are to be found in some records of such cases.

In former days the catoptric test used to be much employed to determine the transparency, or otherwise, of the crystalline lens. Now, however, it has been wholly superseded by another discovery, which in its every-day usefulness is second only to that of the ophthalmoscope itself. I allude to oblique illumination. To accomplish this is the easiest matter possible, and by its aid any one of the slightest skill can, in almost all cases, determine at a glance the condition of the patient's pupil and of his crystalline lens. The smallest dots of pigment on the capsule, the least possible streaks of an incipient cataract, become by its aid conspicuously definite. We have no longer any need for the curious but very disappointing catoptric test, which fails us just when most needed, *i. e.*, in slight cases; for the discovery of cataract, in any stage whatever, is now perfectly easy. For oblique illumination you need only a candle and a convex lens, say a two-inch. The pupil should be dilated with atropia, and the candle, having been placed to one side of the patient's head, the lens is held so as to receive its light, and concentrate it to a pencil, which is thrown upon the patient's eye. All the superficial parts, *i. e.*, the cornea, the iris, the pupil and the lens, may thus be brilliantly lighted up. In addition to the illumination, we may also, with another lens, employ magnifying power, and thus inspect the state of things yet more accurately.

Oblique illumination is applicable to all morbid conditions of the cornea, iris or lens, and to blood-clots in the anterior part of the vitreous or new growths which bulge forwards into the anterior half of the globe. You cannot, however, by its aid, see the fundus of the eye. To do this we must employ another instrument. Here let us ask the important question, Why is an ophthalmoscope necessary? Why can we not, by simply looking into the little round box, one inch deep, which constitutes an eyeball, see what is at its bottom? The answer is, that the eyeball is not simply a box, it is an optical instrument, and it is from its lens apparatus that the difficulty comes. The rays of light received by the eye are brought to a focus on the retina; back again from the retina they are reflected, and pass out of the eye, destined to depict somewhere an image of the retina itself. The lens apparatus, however, not only brings the rays passing in to a certain and definite focus on the retina, but it acts on those which pass back, and brings these also to a focus at a certain and definite place. There is no difficulty whatever in illuminating the fundus—any light held in front of the eye will do that; nor have the structures of the fundus any difficulty in reflecting light by which they themselves ought in turn to become visible. The difficulty is in bringing the eye of the observer into the line of the reflected rays; this without artificial aid is impossible, and hence the necessity for the ophthalmoscope.

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THE USE OF THE OPHTHALMOSCOPE—CONTINUED.

Thus, if we hold a candle two feet in front of the observed eye, its rays, divergent, will be refracted in entering the eye, and will depict an image on the retina—they will then be reflected and again refracted in such a manner that an image of the fundus will be found at the position of the candle flame, that being the position of the conjugate focus. If the observer puts his head in the direction of these rays between the candle and the observed eye, of course he stops the rays which should have entered from the candle, he illuminates only the outside of his own head, and the eye of his patient is left in shadow. If he tries to see by looking from beyond the candle, then the flame of the latter intercepts his view and dazzles his eye. What is wanted is some contrivance to enable the observer to bring his head into his own light. Now, the mirror of the ophthalmoscope does this, a reflecting surface with a small hole in the middle, it practically makes the observer's eye the source of illumination, and brings it into the direction which the rays of light returning to their conjugate focus must take. Foreshadowed by Cumming, invented by Helmholtz, improved by Coccius, Reute, Liebreich, and many others, this little instrument, which has worked such a revolution in ophthalmic science, is thus simple in its essential principle.

The ophthalmoscope, as in daily use, consists of two parts, a mirror and an object lens, and to these is often added an eye-piece as well. The mirror, however, is the essential, the other parts are accessories intended for different special purposes. Without troubling you with details respecting the various modifications of the instrument, I will now describe the use of the simplest of them, a reflecting mirror slightly concave, and with a perforation in its center.

Having placed the patient's head in such a manner that the light (a lamp, candle or gas light), is on a level with his temple, and slightly behind it, and his face, as a consequence, in shadow, the observer sits in front and applies the back of the ophthalmoscope mirror to his own eye. He should keep both eyes open that he may see where the light falls, and then move the mirror until the light falls full on the pupil of his patient. In a moment he will perceive the first fact which this instrument reveals, that the fundus is not black, as it has always appeared to be before, but that it is of a brilliant fire-red. He will, however, see nothing of the fundus distinctly, only a general red reflex. Now at this point the student must stop awhile and use his mirror, to inspect, first, the transparency of the cornea, and next, that of the lens and vitreous, and to do this he must make the patient move his eye in various directions. After a little practice he will be able to manage his light well, and to throw it with precision wherever he may wish, and to keep it steadily on any given part. At a first lesson he may even, with advantage, practice for awhile by illuminating the second button of the patient's waistcoat. Tact in directing the light having been obtained, we may now proceed further. Instruct the patient to look, not full in your face, but over one shoulder; if you are inspecting his right eye, over your left shoulder. You will, when he does this, notice at once that the tint of the light reflected from his fundus is changed, that it is no longer fire-red, but canary-yellow. The reason of this is that a different part of the fundus is exposed to view—that, namely, of the optic disc itself, which is much lighter in color than the rest. The area of yellow is very large—occupies, indeed, the whole of the field, while we know that the disc itself is very small. This proves that the objects thus indistinctly seen are immensely magnified. Magnified by what? By the patient's own eye, which, as we have said, is equivalent to a lens of one-inch focus.

Hitherto, we have seen nothing distinctly, but if the observer now brings his head very close to his patient's face, he will be able with more or less facility to observe the details at the bottom of the eye, the trunks of vessels of the retina, the optic disc, etc., etc. All these will be seen very large indeed, being still magnified by the patient's eye. What he sees now is equivalent to type looked at through a one-inch lens, placed exactly one inch in front of it.

I have said that every lens has a principal focus, or spot at which parallel rays which impinge upon it are made to meet by the convergence induced. Now, suppose that from this focus the rays are reflected back again, they must pass through the lens in the reverse direction, and will again become parallel. If, however, divergent rays be used, they will in returning be converged and made to meet at another focus in front of it. Inasmuch as the rays were at first not parallel but divergent, the focus at which, after passing through the lens, they meet,

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will not be at the same distance as that for parallel rays, but at a greater one. The distance will always be in exact proportion to the degree of divergence, and thus the two foci will always bear mutual relations to each other. If one be brought nearer to the lens the other will be further off, and *vice versa*. Let us call them from this fact, that they maintain mutual relation, "conjugate foci." You may observe, if you like, that although conjugate, they keep each other at a distance. It is absolutely necessary that you should observe that all the rays of light passing out from the eye take a direction towards this conjugate focus, and that thus an observer who would make use of them to see the fundus must bring his eye into their line. This line, however, is the same that the rays took in passing into the eye, and if you try to intercept those coming out, you will intercept those going in and cut off the source of illumination.

[It is plain, then, that we cannot see the fundus of the eye without optical aid. Of such aid, we have our choice of the inverted and of the erect. Both are seen much magnified, the latter much more so than the former. For ordinary purposes the inverted image is used. It is seen very easily, and it brings a large field into view at once, so rendering the observer much less liable to inconvenience from slight motions of the patient's head. The examination of the erect image is chiefly useful for the inspection of detail, and even for these it requires great practice.]

Next I will attempt a few suggestions by which beginners, and those who use the instrument but seldom, may best hope to avoid mistakes.

1. Always indulge yourself in the use of atropine, and by its aid both enlarge the patient's pupil and paralyze his accommodation. Experts can manage without, and may sometimes smile at those who are obliged to use it, but the increased facility which it gives is such that no beginner should neglect it. The objection that it causes the patient inconvenience is a very trivial one. What the patient wants before all things is that a correct opinion should be formed, and to this end he is quite prepared to make a little sacrifice of convenience. For want of the use of atropine I think I have known even experts overlook things which would have been apparent at a glance had it been used.

2. Always proceed on system. Examine the eye first without the object-lens and ascertain the state of the cornea, lens, and vitreous. No mistake is easier to make, or more frequently made, than by the immediate employment of the inverted image to overlook the fact that the media are not perfectly transparent. With strong illumination you can look right through a slight opacity in the cornea, lens, or vitreous, and observe only that the retina and choroid are seen indistinctly. Many a diagnosis of "hazy retina" ought to have been "opaque vitreous." It is like criticising the beauty of a prospect, and declaring that it looks dull, when you have forgotten to observe that the window wanted cleaning. If you have any doubt as to the state of the cornea or lens, examine them by oblique illumination before going further. Many opacities in the cornea are so slight that you overlook them on naked-eye inspection, and also with the ophthalmoscope mirror, but find them directly by oblique illumination. Need I add that you must be very particular that your object-lens, when you use it, is quite clean. Any stains on it will be seen as if on the patient's retina.

3. Having completed your examination of the media, still proceed on system. The next duty is to estimate the length of the eyeball. A patient may come complaining that he is rapidly losing his sight, and you may find that it really has become so defective that he cannot read the largest ordinary print. You hastily assume that he must have some disease of the deep parts, some form of amaurosis. You proceed to ophthalmoscopic examination, and again hastily employ both mirror and object-lens, and it is quite possible that you may overlook altogether the fact that the eyeball is much too short and the patient hypermetropic. In high degrees of hypermetropia, if sudden failure of accommodation happen to occur, the defect in sight may often be so great as to draw the attention quite away from the right scent. I have already described the method by which we ascertain whether an eye is abnormal as to length. For the benefit of the mere novice, I may, however, here add that whenever, without the object-lens, any of the details of the fundus—vessels, disc, patches, etc.—are easily seen, he may be quite sure that the globe is either too long or too short, or that the lens is wanting. If these objects are seen very easily, and the image very bright and beautiful, then, in all probability, it is an inverted image and the eye is myopic. If only large trunks of vessels have been seen, and these not easily kept in view, then probably it is the erect image, and the eye hypermetropic.

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4. Still proceed on system. Having ascertained that the media are clear, and that the eyeball does not materially deviate from its normal length in either direction, you may now examine in succession the optic disc and its vessels, the retina, and choroid near to it, the yellow spot, and lastly, the outlying districts. I must mention each of these separately.

5. The Optic Disc. Note its shape, its margins, whether definite or otherwise, its color and its level. Observe whether the vessels upon it are seen sharply or not, and look particularly as to how they conduct themselves at its margin. Distinguish between artery and vein, and note the size of each. It is a common mistake with young observers to pay attention to the vein only. In the healthy state the disc should be round, and its choroidal ring distinct and sharp; the vessels on its surface should be seen with beautiful clearness and the difference between vein and artery, as to size and color, should be readily distinguished. In the center, or near it, and close to where the trunks of the vessels dip back, there will be seen a bright white patch. This white patch may be large and very conspicuous in some eyes and small in others, whilst still the eye is not in the least diseased. As regards the vessels, you must distinguish between the large branches of those destined to supply the retina and the minute ones which give a general pink tint to the nerve itself. The latter may be much diminished, whilst the former retain their size.

Amongst the more common peculiarities displayed by the disc in a state of disease we have:

1st. The formation of crescents by its side or of irregular circles around it in myopia.

2d. A jagged condition of the choroidal rim, indicating either the commencement of crescents or the previous occurrence of inflammation (neuritis).

3d. A hazy semi-opaque appearance of the structures in which the retinal vessels run, by which the latter are in part concealed and rendered indistinct. In this state the margins of the choroidal rim are concealed and the disc appears to be much increased in size and to be limited by a shaded, indistinct edge. This "wooly" condition implies neuritis.

4th. The disc may be too red or too pale. The pallor sometimes amounts to absolute whiteness, sometimes it is blue-white and sometimes it is a dirty gray tint. Sometimes the pallor affects the whole disc surface and at others only a part. If only a part, the third next to the yellow spot is that usually affected, and in commencing cases this is always the first to suffer. The pallor may indicate mere anæmia with, perhaps, primary atrophy, or it may indicate an anæmia and atrophy which are secondary to inflammation. It requires much experience to decide this point.

5th. The disc, instead of being on the same level as the rest of the retina, may be pushed backwards or cupped, as it is called. This cupping will be recognized by carefully tracing the main trunks of vessels and observing whether they curve on passing over the choroidal margin. If the cup is well marked, the vessels will bend so much that they are lost sight of at the edge of the disc, to be found again on its surface, looking much smaller and paler than those in the retina, and requiring a little movement of the object lens to bring them well out. Cups of this kind imply intra-ocular pressure, the characteristic of the disease known as glaucoma. With them pulsation of the vessels may often be observed.

Having carefully studied the disc, your attention will next be directed to the retina and its vessels. The retina ought to be almost perfectly transparent, but in dark eyes—and particularly in members of the dark races—a delicate haze, or bloom-of-plum appearance, may be observed in it, especially near to the yellow spot. You ought to be able to trace the retinal vessels with the greatest ease. If this cannot be done then inflammation of some kind or degree is present. The grand characteristic of inflammation, as far as the retina is concerned is opacity. This opacity may vary from the merest haze to that of the dense white or gray pellicle. By this haze the trunks of the vessels will probably be more or less concealed, but if the deeper layers of the retina are affected their concealment may not be much. You will remember that the retina consist of three principal layers—that of rods and bulbs, which is close to the choroid and probably fed by it, that of nerve cells, granular matter, etc., in the middle and that of nerve tubes (derived from the optic), etc., which is innermost. It is in the latter layer only that the arteria and vena centralis run; these vessels have nothing to do with the deeper or outer layers. The inflammation may affect chiefly the inner or outer layer, being in the one case a neuro-retinitis, in the other a choroido-retinitis. In some cases of retinitis, as in that which attends Bright's disease, hæmorrhages are very common.

The yellow spot is recognized almost as much by its negative features as by any distinctive peculiarities. It is situate a little to apparent nasal side (inverted image) of the optic disc and is exactly opposite the observer when the patient looks at the ophthalmoscope mirror. No large vessels cross it. It is more highly pigmented than the neighboring parts, and also often looks rather hazy and indistinct. It is here that the deposits characteristic of Bright's disease are earliest seen.

The choroid is the tissue which gives color and glow to the fundus. It may vary exceedingly within the limits of health, and its variations will cause apparent haze, or otherwise, in the retina. Before trusting yourself to any ophthalmoscopic descriptions whatever, examine carefully the differences in the eyes of fair and of dark persons. In the latter you will find the choroidal epithelium full of pigment, and showing dark mapped-out areas, which might easily

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be supposed to be morbid, while the vessels of the choroid are concealed. In the fair-complexioned eye the leashes of vessels will be seen with marvelous brilliancy and beauty, and the suspicion of atrophy will be suggested.

It is much more common to see the results of inflammation in the choroid than to trace the early stages of such. The results are permanent, and very conspicuous. The epithelium may be absorbed in large patches, usually with masses of black pigment remaining. The absorption may implicate deeper layers, and be attended by atrophy of the vascular rete and exposure of the sclerotic. The patchy condition in a case of choroiditis disseminata may be compared to that of a piece of well-marked tortoise-shell.

Inflammation of the choroid in patches is usually of syphilitic origin. Atrophy of the choroid, independent of inflammation, is frequent in advanced stages of myopia.

Inspection of the outlying districts of the fundus is easily made by making the patient look upwards, downwards, etc., strongly. It should never be omitted; for not infrequently changes may here be discovered which will be the key to the case. It is here that the dots of pigment, characteristic of retinitis pigmentosa, will be first found. Here, also, in syphilitic inflammation of limited degree, patches may be sometimes found when there are none in the central parts of the fundus.

Having mentioned some of the chief morbid conditions to be expected, I will now specify some of the errors into which novices with the instrument are likely to fall. Like all other instrumental aids—and the stethoscope is a prominent example—the ophthalmoscope must be expected to lead to many mistakes. It is difficult to use, and requires long experience before the observer can trust his own interpretation of what he has seen. Want of familiarity with the varying conditions which may be met in health, is a main cause of error. Thus a well-pigmented choroid in a dark-complexioned person may be easily apprehended. A very large physiological cup may be taken for "white atrophy," or for a glaucoma cup; a margin of black pigment at the edge of the disc may be attributed to disease; and alterations in size of vessels, which are peculiar to the individual, may be supposed to imply anæmia or congestion. It is possible, also, in a highly pigmented eye, to mistake the yellow spot itself for the remains of a blood clot. As to the common error of fancying the retina hazy when the appearances are due to opacity in one or other of the media, I have, I think, already said enough.

Degrees of vascularity are especially difficult of satisfactory comparison. You will hear one authority assert that the disc or retina is congested, when another will declare that they are quite normal. Let me warn you against the diagnosis of "congested retina." In four out of five of the cases in which the words "hyperæmic retina" are used, they are probably employed in error. Both in the optic disc and in the retina, the size of the vessels may differ widely and be still within the bounds of health. Just as one person may have a florid cheek and red ears, and another pale ones, yet both be in good health, so may the color of the optic disc and the size of the retinal vessels differ. The conditions of the circulation in the retina are such as to make any condition analogous to erythema of the skin simply impossible.

If you find the retina visibly reddened, be sure that it is not simply "congested," but stained by infusion—in fact, inflamed. The individual arteries are too far apart to give any general red color to the whole. The interpretation of congestion must rest on the enlargement of their trunks only; and this, which is a comparative question, is very difficult to estimate. The old notions as to active congestion preceding inflammation, must be abandoned for the retina, as elsewhere. We now know that cell changes are the essential factors in inflammation, and that it is these that induce vascular changes. I do not by any means deny that the optic disc and retina may in some cases contain too much blood, and yet show no trace of inflammation; but I feel sure that these conditions are far less frequent than they are thought, and I warn the beginner against the fatal facility of explaining amblyopia by discovering congestion.

[Jonathan Hutchinson, Esq., Surgeon to the London Hospital, in "Clinical Reports of London Hospital," 1867-8, p. 182.]

OPHTHALMOSCOPES.

4526. KNAPP'S DOUBLE DISC OPHTHALMOSCOPE.

Two discs are placed behind the mirror, the upper containing one empty aperture and thirteen concave glasses; the lower, one empty aperture and thirteen convex glasses. Each disc is fastened like the one in the Single Disc Ophthalmoscope, and is moved separately, the superior one on the upper edge of the instrument, the inferior one on either side of its lower end. The edges of the two discs overlap behind the opening in the mirror in such a way that, by combination of concave and convex glasses, as great a variety of auxiliary lenses can be obtained as the most minute physiological and pathological examination ever will require.

This instrument offers a complete series of correcting glasses to the expert ophthalmoscopist if he wants accurately to ascertain the dioptric condition of an eye independently of the statements of the patient, or to determine the relief of the background of the eye, and follow its changes in the course of exudations, tumors, excavations, etc. A full description of this instrument, with many practical remarks, may be found in the "Archives of Ophthalmology and Otolaryngology," 1874, Vol. III., No. 2, pp. 1-25.

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OPHTHALMOSCOPES.

4520. Dennett's Electric Light Ophthalmoscope, with two Handles and Cable, consists of a Loring Ophthalmoscope No. 4529, so arranged that the Handle and Mirror may be removed in one piece and its place supplied by a Hollow Handle, in which is a One-Candle Edison Lamp, and at the top of which is a small Mirror. In case.....\$35 00
4521. Dudley's Ophthalmoscope..... 22 50
4522. Fox's "..... 25 00
4523. Green's (St. Louis) Ophthalmoscope..... 25 00
4524. Jackson's Ophthalmoscope..... 27 50
4525. Keyser's Double Disc Ophthalmoscope..... 25 00
4526. Knapp's Double Disc Ophthalmoscope..... 26 50

Dr. Fox's Ophthalmoscope is furnished with two Mirrors, one of eight and one of twenty centimetres focal length, the former included for the direct method. These are held by a clip, in which they can be rotated in any direction, and are easily removed to change one for the other. Twenty-one lenses are arranged in a disc, which is moved by a toothed wheel situated some distance below the disc; and a superimposed crescent, which has an independent movement, contains five additional lenses. These are capable of seventy-five different combinations, ranging from 0.5 to 22 dioptics plus, and 0.5 to 35 dioptics minus.

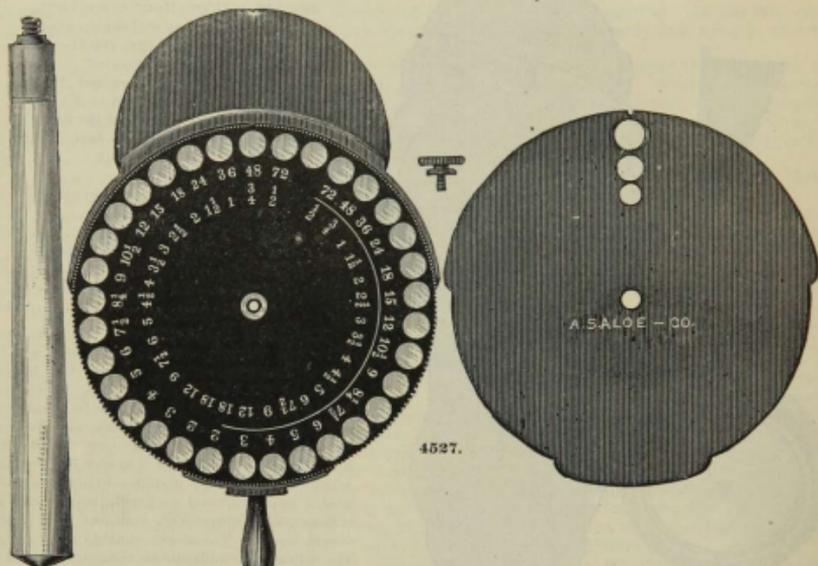


4526. Front View (Mirror).

4526. Lenses and Discs—Cover Removed.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

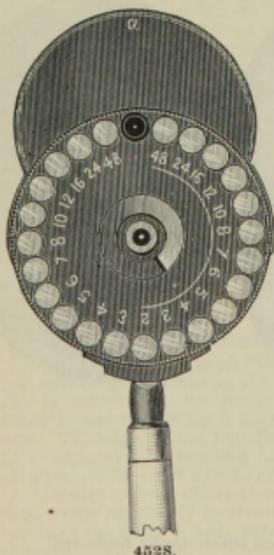
OPHTHALMIC.
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4527.

Knapp's Metric System Ophthalmoscope contains 32 glasses, running from 0.5 Dioptric to 18 Dioptries, positive and negative.

4527. Knapp's Metric System Ophthalmoscope, 32 lenses, round mirror with condensing lens, in case, \$25 00



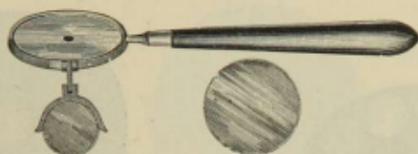
4528.

Knapp's Single Disc Ophthalmoscope has a series of auxiliary lenses as extensive as any ophthalmoscope, with the exception of Dr. Knapp's double disc instrument. It is sufficient for all the purposes of the student and practitioner in ophthalmic surgery. When the instrument is held 20 millimetres from the patient's eye, the accompanying table will indicate, in millimetres, the shortening and elongation of the optical axis as determined with this (and other) instruments in the erect image and by relaxed accommodation. For a full description of the instrument see "Archives of Ophthalmology and Otology," Vol. IV., No. 1.

- 4528.** Knapp's Single Disc Ophthalmoscope, 23 lenses, open disc, round mirror, with condensing lens, in case..... \$12 00
- 4529.** Knapp's Students' Ophthalmoscope, 15 lenses, covered disc, numbered in the metric and inch system, round mirror, with condensing lens, in case..... 15 00
- 4530.** Knapp's Students' Ophthalmoscope, 23 lenses, covered disc, numbered in metric and inch system, round mirror, 2 condensing lenses, in case 18 00

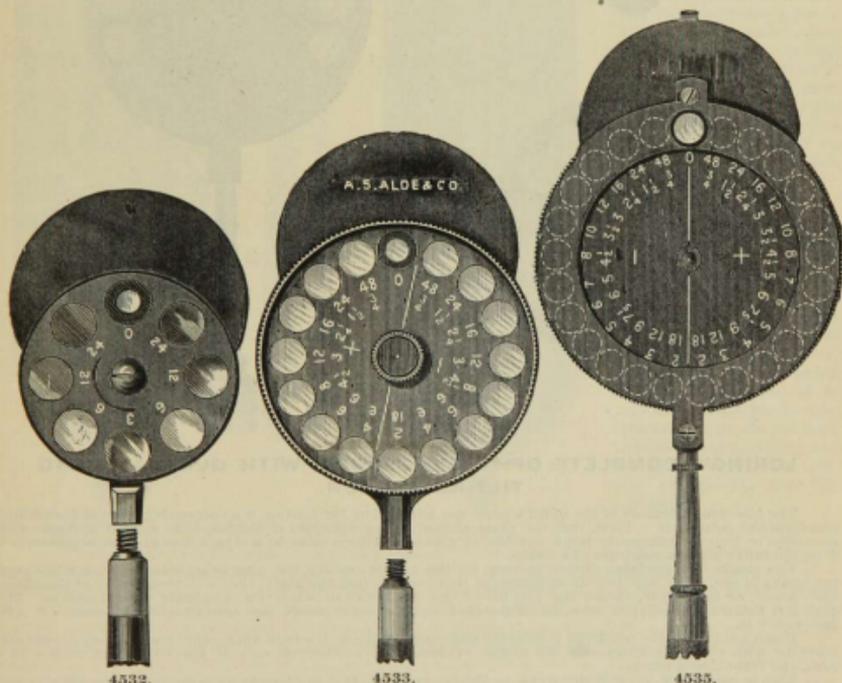
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.
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4531.

4531. Liebreich's Ophthalmoscope, with 2 Bi-Convex Condensing Lenses and a series of 5 Lenses of various foci, fitting into an arm behind the perforated mirror, in case..... \$2 50



4532.

4533.

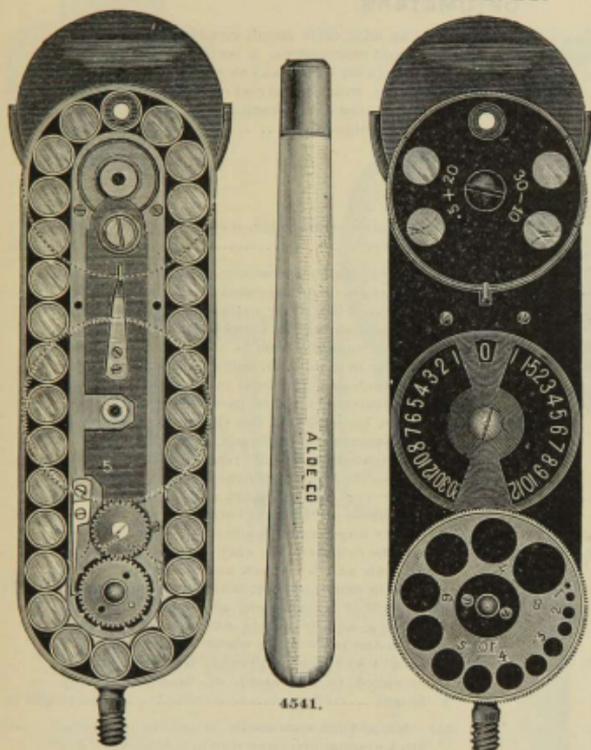
4535.

4532. Loring's Student Ophthalmoscope, 7 lenses, round mirror, with condensing lens, in case..... \$ 5 00
 4533. Loring's Practitioners' Ophthalmoscope, 15 lenses, open disc, numbered in the metric and inch system, round mirror, with condensing lens, in case..... 12 00
 4534. Loring's Ophthalmoscope, 15 lenses, under ring cover, numbered in metric and inch system, round or tilting mirror, with 2 condensing lenses, in case..... 16 00
 4535. Loring's Ophthalmoscope, 23 lenses, under ring cover, numbered in metric and inch system, round or tilting mirror, with 2 condensing lenses, in case..... 18 00
 4536. Loring's Post-Graduate Ophthalmoscope, with round or tilting mirror, with 2 condensing lenses in case..... 20 00

Consists of two superimposed discs, by means of which 31 combinations can be made. The lower disc contains 15 convex lenses, from .50 to 17.5 D., giving the convex series; in the upper disc, which serves also as a cover, is a minus 18. D. lens, which, when brought into position before the mirror hole, gives a series of 16 concave lenses from .50 to 18. D.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.
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OPHTHALMOSCOPES.



MORTON'S
OPHTHALMOSCOPE

Consists essentially of twenty-nine separate lenses, enclosed in an endless groove and propelled by a strong driving-wheel. In addition to the lenses just mentioned are four others, set in a separate disc, and so placed that they can be instantly put in front of, or removed away from, the sight hole, without rotating the whole series of convex or concave lenses. At the same time that the driving-wheel propels the lenses, it rotates a disc on which, at a certain aperture, is indicated the lens presented at the sight hole.

On the front of the instrument is an arrangement similar to the nose-piece of a microscope, revolving on a central pivot and carrying a concave mirror at either end—three mirrors, one plane and one concave mirror of 10-inch focus at one end and a small concave mirror of 3-inch focus at the other. The first two, which are set back to back in one mounting and are reversible, are for indirect examination and Retinoscopy.

The advantages claimed for this Ophthalmoscope are briefly:

1. A continuous series of single lenses, sufficient for all ordinary purposes.
2. The provision of a few separate, easily adjustable, lenses for extraordinary cases.
3. The lens in the sight hole is always shown on the indicating disc (except in the rare cases where one of the extra lenses, just mentioned, is used).
4. The numbers of the lenses and their relative positions being fully exposed on an indicating disc, the direction in which this latter has to be rotated, to bring any particular lens to the sight hole, is at once made manifest.
5. There is only one driving-wheel.
6. A pupillometer, which is set in the face of the driving-wheel.
7. The provision of two mirrors revolving on a central pivot, so that either can be at once brought into position.
8. The width of the instrument is only $1\frac{1}{4}$ inches, while the driving-wheel, being three inches below the sight hole, is unimpeded in its action by contact with the face of observer or patient.
9. Lastly, the instrument balances well in the hand, is light and packs into a small compass.

4541.	Morton's Improved Ophthalmoscope, complete with Plane, Concave and Short Focus Mirrors and Silver Pupillometer, with Condensing Lens, in case.....	\$ 25 00
4542.	Nacht's Pocket Ophthalmoscope, with Condensing Lens, in Steel frame, Leather case	5 00
4543.	Noyes' Ophthalmoscope.....	27 50
4544.	Valk's (Improved Loring) Ophthalmoscope, similar to Loring's, with the addition of a rack movement for rotation of disc	25 00

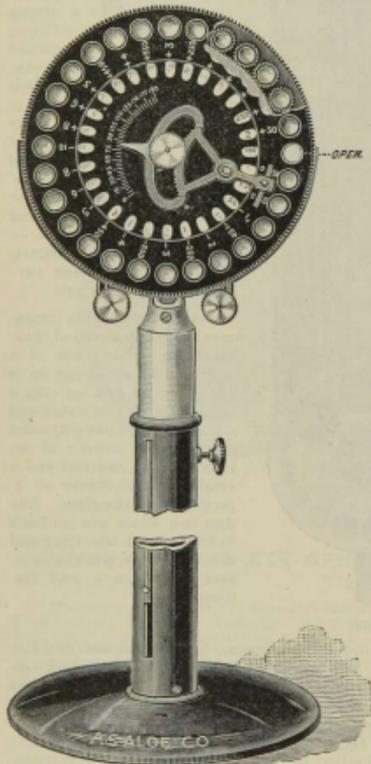
OPHTHALMOSCOPIC CONDENSING LENSES.

4545.	Condensing Lens, $1\frac{1}{4}$ inches.....	\$ 50
4546.	" " $1\frac{3}{4}$ " in hard rubber frame	75
4547.	" " 2 "	1 00
4548.	" " 2 " in hard rubber frame.....	1 25

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OPHTHALMIC.
OPTICAL.
OPTOMETERS.

4549. Bull's Optometer. This instrument, mounted on an adjustable stand, consists of a slide 22 inches long, divided by scales of inches, dioptics and centimetres, a series of domino-like squares, increasing in size, are marked thereon at certain intervals, and an eye-piece, provided with three lenses, respectively -10., + 10., and + 5. D., by which the errors of refraction are determined. A small slide containing cylindrical lenses is used in conjunction with a small astigmatic chart, moving on the slide, for the examination of astigmatism..... \$15 00

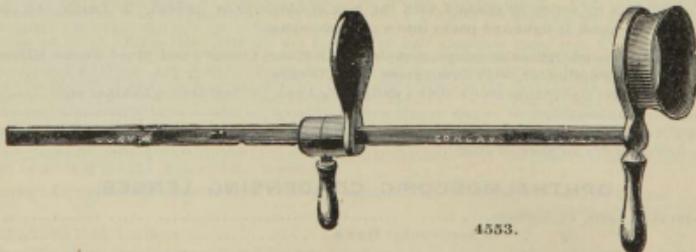


4551.

4550. Graefe's Optometer, Complete with Tape Measure..... 3 00

4551. Javal-Bull's Optometer, model of 1889, consists of two superimposed discs, one carrying spherical, the other cylindrical lenses, each disc containing 14 concave and 13 convex lenses, running from + .50 to + 8. D. and from - .50 to - 10. D. spherical, and the same in cylindrical. There is in addition a clip on the reverse of the disc, carrying a + 10. D. and a - 10. D., by which the spherical series may be increased accordingly, and the different combinations are easily read on either side of the discs. The instrument is so arranged, that either eye can be tested with equal facility. The lenses are brought before the eye by turning the large screw-heads seen below the disc, and the cylinders are each separately rotated on their axis by a rack and pinion movement seen in center of disc, which operates upon a cog-wheel arrangement as shown in the engraving, and the axis is indicated by a pointer upon the scale. The whole is mounted on a stand 4 feet high, with heavy iron base, and is arranged to be raised or lowered to any height..... \$150 00

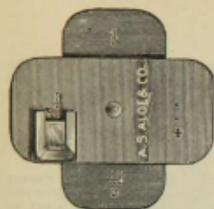
4552. Metre-Stick Optometer. Consists of a metre stick graduated on one side in centimetres and millimetres, and on the other in inches and eighths of inches, while one side has a scale of dioptric focal length. With carrier and a set of 8 cards of test type..... \$2 50



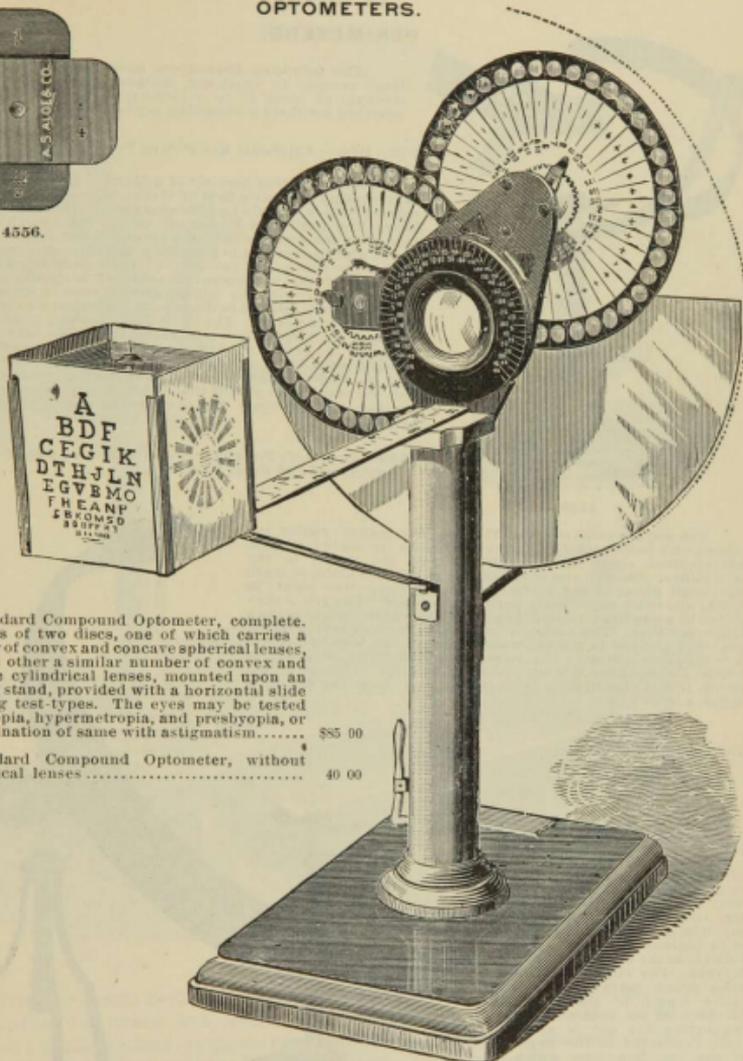
4553.

4553. Simple Optometer with Convex Lens and Sliding Test-Type on Graduated Nickel Plated Bar.. \$2 50
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.
OPTICAL.
OPTOMETERS.



4556.



4554. Standard Compound Optometer, complete. Consists of two discs, one of which carries a number of convex and concave spherical lenses, and the other a similar number of convex and concave cylindrical lenses, mounted upon an upright stand, provided with a horizontal slide carrying test-types. The eyes may be tested for myopia, hypermetropia, and presbyopia, or a combination of same with astigmatism..... \$85 00
4555. Standard Compound Optometer, without cylindrical lenses..... 40 00

4554.

4556. Thomson's Optometer. Dr. Wm. Thomson's Perforated Discs, for the detection and measurement of ametropia. These are four in number. They are to be placed, one at a time, before the eye to be tested, which is fixed on a point of light five metres distant. No. 1 has a single perforation which reduces to a single point the diffuse image of the light which the ametropic eye perceives without the disc. No. 2 has several perforations, each of which gives its separate image of the point of light. No. 3 has two perforations, giving two images, and one of them can be covered by a colored glass, giving a colored image. When the colored image is on the same side as the colored glass myopia is indicated, if on the opposite side it is hyperopia. No. 4 also has two perforations and gives two images. By measuring the apparent distance of these images apart, the degree of ametropia is ascertained. By placing the proper correcting lens before either of these discs, the double or multiple images are fused in one..... \$ 3 00
4557. Tweedy's Optometer..... 15 00

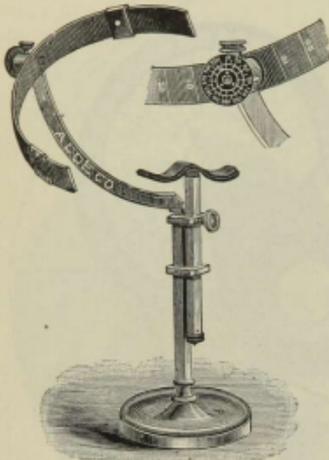
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.

OPTICAL.

PERIMETERS.

The following Perimeters have been selected from the large number in existence, because they comprise the best mechanical ideas as to construction, and furnish the most practical method for obtaining perimetric observations:



4558. Dyer's Automatic Registering Perimeter.....\$ 100 00

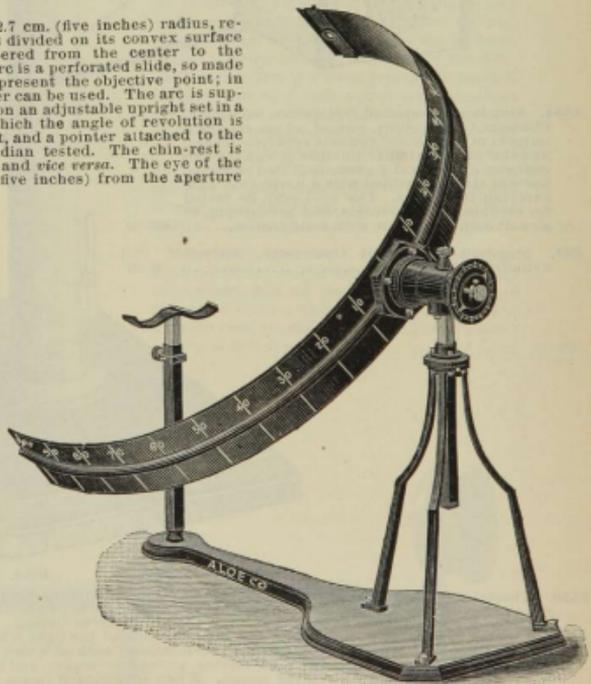
The instrument consists of a Metallic Hemispherical Frame representing the entire field of vision. It is mounted on a hollow column, which contains a gear movement operated by a crank at base. The turning of this crank causes the objective point, attached to the concave side of a revolving arc, to travel along the spiral wire from center to periphery, and thus pass over the visual field in one continuous movement. The registering apparatus on the back of the instrument consists of a stylus, which moves synchronously with the object-carrier over a spirally-grooved metallic plane, marked in degrees to correspond to the positions occupied by the same. The chart for recording is fixed firmly on a hinged shelf and is pressed against the stylus, making a perfect record of the extent of the field of vision. The outer periphery, which is a flat band, is graduated on both sides, so that the degrees may be read from any position that the examiner may occupy, and the crank is so placed that it may be operated by either the surgeon or the patient. The double chin-rest is adjustable to any height.

4559. Emerson's Perimeter, with two Sliding Object-Carriers, on Solid Brass Base.....\$ 20 00

The arc is a semi-circle of 12.7 cm. (five inches) radius, revolving on a hollow spindle, and is divided on its convex surface into eighteen equal parts, numbered from the center to the extremities. On each arm of the arc is a perforated slide, so made that small pieces of paper can represent the objective point; in testing the color zones color paper can be used. The arc is supported by a quadrant, mounted upon an adjustable upright set in a firm brass base. The scale on which the angle of revolution is measured is fixed to the quadrant, and a pointer attached to the revolving arc indicates the meridian tested. The chin-rest is double, the right for the left eye and *vice versa*. The eye of the person tested should be 12.7 cm. (five inches) from the aperture and on a level with it.

4560. Landolt's Perimeter, with Sliding Object-Carrier and Biting Chin-Rest.....\$30 00

The Perimeter is supported by a brass tripod, mounted on a japanned iron base, on the further end of which is fastened an upright supporting the chin-rest. It has a broad, hard rubber arc, describing a radius of 28 cm., which is divided into spaces of 10 degrees each and subdivided near the center into single degrees. The object point is a slide which moves across the entire length of the arc. On the back of the central spindle supporting the arc is a fixed scale graduated to the degrees of the meridian, over which a pointer travels with the revolutions of the arc and indicates its exact position. Both the chin-rest and arc are adjustable to various heights by means of telescopic tubes fastened with set-screws.

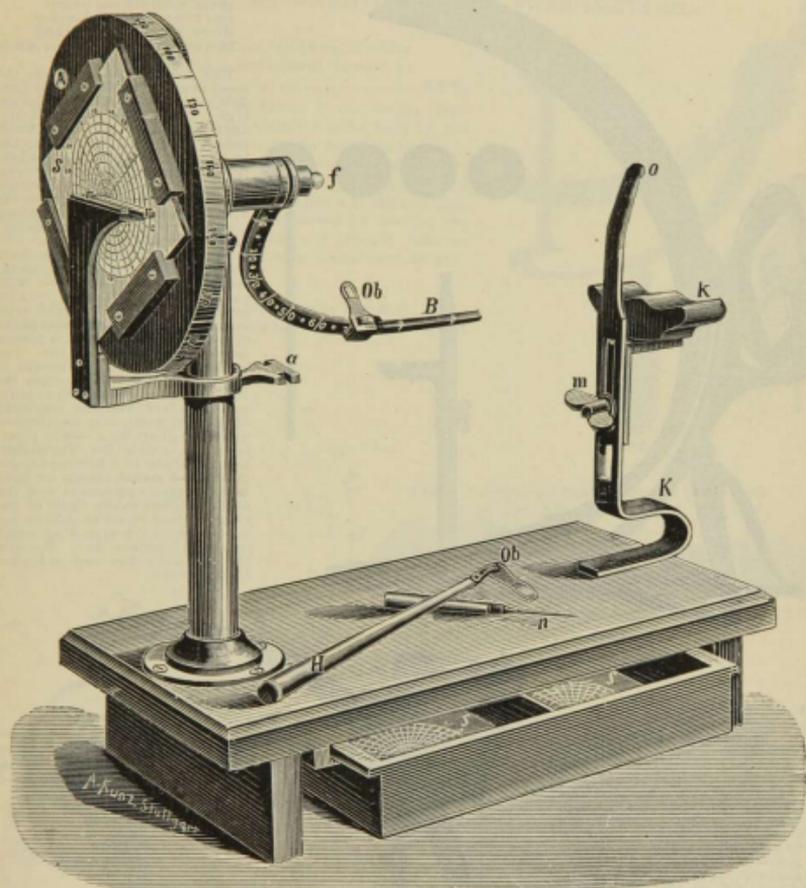


4560.

4561. Carmalt's Perimeter.....\$ 30 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.
OPTICAL.
PERIMETERS.



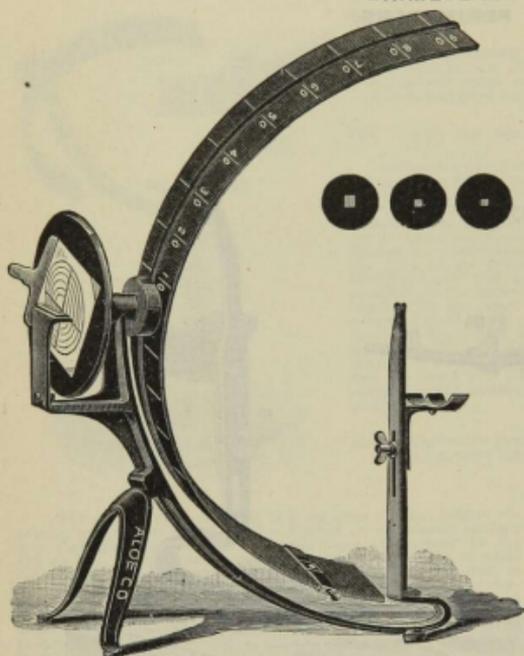
4562.

The Priestley-Smith Perimeter is mounted upon a wooden table which has a convenient drawer holding the charts and colored discs and handle. It consists of a metal quadrant attached to a rotating wheel, weighted to balance the quadrant. To the back of the wheel is attached the chart, which is slipped into the holder when the spring catch of the pocket is uppermost, and on which the exact position of the objective point is pricked in the manner given in the description of the "M. B." Perimeter. A large, hard rubber disc accompanies the instrument, which is placed immediately behind the quadrant and conceals the hand of the operator. An adjustable chin-rest slides on an upright bar, the end of which indicates the point of fixation.

4562. Priestley-Smith's Registering Perimeter, complete, with charts..... \$30 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

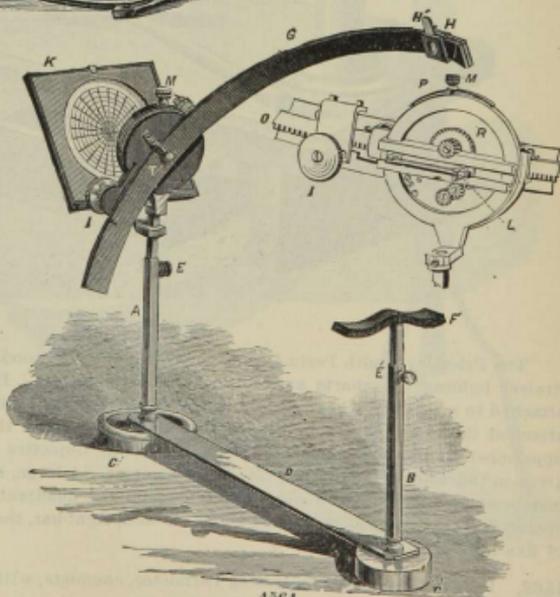
OPHTHALMIC.
OPTICAL.
PERIMETERS.



4563.

4564. Stevens' Automatic Registering Perimeter. Complete, in portable, polished wood case.....\$75 00

The instrument is mounted on a solid brass base, with telescopic tube supporting a revolving cell, through the center of which an arc with a radius of one-third of a metre is moved its entire length by a rack and pinion, thus bringing the objective point to every position in its meridian. The revolution of the cell enables the arc to be moved over the entire visual field. The automatic registration on the chart, contained in a hinged frame, is affected by pressing the same against a needle point, which is moved by the same mechanism as the arc and relatively shows the position of the object-carrier in the field of vision. The double chin-rest, mounted on a telescopic tube with separate base, is attached to the Perimeter by a metallic bar, which holds it at the requisite distance from the fixation point, placed in the center of the revolving cell. The Perimeter is easily taken apart and packed for transportation in the case furnished with it.



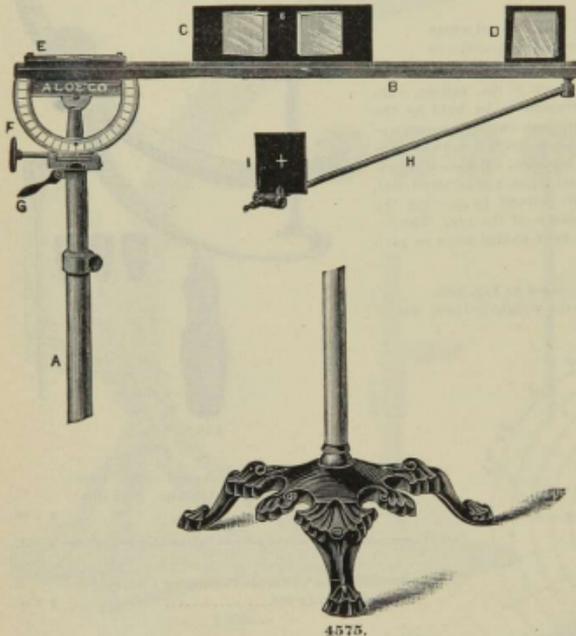
4564.

4563. The "M. B." Registering Perimeter. Complete, with sliding object-carrier, assorted color discs, handle, needle and two dozen charts.....\$25 00

This instrument combines the most practical points of the Landolt and Priestly-Smith Perimeters. It is light and well balanced, and has the broad, hard-rubber arc, with the sliding object-carrier of the Landolt and the registering attachment of Priestly-Smith. It has an adjustable double chin-rest, sliding upon the upright bar, the end of which carries a rubber plate and determines the point of fixation.

The chart is fitted to a hard rubber disc at the back of the instrument, and is revolved with the arc. A stationary scale, mounted upon an upright arm, is graduated to correspond to the divisions of the arc and is placed immediately back of the disc holding the chart. By means of this ingenious combination the exact position of the object point upon the arc, and the meridian of the arc itself, may be pricked upon the chart by a single puncture. In using the Perimeter, bring the arc to a horizontal position, the metal clamp on back of disc being uppermost and the object carrier to the right of patient. *O* on chart should be opposite the corresponding mark on hard rubber disc. Revolve the arc in the direction indicated by the arrow.

OPHTHALMIC.
OPTICAL.
PHOROMETERS.



Stevens' Phorometer consists of the standard A, supported by a tripod. The standard is freely extensible, permitting a ready adjustment for difference in stature of patients. The arm B is grooved, and allows the carriers C and D to rest securely, to slide freely from end to end of the arm, or to be removed at will. At E a spirit-level is attached to the arm, by means of which the horizontal position of the arm can be determined. The semi-circular piece at the head of the arm is spirally toothed and is acted upon by the endless screw at F, which imparts to the arm an upward and downward elbow movement. The semi-circle is graduated in degrees, and a fine pointer indicates the extent of motion imparted by the screw. By means of the lever G the screw can be unlocked, allowing the arm to fall to the side of the standard. Of the two prism-carriers one carries two prisms placed horizontally, with their bases in, and of sufficient strength to induce homonymous diplopia. The prism D is placed with its base down and is used for determining lateral tendencies. The

rod H carries a tablet I, on one side of which is a small cross and on the other side a cross somewhat larger. The tablet is reversible, and the crosses are used as objects in determining the tendencies in accommodation. The tablet is, when brought into position, one-half metre in front of the prism; but by means of a fixation-screw it can be brought nearer if desired.

When not in use the rod is parallel with the arm. As has been intimated above, in the determination of the tendencies of the visual lines much freedom may be given to the position of the head without material effect upon the position of the images, provided the prisms are independent of the head and somewhat removed from the eyes. This does not hold good in every case, but the exceptions are somewhat rare, and the presence of the exceptional condition can be quickly ascertained.

DIRECTIONS.—In using the instrument the arm is brought nearly to the height of the eyes and to the horizontal plane, as shown by the spirit-level. In general it is best to allow the instrument to be about one foot in front of the eyes; but should the horizontal prisms, in a special case, prove to be insufficient to induce diplopia, the instrument may be still further removed, when the effect will be greater. Otherwise an additional square prism may be slipped in front of one of the permanent glasses. In determining the extent of the deviating tendency the measuring prism from the trial case is placed immediately in front of the eye.

4575.	Stevens' Phorometer, Model A, with 2 plain Prism Carriers.....	\$ 30 00
4576.	“ “ “ A, with new Improved Rotating Prism Slide and Supplemental Prism (No. 4582).....	45 00
4577.	Stevens' Phorometer, Model B, with 2 plain Prism Carriers (See Foot Note).....	18 00
4578.	“ “ “ B, with new Improved Rotating Prism Slide and Supplemental Prism (No. 4582).....	33 00

NOTE.—To meet the demand for a reliable instrument at low price, Model B has been constructed. It is not as highly finished as Model A, and has not the endless screw adjustment, but in point of accuracy is equally reliable.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.

OPTICAL.

PRISM HOLDER—PRISM MOBILE—PRISM PILE—PRISM SLIDE.

PRISM HOLDER.

4579. Noyes' Prism Holder consists of a central stem, about 0.5 metre long, graduated in centimetres and inches, on which is a slide carrying test cards, and to the end of which is attached a box containing three cells for each eye, into which corrective glasses and squared prisms may be dropped. It will contain prisms amounting to 50° and is more convenient than the trial frame. With set of three test cards.... \$ 5 00

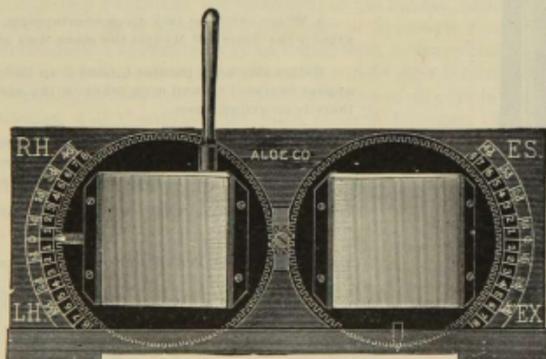
PRISM MOBILE.

4580. Cretes' Prism Mobile. The mechanism is similar to the Stokes' lens, except that prisms are substituted for cylinders, giving a series up to 30° . In case..... 12 00

PRISM PILE.

4581. Emerson's Prism Pile consists of a series of prisms mounted permanently in a brass frame. The strength of the prisms is increased by the addition of two separate prisms of 1° and 16° , sliding in a groove in the back of the frame, giving a complete series up to 32° . In case..... 18 00

PRISM SLIDE.



4582.

The slide contains two cells, in each of which rotates a disc, each disc carrying a prism of 5° . Each disc is furnished with a border of teeth or cogs. A small gear wheel, placed between the two discs, communicates the movements from one disc to the other.

Around the outer part of the border of each cell is a narrow raised band on which is marked a scale of degrees, increasing from the center each way from 0° to 8° , the numbers representing the retracting angle of prism, the method of notation now commonly used. A second scale, just outside the first, is similarly graduated according to the new system of designating prisms by the refracting power or number of degrees of minimum deviation. This scale is made to correspond to the standard recommended by Drs. Jackson, Dennett and others, to the American Ophthalmological Society at its session in 1888. The numbers in this scale are marked 1° , 2° , etc.

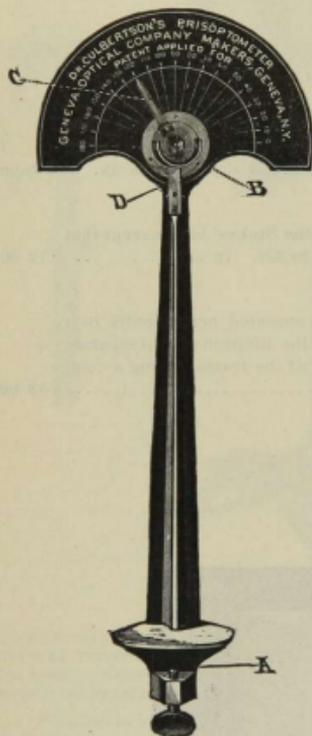
The scales represent a far greater degree of accuracy and uniformity than the prisms found in the trial cases in common use, and the convenience of the two scales is apparent.

4582. Stevens' Improved Rotating Prism Slide and Supplemental Prism..... 18 00

OPHTHALMIC.

OPTICAL.

PRISOPTOMETER—PUPIL METER—PUPILOMETERS.



4583. Back View of Eye-Plate of Prisoptometer.

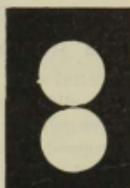


Fig. 1.

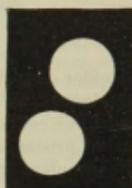


Fig. 2.

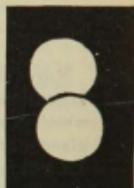


Fig. 3.

CULBERTSON'S PRISOPTOMETER.

When the Prisoptometer is placed in correct position and the distance is made right as directed, a person with perfect eyes, looking at the object circle, will see two white discs with edges touching, as shown in Fig. 1.

A Hypermetrope will see two discs separated, as in Fig. 2, and the degree of separation will indicate the degree of Hypermetropia.

A Myope will see two discs overlapping, as in Fig. 3, and the greater the degree of Myopia the more they overlap.

Rotate the index pointer C from 0° to 180°, and if the two discs appear to travel around each other in the same relative position, there is no astigmatism.

If the discs lap more with index at one point than at another, or are separated more at one point than another there is astigmatism. Full directions with each instrument.

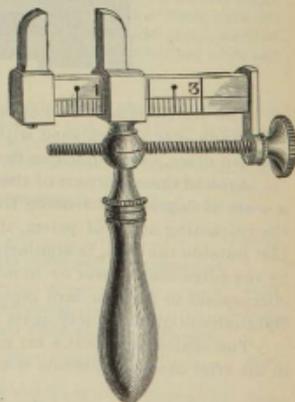
- 4583. Culbertson's Prisoptometer, including Object Circle and Stand \$25 00
- 4584. Culbertson's Prisoptometer, without stand..... 21 00

PUPIL METER.

- 4585. Nickel-plated Pupil Meter, for pocket,..... \$ 0 25

PUPILOMETER.

- 4586. Fisher's Adjustable Frame..... 15 00
- 4587. M. B. Patent Pupilometer, divided in inches and millimetres..... 3 00
- 4588. Set Screw Pupilometer..... 3 75



4588.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.

OPTICAL.

SKIASCOPES—STRABISMOMETERS—STRABOMETERS.

A SIMPLE SKIASCOPE.

By H. V. WÜRDEMANN, M. D., of Milwaukee, Wisconsin.

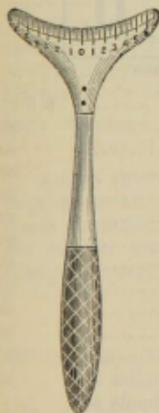
To a skilled operator, in ordinary cases, the findings of the "shadow test" are accurate within .25 D., and I have learned to place such reliance upon the method that, were I suddenly deprived of it, especially in low grades of astigmatism, I would be at loss to do my refractive work properly. Instead of being merely an additional test, the use of the Skiascope facilitates the examination greatly, and the results obtained by this method of ocular examination may be relied upon more than any other. I would have no hesitation in fitting glasses by Skiascopy alone, but of course use it in conjunction with other methods.

The instrument figured has given such satisfaction that I take pleasure in bringing it to the notice of the profession. It consists of an oblong blade of hard rubber, in which are inserted twelve plus and twelve minus lenses. The patient raises or lowers the contrivance by the handle, at the word of the examiner. At first the subject brings the plus .75 lens before his eye, which should completely neutralize the movement of the lighted retinal area, if he be emmetropic. If he is known to be myopic or hyperopic from a previous test, the skiascopic examination may be begun with the calculated lens. The "shadow test" will then be both a corroborative and a finer test of the refraction. If the neutralizing lens be convex, the refraction of the eye in that meridian is .75 D. weaker, and if concave the same amount stronger. Thus we add .75 D. in myopia and subtract it in hyperopia.

If stronger glasses be needed, a pair of lenses from the trial case may be worn by the patient, in a trial frame behind the instrument, and their strength added to those in the skiascope. Thus any combination may be secured.



4589.



4594.

- 4589. Würdemann's Hand Skiascope \$11 25
- 4590. Burnett's Skiascopic Disc, Mounted on Adjustable Iron Tripod Stand..... 15 00
- 4591. Würdemann's Skiascopic Disc, Mounted on Iron Tripod Stand 15 00

STRABISMOMETER—STRABOMETER.

- 4592. Galezowski's Binocular Strabismometer..... \$4 50
- 4593. Horstman's (Inch and Metric) " 5 00
- 4594. Lawrence's Ivory " 1 75

OPHTHALMIC.

OPTICAL.

OCULISTS' TRIAL CASES.

A set of trial lenses is an absolute necessity to any one practicing refraction, if accuracy is at all considered. As a trial set of some sort is indispensable to the refractionist, the first consideration is its accuracy and completeness of detail, that it may meet any requirement. The trial set must be accurate, as it is the "key" to the correction of errors of refraction. The lenses may be numbered either in the dioptric or the inch system. For two conclusive reasons we adopt the former. First, we are able to have a definite and correct starting point. We accept one dioptre as the measurement of a lens having a focal distance of 39.37 English inches (considered 40 inches). This being a correct beginning, we are enabled to determine exactly the focal distance of any given lens quickly and accurately. Second, the combined power of two or more lenses can be readily obtained by a simple mental calculation, with the dioptric system. For instance, the combined power of a convex lens of one, two and four dioptrics (+1. +2. +4.) would be seven dioptic (7.), but the combined power of a forty, a twenty and a ten-inch lens could not as readily be calculated.

Our trial lenses are all ground on extremely accurate tools, the curvatures of which are calculated from the above-mentioned unit.

After insuring accuracy of the lenses, we give attention to other details, in order to make our trial sets complete and satisfactory.

Following closely the well-known Nacet model, we furnish the lenses with metal rims, the concave gilt and the convex silver-plated. This adds to the appearance of the cases, and makes it convenient to readily distinguish one lens from another.

For those who may desire them, we are prepared to furnish trial cases containing lenses fitted with nickel-plated steel rims, the symbol and focus being stamped or cut on the handle. This method is more durable than by designating the character of the lens by plated rings, and does not add much to the cost. The boxes are made of the best seasoned lumber obtainable, and are fastened in the most durable manner. They are leather covered or in natural oak, beautifully polished, as desired. At a slight advance in price, the leather-covered cases are furnished with heavy plate-glass top. The polished oak cases are furnished with patent detachable cover, for which there is no additional charge. This description refers to sets of trial lenses entirely our own manufacture, and in which no expense is spared to make them a source of satisfaction to the refractionist, and a constant reminder of the accuracy of our product. They are not intended to enter into competition with the many low-priced sets which have lately been introduced by unscrupulous dealers, and which are never satisfactory after the user appreciates accuracy.

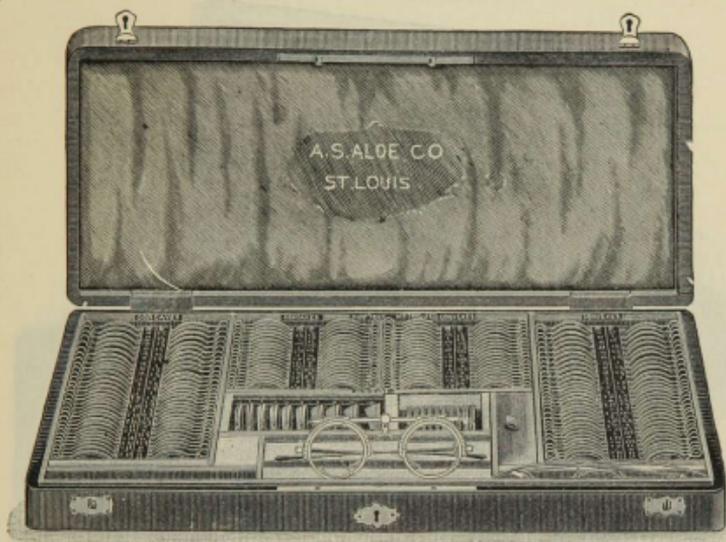
Following we give a detailed description of a few of our many styles of standard sets, the assortment of lenses in which can be varied as desired. The price of any given set can be somewhat lessened by omitting the rings which encircle the lenses, the market value of them being deducted when they are not wanted.

OPHTHALMIC.

OPTICAL.

OCULISTS' TRIAL CASES.

COMPLETE SERIES.



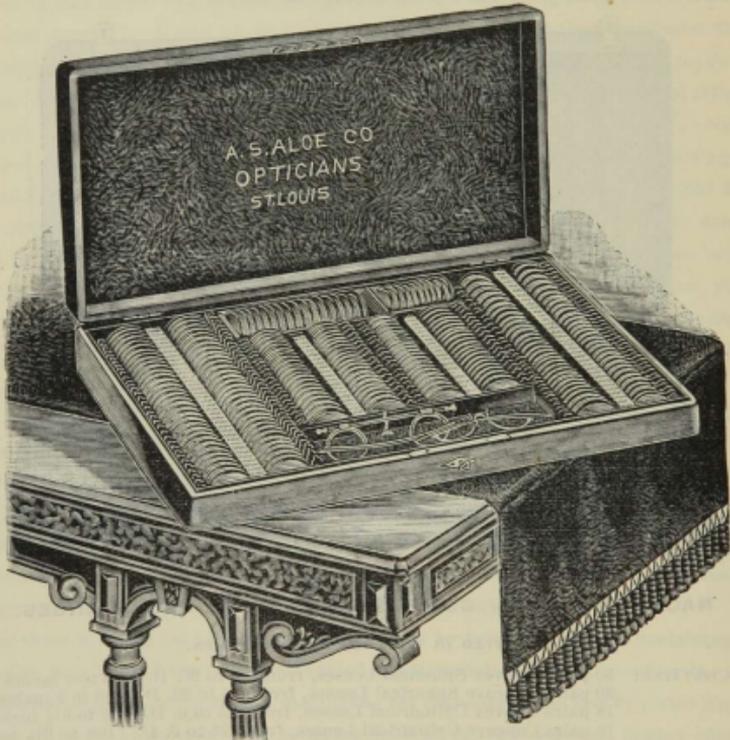
NACHET'S (PATTERN) COMPLETE SERIES OF TRIAL LENSES.

MOUNTED IN SILVERED AND GILT RIMS.

- CONTAINS: 30 pairs Convex Spherical Lenses, from .25 to 20. D. (160 to 2 inches).
 30 pairs Concave Spherical Lenses, from .25 to 20. D. (160 to 2 inches).
 18 pairs Convex Cylindrical Lenses, from .25 to 6. D. (160 to 6½ inches).
 18 pairs Concave Cylindrical Lenses, from .25 to 6. D. (160 to 6½ inches).
 11 Prisms, 1 to 20 degrees.
 4 Plain Colored Glasses.
 1 White Glass.
 1 Half-ground Glass.
 2 Metal Discs, with Stenopaic slit.
 1 Stenopaic Disc, with hole.
 1 Solid Metal Disc.
 1 Perfection Adjustable Trial Frame, with revolving cells and graduated scales (No. 4640).
 1 Double-grooved Plain Frame (No. 4638).

4622. Nachet (Pattern) Trial Case, in Morocco-covered velvet lined case, with focus numbers stamped in inches and dioptics, with lock and keyprice, \$60 00
 4623. Same as No. 4622, with heavy plate-glass panel in top of case..... 65 00
 4624. Same as No. 4622, in polished Oak case, velvet lined, with detachable cover.... 70 00
 4625. Same as No. 4622, having lenses fitted with nickel-plated steel rings, with plus and minus signs cut out of handles..... 65 00
 4626. Aloe's Complete Trial Case.
 CONTAINS: 32 pairs Sphericals and
 20 pairs Cylinders.
 Contents and Case otherwise same as No. 4622..... 65 00

OPHTHALMIC.
 OPTICAL.
 OCULISTS' TRIAL CASES.
 COMPLETE SERIES.



ALOE'S STANDARD SET OF TRIAL LENSES,

MOUNTED IN NICKEL-PLATED STEEL RINGS, WITH PLUS AND MINUS SIGNS CUT OUT OF HANDLES.

- CONTAINS: 35 pairs Convex Spherical Lenses, from .125 to 20. D.
 35 pairs Concave Spherical Lenses, from .125 to 20. D.
 21 pairs Convex Cylindrical Lenses, from .25 to 6. D.
 21 pairs Concave Cylindrical Lenses, from .25 to 6. D.
 4 pairs Prisms, 1 to 4 degrees.
 7 Prisms, 5 to 20 degrees.
 7 plain Colored Glasses.
 1 White Glass.
 1 White Glass, half opaque.
 2 Stenopaic Discs.
 1 Stenopaic Disc, with hole.
 1 Solid Metal Disc.
 1 Perfection Patent Adjustable Trial Frame, with Revolving Cells and Graduated Scales,
 No. 4640.
 1 Single Cell Trial Frame, No. 4637.

4627. Aloe's Standard Trial Case, in Morocco-covered velvet lined case, with lock and key, having Focus numbers stamped in inches and dioptries.....	\$ 75 00
4628. Same as No. 4627, with plate-glass panel in top of case.....	80 00
4629. Same contents as No. 4627, in polished Oak case, velvet lined, with detachable cover.....	85 00

OPHTHALMIC.

OPTICAL.

OCULISTS' TRIAL CASES.

SPHERICAL AND CYLINDRICAL LENSES.



4630. Loring's Student's Trial Case, complete, with Test Types \$14 00

CONTAINS: 7 pairs Convex Spherical Lenses, .25, .5, 1., 2., 3., 4., 8.

7 pairs Concave Spherical Lenses, .25, .5, 1., 2., 3., 4., 8.

5 pairs Convex Cylindrical Lenses, .25, .5, 1., 2., 3.

5 pairs Concave Cylindrical Lenses, .25, .5, 1., 2., 3.

1 Triple-grooved Graduated Trial Frame (No. 4639), and Test Types.

The Lenses are numbered in the Metric system, and so arranged that by means of combination all the numbers contained in the larger sets can be successfully obtained with this.

The above case was designed by E. G. Loring, M. D., to meet the wants of students and general practitioners. One of the principal reasons why students and physicians in general practice do not give more attention to the defects of the eye has been due to the cost of the armamentarium, and the intricacy of the glasses supposed to be necessary.

By the aid of the Metric system, simple combinations can now be made without any knowledge of mathematics whatever.

The set here offered contains seven pairs each of Concave and Convex Spherical Lenses, and five pairs each of Concave and Convex Cylindrical Lenses, and with these almost every combination possible in the most complete sets can be successfully effected. Moreover, as all the numbers are in pairs, both eyes can be examined simultaneously with glasses of equal strength. Printed instructions accompany each case. The case further contains a set of Test Types, a comparative table giving the value of the Metric numbers in inches, and a Triple-grooved Graduated Trial Frame, into which one, two or three lenses may be readily slipped, to obtain the desired number.

OPHTHALMIC.
OPTICAL.
OCULISTS' TRIAL CASES.
SPHERICAL LENSES ONLY.



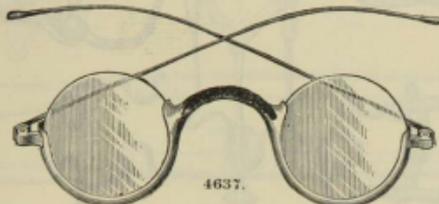
4631. Roosa's Trial Case, for the use of general practitioners, in leather covered case \$12 00
CONTAINS: 18 pairs Convex Spherical Lenses, from 5 to 60 inches focus.
18 pairs Concave Spherical Lenses, from 5 to 60 inches focus.
1 Single-groove Trial Frame (No. 4637).
Test Types and Directions, by Dr. D. B. St. John Roosa.
4632. Roosa's Large Set, in leather covered case..... 15 00
CONTAINS: 24 pairs Convex Spherical Lenses, 5 to 80 inches.
24 pairs Concave Spherical Lenses, 5 to 80 inches.
1 Single-cell Trial Frame (No. 4637).
Test Types and Directions, by Dr. D. B. St. John Roosa.
4633. Same as No. 4632, with Lenses mounted in gilt and silvered metal rims with handles, in Morocco-covered leather case..... 20 00
4634. Same as No. 4632, with Lenses mounted in nickel plated steel rings, with handles, having plus and minus signs cut out of handles, in Morocco leather covered case..... 25 00
4635. Roosa's, full set in leather covered case..... 20 00
CONTAINS: 26 pairs Convex Spherical Lenses, from .25 D. to 20. D. (2 to 144 inches).
26 pairs Concave Spherical Lenses, from .25 D. to 20. D. (2 to 144 inches).
1 Plane Glass.
1 Opaque Glass.
1 Red Glass.
1 Green Glass.
1 Single-groove Trial Frame (No. 4637).
Test Types and Directions, by Dr. D. B. St. John Roosa.
4636. Same as 4635, Lenses mounted in gilt and silvered metal rims, with handles, in Morocco leather case..... 30 00

OPHTHALMIC.

OPTICAL.

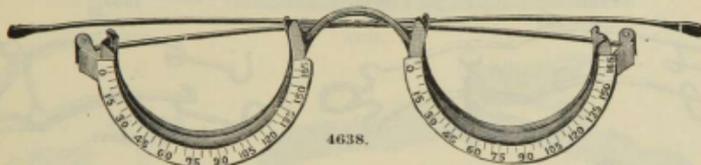
TRIAL FRAMES.

Trial Frames are designed to hold the circular lenses of test sets accurately before the eye, while they allow the glasses to be readily changed. If used in testing for astigmatism, the carrier which holds the glass must allow it to be turned to any angle, and must be graduated to show the direction of the axis of the cylindrical glass in use. This graduation is always the same, starting at 0° on the patient's right when the frame is in position, passing downward to 15°, 30°, etc., until 90° is reached vertically below the pupil, then upward again 105°, 120°, etc., until 180° is reached at the left in the horizontal line, marked 0° at its other extremity. The more complete frames are made adjustable for differences in the height of nose, distance between the eyes, etc.



4637.

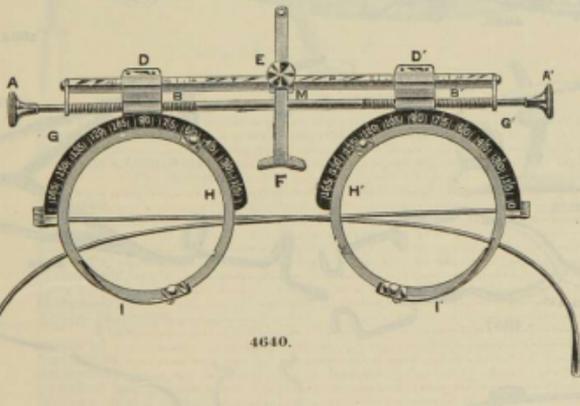
4637. Single Cell Trial Frame, made of Steel, Nickel plated, to hold One Pair of Lenses..... \$ 2 00



4638.

4638. Double Cell Trial Frame. This is also a new frame. It has Double Cells for holding lenses, and springs for holding the back lenses; it is graduated for giving axis of cylindricals. The eye-stock is shaped like the letter V, this being the form found to allow the most free rotation of lenses, at the same time holding them true. The frame is made of light Steel, Nickel-plated \$ 3 00

4639. Triple Cell Trial Frame, Graduated Scale, for Three Pairs of Lenses 3 50

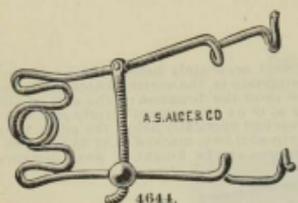


4640.

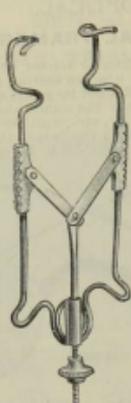
4640. Perfection Trial Frame. This frame registers all the measurements of the frame required to fit the patient's face. A right and left-hand screw B B carries the eyes to get the proper pupillary distance. The Nose-Bridge F on Shank E has both vertical and horizontal motion and is fixed in the desired position by the Screw M. In this frame the temple distance is registered on the side of the Top Ear marked T and the pupillary distance where it is marked P. The position of the crest of the Nose-Piece up or down or in or out from plane of lenses is gauged by the scale in the case. This frame is an entirely new one, and is the lightest and strongest frame made \$ 7 50

- 4641. Aluminium Adjustable Trial Frame..... 13 50
- 4642. Buller's " " " " 8 00
- 4643. Fisher's " " " " 15 00

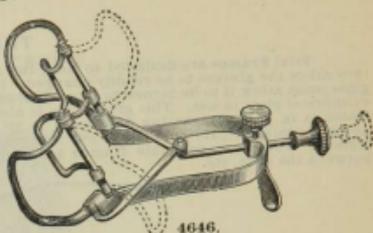
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.
EXAMINING.

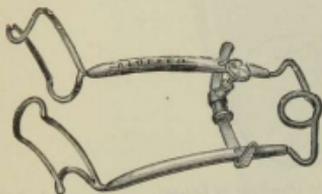
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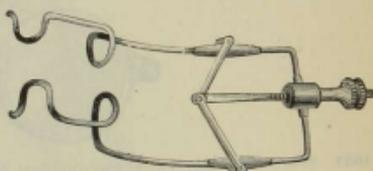
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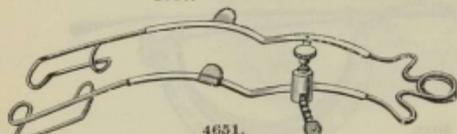
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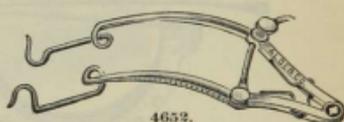
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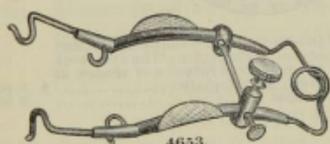
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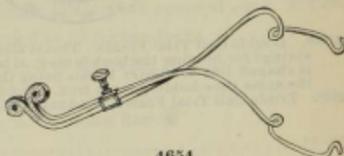
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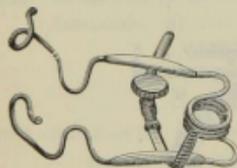
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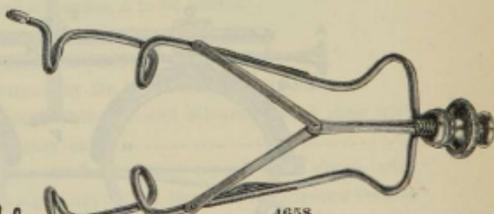
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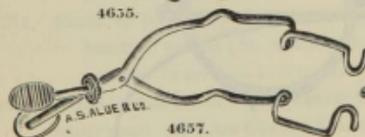
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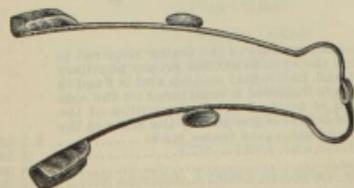
4655.



4658.



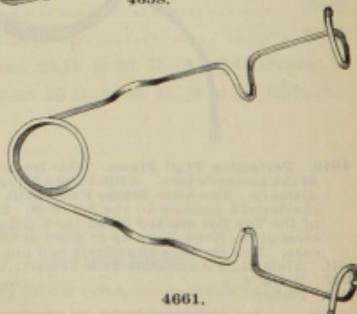
4657.



4664.

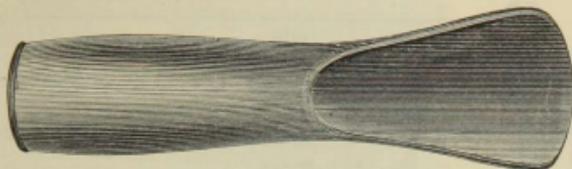


4659.

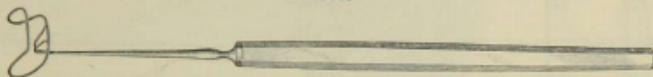


4661.

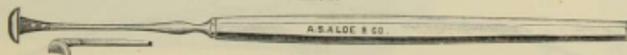
OPHTHALMIC.
EXAMINING.



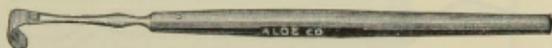
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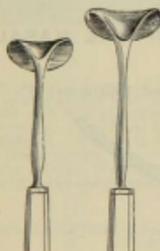
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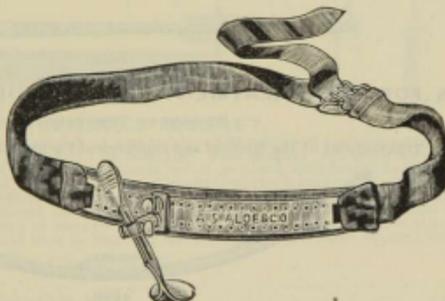
4673.



4675.



4670.

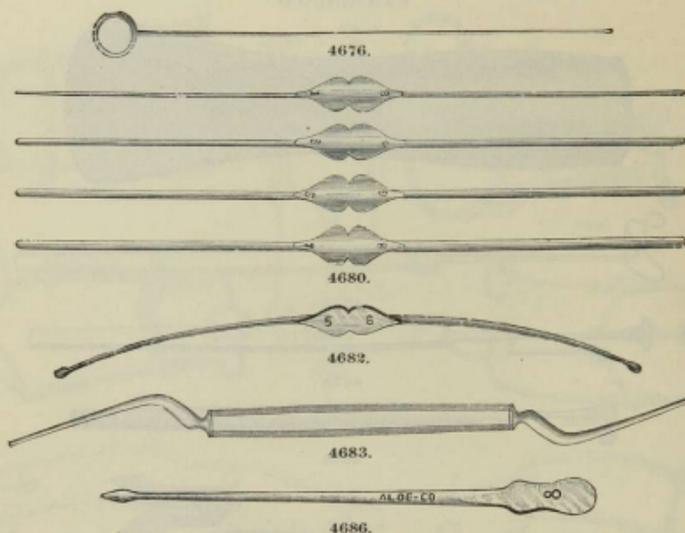


4674.

4644.	Eye Speculum, Aloe's.....	\$ 75
4645.	" " Bowman's.....	2 00
4646.	" " Bradford's.....	3 40
4647.	" " Critchett's, Over Nose.....	1 50
4648.	" " " " Temple.....	1 50
4649.	" " Fox's.....	2 75
4650.	" " Galante's.....	2 50
4651.	" " Graefe's.....	1 75
4652.	" " Knapp's.....	4 50
4653.	" " Landolt's.....	3 00
4654.	" " Liebold's.....	1 75
4655.	" " Liebreich's.....	1 50
4656.	" " Luer's.....	1 50
4657.	" " Mittendorf's.....	1 50
4658.	" " Noyes' Improved.....	2 50
4659.	" " " Plain.....	75
4660.	" " Payne's.....	2 50
4661.	" " Plain Wire.....	50
4662.	" " Schwatka's.....	1 75
4663.	" " Snowden's.....	1 75
4664.	" " Stevens' (shell plates).....	1 50
4665.	" " Weber's, right or left, each.....	1 25
4666.	Eye-Lid Elevator, Kuhnt's.....	3 50
4667.	" " Hook, Prince's Traction.....	1 50
4668.	" " Plate, Jaeger's Hard Rubber.....	60
4669.	" " " Ivory.....	1 00
4670.	" " Retractor, Desmarre's, large or small, each.....	1 00
4671.	" " " " Jointed.....	1 25
4672.	" " " " Noyes'.....	1 25
4673.	" " " " Prince's.....	1 50
4674.	" " " " Pyle's Self-Retaining, with Band.....	7 50
4675.	" " " " Stevens'.....	1 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

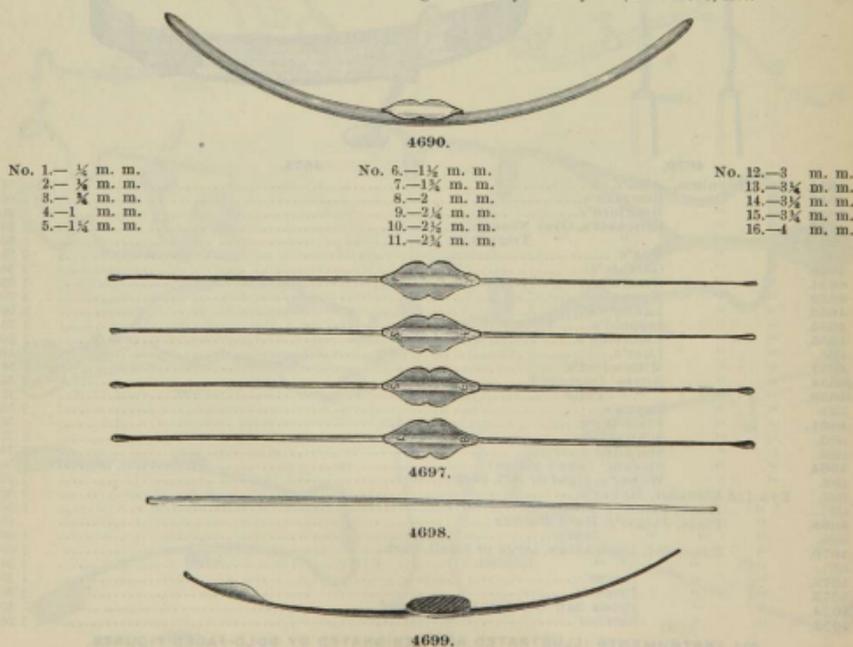
OPHTHALMIC.
EXAMINING—FOREIGN BODY EXTRACTING.



PROBES FOR THE TREATMENT OF STRICTURES OF THE NASAL DUCT.

BY SAMUEL THEOBALD, M. D.

Transactions of the Medical and Chirurgical Faculty of Maryland, Baltimore, 1877.



No. 1.— $\frac{1}{8}$ m. m.
2.— $\frac{3}{8}$ m. m.
3.— $\frac{1}{4}$ m. m.
4.—1 m. m.
5.— $1\frac{1}{4}$ m. m.

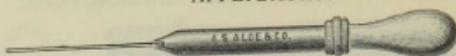
No. 6.— $1\frac{1}{2}$ m. m.
7.— $1\frac{3}{4}$ m. m.
8.—2 m. m.
9.— $2\frac{1}{4}$ m. m.
10.— $2\frac{1}{2}$ m. m.
11.— $2\frac{3}{4}$ m. m.

No. 12.—3 m. m.
13.— $3\frac{1}{4}$ m. m.
14.— $3\frac{1}{2}$ m. m.
15.— $3\frac{3}{4}$ m. m.
16.—4 m. m.

OPHTHALMIC.
APPLICATING.



4717.



4732.



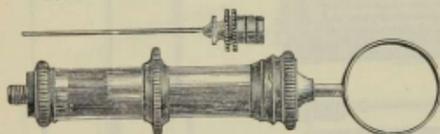
4720.



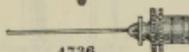
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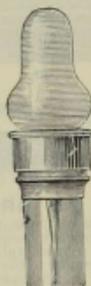
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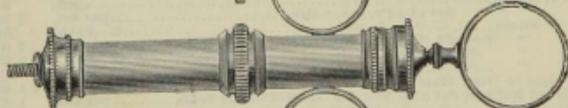
4736.



4745.



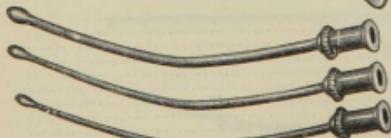
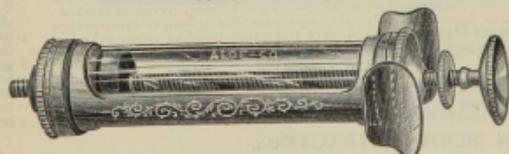
4728.



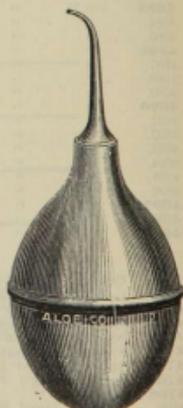
4740.



4746.

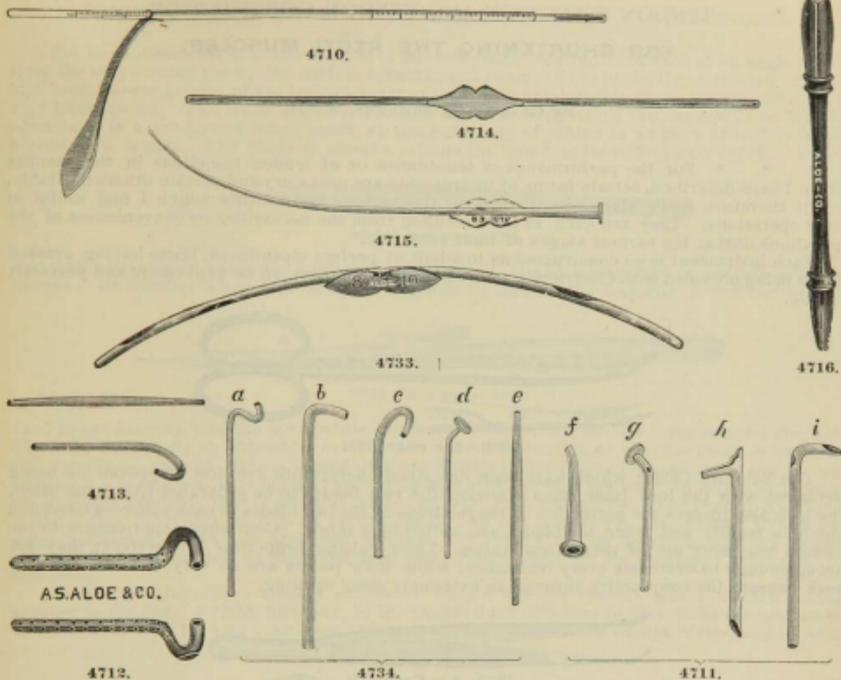


4748.



4747.

OPHTHALMIC.
APPLICATING.



4710.	Canula, Cauterizing, Genson's.....	\$ 2	25
4711.	" Lachrymal, Bowman's, Silver, f, g, h, l.....	each,	50
4712.	" " Prince's, ".....	"	35
4713.	" " Williams', " curved or straight.....	"	35
4714.	Catheter, " Speir's.....	"	75
4715.	" " Wecker's.....	"	1 00
4716.	Caustic Holder, Knapp's.....	"	75
4717.	Eye Bath, Bottle.....	"	35
4718.	" " Cup.....	"	15
4719.	" " Douche, Agnew's.....	"	2 50
4720.	" " Stopcock, Hard Rubber.....	"	50
4721.	" " Droppers, curved or straight.....	per dozen	50
4722.	" " Shade, Silk, Adult's Single.....	"	25
4723.	" " " " Double.....	"	35
4724.	" " " " Jeweler's style.....	"	50
4725.	" " " " Child's.....	"	15
4726.	" " " " Single.....	"	25
4727.	" " Shield, McCoy's.....	"	2 50
4728.	Drop Bottle, Galezowski's.....	"	75
4729.	Ice Bag, Turnbull's.....	"	1 75
4730.	Pencil, Sulphate of Alum.....	"	25
4731.	" " " " Copper.....	"	25
4732.	Pipette, Prince's Cocaine.....	"	55
4733.	Sound, Brewster's Cupped, Silver.....	"	1 50
4734.	Styles, Lachrymal, Bowman's, Silver, a, b, c, d, e.....	each,	25
4735.	" " Williams', " curved or straight.....	"	25
4736.	Syringe, " Agnew's Glass Barrel, plated mountings.....	"	3 50
4737.	" " " " Silver.....	"	5 00
4738.	" " " " Hard Rubber.....	"	3 00
4739.	" " " " Anel's, Plated, with Silver points.....	"	4 00
4740.	" " " " " " Silver, " Gold.....	"	7 50
4741.	" " " " Colburn's Lachrymal and Middle Ear Syringe. See page 231.	"	5 50
4742.	" " " " Deschweinitz's with 2 Wecker's Canula.....	"	2 75
4743.	" " " " Dunn's, Gold Needle.....	"	1 50
4744.	" " " " " " Platinum Needle.....	"	1 50
4745.	" " " " " " Steel.....	"	1 15
4746.	" " " " Knapp's, Gold.....	"	3 00
4747.	" " " " McFarlan's.....	"	2 00
4748.	" " " " Prince's.....	"	75
4749.	" " " " Tansley's.....	"	5 00
4749.	" " Subpalpebral, Liebold's.....	"	1 00

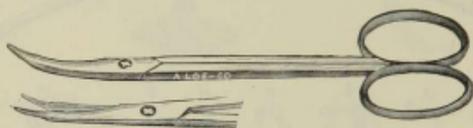
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.
TENDON RESECTION AND TENDON CONTRACTION
FOR SHORTENING THE RECTI MUSCLES.

By GEORGE T. STEVENS, M. D.

* * * For the performance of tenotomies or of tendon resections in the manner which I have described, certain forms of instruments are necessary and certain others desirable. It will therefore be in place here to refer to the various instruments which I find useful in these operations. They are such as have resulted from the necessities or conveniences of the operations during the various stages of their evolution.

Each instrument is so constructed as to admit of perfect cleanliness, those having crossed blades being provided with Charrière's lock; they can, therefore, all be kept easily and perfectly aseptic.



5029. See page 223.

The Scissors (5029) which have been described* heretofore are now improved by being furnished with the lock joint, thus allowing the two blades to be separated from each other. The lock also insures the perfection of the relations of the two blades to each other—a condition which is readily lost when the blades are united by a screw. Continued experience with the scissors convinces me of their great value. Their cutting properties are perfect; they are strong enough to overcome every resistance, while their points are so very slender that they work beneath the conjunctiva through an extremely small opening.



4826. See Page 211.



4827. See page 211.

The Forceps (4826 and 4827) and small Tenotomy Hook (4863) have also been described elsewhere,† and are both found to serve their purpose perfectly. The delicacy of the hook enables the operator to insert it beneath the tendon, at the extremities of the section already made, with little, if any, disturbance of the surrounding tissues.



4863. See page 213.

I have found it necessary to have constructed for use in tendon resection a Fixation Forceps (4808) similar in its general form and in delicacy to the Tenotomy Forceps. This instrument has proved of great service in the perfection of the operation.



4808. See page 211.

A very delicate Traction Hook (4864) has also proved almost essential in operations for tendon contraction and for tendon resection. The hook is of about the same size and delicacy as Tyrrell's Iris hook.



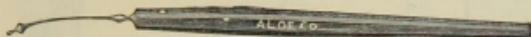
4864. See page 213.

* "Archives of Ophthalmology," June, 1888. †*Ibid.*, June, 1887.

OPHTHALMIC.

TENDON RESECTION AND TENDON CONTRACTION—CONTINUED.

The hook, however, is in the form of a straight barb, bending backward at an angle of 45° from the very slender shaft; the barb is very fine and sharp, and is perfectly calculated to catch and hold the cut border of the tendon without becoming entangled in it, as the Tyrrell hook is very likely to do. The little plow or divulsor used for separating the tendon from its surroundings is a triangular lance blade, at the extremity of which is an olive or button which serves as a leader. The blade is about a millimetre broad at its widest part (4772). I have



4772. See page 209.

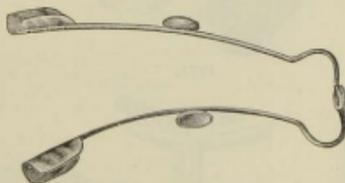
also had constructed a needle-holder (4984), very light and convenient in operations about the eye. Its handle, in size and form, corresponds to that of the majority of the instruments



4984. See page 221.

used in eye surgery, and the jaws, while slender, are so short as to give them unusual strength. The lever fastens by an automatic catch. Since the introduction of cocaine there is but little and usually no pain in operations upon the eye muscles; but I have long observed that in operations in which a needle is used a thrill of pain is sent through the frame of any patient when the ordinary needle-holder is made to release its hold upon the needle. The snap of the release is invariably described as a most severe shock. In the instrument here figured this violent snap is avoided. Like the tenotomy scissors, the blades of the needle-holder are readily detachable, being united by the Charrière lock, hence they can be separated with ease for cleansing.

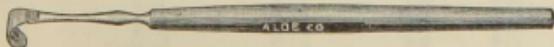
So many oculists have already presented designs for eye specula that I hesitate to add another to the list. I yield, however, to the suggestions of others in describing the instrument which I have used for two years past (4664). It is a modification of old forms, and its merit



4664. See page 201.

is rather in its simplicity and convenience than in its novelty. The spring itself resembles some of the oldest forms of eye specula, and is quite flexible, as I find that a stiff spring is not required since the introduction of cocaine. Consequently the spring is quite light, being made of silver-coated steel, and each branch is terminated by a thin plate of tortoise-shell, so folded upon itself as to hold the border of the lid firmly, and to effectually remove the lashes from the field of operation. The even pressure of the tortoise-shell is far less disagreeable to the patient than the pressure caused by the stiff bent wires almost universal in the blades of eye specula. About the middle of each branch a little cup-shaped finger-piece is attached as a holder. The speculum is light, easy to the patient, perfectly easy in construction, and therefore has the merit of cheapness.

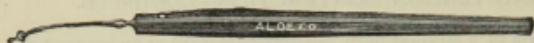
In operations upon the superior muscles the common eye-lid retractor is used. My instrument makers have constructed for me one considerably smaller than those commonly used, the blade being of tortoise-shell (4675).



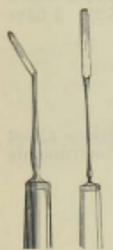
4675. See page 201.

All these instruments, together with fine needles and a quantity of No. 000000 silk are put up in a very neat case. No. 5055, page 225.

OPHTHALMIC.
OPERATING.



4772.



4751. 4752.



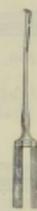
4753.



4754.



4759.



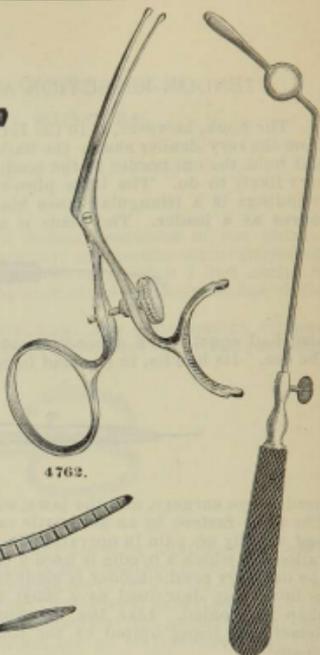
4760.



4761.



4763.



4762.

4755.



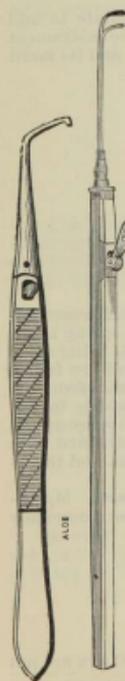
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4767.



4773.

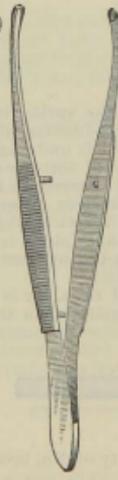


ALOE

4775.



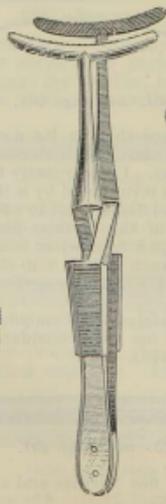
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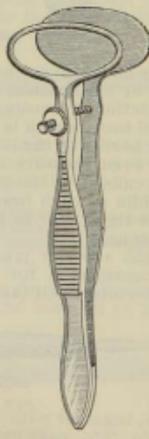
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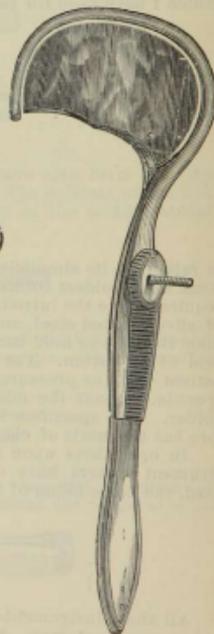
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4789.

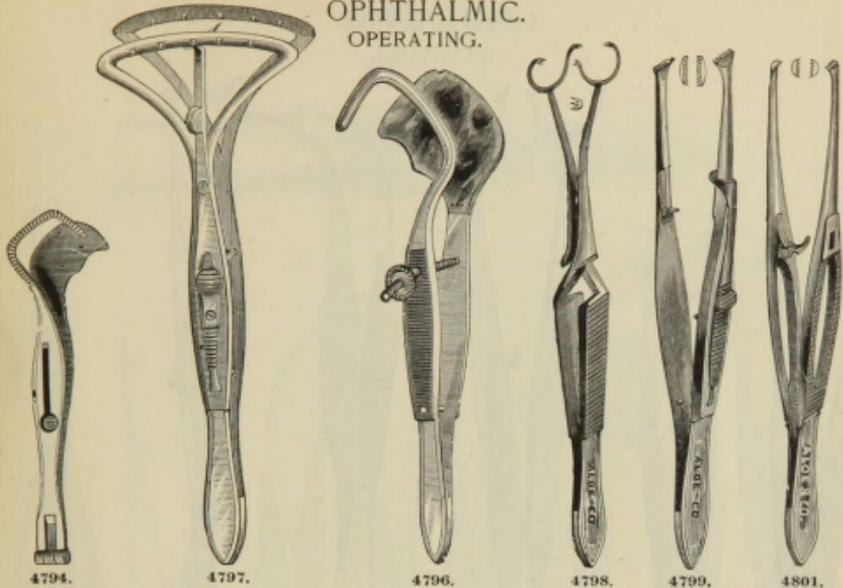


4790.



4792.

OPHTHALMIC.
OPERATING.



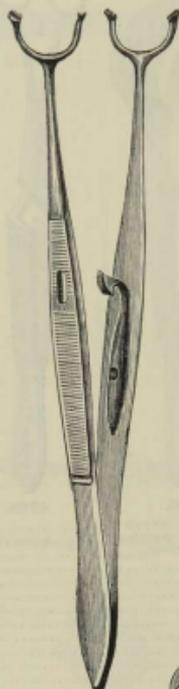
4794.	4797.	4796.	4798.	4799.	4801.	
4750.	Angle Hook, Carter's for Resection of the Optic Nerve.....					\$1 50
4751.	Bistoury, Desmarre's Angular, for Enlarging the Section.....					1 25
4752.	" Noyes' Straight, ".....					1 50
4753.	" Hooked Strabismus.....					1 75
4754.	Capsulotome, Knapp's.....					1 25
4755.	Cautery Iron, Desmarre's.....					2 25
4756.	Cautery Probe, Gruening's Platinum.....					2 50
4757.	Curette, David's.....					1 00
4758.	" Desmarre's.....					1 25
4759.	Cystotome, Graefe's.....					2 80
4760.	" Knapp's.....					1 00
4761.	" Noyes'.....					1 00
4762.	Dilator, Canaliculus, Blitz's.....					8 00
4763.	" " Galezowski's.....					2 00
4764.	" " Lachrymal, Peck's.....					35
4765.	" " Weber's Graduated, Plated.....					50
4766.	" " " Silver.....					80
4767.	" " Williams'.....					75
4768.	Director, Critchett's.....					60
4769.	" Levis'.....					50
4770.	Director and Probe, Bowman's.....					40
4771.	Divulsor, Prince's Pterygium, (Illustrated on Page 215).....					1 25
4772.	" Stevens'.....					1 50
4773.	Eye-Lid Compressor, Stokes'.....					2 25
4774.	" Elevator, Kuhn's.....					8 60
4775.	Forceps, Advancement, Prince's (See Description, Page 218).....					3 00
4776.	" Canulated, Wilde's.....					9 00
4777.	" Capsular, Knapp's.....					3 75
4778.	" Chalazion, Ayres'.....					2 50
4779.	" " Campbell's (St. Louis).....					3 00
4780.	" Cilia, Beer's Broad Points.....					50
4781.	" " ".....					1 25
4782.	" " Brecht's Straight Edge.....					2 25
4783.	" Conjunctiva, Noyes'.....					5 00
4784.	" Cystotome, Smith's (See Description, Page 219).....					3 50
4785.	" " Wecker's.....					1 00
4786.	" Dressing, Curved Serrated.....					1 50
4787.	" " Straight.....					2 50
4788.	" Entropium, Adams' Slide Catch.....					1 75
4789.	" " Cross Bar.....					2 00
4790.	" " Desmarre's.....					2 75
4791.	" " " Shell Plate.....					2 75
4792.	" " Knapp's Right and Left..... each,					1 75
4793.	" " Noyes' " ".....					1 50
4794.	" " Prout's Reversible.....					2 50
4795.	" " Roehrich's Shell Plate.....					2 00
4796.	" " Snellen's Right and Left.....					5 25
4797.	" " Tiemann's, with Knife.....					2 25
4798.	" " Extirpation, Blitz's..... See Figure 4834, page 212.					2 25
4799.	" " Fixation, Carron De Villard's.....					1 50
4800.	" " De La Roosa's.....					2 25
4801.	" " Dudley's.....					2 25

OPHTHALMIC.
OPERATING.

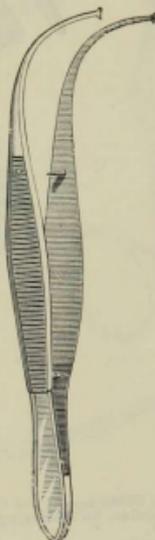
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4803.



4804.



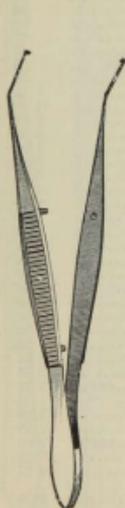
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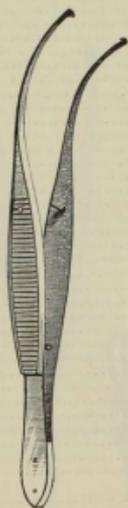
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4808.



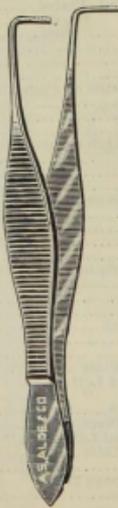
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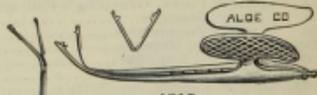
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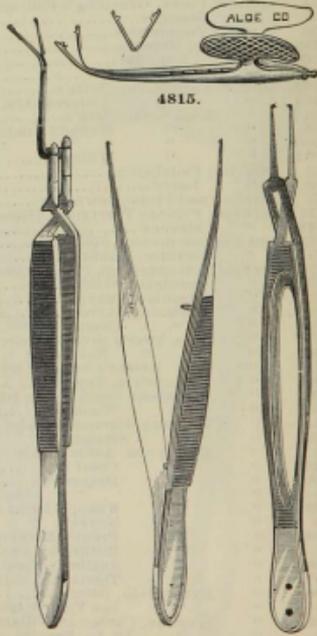
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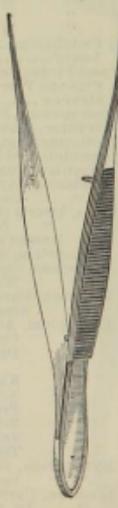
4814.



4815.



4816.



4818.



4819.

OPHTHALMIC.

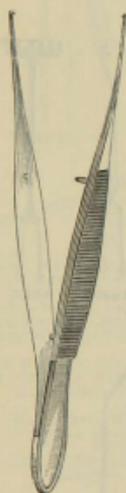
OPERATING.



4822.



4820.



4825.



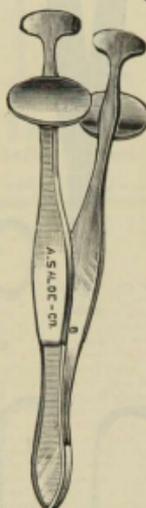
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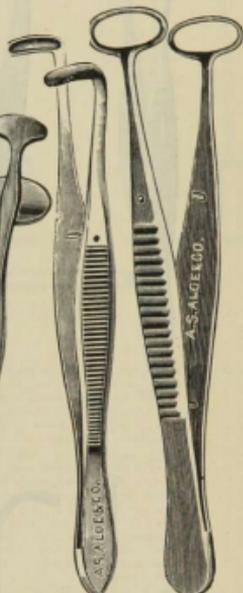
4826.



4827.



4829.



4830.

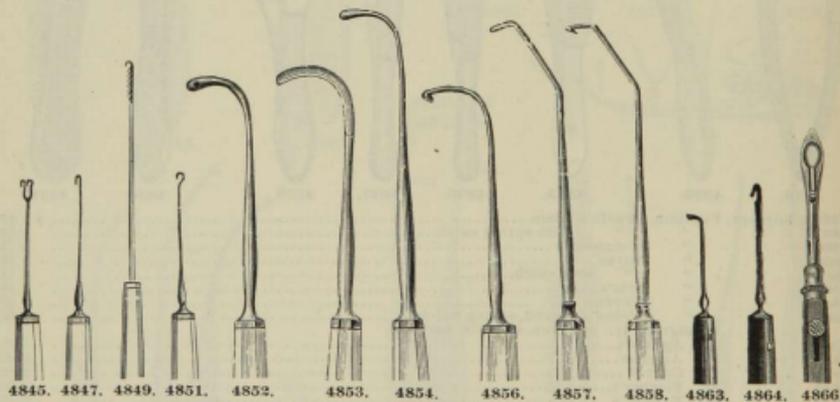
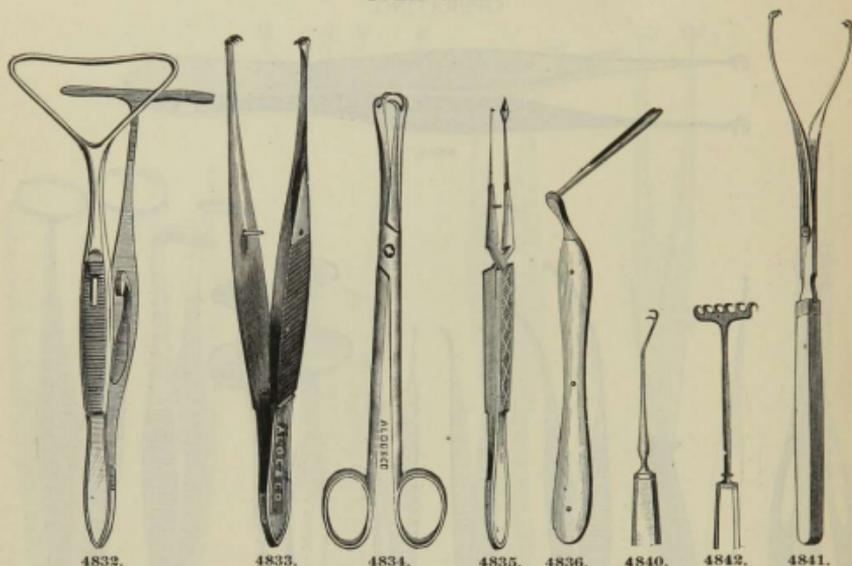


4831.

4802.	Forceps, Fixation, Graefe's, plain.....	\$ 1 10
4803.	" " " with spring catch.....	1 50
4804.	" " Monnoyer's.....	2 75
4805.	" " Noyes.....	1 35
4806.	" " with catch.....	1 75
4807.	" " Pyle's.....	2 25
4808.	" " Stevens'.....	1 50
4809.	" " Weber's curved, spring catch.....	1 50
	Foreign Body. See Nos. 4786, 4787 and 4820.	
4810.	" " Iris, Agnew's.....	1 25
4811.	" " Angular.....	1 00
4812.	" " Curved.....	1 00
4813.	" " Fischer's.....	1 90
4814.	" " Forster's.....	1 25
4815.	" " Liebold's.....	4 00
4816.	" " Liebreich's.....	4 50
4817.	" " Mathieu's.....	4 25
4818.	" " Straight.....	1 00
4819.	" " Walton's.....	1 85
4820.	" " Lens, and Foreign Body.....	2 25
4821.	" " Lid, Carron De Villard's.....	3 00
4822.	" " Ligature, Fox's.....	1 50
4823.	" " Strabismus, Curved.....	1 00
4824.	" " " Fox's.....	1 10
4825.	" " " Straight.....	1 00
4826.	" " Tendon, Stevens', Curved.....	1 50
4827.	" " " Straight.....	1 50
4828.	" " Trachoma, Knapp's. See Description, Page 214.	2 50
4829.	" " May's.....	2 25
4830.	" " Noyes'.....	1 75
4831.	" " Prince's.....	1 75

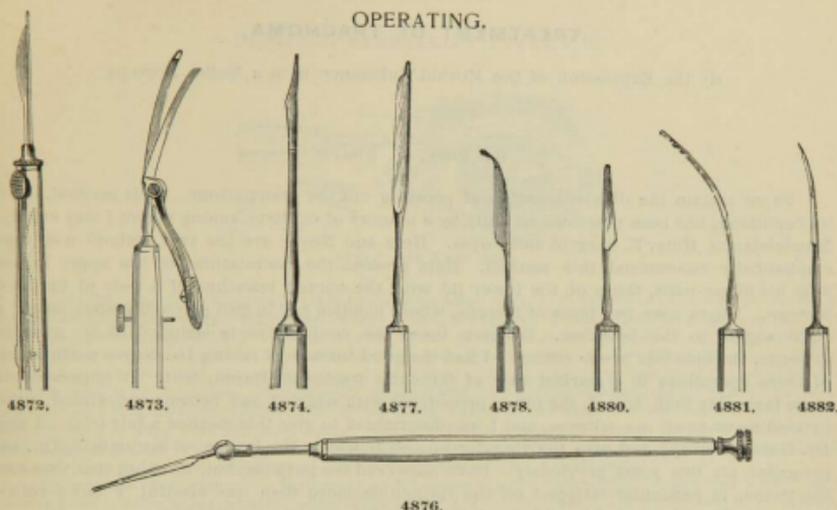
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.
OPERATING.



OPHTHALMIC.

OPERATING.



4832.	Forceps, Trichiasis, Ratti's.....	\$2 25
4833.	" Tumor, Plain Fixation.....	1 00
4834.	" Vulsellum, Ophthalmic.....	1 75
4835.	Forceps—Needle, Lanne's.....	3 50
4836.	Gouge, Noyes', Lachrymal.....	1 90
4837.	Grafitage Knife and Forceps, Darrier's.....	6 00
4838.	" " Weeks'.....	8 50
4839.	Guide, Hirschberg's, Cataract.....	2 00
4840.	Hook, Capsule, Weber's.....	1 10
4841.	" Extirpation, Ball's, Double.....	2 25
4842.	" " Desmarre's, Many-pronged.....	1 50
4843.	" Extraction, Weber's.....	1 25
4844.	" Fixation, Baeder's.....	1 80
4845.	" " Sedillot's, Double.....	1 15
4846.	" Iris, Culbertson's.....	9 00
4847.	" " Graefe's, Blunt.....	90
4848.	" " Sharp.....	90
4849.	" " Noyes', Barbed.....	1 15
4850.	" " Tyrrell's, Blunt.....	90
4851.	" " Sharp.....	90
4852.	" Strabismus, Agnew's, with Eye.....	75
4853.	" " Critchett's.....	75
4854.	" " Graefe's.....	3 00
4855.	" " Jaeger's, Sharp.....	90
4856.	" " MacDonald's, Barbed.....	1 15
4857.	" " Taylor's.....	90
4858.	" " Barbed.....	1 10
4859.	" " Theobald's, Crochet.....	1 00
4860.	" " Wecker's.....	6 50
4861.	" " Double, with Slide for Advancing the Muscle.....	3 00
4862.	" " Synechia, Desmarre's.....	1 25
4863.	" " Tenotomy, Stevens'.....	1 00
4864.	" " Traction.....	1 00
4865.	Iricystome, Culbertson's.....	12 00
4866.	Iridectomy Instrument, Wecker's.....	9 00
4867.	Knife, Canaliculus, Agnew's.....	1 25
4868.	" " Beaumont's.....	1 25
4869.	" " Bowman's.....	6 00
4870.	" " Sharp.....	1 30
4871.	" " Girard Teulon's, Concealed.....	5 00
4872.	" " Greenslade's.....	3 00
4873.	" " Jaeger's, Bistoury Cache.....	6 00
4874.	" " Liebreich's.....	1 25
4875.	" " Noyes', Flexible Shank, Curved or Straight Probe Point.....	1 25
4876.	" " Movable Blade.....	1 25
4877.	" " Plain.....	1 15
4878.	" " Noyes', Stilling's.....	1 30
4879.	" " Prout's.....	1 75
4880.	" " Stilling's.....	1 10
4881.	" " Weber's, Curved.....	1 25
4882.	" " Half Curved.....	1 25
4883.	" " Capsule Discission, Meyhofer's.....	1 75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.

TREATMENT OF TRACHOMA,

By the Expression of the Morbid Substance with a Roller Forceps.

BY PROF. H. KNAPP.

There remain the different modes of pressing out the granulations. This method, old in its beginning, has been practiced recently by a number of oculists, among whom I may mention Mandelstamm, Hotz, E. Sargent and Noyes. Hotz and Noyes are the two authors who most emphatically recommend this method. Hotz pressed the granulations of the upper lid out with his finger-nails, those of the lower lid with the curved branches of a pair of toothless forceps. Noyes uses two pairs of forceps, whose handles end in two grooved plates, placed at right angles to the branches. Between these the conjunctiva is stripped of its granular deposits, the four lids in one sitting. I had the good fortune of seeing Dr. Noyes perform one of these operations in a marked case of follicular trachoma, March, 1891. It impressed me more favorably than any of the other procedures with which I had become acquainted, either by reading or as an eye-witness, and I was determined to give this method a fair trial. I used Dr. Noyes' Forceps and also the ring-forceps with which Dr. Prince, of Springfield, Ill., had presented me two years previously. Both answered the purpose, but, thinking that they tore the tissue, in particular stripped off the epithelium more than was needful, I had a roller-forceps made with which I have done all my trachoma operations ever since.

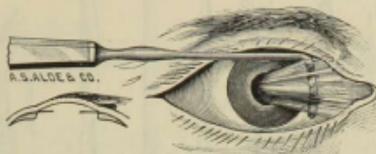


4828. See page 211.

The instrument is made according to the principle of the mangle. The branches of ordinary, rather strong forceps, divide at their ends like a horse-shoe, the free space of which is closed by a creased steel cylinder which rolls on pivots in sockets. The ends of the forceps thus resemble a stirrup. At my suggestion, they made the branches a little longer and somewhat elastic, so that the cylinder can be removed and reinserted. The rolling cylinder (the foot plate of the stirrup) is 20 to 25 mm. long and 1 to 1.5 mm. thick. It is made of steel and can be taken apart to be cleansed, if need be, but the ordinary cleansing with soap and water and sterilizing in boiling water are sufficient to keep it aseptic. I had a pair of platinum which could be sterilized in a spirit flame, but found this an unnecessary precaution. I am sorry to say that the workmanship of the instrument is not always as perfect as it should be. Bending of the pivots, uneven bore of the socket, too tight a fit and other imperfections diminish the ease with which the cylinders should turn. Blood-clots and debris of tissue adhering to the joints also interfere with the turning, and should be removed as often as they collect. It is advisable always to have on hand two pairs of forceps, so that, during the progress of the operation, they may be changed and cleansed in an antiseptic fluid. If well made and kept clean they turn very readily. The method of using the forceps is as follows: The lid is everted and one cylinder shoved up into the cul-de-sac, the other above the inferior margin of the tarsal cartilage; then with a firm pressure the forceps are drawn forward, crushing and rolling the granules out. Of course, the less pressure used the less is the resistance—instead of turning they slide over the tissue. Practically this is of very little importance, for, at the beginning of the operation when the folds held between the cylinders are thick or hard, the pressure and resistance being great, the cylinders run easily, and later, when the trachomatous substance is squeezed out, the folds are thin, smooth and even, so that only little pressure from the forceps is required, and the mucus membrane will not be torn or the epithelium stripped off, even when the rods do not roll, but simply slide.

OPHTHALMIC.

PRINCE'S PTERYGIUM DIVULSOR.



4771. See Page 209.

To explain Fig. 4771, reference is made to the publication of Dr. A. E. Prince, of Jacksonville, Ill., in the "Archives of Ophthalmology," March, 1885, where a case is reported which originated a new and valuable procedure, particularly adapted to the separating of the pterygium from the underlying cornea, with the preservation of its transparency. By accident, while lifting the growth with a strabismus hook, in place of the forceps, in a case of extensive pterygium covering the pupil, an unskillful movement of the assistant tore the pterygium from the cornea. "Inspection converted solicitude into satisfaction, for the removal had been accomplished with the least possible injury to the parts, leaving at the same time so transparent a surface that the iris and pupil were distinctly seen." The uneventful recovery of the case, without opacity of the cornea, led Dr. Prince to employ no other method in the separation of the corneal portion of the growth, and after two years of favorable experience, he has considered it worthy of publication.

To facilitate the operation we have made, at his suggestion the encirculation or divulsion hook, with a cutting point to favor its introduction under the growth at the corneal margin, and wedge-shaped, so that the separation from Bowman's membrane may be more easily accomplished than with the ordinary strabismus hook. Experience has shown that the inevitable remnants of opaque material, which follow the usual dissection with scissors, and the facets and opacities from wounds of the cornea, which too often occur from the use of the knife, are largely avoided when the usually feeble union between the cornea and pterygium is severed by the sliding motion of the hook, counter-traction being exercised with forceps.

A FENESTRATED CHALAZION SPATULA

AS AN AID IN LID TUMOR OPERATIONS.

BY JAMES A. CAMPBELL, M. D., ST. LOUIS.

Every one dealing with small cystic tumors or chalazia of the eyelids, will recall the difficulty which is at times experienced in evacuating their contents after incision is made. This is particularly the case when the tumor is located in the vicinity of either the outer or inner canthus, more marked in the lower than in the upper lid, and is especially pronounced where the incision is made through the conjunctiva. To overcome this difficulty, I am pleased to offer a very simple little instrument, made for me by A. S. Aloe-Co., of this city.

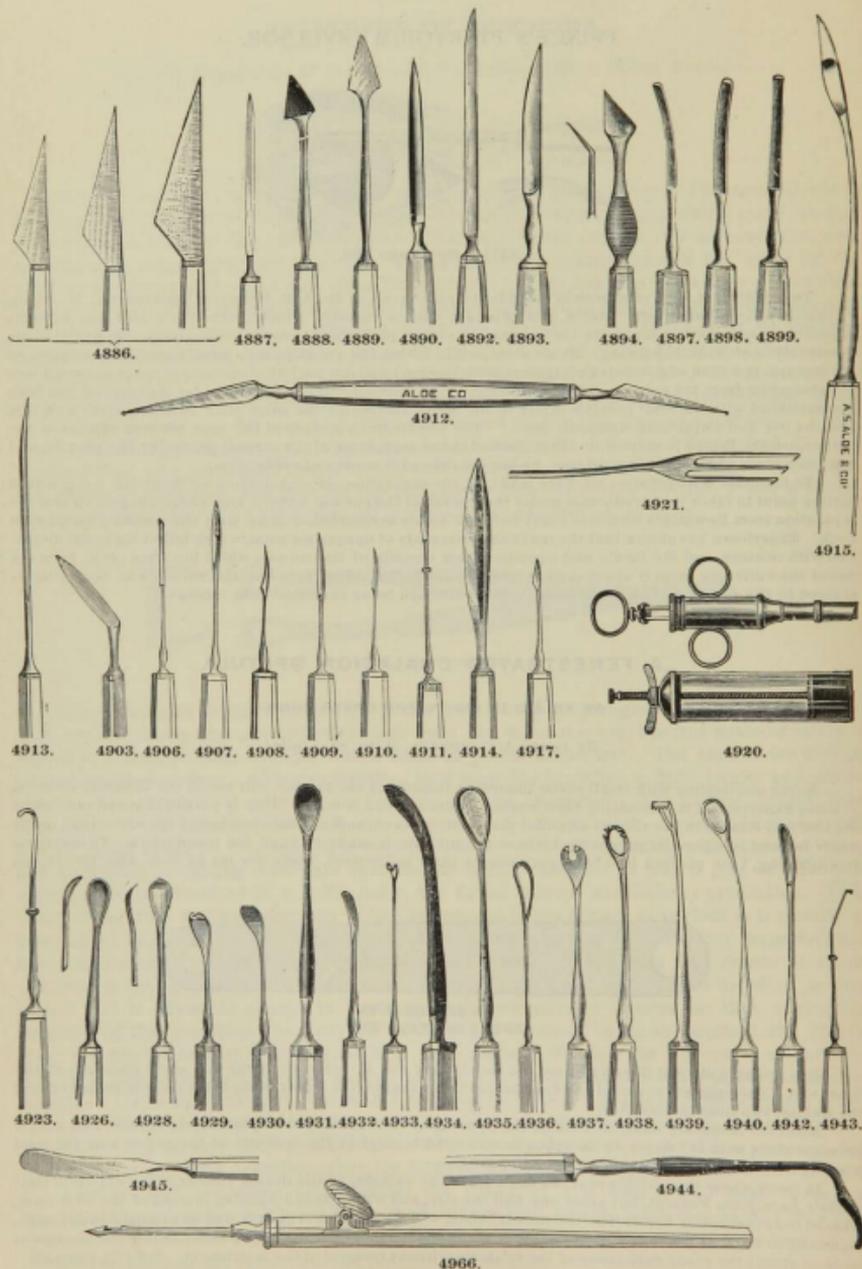
A. S. ALOE & CO.
5039. See Page 223.

It is a simple strip of German Silver, $3\frac{1}{4}$ inches long and $\frac{1}{8}$ inch wide at one end and a trifle less at the other end. The ends are rounded and fenestrated (ring-shape), the larger being three lines in diameter, and the smaller two lines in diameter.

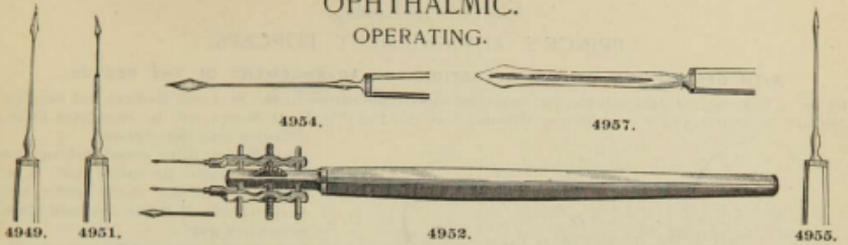
After the necessary incision is made, the opening of the instrument is placed over the cut, and simple pressure made with the finger on the opposite side, readily empties the contents of the tumor with the least possible irritation or injury to the surrounding parts.

In cases where the incision must be made from the outside, a little device similar to the old-style Desmarre's Entropium Forceps, but about one-half the size, and with a round opening instead of the oval form, pressed over the tumor before the incision is made, will be found a very safe and convenient instrument, especially in nervous persons who are liable to make sudden moves at the wrong time. After the incision is made, it allows the ready evacuation of the contents without removal of the instrument. See 4779, page 209.

OPHTHALMIC.
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4884.	Knife, Cataract, Agnew's, Hooked	\$ 1 25
4885.	" " Baeder's, Right and Left	1 25
4886.	" " Beer's Keratome, Large, Medium and Small	90
4887.	" " Graefe's, Linear	90
4888.	" " Jaeger's Keratome, Angular	1 00
4889.	" " " " Straight	1 00
4890.	" " Knapp's Linear, Hollow Ground	1 50
4891.	" " Liebreich's, Linear	1 10
4892.	" " Noyes'	1 10
4893.	" " Sichel's	1 15
4894.	" " Wecker's Keratome	1 90
4895.	" " " " " " " " " " " "	1 15
4896.	" " Secondary, Desmarre's, Angular, Right or Left	60c
4897.	" " " " " " " " " " " "	1 00
4898.	" " " " " " " " " " " "	1 00
4899.	" " " " " " " " " " " "	1 00
4900.	" " " " " " " " " " " "	1 50
4901.	" " " " " " " " " " " "	1 00
4902.	" " " " " " " " " " " "	1 75
4903.	" " Enucleation, Brazil's	1 75
4904.	" " Iridectomy, Agnew's	50
4905.	" " " " " " " " " " " "	1 50
4906.	" " " " " " " " " " " "	1 50
4907.	" " " " " " " " " " " "	1 15
4908.	" " " " " " " " " " " "	1 50
4909.	" " " " " " " " " " " "	1 25
4910.	" " " " " " " " " " " "	1 00
4911.	" " " " " " " " " " " "	1 25
4912.	" " " " " " " " " " " "	1 25
4913.	" " " " " " " " " " " "	1 75
4914.	" " " " " " " " " " " "	1 30
4915.	" " " " " " " " " " " "	1 50
4916.	" " " " " " " " " " " "	2 00
4917.	" " " " " " " " " " " "	1 50
4918.	" " " " " " " " " " " "	1 25
4919.	" " " " " " " " " " " "	20
4920.	" " " " " " " " " " " "	9 00
4921.	" " " " " " " " " " " "	8 00
4922.	" " " " " " " " " " " "	1 50
4923.	" " " " " " " " " " " "	2 25
4924.	" " " " " " " " " " " "	1 10
4925.	" " " " " " " " " " " "	1 10
4926.	" " " " " " " " " " " "	1 25
4927.	" " " " " " " " " " " "	1 25
4928.	" " " " " " " " " " " "	1 30
4929.	" " " " " " " " " " " "	1 00
4930.	" " " " " " " " " " " "	1 00
4931.	" " " " " " " " " " " "	1 00
4932.	" " " " " " " " " " " "	1 35
4933.	" " " " " " " " " " " "	75
4934.	" " " " " " " " " " " "	1 25
4935.	" " " " " " " " " " " "	1 00
4936.	" " " " " " " " " " " "	1 00
4937.	" " " " " " " " " " " "	1 50
4938.	" " " " " " " " " " " "	1 30
4939.	" " " " " " " " " " " "	1 25
4940.	" " " " " " " " " " " "	1 70
4941.	" " " " " " " " " " " "	1 70
4942.	" " " " " " " " " " " "	1 25
4943.	" " " " " " " " " " " "	1 30
4944.	" " " " " " " " " " " "	1 10
4945.	" " " " " " " " " " " "	1 25
4946.	" " " " " " " " " " " "	1 00
4947.	" " " " " " " " " " " "	1 10
4948.	" " " " " " " " " " " "	1 00
4949.	" " " " " " " " " " " "	1 00
4950.	" " " " " " " " " " " "	1 25
4951.	" " " " " " " " " " " "	1 25
4952.	" " " " " " " " " " " "	1 25
4953.	" " " " " " " " " " " "	1 25
4954.	" " " " " " " " " " " "	1 25
4955.	" " " " " " " " " " " "	1 00
4956.	" " " " " " " " " " " "	90
4957.	" " " " " " " " " " " "	1 50
4958.	" " " " " " " " " " " "	1 50

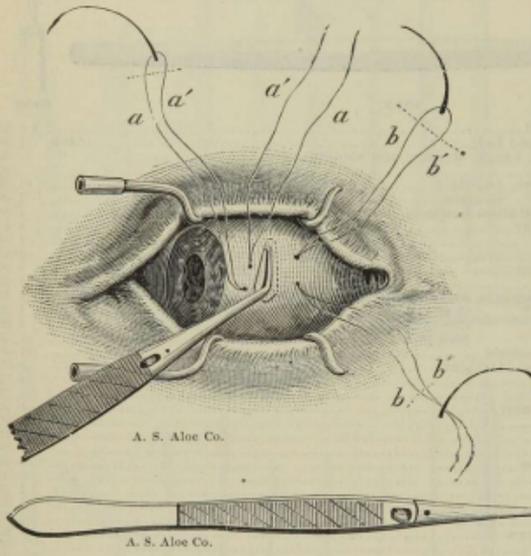
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.

PRINCE'S ADVANCEMENT FORCEPS.

WITH DESCRIPTION OF THE OPERATION FOR ADVANCEMENT OF THE RECTUS.

By Dr. A. E. Prince, of Jacksonville, Ill., improved since publication in the St. Louis Medical and Surgical Journal, June, 1881, and first edition of "Diseases of the Eye," by H. D. Noyes, will be elucidated by the following brief description:



1st. Patient being cocainized, medium sized antiseptic silk suture (a a') is introduced, with very sharp needle, into dense episcleral tissue two mm. from corneal margin.

2d. Conjunctiva and Tenon's capsule are opened in the usual manner, one branch of the advancement forceps is introduced and the remaining branch closed down, grasping conjunctiva and tendon of the rectus, now to be separated from the sclerotic with strabismus scissors.

3d. The muscle now being elevated by the forceps, both needles of the double loop suture (b b') are introduced from beneath through Tenon's capsule and conjunctiva, including the middle portion of the rectus, sufficiently far back to allow for the portion to be excised.

4th. The forceps still being elevated, the belly of the muscle is divided by the scissors at least two mm. on the corneal side of the suture (b b').

5th. The needles being cut away, four independent sutures are formed, viz.: a a', and b b'. Ignoring, for the present, a' and b', one branch of suture, b, is crossed over another suture a, both branches of which

4775. See Page 209.

are now tied down, enclosing b in a loop or pulley.

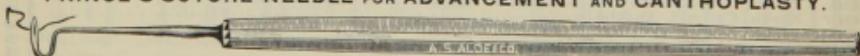
6th. Both branches of b are now taken up and tied, when it will become apparent that, in proportion as they are tightened over the loop (formed by a), will the free end of the rectus be approximated to the insertion of the tendon simultaneously closing the conjunctival gap. A bow knot is now applied, by loosening which the effect may be modified, and, after several hours, if satisfactory, sutures a' and b' (which are reserve sutures to be used in case of entanglement) are withdrawn. The eye is washed out and kept moistened with absorbent cotton compresses, frequently soaked in one-half per cent aqueous solution of acid, carbolicum purum, with 10 per cent of glycerine.

For considerable effect, and to diminish the tension on the loop suture, the tendon of the opposite rectus is divided as a preliminary step, and, in case of paralysis, as much as possible of the anterior portion of the opposite rectus should be excised or divided, back of the capsule.

LIMITING STRABISMUS SUTURE.

As a limiting suture, this method is employed by the author to afford security against over-correction following ordinary section of the rectus: first, in those cases where one desires to produce an extreme effect by extensive division of the capsule, and, second, in the correction of minimum degrees of deviation which compromise comfortable binocular vision. In these cases a and b are introduced single and further forward, previous to section of the tendon, simply dipping into and out of the muscle with a single sharply-curved needle, Fig. 4971, (care being exercised to exert no traction on the hook, thus avoiding temporary paresis and diminishing the consequent dangers of subsequent deviations). Both conjunctiva and capsule are now divided together with the tendon, after which the effect is limited by the completion of stitch, as in the advancement operation. For further details apply to author for reprint of publication.

PRINCE'S SUTURE NEEDLE FOR ADVANCEMENT AND CANTHOPLASTY.



4971. See Page 221.

PRINCE'S SPOOL EYE NEEDLE.



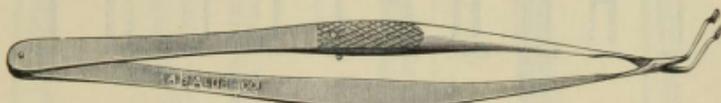
4972. See Page 221.

OPHTHALMIC.

A NEW CAPSULE FORCEPS.

BY EUGENE SMITH, M. D., OF DETROIT, MICH.

PROFESSOR OF OPHTHALMOLOGY AND OTOTOLOGY IN DETROIT COLLEGE OF MEDICINE; EX-PRESIDENT OF SECTION OF OPHTHALMOLOGY AND OTOTOLOGY, AMERICAN MEDICAL ASSOCIATION; OPHTHALMIC SURGEON TO ST. MARY'S HOSPITAL AND FREE EYE AND EAR INFIRMARY, ETC.



4784. See page 209.

Local anesthesia (cocaine) and antisepsis have been the means of producing a great revolution in the operation of cataract. Eserine, also, plays a somewhat important part. The Graefe modified linear extraction—linear incision combined with iridectomy—which has been so generally adopted as the operation for cataract, because of its supposed avoidance of iritis and consecutive destruction of the cornea, easier and better healing of the wound, etc., has, with the majority of the leading ophthalmic surgeons of the present day, been supplanted by simple extraction with a small flap (one-third of the cornea, De Wecker), and without iridectomy, a near return to the old classical operation, and the success of the operation is as great or greater than the Graefe method, and is in no small measure due to the use of cocaine, and the removal of all kinds of infectious factors which may exist in the conjunctival sac, lachrymal ducts, hands of operator or instruments, cleanliness and antisepsis being regarded as identical.

The adhesion to the Graefe method by some surgeons is no doubt due to a fear on their part, which has arisen from the history of the flap extraction as made in the olden time, where the flap, as suggested by Daviel, occupied two-thirds of the cornea, and was so frequently followed by suppuration of the cornea, prolapse of the iris, etc. These fears have been dissipated, with many, by statistics and experience, and I predict that ere many months, thanks to the efforts of De Wecker, Knapp and others, simple flap extraction will be accepted by all ophthalmic surgeons as the operation, and the iridectomy relegated to exceptional cases, where it properly belongs.

An important step in the operation is the best means of opening the capsule. This feature is exciting the interest of many operators. Shall it be done with the knife while passing through the anterior chamber, before making the counter-puncture, *a la* Galezowski? Shall it be made with the cystitome, in the shape of a T, or peripherally after completing the flap, *a la* Knapp? or shall we, with a pair of cystitome forceps extract the capsule, *a la* De Wecker, of Paris?

Each method has its advocates, but in my mind, the beau ideal method is the extraction of the anterior capsule.

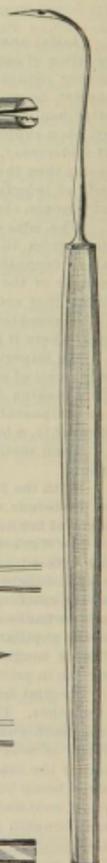
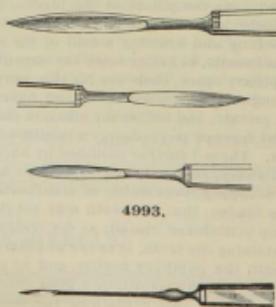
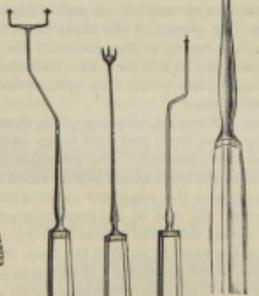
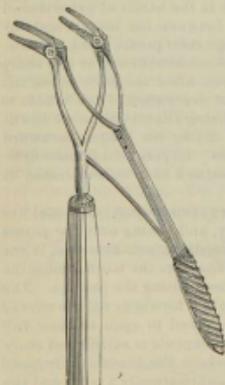
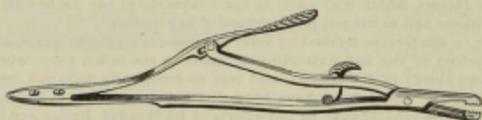
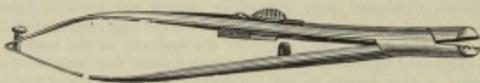
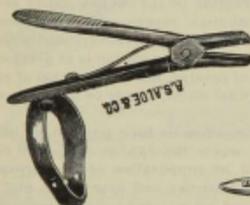
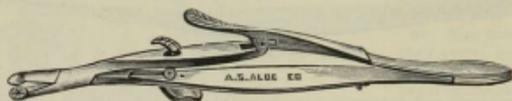
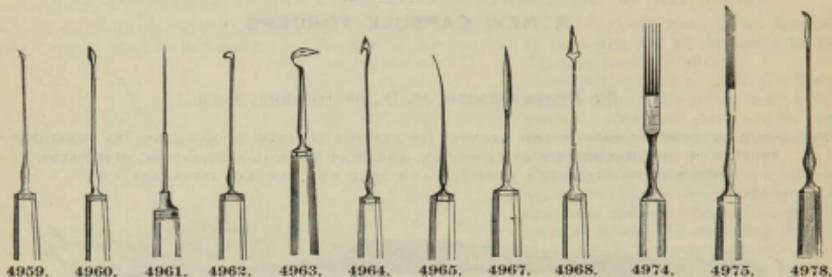
With the forceps heretofore in use, this has been a difficult procedure, even in the hands of experienced and dexterous operators, because of the danger of catching a fold of the iris between the blades, and the danger of bruising the flap by the necessary tilting of the forceps in order to engage their points to the capsule.

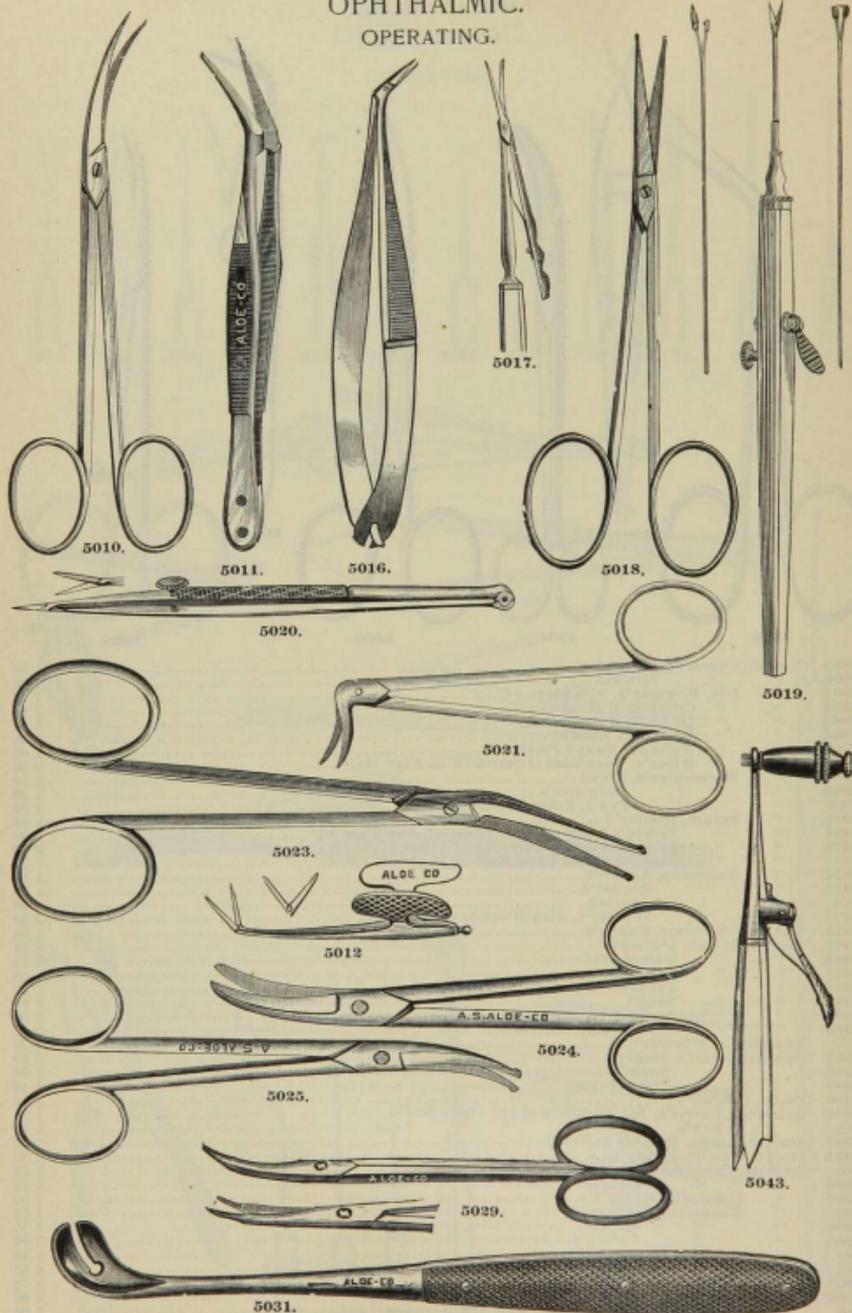
De Wecker, who first suggested removal of the anterior capsule, has forceps made with one or two sharp teeth, placed near the points of the blades, but on the under side of the blades, after the style of the iris forceps of Liebreich and Mathieu. Knapp modified with more teeth and a slight separation of the blades to prevent catching and bruising a fold of the iris, the points of the sharp teeth being slightly directed downwards or backwards, to better seize the capsule, but owing to the necessity for tilting the blades backward into the pupillary space, their use for this purpose was nearly or quite discarded. Experiencing these difficulties, I sought to overcome them, and have succeeded to my own satisfaction, as I have demonstrated by their use in private, and before my class, in many cases.

My first forceps were simply a modification of Knapp's, with four fine, sharp teeth on one blade and five on the other. These I further modified by having three teeth and four teeth only, and having only the points of the teeth sharp, that they may sink into and tear, not cut. The principal modification, however, is the curving or dropping downwards of that portion of the ends of the blade which contains the teeth, below the plane of the blades, that the teeth may set down into the pupillary space without tilting the forceps. The forceps being introduced closed, as for iridectomy, the end of the forceps is pulled forwards till the curved portion, containing the teeth, is in the pupillary space, when the blades may be allowed to open to their full extent beneath the pupillary border, and by gentle pressure against the lens, the capsule is seized and more or less forcibly (within reason), by a little sudden twitch extracted. The curve where the teeth are dropped is 1 mm. in depth, the part containing the teeth is 2 mm. long, the blades open automatically 5 mm., and the blades when closed, except that portion containing the teeth, are $1\frac{1}{4}$ mm. apart.

OPHTHALMIC.

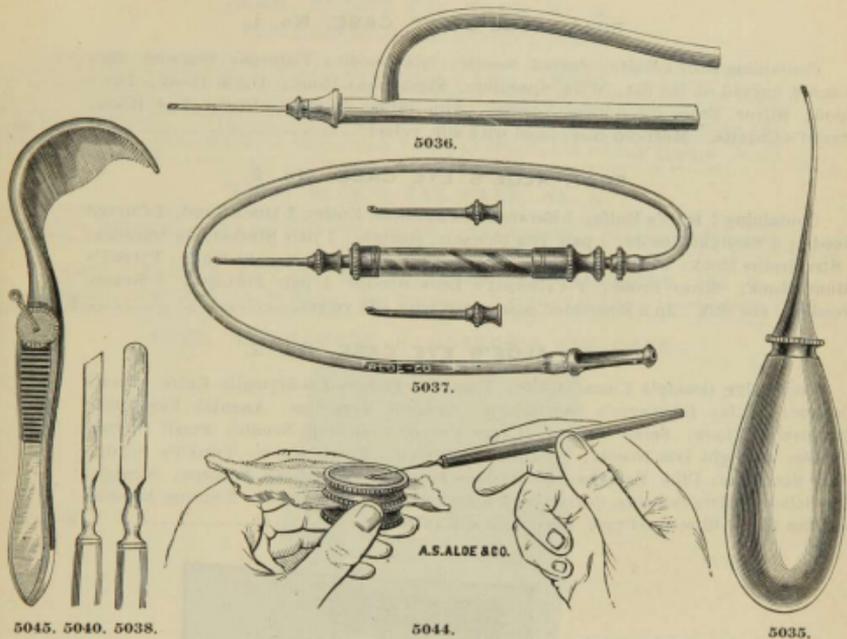
OPERATING.



OPHTHALMIC.
OPERATING.

OPHTHALMIC.

OPERATING.



5045.	5040.	5038.	5036.	5037.	5044.	5035.	
5006.	Scissors, Iris, Agnew's Curved.....						\$1 30
5007.	" " " " Straight.....						1 15
5008.	" " " " Angular.....						1 00
5009.	" " " " Curved Laterally.....						1 15
5010.	" " " " " " On Flat.....						1 00
5011.	" " " " Hall's.....						4 50
5012.	" " " " Liebold's.....						4 00
5013.	" " " " Liebreich's.....						3 50
5014.	" " " " Mathieu's Curved.....						3 50
5015.	" " " " " " Straight.....						3 00
5016.	" " " " McClure's.....						4 50
5017.	" " " " Noyes'.....						3 50
5018.	" " " " Straight.....						1 00
5019.	" " " " Wilde's Canulated and Forceps.....						11 25
5020.	" " " " Keratome, Strawbridge's.....						7 50
5021.	" " " " Pterygium, Chadwick's.....						4 50
5022.	" " " " Strabismus, Angular Blunt Points.....						1 25
5023.	" " " " " " Probe.....						1 25
5024.	" " " " " " Curved Blunt ".....						1 25
5025.	" " " " " " Probe.....						1 25
5026.	" " " " Noyes'.....						2 00
5027.	" " " " " " Straight Blunt Point.....						1 25
5028.	" " " " " " Probe.....						1 25
5029.	" " " " Tenotomy, Stevens'.....						2 25
5030.	" " " " Scoop, Enucleating, Wecker's.....						2 25
5031.	" " " " " " Wells'.....						2 25
5032.	" " " " Iridectomy, Pagenstecker's.....						2 25
5033.	" " " " Meibomian, Silver.....						50
5034.	" " " " Sclerotome, Wecker's.....						1 25
5035.	" " " " Soft Cataract Instrument, Blanchet's.....						1 75
5036.	" " " " " " Bowman's.....						2 00
5037.	" " " " " " Teale's.....						3 75
5038.	" " " " Spatula, Althoff's.....						1 30
5039.	" " " " " " Campbell's (St. Louis) Chalazion (Illustrated on Page 215.).....						75
5040.	" " " " " " David's.....						1 00
5041.	" " " " " " Wecker's, Iris, Silver.....						1 25
5042.	" " " " " " Stricterome, Thomas'. See figure 1915, Page 217.						1 15
5043.	" " " " " " Tattoo, Agnew's, Spring.....						3 50
5044.	" " " " " " Test Drum, Hard Rubber.....						50
5045.	" " " " " " Tourniquet, Laurence's, Eyelid.....						2 25

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OPHTHALMIC.

EYE INSTRUMENT SETS.

5046. ALOE'S EYE CASE, No. 1.

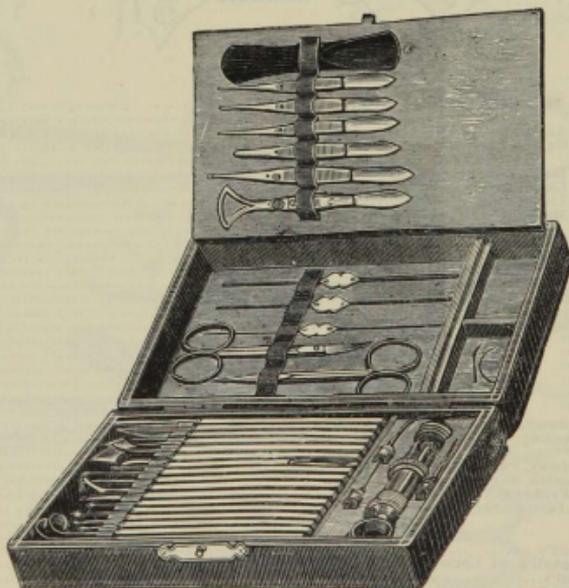
Containing Beer's Knife; Curved Needle; Iris Needle; Forceps; Scissors, fine-pointed, curved on the flat; Wire Speculum; Strabismus Hook; Dix's Hook; Dix's Spud; Silver Probe; 3 Suture Needles; Fine Silk; Tyrrell's Sharp Iris Hook; Daviel's Curette. Morocco case, lined with silk velvet..... \$ 17 00

5047. ALOE'S EYE CASE, No. 2.

Containing 1 Beer's Knife; 1 Keratome or Artificial Knife; 1 Dix's Spud; 1 Curved Needle; 1 Straight Needle; 1 pair Iris Scissors, straight; 1 pair Strabismus Scissors; 1 Strabismus Hook; 1 Wire Speculum; 1 Parker's Fistula Lachrymalis Knife; Tyrrell's Blunt Hook; Silver Probe; 1 Critchett's Lens Scoop; 1 pair Forceps; 6 Suture Needles; fine Silk. In a Rosewood case, lined with silk velvet..... \$ 24 00

5048. ALOE'S EYE CASE, No. 3.

Containing Graefe's Linear Knife; Parker's Fistula Lachrymalis Knife; Beer's Cataract Knife; Desmarre's Sacrificator; Straight Keratome; Angular Keratome; Strabismus Hook; Small Scalpel; Large Curved Couching Needle; Small Curved Needle; Straight Iris Needle; Cystitome; Tyrrell's Blunt Hook; Tyrrell's Scoop; Wire Speculum; Cilia Forceps; Strabismus Forceps; Iridectomy Forceps; Straight Iris Scissors; Iris Scissors, curved on the flat; Anel's Silver Probe; 6 Suture Needles and fine Silk. Rosewood case, lined with silk velvet..... \$ 34 50



5049. ALOE'S EYE CASE No. 4—CONTENTS ON NEXT PAGE.

SPECIAL CASES MADE TO ORDER.

OPHTHALMIC.

EYE INSTRUMENT CASES.

5049. ALOE'S EYE CASE, No. 4.

SEE ILLUSTRATION ON OPPOSITE PAGE.

Containing 2 Beer's Cataract Knives; 2 Jaeger's Keratomes (Iridectomy Knives), 1 angular, 1 straight; 1 Graefe's Linear Knife; 1 Desmarre's Secondary Knife; 1 Weber's Canaliculus Knife; 1 Lid Scarifier; 2 Cataract Needles; 1 Stop Needle; 1 Desmarre's Paracentesis Needle; 1 Cystitome and Scoop; 1 Curved Iris Scissor; 1 Straight Iris Scissors; 2 Desmarre's Lid Retractors; 1 Curved Iris Forceps; 1 Straight Iris Forceps; 1 Graefe's Plain Fixation Forceps; 1 Graefe's Fixation Forceps, with catch; 1 Cilia Forceps; 2 Graefe's Strabismus Hooks; 1 Anel's Lachrymal Syringe; 1 Jaeger's Eye-lid Plate; 3 Bowman's Silver Probes; 1 Anel's Silver Probe; 1 Desmarre's Entropium Forceps. In fine Morocco covered case \$35 00

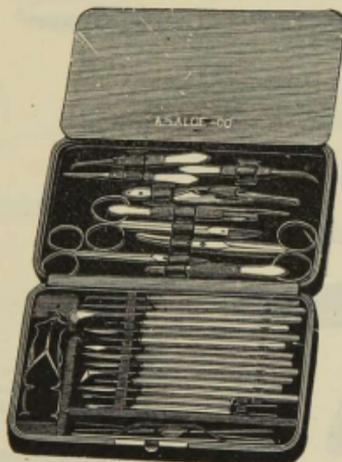
5050. ALOE'S EYE CASE, No. 5.

Containing 1 Curved Couching Needle; 1 Strabismus Hook; 1 Beer's Cataract Knife; 1 Double Hook; 1 pair Curved Forceps; 1 pair Strabismus Scissors; 1 Wire Speculum. In a neat Morocco case, lined with silk velvet \$ 9 00

5051. ALOE'S SET OF STRABISMUS INSTRUMENTS. No. 6.

Containing 1 pair Strabismus Scissors; 1 pair Strabismus Forceps; 1 Sedillot's Double Hook; 1 Graefe's Strabismus Hook; 1 Wire Speculum. In a neat Morocco case..... \$ 7 50

5052. DR. GEORGE R. CUTTER'S EYE CASE.



Containing 1 Lid Retractor; 2 Strabismus Hooks; 2 Graefe's Knives; 1 Beer's Knife; 2 Iridectomy Knives; 1 Weber's Knife; 1 Cataract Needle; 1 Bowman's Stop Needle; 1 Tyrrell's Double Hook; 1 Cystitome and Curette; 1 Weber's Graduated Probe; 1 set Bowman's Probes; 1 Noyes' Eye Speculum, gold plated; 1 pair Spring-Catch Fixation Forceps; 1 pair Plain Fixation Forceps; 1 pair Curved Iris Forceps; 1 pair Straight Iris Forceps; 1 Sands' Needle Holder; 1 pair Curved Iris Scissors; 1 pair Straight Iris Scissors; 1 pair Enucleation Scissors; 1 pair Cilia Forceps. Put up in a fine patent Walnut case, lined with silk velvet; 7½ inches long, 4¼ inches wide, 1¼ inches thick, when closed.... \$30 00

5053. KNAPP'S CATARACT CASE.

Price..... \$31 50

5054. NOYES' EYE CASE.

Containing 2 Desmarre's Eyelid Retractors, large and small; 1 Wire Speculum; 1 Noyes' Canaliculus Knife; 1 set Bowman's Probes, silver, Nos. 1 to 8; 1 Small Scalpel; 1 H. R. Lachrymal Syringe; 2 Strabismus Hooks; 1 pair Straight Iris Scissors; 1 pair Curved Iris Scissors; 1 pair Fixation Forceps; 1 Dissecting Forceps; 1 Dix's Spud; 1 Spatula; 1 Straight Iridectomy Knife (Keratome); 1 Angular Iridectomy Knife; 1 Short Iris Forceps; 1 Large Curved Iris Forceps; 1 Tyrrell's Blunt Hook; 2 Straight Dissection Needles; 1 Graefe's Linear Knife, wide pattern; 1 Small Sharp Iris Hook; 1 pair Prout's Entropium Forceps; 1 Cystitome and Curette; 1 Sand's Needle Holder; 2 Graefe's Linear Knives; 1 H. K. Spoon; 1 Critchett's Lens Scoop; 6 Small Curved and 3 Straight Suture Needles, and fine silk. In a fine Rosewood, brass-bound case, lined with silk velvet \$50 00

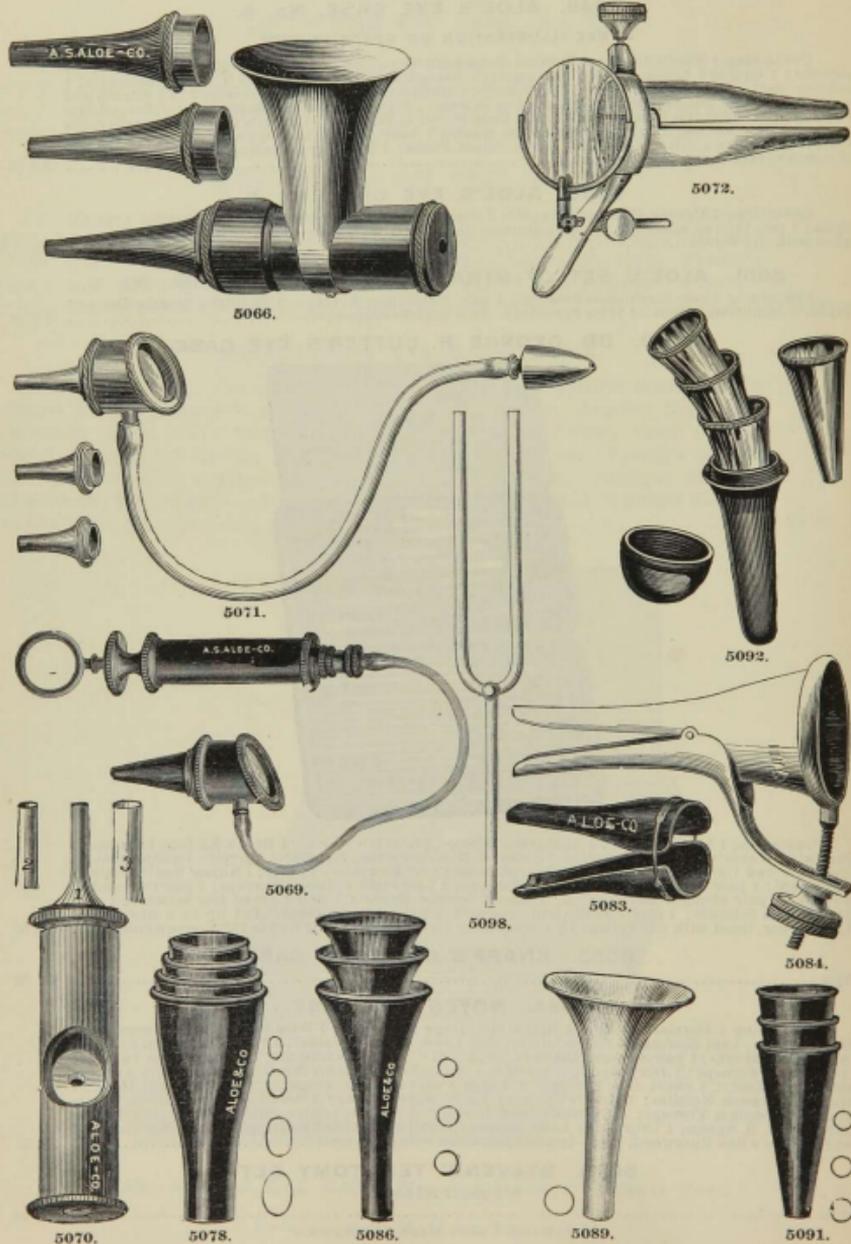
5055. STEVENS' TENOTOMY SET.

See pages 206 and 207.

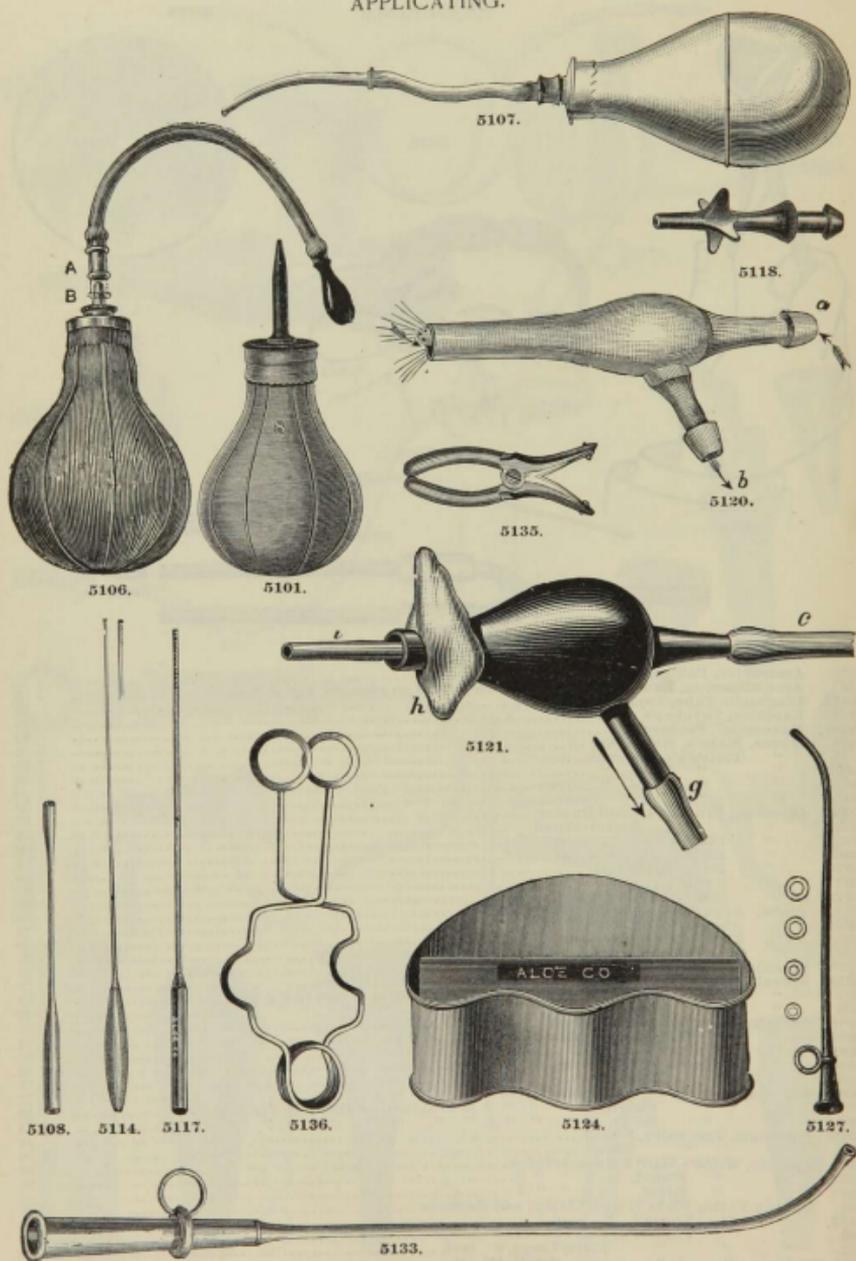
Price..... \$22 00

SPECIAL CASES MADE TO ORDER.

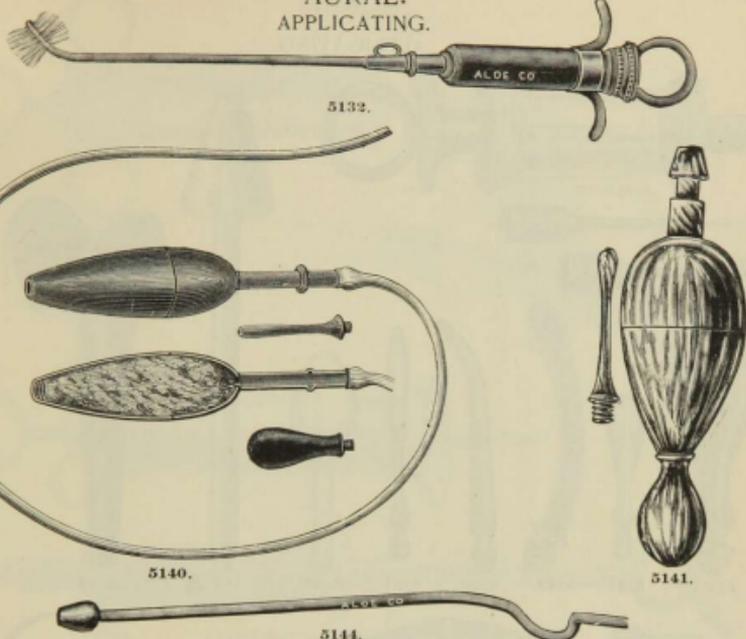
AURAL.
EXAMINING.



AURAL.
 APPLICATING.



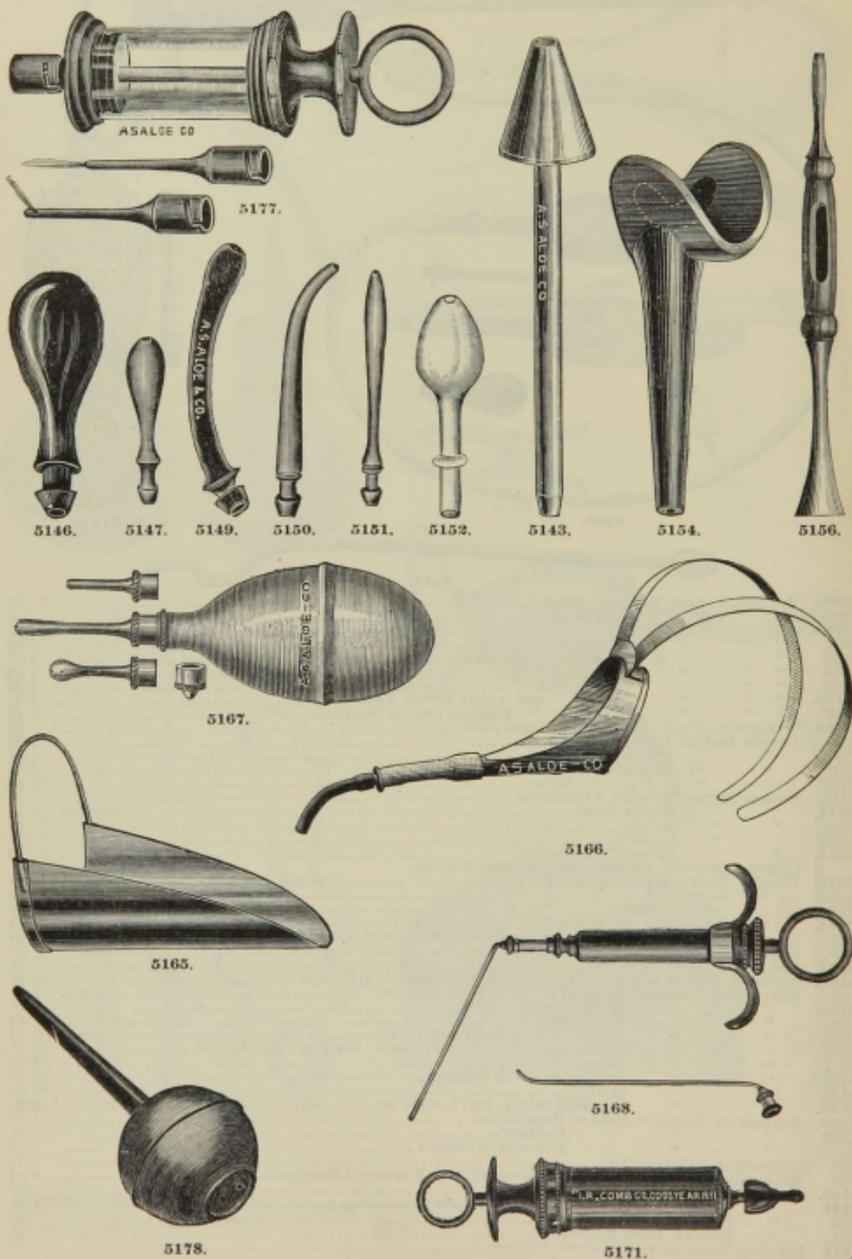
AURAL.
APPLICATING.



5099.	Air Bag, Lennox Browne's, (Fig. 1, Page 238).....	\$ 1 75
5100.	" " Politzer's, Plain, 6 oz.....	1 00
5101.	" " " " " 8 ".....	1 25
5102.	" " " " " 10 ".....	1 50
5103.	" " " " with Valve, 6 oz.....	1 25
5104.	" " " " " 8 ".....	1 50
5105.	" " " " " 10 ".....	1 75
5106.	" " " " " and Agnew's Oval Nozzle.....	1 75
5107.	" " " " " Knapp's Curved Nozzle.....	10
5108.	Applicator, Buck's Porte Acid, Glass.....	1 25
5109.	Caustic Holder, Lucae's.....	1 00
5110.	" " Tröltzsch's.....	3 00
5111.	" " Wilde's, with Platinum Burner.....	1 50
5112.	" " " " Silver.....	20
5113.	Cotton Carrier, Brown's Aluminium.....	25
5114.	" " Buck's, Steel.....	20
5115.	" " Hotz's.....	75
5116.	" " Lucae's.....	20
5117.	" " Spencer's (St. Louis).....	49
5118.	Cotton Reservoir, Phillips', see Fig. 3405, Page 49.....	50
5119.	Donche, Buck's Hard Rubber (Tip only).....	1 00
5120.	" " Lucae's, " Metal " ".....	75
5121.	" " Rumbold's, (St. Louis) " ".....	1 25
5122.	" " " " complete with Bottle and Bulbs, as shown in Fig. 5395, Page 250,.....	4 00
5123.	Donching Canula, Hawley's.....	1 25
5124.	Ear Basin, Up DeGraff's.....	1 25
5125.	Eustachian Bougie, Spencer's (St. Louis), Celluloid, Fig. 6, Page 238.....	1 00
5126.	Eustachian Catheter, Gensoul's, Silver, Right and Left.....	2 25
5127.	" " " " Hard Rubber.....	25
5128.	" " " " Nickel Plated.....	60
5129.	" " " " Noyes', Silver, Right and Left.....	1 75
5130.	" " " " Rumbold's (St. Louis), Flexible. See Fig. 5550, page 265.....	1 75
5131.	" " " " Seiss', Silver.....	1 25
5132.	" " " " " with Syringe.....	2 25
5133.	" " " " Silver.....	1 00
5134.	" " " " Woakes', Silver, Fig. 2, Page 238.....	1 00
5135.	Eustachian Catheter-Holder, Bouffon's.....	1 50
5136.	" " " " Politzer's.....	75
5137.	" " " " Pomeroy-Kramer's.....	2 75
5138.	Eustachian Catheter Tip.....	20
5139.	Eustachian Catheter and Bougie, Dench's, with 3 assorted Bougies.....	4 00
5140.	Inhaler, Buttle's, Hard Rubber.....	1 75
5141.	" " " " Metal.....	1 50
5142.	" " " " Pomeroy's, Glass.....	1 00
5143.	" " " " Roosa's, Hard Rubber.....	75
5144.	Injector, Rumbold's (St. Louis), Curved.....	75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

AURAL.
APPLICATING.



AURAL.

BARCLAY'S (ST. LOUIS) AURAL OPERATING INSTRUMENTS.

THE BEST BEND OF SHAFT AND HANDLE IN INSTRUMENTS FOR OPERATION IN THE DEPTH OF THE EAR CANAL.

BY ROBERT BARCLAY, A. M., M. D., St. Louis, Mo.

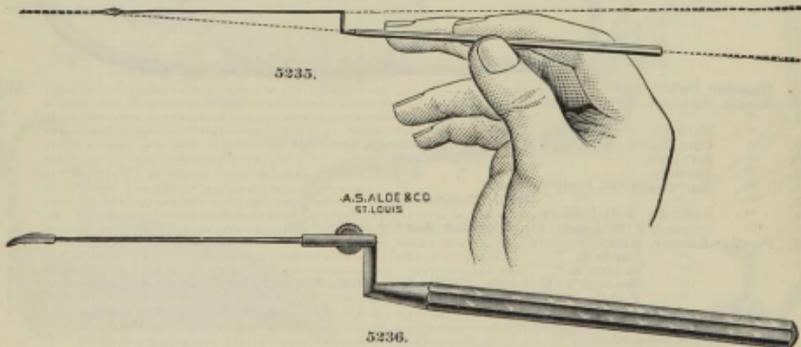
The necessity for the most delicate and accurate manipulation of instruments in operations upon the deeper external auditory canal, drum-head, and tympanic structures, and the extreme difficulty, if not impossibility, of satisfying it with aural instruments having shaft and handle of the existent patterns—straight, bent (as at 110°), and twice-bent (as in the double curette),—which are fundamentally unsuitable for this service, have provoked an attempt to devise a shaft and handle so proportioned as to combine the desirable features of those already in use, without their respective defects and faults.

The result is the instrument described below, which affords a maximum of vision, of illumination, of mechanical effectiveness, of manipulative convenience and manual control, of economy of expense and space, and of adaptability to surgical instruments for narrow cavities.

The essential features of the new instrument are these: the aluminium handle is of dimensions and weight most favorable to delicate and accurate manipulation. Its long axis passes directly through the operative extremity of the operating shaft, which is, therefore, as in a straight instrument, wholly under control, and can be made to operate at will, in any direction, rectilinearly or curvilinearly, or to rotate without displacement.

The handle is joined to the operating shaft by a lateral shaft, of length only sufficient to permit, in operation, the greatest illumination and vision along and beyond the operating shaft. For an operator whose finger-tips are uncommonly slender, or who handles the instrument with his finger-tips, this lateral shaft may with advantage be constructed somewhat shorter than usual.

The operating shaft is of the smallest dimensions permissible under the operative requirements, and is at right angles to the lateral shaft, thereby enabling the operator to hold the handle as near as possible to his work and to operate with a finger rest. If the reflection of



light from the lateral shaft be annoying to an operator, he can avoid this by having the lateral shaft made at an obtuse angle to the operating shaft, which will deflect the rays of light. This will, however, place the handle somewhat further from the operative extremity.

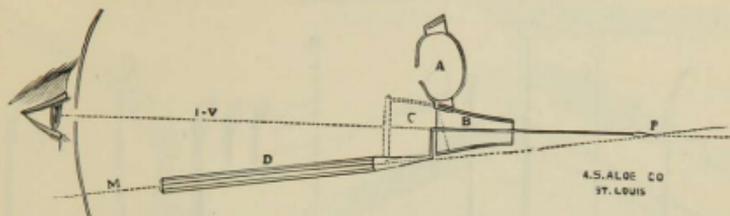
If desired, the shaft and handle may be constructed separately, and adjustable, with socket and set-screw, so that with one handle may be used, as required, shafts having dissimilar operative extremities. The instrument may be constructed of any size, material, or operative character, as desired, for aural, nasal, or other orificial surgery.

It is hoped that this fundamental modification of our instruments may prove a step in the right direction, and be suggestive to otologists generally in search of the perfect aural instrument.

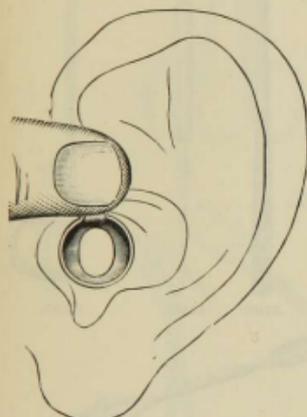
For valuable assistance in perfecting the instrument, I desire, in conclusion, to make grateful mention of Messrs. A. S. Aloe Co., of St. Louis, who have also pledged themselves to construct it—unless ordered otherwise—of material and pattern in strict accordance with my design.

AURAL.

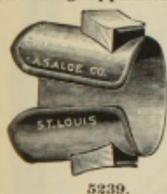
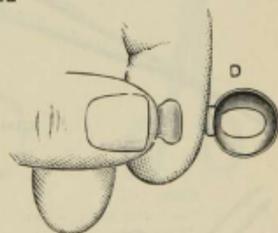
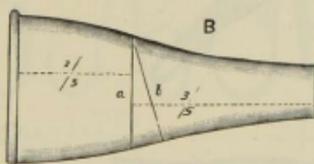
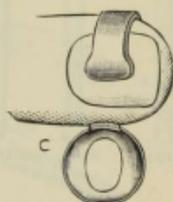
BARCLAY'S (ST. LOUIS) AURAL OPERATING INSTRUMENTS.



Showing Application of Nos. 5235 and 5239.



Showing Application.

A.S. ALOE CO
ST. LOUIS

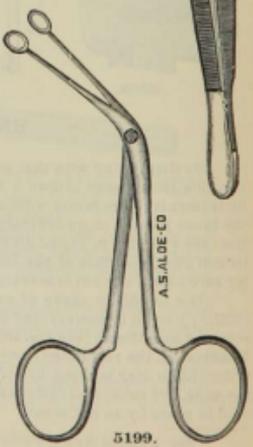
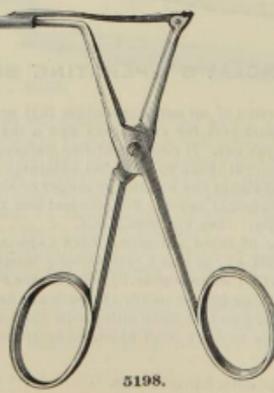
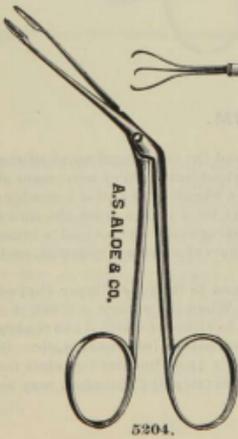
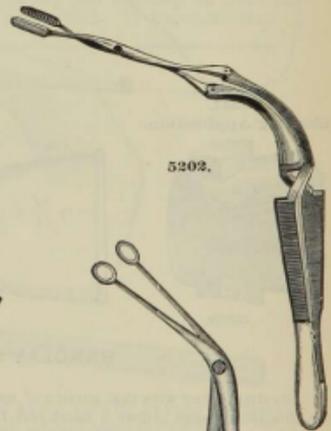
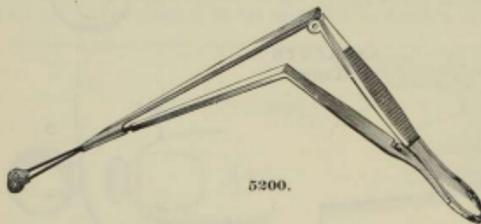
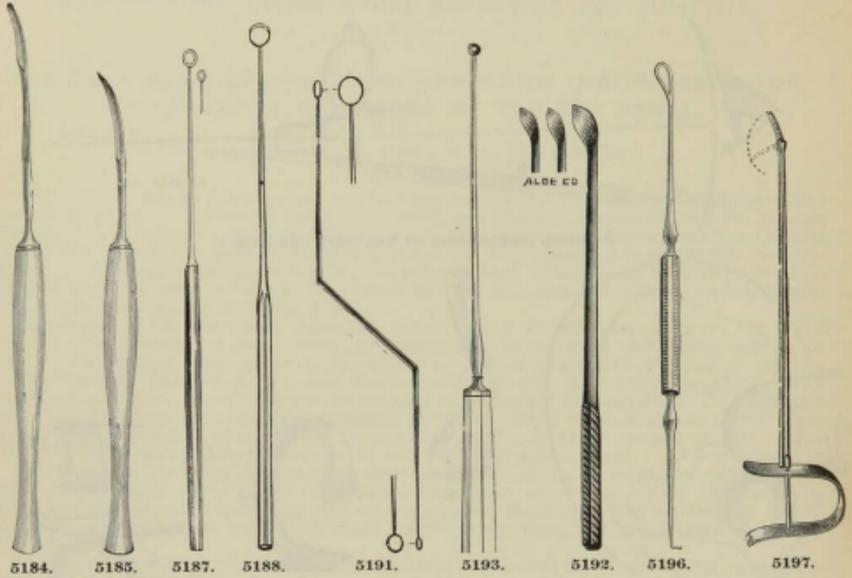
BARCLAY'S OPERATING SPECULUM.

By dispensing with that portion of an aural speculum that projects beyond the intertragal notch of the ear, this instrument allows a hand-rest for steadiness and a maximum of shortening and of movement of instruments in operation within the ear. It consists of two parts—a tube and a handle. The tube resembles the inner portion of an ordinary aural speculum divided obliquely at two-fifths its distance from the outer rim (see Fig. 5238 B, b) and fits the slot of the handle, its longer or shorter side being below as required to bring its rim flush with that of the intertragal notch. For general use tubes of different sizes are required, and, for rare cases, one cut transversely. (See Fig. 5238 B, a.)

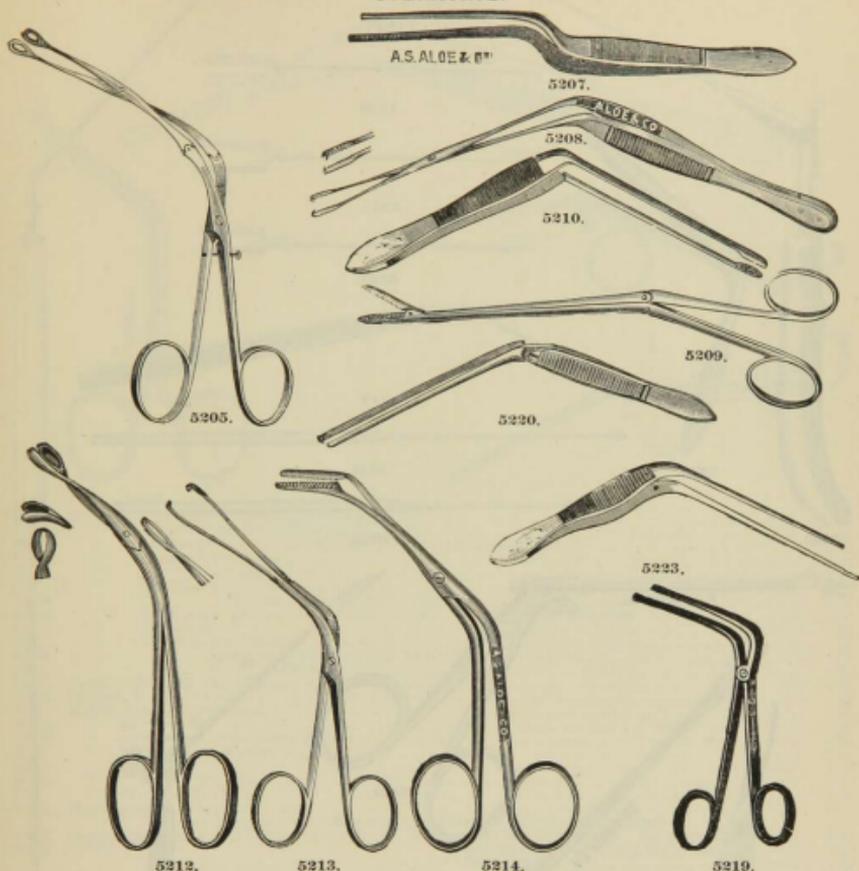
The handle is made of one of three patterns: Like a spoon-handle, fixed to the tube, dipper-shaped (5237)*; like an imperfect ring (5238 A); or like a split tailor's-thimble (5239). When the patient is erect, it is retained by a thumb (see Fig. 5238 C.); when supine, by a finger (see Fig. 5238 D.), to either of which it can readily be adjusted, the rest of the hand being free to steady the patient's head, or to hold cotton, instruments, etc. In order that it may be used by either hand, or upon either side the ear, the thimble-speculum has two slots for the tube. Whenever it is desirable to have both hands entirely free for other service, the speculum may be held in place by an assistant.

* See Medical News, Philadelphia, April 22, 1893.

AURAL.
OPERATING.



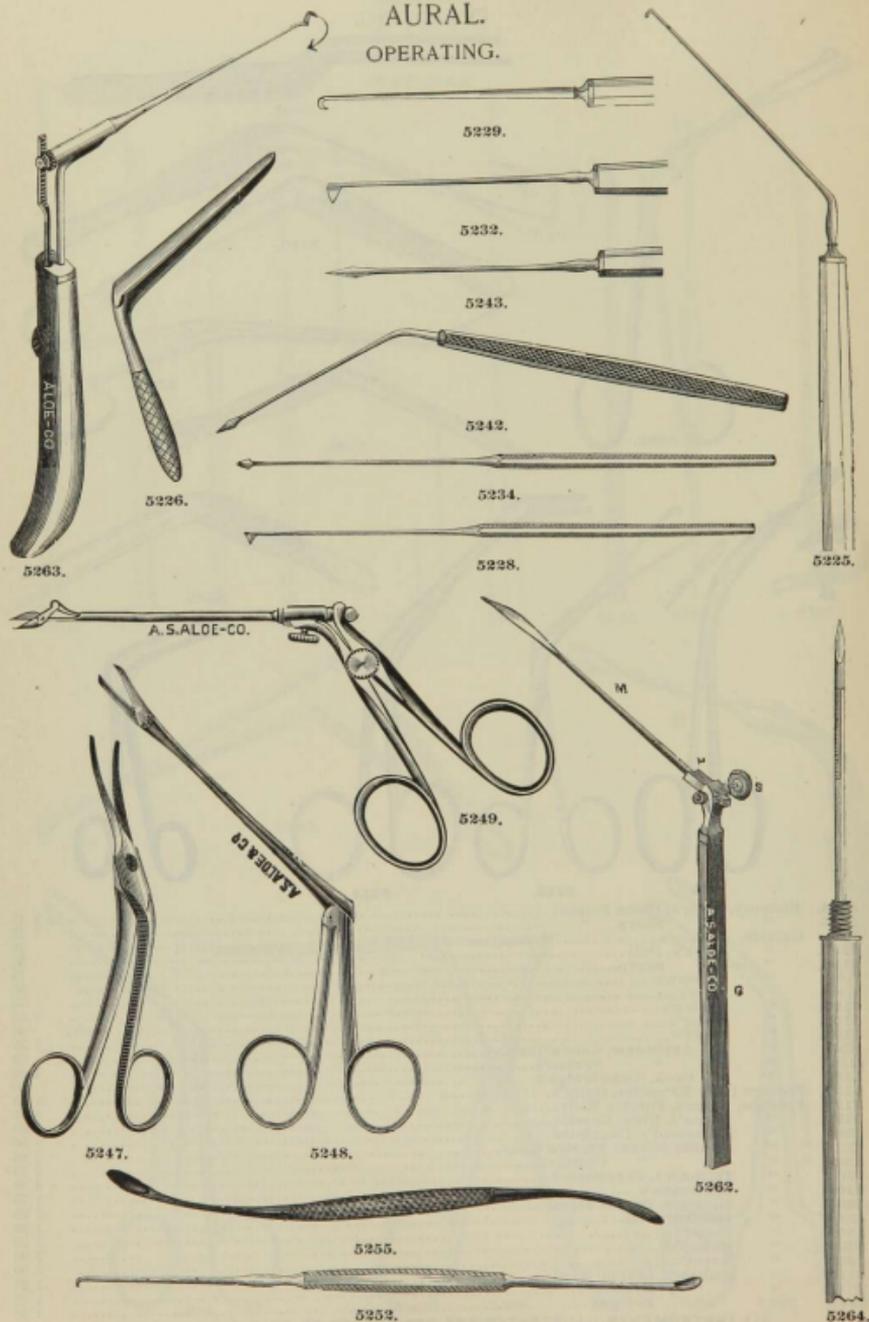
AURAL
OPERATING.



5184.	Bistoury, Buck's, Probe Pointed	\$ 1 15
5185.	" " Sharp "	1 10
5186.	Curette, Bishop's	75
5187.	Buck's, Dull	50
5188.	" " Sharp	75
5189.	" Heburn's	50
5190.	" Hotz's	50
5191.	" Sexton's	1 50
5192.	" Spear's	40
5193.	" Wolf's	1 25
5194.	" and Applicator, Goodwillie's	50
5195.	" " Sexton's	1 00
5196.	" " Hook, Strawbridge's	50
5197.	Foreign Body Extractor, Quire's	1 25
5198.	Forceps, Allen's, Foreign Body	3 25
5199.	" Bacon's, Blunt Curette	2 00
5200.	" Bumstead's, Cannulated	3 00
5201.	" Double Jointed Foreign Body	2 50
5202.	" " Universal	3 75
5203.	" Durham's, Fenestrated	4 50
5204.	" Hartmann's	1 75
5205.	" Hinton's, Double Joint	3 25
5206.	" Leonard's	1 50
5207.	" Lucac's	1 00
5208.	" McKay's	2 00
5209.	" Noyes'	3 00
5210.	" Politzer's Cotton-Wool	1 25
5211.	" " Eyelet	1 25
5212.	" " Polypus	1 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

AURAL.
OPERATING.



AURAL.

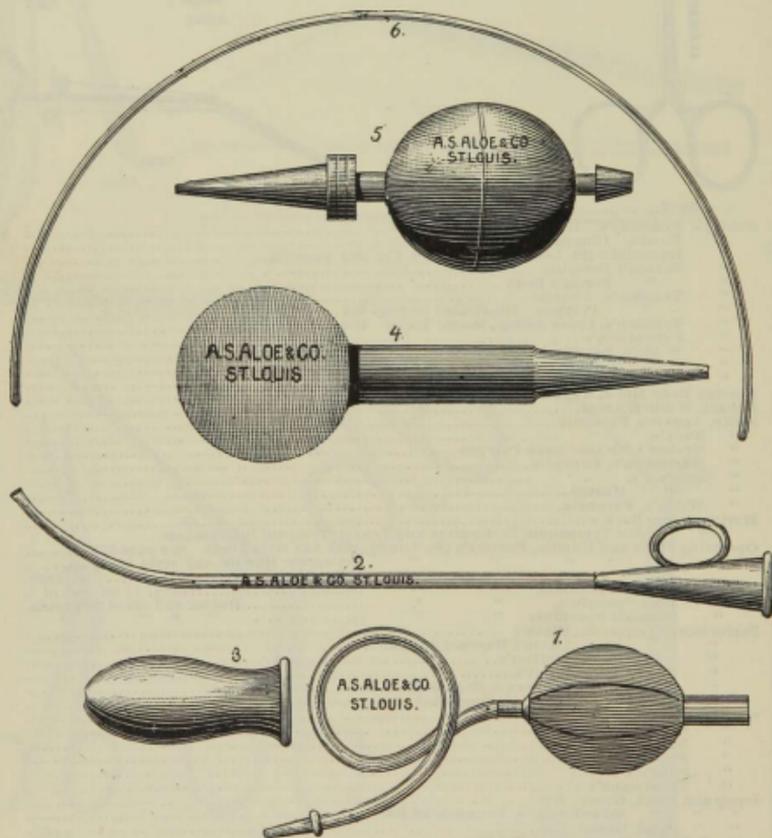
IMPROVED OTOLOGICAL INSTRUMENTS.

By H. N. SPENCER, A. M., M. D.,

Professor of Diseases of the Ear, Missouri Medical College and St. Louis Post Graduate School of Medicine:

The cuts presented herewith represent a group of instruments which the aural surgeon will recognize as indispensable in the treatment of middle ear diseases.

The forms are those which the experience of the writer has led him to adopt as being the best.



The air-bag (1) is that of Dr. Lennox Browne. See No. 5099, page 229.

The short catheter (2, natural size) is the one described by Dr. Edward Woakes of London, Mr. Hodgson of Brighton, and Dr. Weber-Liel of Berlin. See No. 5134, page 229.

The Eustachian bougie (6) is made of celluloid, which material is much to be preferred to catgut. See No. 5125, page 229.

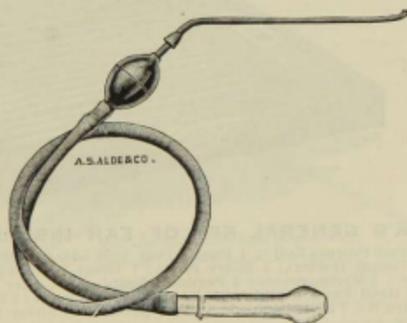
AURAL.

IMPROVED OTOLOGICAL INSTRUMENTS.—CONTINUED.

Three of the cuts (3, 4 and 5) represent devices which are original with the writer. The air-bag which is armed with a point for use in conjunction with the catheter is provided also with a nasal tip (3) for Politzer's inflation. This arrangement secures greater cleanliness and provides the means of antiseptic precaution in furnishing each patient with a tip. For treatment of the Eustachian tube and drum cavity by injection of fluid the catheter syringe (4) has been constructed with a point to fit accurately into the proximal end of the catheter. In the treatment of the ear by vapors, for the use of substances which volatilize easily, as acetic ether, ethylene di-chloride, chloroform, etc., in order to spare the patient the discomfort and even the more serious incidents which might arise from the employment of Bittle's inhaler and the Politzer inflation, the vaporizer (5, natural size) is recommended. By the former process not only the nasal mucous membrane but in unilateral disease the unaffected drum cavity is needlessly subjected to the severe pressure and the medication which might entail serious consequences. This instrument was first made for the writer in the spring of 1890.

[Extract from Annals of Ophthalmology and Otology, April 1893.]

SPENCER'S MIDDLE EAR POWDER BLOWER.



5159. See Page 231.

AN IMPROVED NASAL NOZZLE FOR POLITZER'S INFLATION.

By JAMES A. CAMPBELL, M. D., St. Louis.

Various modifications of Politzer's original instrument have been offered, and nasal tips of many forms have been devised, but the small oval hard rubber bulbous nozzle made for me by A. S. Aloe Co. serves me best for general purposes, and has met with the unanimous approval of all the patients upon whom I have used it.



5149. See Page 231.

Its form and size enables it to be used in the most sensitive nose, with the least possible irritation, and obviates the tendency to bleed, which is frequently seen in such cases.

Its simplicity will be seen and appreciated from a glance at the cut.

AURAL.

AURAL OPERATING CASES.

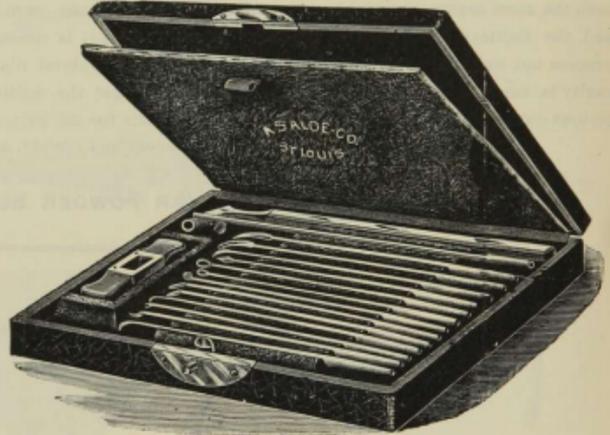


5265. BERTHOLD'S SET OF EAR INSTRUMENTS.

Containing 1 handle, into which are fitted: 1 Fine Hook; 1 Sharp Curette; 1 Sharp Point Curved Bistoury; 1 Tympanum Perforator; 1 Leather-Covered Case..... \$6 00

5266. BISHOP'S SET OF EAR INSTRUMENTS.

Containing 1 Curved Sharp-Pointed Knife; 1 Curved Blunt Pointed Knife; 1 Hook Knife for use in Perforations; 1 Paracentesis Knife; 1 Sharp Curette, large; 1 Smaller Sharp Curette; 1 Small Sharp Spoon; 1 Hoe-Shaped Scraper, obtuse angled, rounded end; 1 Hoe-Shaped Scraper, right angled, rounded end; 1 Sharp Hook; 1 Sharp Double Hook; 1 Tenotome for Cutting Right Tensor Tympani; 1 Tenotome for Cutting Left Tensor Tympani; 1 Polypus Snare, with extra supply of wire; 1 Aluminium Ear Probe and Cotton Holder, and 1 Aluminium Handle With set Screw.....\$12 00



5267. BUCK'S GENERAL SET OF EAR INSTRUMENTS.

Containing 1 Buck's Mastoid Process Knife; 1 Buck's Port Acid Glass; 1 Buck's Silver Probe; 2 Buck's Curettes; 4 Buck's Cotton Holders; 1 Silver Probe; 1 Blunt-Pointed Curved Bistoury; 1 Sharp-Pointed Curved Bistoury; 2 Myringotomes; 1 Furuncle Knife; 2 Drills for Mastoid Process; 1 Mirror, 2 1/4-inch diameter, and Head-Band; 1 Wilde's Ear Forceps, very delicate; 1 Blake's Snare, silver canula, only one hole, to receive No. 7 wire, doubled; 1 set of (4) Wilde's Silver Ear Specula; 1 Fine Morocco Case, silk velvet lining 26 50

5268. BUCK'S POCKET SET OF EAR INSTRUMENTS.

Containing 1 Buck's Curette, small; 1 Buck's Curette, medium; 1 Buck's Curette, large; 1 Tympanum Perforator; 2 Holcomb's Cotton Carriers; 1 Silver Probe; 1 Tenotome; 1 Fine Morocco Case. 6 50

5269. DENCH'S SET OF MIDDLE EAR INSTRUMENTS.

Containing 10 instruments fitted to an aluminium handle with one angular and one straight end; in polished hard wood case..... 12 00



5270. GRUBER'S SET OF EAR INSTRUMENTS.

Containing 1 Handle, into which are fitted; 1 Polypus Snare; 1 Sharp Point Curved Bistoury; 1 Probe Point Curved Bistoury; 1 Myringotome; 1 Fine Hook; 1 Probe; 1 Leather-Covered Case..... 7 50

5271. JACK'S SET OF MIDDLE EAR INSTRUMENTS.

Price \$ 16 00

AURAL.

AURAL OPERATING CASES.

5272. POLITZER'S SET OF EAR INSTRUMENTS.

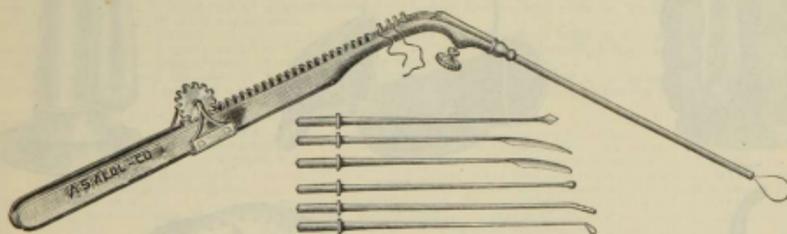
Containing 1 Tröltzsch's Mirror, with handle; 1 set (3) Hard Rubber Ear Specula; 1 Hard Rubber Curette; 1 Polypus Knife, steel; 1 Wilde's Polypus Snare; 2 Hard Rubber Eustachian Catheters; 1 Diagnostic Tube and Explorer; 1 Curette and Hook, Steel; 1 pair of Angular Forceps; 1 Hard Rubber Syringe; 1 Morocco-Covered Case, lined with velvet..... \$ 16 50

5273. ROOSA'S SET OF EAR INSTRUMENTS.

Containing 1 Tröltzsch's Ear Mirror, with handle and Roosa's head-band; 1 set of (3) Wilde's Tubular Specula; 1 pair of Wilde's Angular Forceps; 1 Scalpel and Daviel's Curette; 1 Cotton Probe; 1 Eustachian Catheter, silver; 1 Eustachian Catheter, hard rubber; 1 Posterior Nares Syringe, hard rubber; 1 Roosa's Iodine Apparatus; 6 Toynbee's Artificial Tympani; 1 Diagnostic Tube and Explorer; 1 Siegle's Pneumatic Oscope; 1 Tuning-Fork (C); 1 Small Powder-Blower, hard rubber; 1 Blake's Ear Snare and Paracentesis Needle; 1 Morocco-Covered Case, lined with velvet \$ 32 75
And 1 Politzer's Apparatus, with Roosa's Nozzle, in a separate paper box, additional 1 50

5274. SEXTON'S GENERAL SET OF EAR INSTRUMENTS.

Containing 1 Foreign Body Forceps; 1 Small Dressing Forceps; 1 3-inch Head Mirror and Band; 1 set of German Silver Ear Specula; 1 Sexton's Folding Tongue Depressor; 1 Sexton's Double Curette; 1 Sexton's Hard Rubber Cotton-Wool Carrier; 1 Aluminium Cotton-Wool Carrier; 1 Silver Probe, 6½ inches long; 1 Scalpel and Tenotome, in slide catch tortoise-shell handle; 1 Handle, into which are fitted 1 Polypus Snare, 1 Myringotome, 1 Stout Silver Probe, 1 Sharp-pointed Ear Knife, 1 Probe-pointed Ear Knife, 1 Hoe-shaped Scraper; 1 Case, covered with Morocco, lined with silk velvet..... \$ 26 50



5275. SEXTON'S POCKET SET OF EAR INSTRUMENTS.

Containing 1 Sexton's Handle, with Polypus Snare; 1 Myringotome; 1 Sharp-pointed Knife; 1 Probe-pointed Knife; 1 Stout Silver Probe; 1 Cotton Applicator; 1 Hoe-shaped Scraper, in neat Leather-covered Case..... \$ 9 00

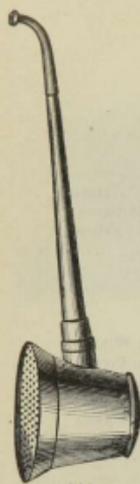
5276. TOYNBEE'S SET OF EAR INSTRUMENTS.

Containing 1 set (3) Toynbee's Silver Ear Specula; 1 pair of Rectangular Forceps; 1 Metallic or Hard Rubber Syringe; 1 Ear Spout; 1 pair of Ring Polypus Forceps; 4 Artificial Tympani; 1 Oscope (Diagnostic Tube) and Explorer; 1 Eustachian Catheter, hard rubber; 1 Wilde's Polypus Snare; 1 Morocco-covered Case, lined with velvet..... \$ 18 75

5277. TURNBULL'S SET OF EAR INSTRUMENTS.

Contents upon application..... \$ 52 50

AURAL.
‡ MICROPHONOUS.



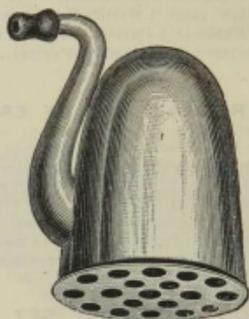
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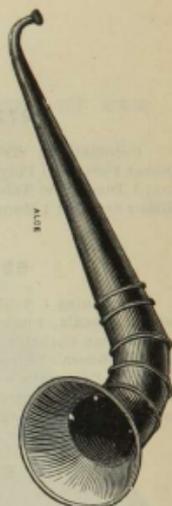
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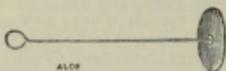
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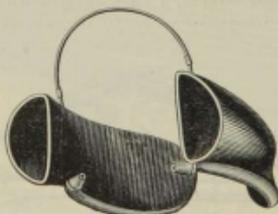


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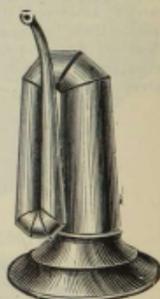


ALOE

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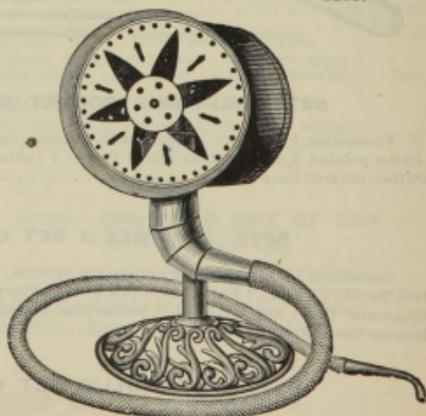
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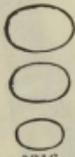


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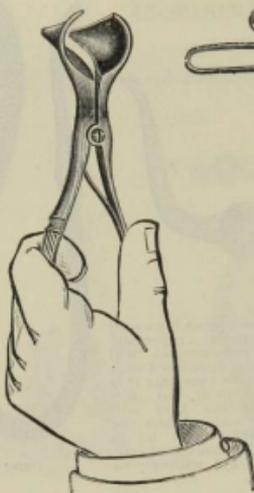


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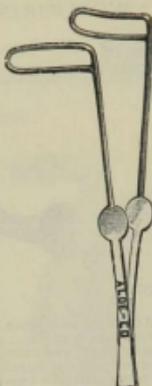
NASAL.
EXAMINING.



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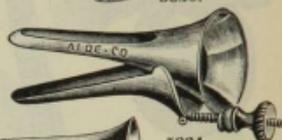
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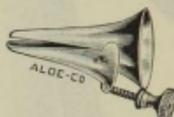
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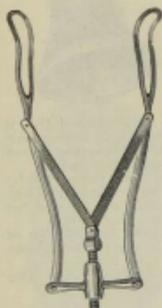
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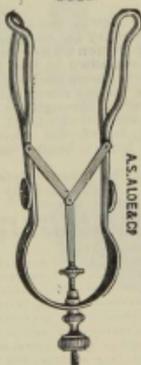
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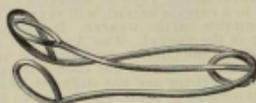
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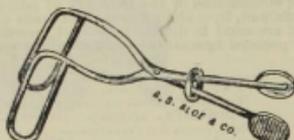
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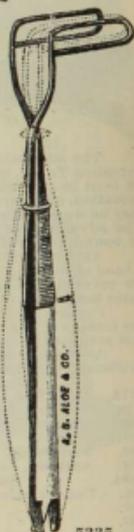
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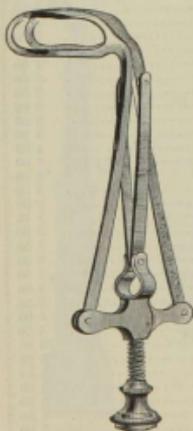
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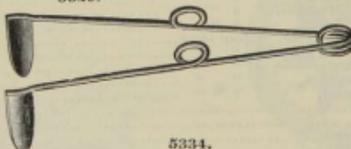
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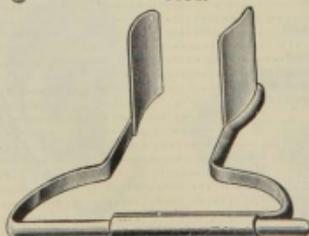
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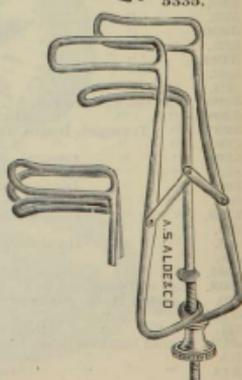
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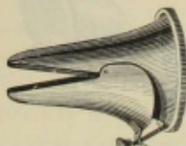
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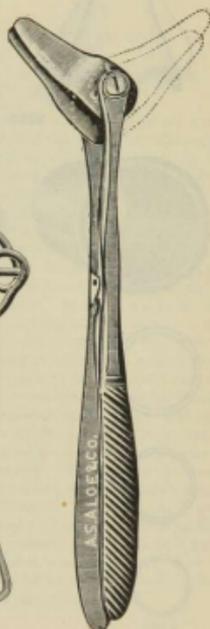
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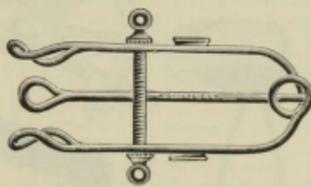
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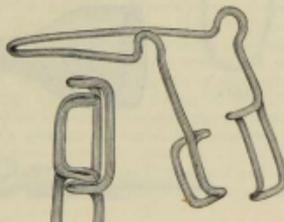
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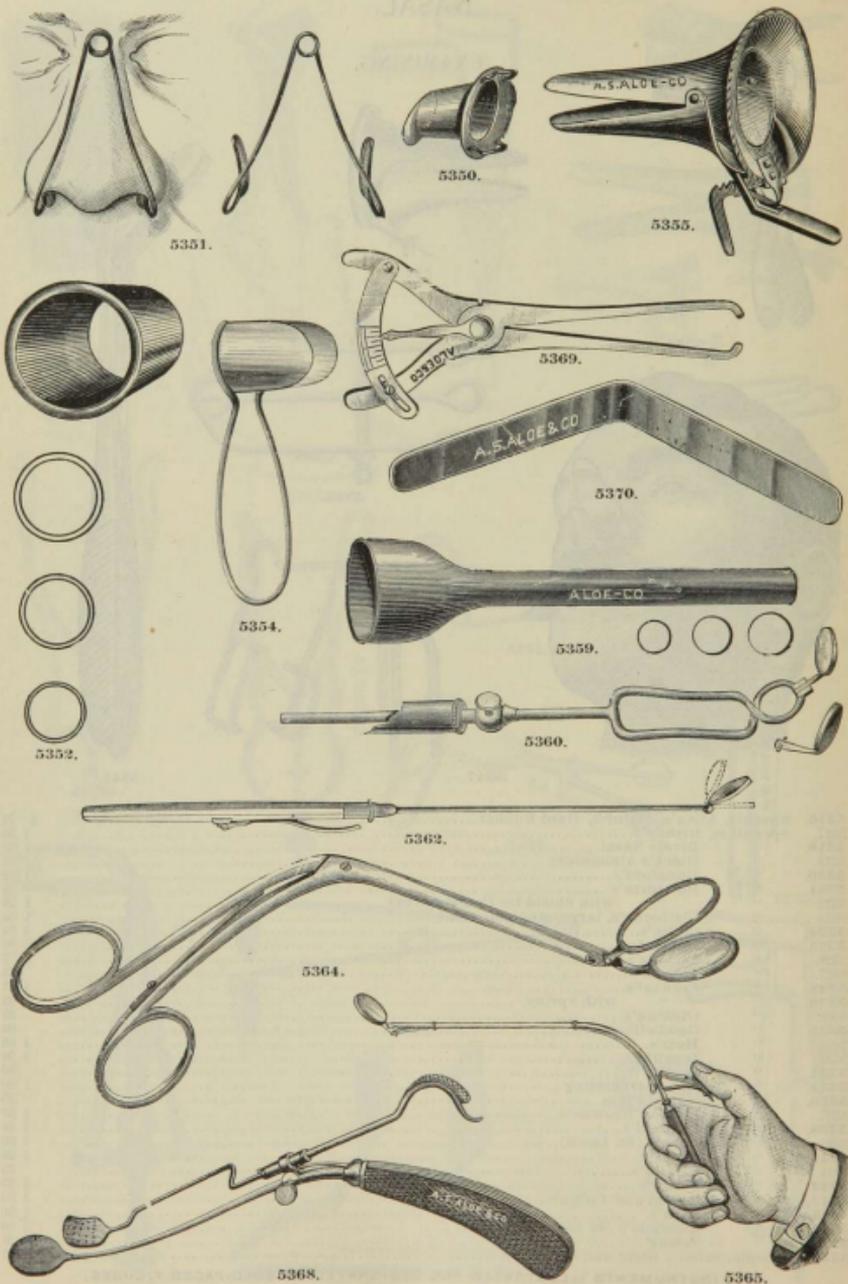
5347.



5316.	Specula, Allen's, Set of 3, Hard Rubber.....	\$ 75
5317.	Speculum, Bishop's.....	1 25
5318.	" Bivale Nasal.....	1 00
5319.	" Black's Aluminium.....	1 50
5320.	" Bonafont's.....	1 50
5321.	" Bosworth's.....	75
5322.	" with Shield for Caution Work.....	1 75
5323.	" Claiborne's, large, medium, small.....	1 00
5324.	" Collin's.....	1 50
5325.	" Duplay's.....	1 50
5326.	" Elsberg's.....	3 75
5327.	" Folsom's.....	75
5328.	" Fränkel's.....	1 25
5329.	" with Spring.....	1 25
5330.	" Gleason's.....	35
5331.	" Goodwillie's.....	60
5332.	" Hotz's.....	1 00
5333.	" Ingal's.....	1 50
5334.	" Ivan's.....	50
5335.	" Jarvis' Operating.....	1 00
5336.	" Plain.....	35
5337.	" Lennox-Browne's.....	1 50
5338.	" Leonard's.....	1 50
5339.	" Loeb's (St. Louis).....	1 50
5340.	" Myles'.....	1 25
5341.	" Palmer's.....	75
5342.	" Potter's.....	1 25
5343.	" Robert and Collin's.....	1 50
5344.	" Roth's.....	1 50
5345.	" Rumbold's (St. Louis).....	3 00
5346.	" Sajons'.....	1 25
5347.	Specula, Seiler's Right and Left.....	75 per pair

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

NASAL. EXAMINING.



NASAL EXAMINING.

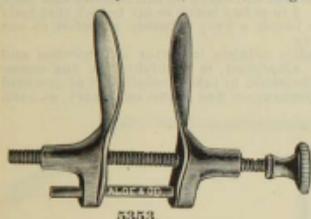
A NEW NASAL SPECULUM.

By H. N. SPENCER, A. M., M. D.

PROFESSOR OF DISEASES OF THE EAR IN THE MISSOURI MEDICAL COLLEGE AND ST. LOUIS
POST-GRADUATE SCHOOL OF MEDICINE.

[Reprinted from the Medical News, February 6, 1892.]

In the present state of otological practice, a nasal speculum is quite as much a necessity as an aural speculum. For mere inspection and for much practical work, I have found the conical form, a modification of the aural speculum, to answer a good purpose. I described this instrument in 1873 in an article on the



5353.

"Mechanics of Naso-pharyngeal Practice."* There are instances, however, especially in operative procedures, in which this does not fulfill all of the requirements, the dilatation being necessarily limited. The objections to the specula at our command—Thudichum's, Fränkel's, Duplay's, etc.—are generally so well understood that it is unnecessary to recite them. The instrument presented herewith has grown out of my own necessities, and I submit it for the consideration of others. As represented in the cut, the two blades travel on a right and left thread-screw. One-half the length of the screw has a right-hand and the other a left-hand thread. There are 24 threads to the inch, and pitched in opposite directions; it is evident that every complete revolution

of the screw will separate the blades one-twelfth of an inch. If a more rapid operation of the blades should be desired, a screw of greater pitch would effect it. The blades are so adjusted on the screw that they will come together where the right and left-hand threads meet. This relative position is constantly maintained by means of the small guide-rod that appears in the cut, running parallel with the screw. One end of the guide-rod is made fast in the lug of the blade nearer the knob end of the screw. The other end travels freely through the lug of the opposite blade. The threaded portion of the instrument is made quite long, to insure easy working and to resist the twisting strain to which the blades are subjected. This, also, is a precaution against wear. The screw is made of hard steel, which contributes further to strength and durability. The mould of the outer aspect of the blades, slightly flaring at the extremity, makes the instrument self-retaining. The instrument when in position rests upon the upper lip. In patients with mustaches, I have found a still further advantage to accrue from placing the screw and guide-rod below the blades. The mustache is thus held out of the way, in this way often sparing annoyance to the operator.

*St. Louis Courier of Medicine, July, 1873.

5348.	Speculum, Sexton's.....	\$ 75
5349.	Specula, Shurley's, Right and Left.....	per pair, 4 50
5350.	Speculum, Simrock's.....	50
5351.	" Smith's.....	75
5352.	Specula, Spencer's (St. Louis), set of 3, Hard Rubber.....	75
5353.	Speculum, " " Improved.....	1 25
5354.	" Thudichum's.....	40
5355.	" Turnbull's.....	4 50
5356.	" Voitolini's, with Ratchet.....	3 50
5357.	" " " Set Screw.....	1 75
5358.	" Zaufal's, Dilating.....	3 50
5359.	" " Tubular, 4 sizes.....	each, 1 00
5360.	Mirror, Jarvis', Rhinoscopic.....	3 00
5361.	" Plain, " 8 mm. in diameter.....	60
5362.	" Rumbold's (St. Louis) Rhinoscopic. Described on page 265.....	9 00
5363.	Rhinometer, Jarvis'.....	6 75
5364.	Rhinoscope, Duplay's.....	6 00
5365.	" Fränkel's.....	4 50
5366.	" " with 6 Mirrors, Assorted Sizes.....	7 50
5367.	" Michel's.....	4 00
5368.	" Simrock's.....	6 00
5369.	Septometer, Seiler's.....	3 50
5370.	Spatula, Ingall's, set of 3.....	75

They are very useful in pressing back swollen tissues in the nares, to afford a better view of the nasal chamber, in tamponing the nares, breaking down adhesions, etc., and in some cases answering the purpose of a nasal speculum.—INGALLS.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

NASAL. APPLICATING.

EXPERIENCE WITH TRICHLORACETIC ACID IN 200 CASES OF AFFECTIONS OF THE THROAT AND NOSE.

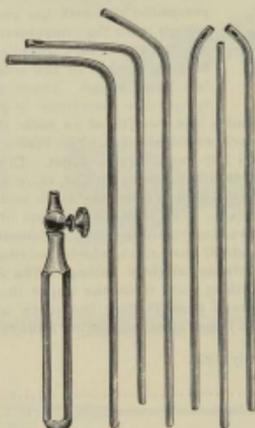
WITH ILLUSTRATION OF INSTRUMENTS.

BY J. W. GLEITZMANN, M. D. NEW YORK,
PROF. OF LARYNGOLOGY AND RHINOLOGY IN THE N. Y. POLYCLINIC.

(Read before the Section on Laryngology and Rhinology of the New York Academy of Medicine.)

At a previous meeting of the Laryngological Section of the Academy of Medicine I mentioned, in the course of a discussion concerning the use of the galvano-cautery in diseases of the nose, that I had begun applying trichloroacetic acid for similar purposes. I stated at the time that the effect of the remedy had been very satisfactory to me, and that it encouraged further experiments. I now beg leave to lay before this body the results of my investigations, as this caustic has proven in my hands a very valuable addition to our *materia medica*, and deserves a more extended trial by other observers.

Trichloroacetic acid is sold in white crystals, which are readily soluble in water and alcohol and extremely hygroscopic. Merck's preparation, which I exclusively employed, is furnished in one-ounce bottles, and, to prevent its deliquescence as much as possible, it is advisable to take a small part of the acid from the vial and to put it in a smaller bottle for daily usage. This precaution was found necessary, as even



A. S. ALOE & CO.
5374.

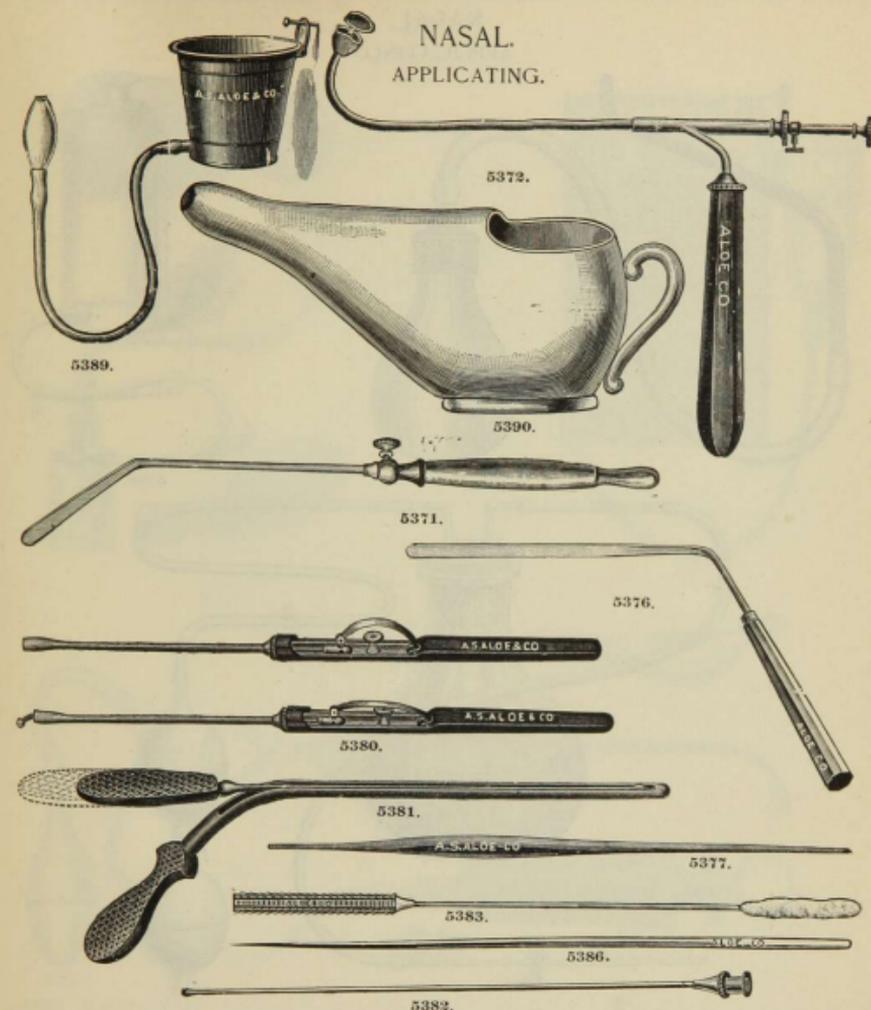
when working with thoroughly dry instruments the frequent exposure of the crystals to the air when opening the bottle is sufficient to liquefy them. To further retard their melting too rapidly I made use of applicators, which I employed for several years in cauterization with chromic acid, a method which has also been adopted by Ehrmann. The instrument consists of a simple rod, which is best made of flexible material, and has an excavation at the distal end. The acid can be rubbed into the excavation by quick movements, leaving the bottle open only a few seconds. In this manner I succeeded in using up a whole ounce of the acid without losing any by its hygroscopic tendency. The acid remains in the excavation of the applicator, and after the crystals accumulating on the lower end of the rod have been wiped off with cotton, the cauterization can be made.

In course of time it was found advantageous to add for certain purposes an eye at the side of the rod, as this assured a more rapid outflow of the acid and its quicker action. The rods recently improved and as manufactured by A. S. Aloe Co. are herewith presented. They are made of aluminium, which will not corrode by contact with the acid, and are moderately flexible, thereby allowing of any desirable curvature, if we do not wish to have a separate instrument for each application.

There are six in number—three for the nose, one for the base of the tongue and two for the larynx. Two nasal applicators have eyes—one for the right, the other for the left inferior turbinate, the third with the nasal curve serves for cauterization of the middle turbinate, the fourth I used for hypertrophy of the lingual tonsil, and the laryngeal with the eye on its posterior surface for the interarytenoid space, the last one for other applications to the larynx, vocal cords, etc. The slight curve on the nasal applicators for turbinate hypertrophies I found useful for reaching and cauterizing their posterior surface. By carrying the distal end of the rod over the turbinate body and then lowering it, the posterior portion of the hypertrophy is cauterized, without pressing the applicator through the sometimes narrow space between the septum and the turbinate. As all the acid is confined to the excavation in the applicator, a cauterization of other parts, which we wish to leave untouched, is thereby avoided, provided the rod is thoroughly dried with cotton before its introduction. Of course these instruments are capable of all possible alterations to suit individual cases and the predilection of the practitioner, but the applicators shown have fulfilled all desirable wants in my hands.

[REPRINT OF COMPLETE ARTICLE MAILED UPON REQUEST.]

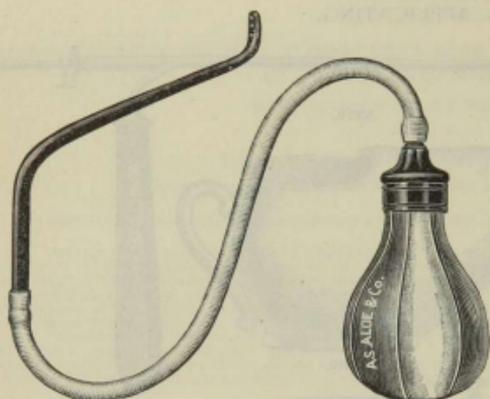
NASAL
APPLICATING.



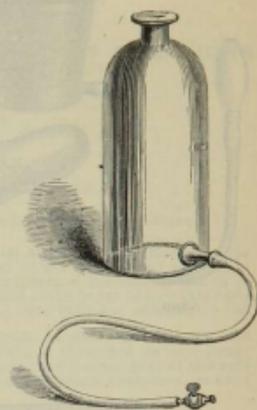
5371.	Applicator,	Bosworth's, Aluminium, Set Screw Handle.....	\$1 00
5372.	"	" Post Nasal Chromic Acid.....	3 75
5373.	"	Ford's, Aluminium.....	35
5374.	"	Gleitmann's, Set of 6 with Set Screw Handle.....	1 75
5375.	"	Goodwillie's, with Slide.....	1 00
5376.	"	Ingall's Aluminium.....	75
5377.	"	Loeb's (St. Louis) Hard Rubber.....	50
5378.	"	Payne's Mod. Gleitmann's, Set of 4.....	2 25
5379.	"	Sajous' Acetic Acid.....	5 00
5380.	"	" Chromic Acid.....	4 50
5381.	"	Smith's, Nitric "	1 90
5382.	Canula,	Ingall's, Silver, for Injecting Cocaine.....	1 00
5383.	Cotton Carriers,	Allen's.....	25
5384.	"	Ford's Aluminium.....	35
5385.	"	Holtz's.....	35
5386.	"	Ingall's.....	25
5387.	"	Reservoir, Phillips'. See Page 49.	
5387.	Douche,	Allen's.....	60
5388.	"	Bridge's.....	60
5389.	"	Clark's.....	1 25
5390.	"	Dessart's, Cup.....	50
5391.	"	Fullgraf's.....	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

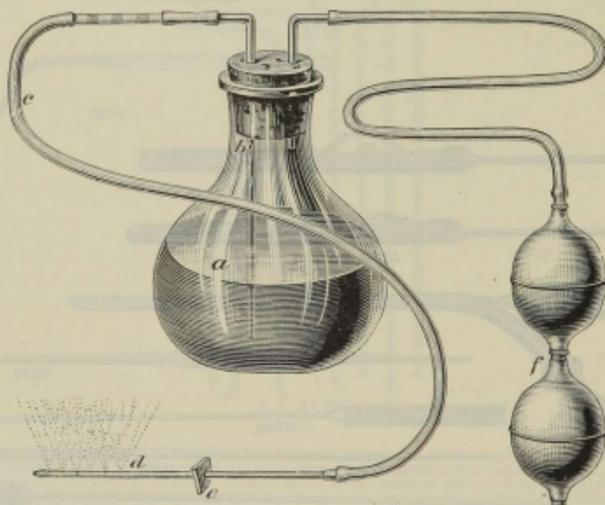
NASAL.
APPLICATING.



5392.



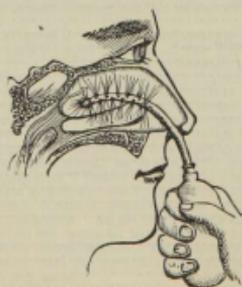
5398.



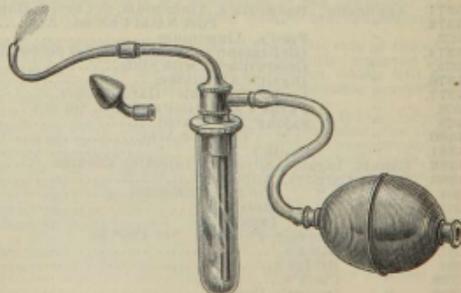
5395.



5393.

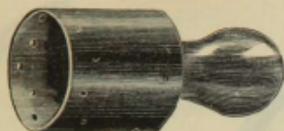


5410.

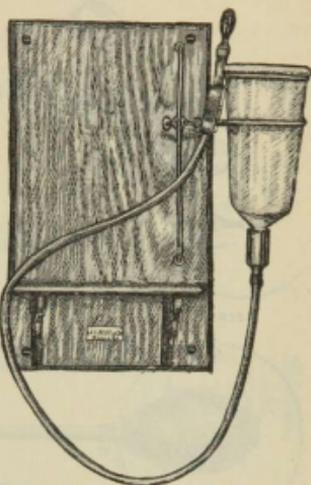


5406.

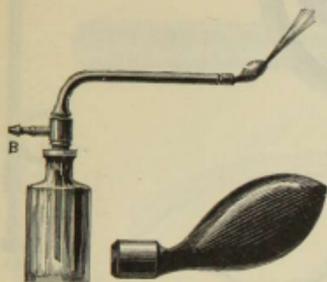
NASAL
APPLICATING.



5402.



5401.



5413.



5403.



5408.



5399.

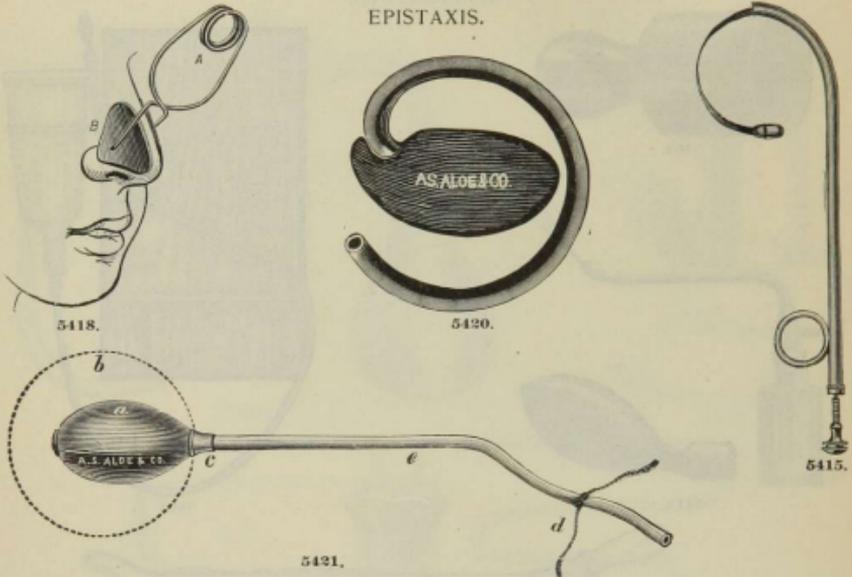


5409.

5392.	Donche, Mulhall's (St. Louis).....	\$ 1 25
5393.	" Pins.....	75
5394.	" Pomeroy's, Double Tips.....	75
5395.	" Rambold's (St. Louis), Catheter.....	5 00
5396.	" Shoemaker's, Pint.....	75
5397.	" Thudichum's, Pint.....	60
5398.	" " Quart.....	75
5399.	" Warner's.....	75
5400.	" Weir's, Sniff Glass.....	60
5401.	" Wilson's (St. Louis).....	2 50
5402.	Inhaler, Robinson's, Improved Nasal.....	50
5403.	Insufflator, Sajous', Auto.....	50
5404.	" " Bridge's, Auto.....	60
5405.	Irrigator, Woakes'.....	1 00
5406.	Powder Blower, Lefert's.....	2 50
5407.	" " Sajous', Anterio-Posterior.....	1 50
5408.	Syringe, Hard Rubber, Post Nasal.....	1 00
5409.	" " Lefert's.....	2 25
5410.	" Success.....	75
5411.	Spout, Ingull's, Nasal.....	2 00
5412.	Spray, Chapman's, Nasal.....	3 75
5413.	" Lefert's, " with Double Bulbs.....	2 25
5414.	Trocar, Sajous', Retro-Pharyngeal.....	1 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

NASAL.
EPISTAXIS.



ORDINARY METHOD OF PLUGGING THE NOSE.

“A roll of lint (or styptic cotton) to stop the posterior opening of the nasal fossa is made, and to this a very strong silk thread is tied, whose extremities are long enough to reach from behind forward through the nostril. Bellocq’s Canula, or a very flexible gum-elastic catheter, is introduced by the nostril; when the extremity of the instrument is in the pharynx, the button of Bellocq’s Canula is sprung—or, if a gum-elastic catheter is used, its end is drawn out through the mouth; to this the threads of the plug are attached, and by withdrawing the catheter they are brought from behind forward through the nostril. By pulling upon the threads the plug is introduced into the posterior nasal opening, which it stops as completely as possible. A second plug, slipped between the two threads, should be tied into the nostril in front and allowed to remain for two or three days.

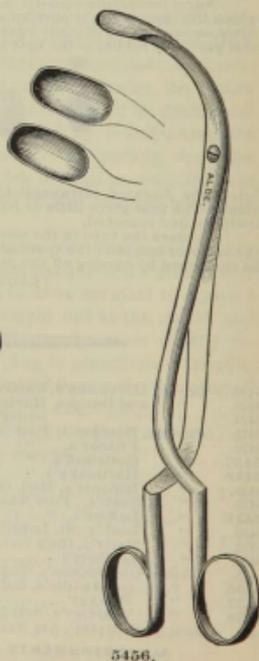
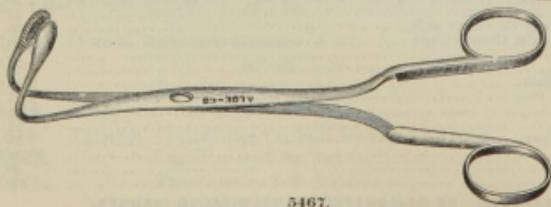
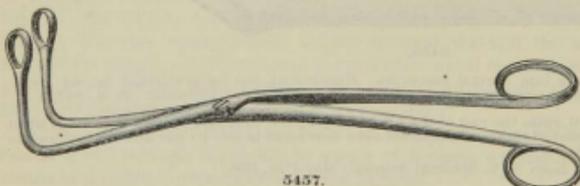
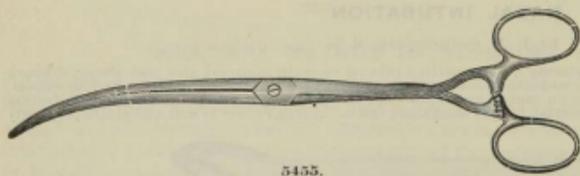
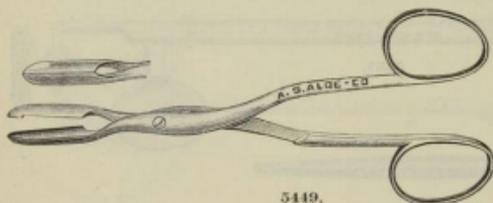
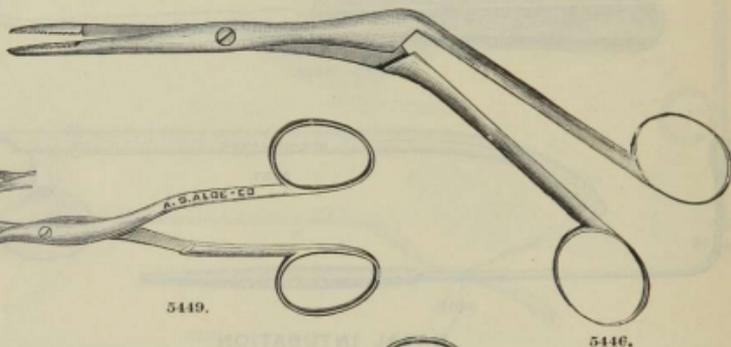
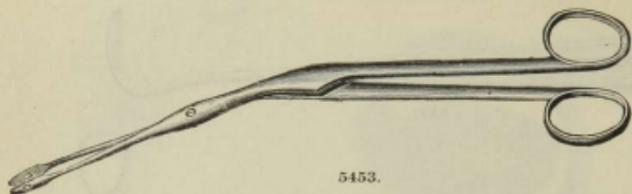
“To withdraw the plugs, the thread in front of the nostrils must be cut; the posterior plug can be seized through the mouth by a pair of forceps, or pushed backward into the pharynx by means of a catheter carried through the nostrils. * * * It is more surgical to attach a ligature to the posterior plug, before its introduction, which is brought out at the mouth and attached temporarily in front; by drawing on this the posterior plug can be more readily removed. Without this precaution the withdrawal of the posterior plug is sometimes a troublesome and very painful process. Sponge is a good substitute for lint as a material for plugs.” —“Bernhard and Huette’s Manual of Operative Surgery.” Am. Ed., p. 193. 1857.

The rubber tampon (Fig. 5421) is introduced into the nasal fossa by means of a sound; air or water is then thrown in, and the end outside of the nostril firmly secured.

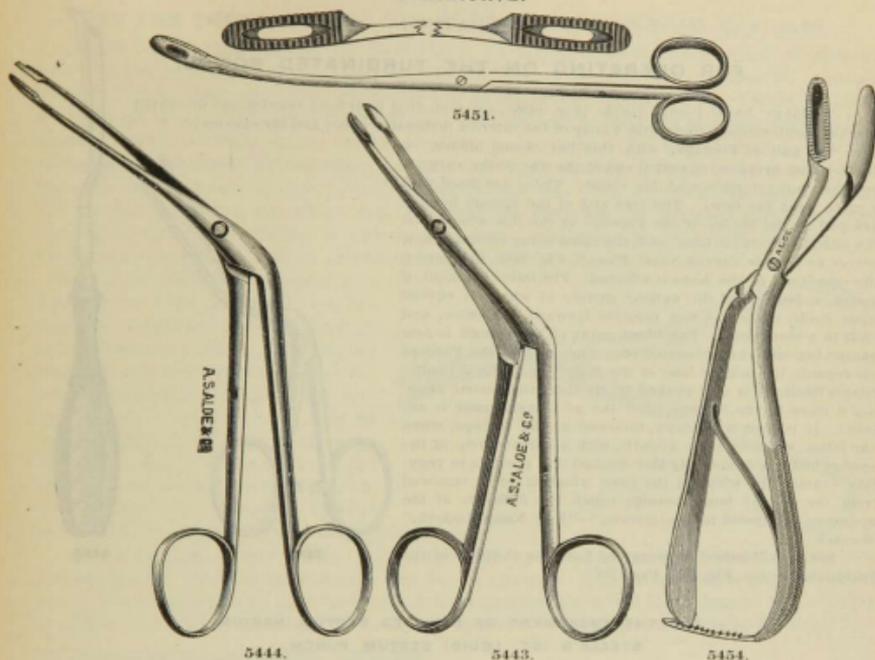
5415.	Canula, Bellocq’s Plated	\$ 1 25
5416.	“ “ Silver	2 50
5417.	“ Jarvis’	1 50
5418.	Clamp, Caro’s Nasal	50
5419.	Tampon, Cooper-Rose’s, Soft Rubber	75
5420.	“ Ingall’s, Soft Rubber	75
5421.	“ Tavernier’s, Soft Rubber	75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

NASAL.
OPERATING.



NASAL
OPERATING.



5440.	Excisor, Brown's, Nasal, illustration page 259.....	\$ 7 50
5441.	Excisor, Jarvis', described on page 257.....	3 75
5442.	Forceps, Cartilage, Jarvis', described on page 267.....	3 50
5443.	Nasal Curette, Heymann's.....	3 00
5444.	" " Dressing, Hartmann's.....	2 50
5445.	" " " Ingall's.....	2 50
5446.	" " " Knight's.....	2 50
5447.	" " " Loeb's (St. Louis).....	3 00
5448.	" " Membrane, Douglas'.....	2 50
5449.	" " Gouge, Weir's.....	2 65
5450.	" " Polypus, Allen's.....	1 75
5451.	" " " Gross'.....	1 50
5452.	" " " Hartmann's.....	2 50
5453.	" " " Simrock's.....	1 75
5454.	" " Polypus Evulsion, Cohen's.....	3 75
5455.	" " " Robinson's.....	3 40
5456.	" " Post Nasal Cutting, Cohen's.....	2 75
5457.	" " " Curtis'.....	2 75
5458.	" " " Gleitzmann's.....	3 00
5459.	" " " Gradle's.....	4 00
5460.	" " " Hooper's.....	3 00
5461.	" " " Loewenberg's.....	2 50
5462.	" " " Nichol's.....	2 75
5463.	" " " Robert's.....	3 00
5464.	" " " Glasgow's (St. Louis).....	3 50
5465.	" " " Polypus, Knight's.....	2 50
5466.	" " " Stoerk's.....	3 00
5467.	" " " Wagner's.....	2 50
5468.	" " Septum Punching, Aloe's, described on page 258.....	3 50
5469.	" " " Jarvis', " " " 258.....	6 50
5470.	" " " Robert's, " " " 258.....	4 50
5471.	" " " Sajous', with set of 6 knives.....	12 00
5472.	" " " Steele's (St. Louis), described on page 256.....	6 00
5473.	" " " Bosworth's, illustration on page 258.....	2 25
5474.	" " " Gleitzmann's.....	2 50
5475.	" " " Goodwillie's.....	9 00
5476.	" " " Weir's, illustration on page 258.....	3 75
5477.	" " " Goodwillie's.....	2 25
5478.	" " " Trimming, Farnham's, Solid Blades, illustration on page 259.....	5 00
5479.	" " " Fenestrated Blades, illustration on page 259.....	6 00
5480.	" " " Teet's.....	3 75
5481.	Gouge, Seiss' Nasal.....	1 50
5482.	Intubation Tube, Goodwillie's, Soft Rubber (Fig. 5486).....	75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

NASAL.

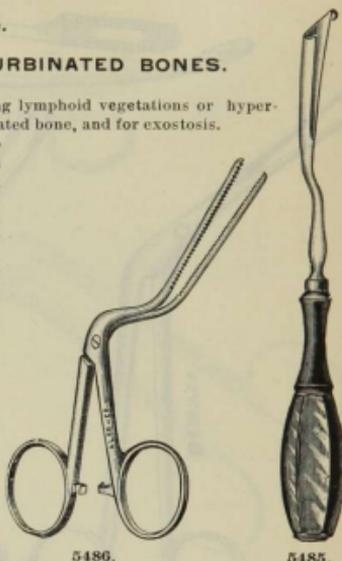
OPERATING.

FOR OPERATING ON THE TURBINATED BONES.

"Woakes' Nasal Plough Guide (Fig. 5486), for removing lymphoid vegetations or hypertrophic proliferations, along with a strip of the inferior turbinated bone, and for exostosis.

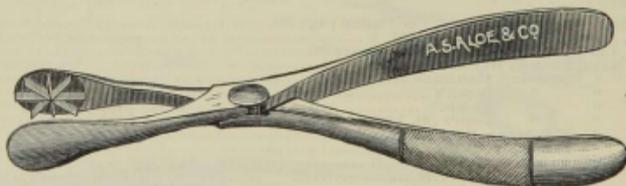
"A pair of Forceps, with thin but strong blades, so shaped that every other part is out of the way of the surgeon and does not interfere with his vision. These are fitted with a catch near the bows. The free end of the spongy bone is grasped by the blades of the Forceps at the line where it is intended to divide the bone, and, the catch being closed, it now serves as a guide for the Nasal Plough, Fig. 5485, with which the severance of the bone is effected. The latter is a kind of gouge, a portion of the cutting surface of which is curved upon itself, while the rest projects forward, keel-wise, and ends in a blunt point. The blunt point of the plough is now passed beneath the turbinated bone and outside the Forceps (as regards the middle line of the body), to which it readily adapts itself. It is now pushed freely along the nostril, keeping it close to the forceps, until the post-nasal space is entered. It is then withdrawn, followed by the forceps, when the latter will retain the growth, with a narrow strip of the spongy bone attached. By this method it is possible to regulate exactly the width of the slice which is to be removed from the spongy bone, besides which the difficulty of the operation is reduced to a minimum."—"Post-Nasal Catarrh." Woakes.

See also Woakes' Scissors for Excising Portions of the Turbinated Bones, Fig. 5517, Page 262.



FOR THE TREATMENT OF DEVIATED SEPTUM NARIUM.

STEELE'S (ST. LOUIS) SEPTUM PUNCH.



5472.

Some twelve years ago Dr. A. J. Steele, of St. Louis, devised an operation for the relief of deflected nasal septum, especially when the cartilaginous portion was involved, and suggested for the purpose the instrument depicted in the accompanying cuts. It consists of a pair of flat-bladed forceps, on one of the blades of which are fastened cutting edges, stellate in form, like knife blades, one-eighth of an inch in height, more or less, according to the thickness of the septum to be cut.

STEELE'S SEPTUM FORCEPS, WITH SHIELD OVER KNIFE BLADE.



The blades are introduced separately into the nostrils, then locked like an obstetric forceps. To protect the opening of the nostril from injury as the cutting blade is introduced a shield is placed over it during introduction, and then removed. As the handles are forcibly pressed together the cutting edges pass entirely through the cartilage. The instrument is then withdrawn and the angular points pressed well over by one of the handles, and a plug, best made of a small rubber nipple stuffed with cotton, is then introduced and allowed to remain three or four days before removal. Success is assured by having the cut portion well broken down, so that the finger can be readily introduced into the occluded nostril. An anæsthetic is required.

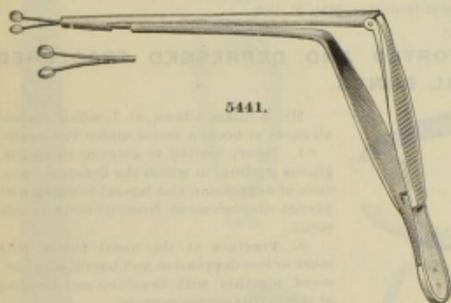
NASAL. OPERATING.

FOR THE TREATMENT OF DEVIATED SEPTUM NARIUM—CONTINUED.

I shall discuss the treatment of the deviated septum, as a most common cause of catarrh. As with a button in the nostril, so that thorn in the flesh, a deviated septum, must be removed to cure catarrh. Since several instruments will be presented to your notice, I trust you will not interpret them as indicating dissatisfaction with any one method and recourse at random to another, but as providing against certain possible contingencies. The very structure and shape of the septum warrants this assertion. We may meet bone, cartilage or mucous membrane. The bone will break or dull our knives, the rongeur forceps may strip off or mutilate unnecessarily the mucous membrane, and either may unfortunately perforate the deviated cartilage. For opening the field of operation I employ my ring-drop nasal speculum (Fig. 5335), since in my hands it has proved the best for painlessly and persistently dilating the nostrils.

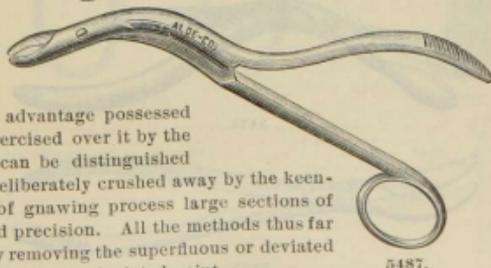
It is often desirable to economize time, and in order to do so I have devised a fenestrated cartilage forceps and a trimming scissor. The cutting edges of the fenestrated forceps resemble somewhat, in shape and action, the ordinary ticket-punch. A ring on the fixed blade is intended to slip over the middle finger, and a knob on the free one is manipulated with the thumb. This arrangement enables one to seize and divide the cartilage with great facility.

The trimming scissors (Fig. 5511, page 261) are convenient for removing asperities remaining after the other instruments have been employed. The instrument is grasped like a pistol, firm pressure being exercised against its lateral margin by the index finger. Their blades are made almost at a right angle, to enable the operator to obtain a clear view of the field.



It is sometimes convenient to have a lighter forceps to use in place of the fenestrated cartilage forceps. I have designed this excisor (Fig. 5441), which is made after the manner of the trimming scissors. I use it for successively excising small pieces of deviated cartilaginous or hypertrophied tissue until the desired effect is obtained.

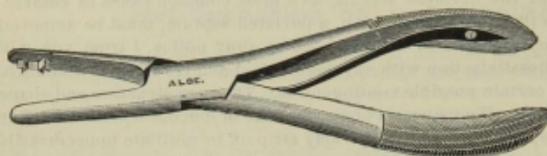
This little instrument (Fig. 5487), essentially a rongeur forceps, has, in my hands, proven most satisfactory. Its two blades are hollowed to cut like the teeth of a rodent, and the great advantage possessed by this bone forceps is the control exercised over it by the operator. Each osseous projection can be distinguished over the edge of the upper blade and deliberately crushed away by the keen-edged cutting surfaces, and by a kind of gnawing process large sections of the bone are removed with rapidity and precision. All the methods thus far mentioned accomplish their purpose by removing the superfluous or deviated tissues or the turbinated structures opposite the deviated point.



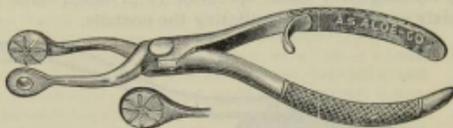
[From "The Etiology and Treatment of Nasal Catarrh with Special Reference to the Deviated Septum," by William Chapman Jarvis, M. D., Lecturer on Laryngology and Diseases of the Throat in the New York University Medical College, in *The Medical Record*, March 14, 1885.]

NASAL. OPERATING.

FOR THE TREATMENT OF DEVIATED SEPTUM NARIUM—CONTINUED.



5468.



5469.

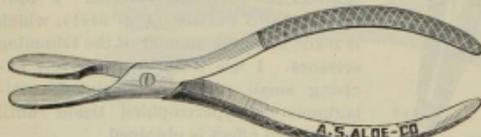


5470.

Dr. John B. Roberts' septum cutting forceps, Fig. 5470, with fenestrated cutting edge, for punching out sections of the septum, to make its replacement more stable. The opening becomes smaller on cicatrizing and frequently completely closes.

[Medical and Surgical Reporter, May 20, 1890.]

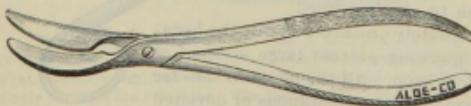
FOR OPERATIONS ON THE DISTORTED AND DEPRESSED FRACTURED NASAL BONES.



5473.



5474.



5477.

In order to prevent sloughing away of the flaps, for lack of nutrition—due to close cutting of the star-shaped knives of Steele's instrument—Dr. Jarvis has fenestrated the star, so as to leave the centre of the portion to be operated upon uncut. Fig. 5469. The blades of the forceps are curved, to facilitate vision. The lock of the forceps, almost straight, is made so as to allow the introduction of its blades, separately, into the nostrils. The knives, removable, fit either blade, so that they may be suitably fixed for introduction into the open nostril.

Aloe's modification, Fig. 5468, consists in having the knife blades arranged so as not to cut too close. We have also added a spring to the instrument, which allows it to be readily disengaged after the cut has been made.

We make our instrument with separable French Lock (Charrière's), the spring also can be removed and the instrument made thoroughly aseptic.

Mr. William Adams, of London, classed all cases of broken noses under two heads:

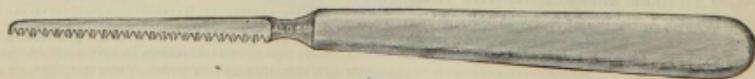
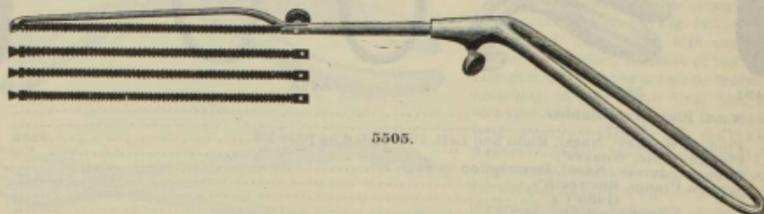
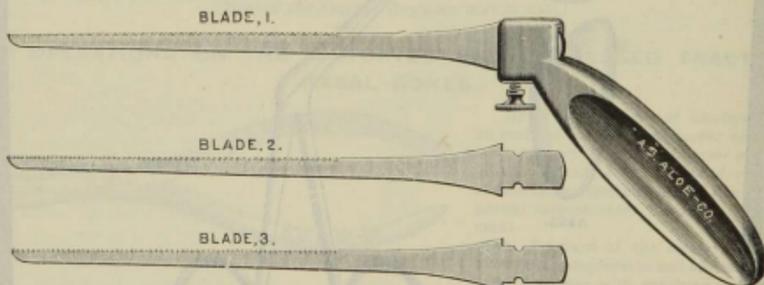
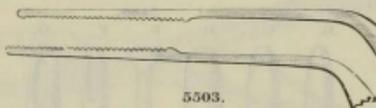
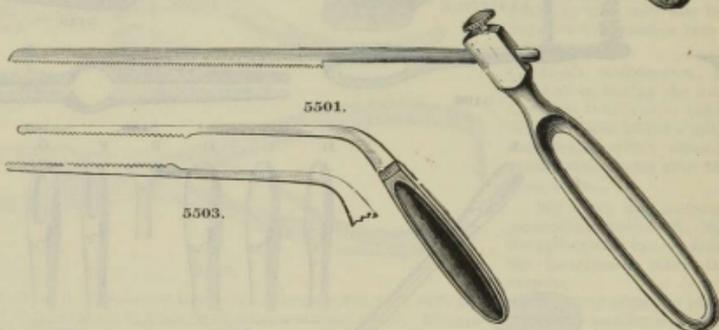
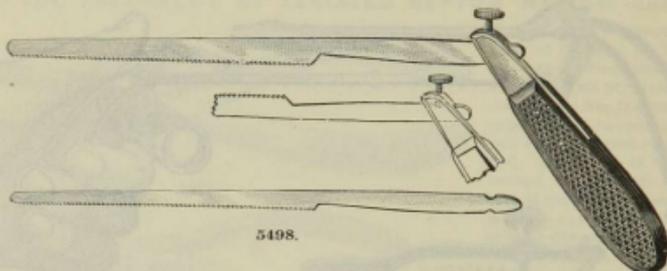
1. Injury limited to anterior or cartilaginous portion, in which the deformity consists of depression and lateral bending with partial displacement from its bony attachment.

2. Fracture of the nasal bones, with more or less depression and lateral displacement, together with crushing and bending of the cartilaginous septum.

He recommends forcible straightening of the septum by forceps (Fig. 5473), one blade of which is introduced into each nostril, and, if a depressed fracture of the bones be also present, that these two be fractured by crowding at the same time the forceps strongly upward, assisting the manœuvre with powerful pressure with the thumb and fingers outside. After the deformity of the septum has been thus overcome, the wearing for several days of a mildly pressing screw clamp (Fig. 5488), to keep it straight, and, in case of refracturing the bones, their reposition to be assisted by a nose truss, so arranged that pressure by a screw pad could

be made at the point of greatest convexity; after which he introduced ivory or hard rubber plugs (Fig. 5483), which the patient can remove and re-introduce at pleasure.

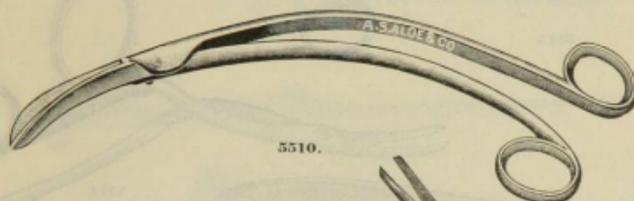
NASAL.
OPERATING.



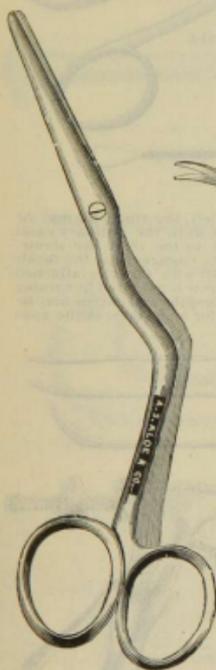
NASAL.
OPERATING.



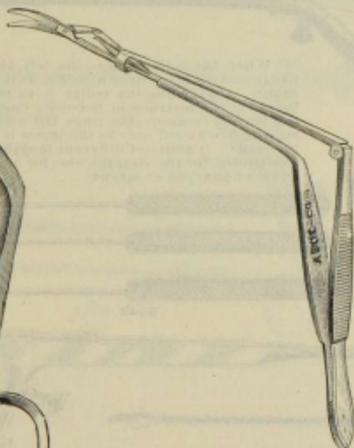
5497.



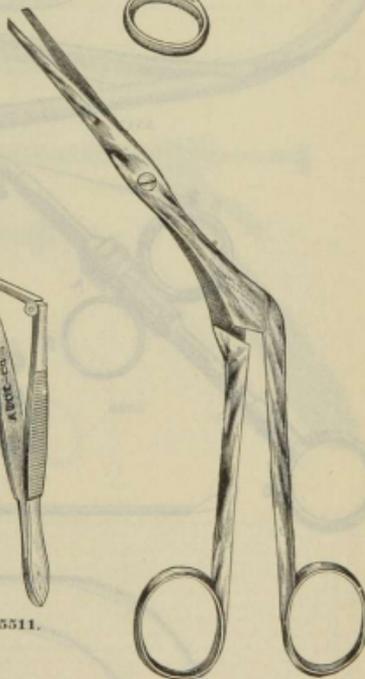
5510.



5509.



5511.



5512.

5497.	Saw, Bosworth's, Up or Down.....	each,	\$ 1 25
5498.	" Bucklin's, 2 Blades, Reversible.....		2 00
5499.	" Curtis'.....		1 50
5500.	" Ingall's.....		1 75
5501.	" Leonard's, Reversible.....		2 50
5502.	" Myles'.....		2 50
5503.	" Payne's, Reversible, Up or Down.....		1 25
5504.	" Rice's.....		1 50
5505.	" Roe's Improved, Reversible, 3 Blades.....		3 50
5506.	" Sajous', Straight.....		1 50
5507.	" " Up or Down.....		1 50
5508.	" Woakes'.....		1 50
5509.	Scissors, Ingall's, Nasal Dressing.....		2 50
5510.	" " Turbinate Bone.....		3 50
5511.	" Jarvis', Trimming.....		6 75
5512.	" Knight's, Nasal Dressing.....		2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

NASAL.
OPERATING.

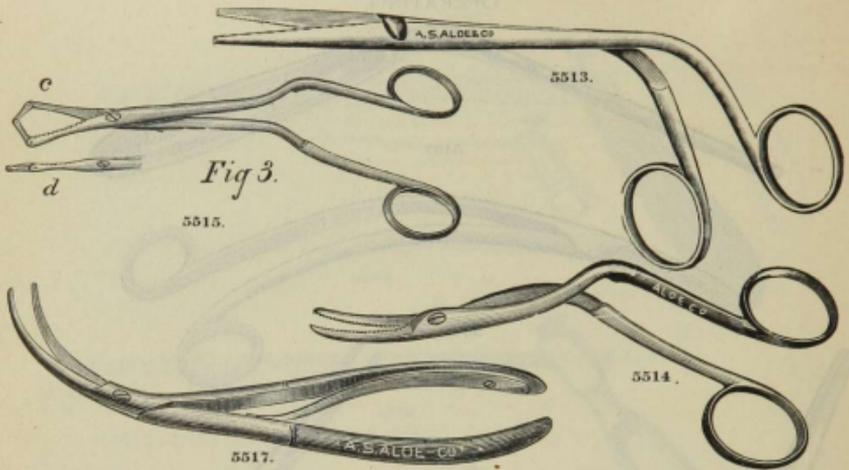
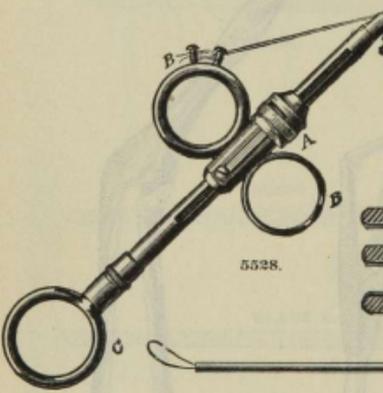
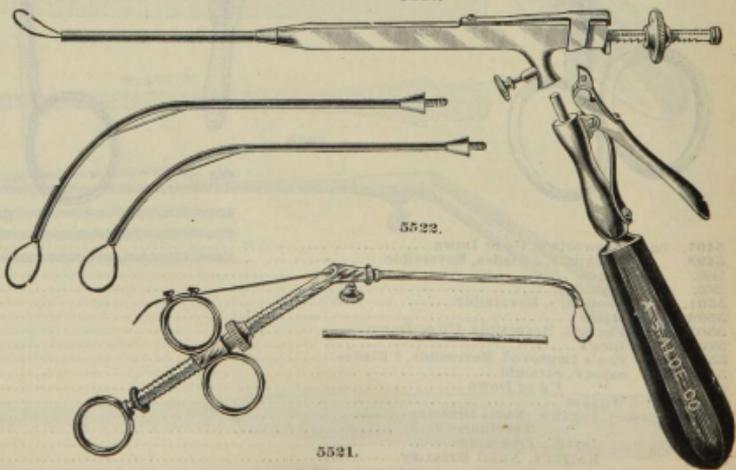
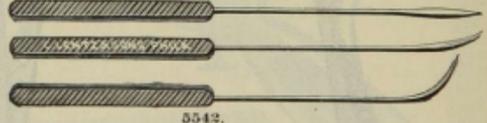


Fig 3.

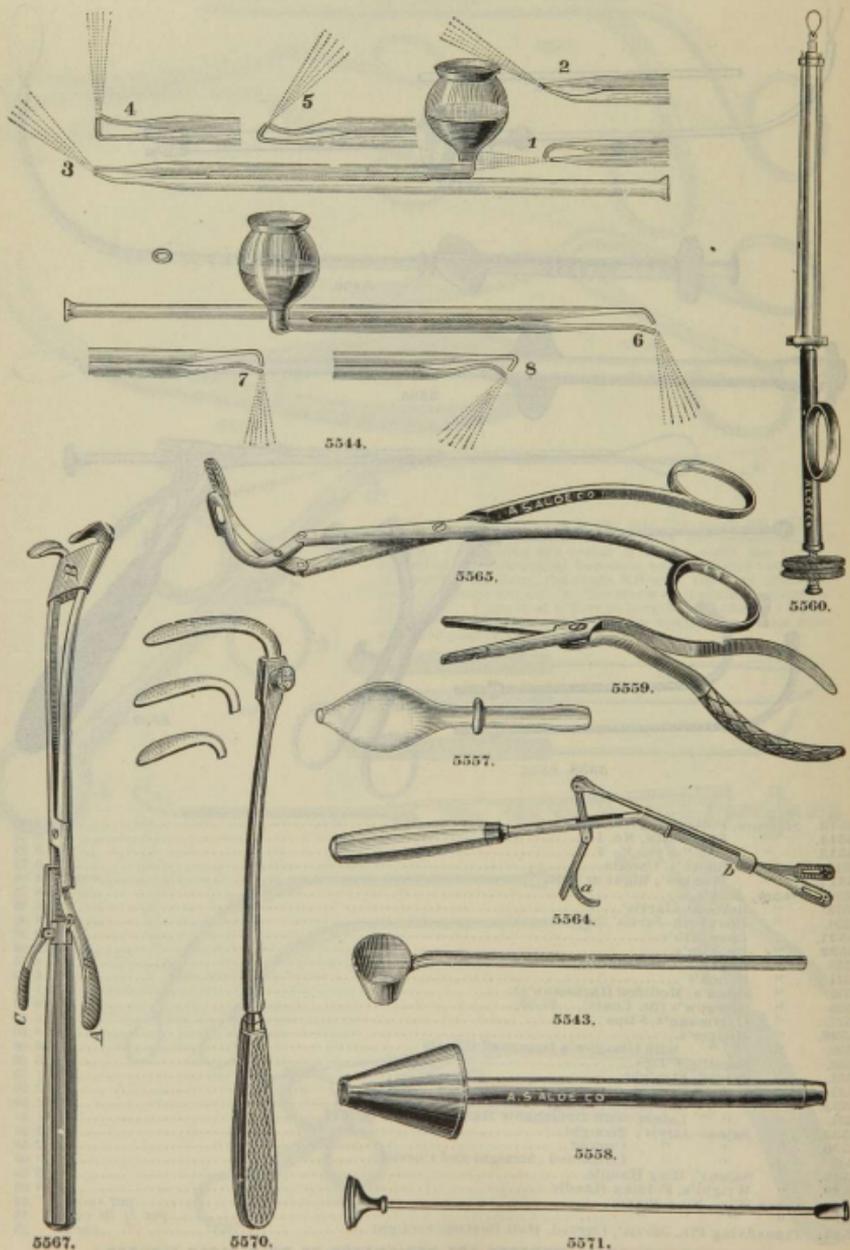


When the collar A is to the left, the rings BB may be freely moved up or drawn down, as in the ordinary nasal snares. On turning the collar A to the right, the screw-thread of the instrument becomes engaged, and the result is a perfect écraseur, the rings BB with the wire attached moving downward only as the screw is operated by turning the ring C. Canulae of different lengths and curves may be substituted for the straight one for operations in the naso or lower pharynx or larynx.



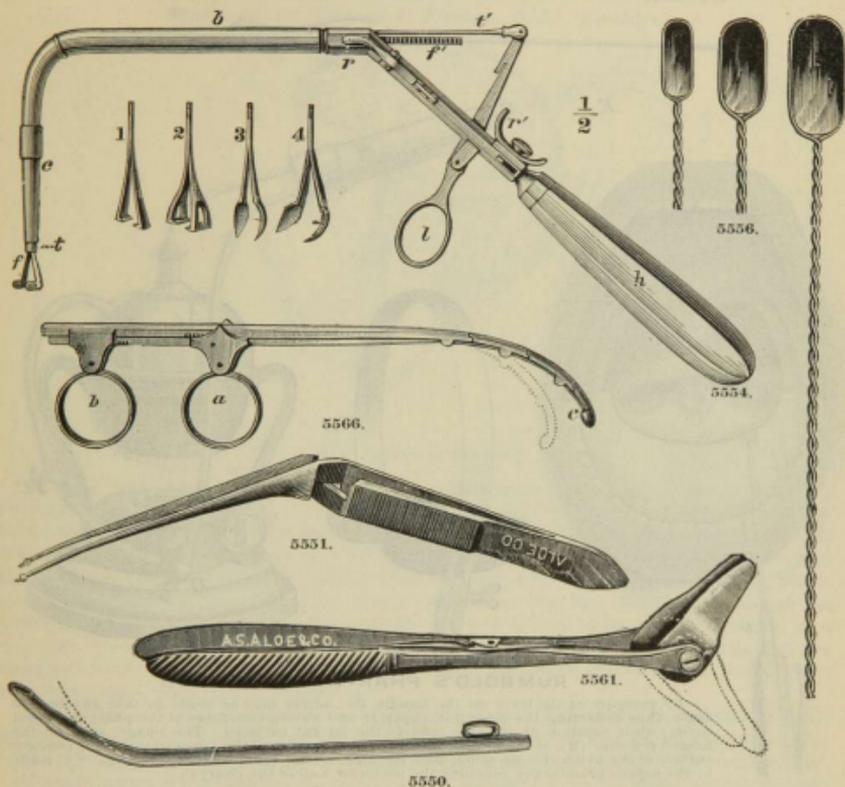
DR. RUMBOLD'S (ST. LOUIS) SPECIALTIES.

AURAL, NASAL AND LARYNGEAL INSTRUMENTS.



DR. RUMBOLD'S (ST. LOUIS) SPECIALTIES.

AURAL, NASAL AND LARYNGEAL INSTRUMENTS.

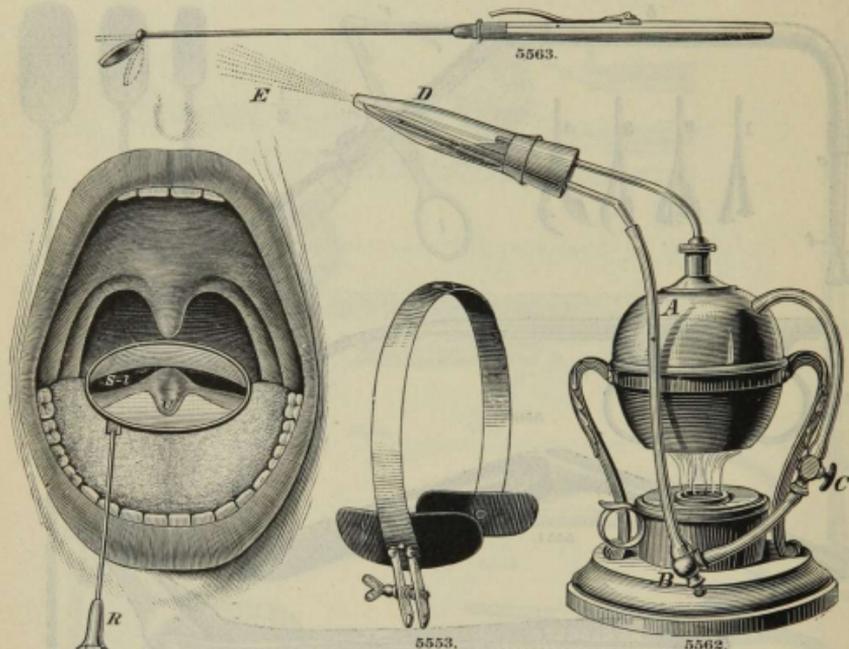


5543.	Acon-Otoscope, Rumbold's.....	\$ 2 00
5544.	Atomizing Tubes, Rumbold's, Glass, for use with Compressed Air Apparatus	35
5545.	" " " Metal, with Bulb add to price of either.....	75
5546.	Ear Donche, Rumbold's, with Bottle and Bulb, similar to Nasal Douche and with Dr. Rumbold's modification of Lucae's Ear Nozzle, Fig. 5121, page 228.....	25
5547.	Ear Injector, Rumbold's, Bent.....	5 00
5548.	" " " Curved, see Fig. 5144, page 229.....	75
5549.	" " " see Fig. 5166, page 230.....	75
5550.	Spout, ".....	2 00
5551.	Eustachian Catheter, Rumbold's, Flexible	1 75
5552.	Eyelet Forceps, Rumbold's, Tympanum.....	2 50
5553.	Eyelets, Rumbold's, Tympanum.....	30
5554.	Headband, " Metal, Jointed, illustration next page	2 50
5555.	Laryngeal Forceps, Rumbold's Tubular.....	30 00
5556.	" " " Catheter, see Fig. 5395, page 250.....	5 00
5557.	" " " Anterior, cut shows full size of Glass, Handles are 5-in. long... ..	1 50
5558.	" " " Nozzles, Glass.....	30
5559.	" " " Metal.....	75
5560.	" " " Scissors, ".....	5 00
5561.	" " " Modification, Jarvis.....	5 00
5562.	" " " Speculum, ".....	3 00
5563.	" " " Spray, Warm Air, illustration next page.....	12 00
5564.	" " " Description and illustration next page.....	7 50
5565.	Pharyngeal Mirror, ".....	10 00
5566.	Polypus Forceps, ".....	7 50
5567.	Post Nasal Forceps, ".....	12 00
5568.	Soft Palate Retractor, " Curved.....	6 00
5569.	" " " with Wedge.....	6 00
5570.	" " " Improved, illustrated on page 312, Fig. 5984	3 50
5571.	" " " Plain, illustrated on page 312, Fig. 5985	1 00
5572.	Tongue Depressor, " with 3 Blades.....	3 75
5573.	Uvula Retractor, ".....	75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

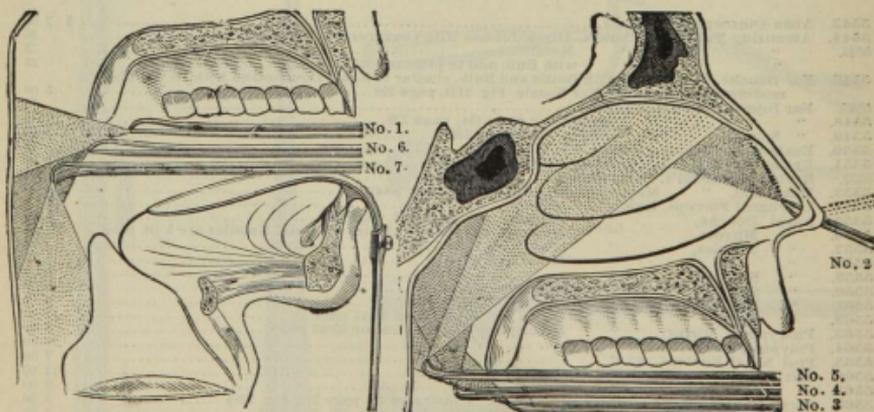
DR. RUMBOLD'S (ST. LOUIS) SPECIALTIES.

AURAL, NASAL AND LARYNGEAL INSTRUMENTS.



RUMBOLD'S PHARYNGEAL MIRROR.

By pressure on the lever on the handle, the mirror may be made to take any desired angle, thus reflecting the posterior, superior and anterior surfaces of the pharyngo-nasal cavity, while rotation on its axis reflects the lateral surfaces. The image, seen on the hinged reflector (R), of the lower edge of the soft palate and the lower or posterior concave surface of the uvula (U), showing, also, the higher semi-lunar-shaped openings (S-1) made by the zygus prominence touching the posterior wall of the pharynx.

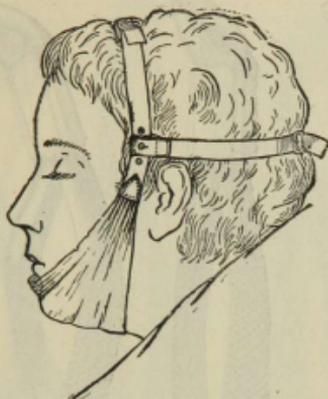


Antero-posterior section of the head, showing the combined direction of Spray Producers 1 to 8. Nos. 1, 6, 7, 8 treat the pharynx, larynx and base of the tongue; Nos. 2, 3, 4, 5, for the local treatment of the pharyngo-nasal and nasal cavities. No. 2 is introduced into the anterior nares.

MOUTH AND THROAT.

A DEVICE TO PREVENT MOUTH-BREATHING DURING SLEEP.

SUGGESTED BY THOMAS R. FRENCH, M. D., Brooklyn.



5573. Device in Position.

"When, from any cause, the nasal passages are greatly diminished in size or occluded, breathing through the mouth is of course a necessity; but even after the cause has been removed the habit of mouth-breathing not infrequently persists. Again, this injurious habit is often practiced because of relaxation of the muscles of the lower jaw during sleep. The mouth may be closed on going to sleep, opened while sleeping, and when consciousness arrives is found closed again, so that many are ignorant of the fact that they ever breathe through the mouth. Adults who present symptoms of the practice of this habit during sleep will, as a rule, deny its existence, but if they are questioned closely they will usually admit that the mouth and throat are almost always dry in the morning, and that it may be several hours before those parts regain their normal condition.

For all cases in which the presence of the habit is known or suspected, and also to determine the existence of sufficient nasal capacity during sleep, it has been my custom, in the past few years, to direct the use of strips of a material known as "wash blonde" in such a way that, if the nasal passages are sufficiently free, the lower jaw will be held in place, and, as a consequence, nasal breathing enforced. With the kind assistance of Mr. S. V. W. Lee, recently under my professional care, this device has been much improved and is serving an excellent purpose.

The device consists of a piece of "wash blonde," a kind of "illusion," which is attached to straps of light webbing and adjusted to the head in the manner shown in the accompanying sketch.

The "wash blonde" is placed under the chin and the perpendicular straps buckled together at the top of the head. In this way the needful support is given to the lower jaw. The perpendicular straps are held in position on the head by two back straps, which are looped on to them, and which are also regulated by a buckle. The buckle at the top of the head is padded to prevent uncomfortable pressure being made, and the whole appliance is so light and elastic that it is usually worn, after a trial or two, without the slightest discomfort.

The apparatus is made in two sizes, for adults and children."

[Extract from New York Medical Journal, April 16th, 1892.]

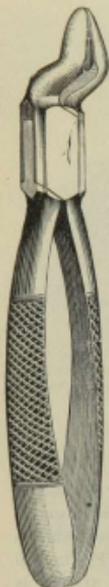
5572.	French's Mouth-Breathing Device, Adult's.....	\$ 1 00
5573.	" " " " Child's.....	75

THIS APPARATUS WILL BE FOUND VERY EFFECTIVE IN PREVENTING AND CURING THE HABIT OF SNORING.

MOUTH AND THROAT.

DENTAL.

TOOTH EXTRACTING.



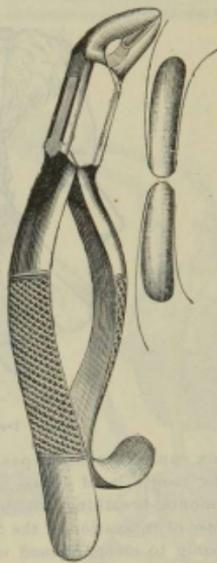
5574.



5575.



5576.



5577.

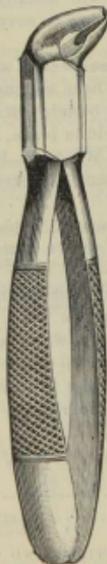


5578.

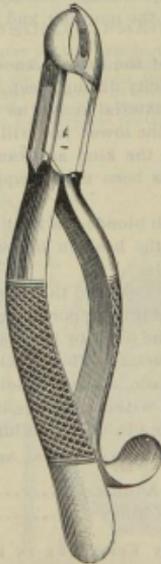
FOR DESCRIPTION AND PRICES SEE PAGE 273.



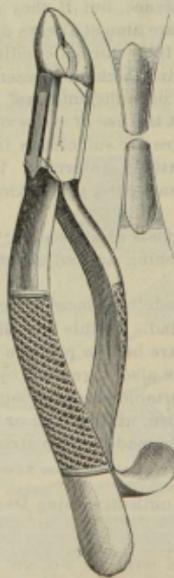
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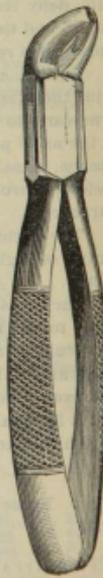
5580,



5581.



5582.

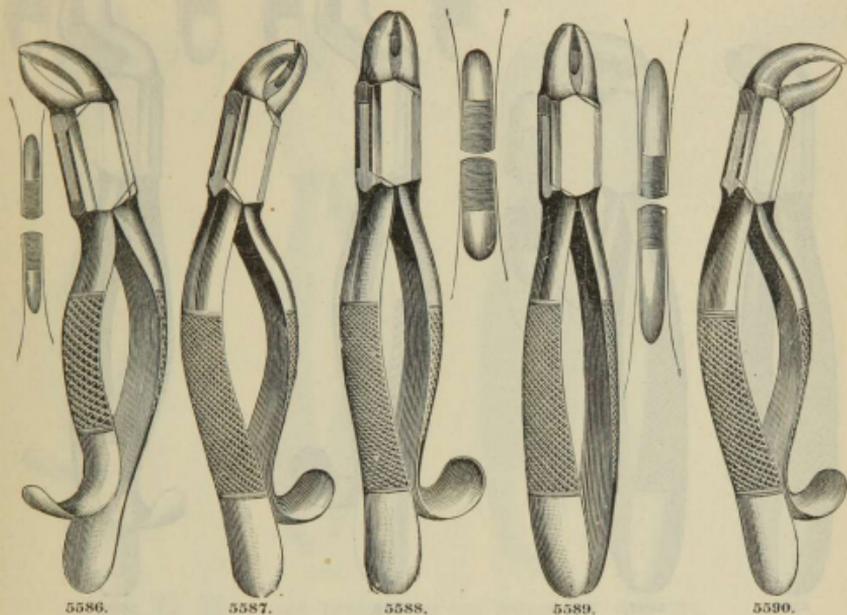


5583,

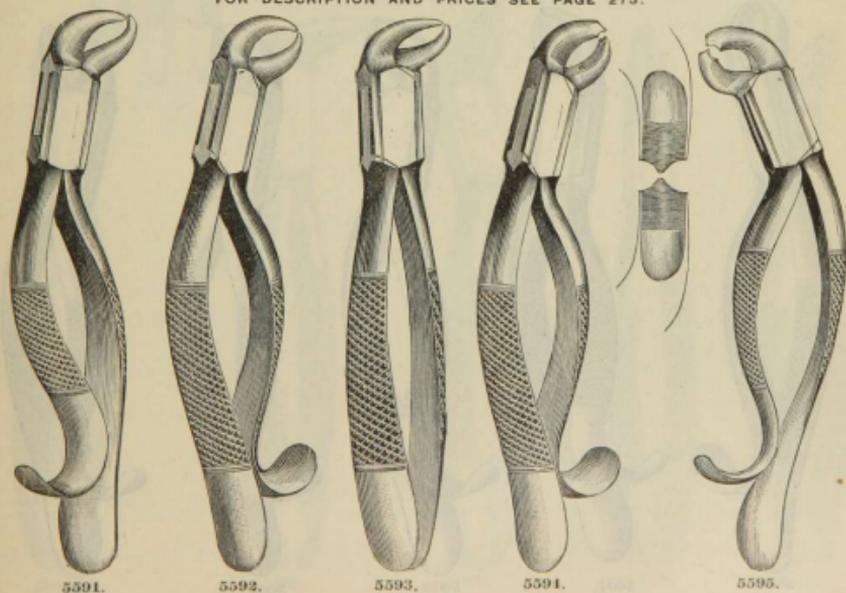
MOUTH AND THROAT.

DENTAL. TOOTH

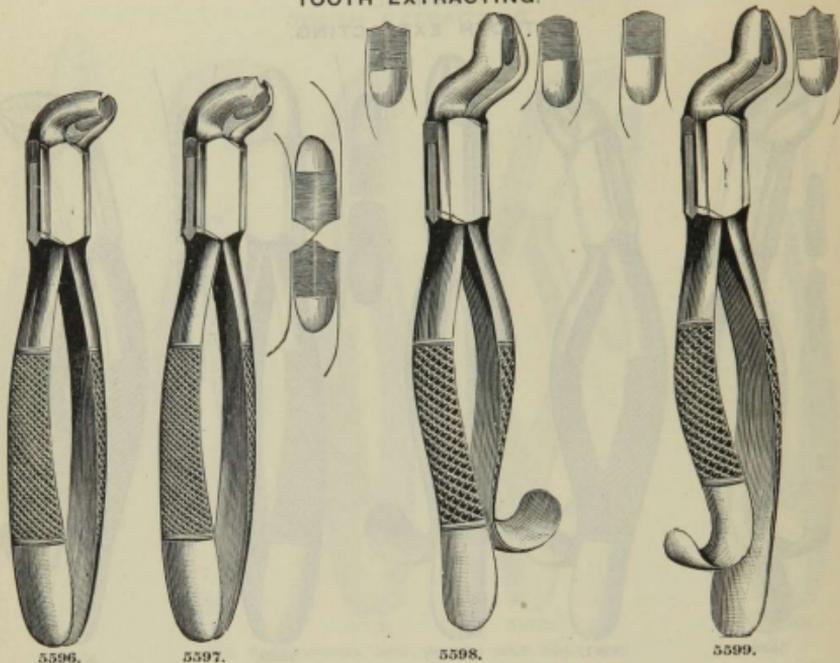
TOOTH EXTRACTING.



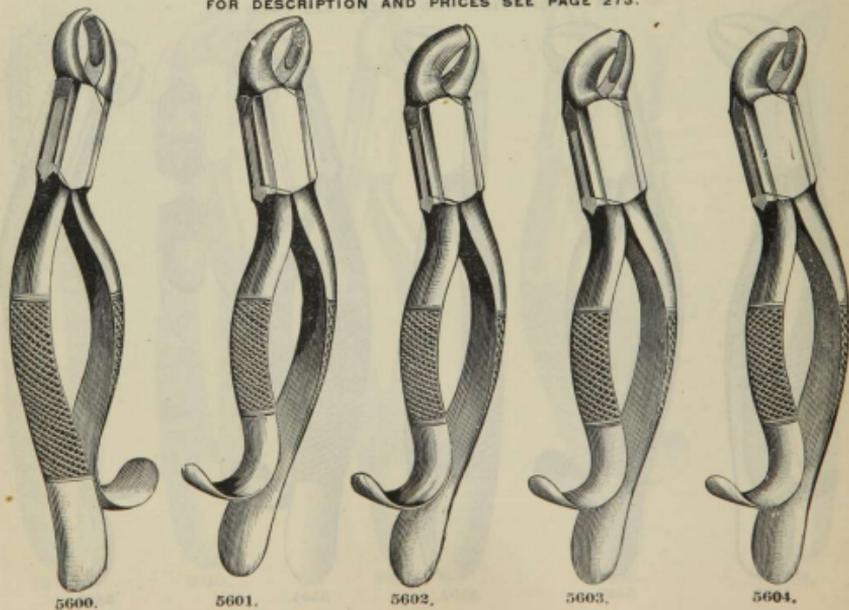
FOR DESCRIPTION AND PRICES SEE PAGE 273.



MOUTH AND THROAT.
DENTAL.
TOOTH EXTRACTING.



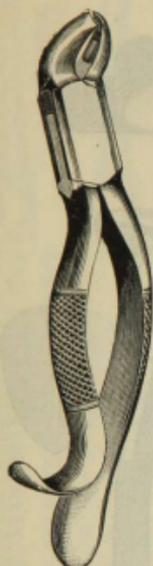
FOR DESCRIPTION AND PRICES SEE PAGE 273.



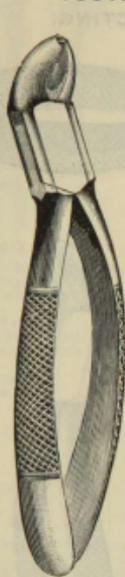
MOUTH AND THROAT.

DENTAL.

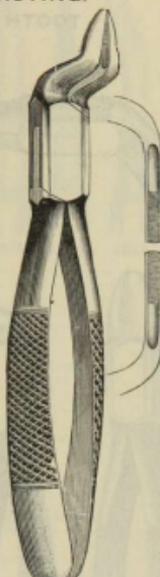
TOOTH EXTRACTING.



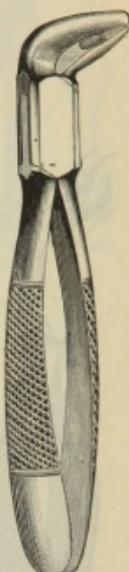
5605.



5606.

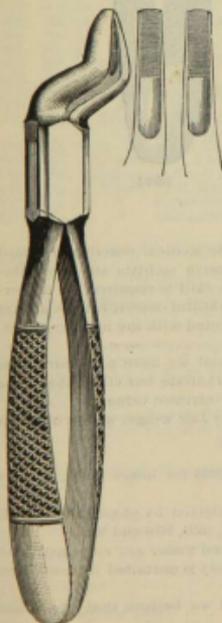


5607.

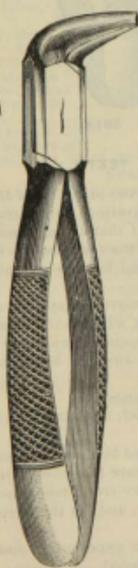


5608.

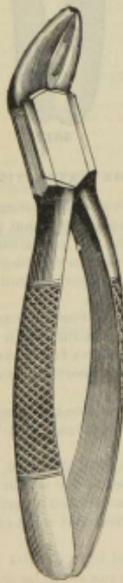
FOR DESCRIPTION AND PRICES SEE PAGE 273.



5611.



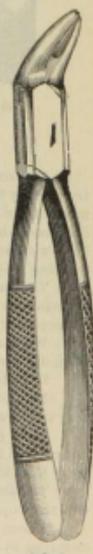
5609.



5610.



5612.

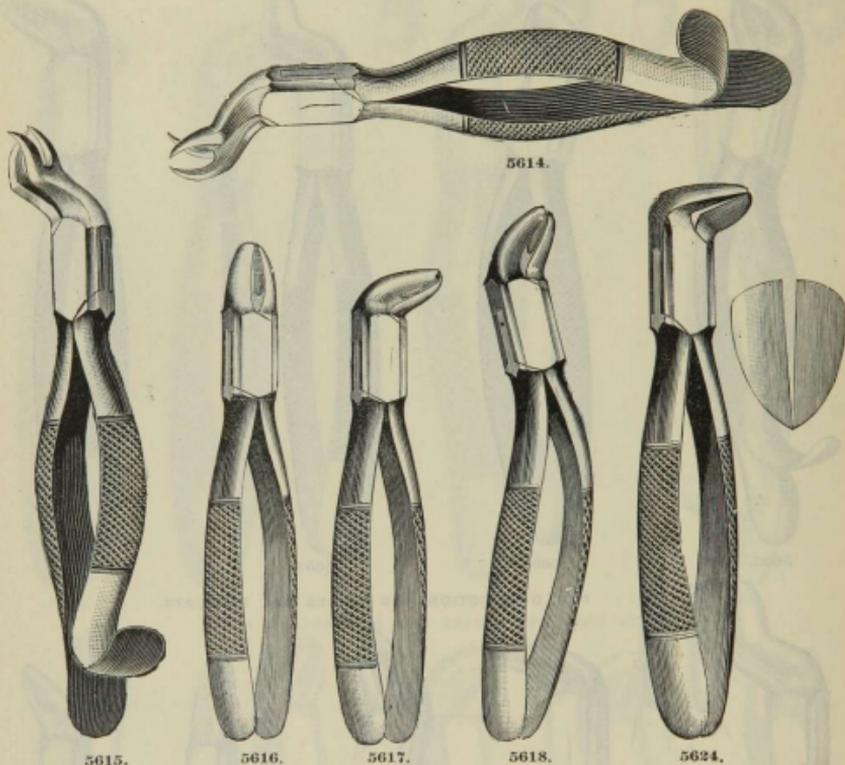


5613.

MOUTH AND THROAT.

DENTAL.

TOOTH EXTRACTING.



THE EXTRACTION OF TEETH.

The extraction of teeth, though not strictly belonging to the province of the medical practitioner, must frequently be performed by him. It is surprising that the operation should receive so little attention; this neglect can only be accounted for by the too prevailing belief that little or no skill is required for its performance; but it is the duty of every physician residing where the services of a skillful dentist cannot always be commanded, to provide himself with proper instruments and become acquainted with the manner of performing this operation.

The importance of a good extracting Forceps cannot be overestimated, and we have paid particular attention to producing a good, practical instrument, a trial of which will substantiate our claim that these Forceps are not excelled by any manufacturer for shape, style, quality and true intrinsic value.

We warrant these Forceps and will cheerfully exchange any that break, by fair usage, within one year from date of purchase.

In ordering, carefully and distinctly state the number desired.

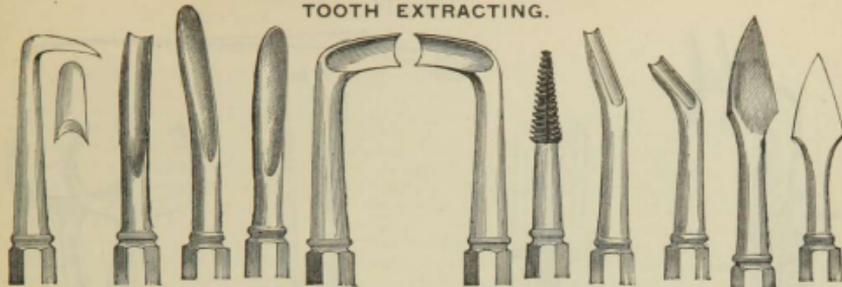
Nos. 5585, 5588, 5603, 5604 and 5611 for upper, and Nos. 5587, 5593, 5594 and 5595 for lower teeth, make a very complete set.

A set of six, comprising Nos. 5588, 5594, 5595, 5606, 5610 and 5611, is often selected by physicians who do not care to have a large variety, and a set of five would constitute Nos. 5588, 5594, 5595, 5606 and 5610.

Nos. 5588, 5597, 5606 and 5610 make as limited a variety as we could recommend under any circumstances. The set of nine will be found the best and most effective, and as the variety is curtailed its usefulness will be proportionately diminished.

These Forceps have been selected by a dentist of long experience, and we believe that physicians ordering by these suggestions will have reason to be well satisfied.

MOUTH AND THROAT.
DENTAL.
TOOTH EXTRACTING.



5574.	No. 32, Parnly's, Bayonet-shape, Alveolar Forceps.....	
5575.	No. 34, " " Curved Beak, " ".....	
5576.	No. 39, " " Half-curved Beak, " ".....	
5577.	No. 52, " " Lower, " ".....	
5578.	No. 33, " " Straight Beak, " ".....	
5579.	No. 21, Lower Bicuspid Tooth Forceps.....	
5580.	No. 25, Lower " Safety Tooth ".....	
5581.	No. 11, Upper " " ".....	
5582.	No. 26, Upper " Safety " ".....	
5583.	No. 4, Upper or Lower Bicuspid " " Half Curved.....	
5584.	No. 21, Lower Canine " ".....	
5585.	No. 11, Upper " ".....	
5586.	No. 9, Lower Incisor, Hawk-bill " ".....	
5587.	No. 14, " " " " either side.....	
5588.	No. 13, Upper " " " " Hook Handle.....	
5589.	No. 48, " " " " Straight ".....	
5590.	No. 55, Lower Molar Cowhorn " " Right.....	First Quality
5591.	No. 56, " " " " " " Left.....	Octagon
5592.	No. 16, " " " " " " either side, Hook Handle.....	Joints,
5593.	No. 23, " " " " " " Straight.....	Nickel
5594.	No. 28, Harris', Lower Molar, Right.....	
5595.	No. 28, " " " " Left.....	
5596.	No. 27, Lower Molar, either side Plain Beak.....	
5597.	No. 17, " " " " Pointed ".....	Plated,
5598.	No. 53, Upper " Bayonet, Right.....	
5599.	No. 53, " " " " Left.....	\$1.50.
5600.	No. 45, " " Cowhorn, either side.....	
5601.	No. 59, " " " " Right.....	
5602.	No. 59, " " " " Left.....	
5603.	No. 18, Harris', Upper Molar, Right.....	
5604.	No. 18, " " " " Left.....	
5605.	No. 24, Universal Molar, Hook Handle.....	
5606.	No. 24, " " " " Straight.....	
5607.	No. 65, Bayonet-shaped Root, for the extraction of difficult roots in the upper jaw and roots of front teeth in lower jaw.....	
5608.	No. 49, Lower Molar Root, with Crowns.....	
5609.	No. 3, Lower Root, Full-curved.....	
5610.	No. 7, Universal Root.....	
5611.	No. 35, Upper Root, Bayonet-shaped.....	
5612.	No. 1, " " Front Root, Straight.....	
5613.	No. 2, " " and Lower Root, Half-curved.....	

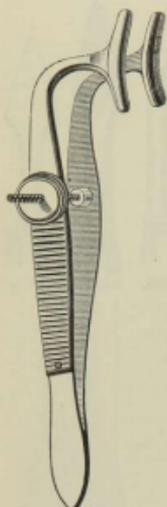
SPECIAL FORCEPS.

5614.	No. 100, Booth's, 3-prong Bayonet, Upper Molar Tooth Forceps, Right.....	\$ 2 25
5615.	No. 100, " " " " " " Left.....	2 25
	Adapted for the removal of difficult upper molars, where the crowns are partially or completely broken away.	
5616.	No. 30, Children's Tooth Forceps, Straight.....	1 50
5617.	No. 29, " " " " Curved.....	1 50
5618.	No. 62, " " " " Universal.....	1 50
5619.	No. 31, Lower Excising " " Curved.....	2 00
5620.	No. 12, Upper " " Straight.....	1 75
5621.	No. 36, Narrow Beak Tooth " " Half-curved (for crowded teeth).....	1 50
5622.	No. 37, " " " " " " Straight.....	1 50
5623.	No. 38, " " " " " " Straight.....	1 50
5624.	No. 6, Separating or Splitting Forceps.....	1 75
5625.	Screw Forceps, Dubs'.....	5 50
5626.	" " Hullihen's.....	4 00

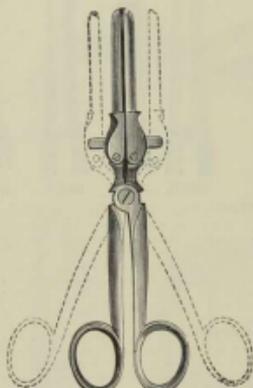
ROOT ELEVATORS.

5627.	Concave Root Elevator, Bent.....	} Round Ebony Handles } \$0 50
5628.	" " " " Straight.....	
5629.	" " " " Right.....	
5630.	" " " " Left.....	
5631.	Convex " " Curved.....	
5632.	" " " " Straight.....	
5633.	Screw " " Large.....	
5634.	" " " " Small.....	
5635.	Starfoot " " Large.....	
5636.	" " " " Small.....	
5637.	Triangular Root " " Concave Blade.....	
5638.	" " " " Flat Blade.....	

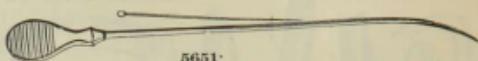
MOUTH AND THROAT.
HARE LIP.



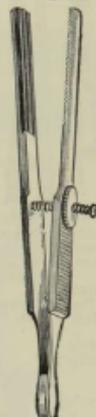
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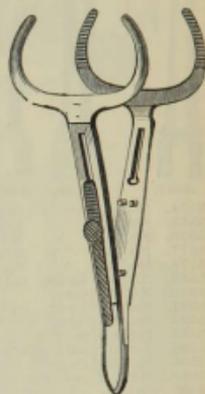
5643.



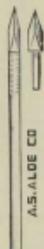
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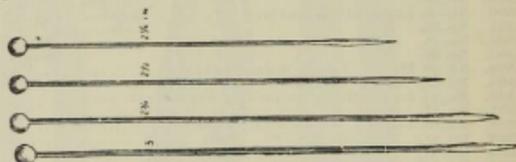
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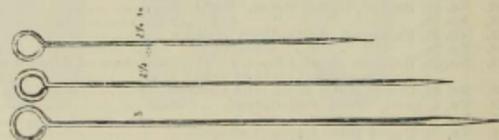
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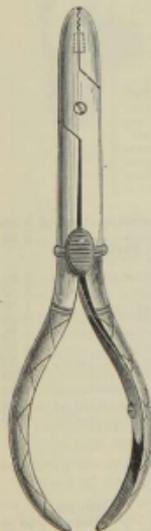
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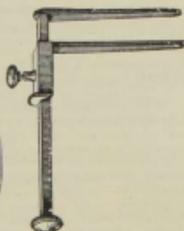
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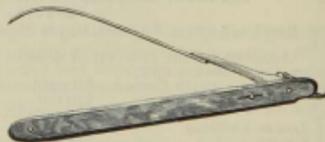
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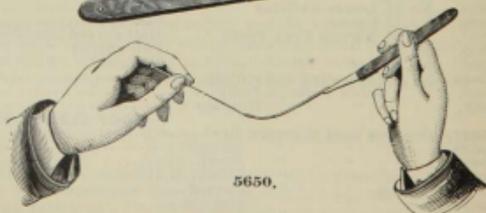
5652.



5639.



5650.



5649.

MOUTH AND THROAT.

HARE LIP.

"Harelip, a congenital fissure of the upper lip, on one or both sides, giving to the mouth very much the appearance presented by the cleft upper lip of the hare. It is sometimes accompanied by a fissure of the hard and soft palate, in which the cavities of the mouth and nose communicate. When the teeth and the gums project through the fissure the deformity is much increased. In the infant it interferes with the process of sucking, and in the adult renders speech imperfect; when the fissure of the palate co-exists, not only is articulation indistinct and nasal, but the passage of food and drink from the mouth to the nose, and of the nasal secretions into the mouth, is a source of great annoyance and mortification. This deformity is in most cases capable of removal by a very simple surgical operation, which has been practised successfully upon infants a few weeks old. The operation consists merely in paring the edges of the fissure with a knife or scissors, and keeping the cut surfaces in apposition by needles and sutures, strengthened by sticking plaster or collodion. When the harelip is double, both sides are generally operated on at the same time. It is usual to extract projecting teeth, or to remove any too prominent portion of the jaw by cutting forceps. Bleeding is generally slight, and restrained by pressure or simple contact of the cut surfaces. In infants, adhesive straps are often necessary to prevent the edges being drawn asunder by crying or sucking; in adults, strict silence and liquid food are enjoined for four or five days."

"Fissure of the soft palate is remedied on the same principle of paring the edges and keeping them in contact by various kinds of sutures and needles; this operation, called staphylorrhaphy, can only be performed on a patient old enough to aid the proceedings of the surgeon."—American Cyclopaedia.



5662.

"When the chasm is uncommonly large, as when the intervening substance has been removed, the tension of the parts may be so great as to require support. A most admirable contrivance for this purpose has been devised by Mr. Hainsby, and is so arranged as to press each cheek over toward the middle line."—"System of Surgery." Gross.

In ordering note measurements required: circumference of face and neck in an oblique direction, circumference of head under chin and over head.

5639.	Clamp,	Prince's, Harelip.....	\$ 2 25	
5640.	"	Whitson's, ".....	2 25	
5641.	Compress,	Goodwillie's, " with Skull Cap.....	11 50	
5642.	Forceps,	Hutchison's, ".....	2 25	
5643.	"	Parellal, ".....	6 75	
5644.	"	Smith's, ".....	3 75	
5645.	"	Ziegler's, ".....	2 25	
5646.	Knife,	Dieffenbach's, Curved, Probe Point.....	1 25	
5647.	"	" Sharp ".....	1 25	
5648.	"	" Straight, " Double Edge.....	1 25	
5649.	"	" Scalpel.....	1 25	
5650.	Pin Conductor,	Buck's.....	75	
5651.	"	Post's.....	75	
5652.	Pin Cutter and Needle Holder,	Stimson's.....	2 75	
5653.	Pins, Glass Head, Harelip.....	per dozen,	75	
5654.	"	Plastic, ".....	per 100,	30
5655.	"	Ring Head, ".....	per dozen,	50
5656.	"	Silver, " Removable Steel Points.....	each,	40
5657.	"	Steel Head, ".....	per dozen,	30
5658.	"	White's, " Octagon Points.....	each,	20
5659.	Scissor, Angular,	".....	1 00	
5660.	"	Hamilton's, ".....	1 15	
5661.	"	Straight, ".....	85	
5662.	Truss,	Hainsby's, ".....	4 50	

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

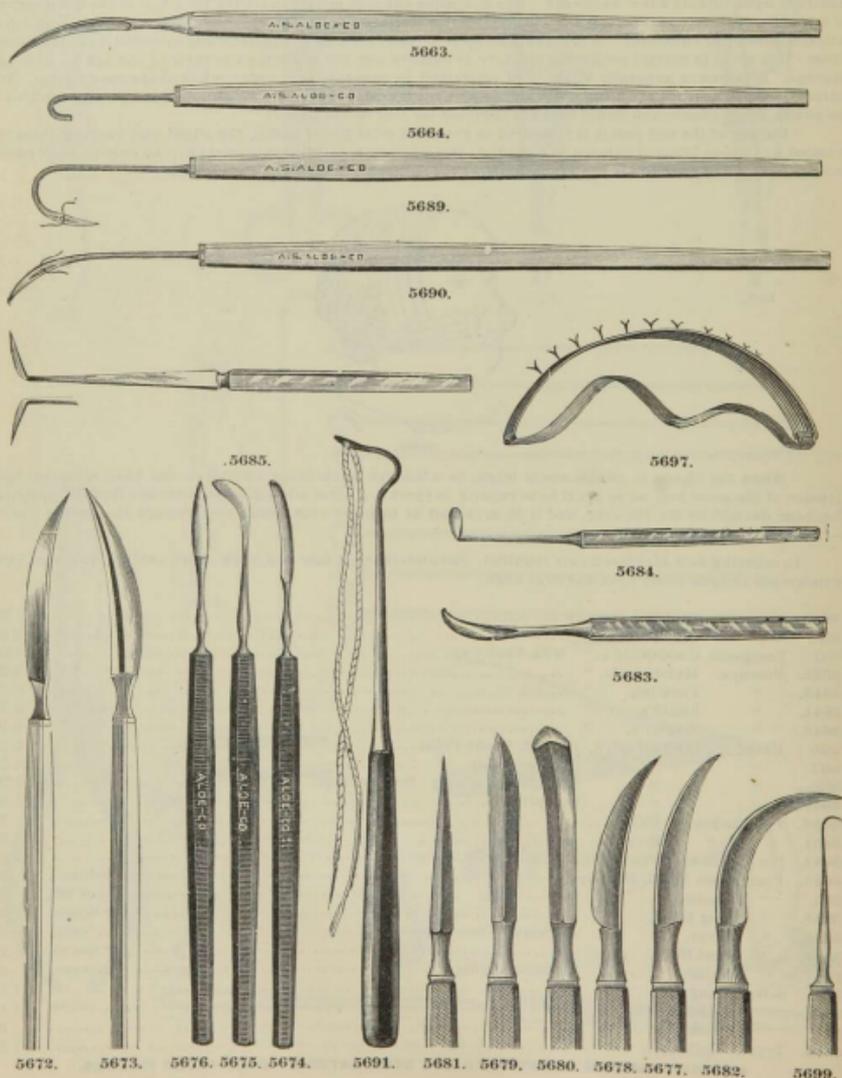
MOUTH AND THROAT.

STAPHYLORRAPHY—URANISCOPLASTY.

STAPHYLORRAPHY: THE OPERATION FOR UNITING A CLEFT PALATE.

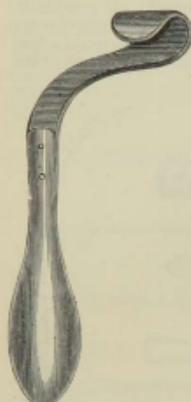
It consists in paring the edges of the cleft, passing ligatures through them and bringing them together.—DUNGLISON.

UPDEGRAFF'S METHOD.—The edges of the cleft are freshened with the bistoury (Fig. 5663). The curved needle (Fig. 5690) is threaded with waxed Chinese silk and thrust through one edge of cleft, then slightly withdrawn, so as to form a loop underneath. The blunt hook (Fig. 5664) is passed through this loop, by means of which the thread is withdrawn outside the mouth, and the needle is also withdrawn. The bent needle (Fig. 5689) is then threaded with the same thread and pushed from the rear (of the opposite side of cleft) to the front; a loop is formed in same manner as with curved needle, and thread withdrawn with the blunt hook. The process is repeated until as many sutures are introduced as seem necessary, all of which are tied.



MOUTH AND THROAT.

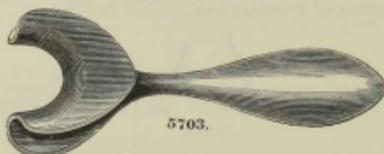
ORAL.



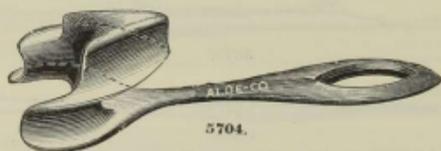
5701.



5700.



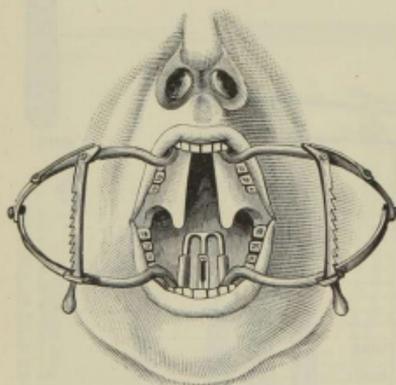
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5704.



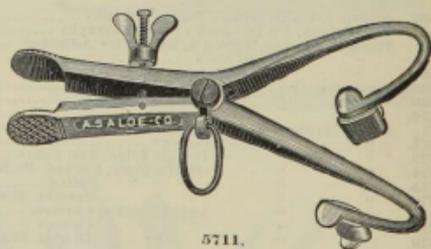
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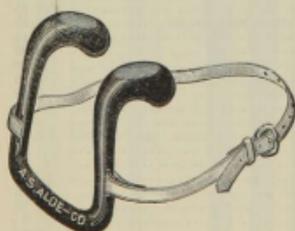
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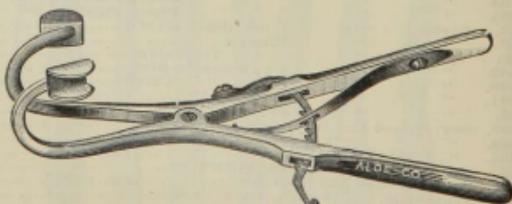
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5711.



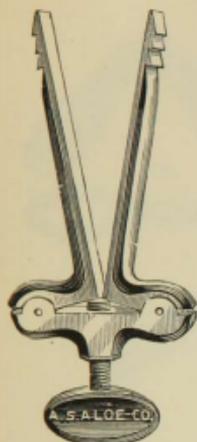
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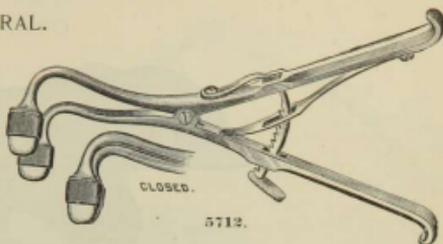
5715.

MOUTH AND THROAT.

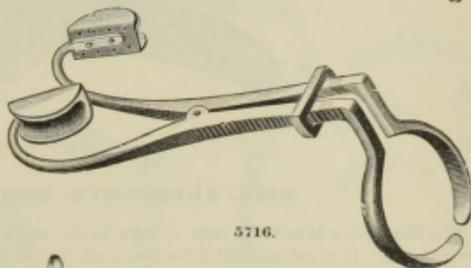
ORAL.



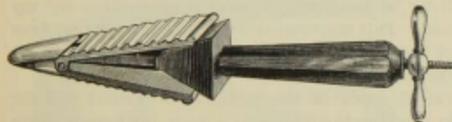
5709.



5712.



5716.



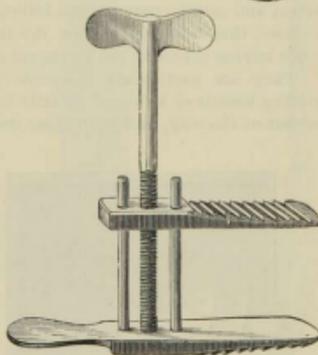
5705.



5705.



5707.



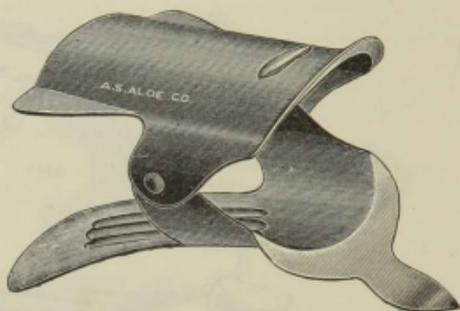
5710.

5700.	Cheek Retractor, Langenbeck's	\$ 1 85
5701.	" " Lier's, Right	1 20
5702.	" " " Left	1 20
5703.	" " " for Either Side	1 60
5704.	" " Roe's, "	1 90
5705.	Finger Protector, Langenbeck's, Plain	1 00
5706.	" Zaufal's, Articulated, with sharp scoop	3 75
5707.	Lock Jaw Forceps, Gross'	2 25
5708.	" " Screw, Goodwillie's	6 00
5709.	" " " Mott-Heister's	4 50
5710.	" " " Westmoreland's	4 50
5711.	Mouth Gag, Allingham-Annandale's	5 25
5712.	" " Bleyer's	5 00
5713.	" " Clover's	2 75
5714.	" " Croft's	3 75
5715.	" " Denhard's	2 50
5716.	" " Goodwillie's	5 00
5717.	" " " Elastic	2 25
5718.	" " " Mason's	4 00
5719.	" " " Mussey's	5 25
5719.	" " " O'Dwyer's. See Page 327.	
5720.	" " " Parker's	2 00
5721.	" " " Weir's	5 25
5722.	" " " Whitehead's	9 00
5723.	" " " Wolf's	10 00
5724.	Oral Screw, Hard Rubber	75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.

ORAL.

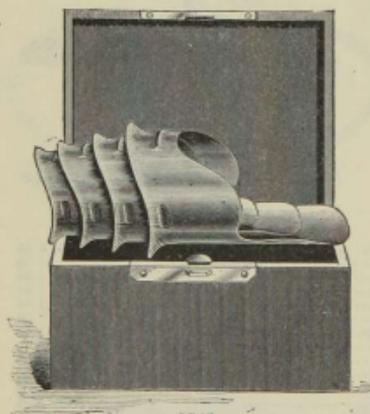


5725.

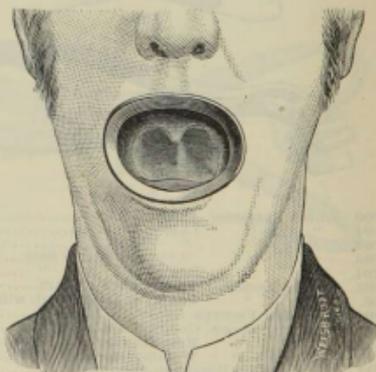
5726. EHRHARDT'S MOUTH SPECULA.

In Ehrhardt's Mouth Specula we offer to the profession an instrument indispensable to the practitioner. It is recommended for its simplicity of construction, ease of application and the perfect and satisfactory results following its use. This instrument depresses the tongue, fixes the jaws, thus bringing to view the interior of the mouth and throat, and with the laryngoscopic mirror exposing the laryngeal and pharyngeal cavities.

They are particularly desirable for operative work in the post nasal cavities and for excising tonsils or uvula, especially in children, keeping the mouth well open, the tongue down and out of the way, and protecting the operator's fingers from the patient's teeth.



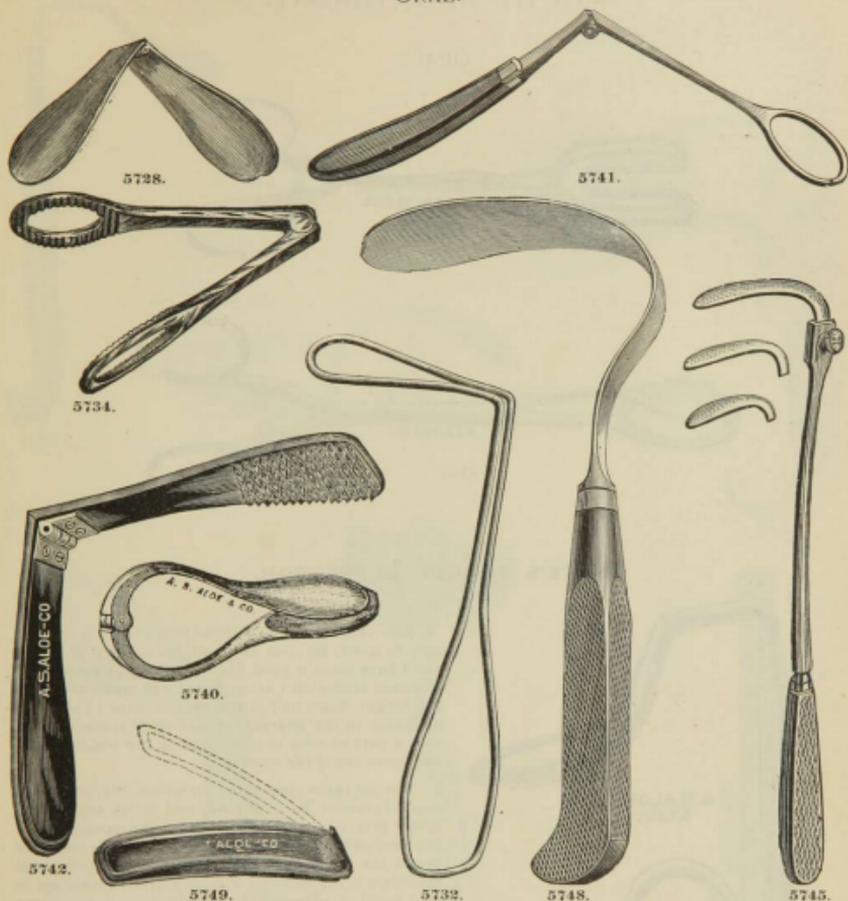
5726.



5726.—Showing Application.

Every physician should possess one or more sets of these instruments, for they are applicable alike for the infant or adult in the diagnosis and treatment of all throat affections. The instrument causes no spasmodic contraction of the muscles of the mouth, nor do they produce a flow of saliva, and they can be retained for any length of time, without inconvenience. They are sold in sets consisting of four sizes, forming nests, and are put up in neat Morocco covered, velvet lined cases.

MOUTH AND THROAT.
ORAL.

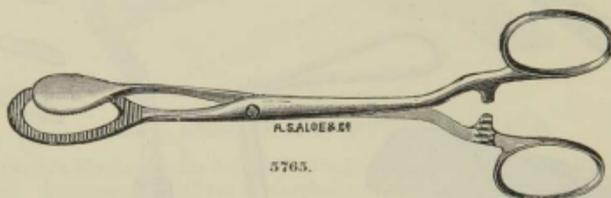
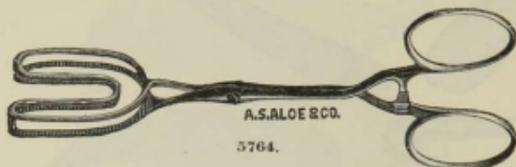


5725.	Mouth Specula, Cole's, set of 4 in case	\$ 5 00
5726.	" " Ehrhardt's, set of 4 in case.....	3 50
5727.	Tongue Depressor, Bosworth's.....	75
5728.	" " Champion, German Silver.....	75
5729.	" " Church's, Self-retaining.....	5 00
5730.	" " Cohen's.....	60
5731.	" " Folding.....	1 50
5732.	" " Set of 3 sizes.....	50
5733.	" " DeVilbiss'.....	1 25
5734.	" " Double Fenestrated, Folding, Aluminium.....	1 25
5735.	" " " Nickel Plated.....	75
5736.	" " Dumesnil's (St. Louis).....	2 00
5737.	" " Elsberg's.....	3 50
5738.	" " Fränkel's.....	1 00
5739.	" " Goodwillie's, Aluminium.....	1 50
5740.	" " " Nickel Plated.....	1 00
5741.	" " Green's.....	1 00
5742.	" " Hard Rubber, Folding.....	1 00
5743.	" " Higgins', Self-retaining.....	4 50
5744.	" " Jackson's, All-steel.....	1 35
5745.	" " Rumbold's (St. Louis).....	3 75
5746.	" " Sass', Aluminium.....	2 50
5747.	" " Hard Rubber.....	1 00
5748.	" " Steel, Hard Rubber Handle.....	2 25
5749.	" " Smith's, Wire, Folding.....	50

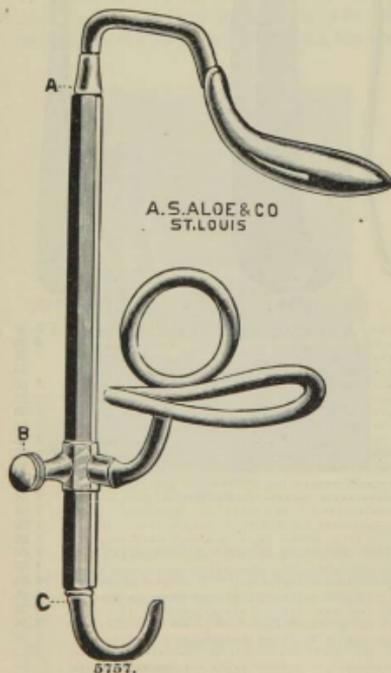
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT:

ORAL.



WHITE'S TONGUE DEPRESSOR.

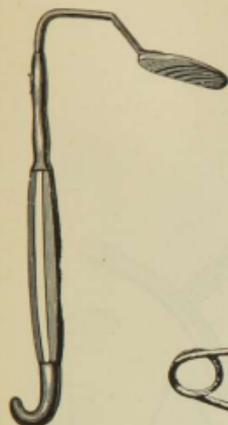


The "Self-retaining Tongue Depressor" is nothing new in itself, for you have all seen many of them, and I have spent a good deal of money in purchasing different kinds, but I never found one that would hold the tongue down and in the proper place to allow of operation in the pharynx or post-nasal space, nor one that a patient with any strength in the tongue could not throw out of the mouth.

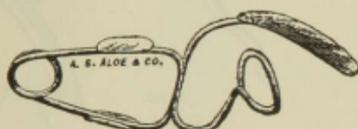
The one I here present to your notice (Fig. 5767), once applied, cannot be displaced, and holds the tongue firmly pressed down on the floor of the mouth, exposing perfectly the pharyngeal wall, and allowing free use of the rhinoscopic mirror, whilst the post-nasal speculum is in position. This is a great advantage in post-nasal or pharyngeal operations, as it does away with the necessity of the patient holding his own tongue down, which nervous or timid patients never do satisfactorily, frequently releasing the tongue at the most critical moment.

It is made exactly like Turck's Tongue Depressor, with a metal instead of a wooden handle, on which slides the holder of the chin-rest. This handle or shaft is made octagonal, with the holder fitting closely to it, so that the counter pressure of the tongue and chin make it stationary wherever placed. A thumb-screw (B) is put on the slide for chin-rest to fix it firmly if necessary. This chin-rest can be removed by unscrewing the hook at C and the instrument used simply as a Turck's Tongue Depressor when it is unnecessary to make it self-retaining. It can be purchased with one blade or with three blades of different sizes, which screw on to the handle at A.—J. A. White, M. D., in Virginia Medical Monthly.

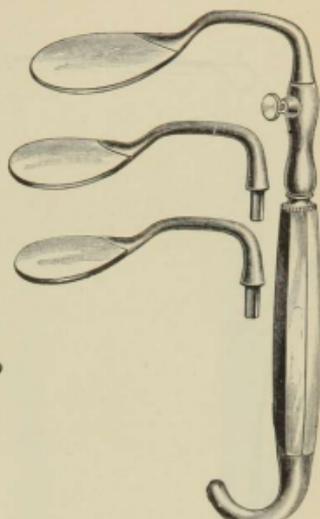
MOUTH AND THROAT.
ORAL.



5753.



5750.



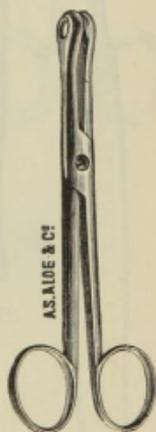
5754.



5761.



5762.



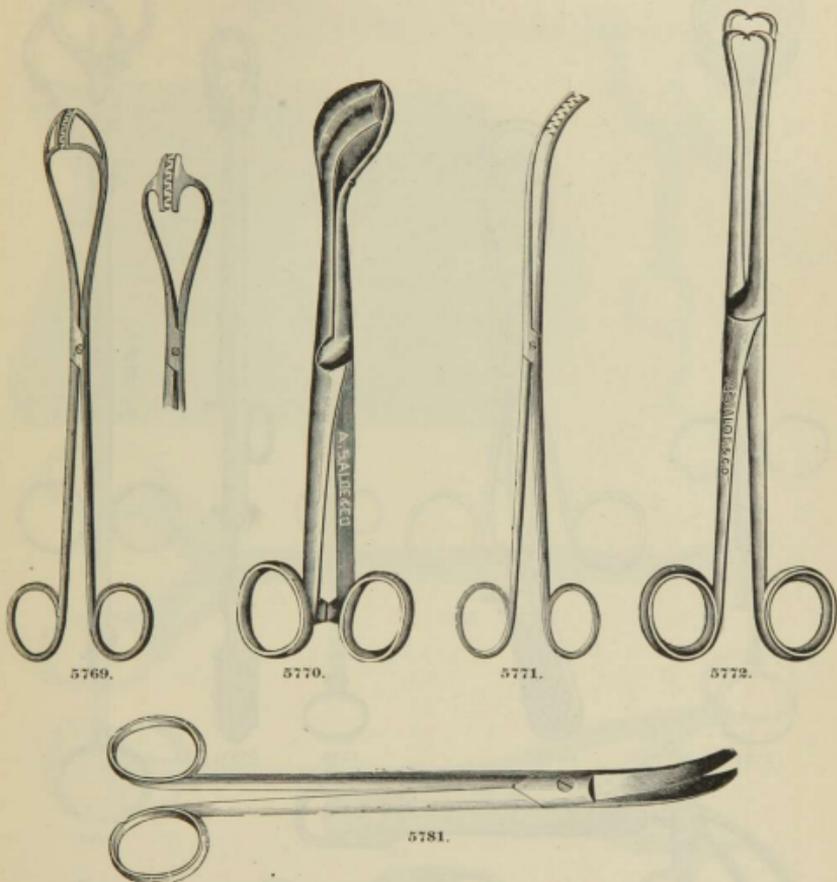
5763.

5750.	Tongue Depressor, Stamman's, Self-Retaining	\$ 1 50
5751.	" " Tobold's, Hard Rubber	75
5752.	" " Türk's, Aluminium Handle	2 00
5753.	" " " " Hard Rubber	1 25
5754.	" " " " set of 3, Aluminium Handle	3 00
5755.	" " " " " " 3, Hard Rubber Handle	2 75
5756.	" " " " Waxham's	1 00
5757.	" " " " White's Self-Retaining	1 75
5758.	" " " " " " set of 3 Blades	2 50
5759.	" " " " Wire Folding Double	50
5760.	Tongue Holding Forceps, Collin's	3 00
5761.	" " " " " "	3 25
5762.	" " " " " "	3 35
5763.	" " " " " "	1 50
5764.	" " " " " "	4 50
5765.	" " " " " "	3 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.

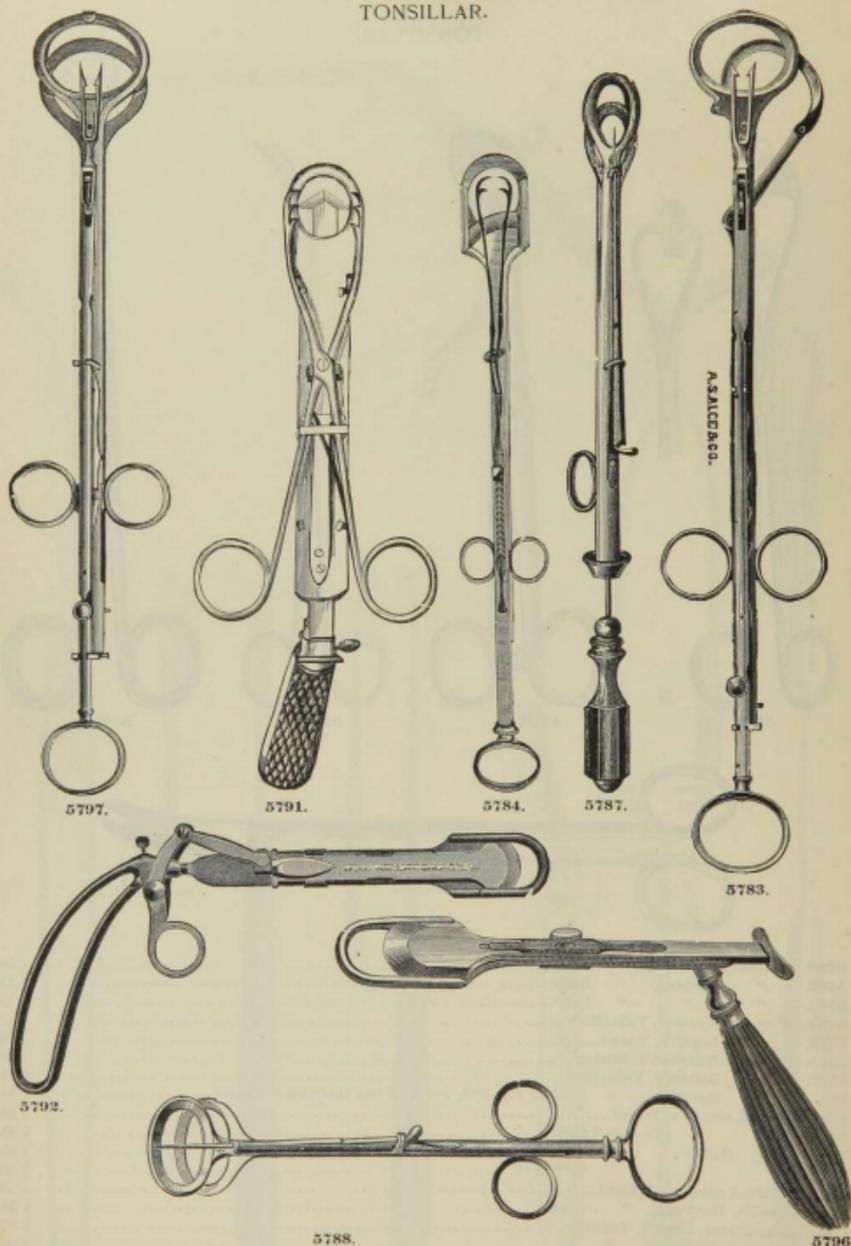
TONSILLAR.



5766.	Bistoury, Green's, Tonsil.....	\$ 1 50
5767.	" Hobbs', " Right.....	1 35
5768.	" " " Left.....	1 35
5769.	Forceps, Byrnes', Vulsellum.....	2 25
5770.	" Ingall's, Tonsil.....	3 00
5771.	" Musseau's, Seizing.....	1 75
5772.	" Robert's, Vulsellum.....	2 25
5773.	" Roser's, " like Fig. 5772, but with one tooth on each side.....	2 25
5774.	Hooks, Green's, Tonsil.....	1 30
5775.	" " Double Tonsil.....	1 85
5776.	" Hobbs', " Right.....	1 35
5777.	" " " Left.....	1 35
5778.	Knife, Yearsley's, Tonsil.....	1 75
5779.	Needle, Horton's, ".....	1 25
5780.	Scarificator, Buck's, Tonsil.....	2 00
5781.	Scissors, Plain.....	2 00
5782.	Snare, Bosworth's, ".....	11 25

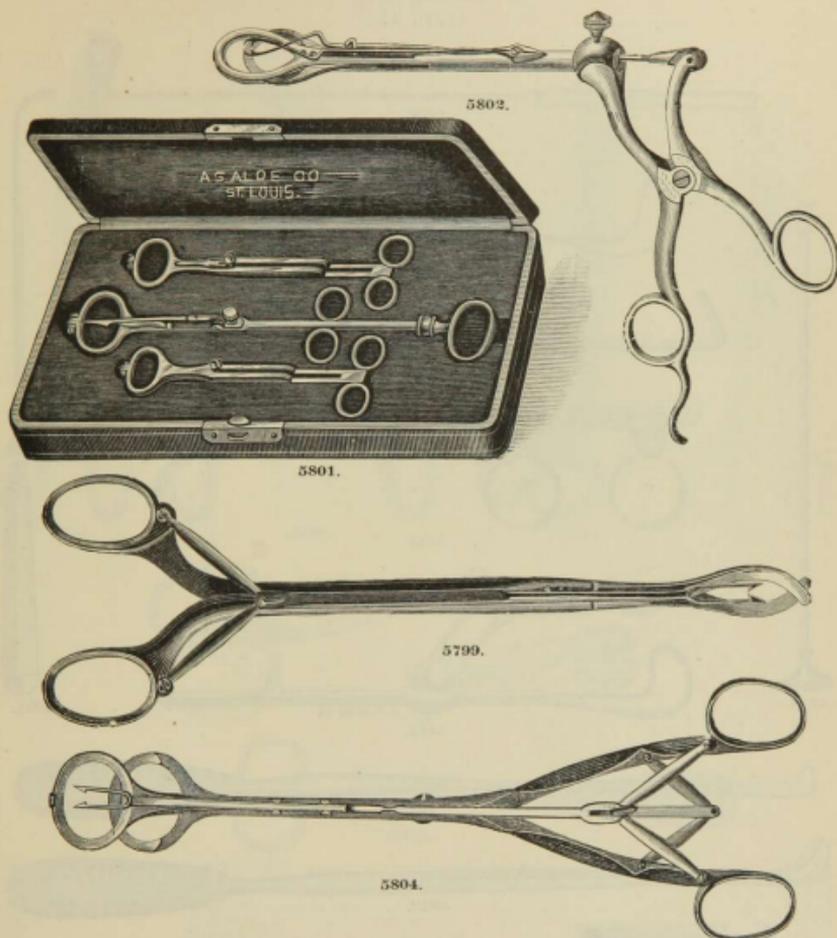
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.
TONSILLAR.



Glasgow's Tonsillotome, No. 5789, is made similar to Hamilton's, Fig. 5791. The forceps for catching and holding the tonsil are provided with a catch, that the operator may release his hold upon this part of the instrument and steady the patient's head. The blade is provided with a powerful spring, which is drawn back until caught by a ratchet. The instrument is then introduced and applied, the trigger pressed and the excision is made.

MOUTH AND THROAT.
TONSILLAR.

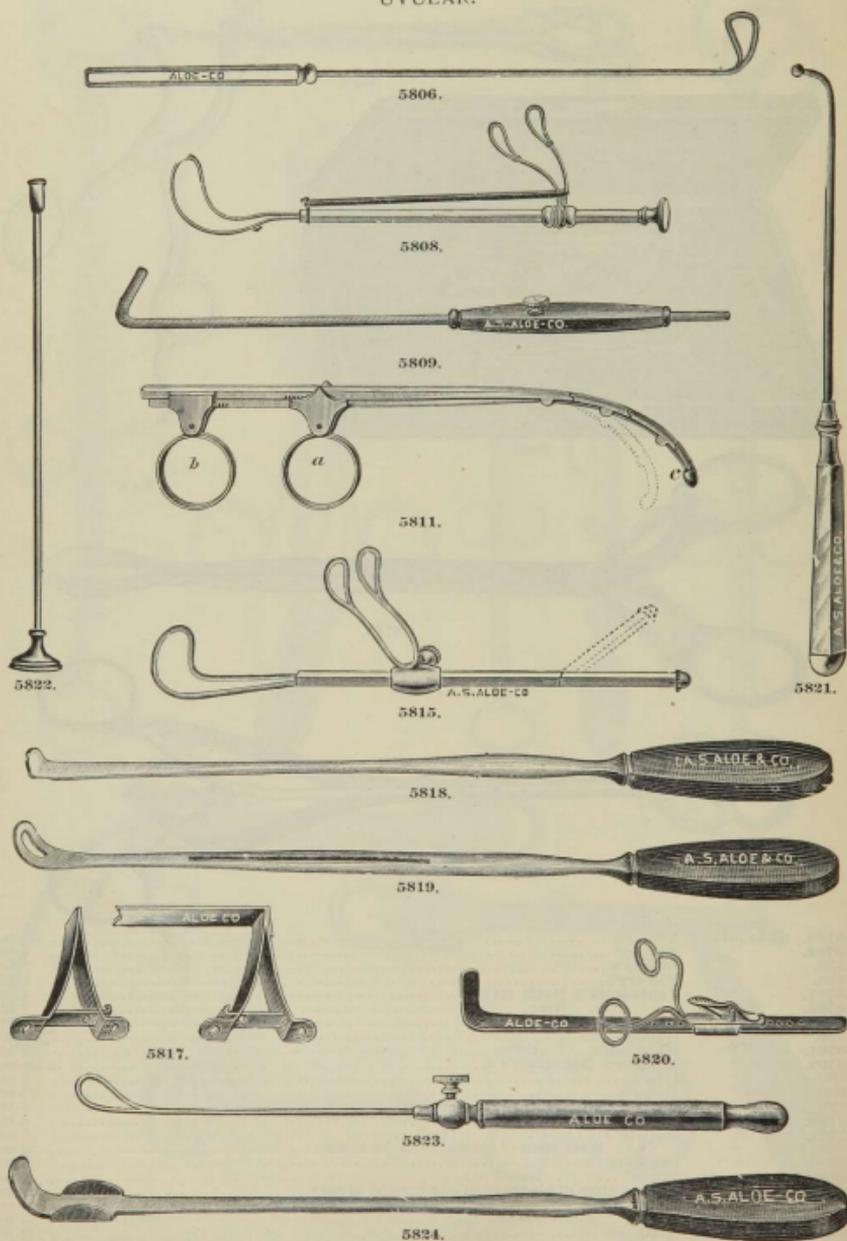


5783.	Tonsilotome, Aubrey's.....	\$10 00
5784.	" Billing's.....	8 00
5785.	" Bishop's.....	7 50
5786.	" Elsberg's.....	7 50
5787.	" Fabnestock's, Metal Handle.....	4 50
5788.	" " Ring ".....	3 50
5789.	" Glasgow's (St. Louis).....	15 00
5790.	" Gunn's.....	10 00
5791.	" Hamilton's.....	10 50
5792.	" Improved, Mackenzie's.....	10 00
5793.	" Ivan's.....	8 00
5794.	" Kolbe's.....	12 00
5795.	" Mandeville's (Modified Mackenzie's, to reverse).....	7 50
5796.	" Mackenzie's.....	6 00
5797.	" Mathien's.....	7 00
5798.	" " three sizes of blades, to fit one handle.....	10 00
5799.	" Rupprecht's.....	10 00
5800.	" Sajous's.....	9 00
5801.	" 3 sizes of blades to fit one handle, in case.....	20 00
5802.	" Tiemann's.....	10 50
5803.	" " with 2 blades.....	15 00
5804.	" Windler's.....	12 00

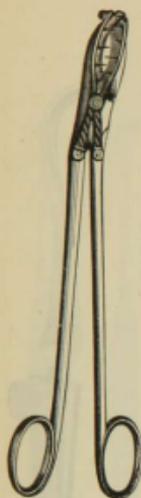
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.

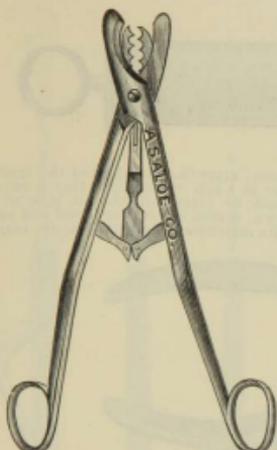
UVULAR.



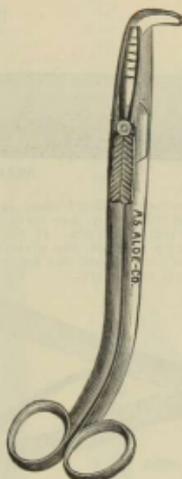
MOUTH AND THROAT.
UVULAR.



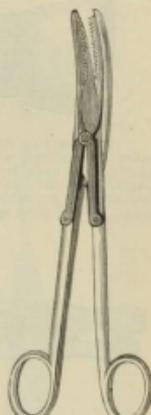
5825.



5826.



5827.



5830.



5831.



5832.

5805.	Palate Retractor, Hard Rubber.....	\$ 50
5806.	" " Hinde's.....	75
5807.	" " Joachim's.....	1 50
5808.	" " Knight's, Aluminium.....	2 25
5809.	" " Lefert's.....	1 50
5810.	" " Morgan's.....	1 50
5811.	" " Rumbold's (St. Louis), Curved.....	12 00
5812.	" " " with Wedge. See Fig. 5967 page 264.....	6 00
5813.	" " Sajous'.....	1 50
5814.	" " Wengley's.....	2 00
5815.	" " White's, Improved.....	1 50
5816.	" " Winston's.....	5 00
5817.	Tape Holders, Jarvis'.....	75
5818.	Uvula Retractor, Czernack's.....	1 50
5819.	" " Fränkel's.....	1 50
5820.	" " Porcher's.....	2 50
5821.	" " Roe's.....	1 00
5822.	" " Rumbold's (St. Louis).....	75
5823.	" " Türk's.....	75
5824.	" " Voltolini's.....	75
5825.	Uvula Scissors, Johnson's.....	4 50
5826.	" " Sajous'.....	6 75
5827.	" " Seilers'.....	5 00
5828.	" " Smith's.....	4 00
5829.	" " Stuckey's.....	3 75
5830.	" " Wood's.....	4 00
5831.	Uvulotome, Knox's.....	5 00
5832.	" " Mackenzie's.....	6 75
5833.	" " Sayre's.....	7 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.

TRACHEAL.

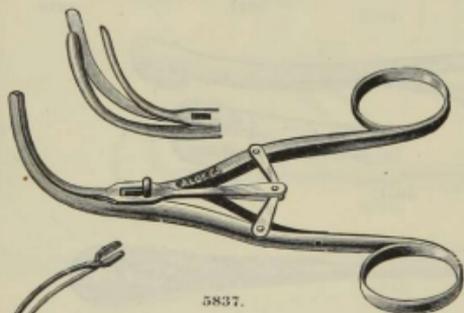


5834.

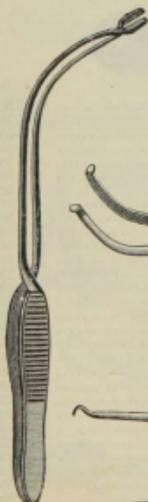
For clearing the trachea of blood-clots or mucus, after the insertion of the trachea tube. It is simply a hard rubber syringe terminating in a soft rubber cup; this is easy of application over the inserted canula. If the thumb be placed on the air-hole of the barrel, the soft rubber cup applied, the piston drawn, mucus or clots of blood will enter the barrel. By taking the thumb off the air-hole the instrument detaches easily, may be cleansed and used again if necessary.



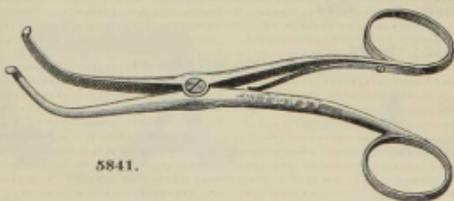
5835.



5837.



5845.



5841.



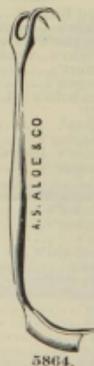
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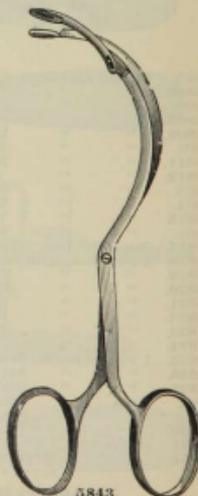
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5839.

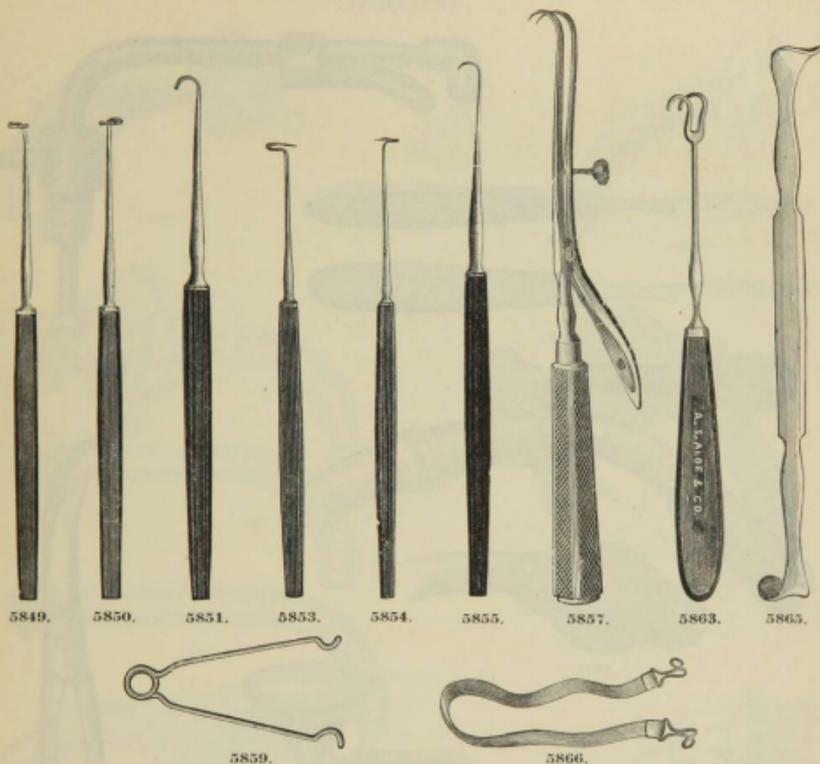


5804.



5843.

MOUTH AND THROAT.
TRACHEAL.

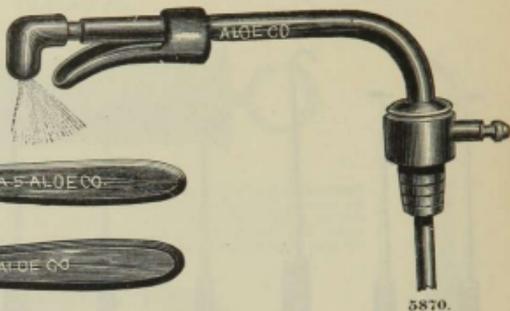


5834.	Aspirator, Tiemann's, Tracheal.....	\$ 1 75
5835.	Bronchotome, Pilcher's, for removing pieces from the Trachea.....	4 50
5836.	Dilator, Chassaignac's, Tracheal.....	2 25
5837.	" Laborde's, ".....	3 75
5838.	" Leffert's, ".....	2 00
5839.	" Lier's, ".....	1 50
5840.	" Otis', ".....	2 25
5841.	" Trousseau's, ".....	1 75
5842.	Director, Fowler's, ".....	1 25
5843.	Forceps, Collin's, Intercauala.....	3 25
5844.	" Esmarch's, Claw.....	2 50
5845.	" Meunier's, Intercauala.....	1 75
5846.	" Trousseau's, ".....	2 00
5847.	" Universal, Tracheal.....	1 85
5848.	Guide, Buck's, Tracheotomy.....	1 50
5849.	Hook, Bose's, Blunt, Right.....	1 00
5850.	" " " Left.....	1 00
5851.	" " " Single.....	75
5852.	" " " Double.....	1 00
5853.	" " Sharp, Right.....	1 00
5854.	" " " Left.....	1 00
5855.	" " " Single.....	75
5856.	" " " Double.....	1 00
5857.	" Langenbeck's, " Tracheal.....	2 25
5858.	Mirror, Czermack's, Trachea Tube.....	1 15
5859.	Retractor, Bose's, Tracheal.....	75
5860.	" Briggs' (St. Louis), Tracheal.....	7 50
5861.	" Golding Bird's.....	2 50
5862.	" Minor's, Tracheal.....	3 25
5863.	" Pilcher's, Tracheal.....	1 50
5864.	" " Supra-sternal.....	1 50
5865.	" Rose's, Double-end.....	1 50
5866.	" Wells', Tracheal.....	1 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.

TRACHEAL.



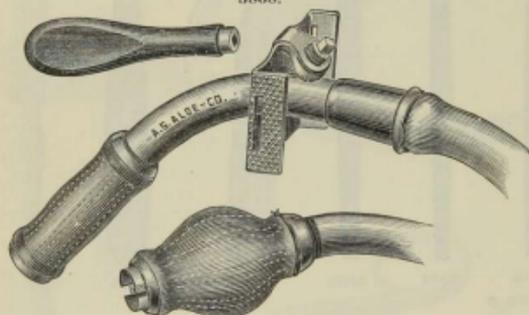
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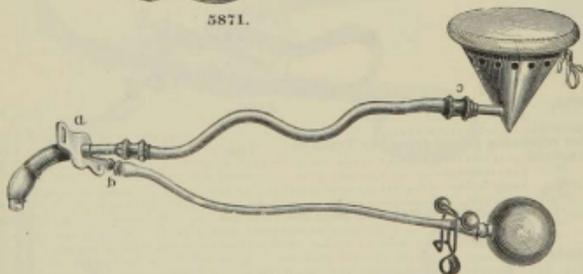
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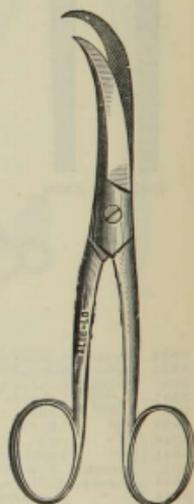
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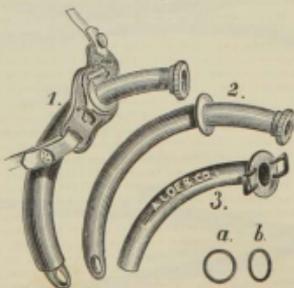
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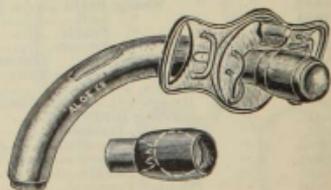
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5869.



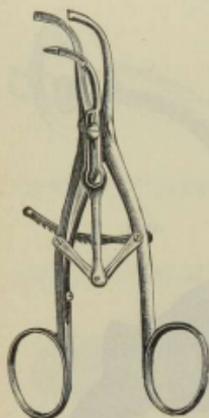
5875.



5878.

MOUTH AND THROAT.

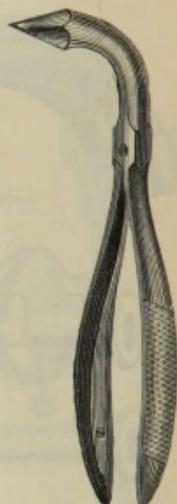
TRACHEAL.



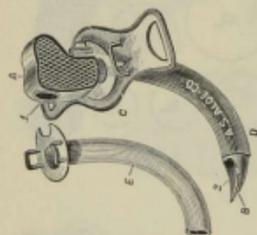
5889.



5891.



5892.



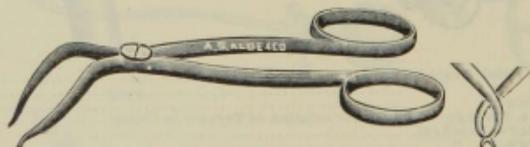
5890.



5893.

A NEW TRACHEAL TENACULUM DILATOR.

By W. J. Otis, M. D., Boston.

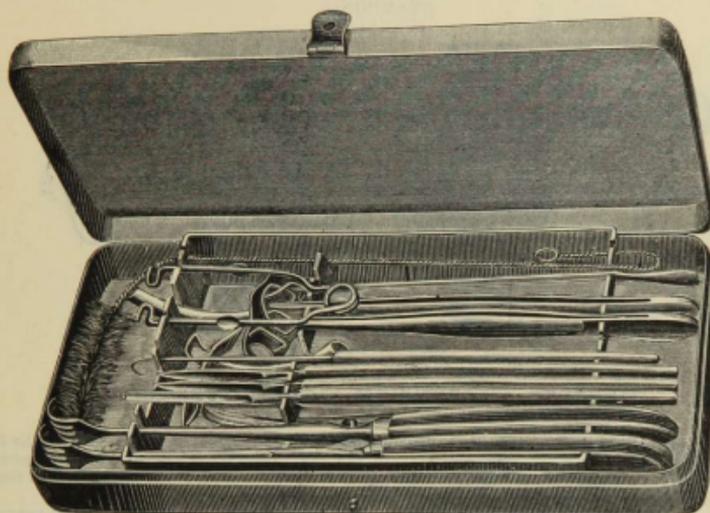


5840. See Page 291.

The accompanying cut represents an instrument devised by Dr. Otis, the peculiar feature of which is a Tenaculum and Dilator combined, the blades being bent at an angle instead of being parallel, so as to act as retractors of the soft parts, and each blade terminating in a hook. The right hand figure shows the position of the hooks when the blades are closed ready for use. The point of each hook being turned down aids in introducing. By pressing the points lightly against the trachea and opening the blades the hooks insert themselves firmly into the trachea, leaving space enough between them for the knife to pass. The instrument is now a Tenaculum, by which the trachea can be lifted forward and held firmly before opening it, which is particularly to be desired when operating on children, where the trachea is situated deeply and often has a great range of up-and-down movement. To open the trachea the knife is inserted between the blades, and as the rings of the trachea are cut the instrument can now be used as a Dilator, holding open the edges of the cut perfectly with no danger of slipping out.

MOUTH AND THROAT.

TRACHEAL.



5895.

ALOE'S TRACHEOTOMY SET, No. 1.

CONTAINING: 2 Dieffenbach's Scalpels.
 1 Dieffenbach's Bistoury.
 1 Scissor, Curved on Flat.
 2 Sharp Retractors, 4 Prong.
 1 Bose's Sharp Hook.
 1 Bose's Retractor.
 2 Rat Tooth Forceps, Dressing.
 1 Silver Probe, with Eye.
 1 Silver Director and Tongue Tie.
 2 Lüer's Silver Trachea Tubes.
 1 Trachea Tube Brush.
 In Nickel-plated German Silver Case.

ALOE'S TRACHEOTOMY SET, No. 2.

CONTAINING: 2 Dieffenbach's Scalpels.
 2 Bose's Blunt Hooks (Right and Left).
 2 Bose's Sharp Hooks (Right and Left).
 1 Bose's Retractor.
 2 Mouse Tooth Dressing Forceps.
 2 Slide Catch Artery Forceps.
 1 Dissecting Forceps.
 1 Director and Tongue Tie, Silver.
 2 Lüer's Silver Trachea Tubes.
 1 Trachea Tube Brush.
 In Nickel-plated German Silver Case.

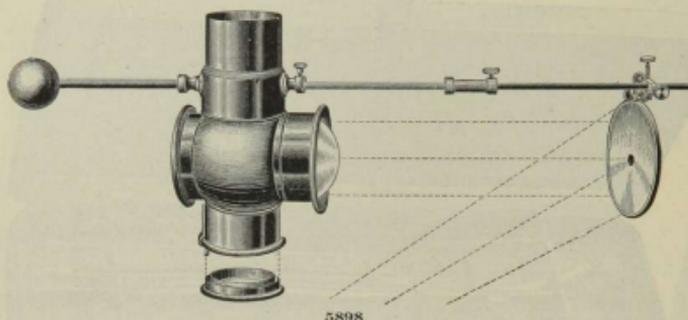
5889.	Tracheotome, Anger's Dilating.....	\$ 4 50
5890.	" Hanks'.....	6 75
5891.	" Langenbeck's.....	3 00
5892.	" Pitha's Dilating.....	3 00
5893.	" Thompson's Dilating.....	2 65
5894.	Tracheotomy Instrument, Holden's.....	13 50
5895.	Set, Aloe's, No. 1.....	27 50
5896.	" " " No. 2.....	25 00
5897.	" " " Leffert's, list of contents on application.....	34 25

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.

LARYNGEAL—PHARYNGEAL.

EXAMINING.

**IMPROVED MACKENZIE'S LIGHT CONDENSER.**

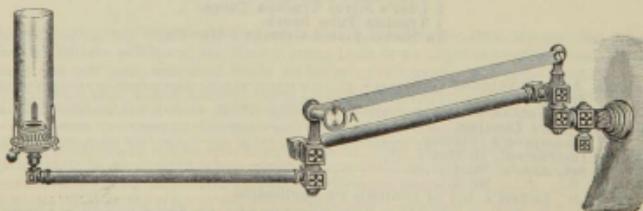
Superior for the following reasons: On account of the spherical or round form of the flame-chamber, which has a tendency to concentrate the rays, producing thereby a more powerful light than could be otherwise obtained. The light, thus condensed, is thrown forward through the lens onto the mirror by a reflector in the rear.

To avoid the annoyance of placing the mirror in the right position each and every time when brought to use, we have added a rod or bracket fastened to a band, which slides over the chimney and rests on the sphere, while the rod penetrates the chimney, holding it steadily and parallel with the focal line. At the extreme end of this rod the mirror is suspended by means of a ball joint, similar to the one used on the improved headbands, to allow the direction of the light wherever needed. The ball joint can be raised or lowered, according to the size of the mirror. With this bracket the operator is never hindered in his movements, as the mirror is thereby always held in the focal line, which is most decidedly an improvement over the independent stand or headbands and all the other devices that have been used before for that purpose.

A ball-shaped weight, which screws on the back of the band, counterbalances the mirror when adjusted to a gas bracket or lamp. The Condenser, with its attachments, is constructed with screw-joints, and can readily be taken apart for convenient packing.

IMPROVED ADJUSTABLE GAS BRACKET.

This Bracket is the best pattern for use with the Improved Mackenzie Condenser. The handle, A, is at the same time the set-screw for the friction-disc, by means of which the bracket is held in position or raised or lowered as desired. This can be done with one hand, a feature no other bracket presents. One chief objection to all other brackets is that they unscrew from the gas pipe connection in the wall. To obviate this the back—fitting against the wall—is made in one piece with the fixture, so that two wood screws are sufficient to hold the bracket firmly and securely in place.



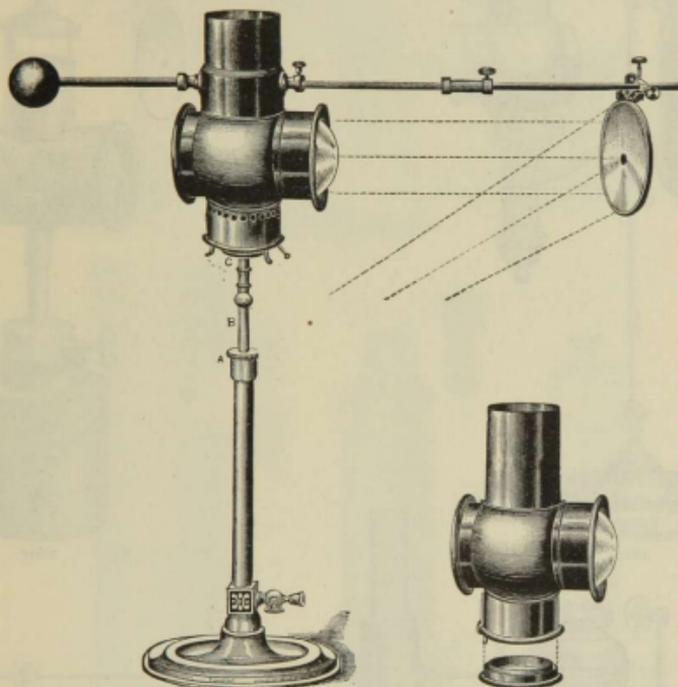
5901. Extreme Length 30 Inches.

MOUTH AND THROAT.

LARYNGEAL—PHARYNGEAL.

EXAMINING.

ADJUSTABLE GAS STAND.



5904. Extreme height of large size, 48 inches.
5905. " " " small " 18 "

5900.

For the convenience of those who wish to use the Light condenser, and have no suitable gas outlet for using a wall bracket, we have constructed an adjustable gas stand in two sizes; the smaller size is for desk or table, and the larger to place on the floor. They are attached by flexible gas tubing from a center light.

They are very strongly made, have a heavy iron base to increase steadiness and have a generally neat appearance. The rod marked B, supporting the burner, is very readily raised or lowered, after slightly loosening the center screw A; by tightening the same the burner support is held firmly in position and the joint is made gas-tight.

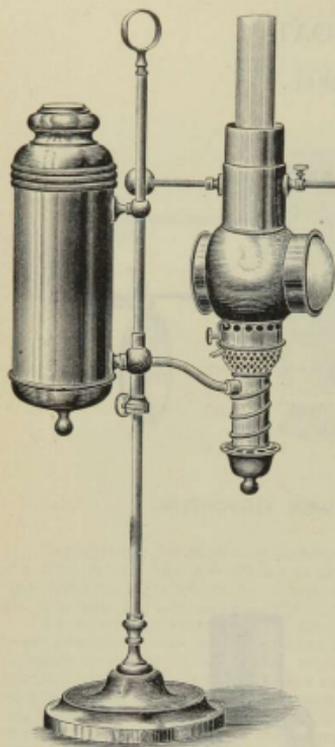
5898.	Condenser, Mackenzie's Light, with Mirror-bar and $3\frac{1}{2}$ -inch mirror.....	\$10 50
5899.	" " " " " only.....	7 50
5900.	" " " " (Condenser only).....	5 00
5901.	Gas Bracket, Improved Adjustable, with burner and chimney.....	7 50
5902.	" Lamp, Boeckel's, with Bent Arm.....	6 00
5903.	" " Adjustable Drop-light.....	7 00
5904.	" Stand, Large Adjustable, with burner and chimney only.....	7 50
5905.	" " Small " " " " " ".....	6 00
5906.	" Tubing, Mohair Covered, with metal connections, per foot.....	25
5907.	" " Silk " " " " " ".....	35

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

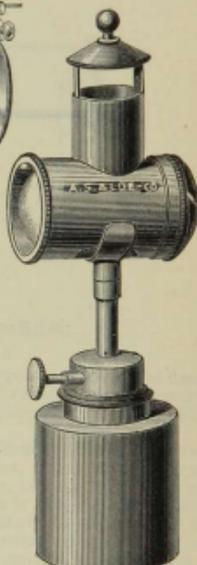
MOUTH AND THROAT.

LARYNGEAL—PHARYNGEAL.

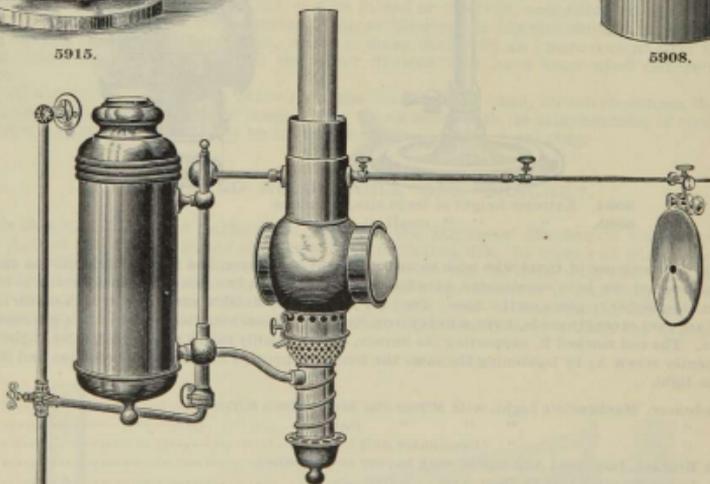
EXAMINING.



5915.



5908.



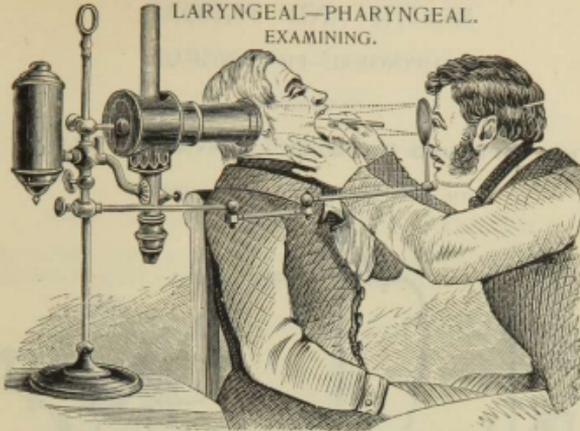
5916.

ADJUSTABLE WALL BRACKET STUDENT LAMP.

(Vertical Movement 15 Inches.)

It has both longitudinal and lateral motions. The sliding arm is fixed in position by means of a set-screw. It is highly polished and nickel-plated.

MOUTH AND THROAT.
LARYNGEAL—PHARYNGEAL.
EXAMINING.



5920.

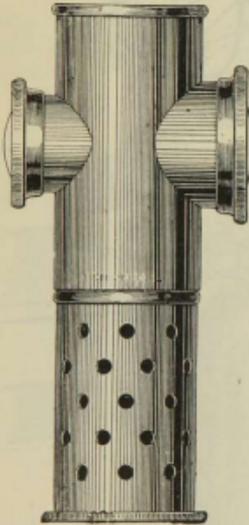


Fig 1



Fig 2.
Lamp Can.

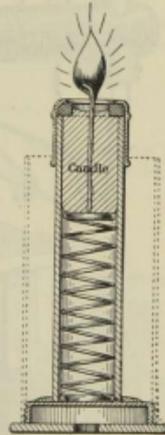


Fig 3.
Section of Candlestick
and Base.

5911

The lamp is six inches high by two and three-fourths in diameter. It has a condenser of two inches focus for general examination and one of one inch for oblique illumination, etc. It has two attachments, either or both of which may be had with the instrument. In the one a wax candle, which is self-feeding, (see Fig. 3), and in the other petroleum oil is burnt. Either gives a brilliant and steady light; the lamp-can, to my mind, giving more satisfaction. If closed by the plug it will not leak and may be safely carried in any position in the pocket or satchel. Such a portable illuminator does away with the trouble and danger attending the use of the ordinary house lamp or candle at the bedside — H. V. Würdemann, M. D., Milwaukee, in Annals of Ophthalmology and Otology.

5908.	Lamp, Collin's, Condensing	.....	\$ 5 00
5909.	" Nickel Plated Student, as shown in Fig. 5915	.....	3 00
5910.	" Wall Bracket, " " " 5916	.....	8 00
5911.	" Würdemann's, Hand	.....	12 75
5912.	Laryngoscope, Beseler's, Improved, on stand	.....	35 00
5913.	" DeVilbiss', with Lamp	.....	15 00
5914.	" Mackenzie's, Improved, with Gas Lamp	.....	10 00
5915.	" " " " Student Lamp	.....	8 00
5916.	" " " " Wall Bracket Lamp	.....	12 00
5917.	" " " " Condenser only, see Fig. 5900, Page 297	.....	5 00
5918.	" " " " Standard and Adjustable Bracket	.....	75 00
5919.	" " " " Adjustable Wall Bracket	.....	60 00
5920.	" Tobold's, Large, with Student Lamp	.....	18 00
5921.	" " " " Small, " " "	.....	18 60

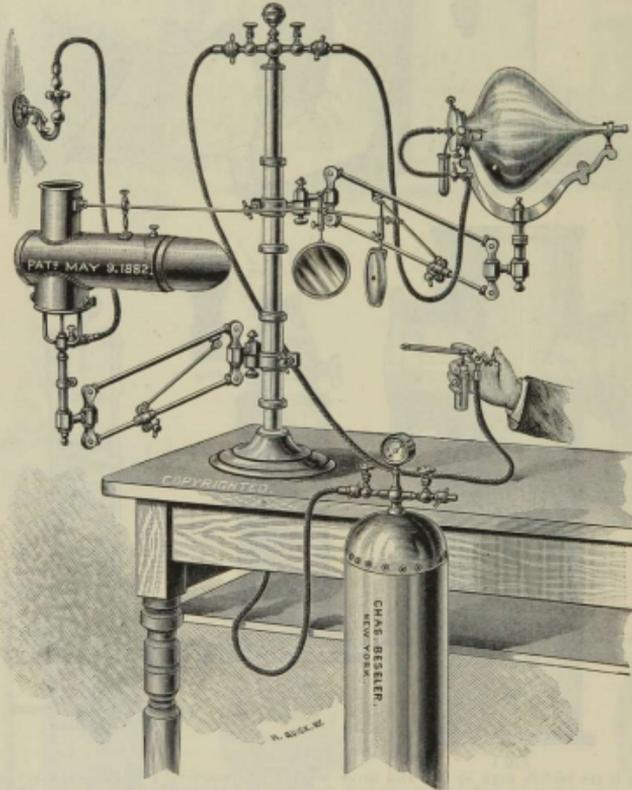
MOUTH AND THROAT.

LARYNGEAL—PHARYNGEAL.

EXAMINING.

THE IMPROVED "HAWLEY" LARYNGEAL STAND.

WITH THE "BESELER" LARYNGOSCOPE



5922.

The entire instrument is very handsomely finished, and all the metal parts are highly polished and nickel-plated.

The air obtained from a receiver, as shown in cut, is regulated by two needle valves near the top of the standard, one for supplying air for the Globe Inhaler and the other for supplying air for the automatic cut-off. The laryngoscope is provided with a powerful gas burner giving a very intense light.

Dimensions from table to top of instrument, 38 inches; diameter of standard, 1½ inches.

5922.	Laryngeal Stand, Hawley's (without Receiver).....	\$ 125 00
5923.	" " " with Receiver, Fig. 5968, Page 309.....	160 00
5924.	" " " same as Fig. 5922, Fitted with Edison (50 Candle) incandescent Lamp	135 00
5925.	" " Sass'. Description upon application	250 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.

LARYNGEAL—PHARYNGEAL.

EXAMINING.

LARYNGOSCOPIC CASES.

5926. ALOE'S LARYNGOSCOPIC CASE, No. 1.

Containing 3½-inch Glass Concave Mirror, Head Band and Handle; 3 Throat Mirrors; 1 Universal Handle; 1 Tongue Depressor \$ 7 50

5927. ALOE'S LARYNGOSCOPIC CASE, No. 2.

Containing 3-inch Glass Concave Mirror; Head Band and Handle; 2 Throat Mirrors; 1 Universal Handle; 1 Tongue Depressor 6 50

5928. ALOE'S LARYNGOSCOPIC CASE, No. 3.

Containing 3½-inch Glass Concave Mirror; Head Band and Handle; 3 Throat Mirrors; 1 Post Nasal Syringe; 1 Sponge Holder; 1 Brush Holder and 6 Brushes; 1 Tongue Depressor; 2 Universal Handles 12 00

5929. BOSWORTH'S LARYNGOSCOPIC CASE.

Containing 3½-inch Glass Concave Mirror; Head Band and Handle; 1 Post Nasal Syringe, with Ear Nozzle; 2 Throat Mirrors; 2 Universal Handles; 1 Tongue Depressor; 1 Sponge Holder; 1 set Toynbee's Ear Specula..... 13 50

5930. FOWLER'S LARYNGOSCOPIC CASE.

Containing 3½-inch Glass Concave Mirror; Head Band; 1 Tongue Depressor; 2 Vials; 3 Throat Mirrors; 2 Universal Handles; 1 Brush Holder; 6 Brushes..... 10 00

5931. IVAN'S THROAT, EAR AND NASAL SET.

Containing 3½-inch Glass Concave Mirror, with Head Band; 4 Throat Mirrors; 2 Universal Handles; 1 Laryngeal Applicator; 1 Post-Nasal Applicator; 1 Ear-Cotton Holder; 1 set of 3 Toynbee's Ear Specula, plated; 1 Goodwillie's Nasal Speculum; 1 Goodwillie's Tongue Depressor..... 12 00

5932. JURIST'S THROAT AND NASAL SET.

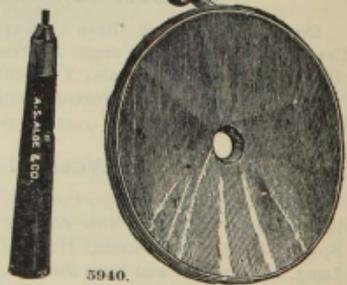
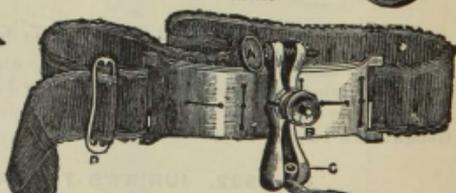
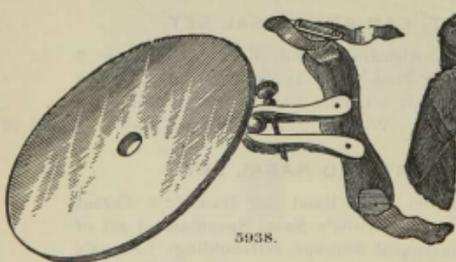
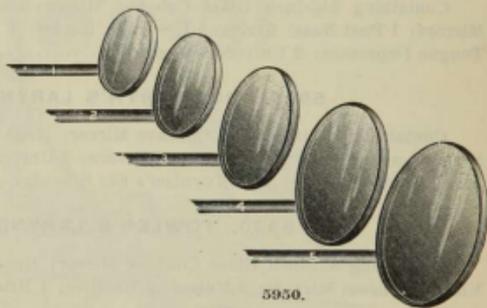
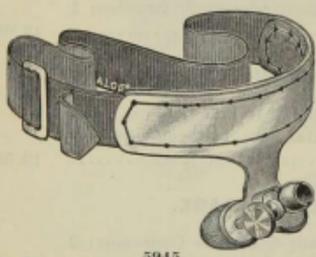
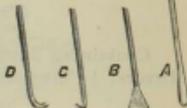
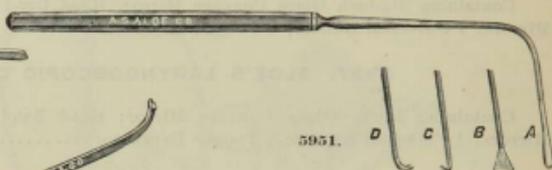
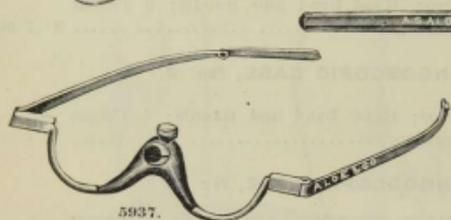
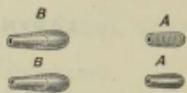
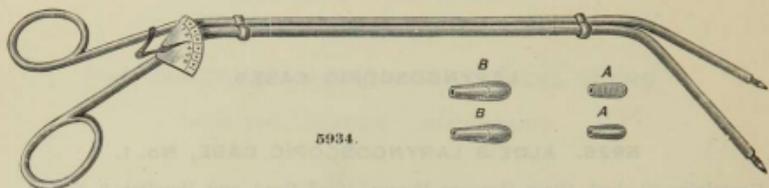
Containing 3½-inch Glass Concave Mirror; Head-Band and Handle; 3 Throat Mirrors; 1 Goodwillie's Tongue Depressor; 1 Goodwillie's Nasal Speculum; 1 set of 3 Hard Rubber Nasal Specula; 1 Cohen's Pharyngeal Forceps, self-holding; 1 Sajou's Universal Cotton-Holding Forceps, with Slide Lock; 1 Aluminium Wire; 1 Universal Handle, with Set-Screw..... 15 00

5933. POLYCLINIC THROAT, EAR AND NASAL SET.

Containing 3½-inch Glass Concave Mirror, with Head-Band; 3 Laryngeal Mirrors, with Handles; 1 Cohen's New Folding Tongue Depressor; 1 Aluminium Applicator; 1 Sponge Holder; 1 Universal Handle; 1 Cohen's Pharyngeal Forceps, self-holding; 1 Long, Angular Ear and Nose Forceps, self-holding; 1 Goodwillie's Nasal Speculum; 1 set of 3 Gruber's Ear Specula, oval, silver-plated..... 15 00

ALL THE ABOVE CASES ARE OF MOROCCO, LINED WITH VELVET, AND VERY NEAT AND COMPACT. ANY OTHER STYLE FITTED UP TO ORDER.

MOUTH AND THROAT.
LARYNGEAL-PHARYNGEAL.
EXAMINING.



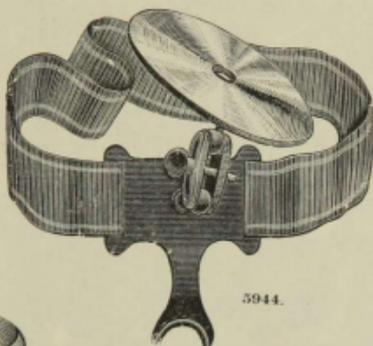
MOUTH AND THROAT.
LARYNGEAL-PHARYNGEAL.
EXAMINING.



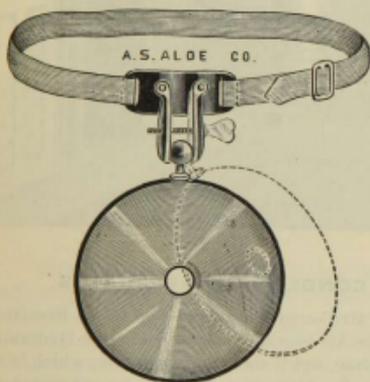
IN USE
5942.



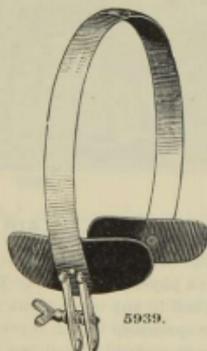
CLOSED.
5942.



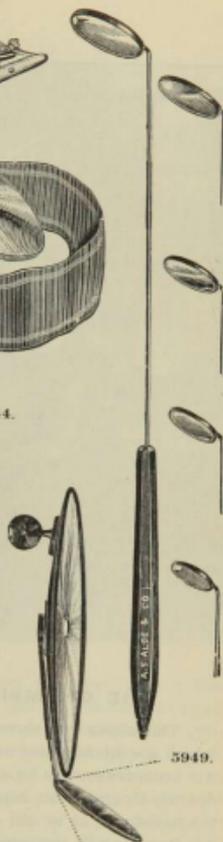
5944.



5935.



5939.



5949.

Keen's Re-Reflecting Mirror.



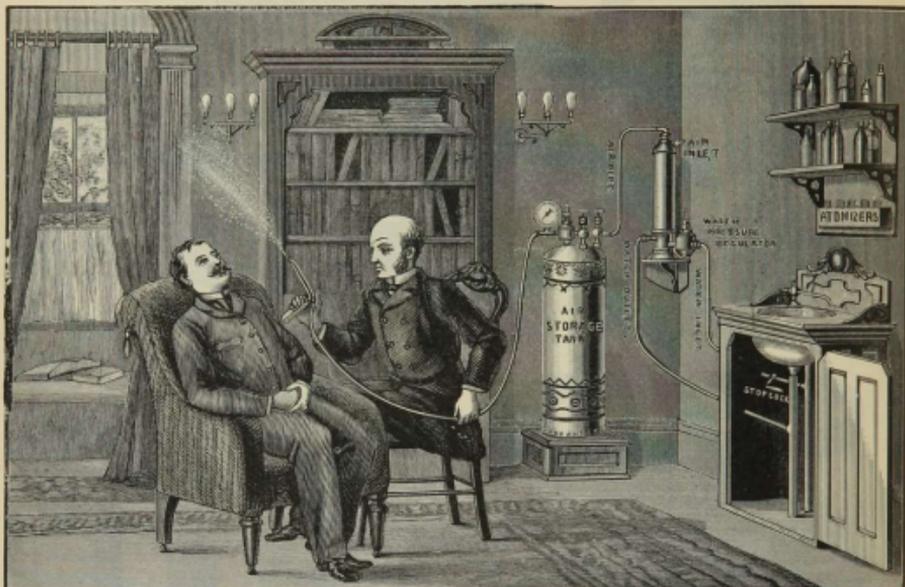
5953.

5934.	Esthesiometer, Elsberg's, Laryngeal.....	\$ 5 25
5935.	Headband, Bosworth's.....	75
5936.	" Fowler's.....	1 00
5937.	" Fox's.....	4 00
5938.	" Pomeroy's.....	75
5939.	" Rumbold's (St. Louis).....	2 50
5940.	" Sajous'.....	1 50
5941.	Sardy's No. 1, for 3-inch Mirror.....	1 50
5942.	" " " 1, " 3½ " ".....	1 75
5943.	" " " 1, " 4 " ".....	2 00
5944.	" " " 2.....	75
5945.	" Schrötter's, Aluminium (Plate).....	2 00
5946.	" " Hard Rubber.....	1 25
5947.	" " Metal.....	1 00
5948.	" Simrock's.....	3 00
5949.	Mirror, Laryngoscopic, with Fixed Handle.....	50
5950.	" " " Stems 5 inches long, to use with Figs. 5943 and 5944.....	50
	" " Reflecting, to use with any style Headband. Add for 2½-inch.....	1 75
	" " " 3-inch, \$2.00; 3½-inch, \$2.25, and " 4 ".....	2 50
	" " Re-reflecting, Keen's, 3-inch, \$5.00; 3½-inch, \$5.25; 4-inch.....	5 50
5951.	Probe, Mackenzie's, Laryngeal, Silver.....	90
5952.	" " Lobold's.....	90
5953.	Universal Handle, Hard Rubber (To use with Laryngoscopic Mirrors, }.....	25
5954.	" " Nickel-plated (Throat Brushes, Applicators, etc. }.....	35

MOUTH AND THROAT.

LARYNGEAL—PHARYNGEAL.

APPLICATING.



5955.

THE CHAMPION HYDRAULIC AIR CONDENSING APPARATUS.

The above cut shows the Champion Hydraulic Air Compressor connected to Air Receiver, which are intended for use in a physician's office. The Air Storage Reservoir and the Hydraulic Air Compressor can be attached in any convenient place, but if the water pressure, which is to operate Compressor, is a low-pressure water service, the Compressor should be connected in the basement, or at the lowest possible level (as it is not necessary to place Compressor and Air Reservoir in the same room), so as to allow of the waste water being carried to the sewer connection.

5955. The Champion Hydraulic Air Condensing Apparatus, complete..... \$60 00

THIS OUTFIT CONTAINING—

1 Champion Hydraulic Air Compressor, with Water Regulator attached.....	\$ 35 00
1 Air Receiver, handsomely decorated, diameter 12 inches, height 36 inches....	20 00
1 High Pressure (Inlet) Valve to Receiver.....	2 00
1 High Pressure (Outlet) Valve from Receiver.....	2 00
1 Air Regulator, to regulate the air pressure as it leaves the Receiver.....	7 50
1 First Quality Air Gauge, to indicate the pressure that goes to the Spray Tubes	2 50
1 Blow-off Cock, at lower side of Receiver	1 00
6 feet of Cloth-lined Tubing, to attach Compressor to Receiver, @ 25c.....	1 50
6 feet of Silk-covered Tubing, to attach Spray Tubes to Receiver, @ 50c.....	3 00
1 Set (3) Davidson's Spray Tubes and Rack.....	3 50
Davidson's Improved Cut-off.....	1 50
Total.....	\$ 79 50

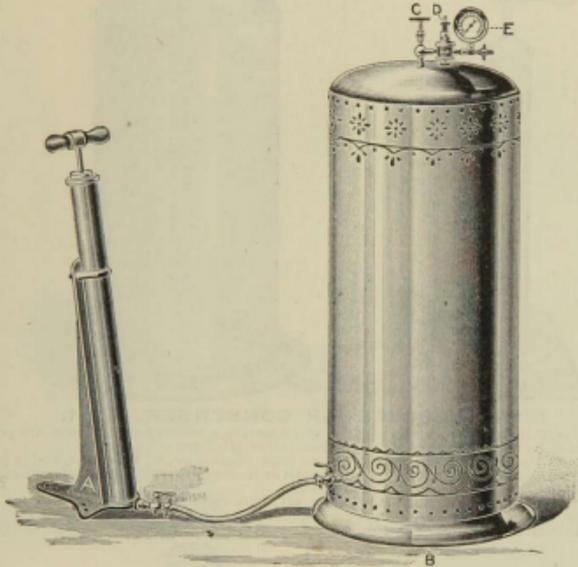
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.

LARYNGEAL—PHARYNGEAL.

APPLICATING.

CLEVELAND HAND-PUMP COMPRESSED AIR APPARATUS.



5956.

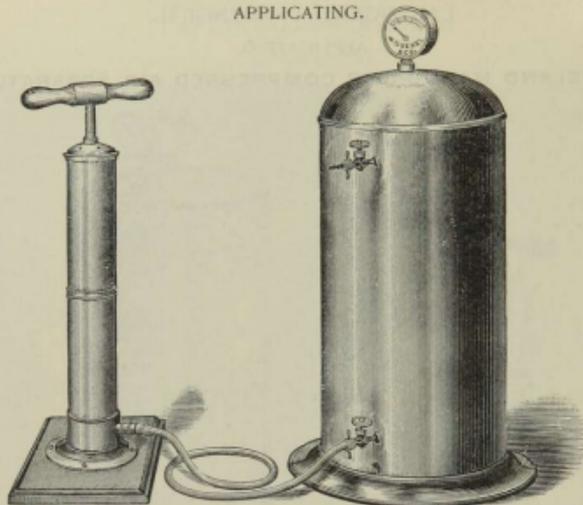
This apparatus is undoubtedly the most practical and convenient for physicians whose offices are in buildings not supplied with water from the water-works, and who therefore cannot avail themselves of the advantages offered by the apparatus listed and described on the opposite page. The pump supplied with this apparatus is a perfect low-pressure air pump, having a capacity of from 40 to 50 pounds to the square inch, and is the simplest and easiest working hand-pump in the market. It is mounted on an iron frame, at a slight angle, to comply with the motion of the body while pumping. The frame is drilled with screw holes, and can be screwed to the floor or to a foot-board, to steady the pump while operating. The pump stands 28 inches high, is 2½-in. diameter, and, with 24-inch stroke, gives a greater capacity than any other hand-pump made. The air receiver supplied is No. 5964, shown and fully described on page 308.

5956. Cleveland Hand-Pump Compressed Air Apparatus, complete..... \$ 40 00

THIS OUTFIT CONSISTS OF

1 Incline Plane Hand-Pump (A).....	\$10 00
1 Air receiver (B), 12 inches diameter, 36 inches high, handsomely decorated.....	20 00
1 High Pressure Angle Valve (C).....	3 00
1 Air Regulator and Arm (D).....	6 00
1 N. P. Air Gauge (E).....	4 00
1 N. P. Air Cock.....	2 00
3 feet Cloth-Lined Tubing, to attach Pump to Receiver, @18c.....	54
6 " Silk-Covered " " Spray Tubes to Receiver, @40c.....	2 40
1 set (3) Davidson's Spray Tubes and Rack.....	3 50
1 Davidson's Improved Cut-off.....	1 50
Total	\$52 94

MOUTH AND THROAT.
LARYNGEAL—PHARYNGEAL.
APPLICATING.



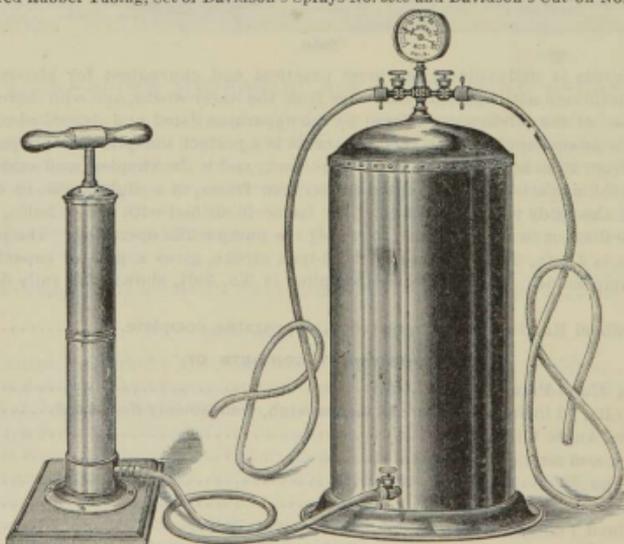
5957. BOECKEL AIR CONDENSER, No. 1.

The Receiver is 22 inches high and 10 inches in diameter, is thoroughly tested to 100 pounds hydraulic pressure, warranted to be air tight and to stand the maximum pressure of 50 pounds.

The Pump stands 21½ inches high, is mounted on neat wood base, 5 x 12 inches, and is particularly well adapted for the purpose designed, having most excellent Valves, thereby greatly increasing its working capacity. Size, 2 inches in diameter with 16-inch stroke.

Both Receiver and Pump are nickel-plated and well made and finished in every respect.

Price of Pump, Receiver and Test Gauge complete, including 4 feet Lined Rubber Tubing and 4 feet Silk-covered Rubber Tubing, Set of Davidson's Sprays No. 5989 and Davidson's Cut-off No. 5982... \$30 00



5958. BOECKEL DOUBLE VALVE AIR CONDENSER, No. 2.

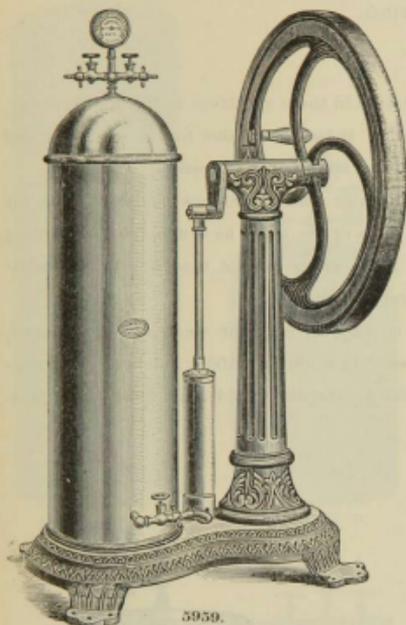
The Receiver and Pump are virtually the same as Fig. 5957, with exception of having two Exhaust Valves on Receiver and two Tubes to connect with Spray Tubes, thus allowing two applications at the same time.

Both Receiver and Pump are nickel-plated and well made and finished in every respect.

Price of Receiver, Pump and Test Gauge complete, including 4 feet Lined Rubber Tubing and 2 pieces of 4 feet each Silk-covered Rubber Tubing, Set of Davidson's Sprays No. 5989 and Davidson's Cut-off No. 5982..... \$32 50

MOUTH AND THROAT. LARYNGEAL—PHARYNGEAL. APPLICATING.

5959. BOECKEL'S COMBINED AIR CONDENSER AND PUMP.



5959.

5960. C. AND S. COMPRESSED AIR OUTFIT, NO. 80.

- 1 Air Pump, No. 80, 2 inches internal diameter, with 16-inch stroke.
 - 1 5-gallon Air Chamber, No. 80.
 - 1 Wall Bracket, No. 80.
 - 1 4-inch Pressure Gauge, No. 80.
 - 1 Cut-off Holder, No. 80.
 - 12 feet strong Brown Rubber Tubing and couplings.
 - 1 Cut-off, No. 86, complete, with air-filter.
- Price..... \$42 50

5961. C. AND S. COMPRESSED AIR OUTFIT, NO. 480.

- 1 Air Pump, No. 266, 1 5-16 in. diam., 10-in. stroke.
 - 1 1 1/2-gallon Air Chamber, No. 266.
 - 1 2 1/2-inch Pressure Gauge, No. 266.
 - 9 feet strong Rubber Tubing, with couplings.
 - 1 Cut-off, No. 216.
 - 1 Cut-off Holder, No. 80.
 - 1 Wall Bracket, No. 266.
- Price..... \$22 50

Outfits No. 80 and 480, being without minor outfits or atomizing tubes, are intended to be completed by selection, at the pleasure of the physician. See pages 312 and 313.

PORTABLE CASES.

The No. 480 outfit, being of a size to adapt it to carriage and use at house of patient, we make for them neat wood cases, with hinged top and brass handle. They contain compartments fitted for Oliver's Jar, Fig. 6418, and usually enough additional room for other tubes, vials and small articles.

5962. Portable Case for C. and S. No. 480 outfit... \$2 00

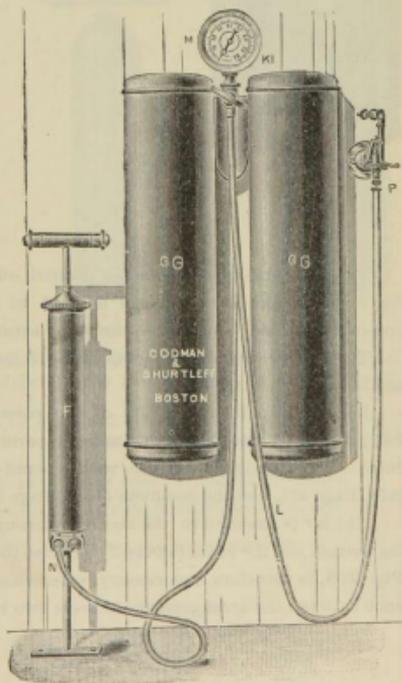
Figure 5959 illustrates one of the most desirable patterns of air condensing apparatus. The base, column and fly-wheel are made of iron, japanned in black and ornamented in bronze; the extreme height is 42 inches, the base is 14 by 24 inches, and the wheel 24 inches in diameter. The Pump and Air Receiver are made of brass, highly polished and nickel-plated. The Air Receiver is 32 inches high and 9 inches in diameter, provided with a 50-pound gauge and two exhaust valves, is thoroughly tested to 100 pounds hydraulic pressure and warranted to be air-tight.

The Pump has most excellent valves, thereby greatly increasing its working capacity; the chamber is 2 1/2 inches in diameter by 7-inch stroke.

Price, complete, including ten feet of silk-covered tubing, set of Davidson's Sprays, No. 5989, and Davidson's Cut-off, No. 5982..... \$65 00

C. AND S. DOUBLE CYLINDER COMPRESSED AIR APPARATUS.

For office use this Air Chamber is hung against the room wall upon a handsome bracket which accompanies it, thus obviating the necessity for a table or special stand, as required by the older and more clumsy pattern, upon which this is a decided improvement in strength and durability, as well as in appearance and convenience. The brackets (not easily shown in cut) are so made as to favor instant attachment and detachment of the apparatus when required for portable use. We make two sizes of this form of Air Chamber, both highly polished and nickel-plated.

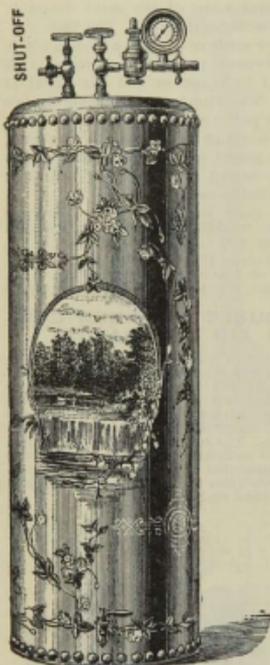


5960.

MOUTH AND THROAT.

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APPLICATING.



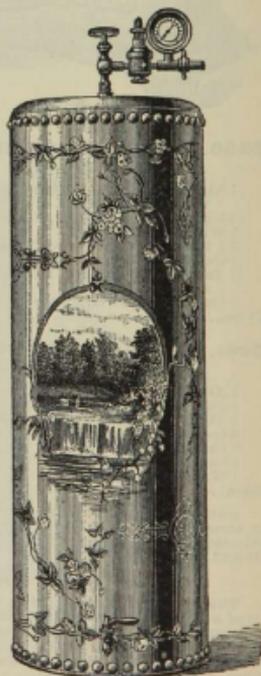
5963.—Size 12 in. x 36 in.

The air regulator controls the desired outflow of air from the receiver, and an air gauge is used to indicate at what pressure it is being supplied to the spray tubes.

The receiver stands 36 inches high, 12 inches in diameter, and is guaranteed air-tight.

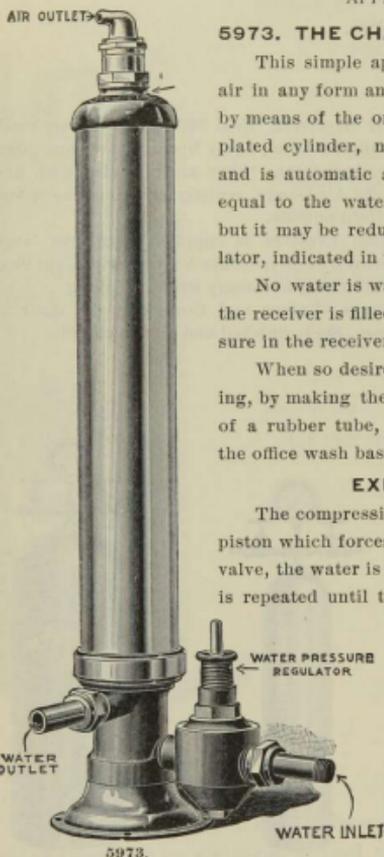
Receiver No. 5964 is made of the same material as Fig. 5963, and has identically the same superior decoration and finish. It is designed for use with a hand-pump. (See Fig. 5974, Page 311, and the complete outfit, Page 305).

The air is supplied to the receiver through the air cock at the bottom and the extra (shut-off) valve at the top, as shown in Fig. 5963, is therefore unnecessary, otherwise there is no difference between the arrangements of these two receivers.



5964.—Size 12 in. x 36 in.

MOUTH AND THROAT.
LARYNGEAL—PHARYNGEAL.
APPLICATING.



5973. THE CHAMPION HYDRAULIC AIR COMPRESSOR.

This simple apparatus is a great boon to all who use compressed air in any form and have heretofore depended on acquiring the same by means of the ordinary air pumps. It is a highly finished nickel-plated cylinder, not much larger than the ordinary T-hand pump, and is automatic and noiseless in its action. The pressure of air is equal to the water pressure of the system to which it is attached, but it may be reduced to any desired amount by means of the regulator, indicated in the illustration as "water pressure regulator."

No water is wasted, as the Compressor ceases to operate when the receiver is filled, but will again begin to work as soon as the pressure in the receiver has been reduced below the maximum.

When so desired the pump may be used without any extra plumbing, by making the connection to an ordinary water faucet by means of a rubber tube, and allowing the waste water pipe to empty into the office wash basin.

EXPLANATION OF OPERATION.

The compression of air is accomplished by the water forcing up a piston which forces the air out at air outlet, when, by the closing of a valve, the water is evacuated through the water outlet. This process is repeated until the pressure in the receiver is equal to the water pressure of the water system, when the pump ceases to operate. As soon as the pressure in the air condenser is reduced below the maximum, the pump again begins to operate, and thus the air condenser is constantly charged.

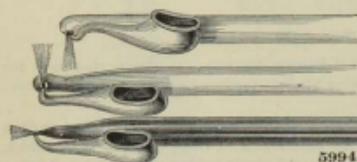
DIRECTIONS FOR USE AND CONNECTION OF CHAMPION AIR COMPRESSOR.

Connect the water system with the opening of the Champion Compressor marked water inlet, and then carry a pipe from the opening marked water outlet to the waste pipe. The pipe on top of the Compressor, marked air outlet, is then connected with the air receiver by means of a rubber tube, like an ordinary pump, and the Compressor is ready for operation and will keep the receiver filled with compressed air of the same pressure as is furnished by the water system. The pressure can be reduced proportionately by screwing up the water pressure regulator.

Dr. Arthur G. Hobbs, Atlanta, Ga., Professor of Ophthalmology, Otology and Rhinology, Southern Medical College, ex-President American Rhinological Association, writes us as follows:

"I have enclosed you cheque for Hydraulic Air Compressor, and am glad to tell you that I would not return it to you for ten times the amount I enclose. It has been in daily use in my consultation room now for some weeks, and it works without a flaw, beautifully, perfectly. It is just what I have wanted for years, and it far surpasses, in simplicity, utility and cheapness, anything I ever hoped to find. I thank you for calling my attention to it."

MOUTH AND THROAT.
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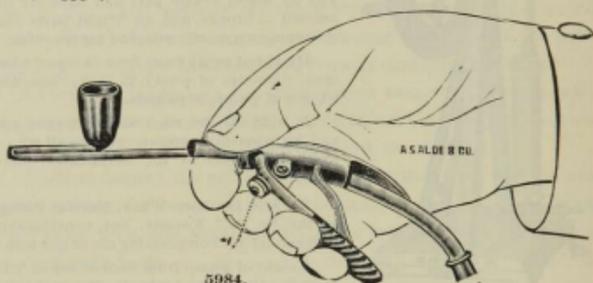
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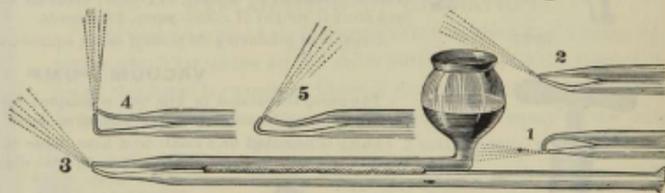
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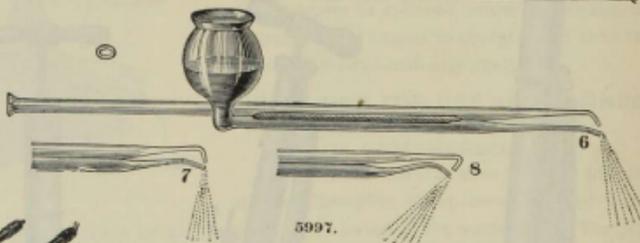
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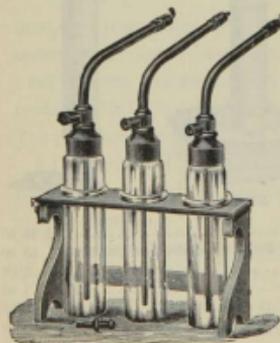
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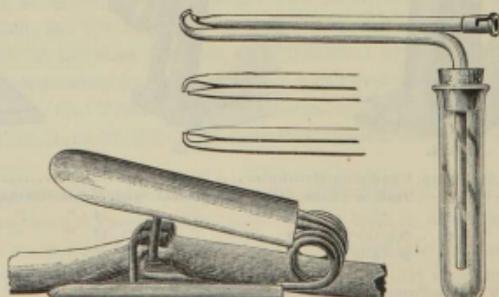
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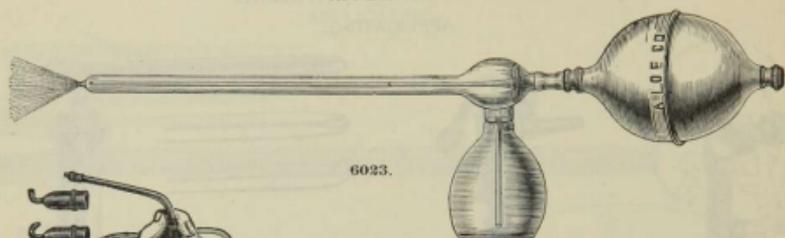
5989.



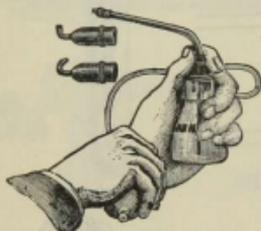
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MOUTH AND THROAT.
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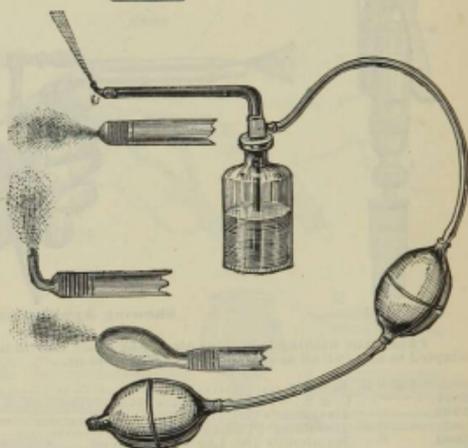
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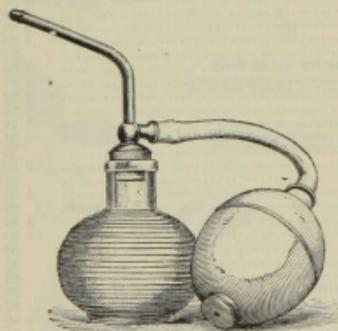
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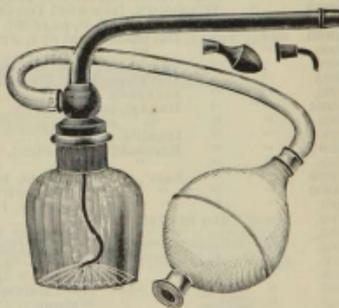
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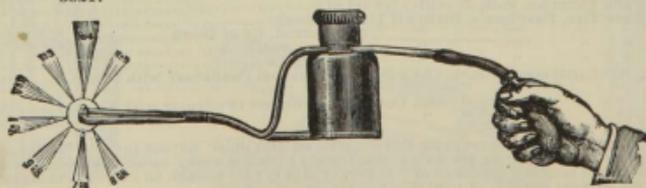
6029.



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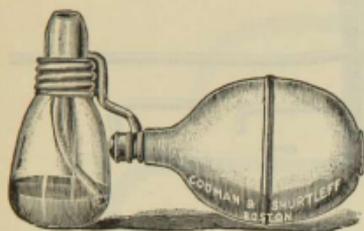


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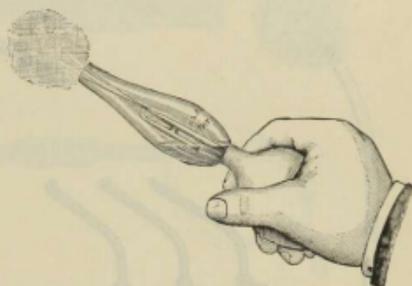
MOUTH AND THROAT.

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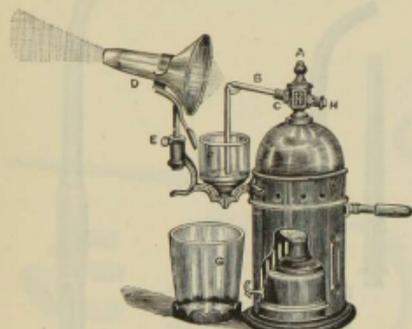
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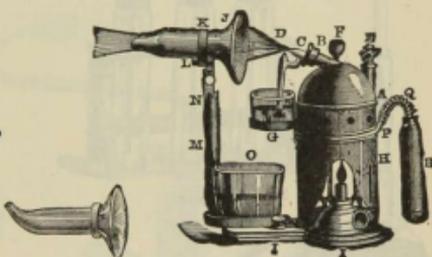
6040.



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6034.

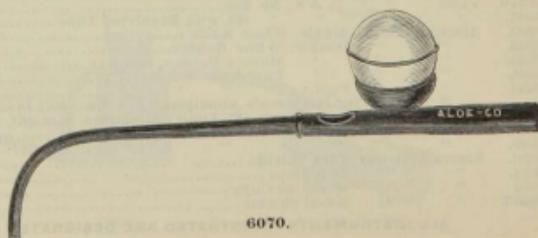
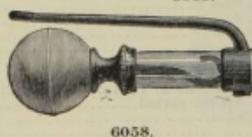
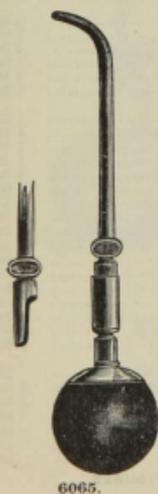
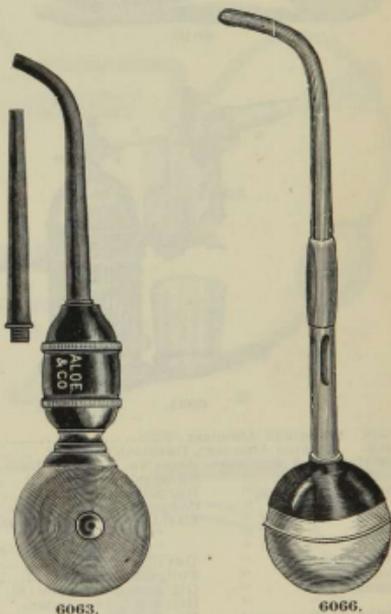
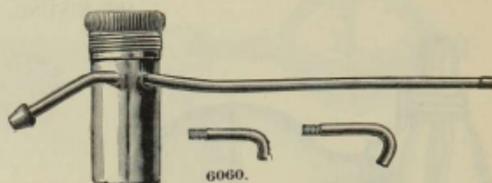
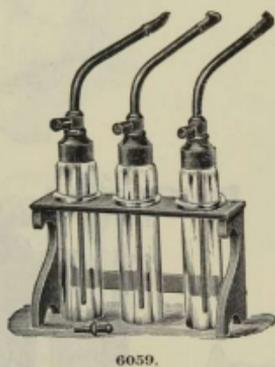
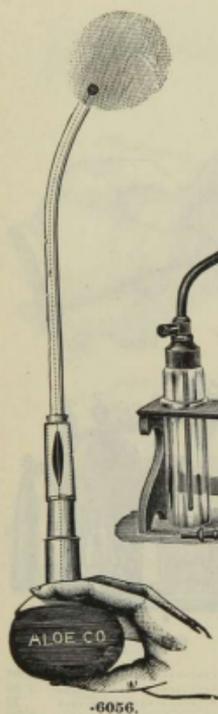


6035.

6019.	Albolene Atomizer.....	\$ 1 00
6020.	Cocaine Atomizer, Davidson's, No. 62.....	1 00
6021.	Hand Atomizer, Atlas No. 10, Single Bulb.....	75
6022.	" " Burgess, ".....	1 00
6023.	" " Burrall's, ".....	1 50
	Chapin's, Tracheal. See page 236.	
6024.	" " Davidson's, No. 59, 3 Tips, Single Bulb.....	2 00
6025.	" " " " 61, 2 " Double ".....	2 25
6026.	" " " " Set, No. 65 (see Fig. 5989), with Double Bulb.....	4 00
6027.	" " * DeVilbiss'.....	2 00
6028.	" " Fullgraf's, Laryngeal.....	4 50
6029.	" " Glasgow-Richardson (St. Louis).....	2 50
	Hibbard's. See index.	
6030.	" " Monarch, No. 2.....	1 25
6031.	" " Newman's.....	4 50
6032.	" " Richardson's.....	2 25
6033.	Ointment " Aloe's.....	1 25
6034.	Steam " Boeckel's.....	4 50
6035.	" " C. & S., No. 15, Complete, Glass Tubes.....	4 00
6036.	" " " " 245, Metal Tubes, Platinum Tipped.....	2 80
6037.	" " German, Nickel plated.....	1 75
6038.	" " Tiemann's.....	3 75
6039.	Trypsin " Chapin's.....	3 50
6040.	Vasol " C. & S., No. 356.....	1 00
6041.	" " " " 362, with Revolving Tube.....	2 00
6042.	Atomizer Bulbs, Single, White Rubber.....	35
6043.	" " Double, White Rubber.....	1 00
6044.	" " Maroon Rubber, Silk Net.....	1 25
6045.	" " " " Pure Gum, Silk Net.....	1 00
6046.	" " Foot, " ".....	4 00
	Tips, for Davidson's Atomizers. See Nos. 6011 to 6014, page 313.	
6047.	" " Glasgow's (St. Louis) Atomizers, Straight, Curved or Nasal.....	25
6048.	Tubes, for Steam Atomizers, any style, Glass..... each, 25c.; per dozen,	2 00
6049.	" " " " " Silver.....	1 50
	Steam Atomizer Face Shields.....	
6050.	" " " ".....	15
6051.	" " " ".....	15
6052.	" " " " Medicine Cups.....	10
6053.	" " " " Nasal Shields.....	35

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

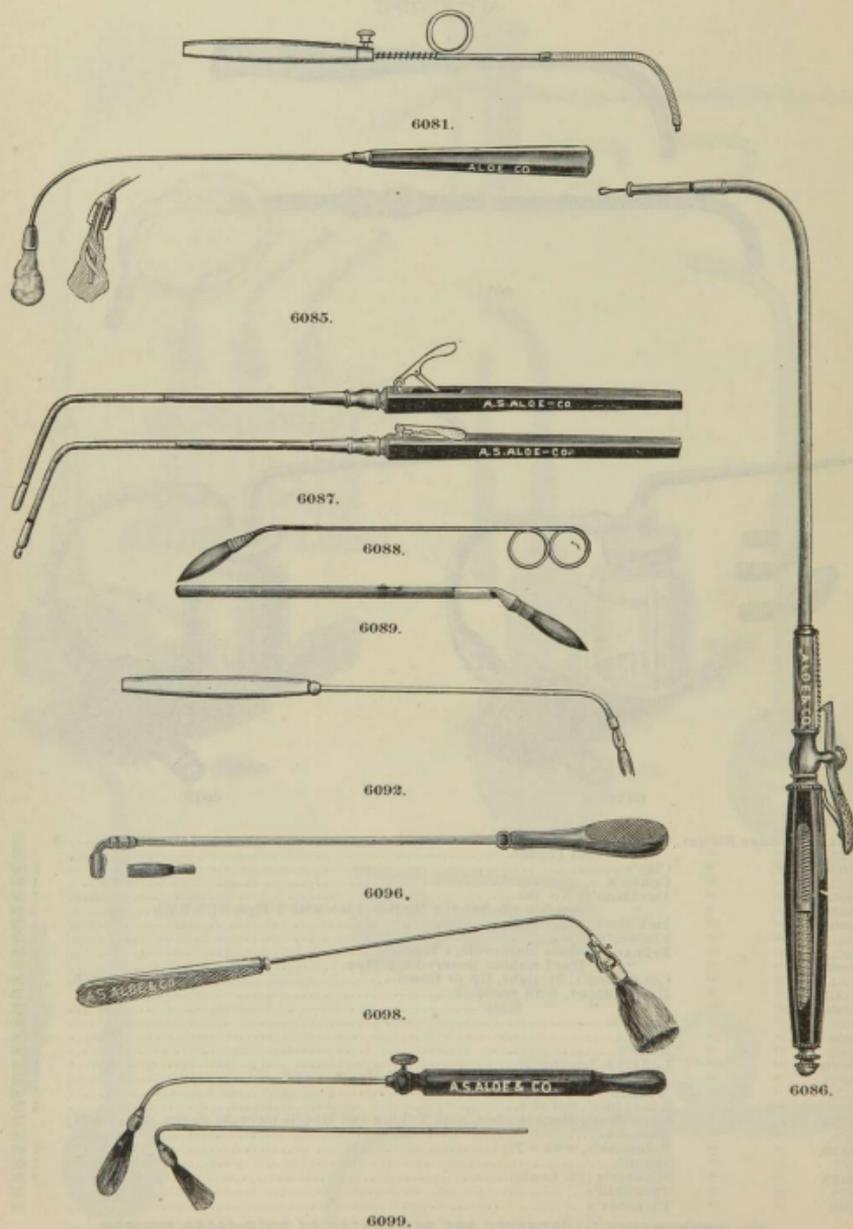
MOUTH AND THROAT.
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APPLICATING.



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APPLICATING.



MOUTH AND THROAT.

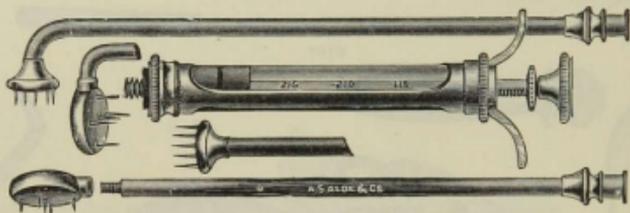
LARYNGEAL—PHARYNGEAL.

APPLICATING.

AN ADVANTAGEOUS METHOD OF TREATMENT OF SOME THROAT AFFECTIONS.

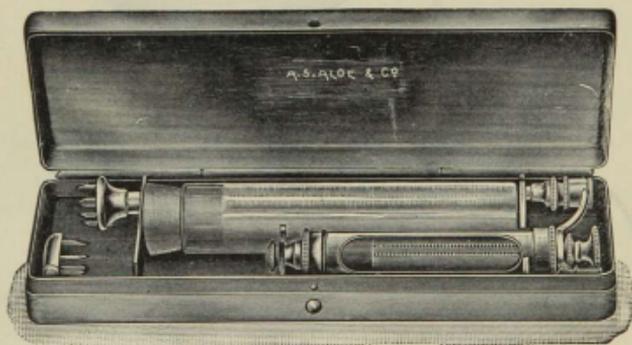
BY WM. S. BARKER, M. D., St. Louis.

The peculiar long-shafted, five-pointed hypodermic (?) syringe devised by Dr. Seibert, of New York, for the chlorine-water injection treatment of pharyngeal diphtheria, is an instrument of remarkable adaptability in the treatment of quite a number of pharyngeal affections. It was my pleasure, some months ago, to report the advantage which this instrument afforded as a means of making strychnine injections into the pharyngeal muscles affected by post-diph-



6116.

theritic paralysis, a method which seemed to produce marked improvement when the internal administration of the same drug had been tried with little effect. The instrument was, I judge, originally intended simply for attacking, isolating and rendering innocuous the ptomaine-generators of the diphtheritic membrane, but it has found, with very satisfactory results, a much wider range of usefulness in my hands.



6116 in Case.

As to its use as originally intended by the inventor, I can only say that comparatively few cases of faucial diphtheria have lately come under my care. It was in but one of these cases, (January, 1892), a girl aged seven, that the Seibert-chlorine-water injections were employed. There had been two fatal cases next door, whence the infection had evidently spread. My case presented considerable prostration, and both faucial tonsils and uvula were covered with the characteristic pseudo-membrane. Improvement began at once on adopting the membrane injection treatment. In two or three days all trace of the membrane itself had been removed, and the case progressed rapidly to recovery. No post-diphtheritic paralysis occurred in this case, as far as I could learn. Seibert claims that this is usually so in cases thus treated.

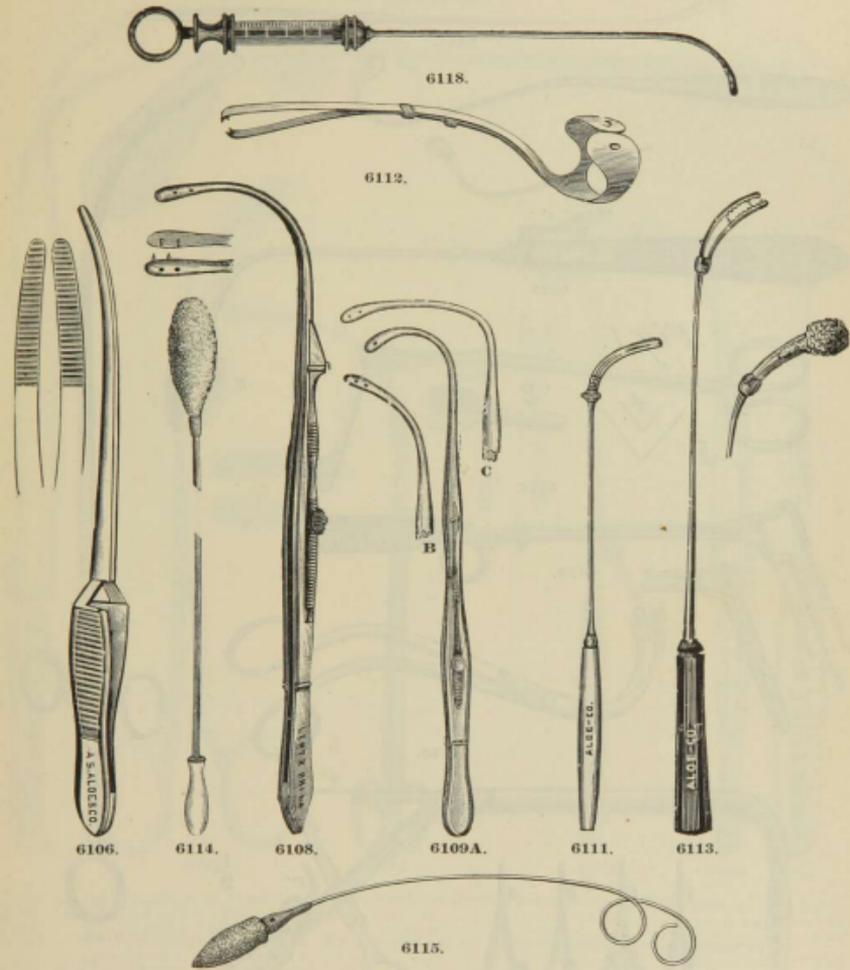
It has been imagined that there is difficulty in using the instrument on the child's throat. I have found it far from the case. In fact, in the above-cited case, and in another I have in mind, request came from the patient's themselves for the continuance of the employment of the Seibert syringe in preference to local astringents which had been used. Gargling, also, was kept up to some extent on general principles.

Written for the Medical Fortnightly.

MOUTH AND THROAT.

LARYNGEAL-PHARYNGEAL.

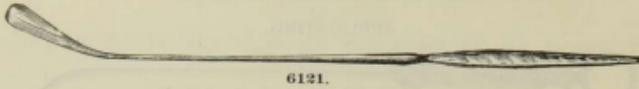
APPLICATING.



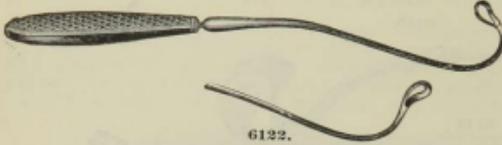
6106.	Forceps, Cotton-Holding, Cohen's Pharyngeal, Self-Retaining.....	\$1 85
6107.	" " " Miller's Laryngeal.....	2 75
6108.	" " " Sajous' Universal.....	2 75
6109.	" " Sponge " Cohen's, either style, A, B or C.....	3 00
6110.	" " " Elsberg's.....	4 50
6111.	Sponge Holder, Buck's.....	60
6112.	" " Finger.....	1 00
6113.	" " Granger's, Bayonet Catch.....	75
6114.	Sponges, Throat, Whalebone Handle.....	per dozen, 1 50
6115.	" " Wire Handle.....	80
6116.	Syringe, Diphtheria, Seibert's, with one oval and one round point, and one each straight and curved tube in case.....	7 50
6117.	Syringe, Goitre, Plated, with Platina Needles.....	3 50
6118.	" Laryngeal, Tobold's.....	2 00
6119.	" Pharyngeal, Boylan's, with Guarded Needle.....	4 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

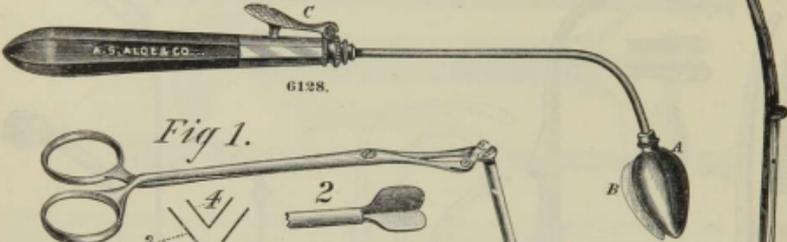
MOUTH AND THROAT.
LARYNGEAL—PHARYNGEAL.
OPERATING.



6121.



6122.



6128.

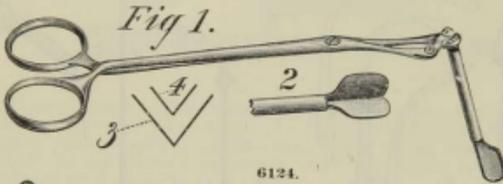
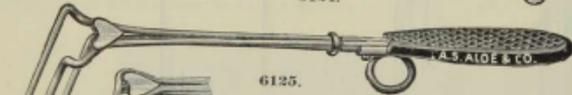


Fig. 1.

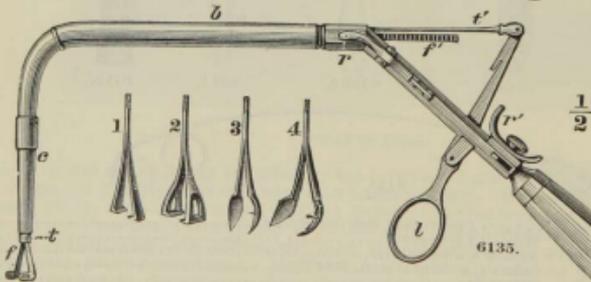
6124.



6125.

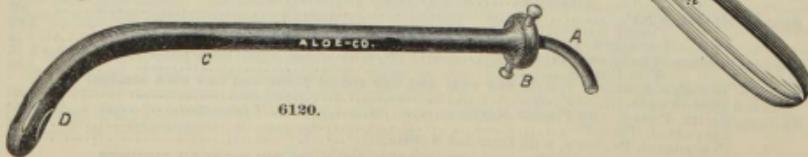


6140.



6135.

6129.

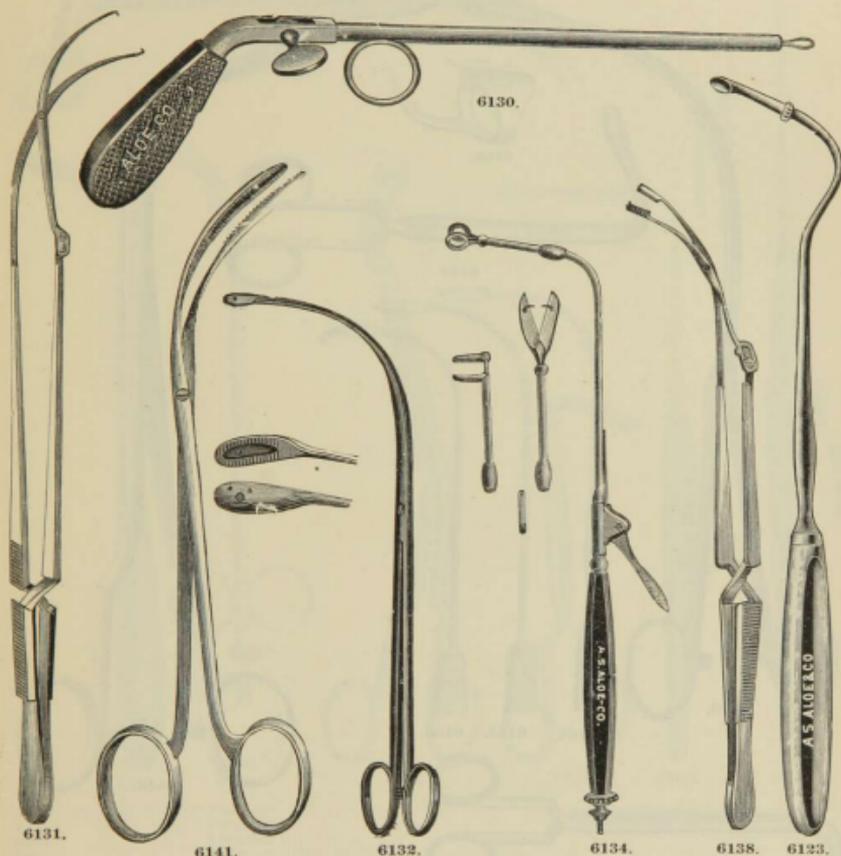


6120.

MOUTH AND THROAT.

LARYNGEAL—PHARYNGEAL.

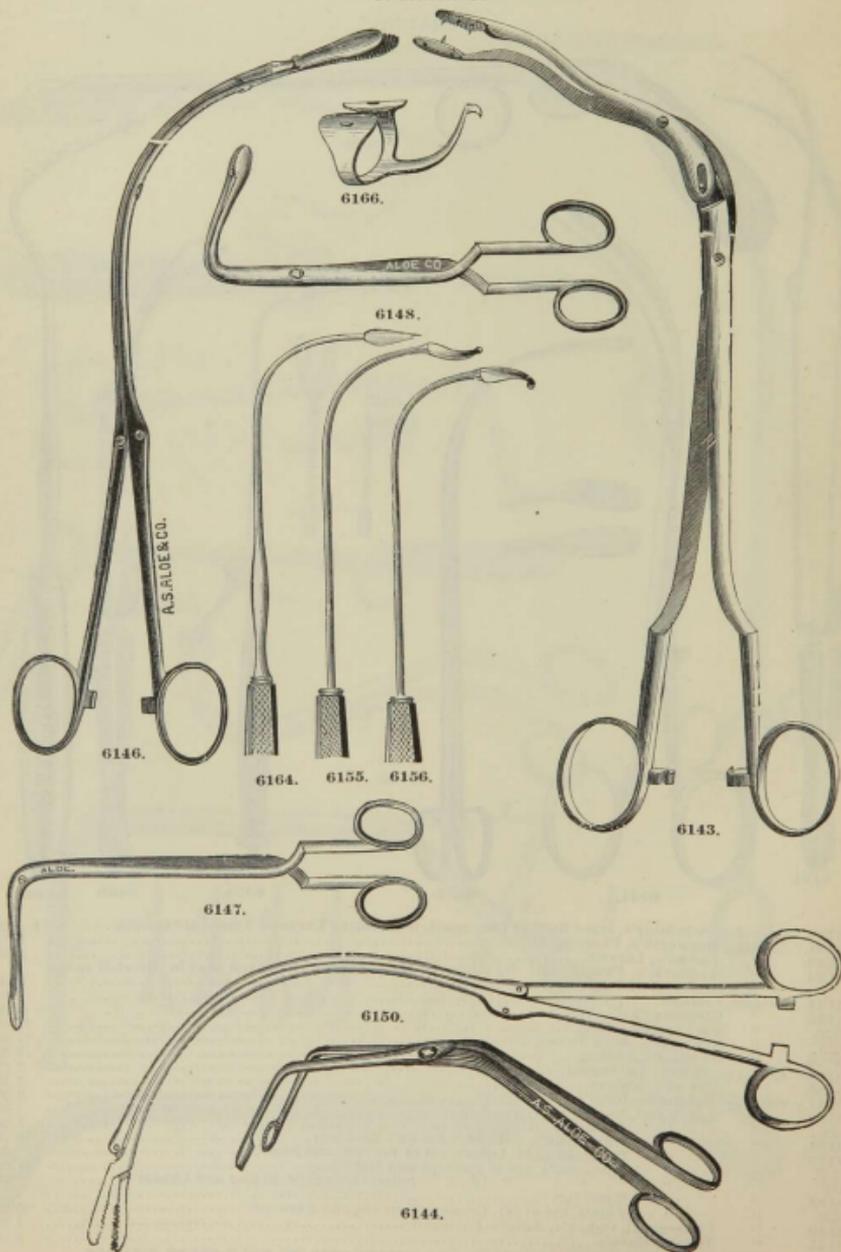
OPERATING.



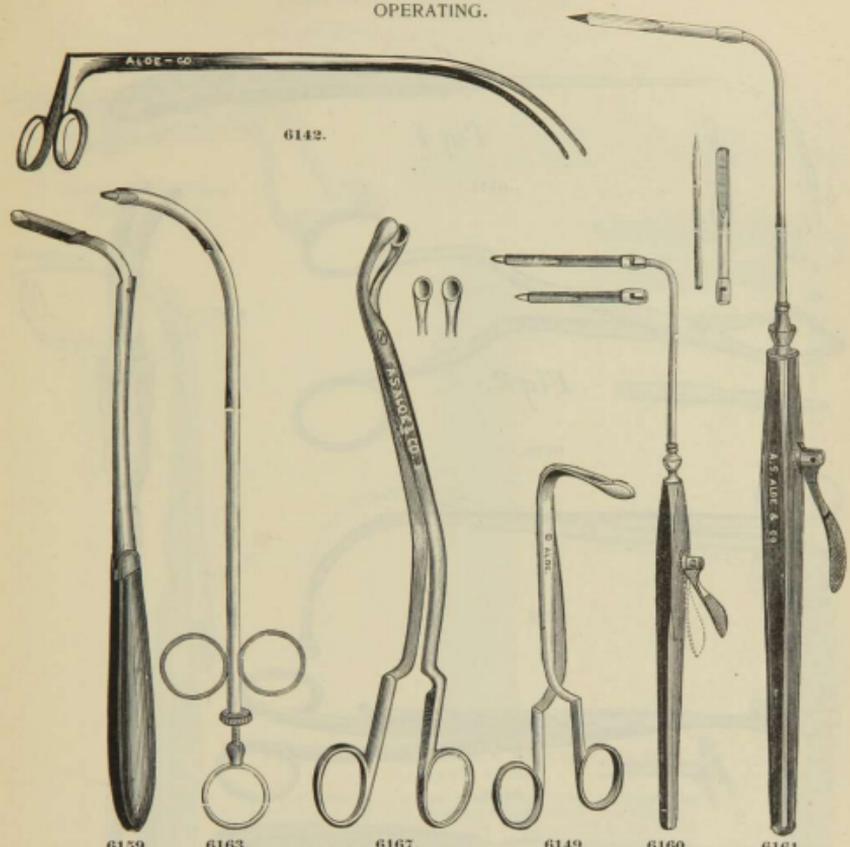
6120.	Catheter, Schrötter's, Hard Rubber Laryngeal, for treating Laryngo-Tracheal Stenosis.....	\$ 2 25
6121.	Curette, Bosworth's, Pharyngeal.....	1 25
6122.	" Cohen's, Larynx.....	1 50
6123.	" Lubinski's, Pharyngeal. By means of the set screw the spoon may be directed to the posterior wall or laterally.....	3 50
6124.	Dilator, Cohen's.....	7 50
6125.	" Gleitzman's.....	6 50
6126.	" Mackenzie's.....	15 00
6127.	" McSherry's, with Tube.....	12 00
6128.	" Whistler's, Cutting.....	13 50
6129.	Ecraseur, Gibb's, Laryngeal.....	2 25
6130.	" Penn's, Catgut.....	3 75
6131.	Forceps, Epiglottis, Brunk's.....	3 25
6132.	Laryngeal, Fauvel's.....	3 00
6133.	" Ingall's.....	3 50
6134.	" Mackenzie's, with Scissors and Ecraseur.....	18 75
6135.	" Rumbold's (St. Louis), set of Forceps and Scissors.....	30 00
6136.	" Schrötter's, set of Forceps and Lancel.....	11 25
6137.	" " (B), " Scissors, Caustic holder and Lancel.....	30 00
6138.	" Simrock's.....	3 25
6139.	" Türk's, set of (6), Lancets, Forceps and Ecraseur.....	25 00
6140.	" Pharyngeal, Cohen's, Antero-Posterior.....	3 50
6141.	Throat, Buck's.....	2 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.
LARYNGEAL—PHARYNGEAL.
OPERATING.



MOUTH AND THROAT.
LARYNGEAL—PHARYNGEAL.
OPERATING.



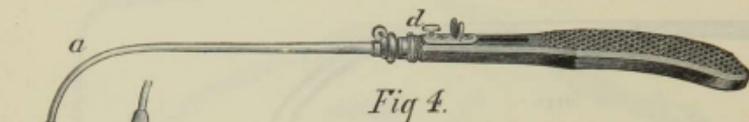
6142.	Forceps, Throat, Burgess'	.....	\$3 25
6143.	" " Cusco's	.....	3 75
6144.	" " Leonard's	.....	2 75
6145.	" " Lier's, Antero-Posterior	.....	5 00
6146.	" " " Lateral	.....	5 00
6147.	" " Mackenzie's, Antero-Posterior	.....	2 50
6148.	" " " Lateral	.....	2 50
6149.	" " " Cutting Edge	.....	3 00
6150.	" " Mathieu's, Antero-Posterior	.....	4 50
6151.	" " Waxham's (Mod. Cusco's)	.....	3 75
6152.	Guillotine, Mathieu's Laryngeal Polypus	.....	15 00
6153.	" Seiler's, with Laryngotome and Forceps in one handle	.....	12 00
6154.	Guillotine and Snare, Störk's Laryngeal Polypus	.....	13 50
6155.	Knife, Tobold's Laryngeal Polypus, Concave, Cutting Edge Posterior	.....	1 25
6156.	" " " " " Anterior	.....	1 25
6157.	Knives, Fränkel's Laryngeal, set of 7, fitting one handle	.....	9 00
6158.	Knives and Currettes, Hering's set of 5 Laryngeal Knives and 6 Currettes	.....	18 75
6159.	Lanct, Buck's Throat	.....	2 00
6160.	" Mackenzie's Concealed Laryngeal, 2 Blades	.....	9 00
6161.	" " " " " "	.....	10 50
6162.	" Schrötter's, with Forceps fitting same handle	.....	11 25
6163.	" Tobold's Concealed Laryngeal	.....	8 00
6164.	" " Plain	.....	1 25
6165.	" Whistler's Dilating Fig. 6128, page 322	.....	13 50
6166.	(Edema Glottis Instrument, Grant's	.....	1 25
6167.	Pharyngotome, Loewenberg's	.....	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

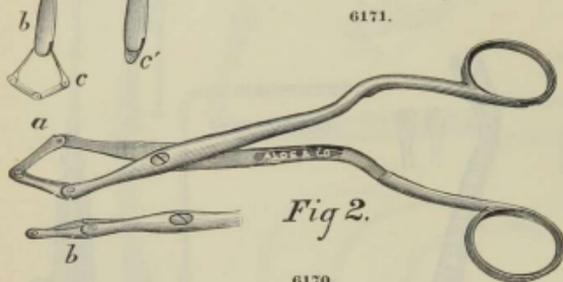
MOUTH AND THROAT.

LARYNGEAL-PHARYNGEAL.

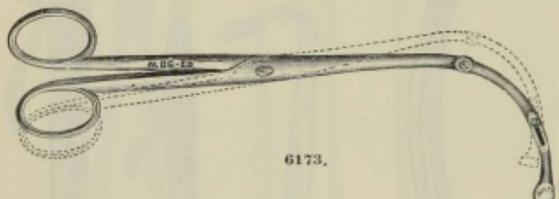
OPERATING.



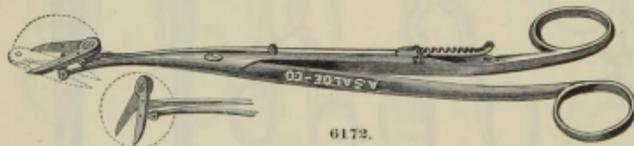
6171.



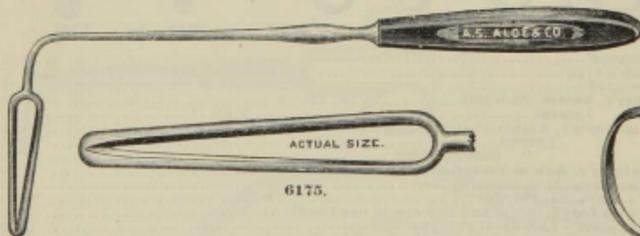
6170.



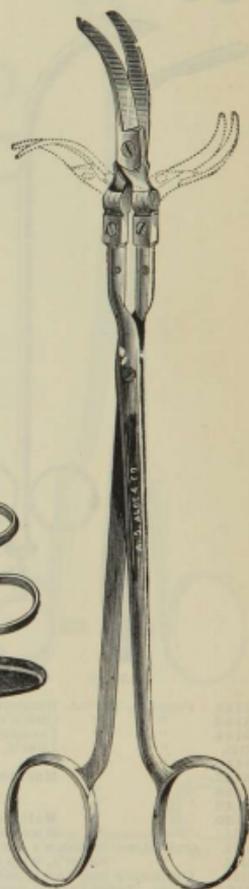
6173.



6172.



6175.



6169.

6168.	Scissors, Brun's, Polypus	\$ 6 00
6169.	" Heywood Smith's	9 00
6170.	" Sherwell's Laryngeal, No. 2	5 25
6171.	" " " " No. 4	10 50
6172.	" Tiemann's, Movable Point	6 50
6173.	" Tobold's, Polypus	4 50
6174.	Scoop, Schaeffer's, Laryngeal	6 00
6175.	Snare, O'Dwyer's "	2 60

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

MOUTH AND THROAT.

LARYNGEAL—PHARYNGEAL.

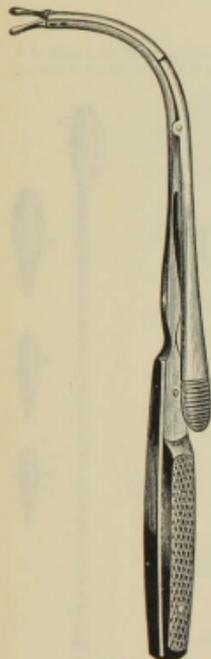
INTUBATION OF THE LARYNX.

DR. JOSEPH O'DWYER'S METHOD IN CROUP AND KINDRED DISEASES.

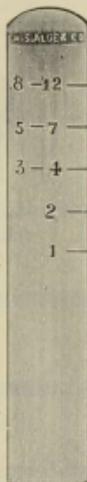


6179. O'DWYER'S MOUTH GAG.

See Denhard's modification of O'Dwyer's Mouth Gag, Fig. 5715, Page 278. The substitution having proven acceptable to Dr. O'Dwyer, we now put in all our O'Dwyer's Intubation Sets, Denhard's Mouth Gag in place of the original Gag.

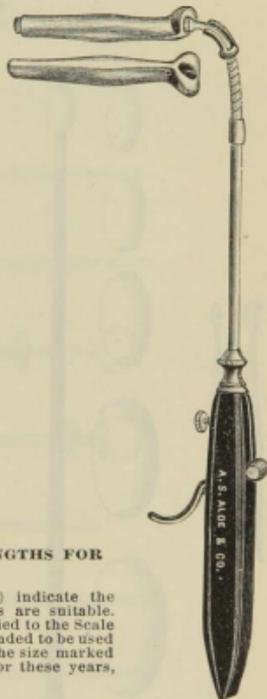


6178. O'DWYER'S EXTRACTOR.



6180. O'DWYER'S SCALE OF LENGTHS FOR LARYNX TUBES.

The numbers on the Scale (Fig. 6180) indicate the years for which the corresponding tubes are suitable. For instance, the smallest tube when applied to the Scale will reach the first line, marked 1, and is intended to be used up to the age of twelve or fifteen months; the size marked 2 is suitable for the next year; 3 and 4 for these years, and so on.



6177. O'DWYER'S INTRODUCER AND LARYNX TUBES.

The complete set of O'Dwyer's Instruments for intubation of the Larynx, consists of

6176.	5 Laryngeal Tubes of different sizes, each having an obturator.....	price, each,	\$ 2 25
6177.	1 Introducer.....		3 75
6178.	1 Extractor.....		3 75
6179.	1 Mouth Gag.....		3 50
6180.	1 Scale.....		40
6181.	1 Morocco covered, velvet lined case.....		4 00

\$27 65

Owing to the large number of O'Dwyer's Intubation Sets on the market, that are not correct patterns, many of the failures of physicians to obtain satisfactory results, can be ascribed to the use of these incorrect instruments, for not only is it necessary that the instruments be of good quality and finish, but that the minutest details of size and shape be conformed to with all possible accuracy.

Each one of our sets of O'Dwyer's Instruments contains the inventor's card, with his certification as to the quality and accuracy of the instruments furnished.

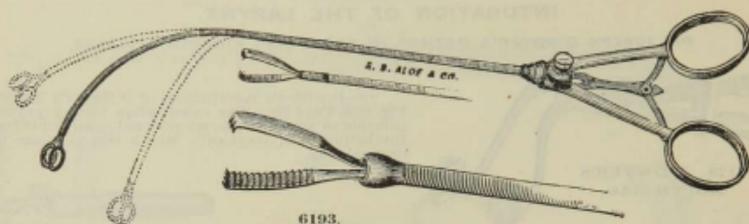
6182. O'Dwyer's Intubation Set, contents as above..... \$22 50

6183. Dr. Waxham's Set of Intubating Instruments containing O'Dwyer's Introducer; O'Dwyer's Extractor; O'Dwyer's Gauge; Waxham's Gag; Waxham's Trachea Forceps; Waxham's Respirator, and 5 of Waxham's Tubes, with Dr. Waxham's certificate as to quality and accuracy of pattern..... 30 00

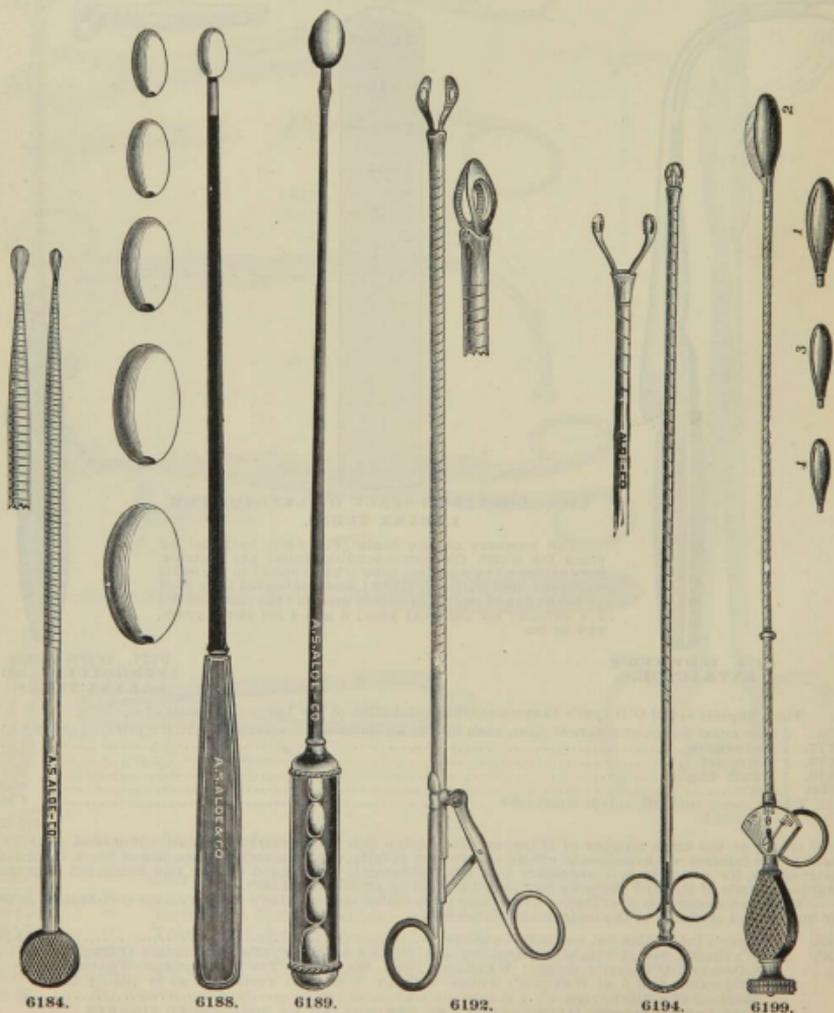
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ALIMENTARY.

OESOPHAGEAL.



6193.



6184.

6188.

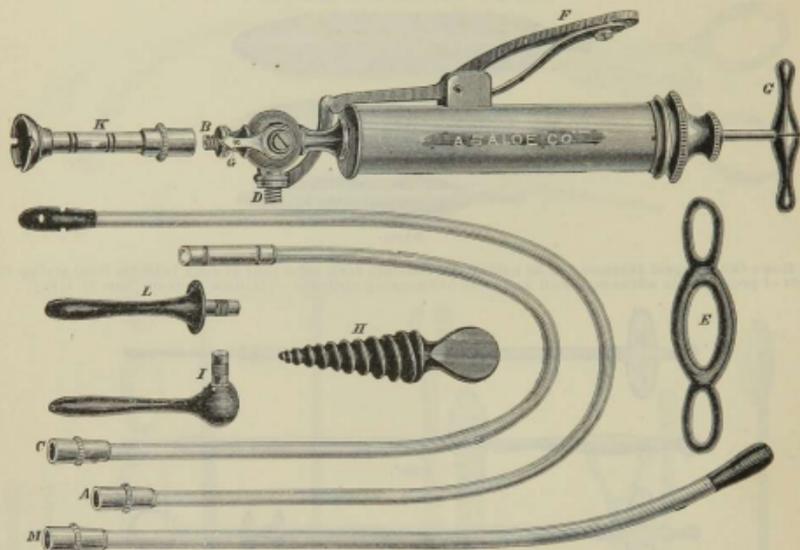
6189.

6192.

6194.

6199.

ALIMENTARY.
STOMACHAL.
LEVER STOMACH PUMP.



6207.

DIRECTIONS FOR USING THE STOMACH PUMP.

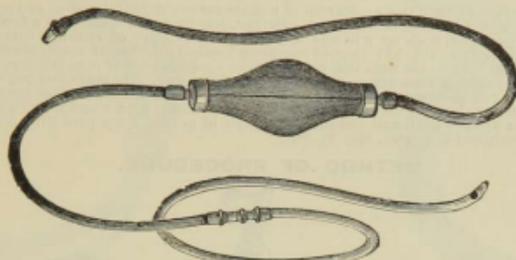
Attach the stomach tube, A, firmly on to the lower tap, B, of the pump, and affix the hose, C, on to the side tap, D. Place the mouth-gag, E, between the jaws of the patient, and introduce the stomach tube through the aperture. This mouth-gag serves the two-fold purpose of keeping the mouth open and of protecting the stomach tube against possible injury from the patient's teeth. After pressing down the lever, F, which opens the instrument for aspiration, the piston is drawn out by the handle, G; this fills the barrel of the pump with part of the contents of the stomach, which are then ejected through the hose, C, by first releasing the lever, F, and then pushing the piston down. A few repetitions of this operation will relieve the stomach of its fluid or masticated contents. The hand, S, connected with the lever, F, indicates that passage of the instrument shut towards which its point is turned. Before attempting to discharge the stomach of its contents a quantity of warm water should be pumped into it, as this will facilitate the operation very much. To charge the stomach merely reverse the action of the pump, having immersed the hose, C, into the fluid prepared for this purpose, which should be held in a narrow, deep bowl. The hard rubber screw, H, is used for reducing lockjaw or for forcing the mouth open, which is done by screwing it between the jaws.

"To feed a patient in spasmodic closure of the jaw it is well to know that there is behind the last molar tooth a space sufficient for the passage of a small tube, into the mouth."—"Medical and Surgical Landmarks" Luther Holden.

N. B.—In affixing the tubes to and detaching them from the pump their metal fittings only should be handled. After the use of gruel, or any thick fluid, wash out the instrument by pumping water through it. If the piston gets hard and allows water to pass over it, it should be oiled and a little worsted evenly wound around it under the leather, which will render it as perfect as at first.

Dr. Bowditch has used the lever stomach pump, in connection with trocars, as an aspirator. It may also be used as an injector in severe constipation of the bowels, the rectal tube, M, being supplied for this purpose; or, the tube, C, can be used in connection with either of the hard rubber pipes, I or L.

ALIMENTARY.
STOMACHAL.
TOSWILL'S STOMACH PUMP.



6208.

The instrument consists of an india rubber tube about half an inch in diameter and some four feet in length, provided with a ball of the same material, which is two or three inches in diameter and situated about eighteen inches from one end of it. In fact, it is almost a facsimile of an enema syringe, but without a valve. To the other end a Tiemann patent velvet-eyed stomach tube is attached. Let us suppose the instrument to be used in a case of poisoning where it is desired to wash out the stomach as speedily as possible. The patient, being seated in a chair or reclining on a couch, the stomach tube is oiled and then passed back in the mouth in the usual way until it has reached the upper part of the pharynx. Its passage down the œsophagus, as in the case of a catheter in the urethra, is effected by twisting it round and round in the hand until it has reached the stomach. We need scarcely point out how much less pain this soft, flexible tube must cause than the hard, somewhat inelastic tube generally used. The rest of the instrument is now adjusted to the stomach tube (the work of a second), and then, a jug of water being obtained, the end of the tube beyond the ball is introduced into it. The operator, with one hand pinching the india rubber tube somewhere between the ball and the patient's mouth, with the other hand compresses the elastic ball, and thus forces out some of the air contained in it, which bubbles up through the water into the jug. When this has been repeated two or three times all the air is forced out, and the ball becomes filled with water. If the jug be now raised a foot or two above the patient's stomach, and pinching of the tube discontinued, the instrument acts at once as a siphon, and the water flows from the jug in a continuous stream into the patient's stomach. When enough has been introduced the tube is pinched somewhere between the ball and the patient's mouth and the flow of water into the stomach is at once stopped, the water being retained in the ball by atmospheric pressure. If the end of the tube be now taken out of the jug and put into a basin below the level of the patient's stomach, upon the pinching of the tube being discontinued the contents of the stomach will at once flow out into the basin in a continuous stream, the instrument acting, of course, again as a siphon, only in the reverse way to that previously. When it is believed that the stomach is nearly empty the tube is pinched between the ball and the basin, the end of the tube put back into the jug and the whole thing repeated over again. The object of pinching the tube when the end of it is being shifted from the jug to the basin, and vice versa, is, of course, to retain the water in it by means of the atmospheric pressure, thus enabling it to act as a siphon. In case the holes at the end of the stomach tube become clogged with food they can be easily freed by pinching the tube between the ball and the jug; compression of the ball will then force out the fluid contained in it, and thus clear the holes. In conclusion, we would draw special attention to the low price at which this instrument can be obtained. The great majority of general practitioners do not possess a stomach pump. This is chiefly due to the high price of the instrument hitherto used. This objection being now removed, there can no longer be any excuse for any practitioner being unprovided with an instrument, the want of which may materially tend to lessen the chances of recovery in a case of poisoning.

6207. Lever Stomach Pump.....	\$12 00
6208. Toswill's " ".....	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

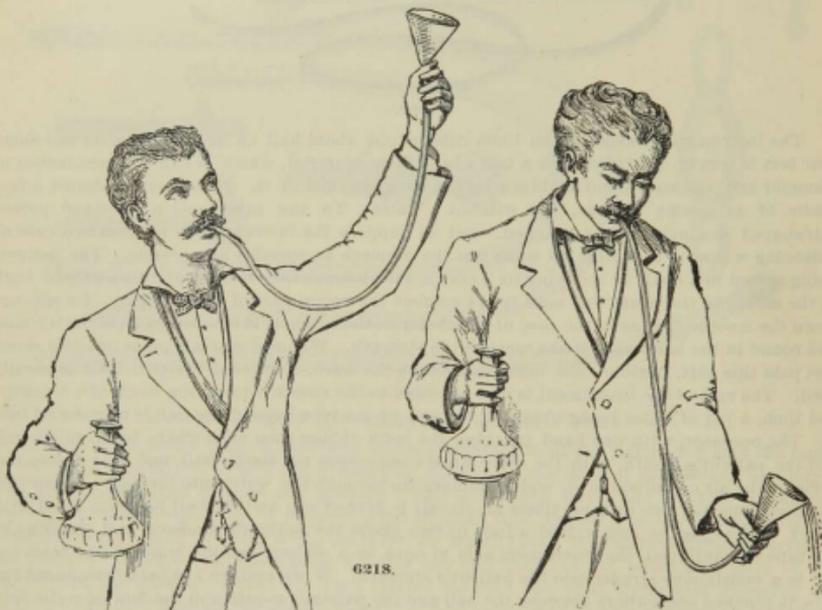
ALIMENTARY.

STOMACHAL.

LAVAGE OF THE STOMACH.

Washing out the stomach, and the aspiration of liquids secreted by it, is more and more practiced in Germany since Kussmann highly praised this method. Dr. Schliep uses it in nearly all affections of the stomach, especially in chronic gastritis, with or without dilatation. The cure of chronic catarrh, according to his account in the *Deutsche Klinik*, Vol. XIV., would require a limited number of applications; in simple catarrh five would suffice on an average. He uses this method even in dyspepsia of consumptive patients. In dilatation of the stomach he empties that organ with the pump every day. He performs the washing out, even in cancer, with pure water; or adds bicarbonate of soda to the water if the liquids be very acid; or permanganate of potash if these liquids show signs of fermentation; carbonic acid when they contain vegetable parasites; boracic acid as a disinfectant, and tincture of myrrh in atonic dyspepsia with abundant secretion of mucus.—*Medical and Surgical Reporter*, May 15, 1875.

METHOD OF PROCEDURE.



6318.

THE LAVAGE OF THE STOMACH.

"The introduction of the stomach tube is easy in most cases. You stand in front of the patient, make him open his mouth and protrude the tongue. You then introduce the tube into the pharynx. When it reaches the base of the tongue you ask your patient to swallow, and, during the movements caused by the effort, you advance the tube into the oesophagus; when the first part of the oesophagus is freely entered, you can push the tube easily and with more rapidity down into the stomach. For facilitating the descent of the tube it has been advised to make them slippery by application of oil, vaseline or glycerine; but, as fatty substances often leave a disagreeable taste, it is better to immerse the tube in Vichy water or milk.

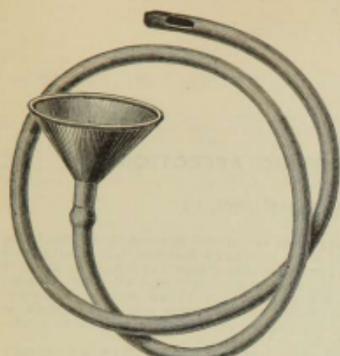
"The tolerance of the pharynx, oesophagus and stomach becomes easily established; after three or four sponges patients never object to the presence of the tube; they are soon able themselves to introduce the tube and conduct the washing. As to the quantity of the liquid to be employed, it varies and depends on the degree of dilatation and tolerance of the stomach; some patients will allow two, three, four and even five litres to enter, with others five hundred grammes excite efforts to vomit. Those who are capable should continue the lavage of the stomach until the liquid runs out as limpid as when it entered the tube. The return jet of liquid will sometimes cease to run on account of presence of particles of food closing the eyes of the tube; it suffices to let a little water run into the stomach to displace the obstacle.

"To completely empty the stomach of the liquid that has been introduced, bring into play the abdominal muscles and the diaphragm, and assist the careful efforts of these by pressure of the hands on the abdomen. If, in cases of greatly dilated stomachs, when the tube has been introduced too deeply, the extremity thereof curving up, the eyes rising to the superior part of the stomach the syphon ceases to act, you may correct by withdrawing the tube a little occasionally.

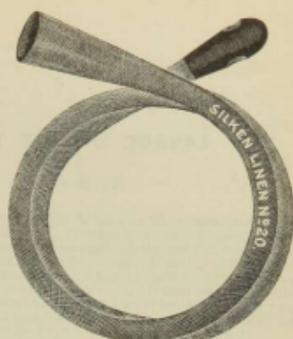
"During the first introduction of the tube certain phenomena are observed, the most important of which is dyspnoea. The patient's eyes become injected, his face reddens and he claims he cannot breathe. I cannot recommend too strongly to encourage your patient to breathe during the introduction of the tube, as well as during the time it remains in the stomach.

"Besides dyspnoea, nausea and vomiting are sometimes caused by the introduction of the tube. As soon as the first portion of the oesophagus or the stomach of certain sensitive patients is entered, a discharge is excited. By administering bromide of potassium internally, and making local pharyngeal applications of the salt during the three or four days preceding the first 'lavage' of the stomach, this accident is avoided."—From a lecture by Dr. Dujardin Beaumetz. O. Doin. Paris, 1883.

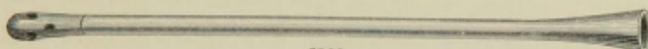
ALIMENTARY.
STOMACHAL.



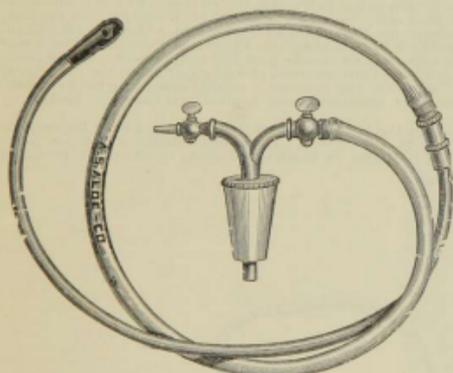
6217.



6214.



6209.



6212.

For those physicians who do not care to invest in a complete stomach pump, and who are already supplied with our Potain's or Tiemann & Co.'s Aspirator, we have the attachment as shown in Fig. 6212, consisting of a stomach tube connected by a rubber hose to a double stopcock with a conical rubber stopper of a size to fit almost any large bottle, jug or demijohn, such as may be found in most houses.

EINHORN'S STOMACH BUCKET OUTFIT,

Consisting of Silver Stomach Bucket, nest of 3 Porcelain Dishes, Glass Rod, Vial of Günzburg Solution, Litmus and Congo Paper.

METHOD.—A silk thread is fastened to the arch of the bucket, and a knot is made at a distance of 40 ctm. from the attachment. In order to obtain a sample of the stomach contents, we proceed as follows: The patient is asked to open his mouth widely, and the bucket is placed on the root of the tongue (almost in

the pharynx); the patient should now swallow once. The vessel after a short time (one to two minutes) enters the stomach. As soon as the knot of the thread is at the lips we are sure that the bucket is in the stomach, for the distance from the teeth to the cardia is usually 40 ctm. The vessel is then left in place for about five minutes and thereupon withdrawn. If the stomach is not empty, the bucket returns filled, and the amount is sufficient for making various important tests. In people suffering from an abundant secretion of the mucous membranes, the bucket might become filled with mucus before entering the stomach, and then in emptying the vessel we would find clear mucus instead of chyme. In such cases it is necessary to make the trial again and to cover the opening with a thin gelatinous capsule, which keeps away the mucus from the vessel on its passage to the stomach; there the capsule is dissolved and the stomach contents can now enter the apparatus. On its return from the stomach, the bucket being filled, the mucus cannot to any extent enter into it. The best time for obtaining a sample of the stomach contents is one hour after Ewald's test breakfast, consisting of a cup (½ litre) of tea, without sugar or milk, and a roll. Directions for examining stomach contents furnished with each outfit.

6209.	Nasal Feeding-Tube, Belfast Linen.....	\$ 75
6210.	" " " Paine's Soft Rubber.....	75
6211.	Stomach Bucket, Einhorn's (complete outfit).....	4 00
6212.	Stomach Pump Attachment.....	4 50
6213.	Stomach Tube, Cohen's Velvet Eye Tube, with Hard Rubber Funnel.....	2 25
6214.	" " " Silken Linen.....	1 25
6215.	" " " Soft Rubber, Plain.....	1 25
6216.	" " " " with Bulb Center.....	1 50
6217.	" " " " with Hard Rubber Funnel.....	2 50
6218.	" " " " Soft " " and Bulb Center.....	1 50
6219.	" " " " " " " " and Bulb Center.....	1 75

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ALIMENTARY.

STOMACHAL.

LAVAGE IN THE TREATMENT OF GASTRIC AFFECTIONS.

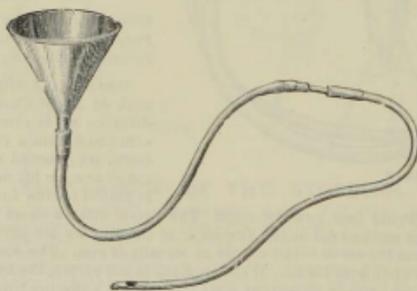
By SOLOMON SOLIS-COHEN, M. D., of Philadelphia, Pa.

Any agent, or any method, that promises to enlarge our therapeutic resources against those obstinate conditions of "gastric catarrh," "functional dyspepsia," etc., that are a source of distress to the patient, of annoyance to the physician, and of profit to the pepsin and patent medicine manufacturers, deserves at least a respectful consideration. The method that I desire briefly to present to the Society this evening—lavage, or irrigation of the stomach—has been employed for many years, in Europe, so that it can no longer be considered to be merely on trial. In America, however, it has not won general introduction, nor am I aware that any discussion of it has been had before this body. This, then, is my excuse for calling attention to a subject in connection with which I have nothing new to communicate.

It needed not the discovery of omnipresent bacilli, those evil spirits named "legion" of our modern superstition, floating about, "seeking whom they might devour," to enforce the value of cleanliness. The surgeon long ago discovered that clean surfaces would unite more promptly—that a wound kept free from foreign substances and irritating secretions would undergo a more rapid and more satisfactory course toward repair—than if the conditions were otherwise. In the treatment of the more readily accessible mucous surfaces, whether of the eye, the nose, the throat, the vagina, the urethra, the importance of keeping the parts free from morbid secretions, from the products of desquamation and other sources of irritation, is not a matter for debate. The extension of the same principle to the treatment of affections of the gastric mucous membrane is but a question of mechanical detail, not of therapeutic justification.

Kussmaul, in 1857, employed a doubly-acting stomach pump to irrigate the stomach with alkaline solutions (Carlsbad water), and it is to this observer that we are principally indebted for a study of the method, mechanically and therapeutically. It is said, however, by Dujardin-Beaumetz, that a French physician, Blatin, had proposed the practice in 1832. It is to another French observer, Fauché, of Paris, who communicated his procedure to the Academy of Medicine in 1879, that we chiefly owe the simplification of the technique by the use of siphonage—a process employed independently by Osor, of Vienna, at about the same time. Others have variously modified the details of instrumentation and practice. Among those who have contributed most to the popularization of the method is Dujardin-Beaumetz, who applied to it the name lavage, by which it is now described.

The manner of performing lavage recommended by the latter observer is that which I have followed in the few cases in which I could induce private patients to submit to it. The results obtained in these cases have been sufficiently encouraging to induce me to continue, at least to propose, it wherever it seems applicable.



6313.

The apparatus and its employment are sufficiently simple. An œsophageal tube, with blunt, double-eyed extremity, of flexible rubber, about twenty-eight inches long, and from one-quarter of an inch to a little less than half an inch in diameter—practically an enlarged catheter, and made of similar material—is attached by a small section of glass tubing to a soft rubber tube about one yard in length, into the free extremity of which a glass or rubber funnel of from six ounces to eight ounces capacity is inserted.

The patient sits or stands facing the physician. The œsophageal tube, having been dipped into warm water or warm milk, is placed within the entrance of the œsophagus, and is then propelled by successive pushes into the stomach, the process being facilitated by efforts at deglutition on the part of the patient.

Many patients quickly learn to introduce and swallow the tube without assistance. A mark on the tube shows when a sufficient length has been introduced (say eighteen or nineteen inches). The funnel is then elevated to the level of the patient's forehead, and from a pint to a quart or more of the lavage solution is slowly poured in, the glass junction tube permitting its passage to be watched and obstruction or attempted regurgitation to be detected. The patient's sensations will usually inform us when a sufficient quantity of the solution has entered the stomach. As the last portion of liquid disappears from the funnel the soft-rubber tube is pinched near the extremity, the funnel is rapidly inverted over a receptacle placed upon the floor, and the contents of the stomach are thus removed by siphonage. These manœuvres are repeated until the returned fluid is clear.

[Read before the Philadelphia County Medical Society, November 9, 1887.]

ALIMENTARY.

STOMACHAL.

LAVAGE IN THE TREATMENT OF GASTRIC AFFECTIONS.—CONTINUED.

The first introduction of the tube, and possibly the second and third, will occasion more or less dyspnea, often nausea and retching, rarely vomiting. These effects, though partly physical, are largely psychical, and will disappear with tolerance. The dyspnea may be immediately checked by insisting on full inspirations. Nausea is overcome as soon as the water enters the stomach, floating the tube away from immediate contact with the mucous membrane. In highly neurotic subjects it may be well to prepare for the operation, by at first administering full doses of bromides. I have tried anointing the end of the tube with a solution of cocaine in glycerine, but cannot claim any striking benefit from the procedure. Firm but skillful handling of the tube is the best sedative.

Sometimes during the withdrawal of the solution solid particles of food (grains of corn in one of my cases) may become impacted in the eyes of the tube, and the flow of liquid will cease. A little more of the solution must then be introduced, both to wash away the obstruction and to re-establish the syphon current. If the tube should be pushed too far into the cavity of the stomach it may curve upon itself, and the syphon will not work; withdrawal of the tube for a few inches will remedy this. If the flow is not readily established, it is said that it may be favored by manipulation of the stomach, and efforts at coughing may be made by the patient. I have not had occasion to resort to these devices.

When lavation alone (washing) is the object of the procedure, a weak alkaline solution is employed; a drachm or two of sodium sulphate, sodium chloride, sodium borate, or sodium bicarbonate, in a quart of warm water at about 100° F.

Should it be considered necessary, however, various sedative or anti-septic medicaments may be added to the lavage solution. Those most highly recommended are resorcin (1 per cent), boric acid (1 per cent), creosote (1 per cent), carbon disulphide water (one part of a solution containing 15 grains to the quart, or two parts of water), charcoal powder (two to four tablespoonsfull), chloroform water (saturated), bismuth subnitrate (two tablespoonfuls to the pint).

In the use of agents like resorcin, carbolic acid, etc., the liability to absorption if the solution be not all removed must not be forgotten. In using what he terms "milk of bismuth," Dujardin-Beaumez advises that the solution be allowed to remain a few minutes in the stomach, so as to allow the bismuth to be deposited, after which the supernatant liquid may be withdrawn.

Lavage should be performed when the stomach is empty; therefore some authors recommend the hour of rising in the morning. I have found noon—say four or five hours after a light breakfast—or the same interval after lunch or dinner, to be more convenient for myself, and to answer as well in most instances. One lavation daily is usually enough. After a while the intervals may gradually be lengthened, until the process is discontinued.

The therapy is sufficiently obvious. The effects are said to be most marked in cases of dilatation of the stomach, in which delayed digestion, retention and putrid fermentation of the contents of the stomach, give rise to distressing symptoms. In all cases in which the gastric mucous membrane is in a catarrhal condition, coated with the glairy mucus seen amid vomited matters, or bathed in the sour liquid ejected as "water-brash," in which the production of gastric juice is impeded, or the secretion altered in quality by an abnormal condition of the membrane, extending perhaps into the tubules, or by the presence of irritative matters, in which fermentation of ingested and retained matters takes place; in short, in the typical case of chronic gastric catarrh or acid dyspepsia, lavage will be found highly useful. It removes any undigested matters remaining in the viscus, cleanses it from products of desquamation and morbid secretion, and gently stimulates the glands and absorbs to healthy action. In gastralgia, dependent upon the presence of irritating matters, and sometimes in cases apparently idiopathic, large, with the employment of chloroform or bismuth as a sedative, is said to be productive of cure. I have had no opportunity to test the statement personally.

In the chronic gastritis of drunkards, the measure is said to be an excellent palliative, nor is hæmatemesis considered a counter-indication, unless actual ulceration exists. In cancer of the stomach it is useful as a palliative measure; and my first practical acquaintance with this method of treatment was made during my student days, in two cases of gastric carcinoma treated after the method of Kussmaul, with doubly-acting stomach-pump, at the hospital of the Jefferson Medical College, in the clinic of Prof. DeCosta. Within the last few years two new applications of the lavage method have been found. In 1885, at Kussmaul's clinic, and subsequently by Senator, Rosenthal, and other observers, it has been successfully employed in the treatment of ileus. Kussmaul explains this result by the theory of relief to the tension above the point of constriction, caused by gases and accumulated feces, with concomitant restoration of normal peristaltic action. Since 1884, Leube and other observers have made chemical and microscopical examinations of the gastric secretions and other matters removed from the stomach of various periods of digestion, and claim to have thus obtained valuable diagnostic indications. This subject, however, is beyond the scope of the present communication.

While the practice is usually confined to chronic cases, I have had occasion to resort to it in one case of acute indigestion with obstinate vomiting, in a phthisical, slightly hysterical, female, with gratifying result—in that the vomiting, subsiding to diet and medication, yielded to two applications of the stomach tube. In this case, before withdrawing the tube, warm milk was introduced into the stomach, a measure advocated by French writers. Indeed, there can be little doubt but that, in connection with gavage, or forced feeding, irrigation of the stomach assists in maintaining nutrition in phthisis and other wasting diseases.

(Extract from "The Journal of the American Medical Association," December 10, 1887.

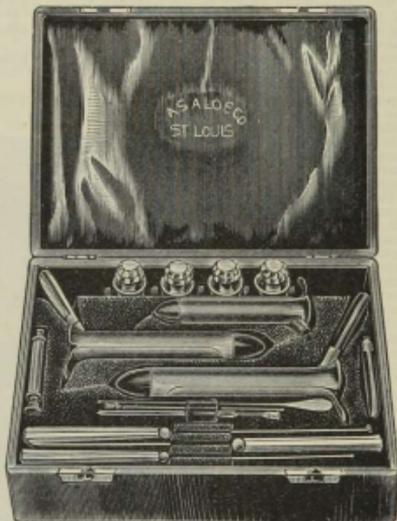


6213. Showing Application.

ALIMENTARY.

ANAL AND RECTAL.

ALOE'S IMPROVED RECTAL SET.



6220.

- CONTENTS:** 1 Aloe's Rectal Speculum, Large.
 1 Aloe's Rectal Speculum, Medium.
 1 Aloe's Rectal Speculum, Small.
 1 Aloe's Haemorrhoidal Syringe.
 1 Aloe's Rectal Curette.
 1 Aloe's Rectal Ligator.
 1 Aloe's Rectal Probe, Long.
 1 Aloe's Rectal Probe, Short.
 4 Cut-glass, ground Stoppered Vials, for Holding Solutions.
 1 Fine Morocco-covered Case, Silk Plush lined.

Price \$25 00

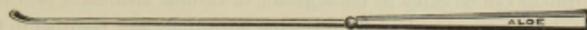
All instruments are made of silver, with ivory handle, with the exception of the Rectal Specula.
 A complete Rectal treatise, containing formulæ for injection and application sent with each set.

ALIMENTARY.

ANAL AND RECTAL.

SEPARATE INSTRUMENTS CONTAINED IN ALOE'S RECTAL SET.

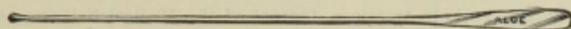
(IMPROVED.)



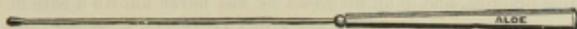
6284. Rectal Curette (Sterling Silver, Ivory Handle).



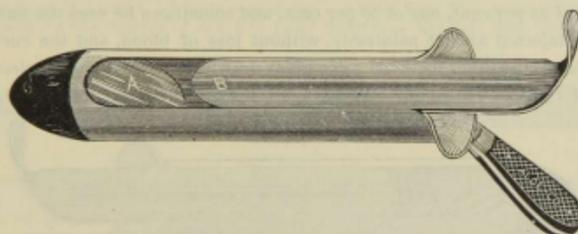
6327. Rectal Ligator (Sterling Silver, Ivory Handle).



6349. Rectal Probe, short (Pure Silver).

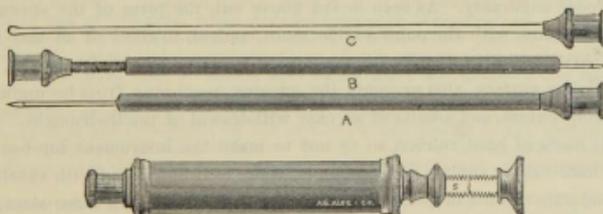


6350. Rectal Probe (Pure Silver, Ivory Handle).



6222. Rectal Speculum (described on Page 338).

As a companion to the above Speculum, we have devised a Hæmorrhoidal Syringe, the cut of which is given below. This Syringe has given the greatest satisfaction to all who have used it.



6367. Sterling Silver Hæmorrhoidal Syringe.

The instrument consists of a Silver Syringe, made to hold 30 minims, with cap to prevent packing drying out, one Sharp Injecting Needle A, which has an outer canula as represented at B, by which the depth of introduction can be regulated; this adjustable feature cannot be too highly recommended, for in using a needle without this adjustable canula, it is liable to pass through the tumor and inject into the bowel. The needle point is made of gold, making it impervious to the action of any fluid or fluids that may be used; the rest of the instrument is made of sterling silver. The Fistula Needle C is made of pure silver, with a probe end, and can be used to great advantage in the exploration and injection of sinuses, etc.

ALIMENTARY.

ANAL AND RECTAL.

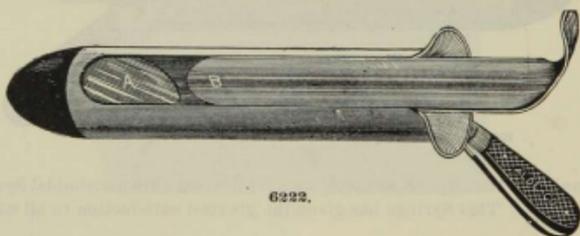
ALOE'S IMPROVED RECTAL SPECULUM.

FOR THE TREATMENT OF HÆMORRHOIDS BY INJECTION.

That hæmorrhoids can be cured by the injection of various medicines into them there can be no doubt. Owing to the dread of the torturing operations now resorted to for their cure, such as the knife, ligature and actual cautery, most persons prefer to suffer rather than submit to the painful operations which they suppose alone can give them permanent relief. All of these operations are more or less dangerous. They are painful and often require the use of anæsthetics during the operations.

Dr. Kelsey, of New York, in American Journal of the Medical Sciences, again urges the treatment of hæmorrhoids by injection of carbolic acid. After an ample experience this has become his routine practice, and in all his cases he has never known a patient to abandon the treatment after it was begun, and he has never failed to effect a perfectly satisfactory cure by it, and he has never had an accident of serious nature with it. He uses three solutions, one of 15 per cent, one of 33 per cent, one of 50 per cent, and sometimes he uses the pure acid.

Piles can be injected almost painlessly, without loss of blood, and the cure is as certain and permanent as by any other method. The great drawback to the plan of injecting piles has been the want of a proper speculum. We have devised the one here represented, and find it to



answer the purpose admirably. As seen in the above cut, the form of the speculum is about the same as the Ashton, with the point a trifle more conical, to allow of an easy introduction. The slide B is partly withdrawn, showing the mirror A, placed at an angle of 45° , which, while acting as a reflecting surface, also prevents the mucous membrane from becoming engaged in the point of the speculum, and admits of an easy withdrawal of the instrument. The point of the speculum is made of hard rubber, so as not to make the instrument top-heavy. Another advantage the hard-rubber conical point offers is, when well lubricated with vaseline it greatly facilitates introduction of the instrument. These specula are made in three sizes, the smallest being $\frac{3}{4}$ of an inch in diameter by 4 inches long; the medium, $\frac{7}{8}$ of an inch in diameter by 5 inches long; the large, 1 inch in diameter by $5\frac{1}{2}$ inches long. The advantage claimed for this speculum is, that the smallest part of the mucous membrane can be exposed, to the exclusion of all other parts. The first principle is, to never operate while they are protruded and grasped by the sphincter; always return them within the sphincter and inject them in their natural position, when they are almost empty of blood, and the treatment will be almost painless and entirely devoid of danger. After locating the tumor to be operated on, the speculum is introduced, the slide withdrawn until its end is about the center of the tumor, then the hypodermic needle is introduced and the medicine injected.

ALIMENTARY.

ANAL AND RECTAL.

THE APPLICATION OF WALES' BOUGIES FOR DILATATION OF RECTAL STRICTURES.

"* * * With the view of obviating all possible objections to mechanical dilatation, I devised, for the first time, in 1876, rectal bougies made of pure gum (not, as heretofore, of gummed cloth webbing or other materials) of exceeding flexibility, smoothness and varying in size.

"A conduit runs through the centre and terminates in the point of the bougie, for the purpose of commanding a stream of water that might be required at any moment to facilitate the introduction of the instrument. The points of the bougies are made in various shapes, spherical, conical and olivary, with the view of meeting the necessities of special cases. The surface is perfectly polished, which, by reducing friction, increases the facility of introduction and eliminates the unpleasant sensation of dragging caused by a rough instrument.

"The method of introducing the bougie is simple. The patient, after the bowels have been cleaned out by injection, is placed, reclining on his left side, upon an ordinary operating table, the thighs flexed and the buttocks just overhanging its lower edge. The smallest sized instrument likely to pass the stricture is smeared with vaseline, its point inserted into the anus and gently pushed onward in the following manner: The right hand grasping the bougie close to the anus, the whole perineum is pressed upwards, which will advance the point of the instrument; the left hand now steadies it while the right is slid downwards for a lower hold, the perineum, of course, settling with it; the bougie is again pushed forward in the same manner until the obstruction is passed. I have occasionally found that this manœuver may be greatly facilitated by sinking the fingers of the left hand deep into the left iliac region and drawing



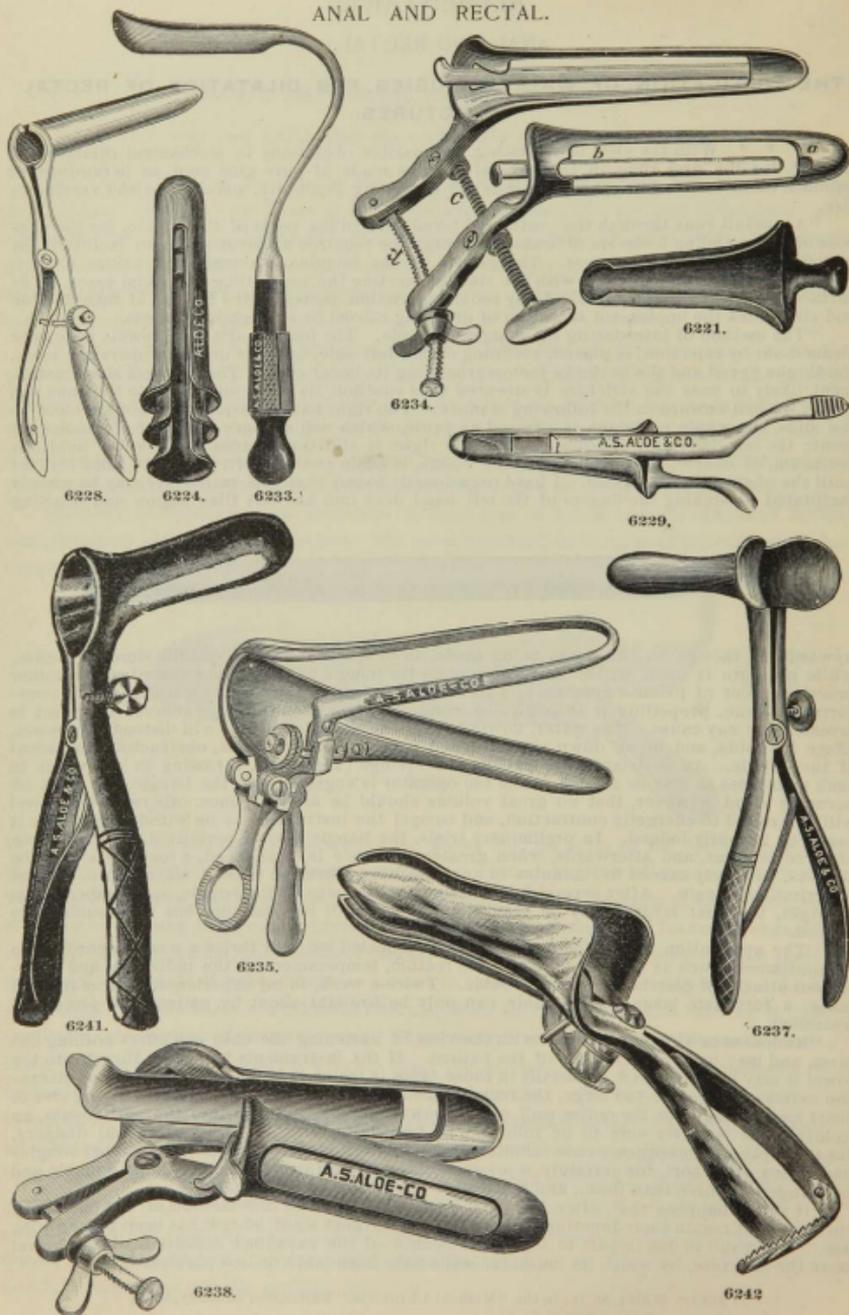
upwards, as though an effort was being made, so to speak, to stretch out the sigmoid flexure, while pressure is made at the same time upon the bougie in the manner described. Another practical point of prime importance is to employ a stream of water, as warm as can be comfortably borne, propelling it through the conduit of the instrument whenever its point is arrested for any cause. The water, flowing from the distal aperture, will distend the bowel, efface its folds, and break down any hardened fœces which may exist, obstructing the ascent of the bougie. An assistant may manage the syringe (Fig. 6892), throwing in the water in such quantities as may be needed, while the operator is engaged with the bougie. It must be borne in mind, however, that no great volume should be used at once, otherwise the bowel will be excited to energetic contraction, and compel the instrument to be withdrawn before it has been properly lodged. In preliminary trials, the bougie may be permitted to remain two or three minutes, and afterwards, when greater tolerance is established, a longer stay may be allowed. I rarely exceed five minutes in any case, even when the patient makes no complaint of irritation or pain. After several introductions of one size of the bougie, say number seven or eight, the next largest may be taken, and so on until the stricture has been sufficiently dilated.

"The application of the instrument may be repeated twice or thrice a week, according to circumstances, such as the irritability of the rectum, temperament of the individual and intercurrent attacks of diarrhoea or other trouble. Twice a week, in my experience, suffices in most cases; a fortunate issue, if attainable, can only be brought about by patient and prolonged treatment.

"Rudeness or violence inflicted with the view of hastening the case can effect nothing but harm, and may jeopardize the life of the patient. If the instruments be hastily thrust into the bowel it may be perforated, especially in those cases in which inflammatory softening or ulceration exists; or, if it be too large, the rectal mucous membrane may be ruptured, giving rise to smart hæmorrhage; or the entire wall of the bowel may be ruptured into the peritoneum, an accident that is pretty sure to be followed by peritonitis, with all of its attendant dangers. But these funest consequences are infinitely less liable to follow the use of India rubber bougies than of any other sort, for certainly, *a priori*, nothing could furnish a milder, more equable and less dangerous force than these, and experience shows this to be the fact.

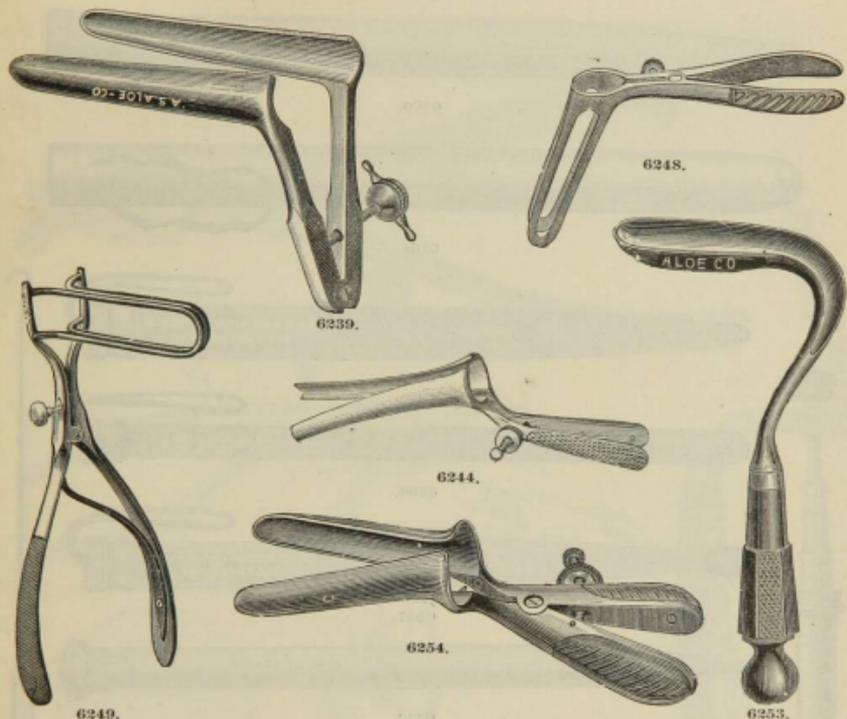
"It often happens that, after the most patient devotion to this method of treatment, the bowels do not regain their functions, even after the largest sized bougie has been passed with ease. The result is due in part to long continuance of the expanded condition of the bowel above the stricture, by which its muscular walls have been more or less paralyzed."

ALIMENTARY.
ANAL AND RECTAL.



ALIMENTARY.

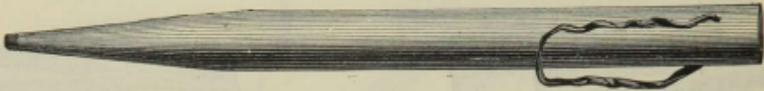
ANAL AND RECTAL.



6221.	Speculum, Allingham's.....	2 25
6222.	" Aloe's, 3 sizes. Described on page 338.....	10 00
6223.	" Ashton's, Glass.....	75
6224.	" " Hard Rubber, set of 4 sizes, nested.....	3 00
6225.	" " Trivalve.....	3 75
6226.	" Bernays' (St. Louis).....	3 50
6227.	" Bodenhamer's, Aluminium.....	3 00
6228.	" " Nickel-plated.....	2 25
6229.	" Brinkerhoff's.....	6 00
6230.	" Cook's, Trivalve.....	9 00
6231.	" Ducken's.....	3 00
6232.	" Glass, Flute-Mouthed.....	5 50
6233.	" Helmut's.....	2 50
6234.	" Keen's.....	5 00
6235.	" Kelsey's (Folding Handles).....	3 00
6236.	" Leonard's, Aluminium.....	3 00
6237.	" " Nickel-plated.....	2 50
6238.	" O'Neal's.....	5 00
6239.	" O'Reilly's.....	2 50
6240.	" Pratt's, Bivalve, Aluminium.....	3 50
6241.	" " Nickel-plated.....	3 00
6242.	" " Trivalve.....	3 50
6243.	" Reed's, with Glass Slide.....	2 75
6244.	" Ricord's.....	2 50
6245.	" Sass', Aluminium.....	3 00
6246.	" " Nickel-plated.....	2 50
6247.	" Sims', Aluminium.....	3 00
6248.	" " Nickel-plated.....	2 50
6249.	" " Steel.....	3 50
6250.	" " Nickel-plated.....	3 00
6251.	" Skene's, Aluminium.....	2 50
6252.	" " Nickel-plated.....	3 00
6253.	" Van Buren's, Aluminium.....	2 50
6254.	" " Nickel-plated.....	3 00
	" Williams'.....	3 00

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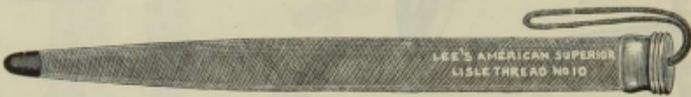
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ANAL AND RECTAL.



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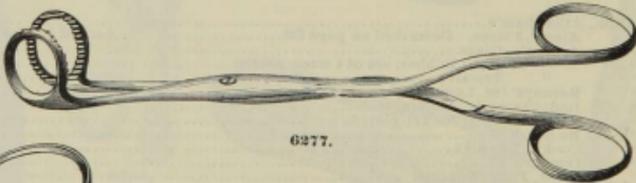
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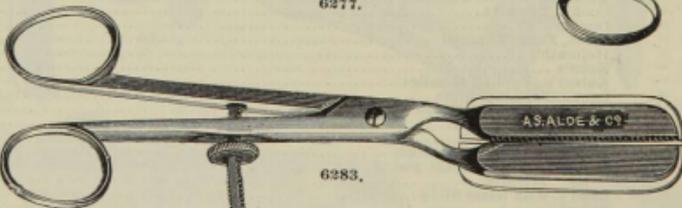
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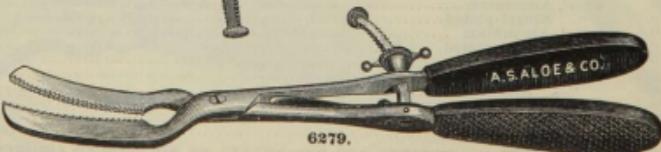
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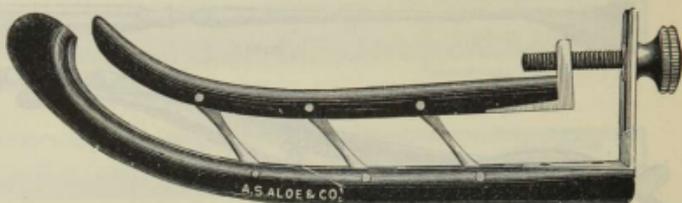
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ALIMENTARY.

ANAL AND RECTAL.



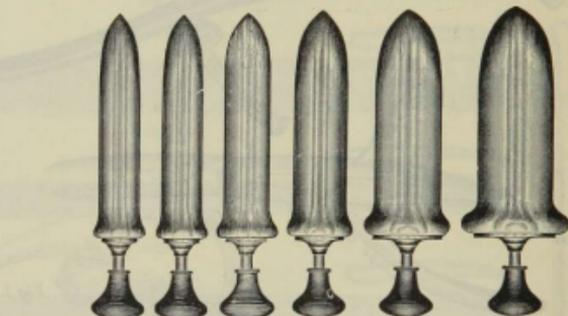
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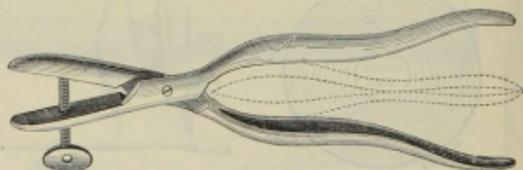


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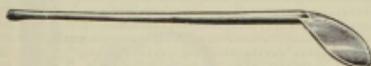


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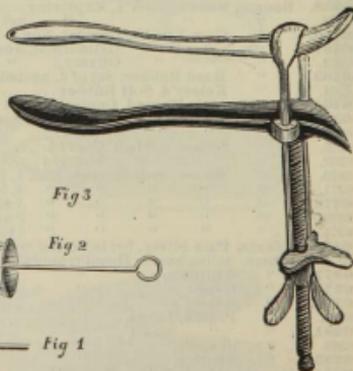
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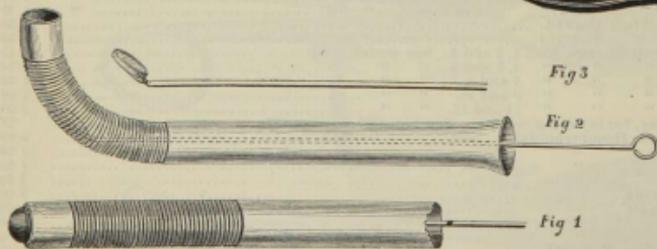
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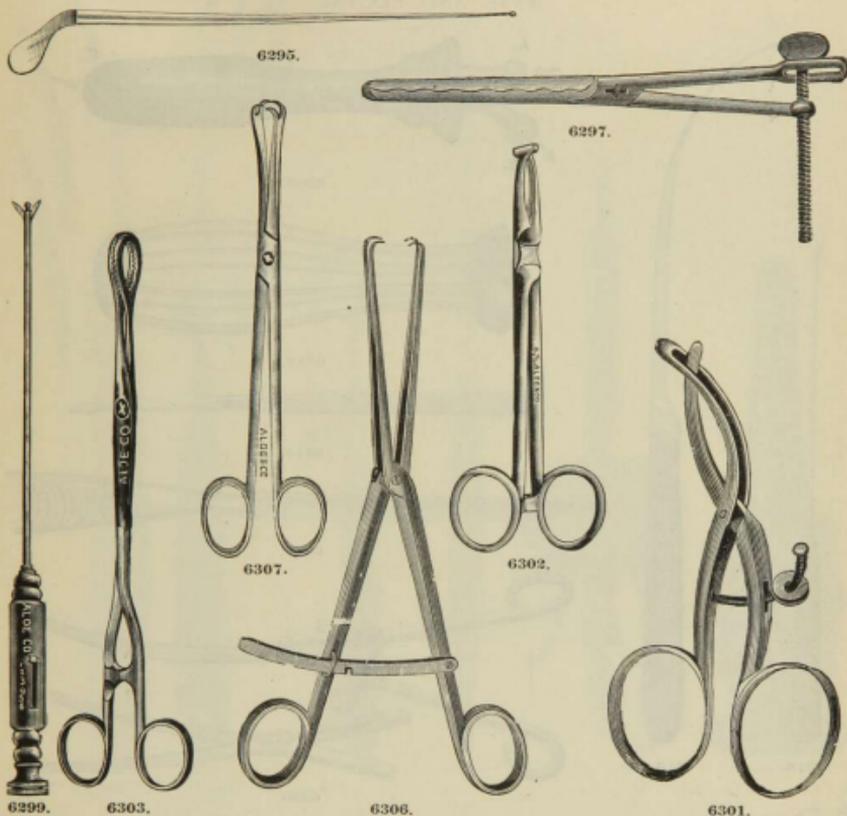
6296.

Fig 3

Fig 2

Fig 1

ALIMENTARY.
ANAL AND RECTAL.

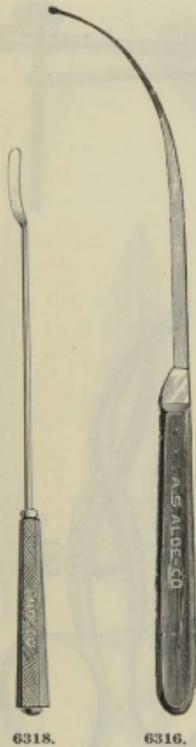


6287.	Dilator, Bauer's (St. Louis).....	\$9 00
6288.	" Eldridge's.....	2 00
6289.	" Pratt's.....	each, 1 50
6290.	" with handle to unscrew for applying hot or cold water.....	" 2 00
6291.	" Sims'.....	3 25
6292.	" Thebenud's.....	7 50
6293.	" Whitehead's.....	2 25
6294.	Director, Pratt's, Steel.....	1 25
6295.	" Silver, Probe-Pointed, Rectal.....	1 00
	Director and Scissors, Allingham's. See Fig. 6356, page 348.	
6296.	Endoscope, Bodenhamer's, Recto-Colonic.....	3 75
6297.	Enterotome, Depuytren's.....	3 75
6298.	" Pana's.....	3 00
6299.	Fistulatome, Matthews'.....	6 00
6300.	" Rorick's.....	1 50
6301.	Forceps, Curvilinear, Bodenhamer's.....	3 50
6302.	" Hemorrhoidal, Pratt's.....	2 50
6303.	" " Smith's.....	3 00
6304.	" Ligating, Bodenhamer's.....	3 50
6305.	" Pile, Matthews'.....	3 50
6306.	" Tenaculum, Byrnes'.....	4 50
6307.	" Tumor, Kelsey's.....	1 75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ALIMENTARY.

ANAL AND RECTAL.

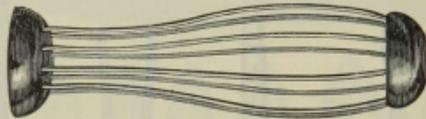


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6316.



6308.



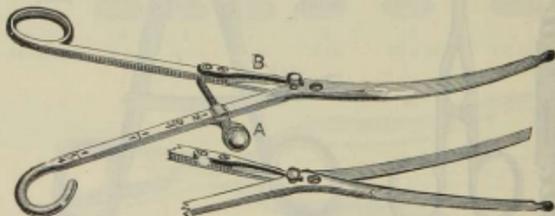
6312.



6314.



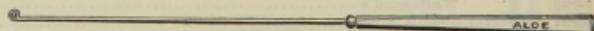
6317.



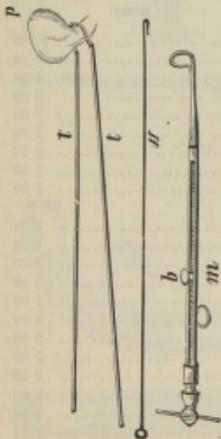
6320.



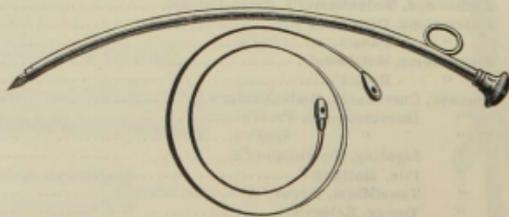
6321.



6327.



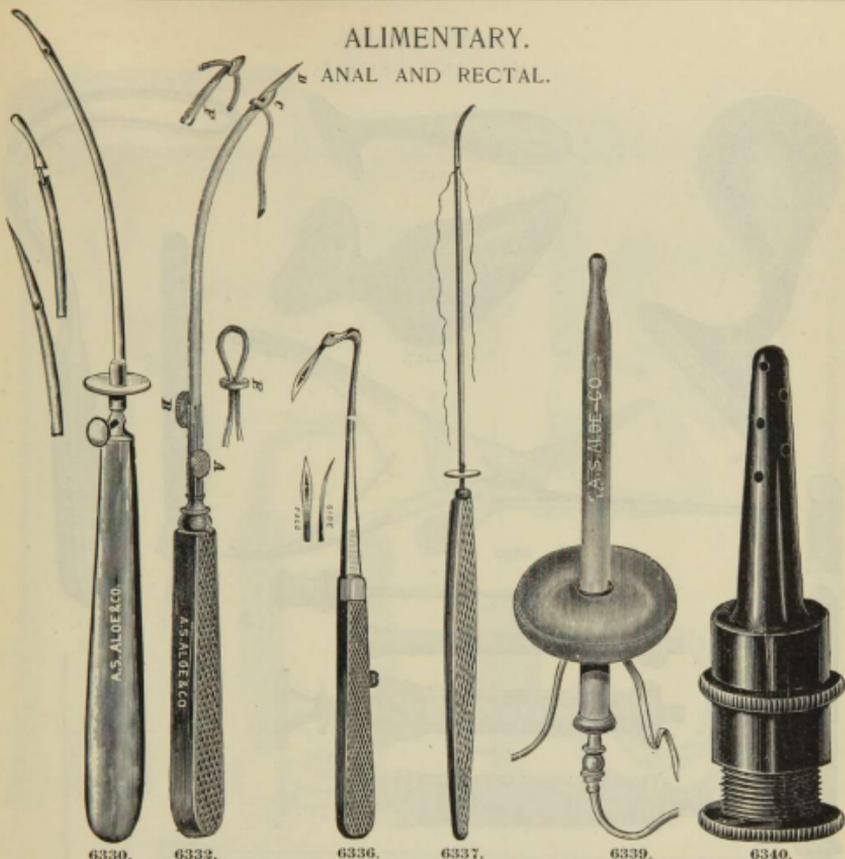
6329.



6328.

ALIMENTARY.

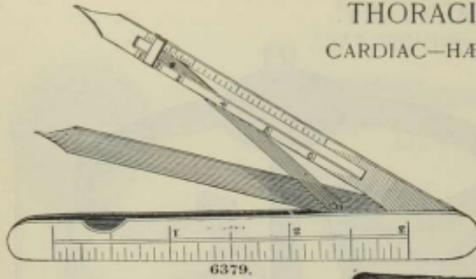
ANAL AND RECTAL.



6308.	Irrigator, Bodenhamer's.....	\$ 2 25
6309.	" Clendinen's.....	4 50
6310.	" Jenison's.....	1 25
6311.	" Martin's.....	1 25
6312.	" Munde's.....	1 15
6313.	" Skene's, H. R. Reflux.....	.....
6314.	Knife, Anal Fissure, Bodenhamer's.....	3 75
6315.	" " Bodenhamer-Blandin's.....	6 00
6316.	" Fistula, Kelsey's.....	1 50
6317.	" Proctotomy, Kelsey's.....	1 30
6318.	" Scurfying, all Steel.....	1 00
6319.	" Bistoury Caché, Bodenhamer's.....	7 50
6320.	" " Briggs'.....	5 25
6321.	" " Simpson's.....	5 25
6322.	" " Curved, Probe Point.....	1 00
6323.	" " Sharp.....	1 00
6324.	" " Straight, Probe.....	1 00
6325.	" " Sharp.....	1 00
6326.	" " Syringotome, Breschet and Marx.....	3 00
6327.	Ligatur, Aloe's, Silver, Ivory Handle.....	1 50
6328.	" Gibson's.....	2 25
6329.	" Van Buren's.....	5 25
6330.	Ligature Carrier, Allingham's.....	2 75
6331.	" " Hall's.....	3 00
6332.	" " Helmuth's.....	2 50
6333.	" " Ostrum's.....	2 25
6334.	Ligature, Soft Rubber, 4 one yard pieces, assorted sizes in box.....	75
6335.	Needles, Aloe's, Fistula, Pure Silver, see Fig. 6367-C, page 337.....	75
6336.	" Bush's Pile, set of 3.....	2 25
6337.	" Hutchinson's Ligating.....	1 90
6338.	Obturator, Peterson's, with Stop Cock.....	1 50
6339.	" Prince's.....	2 75
6340.	Pile Pipe, Seeley's, Hard Rubber.....	1 00
6341.	" " with bottle of Ointment.....	1 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

THORACIC.
CARDIAC—HÆMAL.



6379.

CAMMANN'S CARDIOMETER.

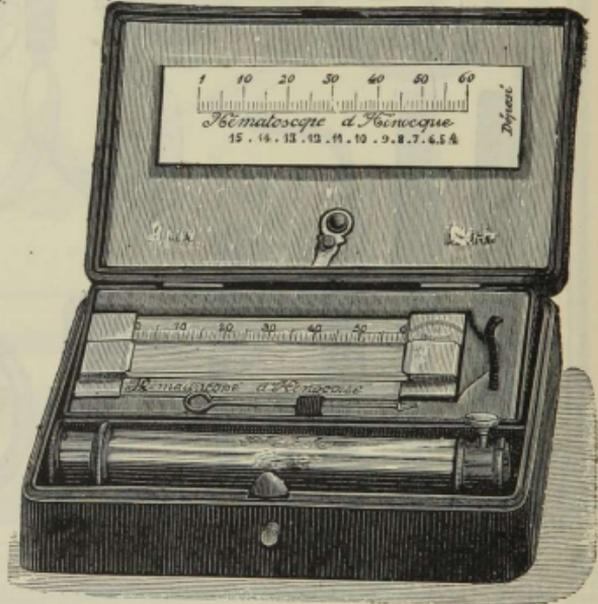
To determine the distance of the apex beat from the median line one point of the instrument is placed on the median line and that of the other bar to a point corresponding to the apex beat; by reading the figure marked by the indicator you determine the number of inches the apex beat is distant from the median line.

The instrument is very small and when closed presents rounded ends, and may be conveniently carried in the pocket.

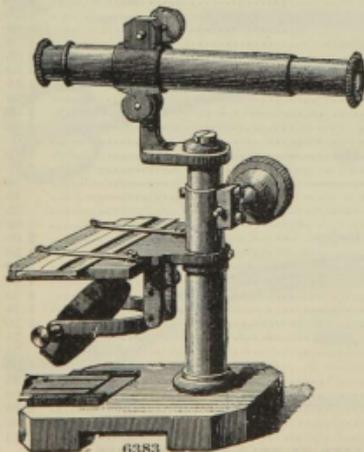
HENOCQUE'S
HÆMATOSCOPIC
SET.

FOR THE POLARIZATION
OF THE BLOOD, AND
TO DETERMINE THE
DENSITY OF THE BLOOD.

This set consists of a spectroscope, a hematoscope of glass, a hematoscopic plate of enamel, a needle and the various accessories, with complete directions, in fine case.



6382.



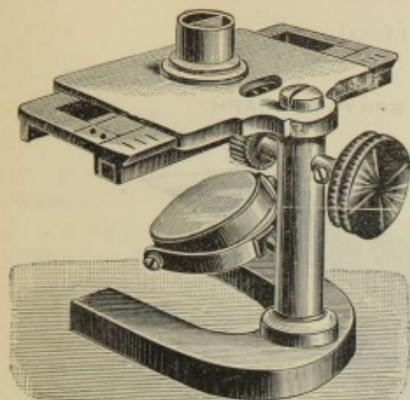
6383.

HENOCQUE'S HÆMATOSPECTROSCOPE,
FOR THE POLARIZATION OF BLOOD.

A large and accurate spectroscope on stand, with iron base, together with necessary accessories.

This instrument can also be advantageously employed for the polarization of wine, milk, etc., etc. In fine wood case, with directions.

THORACIC.
CARDIAC-HÆMAL.



6385.

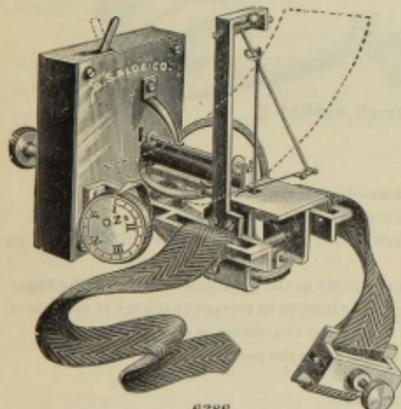
Fleischl's Hæmometer. This novel apparatus is used for ascertaining the quantity of hæmoglobine in the blood. The apparatus advantageously differs from similar ones now in use, in the following points:

1st. Its manipulation is easier and requires less care.

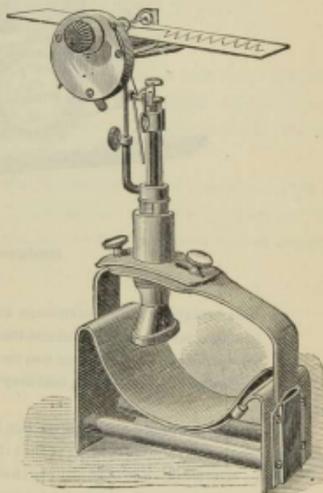
2d. The percentage of hæmoglobine can be read off rapidly and surely.

3d. But a small quantity (one drop) of the blood to be examined is required.

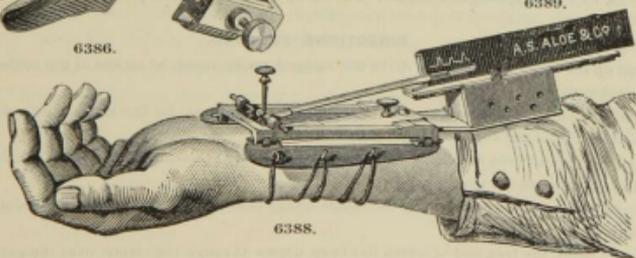
The apparatus is accompanied by instructions on its use. (For particulars see "Medicinische Jahrbucher der k. k. Gesellschaft der Aerzte.")



6386.



6389.



6388.

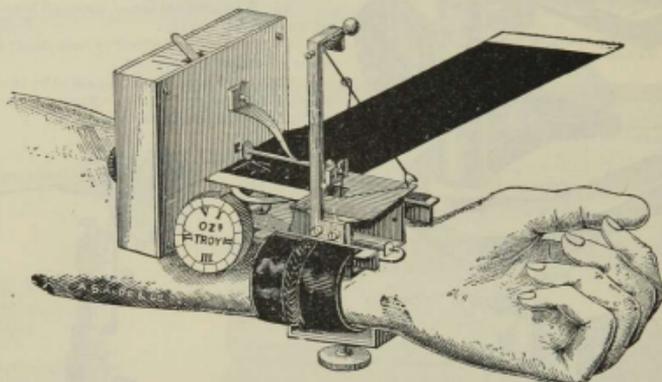
6379.	Cardiometer, Camman's.....	\$ 3 50
6380.	Hæmacytometer, Gower's, for the numeration of blood corpuscles, complete in Morocco case.....	28 00
6381.	Hæmarumascopie, White's.....	2 00
6382.	Hæmatoscopic Set, Hénocque's.....	.....
6383.	Hæmatospectroscope.....	.....
6384.	Hæmoglobinometer, Gower's, for the approximate estimation of hæmoglobin, accurate within two or three per cent; used independently of the microscope; complete, in Morocco case.....	9 50
6385.	Hæmometer, Fleischl's.....	28 00
6386.	Sphygmograph, Dudgeon's Pocket. See description, next page.....	18 50
6387.	" Holden's.....	30 00
6388.	" Marey's.....	60 00
6389.	" Pond's.....	35 00
6390.	" Richardson's, Standard. See page 354.....	25 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

THORACIC.

CARDIAC—HÆMAL.

DUDGEON'S POCKET SPHYGMOGRAPH.



Dudgeon's Sphygmograph Applied.

The advantages of this instrument are:

1. It magnifies the movements of the artery in a uniform degree, viz., 50 times.
2. The pressure of the spring can be regulated from 1 to 5 ounces (30 to 150 grammes).
3. It requires no wrist-rest, and may be used with equal facility whether the patient is standing, sitting or lying.
4. With it a tracing of the pulse can be made almost as quickly as the pulse can be felt with the finger.
5. Its sensitiveness is so great that it records the slightest deviation in form or character of every beat.
6. In construction it is so simple that if accidentally broken any instrument maker can repair it.
7. Size 2¼ by 2 inches, weight 4 ounces. Can easily be carried in the pocket.

DIRECTIONS FOR USE.

1. Wind up the clockwork used to drive the smoked paper along, by means of the milled button at the back of the clockwork box.
2. Insert one end of the smoked paper (smoked side uppermost) on the right-hand side of the instrument, between the roller and small wheels.
3. Make the patient hold out either hand, open, and in an easy position, the fingers pointing toward you, and direct him not to move the wrist or fingers.
4. Ascertain the precise spot where the radial artery beats at the wrist, close behind the eminence of the os trapezium.
5. Slip the band, the free end of which has been drawn through the clamp, over the patient's hand.
6. Apply pressure to the spring by turning the spring-regulator so that the number of ounces, or portions of ounces, you wish is pointed to by the indicator. The pressure may be altered at will when the instrument is fixed on the arm.
7. Place the bulging button of the spring exactly over the artery, its long axis parallel to the course of the artery, the box containing the clockwork resting lightly on the forearm above.
8. Retaining the instrument in its place with the left hand, draw the band through the clamp with the thumb and forefinger of the right hand, holding back the clamp with the other fingers of that hand; when the requisite tightness has been obtained, which will be known by the point of the needle working freely over the center of the smoked paper, screw up the clamp with the left hand, so as to fix the instrument.

THORACIC.

CARDIAC—HÆMAL.

DUDGEON'S POCKET SPHYGMOGRAPH.—CONTINUED.

9. Set the smoked paper in motion by pushing toward the right the small handle on the top of the clockwork box.

10. Let the paper run through, and do not touch the instrument or the patient, unless to support his hand in your own to secure perfect steadiness.

11. Catch the paper as it passes out of the instrument in your left hand.

12. Stop the clockwork as soon as the paper has passed.

REMARKS: The clockwork is regulated so that the smallest paper shall pass through in ten seconds. Six times the number of pulsations traced on the paper will give us their number per minute. The clockwork will not pass more than three lengths of the paper at the same rate. It is best to wind it up anew after two lengths have passed.

For ordinary purposes the instrument may be used without fixing the band in the clamp, both ends of the band being merely held with sufficient tightness at the back of the patient's wrist by the fingers of the operator's right hand. A very little practice will enable the operator to hold the instrument thus as steadily as the clamp can do it, and time is thereby saved.

DIRECTIONS FOR MAKING THE SMOKED PAPER.

1. A stiff, enameled white paper, i. e., about six inches in length, is cut into strips of one inch in breadth. In packets of 100 strips, price, 25c.

2. Place one of these strips in the tin-plate holder, which covers half an inch of each end.

3. Take a piece of camphor about the size of a bean, put it on a plate or other convenient place and ignite it.

4. Pass the paper in its holder several times rapidly over the top of the flame, not in the flame, as this would burn in the smoke and prevent the needle removing it easily. We thus get a strip of paper with five inches of its surface properly smoked and ready for use.

5. When the tracing has been made write on the paper with something pointed, e. g., a toothpick, the patient's name, his position (| standing, — lying \ sitting), the pressure of the spring, the date, and any short note you wish to make.

REMARKS.—It is best to make these smoked papers at home, and to carry them to the patient's house in a small box provided for that purpose, and to replace them in the box when the tracing is made, in order to convey them home to be varnished.

DIRECTIONS FOR VARNISHING THE SMOKED PAPER.

The best varnish for this purpose is made by dissolving one ounce of gum damar in half-pint of benzoline. A glass vessel about six inches high and 1½ inch in diameter is filled with this varnish and the smoked paper dipped into it for a second and then withdrawn. The varnished paper, smoked side uppermost, is then laid on a piece of blotting paper. In two minutes it is perfectly dry and ready for fixing in the case book.

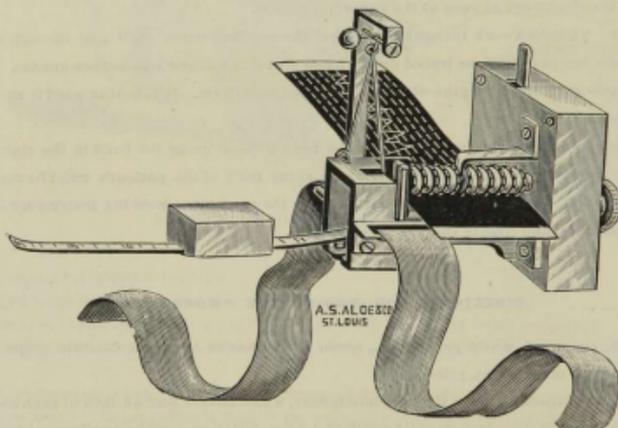
THORACIC.
CARDIAC--HÆMAL.
A STANDARD SPHYGMOGRAPH.

By B. W. RICHARDSON, M. D., F. R. S.

For all writing purposes, and for perfect convenience, Dr. Dudgeon's Sphygmograph may be taken as well nigh perfect. What I found wanting in it, as in Pond's, and what I have attempted to supply, have been the means of applying, accurately and easily, the pressure upon the pulse, and of registering the reading so as to be able to obtain a natural standard—I mean a standard from a natural pulse—that will determine, from one uniform reading or constant, all unnatural or morbid variations, and will be worked automatically.

THE STEEL YARD BALANCE.

To effect the weighing part, or the means of determining the pressure, I have had removed from my Dudgeon's Sphygmograph the pressure-gauge devised by its inventor, and introduced instead a steel yard balance, which projects as a weighing bar from the fore part of the instrument, as shown in the diagram (Fig. 6390). The bar, which is carefully graduated, will weigh from one ounce to six ounces. The weight,



6390. See page 351.

which moves along the bar, is arranged in the same manner as in the instrument for measuring time in music, the metronome, and can be made to glide from one degree to another with the utmost ease.

"In weighing the pulse with this balance, the Sphygmograph is placed on the wrist in the usual way, and, when the pulse is found, by the regular movements of the needle on the recording paper, the weight is gradually moved up and down the scale until the balance between the pressure which holds the instrument firmly in position, and the pressure exerted by the steel yard is precisely determined. Then the recording paper is allowed to traverse the stage under the clock-work action, and the record is written off by the needle.

"As a general practice, I take the reading at first with a three-ounce pressure from the balance. But I never omit to test the full pressure later on. I fix the instrument with my left hand, by means of the straps which pass from it around the wrists, so firmly that I may, by movement of the steel yard weight, find what is the longest up-stroke that can be obtained. Having found that, I let the recording paper traverse the stage to take the record. For holding the instrument steadily in its position, I use two straps of equal length attached to the instrument on each side. Over these I fit a movable wrist-plate, which gives great firmness, with ease of movement. With properly acquired skill in manipulation the pulse may be taken by the instrument almost as readily as by the finger itself.

" THE AUTOMATIC SPHYGMOGRAPHIC CHART.

"I now come to the second, and I think more important improvement in the pulse-reading process. This introduces a plan by which each record is measured as it is taken, on a series of vertical and horizontal lines produced on the carbonized paper at the same moment as the pulse curves are written. The plan is as follows:

THORACIC.
CARDIAC—HÆMAL.

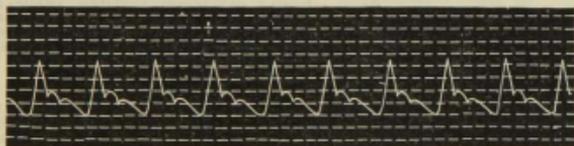
RICHARDSON'S STANDARD SPHYGMOGRAPH.

"The carbonized paper, which traverses the stage to receive the impressions from the needle, and which is moved by the pulse, has hitherto been carried along by the motion of a smooth circular rod or bearing, made to rotate by the clock represented in the square box in diagram (Fig. 6390). Into this revolving bar I have now had set a row of sharp edges, which, in revolving on the carbon, cut a series of lines of equal distance from each other along the whole length of the paper. These lines are so arranged that they leave on the paper ten horizontal spaces or degrees, each degree two millimetres apart. At the same time, the sharp blades are divided transversely, so as to cut also a series of vertical dotted lines or degrees, each two millimetres apart. When, therefore, the carbonized paper is made to traverse the stage by the clock movement, with the needle at rest, it is marked out by a set of measuring lines, horizontal and vertical, upon which the movements of the pulse are written when the needle is moved by it. This constitutes the scale, or chart, on which the standard readings of the radial pulse are taken. In its open form the scale is sketched in the diagram below.



In bringing this scale into action, no more preparation is required than for the ordinary paper. The change is effected entirely by the Sphygmograph itself, which cuts the carbon automatically at the same time that the needle is marking the tracing produced by the pulse. There is, therefore, neither addition of time nor of labor to the operator.

In order to produce the pulse readings with the measuring scale, the carbonized paper is made to traverse the stage with the needle set in motion by the pulse, after the correct pulse pressure has been found. The result is a reading shown in the following diagram:



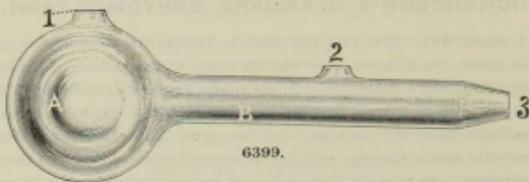
"As will be seen, the pulse tracings cross the standard or chart lines, and admit of being accurately measured in respect to the ascending or ventricular movement of the pulse; the first descending movement; the second short ascent; the second short descent; the third short ascent; and the third final descent down to the angle where the next similar series of movements, or, as they are sometimes called, 'events,' take their start. This diagram shows the order of movement over the lines and degrees, but it also shows more. It gives, as correctly as I can render it from twenty-five readings of the right radial pulse of healthy persons between thirty and thirty-five years of age, and in conditions as closely natural as it is possible to obtain, the normal pulse standard or constant, while the pulse is lifting the steelyard weight balanced at four ounces, with the subject in the sitting posture. The clock in the Sphygmograph, with which these tracings were made, is so 'set' that the period of passage of the surface of carbonized paper occupies precisely the sixth part of a minute, or ten seconds. The number of each ascending tracing is consequently the number of completed pulse movements in the sixth of a minute. Let the number of straight upright lines across the scale be multiplied by six, and the rate of the pulse per minute is arrived at, and may be estimated fairly from the number 72 as a natural mean or standard. Once more, let it be observed that the distance apart of each upright line, horizontally, is precisely the length of the line itself, so that the space included in a perfected pulse movement, from the first point of impulse to the last point of movement, is a square of $4\frac{1}{2}$ degrees, or 9 mm."

[Dr. Richardson in the *Asclepiad* for July, 1883, article "Standard Pulse Readings."]

THORACIC.

PECTORAL—PLEURAL—PULMONARY—RESPIRATORY.

EVANS' POCKET INHALER.



By GEORGE A. EVANS, M. D., Brooklyn.

Five years ago I devised the "pocket" inhaler, to which I now desire to call attention.

Its invention was suggested by the conviction that the evaporating surface afforded by the sponge in the ordinary oro-nasal inhaler during inspiration was too small, while, on the other hand, it served during expiration to absorb and accumulate the waste products of respiration.

In addition, it seemed to me advisable to secure the simultaneous operation of voluntary deep breathing through a small orifice in conjunction with local medication of the air passages.

It should be used in the following manner: Medicate the sponge in the bowl (A) of the inhaler according to directions to be given; place the open end of the stem (B) well between the lips; close the stem opening (2) with the index finger of the right hand and inspire deeply, lengthening the pause at the end of the inspiratory act to facilitate intrapulmonary gaseous diffusion; cover the opening (1) in the bowl (A) with the index finger of the left hand; uncover the opening (3) and empty the lungs by blowing through the openings (3 and 2) of the stem.

Respiration should be carried on in this manner at the rate of about ten a minute, and continued until the desired effects have been secured.



DR. C. L. COULTER'S

COMBINED VAPORIZER AND INHALER.

For inhalation in diseases of the nose, throat and lungs.

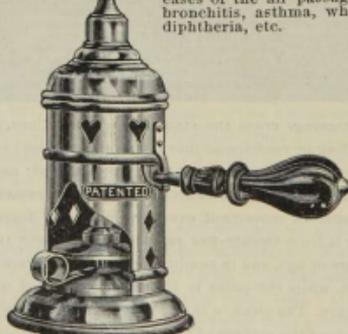
Excels any other because it reduces the drugs and oils to a gaseous state, whereby the inhaled drug can reach any part of the throat and lungs.

Also a perfect instrument for deodorizing and disinfecting sick rooms, hospitals, public buildings, railway carriages, etc. No glass tubes or valves to get out of order. Specially designed for the treatment and cure of all diseases of the air passages, such as catarrh, consumption, bronchitis, asthma, whooping cough, croup, la grippe, diphtheria, etc.

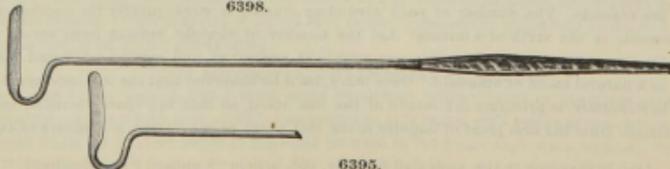
Made of copper and brass, nickel-plated.

Each one in stout paste-board box, with directions.

Perfumer and
Deodorizer
Attachment.



6398.

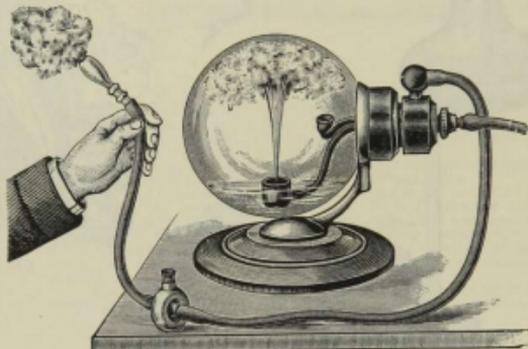


6395.

THORACIC.
PULMONARY—RESPIRATORY.
GEYSER VAPORIZER AND INHALER.

The treatment of pulmonary diseases by the inhalation of medicine in the form of vapor is rapidly superseding all other methods. It is the only way by which a local application of the remedy employed can be made to the entire respiratory tract.

The Geysier, invented by Dr. A. J. Palmer, is a neat, simple and substantial instrument, meeting all the requirements of a vaporizer for treatment by inhalation. It produces the vapor by mechanical means without the use of heat or chemical action.



6419.

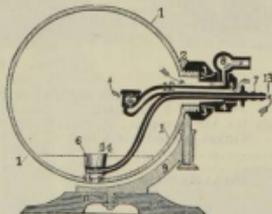
The air jet, being surrounded by the liquid to be vaporized, much less compressed air is required to produce a given amount of vapor than by any other instrument. This will be appreciated by those who use the hand pump.

The medicine is vaporized simply by the force of the air against the liquid, and when inhaled and deposited upon the mucous membrane is precisely the same as before vaporization.

The vaporization is accomplished by the use of a single tube, thereby avoiding the annoyance occasioned by a second or suction tube.

Any liquid can be thoroughly vaporized without changing its quality or temperature. Glass and hard rubber only are exposed to the liquid, thus avoiding corrosion of metal or swelling and sticking of soft rubber fittings.

It can be taken apart, cleaned, refilled and put together in a few minutes.



The small cut represents a sectional view:

1, a glass globe six inches in diameter, furnished with a threaded neck.

2, a metal ring encircling the glass neck, being beveled to neatly fit the globe. This ring terminates in a metal arm, 9, which is mounted upon a polished wooden standard, 10, and firmly held by screw 11.

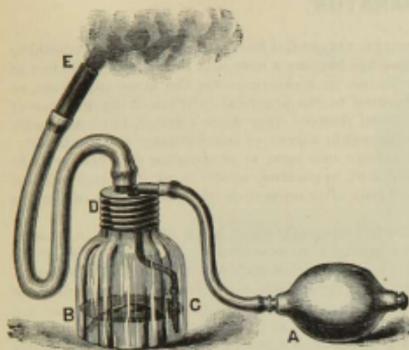
A hard rubber cap, 3, furnished with a beveled orifice, is secured on the glass neck, holding the metal ring tightly in place.

4, is a hard rubber hollow stopper, through which passes a tube, 12, terminating with a valve, allowing the atmosphere to enter (5) when required. The compressed air tube, 13, also passes through the stopper. Its outer end is supplied with a screw nipple, 7, for convenience in connecting with air receiver. The other end terminates with a small cup, 6, through the bottom of which the pressure tube passes, having a small orifice, 14, for the escape of the air jet. In the bottom of the cup are two apertures, 15 and 16, which allow liquid to enter the cup as rapidly as the air jet vaporizes it. By this method the entire circumference of the air jet is in contact with fluid. On the top of the hollow stopper is placed a movable elbow, 8, for the attachment of breathing tube. The breathing tube is provided with an improved saliva trap, as seen in Fig. 6419.

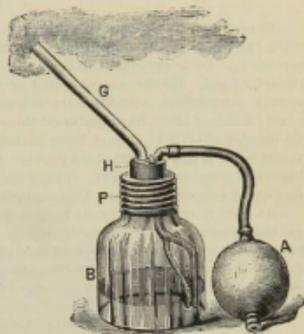
Full directions for using, together with a few formulæ of approved remedies, will be sent with each instrument.

THORACIC.

PULMONARY—RESPIRATORY.



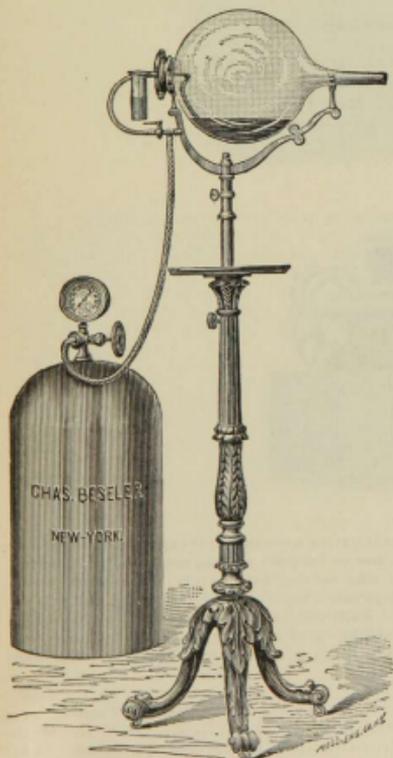
6418.



6417.

BESELER'S GLOBE INHALER.

This instrument consists of a glass vessel, 9 inches in diameter by 12 inches long, one end being provided with a metal cap with a spray tube attached, reaching about two inches into the globe. The liquid to be atomized can be taken from the globe or from a vessel attached to the frame. The instrument can be adjusted to the height of the patient. The iron table stand is nicely ornamented in black and gilt, and the other metal parts are highly finished and plated. Two mouth pieces and six feet of silk-covered tubing are furnished with each instrument.



6413.

- 6412. Inhaler, Evans', complete, in Walnut Case, \$25 00
- 6413. " Globe, Beseler's (without receiver shown in cut)..... 30 00
- 6414. " McBride's..... 12 00
- 6415. " Shurley & Gibb's, Chlorine, complete, with Atomizer..... 6 00
- 6416. Nebulizer, Dunlap's Globe..... 4 00
- 6417. Vaporizer, Oliver's, No. 169, with Glass Atomizing and Inhaling Tubes..... 1 25
- 6418. Vaporizer, Oliver's, No. 165, similar to 169, but differs from it in having the atomizing tubes of metal, platinum plated, with both the nozzles and liquid-bearing tube of platinum, while the inhaling tube is of flexible rubber with hard rubber mouth-pieces..... 3 50
- 6419. Vaporizer and Inhaler, Geyser..... 12 00



6416.

THORACIC.

PULMONARY—RESPIRATORY.

OXYGEN APPARATUS.

Ever since the beginning of the recent revival of interest in Oxygen, it has been evident that something to take the place of the unwieldy apparatus so long in vogue has become a necessity to the popularization of the remedy. Only specialists are inclined to incur the expense, or make room for the large apparatus, as ordinarily used. Hence a great deal of study has been devoted to the practical solution of the question of securing portability, without surrendering efficiency. Several devices have been offered, but until quite recently none of them has combined thoroughness with a reasonable degree of compactness and portability. This combination has at last been attained, and every physician can now, at reasonable expense, provide himself with a convenient, inexpensive and thoroughly efficient apparatus, which is, at the same time, as portable as a galvanic battery. This result has been reached only after numerous failures, and the successive rejection of scores of more or less imperfect models.

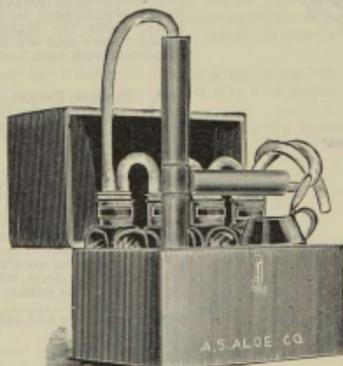
At first it was thought to be impracticable to provide for thorough purification of the gas in a small, portable compass. This obstacle, which seemed insurmountable, has been overcome, by the adoption of the "bulb-end" wash-bottle tube, and the insertion of a filtering device, in connection with the system of wash-bottles. Thus the principal objection to portable instruments has been deftly and effectually set aside; and now, without surrendering the element of efficiency, these compact and easily transported combinations are at command, and purify the evolved gas as thoroughly as the larger and more cumbersome styles of apparatus.

They are easily managed, may be intrusted to nurse or patient, and yield, promptly, and as frequently as required, a quantity of gas sufficient to carry out with entire thoroughness any prescribed degree or line of treatment. They therefore make oxygen available to every enterprising practitioner, who cares to be up with the times, by adding this pleasant and powerful remedy to his armamentarium.

DESCRIPTION AND PRICES.

Of the portable form of apparatus we supply two sizes and styles, as follows:

THE ECONOMIC, No. 1.



6420.

This size is designed for those who require an apparatus having a considerable capacity, and which is very compact and portable. It is supplied with removable and re-loadable retorts, each holding sufficient material to generate seven gallons of gas. This quantity may be duplicated every ten minutes, or as required. The retorts used with this instrument are exact duplicates, made of brass, die-drawn, and may be cleansed after each operation and refilled as often as desired. Each will last to prepare several hundred gallons of gas, and they are inexpensive. Hence the cost of making oxygen by this generator is reduced to a minimum, viz.: it is less than one and a half cents per gallon. In using the gas for chronic or other than emergency cases this is an item of considerable importance.

6420.	The Economic Oxygen Apparatus, No. 1, complete in handsome Walnut case, with all Wash-Bottles, Chemicals and 6 filled Retorts, weight 12 lbs	\$25 00
6421.	Extra Retorts for No. 1 outfit	each 25 cents, per dozen, 2 50
	Prepared Chemicals, best quality	per pound, 40

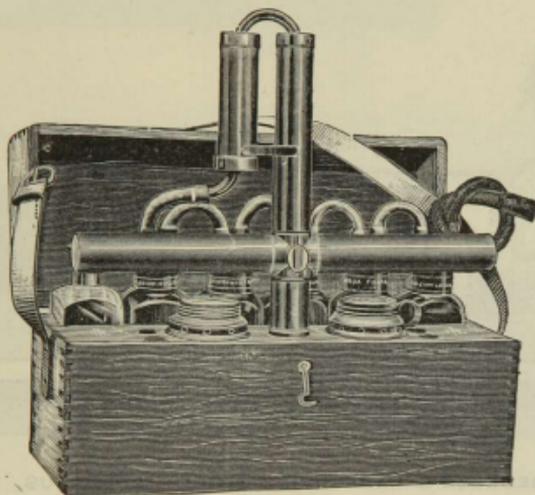
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

THORACIC.

PULMONARY—RESPIRATORY.

OXYGEN APPARATUS.

THE CLIMAX, NO. 2.



6422.

This size has been the outcome of a suggestion by an eminent surgeon, with a view to the production of a continuous spray of pure oxygen as a substitute for all other—and sometimes questionable—antiseptics, during ovariectomy and other capital operations in surgery. Also as a substitute for other forms of generating apparatus for office use.

This large size Generator is the climax and triumph of mechanical ingenuity. It has almost unlimited capacity, being so arranged, by a system of interchangeable retorts, that it can be used continuously, yielding a constant stream of thoroughly purified, desiccated and cooled oxygen, at the rate of one to two gallons per minute, as long as desired. It accomplishes this result by means of duplex and exchangeable retorts, each retort having a capacity of 12 to 14 gallons at each filling, a fresh-filled one being ready for action even before its predecessor is exhausted. This arrangement was suggested, as stated, in response to the demand for some means by which surgeons might avail themselves of the well-known antiseptic and germicidal properties of nascent oxygen. It proves so efficient for producing the gas in considerable quantities that it is likely to supersede most other forms of oxygen generators, for medical purposes.

The coiled tube of former styles has been discarded, and a cooler adopted which can not be clogged under the most unfavorable circumstances. At the same time the apparatus is not at all unwieldy, but measures, in its case, 16x10x6¼ inches and weighs 17 pounds.

It also includes an extra 6 feet of rubber tubing, which can be used as a coil within a vessel of warm water, thus enveloping the patient, all the instruments and the operators in an atmosphere of warmed, nascent oxygen. This idea promises to inaugurate a decided and valuable innovation in the future use of antiseptics in surgery. Not only is an oxygen spray thoroughly efficient for the purposes of antiseptics, it is entirely harmless in every sense, and in addition to its protection of the patient from germ infection it is a valuable safeguard against the always disagreeable and occasionally dangerous effects of anesthetics. At the same time it surrounds the operators and attendants with a protecting and pleasantly exhilarating atmosphere, and does away with all the usual depressing influences of the operating room.

We believe that its general introduction will mark an era in the history of modern surgical practice.

- 6422.** The Climax Oxygen Apparatus, No. 2, put up in a strong and finely finished walnut case (mahogany to order), with 12 retorts, 5 wash-bottles, having patent bulb-end tubes, alcohol bottle, 2 alcohol lamps, all needed chemicals, 1 10-gallon and 1 15-gallon gas-holder, 6 plain and 6 diluting mouth-pieces; also prepared chemicals sufficient to make 200 gallons oxygen, \$50 00
- 6423.** Extra retorts for No. 2 outfit.....each 35 cents; per dozen, 3 00

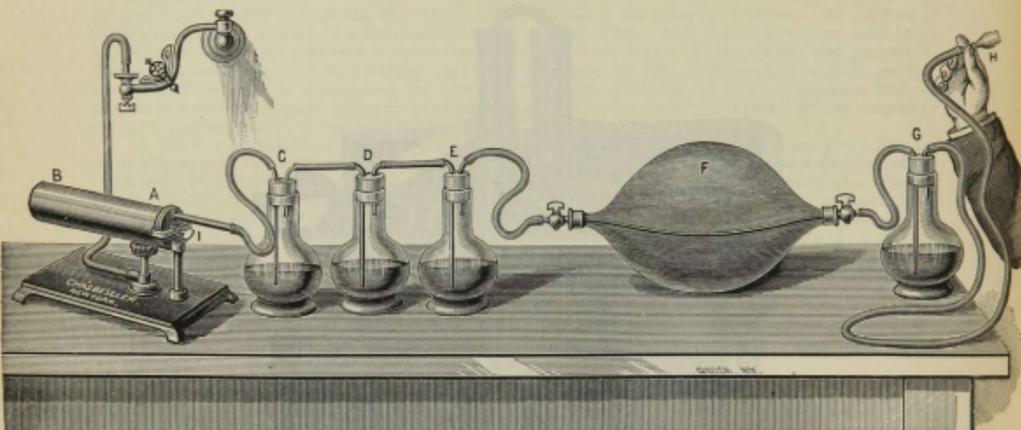
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

THORACIC.

PULMONARY—RESPIRATORY.

OXYGEN APPARATUS.

A NEW AND IMPROVED METHOD OF GENERATING AND INHALING PURE OXYGEN GAS FOR MEDICINAL PURPOSES.



6424. BESELER'S IMPROVED OXYGEN APPARATUS, No. 15.

DESCRIPTION.

The apparatus consists of a Russia sheet-iron retort, 2 inches in diameter by 12 inches long, mounted on a nicely finished cast-iron base 6 inches by 14 inches; gas burner, four 1-quart wash bottles, with rubber corks and glass tubes; 1 double-necked 4-gallon gas-bag, with nickel-plated stop-cocks; 9 feet of $\frac{5}{16}$ -inch rubber tubing, 2 glass mouth-pieces and 1 retort cleaner.

One pound of prepared chemicals will be sent with each apparatus.

A non-explosive Argand spirit lamp will be furnished in place of gas burner, where house gas is not available.

GENERAL DIRECTIONS.

The retort is to be half filled with the chemicals, which must be distributed along its whole length. All the wash-bottles are to be about half filled with pure water; then put $\frac{1}{4}$ ounce of caustic soda or potash in wash-bottles C and D. Wash-bottles E and G should be emptied and refilled once a day; wash-bottles C and D, for every newly-filled retort. Arrange the apparatus as shown in cut. Six feet of rubber tubing are provided for furnishing the connections, and should be cut up as follows: 24 inches to connect the retort with wash-bottle C; 8 inches each to connect wash-bottle C with D and D with E; 16 inches each to connect E with gas bag and the latter with inhaler G. The retort will admit 1 pound of the chemicals, which will be sufficient to generate 30 gallons of oxygen. The chemicals furnished with apparatus are ready for use. Gas will begin to pass over soon after heat is applied to the retort. The gas burner or spirit lamp should be placed under the retort at A, and moved along toward B as the chemicals become exhausted. The retort is to be disconnected from wash-bottle C promptly when gas ceases to pass over. The oxygen may be inhaled immediately, or can be stored in the bag for future use.

The great advantage of this apparatus is, that a small quantity of the oxygen can be generated at a time, and the rapidity of evolution is under perfect control. The retort should not be removed from base until all the chemicals are exhausted. The chemicals may remain in the retort for any length of time.

This apparatus is also adapted for the preparation of nitrogen monoxide, but for that purpose a gasometer should take the place of gas bag F. Can furnish a 30-gallon gasometer, well constructed, made nicely of zinc, for \$25.00.

Printed instructions for preparing the chemicals, etc., will be sent with each apparatus.

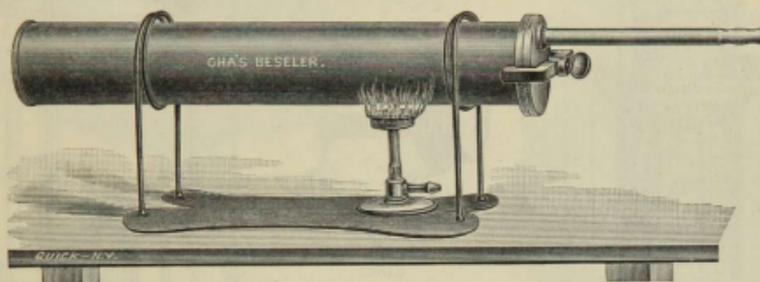
6424. Beseler's Improved Oxygen Apparatus, No. 15..... \$22 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

THORACIC.

PULMONARY—RESPIRATORY.

OXYGEN APPARATUS.



6450. Cylindrical Oxygen Retort, No. 15.

This Retort is made of Russia sheet-iron, with gas-tight seams and accurately fitted and ground cover secured to retort by means of a strong and well-constructed clamp.

The Retort is provided with a neat and durable iron stand and latest improved gas-burner.

One charge put into this Retort will generate from one to one hundred gallons of oxygen.

Size of Retort: Length, 18-inch; diameter, 3-inch.

6425.	Chemicals, Prepared for Oxygen.....	In 5-pound lots, per pound, \$	35
6426.	“ “ “ “ Nitrogen Monoxide.....	“ 10 “ “ “ “	80
6427.	Florence Flask, for Nitrogen Monoxide, with Glass Tube and Rubber Cork.....		1 50
6428.	Gas Bags, with Plated Stop-Cock, 4-Gallon.....		3 85
6429.	“ “ “ “ “ 5 “		4 00
6430.	“ “ “ “ “ 6 “		4 50
6431.	“ “ “ “ “ 7 “		4 85
6432.	“ “ “ “ “ 8 “		5 25
6433.	“ “ “ “ “ 9 “		5 85
6434.	“ “ “ “ “ 10 “		6 65
6435.	“ “ “ “ “ 15 “		8 75
6436.	“ “ “ “ “ 25 “		10 75
6437.	Gas Bags, Double-Neck, with Plated Stop-Cock, 8-Gallon.....		6 50
6438.	Gas Burner, Mounted on Plated Base.....		1 00
6439.	Gasometer, 80-Gallon, made of Zinc, well constructed.....		25 00
6440.	Gas Tubing, Rubber, 5/16-inch, Hand-made.....	per foot,	18
6441.	“ “ “ “ 3/8 “ “ “	“ “	20
6442.	“ “ “ “ 1/2 “ “ “	“ “	25
6443.	“ “ Mohair, 1/4-inch.....	“ “	25
6444.	Inhaling Bottle, Fancy, for Office Use, with Rubber Tubing and Mouth-Piece, Complete, One Pint.....		1 75
6445.	Lamp, Argand, Spirit, Non-Explosive.....		1 50
6446.	Mouth-Pieces, Glass, Amber or Crystal Glass.....	each, 15c, dozen,	1 50
6447.	“ “ “ “ with inlet for diluting the gas.....	each, 20c, dozen,	2 00
6448.	Oxygen Retort, Conical, Sheet-Iron, One Quart, Complete.....		3 00
6449.	“ “ “ “ Two “ “		4 00
6450.	“ “ Cylindrical, Russia Iron, Complete.....		10 50
6451.	“ “ “ Sheet “ “		9 50
6452.	Stop-cock for Gas Bags, Hard Rubber.....		50
6453.	“ “ “ “ Nickel-plated.....		1 00
6454.	Wash-bottle, 1 quart, with glass tubes and rubber cork.....		1 50
6455.	“ 2 “ “ metal “ “		2 00

HOW TO PREPARE THE CHEMICALS FOR OXYGEN.

To prepare the chemicals for oxygen, use chlorate of potassium (crystals), which granulate in a spice mill; then mix thoroughly with black oxide of manganese—the jet black and soft answering the best.

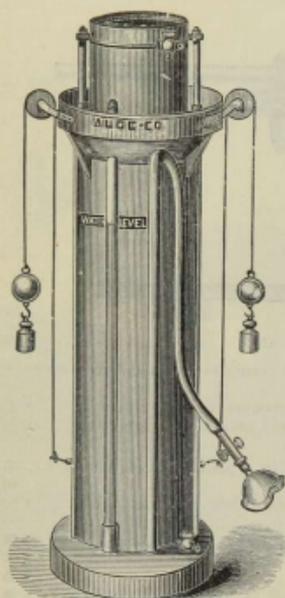
A mixture of one part of black oxide of manganese to four parts of chlorate of potassium will give the most satisfactory results.

Pulverized chlorate of potassium may be used in place of the crystals, but in such case the former should be the grade known as “Chemically pure.”

Reliable chemicals for oxygen, ready for immediate use, always on hand.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

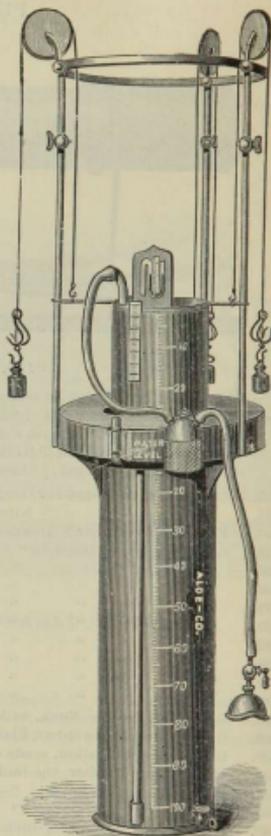
THORACIC.
PULMONARY—RESPIRATORY.



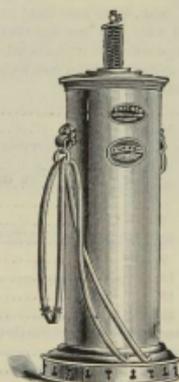
6460.



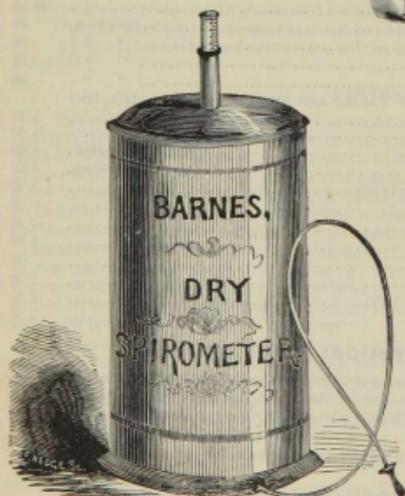
6465.



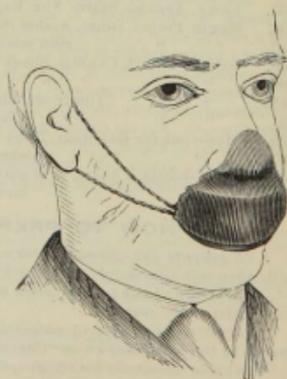
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6484.

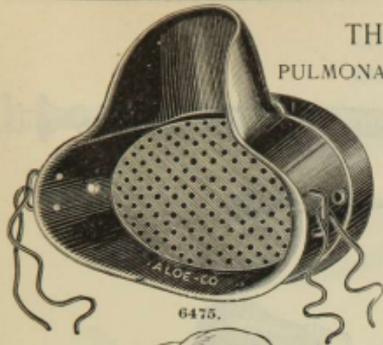


6476.

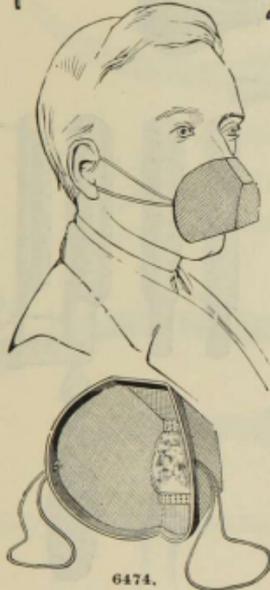


6471.

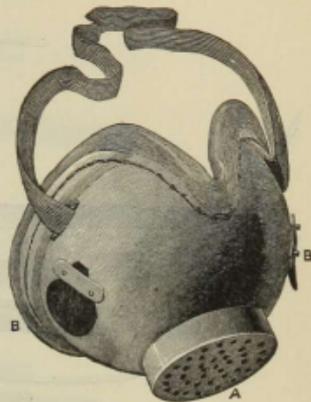
THORACIC.
PULMONARY—RESPIRATORY.



6475.



6474.



6472.

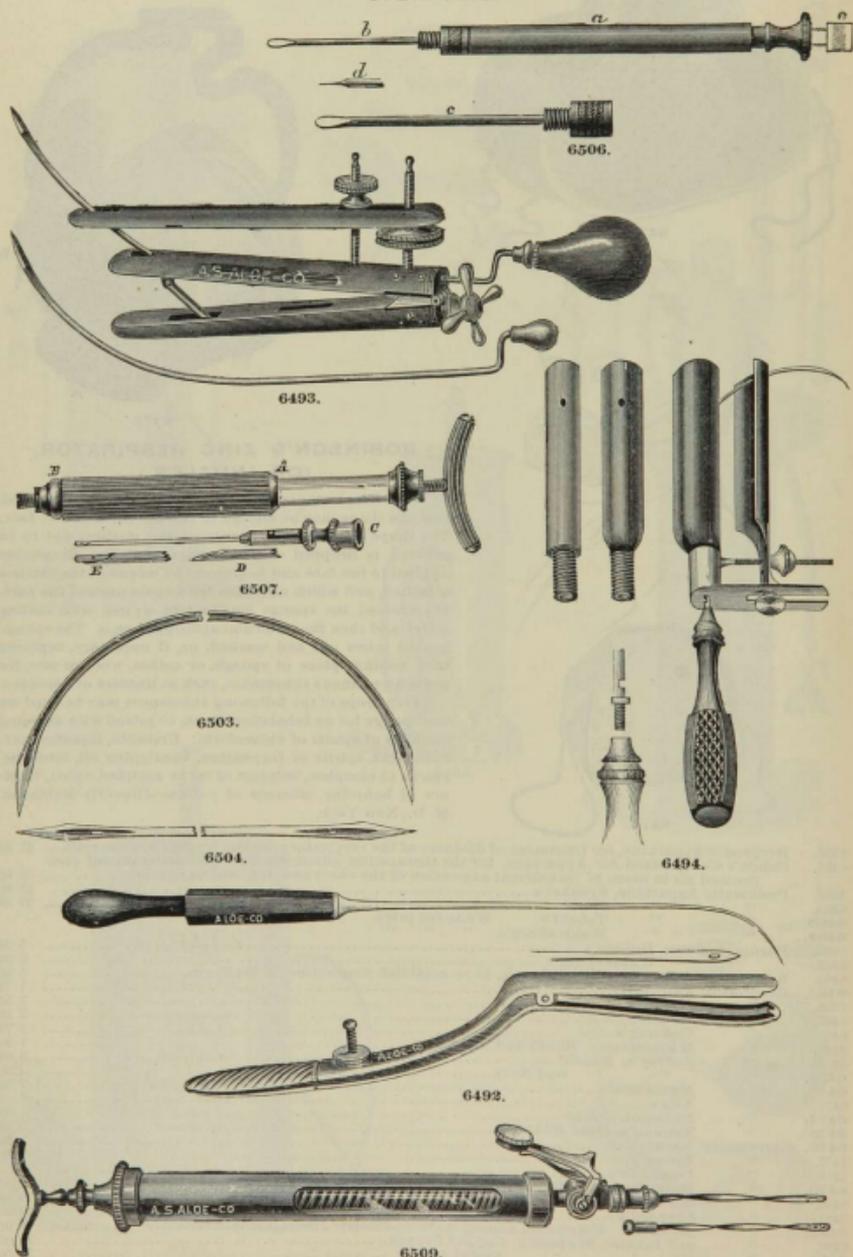
ROBINSON'S ZINC RESPIRATOR,
(OR INHALER.)

This Respirator is made of a pliable material, in order that the shape may be altered to suit the form of the face. The shape having been regulated, the medicament to be inhaled is dropped on the sponge, and the Respirator applied to the face and held there by means of the elastics attached, and which are intended to pass around the ears. If preferred, the sponge may first be wetted with boiling water, and then the medicament dropped on it. The sponge can be taken out and washed, or, if necessary, replaced with another piece of sponge, or cotton, wool or tow, for use with resinous substances, such as tincture of benzoine.

Five drops of the following substances may be used on the sponge for an inhalation alone, or mixed with an equal quantity of spirits of chloroform: Creosote, liquefied carbolic acid, spirits of turpentine, eucalyptus oil, terebene, spirits of camphor, solution of tar in rectified spirit, tincture of benzoine, tincture of iodine.—[Beverly Robinson, M. D., New York.

6456.	Bergeon's Apparatus, for treatment of diseases of the respiratory organs by gaseous enemata.....	\$7 50
6457.	Cohen's Compressed Air Apparatus, for the therapeutic administration of inhalations of compressed air in cases of insufficient expansion of the chest and deficient oxygenation.....	35 00
6458.	Pneumatic Apparatus, Fränkel's.....	12 00
6459.	" " Hess'.....	27 50
6460.	" " Tobold's, Write for price.	
6461.	" " Waldenburg's, " " "	
6462.	Pneumatometer, Holden's.....	5 25
6463.	" " Waldenburg's.....	6 00
6464.	Respiration Apparatus, Richardson's, to re-establish respiration in asphyxia.....	8 50
6465.	Respirator, Anti-dust.....	1 75
6466.	" " Coghill's.....	2 50
6467.	" " Dobell's.....	2 25
6468.	" " Gedling's.....	3 75
6469.	" " Haussmann's, Mouth and Nose.....	1 25
6470.	" " Jeffrey's, Mouth.....	2 00
6471.	" " " and Nose.....	2 25
6472.	" " Mackenzie's.....	2 50
6473.	" " Nitz's.....	1 15
6474.	" " Robinson's, Zinc.....	50
6475.	" " Tyndall's, Hard Rubber.....	2 50
6476.	Spirometer, Barnes'.....	7 50
6477.	" " Brown's.....	7 50
6478.	" " Dennison's.....	25 00
6479.	" " Hutchinson's. Illustrated among Anthropometric Instruments.....	24 00
6480.	" " Marsh's.....	2 50
6481.	" " Shepard's.....	10 00
6482.	" " Standard. Illustrated among Anthropometric Instruments.....	12 00
6483.	" " and Inhaler, Shepard's, Copper Bronze.....	20 00
6484.	" " " Nickel-plated.....	25 00
6485.	Steam Jacket, May's, for applying heat to the chest.....	26 50
6486.	Syringe, Tyndale's, Intra-Pulmonary, Hypodermic.....	4 25

HERNIAL. OPERATING.



HERNIAL.
OPERATING.

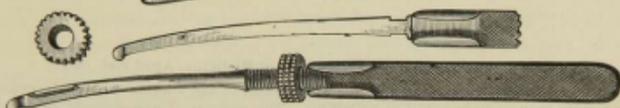
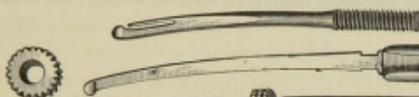
6487.



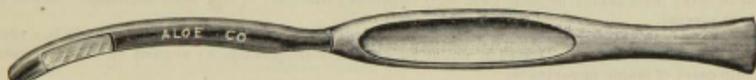
6490.



6491.



6496.



6498.



6499.



6500.



6501.

6487.	Director, Hinged Hernial.....	\$ 1 00
6488.	" Hunter's.....	60
6489.	" Levis'.....	1 00
6490.	" Peter's.....	1 50
6491.	" Stanley's.....	1 50
6492.	Hernia Instrument, Agnew's.....	4 50
6493.	" " Redfern Davis'.....	11 25
6494.	" " Wutzer's.....	9 00
6495.	Hernia Saw.....	1 50
6496.	Herniotome, Allis'.....	5 25
6497.	" Warren's.....	4 50
6498.	Knife, Cooper's Hernia.....	1 00
6499.	" Stewart's ".....	3 75
6500.	" Tesse's ".....	1 50
6501.	" Wales' ".....	1 25
6502.	Ligator, White's.....	7 50
6503.	Needle, Dowell's.....	75
6504.	" " Curved.....	75
6505.	Strephtome, Spanton's.....	1 50
6506.	Syringe, Davenport's.....	3 00
6507.	" De Garmo's.....	6 00
6508.	" Heaton's.....	3 00
6509.	" Warren's Latest.....	13 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

VARICOCELE.

REMARKS ON AMPUTATION OF REDUNDANT SCROTUM FOR THE RELIEF OF VARICOCELE.

ILLUSTRATED WITH NEW INSTRUMENTS TO FACILITATE THE OPERATION.

By M. H. HENRY, M. A., M. D.,

LATE SURGEON-IN-CHIEF STATE EMIGRANT HOSPITALS, WARD'S ISLAND, NEW YORK, ETC., ETC.

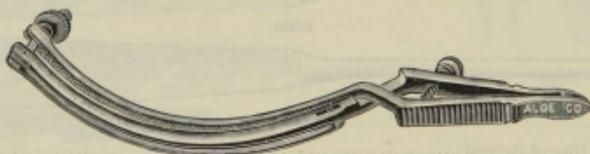
(Read before the New York Academy of Medicine, April 21st, 1881.)

* * * In the removal of a redundant scrotum in the manner I shall describe, for the relief of varicocele, no more than ordinary skill is called for. The success of any delicate surgical operation depends mainly on the care and management before, during and subsequent to the operation. I have ventured to allude to many little details because I am fully impressed that they bear a most important relation to the chances of success.

Success in any operation depends on attention to details. Failures are too frequently the result of neglect of these so called trifles. Cases of minor surgery have frequently—by neglect of details—been converted into cases of major importance.

DESCRIPTION OF INSTRUMENTS.

This instrument, which I have called scrotal forceps or clamps, consists of two parts (Fig. 6513). The main part of the instrument has two double curved blades, made of steel, about ten inches long, sufficiently heavy to give strength and admit of pressure without injury when in contact with the tissues. The handles



6513.

are large enough to admit of a good grasp without cramping. That part of the instrument below the joint is curved as nearly as possible according to the natural lines of the raphe, from the upper anterior part of the scrotum down to and under the scrotum, so that it embraces, when placed in front of the scrotum, the entire and exact portion which it is desired to remove. The coating surfaces are evenly notched to prevent the tissues from slipping, affording a more secure hold on the soft parts with less pressure and less injury than smooth surfaces. The blades are only thick enough to give strength, without leaving too much tissue in front.

The handles are curved so that while they maintain a direct median line they do not interfere or press on the genital parts. The double spring, besides giving additional security and compactness, renders them, to a great extent, self-acting, easy of manipulation, and that, at times, of very great consequence, ability on the part of the operator to perform the operation without the aid of additional assistance.

The screws in the handle and at the end of the blades afford a complete and perfect hold of the parts to be removed. They are not adjusted until the operator is perfectly satisfied that he has embraced the exact portion to be removed, in front of the blades.

GENITO—URINARY.

VARICOCELE.

REMARKS ON AMPUTATION OF REDUNDANT SCROTUM FOR THE RELIEF OF VARICOCELE.—CONTINUED.

The extra blade is made of steel, nickel plated, and is maintained in the right anterior surface of the clamp by two small pins that fit in grooves cut in the clamp. It is easily inserted with a little pressure, and removed as easily by pressing downward and forward; it is then dislodged by slightly raising the extreme end. The extra blade, when in position, leaves a fenestra to afford the surgeon the facility of inserting all his ligatures, should he prefer it, before dividing the parts. The thickness or amount of the tissue left in front of the main blade and between that and the extra blade, which is the guide for the part to be removed, is ample to assist union, and if the division is a clean one, and the stitches are close and evenly inserted, the pressure and tension are so slight, or rather, so divided over the entire cut surfaces, that there is little probability of ulceration through the stitches before union has taken place.

When the part has been removed the extra blade is displaced, leaving a free border exposed in front of the main blade about a quarter of an inch in thickness. In a few minutes the whole wound can be stitched without any inconvenience. The clamp is, of course, not removed until this is accomplished.

Besides the clamp the only instruments necessary are the scissors or scalpel, needles, with either silk or fine silver wire for sutures, a few acupuncture needles, a few serrefines, silver pins and some adhesive plaster.



6525.

For the removal of the redundant portion I prefer scissors to the knife. I am inclined to think the hemorrhage is apt to be less and the cut edges heal more readily by first intention. I cannot give any positive explanation for this, but such is my impression. When the double layers of the scrotum are tightly compressed between the blades of the clamp it forms a very dense, tough substance, and requires a pair of very strong, sharp scissors to cut through. It is as dense as cartilage. A strong pair of scissors will, with some extra effort, serve the purpose; but to insure an easy and clean removal of the part I use a cutting instrument which I have named cartilage scissors (Fig. 6525). I have dispensed with the rings. These scissors can be grasped and handled with the utmost ease. By the aid of the springs on the inner sides of the handles they are self-acting so far as opening the blades. They are curved on the flat side. They are not only useful for this operation, but will, I think, be found to serve better, and are handled with greater facility, than any other scissors wherever a cutting instrument is needed for cartilage or other dense or thickened tissues.

GENITO-URINARY.

VARICOCELE.

BROOME'S (ST. LOUIS) VARICOCELE CLAMP.



6512.

The objection to Lewis' Clamp has been the serrated or roughened inner surfaces, designed to prevent slipping, which produces more or less laceration or contusion of the parts. This I have overcome by having my instrument makers—Messrs. A. S. Aloe Company—make for me an improved clamp with rubber-lined jaws and with flat-head thumb-screws instead of the round ones originally employed.

I find the rubber-lined jaws prevent any slipping whatsoever, and unless excessive pressure be applied no bruising of the parts need be feared.

G. WILEY BROOME, M. D., St. Louis.

HENRY'S SCROTAL CLAMP.

Until a short time ago I considered the operation of course a dangerous one, the hemorrhage being at times alarming. To overcome this difficulty I devised a clamp, which is shown (half-size) in the accompanying cut.



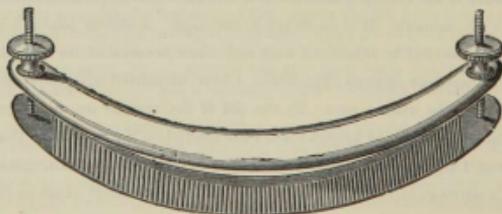
6515.

All the scrotal clamps heretofore invented have only served as guides to the surgeon, and their removal after cutting is always followed by profuse hemorrhage. With my clamp the operation is completed before its removal, and there is absolutely no hemorrhage. On the inside of blades of my clamp are longitudinal grooves which receive a fold of scrotum, thus preventing any slipping whatever, and no bruising of the parts is to be encountered. I find that the cut edges, when the neighboring tissues are not bruised, always heal by first intention. Ordinarily I employ a woven-silk ligature, and apply simple carbolic dressings; but recently I have had splendid success by the antiseptic method. When the latter is employed I use the juniperized animal ligature, wash parts with $\frac{1}{1000}$ bi-chloride mercury solution, dress wound with iodoform cotton and gauze, held in place by figure-of-eight bandage. This dressing I allow to remain in position eight days. On its removal the wound is found to have healed by first intention, and with little or no suppuration.

I also use my clamp in performing circumcision, and find it indispensable. I always use a thread long enough for two interrupted stitches, to be cut in the middle before tying, after removal of the clamp.

In offering my clamp to the profession, I feel confident that its use will soon place excision of the scrotum as a radical cure for varicocele in the category of minor surgery.

FERDINAND KING, M. D., New York.



6516.

GENITO-URINARY.

VARICOCELE.

KEYES' VARICOCELE NEEDLES.



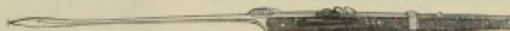
6522.



6523.

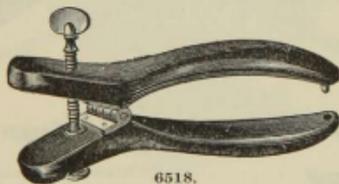
"I have two varieties of needles, both straight, in handles; one has a lance-shaped point, the other a point like a hypodermic needle. The former I prefer when any of the thickened tissues of the cords have to be pierced, the latter when a single large vein can be isolated from all the other tissues, as is sometimes the case. Both needles have a long eye. The needle is threaded with a loop of silk, or a thin whale tendon (carbolized), or a piece of carbolized catgut. The scrotum is to be thoroughly washed out with a solution of bichloride of mercury, one in one-thousand, and all instruments, ligatures and the operator's hands to be soaked constantly in the same solution. Ether is not admissible, as the patient must stand up. A few drops of four per cent solution of cocaine, thrown under the skin, near the point of proposed puncture, will nullify the pain in the case of exceptionally nervous patients."

KEYES' IMPROVED VARICOCELE NEEDLE.



6524.

I have devised and used no less than six different needles for facilitating the operation, but of late have come to use a modification of Reverdin's needle. The needle, as modified, is simply a straight needle in a handle. By a mechanism in the handle the eye of the needle is opened and shut, and by a spiral spring which I have applied the eye is kept permanently closed, so that, while manipulating the needle, the eye cannot be opened, as may and occasionally does happen in the original Reverdin needle, during manipulation of the point within the scrotum.—E. L. KEYES, M. D., N. Y.



6518.

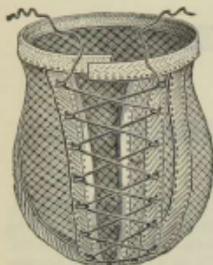
6510.	Button, Pancoast's Varicocele.....	\$ 0 25
6511.	Clamp, Andrews' ".....	4 00
6512.	" Broome's (St. Louis) Varicocele.....	3 50
6513.	" Henry's Scrotal. Illustrated and described on page 368.....	6 00
6514.	" Horteloup's ".....	10 00
6515.	" King's ".....	6 00
6516.	" Lewis' Varicocele.....	3 00
6517.	" Sayre's Scrotal.....	3 00
6518.	" William's Varicocele, Hard Rubber.....	2 00
6519.	" " " Metal.....	60
6520.	" Woods'.....	2 00
6521.	Needle, Bryson's (St. Louis) Varicocele, with Button.....	2 00
6522.	" Keyes' Varicocele, Lance Point.....	1 25
6523.	" " " Oblique ".....	1 25
6524.	" " " Improved Varicocele.....	4 50
6525.	Scissors, Henry's Cartilage. Illustrated and described on page 369.....	3 75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

ORCHITIS.

CARROLL'S ORCHITIS COMPRESSOR.

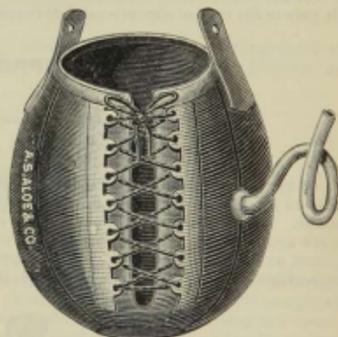


6526.

"Carroll's Orchitis Compressor is a bag of webbing like that of the common suspensory, open at one side, is bound at its mouth with a strip of flexible metal, which can be wrapped above, and thus made to isolate and control the affected testicle. The side opening is then laced from below upwards with elastic cord, which maintains its elastic tension as the testis decreases in size, or may be loosened or tightened as occasion may demand. Not the least advantage of this appliance is that the patient can remove and readjust it for purposes of cleanliness."—Medical Record, March 19, 1881.

HAWES' ORCHITIS COMPRESSOR.

Hawes' Orchitis Compressor is composed of two rubber bags, the inner one easily distensible, and united so as to form an air-tight compartment between the outer and inner layers. A small rubber tube perforates the outer layer. Placing the swollen testicle within the bag, its mouth completely encircling the cord, it is carefully closed by lacing; air is then blown from the mouth or by syringe through the rubber tube into the air-tight space, and prevented from escaping by simply tying the tube. Instead of air, hot water may be used.—Jesse Hawes, M. D., Greeley, Colo.



6527.

WHITE'S ELASTIC SCROTAL COMPRESSOR.



6530.

"White's Elastic Scrotal Compressor is shell-shaped, very light and symmetrically molded to receive and accommodate within its cavity a swollen testicle, surrounded by its scrotal integuments. The material of which it is composed is hardened rubber, special care being taken to render the walls as thin and light as possible. The peculiar shape selected has been found by experience to afford the very best mechanical support to the pendulous organ. The cleft, running down the front of the shield, is intended to admit of free overlapping of the two thin edges. By this means ample provision is made for all necessary reinforcement of compression which is to be practiced during the management of the case."—O. A. White, M. D., Boston Medical and Surgical Journal, January 29, 1880.

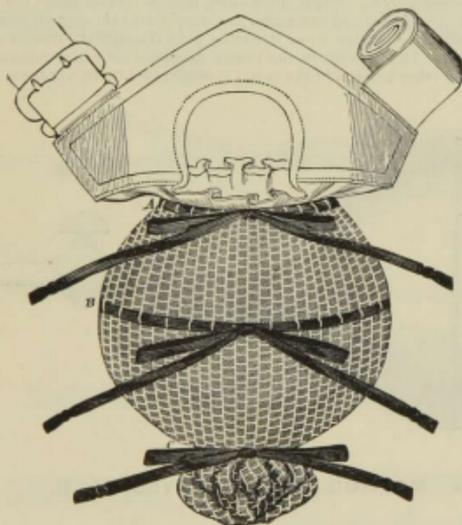
GENITO-URINARY.

ORCHITIS.

MILIANO'S SCROTAL COMPRESSOR.

The first step in applying the apparatus is to secure for it close apposition to the scrotal organs. This is begun by taking the two ends of the upper lacings on either side (marked A), and by pulling uniformly on each, the diameter of the upper part of the appliance is contracted and closed around the spermatic cords above the testes, so as to prevent either of the latter escaping. The bandage being shirred snugly, is held in position by tying the laces in a bow-knot under the penis. The next step is to similarly shirr and tie the lowest set of lacings, which closes and shortens the bandage below the testicles (marked C). This produces counteraction and compression against the upper double set of lacings, care being taken to exclude any fold of the scrotum.

The next lacings above the lowest set (marked B), which encircle the middle of the scrotal organs, should not constrict (as shown at A and C), but be shirred only snugly enough to be comfortable. The com-



6529.

pression acts upon the veins and absorbents, when the enlargement will begin to abate. As this reduction of the scrotal contents progresses, the sets of lacings (marked A and B) are to be tightened, in order to maintain equable compression.

They are manufactured of linen and cotton fabrics, mixed, and for ordinary purposes are made in three sizes, No. 1 being the smallest, No. 2 medium and No. 3 the largest.

6526.	Compressor, Carroll's, Orchitis.....	\$1 00
6527.	" Hawes', "	2 25
6528.	" Hersman's (St. Louis), Scrotal.....	2 50
6529.	" Miliano's, "	1 50
6530.	" White's, Elastic Scrotal.....	2 25

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

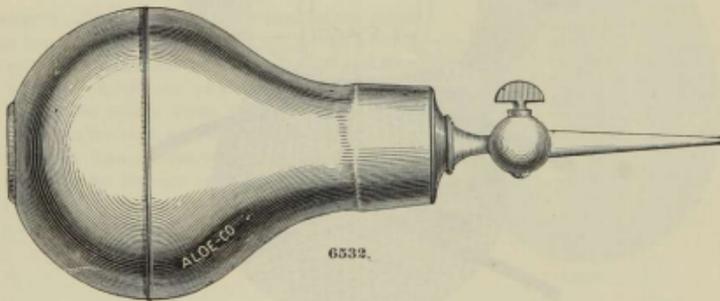
HYDROCELE.

"A term generally applied to a collection of serous fluid in the areolar texture of the scrotum, or in some of the coverings, either of the testicle or spermatic cord. To the first of these varieties the names external hydrocele (h. œdematodes) have been given; and, to the second, those of hydrocele interna' (h. tunicæ vaginalis testis). When the collection occurs in the envelope of the testicle it is called hydrocele of the tunica vaginalis; and the epithet, congenital, is added; hydrocele congenita, when the interior of the membrane in which it is situate still communicates freely with the cavity of the abdomen. When it exists in the spermatic cord it is called encysted or diffused hydrocele of the spermatic cord, hydrocele cystica, hydrocele



6531.

funiculi seminalis, as the case may be. The tumor of the distended scrotum is oblong; greater below than above; indolent and semi-transparent. When it becomes inconveniently large, the fluid may be evacuated by puncturing with a trocar; but, as it collects again, this operation can only be considered palliative. The radical cure consists, usually, in injecting some irritating fluid through the canula of the trocar, which has been left in after puncturing. This is kept in the tunica vaginalis for a few minutes and then withdrawn. The coat inflames, adhesion takes place, and the cavity is obliterated."—DUNGLISON.



6532.

METHOD OF E. L. KEYES, M. D.

"The apparatus I employ is a glass syringe (Fig. 4052, page 113) holding one hundred minims, having for its nozzle an ordinary hypodermic point, not the very smallest size. If the cyst is small this point is thrust into it and the clear contents drawn out with a syringe. Then the latter is unscrewed from its point, rapidly and thoroughly washed, and promptly filled with pure carbolic acid, deliquesced with a little glycerine. The syringe is now screwed again upon the point, which has been left sticking in the cyst, and from thirty to sixty minims of the deliquesced acid thrown in. The point is now withdrawn and the whole operation terminated, with not much more trouble than it takes to give a hypodermic injection.

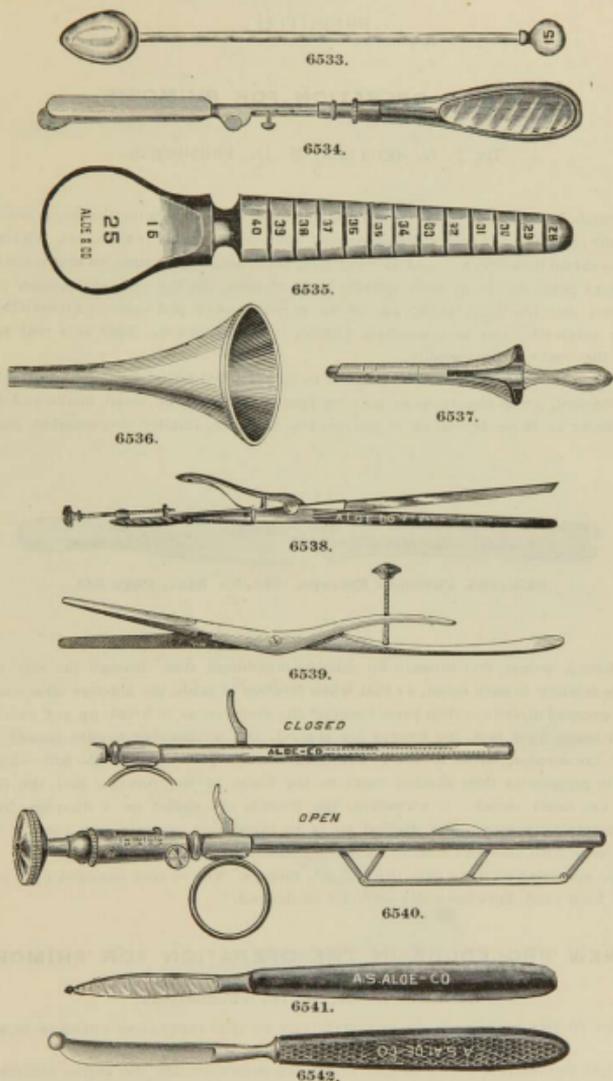
"When the hydrocele is large I modify the operative method as follows: I first insert the hypodermic point and see that a drop of clear serum oozes from it. I now puncture the cyst at another point with a fine aspirating needle, empty the contents, and withdraw the aspirating needle. I then screw the glass syringe upon the hypodermic point first introduced, and throw in the drachm of deliquesced acid, which appears to be all that is required to accomplish the cure. Nothing is easier; no operation of minor surgery in my hands has been more satisfactory in its results."—Medical Record, February 20, 1886.

See "Aspirators," pages 108 to 113.

- | | |
|--|---------|
| 6531. Hydrocele Syringe, Levis', $\frac{1}{2}$ -oz. Hard Rubber Syringe, with long Silver Canula to introduce through Trocar Canula for injecting, after having evacuated the fluid..... | \$ 1 25 |
| 6532. Hydrocele Syringe, Van Buren's..... | 2 00 |

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.
MEATIC.



6533.	Bougie à Boule, Piffard's, Fossal.....	\$ 85
6534.	Knife, Piffard's, Fossal Stricture.....	7 50
6535.	Meatometer, Piffard's.....	1 00
6536.	Meatoscope, Glass, Silvered.....	35
6537.	Walt's.....	1 00
6538.	Meatotome, Civiale's.....	3 75
6539.	" Gouley's.....	2 25
6540.	" Mitchell's.....	15 50
6541.	" Otis'.....	1 25
6542.	" Piffard's.....	1 50
6543.	Sound, Piffard's, Fossal.....	75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

PREPUTIAL.

A NEW OPERATION FOR PHIMOSIS.

BY P. G. SKILLERN, M. D., Philadelphia.

I wish to invite the attention of the profession to a method of performing the operation of circumcision which I originally proposed and have since performed upon several cases of phimosis. The object sought to be obtained is to excise both prepuce and mucous membrane at the same time, so that when the forceps are removed the glans penis will be at once entirely clear of both. In the ordinary manner of operating, it frequently occurs that the lining membrane of the prepuce covers and entirely surrounds the glans after the foreskin is removed, so as to necessitate slitting it up afterward. This is a real annoyance, and also protracts the healing considerably.

In performing this operation, the foreskin is to be retracted until the junction of skin and mucous membrane is reached, or as nearly so as may be desired; then three small hooks attached to a chain—somewhat similar to those contained in postmortem case, but smaller—are inserted from within out-



Skillern's Phimosis Forceps. See No. 6557, Page 381.

ward, at equidistant points, first through the mucous membrane, then through the skin, thus fixing the two in their new relation to each other, so that when traction is made the mucous membrane is put upon the stretch. A grooved director is then passed around the glans, so as to break up any existing adhesions. Now the chain being kept taut, the forceps are applied, and a threaded needle passed twice through the fenestra of the forceps, so as to leave two long threads passing through both skin and mucous membrane. The prepuce is then divided close to the blade of the forceps, and the latter removed. After ligating the small vessels, if necessary, the threads are raised on a director from the center between the remaining prepuce, and divided so as to leave four separate and distinct sutures, which, when tied, will leave both skin and mucous membrane nicely coaptated.

This is the operation as done with the author's forceps. The results obtained by it in several cases in which it has been used, have been all that could be desired.

A NEW PROCEDURE IN THE OPERATION FOR PHIMOSIS.

BY R. J. LEVIS, M. D., Philadelphia,

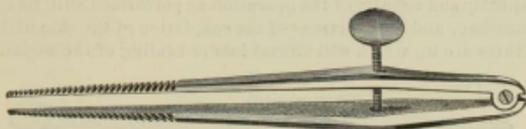
SURGEON TO THE PENNSYLVANIA HOSPITAL, AND TO THE JEFFERSON COLLEGE HOSPITAL.

The object of the instrument illustrated in the cut is to facilitate the entire excision of the inner inelastic mucous membrane of the prepuce, without removing any, or more than may be required, of the outer normal skin. In some cases of phimosis total circumcision is necessary, but in a considerable proportion only a partial ablation of preputial integument is essential, and the inconvenience may be readily overcome by the method I suggest, without causing disfigurement, or indeed, making much change from the normal appearance of the organ. In most instances only the inner lamina of the preputial fold is morbidly involved, and the excessive removal of the outer layer is an error which is liable to be committed in the usual manner of operating.

GENITO-URINARY.

PREPUTIAL.

LEVIS' OPERATION FOR PHIMOSIS.—CONTINUED.

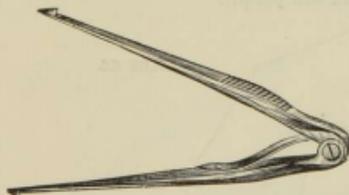


Levis' Phimosi Forceps. See No. 6554, Page 381.

In general form the instrument somewhat resembles the ordinary mathematical compasses or dividers. The limbs, or blades, terminate in blunt points, and are deeply serrated on their outer surfaces, with points or teeth set backward, like fine saw teeth, for the purpose of firmly holding the mucous membrane without the risk of slipping when traction is made. The blades are forced apart by a thumb screw.

In operating, the blades, closed to a point, are introduced within the prepuce up beyond the corona of the glans. They are then, by turning the thumb screw, strongly separated, so as to render the mucous membrane tense. Traction is then made, and the outer elastic skin is drawn back fully, so as to be away from the portion to be excised, and excision is effected by transfixing the prepuce through the middle with a bistoury, and cutting laterally in both directions toward the blades of the instrument. Any remaining portion of inelastic tissue may be removed with the scissors, and the operation is completed by attaching the cut edge of skin to the edge of mucous membrane remaining, by a few stitches. In this manner the inner inelastic mucous membrane may be removed, while all the normal outer integument remains.

GIRDNER'S METHOD OF OPERATING FOR PHIMOSIS.



Girdner's Phimosi Forceps. See No. 6550, Page 381.

Grasp the penis between thumb and forefinger of left hand and draw the foreskin back until the mucotegumentary junction, from the boundary of its opening. Take the forceps in the right hand, press the jaws together and pass the points within the preputial opening until the barbs are just within the mucotegumentary junction above and below; relax the grasp on the forceps and the spring presses the jaws apart, and the barbs transfix, first the mucous membrane, and then the skin. Now make traction on the instrument, and the skin and mucous membrane are drawn out together and are cut off with stout scissors, just in front of the glans penis. The cut edges of the two folds are now found to coaptate perfectly, having been cut at one stroke, and with a few sutures, union by first intention follows without a cicatrix.

GENITO-URINARY.

PREPUTIAL.

A NEW PHIMOSIS FORCEPS.

By WALDO BRIGGS, M. D., St. Louis, Mo.

PROFESSOR OF CLINICAL SURGERY, BEAUMONT MEDICAL COLLEGE; CONSULTING SURGEON TO ST. LOUIS CITY AND FEMALE HOSPITALS, AND TO THE ST. LOUIS BAPTIST HOSPITAL.

The superiority of these forceps over others designed for the operation of circumcision consists in the simplicity and celerity of the operation as performed with them; the comparative freedom from hæmorrhage and the exactness of the coaptation of the skin with the mucous membrane when the sutures are in, which will almost insure healing of the wound by first intention.



6548. See Page 381.

The forceps resemble the ordinary rat-tooth dissecting forceps, being, however, a trifle larger and heavier. The blades are serrated to insure a good hold and the pressure of the blades to check any possible hæmorrhage is controlled by a set-screw. The adjustable guard is the feature of the instrument. It permits the sutures to be placed before the incision is made, which, it will be readily understood, can be done much more conveniently prior to the incision than after. Furthermore, the guard being adjustable, it can be raised, and the sutures tied before removing the forceps, thus checking any possible hæmorrhage that might otherwise follow removal of the forceps.

METHOD OF PERFORMING CIRCUMCISION WITH BRIGGS' PHIMOSIS FORCEPS.

By G. M. BAUMGARNER, M. D., St. Louis.

ASSISTANT TO DR. WALDO BRIGGS.

Wash the parts thoroughly and introduce laterally, a short, glass head acupressure pin into the end of the prepuce, as shown in Fig. I, driving the point through both mucous membrane and skin, about an eighth of an inch anterior to the tip of the glans, and carrying the pin through as far as the head will permit.

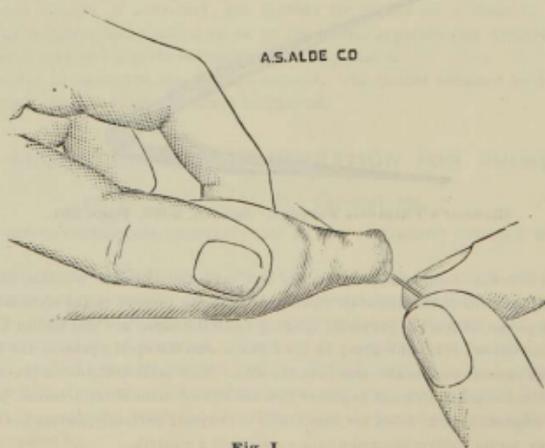


Fig. I.

GENITO-URINARY.

PREPUTIAL.

METHOD OF PERFORMING CIRCUMCISION WITH BRIGGS' PHIMOSIS FORCEPS.

Now introduce another pin as before, bringing the point out on the opposite side. Carry both pins through as far as the glass heads will permit, thus holding the mucous membrane and skin closely together, that one incision may sever both at the same time. Then, with the forceps (the guard closed down on the blade), grasp the prepuce a trifle posterior to the pins and clamp, as shown in Fig. II. Introduce the sutures between the guard and the forcep blades.

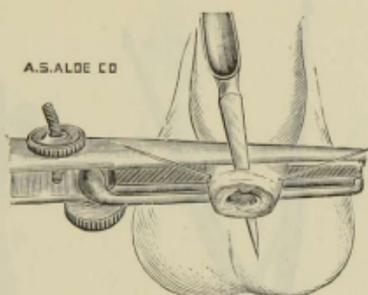


Fig. II.

Any desired number of sutures may be introduced, but it is only necessary to have three, which, on division of the loop, makes six sutures—three on each side. Take a sharp-pointed straight bistoury and pass it through the center of the prepuce anterior to the guard, Fig. II, cutting outward. Reverse knife and return, cutting the prepuce off. The forceps being held laterally, obviates any constriction of the membrane, in the majority of cases; but should there be any, it can be easily remedied by dividing the membrane on the dorsum, between the sutures.

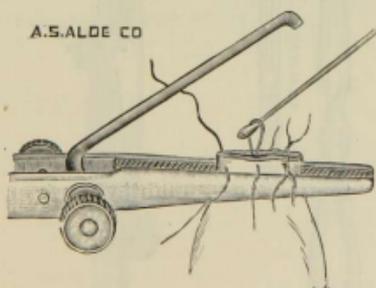


Fig. III.

Raise the guard of the forceps and introduce a probe, as in Fig. III, between the two layers of mucous membrane, and bring up the middle sutures. Divide the tie on either side, treating the other two sutures likewise. Remove the forceps and dress as you like best.

GENITO-URINARY.
PREPUTIAL.



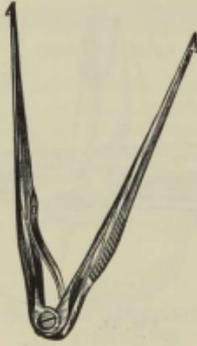
6548.



6549.



6560.



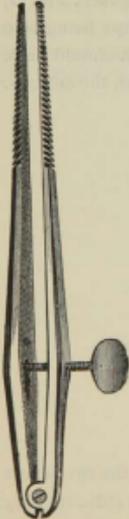
6550.



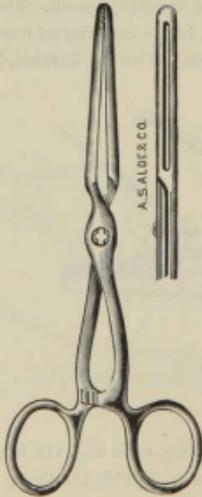
6552.



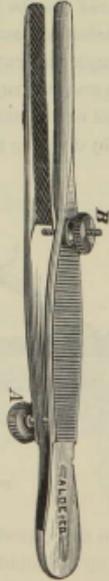
6553.



6554.



6555.



6556.



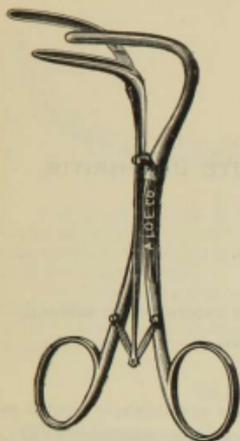
6557.



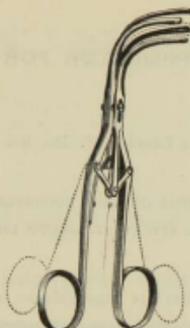
6558.

GENITO-URINARY.

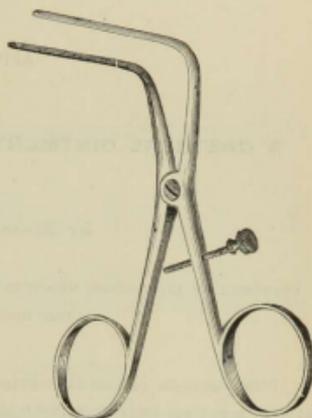
PREPUTIAL.



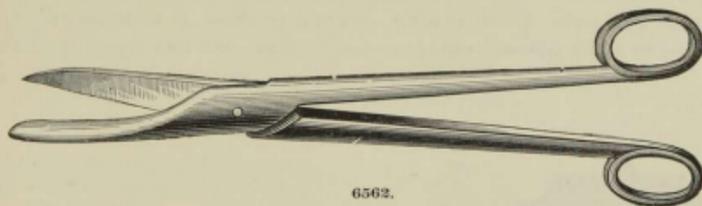
6546.



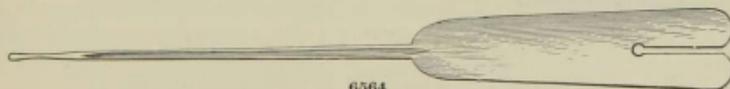
6547.



6545.



6563.



6564.

6544.	Dilator, George's Phimosi	.....	\$ 6 75
6545.	" Hutchinson's Prepuce	.....	1 75
6546.	" Nélaton's "	.....	3 75
6547.	" Stewart's "	.....	4 75
6548.	Forceps, Briggs' (St. Louis) Phimosi. Described on pages 378 and 379.	.....	3 00
6549.	" Fisher's Phimosi	.....	2 25
6550.	" Girdner's " Described on page 377.	.....	3 50
6551.	" Hall's "	.....	2 25
6552.	" Henry's "	.....	3 40
6553.	" Knox's "	.....	3 00
6554.	" Lewis' " Described on page 376.	.....	2 00
6555.	" Ricord's "	.....	2 50
6556.	" Rogers' "	.....	2 25
6557.	" Skillern's " Described on page 376.	.....	1 75
6558.	" Torlat's "	.....	2 00
6559.	Plate, Jeffrey's Circumcision	.....	75
6560.	Ring, Ross' Hard Rubber Circumcision	.....	75
6561.	Scissors, Baruch's Circumcision	.....	1 90
6562.	" Taylor's Phimosi	.....	3 75
6563.	Spatula, Circumcision	.....	75
6564.	" Frenum, and Probe Director	.....	75
6565.	Syringe, Taylor's Sub-Preputial	.....	1 25

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

PENILE—URETHRAL.

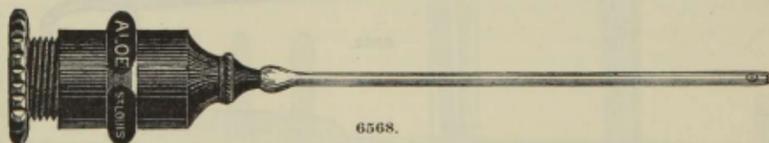
APPLICATING—IRRIGATING.

A URETHRAL OINTMENT APPLICATOR FOR ACUTE URETHRITIS.

BY BRANSFORD LEWIS, M. D., St. Louis.

LECTURER ON ANDROLOGY, MISSOURI MEDICAL COLLEGE; CONSULTANT IN ANDROLOGY TO MISSOURI PACIFIC HOSPITAL AND TO ST. MARY'S INFIRMARY.

Pathology of the present day teaches us that it is impossible, by any means now known, to jugulate or cut short a primary gonorrhœa that is well established, and, therefore, that the most desirable end to be attained is that of conducting the disease through its course *tuto cito et jucundo*, with as little suffering on the part of the patient as possible. The use of atomized ointments in the treatment of inflammation of the nasal, pharyngeal and other mucous membranes is now universally advocated. In the severely acute stages of gonorrhœa they are equally applicable, affording many points of advantage not possessed by other vehicles.



6568.

The Urethral Applicator illustrated offers in a simple and handy way a means of making such urethral application of medicated ointments, and with absolutely no pain to the patient. For the suppression of acute suffering, strangury, etc., by the introduction of cocaine or morphine ointment into the urethra (anterior or posterior) with this instrument, nothing is superior. Albolene ointment is the vehicle preferred.



6566.

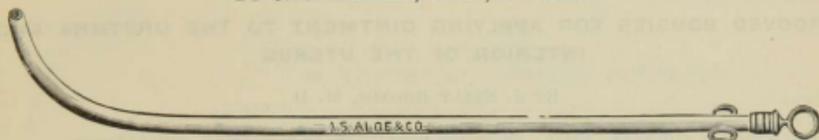
GENITO-URINARY.

PENILE—URETHRAL.

APPLICATING—IRRIGATING.

A URETHRAL OINTMENT APPLICATOR.

By C. F. HERSMAN, M. D., St. Louis.



6567.

A silver catheter, No. 18, French, with a short curve, the orifice in the distal end being only slightly smaller than the calibre of the instrument. Into this a piston, fixed upon a flexible wire, is fitted. The instrument is to be charged by partially withdrawing the piston and repeatedly thrusting the distal end into a very firm ointment base.

The contents may then be deposited in the urethra, in any desired quantity, by pressing upon the piston. The particular advantage presented by this instrument is that it can be charged at its distal end and that the opening is large enough to admit of sufficient quantity of the medicament being deposited to produce the desired result.

SAGE'S URETHRAL POWDER APPLIER.



6570.

The instrument consists of three principal parts, two of which resemble very much the original form of the urethroscope, as devised by Desormeaux, Finger and others, namely: First a canula, with a cup attached to one end; second, an obturator, to facilitate the introduction, and third, a hollow spiral, whose object is to convey the powder through the canula into the urethra.

It is not possible to pack the urethra too firmly, as the instrument is in a certain measure self-regulating.

If properly executed, the whole operation will cause very little inconvenience to the patient; by the previous use of a cocaine solution it can be made absolutely painless. The patient will during the next few hours naturally have a sensation of fullness; by and by, as the powder is dissolved and eliminated by a profuse watery discharge, the urethra will be emptied within four to six hours.

6566.	Appliator, Bryce's, Urethral, Silver.....	\$ 3 50
6567.	" Hersman's (St. Louis), Urethral Ointment, Silver	2 50
6568.	" Lewis' " " "	1 75
6569.	" Nall's, Soft Rubber Cupped Ointment.....	1 00
6570.	Applier, Sage's, Urethral, Powder.....	7 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO.

PENILE—URETHRAL.

APPLICATING—IRRIGATING.

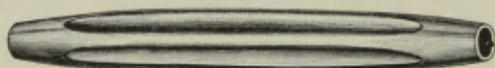
GROOVED BOUGIES FOR APPLYING OINTMENT TO THE URETHRA AND INTERIOR OF THE UTERUS.

BY J. NEELY RHOADS, M. D.,

CHIEF OF CHILDREN'S CLINIC, JEFFERSON MEDICAL COLLEGE HOSPITAL, PHILADELPHIA.

For the past two or three years I have been using different ointments on bougies in the treatment of gonorrhœa of long standing and chronic urethritis. The results obtained were generally negative, owing, I think, to inadequate instruments, for the contraction of the meatus renders it next to impossible to reach the desired parts with the salve on the ordinary bougie or sound, the salve remaining in a large ring around the bougie at the handle, upon withdrawal. And the cupped sound contains such a small number of cavities and are arranged so that the urethra is only touched with the ointment in spots in a haphazard way, and being made larger at the handle than at the cupped portion, gives so much pain, due to stretching of the meatus, that it must be withdrawn before the parts are properly reached or the salve dissolved. The ribbed bougie and catheter are subject to the same meatus-stretching objection. The syringe in use for carrying ointment is very inaccurate in its application, and is not, precisely speaking, an ointment carrier, as ointments must be semi-liquid or they can not be used.

Last fall I had several three-inch bulbs made, such as are used in my pocket set, Fig. 7036, Page 436, (described in *The Medical News*, July 10, 1886, page 54), deeply grooved on four sides, as shown full size in accompanying cut, and have used them since with gratifying results. I gave several sets of these to my



6572.

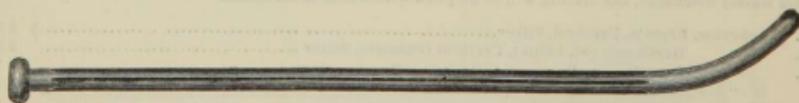
friends, who speak of them very highly, reporting cases of urethritis cured or benefitted, both acute and chronic, specific and non-specific, occurring in both sexes. Several cases of cervical endometritis are also being treated by this method.

I have cured several cases of gonorrhœa of long standing in the male by applying the following ointment on the grooved bulbs:

R.—Argenti nitratis.....	gr. x.	
Tr. benzoin comp.....	gīt. xv.	
Unguenti petroli.....	ʒ j.	—M.

Making two or three applications per week. After applying the salve I insert the bougie in the ordinary manner, using either the straight or the curved point—preferably the straight. After the bulb passes the meatus I watch the patient's face, ascertaining by the facial expressions, which are the most sensitive parts, and then allowing the instrument to remain in such a position that they shall be perfectly anointed.

Now, the advantage claimed for this instrument over other ointment-carriers is the operator's ability to locate by it the exact sensitive or diseased spot of the urethra, for, be it remembered, after the bulb of this instrument passes the meatus (the most sensitive part of the normal urethra) the passage is painless if the urethra be not inflamed; hence, the moment the patient flinches we know beyond a doubt that we have reached the diseased part. I have frequently allowed a bulbous bougie of large size to remain in position for ten and even fifteen minutes, the patient walking around my office perfectly unconcerned. We do not expect this instrument to cure every urethric or endometritic disease, but do hope it will find a useful place as a salve-carrier.

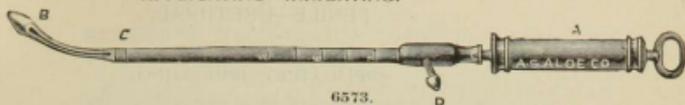


6571.

GENITO-URINARY.

PENILE—URETHRAL.

APPLICATING—IRRIGATING.

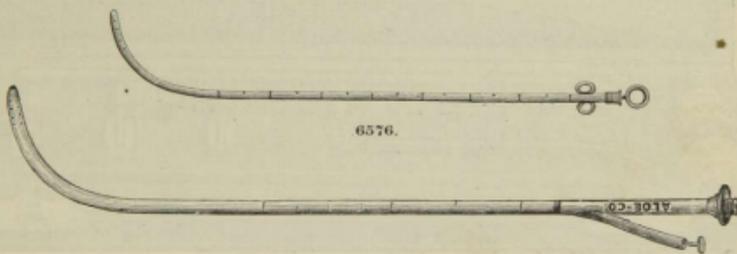


6573.

WAECHTER'S IMPROVED CATHETER.

For some time past it has been my desire to find some simple means by which the posterior part of the canal could be treated. After many unsuccessful attempts I have now been able to have an instrument made which answers the purpose admirably. The accompanying figure demonstrates itself. The fluid is injected by means of the syringe, *A*, running through a narrow canal, and making its issue at the point *B*, whose openings are directed backward. The fluid comes then in contact with the mucous membrane, re-enters the catheter at *C*, and flows off at *D*. Consequently the anterior part of the canal is entirely avoided, and a strong solution of nitrate of silver, etc., can locally be applied without producing any considerable pain.

The catheter is made of hard rubber, as is also the syringe, the former can be separated into three parts, easily cleaned, and is manufactured in different sizes.—From the Medical Record, August 6th, 1892.



6576.

6575.

6579. WEIR'S URETHRAL DILATOR,

Is designed for the abortive treatment of gonorrhoea in the male. It will be found admirable for the detection of concealed chanere and for breaking up stricture when near the meatus.

The dilator consists of two hollow metal blades fitting each other (as shown in figure A) so closely that it can be introduced into the urethra, the same as an ordinary bougie. Figure B shows the blades open, as they are dilated in the urethra.

The instrument is $2\frac{1}{2}$ inches long, finely polished and nickel-plated, thus insuring a perfectly smooth surface.



B.



A.

6577.

6571.	Bougie, Caspar's, Hard Rubber, Ointment.....	\$ 1 50
6572.	" Rhoads', Applying.....	2 00
6573.	Catheter, Waechter's, Improved, with H. R. Syringe.....	3 00
6574.	" Wohlfarth's, Ointment.....	3 50
6575.	Catheter Syringe, Bigelow's, Silver.....	4 00
6576.	" Parker's ".....	2 50
6577.	Caustic Syringe, Dick's.....	2 50
6578.	Curette, Rokey's, Deep Urethral, for Chronic Gonorrhoea.....	.....
6579.	Dilator, Weir's, Urethral.....	2 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

PENILE—URETHRAL.

APPLICATING—IRRIGATING.

LINDENSCHMIDT'S URETHRAL IRRIGATOR AND IRRIGATING DILATOR.



6588.

This instrument presents advantages offered by no other instrument of its class.

In acute gonorrhœa or chronic prostatitis, where it is desired to use the irrigator only, the dilator can readily be removed from the instrument.

In chronic gonorrhœa and gleet, the most gratifying results are obtained by using the dilator in conjunction with the irrigator.

To irrigate successfully is of great importance, and as this cannot be accomplished, unless the mucous membrane can be dilated at the same time, in order to separate and distend the large number of crypts and follicles connected with the urethra, every physician will understand how indispensable this instrument is in the treatment of these obstinate cases.

All sections of the instrument are arranged in such a manner, that they can easily be separated and used independent of the rest.

Each canula has a funnel end to permit the introduction of a nozzle from either a fountain or a bulb syringe.

If it is impossible to locate the disease to any certain portion of the urethra, the instrument can be moved backward and forward through the entire length of the canal in order to irrigate every part of it thoroughly.

Dr. G. Wiley Broome, of St. Louis, in his article on Gonorrhœa and its Rational Treatment, read before the St. Louis Medical Society, says: "Instead of attempting at the outset of treatment, to render the urine of the patient alkaline, as was the practice formerly, quite the opposite course is recommended, viz.: to irrigate the urethra and bladder with an acid. This is best done by means of Lindenschmidt's Urethral Irrigator and Irrigating Dilator, attached to a syringe capable of throwing a continuous solution of benzoic acid. Besides bathing the entire penis in hot water several times daily, the patient is subjected to no change of treatment until after the lapse of several days; then the urethra is insufflated with about five grains of the pure substance of methyl-violet—which substance appears to penetrate the urethral walls, and seizing upon the deeply infiltrated specific micro organisms, eventually destroys them."

The complete set of instruments, with one vial of each Corrosive Sublimate and Permanganate of Potash Tablets for making solutions, in neat Morocco covered case.

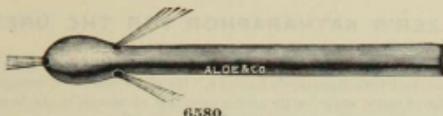
We will furnish with the above, a two quart Fountain Syringe, with special tip, at an additional cost of \$1.50, if specified in your order.

GENITO-URINARY.

PENILE—URETHRAL.

APPLICATING—IRRIGATING.

PARKER'S GONORRHŒA TUBE.



6580.

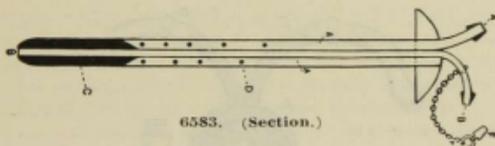
To remove some of the difficulties encountered at present in the treatment of urethral inflammation and to facilitate the injection of the urethra without pain, I have had made some soft rubber, velvet-eyed tubes with bulbs, for making the injection painless.

The accompanying wood cut gives a very good idea of the tube.

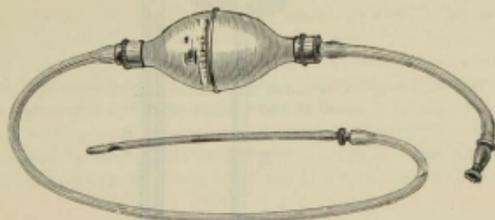
They are about two and a half inches long, of three sizes, the bulbs corresponding with Nos. 13, 15 and 17, American scale. They are made of pure rubber, soft and pliable. They fit easily on the nozzle of almost any syringe.



6581.



6583. (Section.)



6585.

HARRISON'S URETHRAL IRRIGATOR.

"The catheter should be six inches in length, and be completely passed into the urethra, merely allowing room for the connection with the syringe pipe. The catheter should not be larger than a No. 6, English gauge, so as to allow plenty of room between it and the walls of the urethra, in which the injected fluid can circulate. The eye in the catheter should not be too near the end, nor too large, and its edge should be beveled, so as not to scrape the urethra. For smoothness in introduction the velvet-eyed india rubber catheters are a great improvement on the English make, where the eye of the instrument is punched out without being beveled."—Reginald Harrison, F. R. C. S., Surgeon to the Liverpool Royal Infirmary.

6580.	Gonorrhœa Tube, Parker's, Soft Rubber.....	\$ 50
6581.	" " " Skene's.....	1 00
6582.	" " " Wigmore's, Plated.....	2 00
6583.	" " " Silver.....	3 00
6584.	Insufflator, Mallez's, Urethral.....	1 25
6585.	Irrigator, Harrison's, Urethral.....	2 50
6586.	" " Keller's, Curved, Urethral, Silver.....	2 75
6587.	" " " Straight, " ".....	2 00
6588.	" " Lindenschmidt's, " ".....	5 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

PENILE—URETHRAL.

APPLICATING—IRRIGATING.

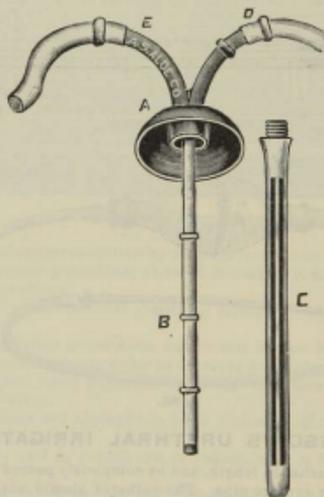
ZUELZER'S KATHARAPHOR FOR THE URETHRA.

The above-named instrument, designed by Professor Zuelzer, is well adapted to cleanse a diseased urethra of infectious bodies and inflammatory effusions. Its chief use is in cases of acute gonorrhœa, but it also finds application in the chronic state, with accompanying erosions, rents, broad superficial loss of substance and ulceration or croupous infiltration of the mucous membrane.

The customary method of using injections, suppositories and ointments is undoubtedly deficient in not providing for a preliminary thorough washing of the affected tract, and the want of care and exactness, which lies in applying medicaments over an unremoved layer of inflammatory products, needs hardly to be mentioned as incompatible with our ideas of antiseptic treatment.

By the use of the Katharaphor this indication is fulfilled, and the ingenious and complete manner of construction has led to the belief that it is deserving of notice in America. The accompanying illustration may serve to explain the instrument.

The bell A is of a size to cover the glans penis. The bent tube D, distinguished from its fellow E by an elevated ring, is connected with an irrigator of water or antiseptic solution, and terminates in the straight tube B. The latter has a length of $4\frac{1}{2}$ -5 $\frac{1}{4}$ inches, and ends with a free opening. The outer tube C, encasing B, is screwed into the under surface of the bell, and communicates thereby with the outflow tube E. The outer tube is of silver, its lower end is closed and has a tip like a catheter. Its sides are perforated by four long broad fenestrae. The three elevations on B prevent the outer tube C from bending inward.



6590.

The current of fluid in D, B escapes at the open extremity. Through the fenestra in C it bathes the urethral walls, and the collected washings returning inward again, are discharged through E. In the treatment of acute gonorrhœa in Zuelzer's clinic, the patient's urethra is irrigated once daily. The liquid is either hot or cold, the latter state being generally preferred on account of the comfortable sensations it produces. The washings are collected in glass vessels until the fluid no longer shows turbidity. By compressing the rubber tube attached to D the outflow is arrested. This is done at short intervals and tends to remove particles that would not otherwise come away.

An irrigation lasts from fifteen to forty minutes. It may, of course, when possible, be frequently repeated. Prof. Zuelzer usually combines the use of medicated suppositories, but not with any decided influence on the duration of the purulent discharge. This as a rule, entirely disappears in from six to eight days, even when pure water is the irrigant.

BERLIN, August 6, 1887.

LOUIS KOLIPINSKI, M. D.

[Reprint from Medical News.]

GENITO-URINARY.

PENILE—URETHRAL.

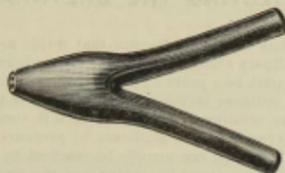
APPLICATING—IRRIGATING.

A DOUBLE CURRENT NOZZLE FOR URETHRAL IRRIGATION.

By LOUIS F. KIEFER, M. D., New York.

While working in the Genito-Urinary Clinic of the Roosevelt Hospital of this city, I often found great difficulty in thoroughly irrigating the urethra (in that treatment of gonorrhœa) with the nozzles in use; sometimes almost failing to attain that object.

It then occurred to me that these objections could be overcome by a nozzle which was bulbous, but which was provided with a tube for a return current; such an instrument I have found to fulfill all the requirements of a nozzle for this plan of treatment of gonorrhœa.



6591.

The instrument is made of hard rubber (glass having been found to be too brittle), and is about three inches in length. It consists of two tubes, one end of each being free, the other ends being united side by side in a bulbous expansion; the bore of each tube, however, remains separate, and each tube opens separately at the apex of the bulbous extremity. The bore and orifice of one tube is smaller than that of the other; the smaller will be designated the inflow, and the larger the outflow-tube.

The inflow-tube is intended to be connected to the tubing from a fountain placed at a proper elevation. The conical bulbous end is so made in order to fit the varying sizes of urethral orifices, and when once inserted into the meatus can be firmly held there without interfering with the outflow of the fluid.

The instrument is intended to be used as follows: The inflow-tube having been connected to the tubing, as stated above, and the fountain filled with the desired solution, the conical bulbous end is to be inserted into the meatus and firmly held there by one hand; the solution may now be allowed to flow through the inflow tube, and if now the free end of the outflow-tube be closed by a finger of the disengaged hand, the medicated solution will then distend the urethra, and thus come into contact with every portion of the urethral walls. This manœuvre can be gone through with from fifteen to twenty-five times a minute, thus making it possible to thoroughly irrigate the urethra with a quart or more of medicated solution in a very short time.

The bore of the outflow-tube was made the larger in order that the urethra would be thoroughly and promptly emptied, and thus a constantly renewed application of the irrigating fluid to the urethral walls be insured.

If a cold solution is used, the danger of the fluid entering the bladder is very slight, the local effect of the cold solution being to cause a tonic contraction of the sphincter vesicæ; the fountain, however, should not be placed too high—about three feet above the level of the nozzle when in use has been found sufficient. The instrument, being made of hard rubber, can be kept in antiseptic solutions without injury, an advantageous feature which is self-evident.

To avoid using the finger to occlude the outflow-tube, I have devised an arrangement of levers so placed that when the outflow-tube is occluded the inflow-tube will be open, and *vice versa*; this, of course, is merely a refinement.

[Medical Record, April 9th, 1887.]

6589.	Katharaphor, Zuelzer's, Plated	\$ 2 50
6590.	“ “ Silver	4 00
6591.	Nozzle, Kiefer's, Irrigating	65
6592.	“ “ with Stopcocks	1 25
6593.	“ Otis', Syringe, Illustrated on next page	75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

PENILE—URETHRAL.

APPLICATING—IRRIGATING.



6593. See page 389.

INJECTING THE URETHRA.

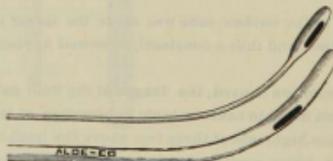
"A very general impression exists in the profession that fluids are with difficulty injected into the deeper parts of the urethra by an ordinary syringe, and that to force them into the bladder by that means is a physical impossibility. Within the past two years I have had three patients who were able to inject their respective bladders by means of an ordinary Davidson syringe, one of them throwing in a pint of water in my presence, then emptying the viscus, refilling and discharging it in succession. I am therefore convinced that it is judicious to limit the distance we desire to medicate by pressure on the canal at a given point; and I also believe that the whole diseased surface can usually be reached by a properly constructed syringe of ordinary size. After directing the patient to pass his water (for the purpose of cleansing the canal), the medicated fluid should be thrown in quickly, to avoid spasmodic resistance, filling the urethra to the desired limit, and allowing it to remain for from one to three or four minutes. This procedure I am accustomed to have repeated three or four times in the twenty-four hours. If, notwithstanding the use of injections administered after the manner I have indicated, the discharge still continues, though in decreased quantity, no other cause of failure appearing prominent, I am led to infer that the medicating fluid does not reach all points of the diseased surface; that, from insufficient distention of the canal, portions between the folds of the membrane, or in the sulci of some of the numerous follicles with which the urethral lining is studded, have escaped the topical application. For security against failure, I am accustomed to introduce the injection through a modification of the ordinary syringe, as represented in the cut. By means of this instrument the urethra is penetrated to the farthestmost point of disease, distended to its full capacity and thoroughly bathed with the contained fluid."—"Stricture of the Male Urethra." F. N. Otis, M. D. 1878.



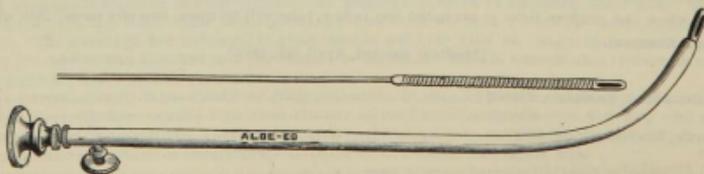
A. S. ALOE CO



6596.



6597.

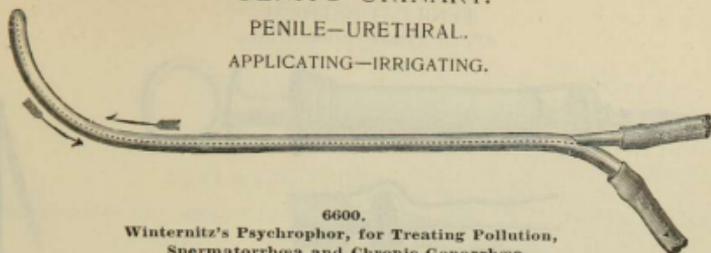


6598.

GENITO-URINARY.

PENILE-URETHRAL.

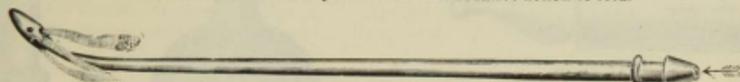
APPLICATING—IRRIGATING.



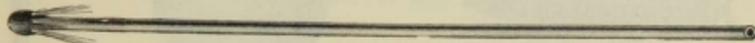
6600.

Winternitz's Psychrophor, for Treating Pollution, Spermatorrhea and Chronic Gonorrhœa.

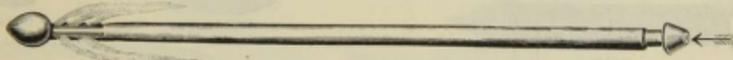
A double current catheter without eyes, the two canals communicating near the point of the instrument. It is introduced into the urethra until its point has passed the pars prostatica, and it is then attached by rubber tubing to a reservoir containing water of the desired temperature. On turning the stopcock, the water flows into one canal and out through the other. In this way the caput galliniginis and the entire mucous membrane are exposed to the mechanical action of pressure and the sedative action of cold.



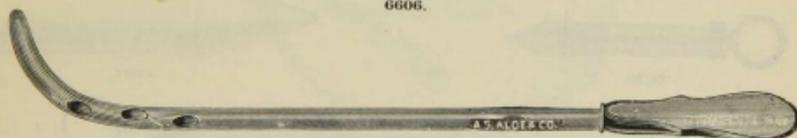
6603.



6604.



6606.



6609.



6610.

The Spermatorrhea Ring is for the purpose of preventing nocturnal involuntary emissions of semen—the teeth of the ring causing pain as soon as an erection occurs and awakening the patient.

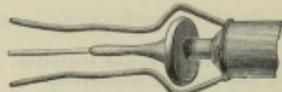


6595.

6594.	Penis Conjector, Glass Cup.....	\$ 3 75
6595.	" " Jennison's Metal.....	3 75
6596.	Porte Caustique, Agnew's, Silver.....	2 50
6597.	" " Gross' ".....	3 00
6598.	" " Lallemand's ".....	3 25
6599.	Powder Blower, Waechter's Urethral.....	2 00
6600.	Psychrophor, Winternitz's, Plated.....	1 50
6601.	" " Silver.....	3 00
6602.	Retrojector, Bartholow's, Plated.....	75
6603.	" Durham's, ".....	75
6604.	" Mitchell's Soft Rubber.....	75
6605.	" Skene's, Plated.....	75
6606.	" Van Marter's, Plated.....	75
6607.	Sound, Hale's, for Treating Involuntary Emissions.....	1 50
6608.	" Thompson's Applying.....	1 25
6609.	" Van Buren's Cupped Ointment.....	1 50
6610.	Spermatorrhea Ring.....	50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.
 PENILE—URETHRAL.
 APPLICATING—IRRIGATING.



6612.



6617.



6618.



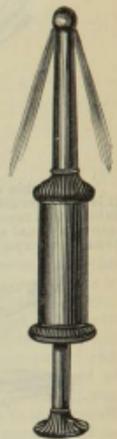
6619.



6620.



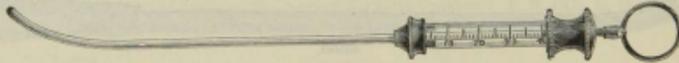
6622.



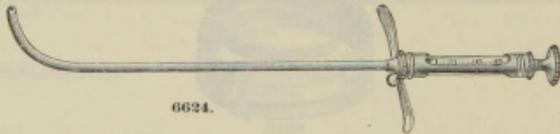
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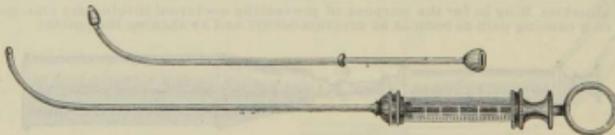
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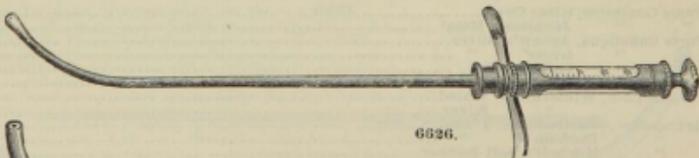
6623.



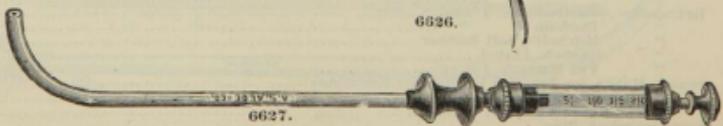
6624.



6625.



6626.



6627.

GENITO-URINARY.

PENILE—URETHRAL.

APPLICATING—IRRIGATING.

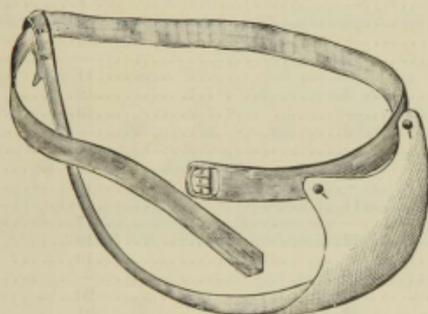
A GENITAL DRESSING SUPPORTER.

By BRANSFORD LEWIS, M. D., St. Louis.

LECTURER ON ANDROLOGY, MISSOURI MEDICAL COLLEGE; CONSULTANT IN ANDROLOGY TO MISSOURI PACIFIC HOSPITAL AND TO ST. MARY'S INFIRMARY.

The difficulty of retaining in position light but essential, as well as competent, dressings to the penis or scrotum, as after circumcision or in case of gonorrhœa with profuse discharge of pus, etc., etc, has heretofore been half-way met by the extemporaneous and inadequate T bandages or other awkward arrangements which have not fulfilled for any length of time the ends desired.

To meet these indications I have devised the appliance shown in the cut.



6611.

It has proved exceedingly gratifying to every patient on whom it has been used; and the comfort, both mental and physical, secured by a knowledge that the clothing is not becoming soiled, nor the dressing disarranged, has not failed to be observed and commented on by each of them.

Moreover, in its use opportunity is afforded for an application of the beneficent principles of fixation and physiological rest in inflammation of these parts, especially in gonorrhœa.

The belt should be placed below the anterior superior iliac spines, and the supporter should not be drawn too tight. For urination, etc., one corner may be unbuttoned.

6611.	Supporter, Lewis' (St. Louis), Genital Dressing.....	\$ 1 00
6612.	Syringe, Gonorrhœa, Buttle's, Dilating.....	3 75
6613.	" " Wheelock's, Reverse Flow.....	1 50
6614.	" Ointment, Hutchison's, with 1 H. R. Tube.....	2 25
6615.	" " " " 3 Plated Tubes.....	4 50
6616.	" " " " 3 Silver ".....	7 50
6617.	" Penis, Bumstead's.....	60
6618.	" " Hard-rubber, $\frac{1}{2}$ -ounce, Blunt Point.....	60
6619.	" " " " $\frac{3}{8}$ " Soft-rubber Tip.....	75
6620.	" " Lyons', Soft-rubber Tip.....	75
6621.	" " Sigismund's.....	60
6622.	" " Soft-rubber.....	35
6623.	" Urethral, Bumstead's, Hard-rubber Tube.....	1 75
6624.	" " Keyes', Silver.....	4 00
6625.	" " Taylor-Bumstead's, Hard-rubber.....	2 50
6626.	" " Woodward's, Silver.....	3 00
6627.	" " Ultzman's, ".....	3 00
6628.	Syringe and Applicator, Brown's, Urethral.....	18 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

URETHRAL.

SCALES OR GAUGES

FOR GRADING THE SIZES OF URETHRAL INSTRUMENTS.

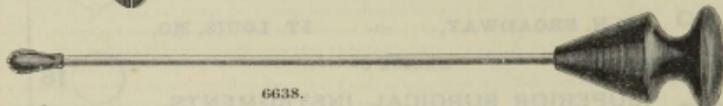
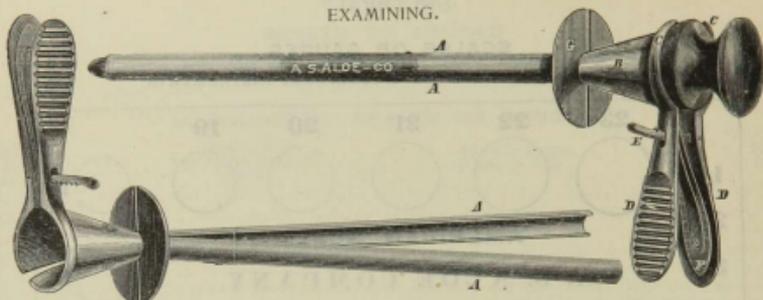
COMPARATIVE SCALES OR GAUGES.

Diameters in Millimetres.	American or Van Buren & Keyes' Gauge.	French Gauge. (Used by Otis.)	English Gauge.
$\frac{1}{8}$	—	1	—
$\frac{1}{6}$	1	—	—
$\frac{7}{16}$	—	2	—
1	2	3	—
$1\frac{1}{8}$	—	4	—
$1\frac{1}{2}$	3	—	—
$1\frac{5}{8}$	—	5	—
2	4	6	—
$2\frac{1}{8}$	—	7	1
$2\frac{1}{6}$	5	—	—
$2\frac{1}{2}$	—	8	2
3	6	9	3
$3\frac{1}{8}$	—	10	—
$3\frac{1}{6}$	7	—	—
$3\frac{5}{8}$	—	11	4
4	8	12	5
$4\frac{1}{8}$	—	13	—
$4\frac{1}{6}$	9	—	—
$4\frac{3}{8}$	—	14	—
5	10	15	6
$5\frac{1}{8}$	—	16	7
$5\frac{1}{6}$	11	—	—
$5\frac{5}{8}$	—	17	8
6	12	18	9
$6\frac{1}{8}$	—	19	10
$6\frac{1}{6}$	13	—	—
$6\frac{3}{8}$	—	20	11
7	14	21	—
$7\frac{1}{8}$	—	22	12
$7\frac{1}{6}$	15	—	—
$7\frac{5}{8}$	—	23	13
8	16	24	—
$8\frac{1}{8}$	—	25	14
$8\frac{1}{6}$	17	—	—
$8\frac{5}{8}$	—	26	15
9	18	27	16
$9\frac{1}{8}$	—	28	17
$9\frac{1}{6}$	19	—	—
$9\frac{5}{8}$	—	29	—
10	20	30	18
$10\frac{1}{8}$	—	31	19
$10\frac{1}{6}$	21	—	—
$10\frac{5}{8}$	—	32	20
11	22	33	21
$11\frac{1}{8}$	—	34	22
$11\frac{1}{6}$	23	—	—
$11\frac{5}{8}$	—	35	23
12	24	36	24
$12\frac{1}{8}$	—	37	25
$12\frac{1}{6}$	25	—	—
$12\frac{5}{8}$	—	38	26
13	26	39	27
$13\frac{1}{8}$	—	40	28

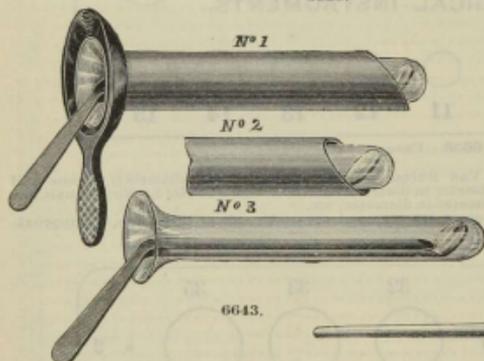
From and after the issue of this price list we will use the American gauge in filling orders, except in cases where some other is specified. Customers in completing sets of instruments, or who have been ordering from other standards should carefully note the above comparison. The American scale advances by one-half millimetre, while the French advances by one-third; an instrument therefore that is nine millimetres in diameter is No. 15 American, and 27 French. The English scale is not a regularly graduated one, is not based on any standard, and varies with different makers and authors.

Approximate scale cards sent on application.

GENITO-URINARY.
URETHRAL.
EXAMINING.



6638.

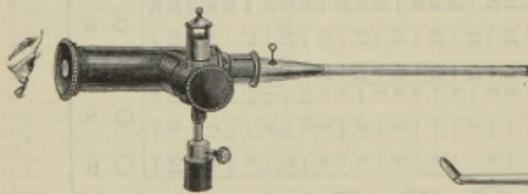
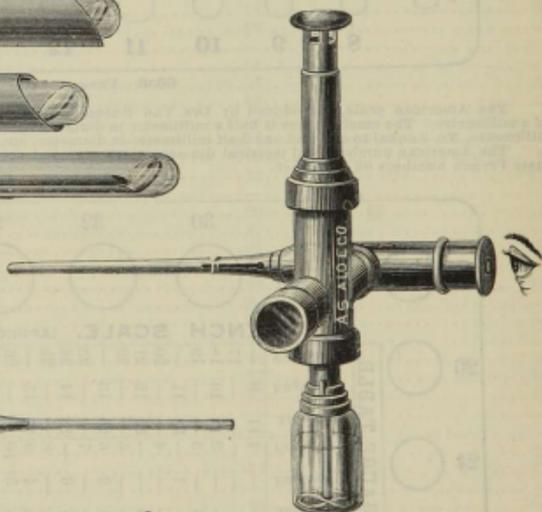


N° 1

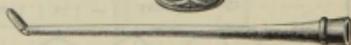
N° 2

N° 3

6643.



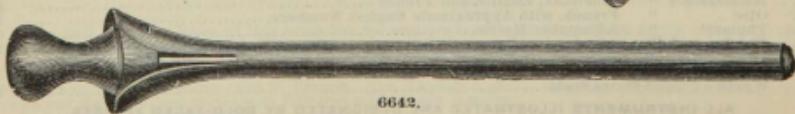
6641.



6639.



6640.

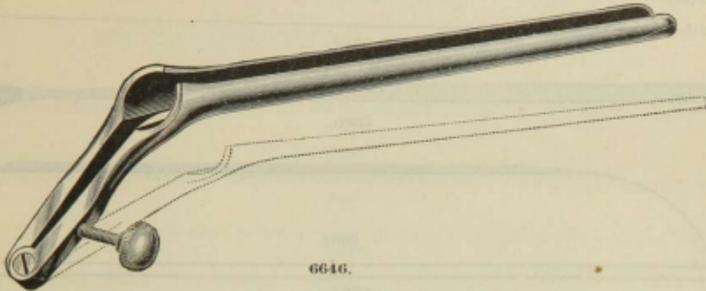


6642.

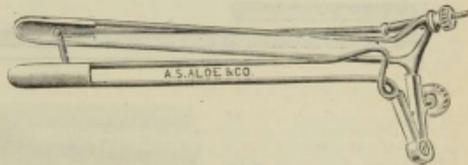
GENITO-URINARY.

URETHRAL.

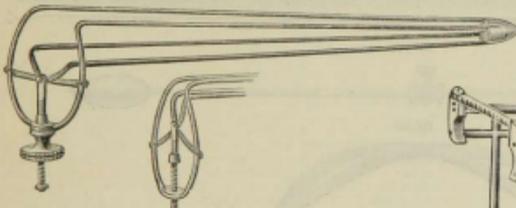
EXAMINING.



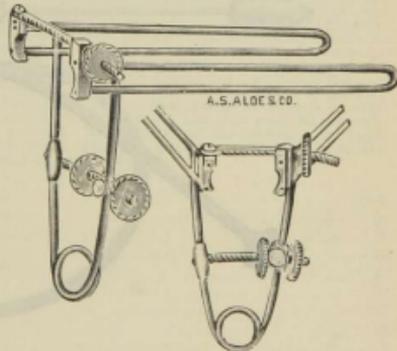
6646.



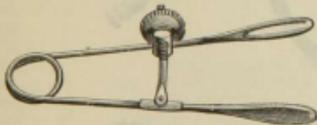
6644.



6652.



6651.

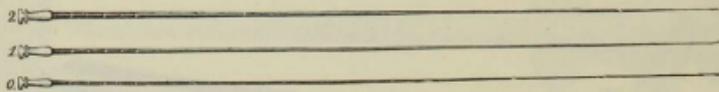


6647.

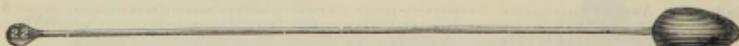
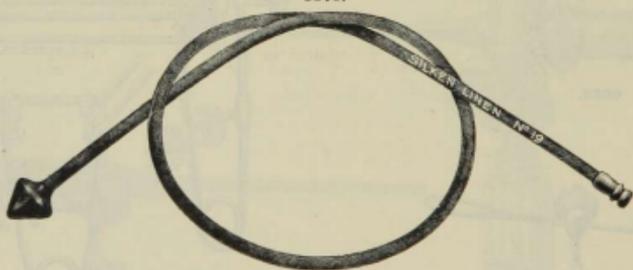
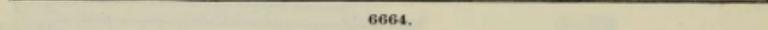
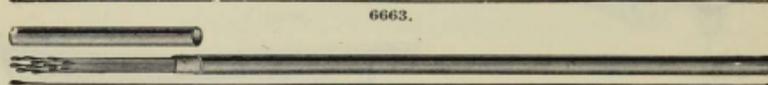
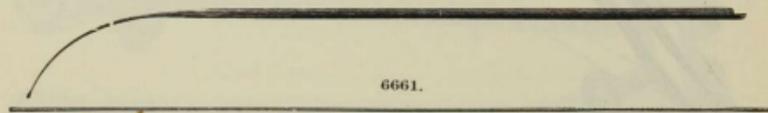
6638.	Endoscope, Auspitz's.....	\$ 15 00
6639.	" Desmoreau's.....	\$15 to 90 00
6640.	" Electric, see index.....	
6641.	" Klotz's.....	2 50
6641.	" Laveur's.....	15 00
6642.	" Otis', Hard Rubber.....	1 00
6643.	" Skene's.....	2 00
6644.	Speculum, Brown's, Urethral.....	3 00
6645.	" Caro's, Male Urethral, Aluminium.....	2 00
6646.	" " " Plated.....	1 50
6647.	" Otis', Urethral (Meatus Dilator).....	1 15
6648.	" Skene's, Urethral.....	1 75
6649.	" " Mod. Folsom's.....	1 00
6650.	" Stein's, Dilating.....	4 50
6651.	" Tuttle's.....	3 00
6652.	Urethroscop, Smith's.....	3 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

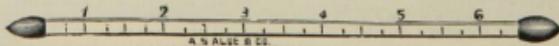
GENITO-URINARY.
URETHRAL STRICTURE.
EXPLORING.



6658.



6673.



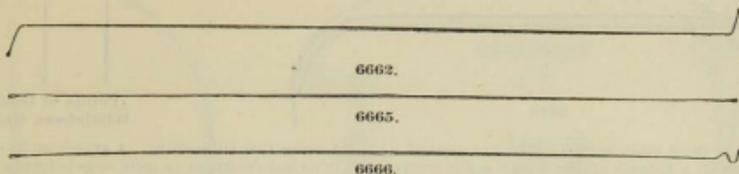
6674.

GENITO-URINARY.

URETHRAL STRICTURE.

EXPLORING.

GOULEY'S WHALEBONE FILIFORM BOUGIES.



"Though the soft filiform bougie of Leroy d'Etiolle answers well in many cases, I have often verified the fact that the instrument coiled in front of a stricture and sometimes doubled itself, so that the point appeared at the meatus when it was believed to have passed into the bladder. For these reasons I have for many years used in their stead slender, probe-pointed shafts of whalebone, which are less liable to coil in the urethra, adapt themselves admirably to the inflexions of the canal, can be made as thin as a horse-hair, and will still retain sufficient strength to enter the narrowest stricture."—"Diseases of the Urinary Organs." Gouley. 1873.

Gouley's Whalebone Guides are especially designated to be used with his Tunnelled Instruments, of which they form a *sine qua non*; see next page.

"Mode of using them.—Being very slender, they can not be properly oiled; it is therefore better to fill the urethra with warm benzoated olive oil; then, if the stricture be eccentric, an angular bougie is to be introduced, with the point directed towards the floor of the canal in order to avoid its entering the *lacuna magna*. The direction of the point may be changed as soon as it has gone beyond the lacuna, but should it then enter another lacuna it must be slightly withdrawn, turned aside, and carried onward until it meets the final obstruction. From this moment it becomes an explorer in search of the orifice of the stricture, to find which is not, as has been asserted, "a mere matter of chance," but a procedure requiring very light fingers with great delicacy of touch, and much experience and skill. To be sure of entering the mouth of a narrow eccentric stricture, the point of the bougie should be kept in contact with the urethral wall, while a slight to and fro movement is given the instrument until the stricture is entered or the whole circumference of the canal is explored. The instrument is bent at both ends in exactly opposite directions, that the distal may indicate the position of the vesical extremity, and consequently the situation of the orifice of the stricture.

"After the bougie has been passed through the stricture it should be movable back and forth; otherwise it is almost certain that the point is caught in one of Cowper's ducts, in one of the many enlarged lacunae, in the ampulla behind the stricture in the utriculus, or in one of the ejaculatory ducts. At this stage of the proceedings it is necessary to exercise much caution and gentleness in disengaging the instrument from its faulty position, as an undue force will give rise to a false passage, or excite inflammatory action which may extend to Cowper's gland or to the testicle. By withdrawing the instrument a quarter of an inch, or even less, and giving it a slight rotary movement to change the direction of the point, and then pushing it gently onward, the obstacle will be surmounted and the bladder entered. Having reached the bladder, the bougie serves as a conductor upon which a peculiarly constructed sound (Fig. 6728, page 465), is made to glide and dilate the canal, and also straighten it if the stricture happens to be tortuous.

6653.	Bougie, French, Gum Elastic, Bougie à Boule, Dick's	\$0 75
6654.	" " " " " " " Mallez's.....	1 00
6655.	" " " " " " " à Trois Nœuds.....	1 25
6656.	" " " " " " " Conique à Ventre.....	1 35
6657.	" " " " " " " Olivaire à Ventre.....	1 30
6658.	" " " " " " " Filiform, Leroy d'Etiolle's	50
6659.	" " " " " " " Lead-filled, Thompson's Olivary.....	1 00
6660.	" " " " " " " Linen, Bellied.....	50
6661.	" " " " " " " Whalebone, Banks'.....	75
6662.	" " " " " " " Gouley's Angular Filiform.....	35
6663.	" " " " " " " Cylindrical Filiform.....	25
6664.	" " " " " " " Olivary " ".....	25
6665.	" " " " " " " " " double end.....	35
6666.	" " " " " " " " " Spiral.....	35
6667.	" " " " " " " Hunter's Filamentous.....	65
6668.	" " " " " " " Otis' Filiform.....	60
6669.	" " " " " " " Wyeth's Dilating.....	75
6670.	Bougie à Boule, Fowler's	1 00
6671.	" " " " " " " Linen.....	75
6672.	" " " " " " " Otis' Flexible Whalebone Stems.....	50
6673.	" " " " " " " Pliable Wire Stems.....	25
6674.	" " " " " " " Weiss's, with Ruled Staff.....	75

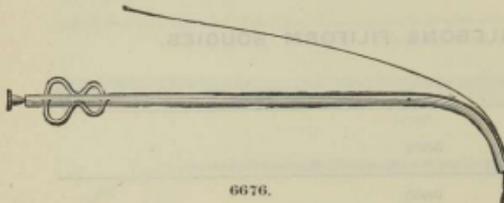
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

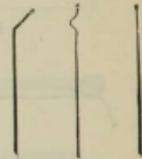
URETHRAL STRICTURE.

EXPLORING.

GOULEY'S TUNNELLED CATHETER.



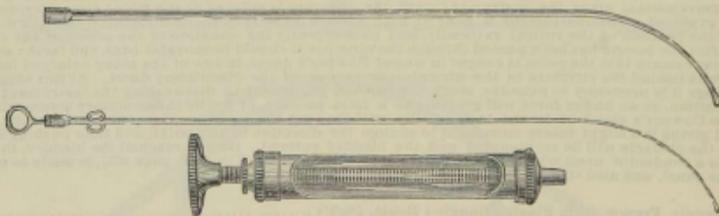
6676.

Points of Gouley's
Whalebone Guides.

It is three millimetres in diameter, conical, its point being two millimetres. A groove on its convex side extends a distance of four inches, and is bridged over in its last twelfth of an inch, so as to form a tunnel for the reception of a whalebone guide. The catheter eye is on the concave side of the instrument, about three-fourths of an inch from its point, and is kept closed by a well fitted stylet.

The whalebone guides or probe-pointed conductors are of the length of the ordinary gum bougies, and half a millimetre in diameter. Some are straight, some spiral and some angular pointed (as indicated in cut); a dozen of these should be in your case of instruments. One of these is introduced into the urethra; if it enters a false passage, it is retained *in situ* by the left hand, while another is passed by its side. If this second guide makes its way into the false passage, it is to be treated precisely as was the first, and the operation repeated till one guide can be made to pass the obstruction and enter the bladder; the others are then removed. Now, if the free end of the guide bougie, which occupies the whole length of the urethra, be passed through the tunnel or canal of the catheter and the instrument made to advance, it must follow the guide. When its point comes in contact with the face of the stricture it will be held there firmly, but no force must be used; in a few moments it will probably pass the stricture and enter the bladder.

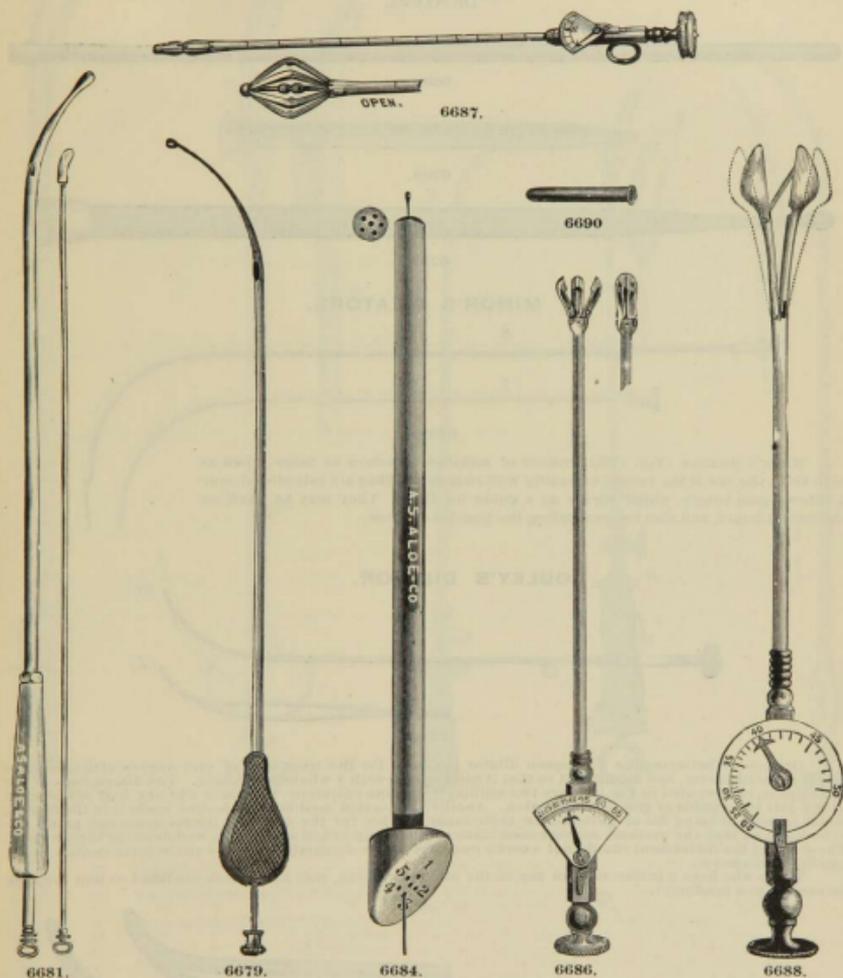
OTIS' DILATING CATHETER AND SYRINGE.



6677.

"With the view of affording aid in the preparatory dilatation of strictures too small to admit the necessary instrument for immediate operation, I have designed the accompanying modification of Sir Henry Thompson's probe-pointed catheter. It consists simply of a fine probe-pointed silver tube, eleven inches in length and three millimetres in circumference at its point, gradually increasing in size, so that at six inches it is six millimetres. The tube is traversed by a steel stylet throughout its length. Carefully insinuated through a close stricture, by the aid of a finger in the rectum, until its point may be supposed to have reached the bladder, the stylet is removed and a small syringe is applied to its proximal opening. If the instrument has passed the sphincter vesicæ, on withdrawal of the piston, the urine will appear in the barrel of the syringe. The instrument may then be confidently pressed onward until the stricture is dilated to the largest capacity of the tube; a second tube, of corresponding form, but with dimensions ranging from four millimetres at the point to eight millimetres, may then be similarly used. In cases where, on account of the extreme closeness of the stricture or from its divergent or tortuous course, a difficulty in passing the instrument occurs, Dr. Gouley's whalebone guide bougies will prove serviceable. These are used as in his grooved canulated staff, viz.: By the previous introduction of the guide bougie into the bladder, threading the dilating catheter upon it and following it down through the stricture. Succeeding in this manoeuvre, the guide bougie may be removed, the presence of the dilating catheter in the bladder tested by the aid of the syringe, the stylet introduced and the stricture dilated, as previously described. The whalebone guide bougies, to be used in this manner, require to be from sixteen to eighteen inches in length. They are easily made of any desired length and fineness, and, by passing them through the flame of an alcohol lamp, may be moulded at the extremity to any curve or angle deemed most likely to adapt itself to the eccentricity of the stricture."—"Stricture of the Urethra: Its Radical Cure." Fessenden N. Otis, M. D.

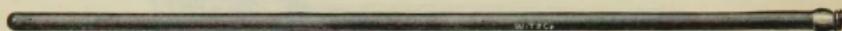
GENITO-URINARY.
URETHRAL STRICTURE.
EXPLORING.



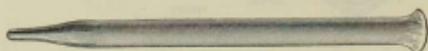
6675.	Catheter, Bumstead's, Retention	\$ 2 50
6676.	" Gouley's, Tunnelled	1 75
6677.	" Otis', Dilating, with Syringe	3 25
6678.	" " Retention	2 25
6679.	" Thompson's, Retention	2 25
6680.	" Teevan's, "	2 00
6681.	Catheter-Sound, Trendelenburg's	3 00
6682.	Indicator, Wyeth's, Wedge-shaped	75
6683.	Pathfinder, Eldridge's	26 35
6684.	" Tiemann's	2 00
6685.	Sound, Warren's, Exploring	15 00
6686.	Urethrometer, Gross'	2 65
6687.	" " Otis', Hinged (latest). See description, page 410	15 00
6688.	" " Weir's	13 50
6689.	Urethrograph, Stewart's	30 00
6690.	Soft-rubber Covers for Otis' Urethrometer	per doz., 2 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

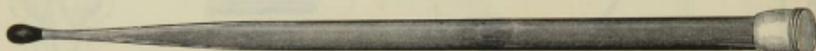
GENITO-URINARY.
URETHRAL STRICTURE.
DILATING.



6696.

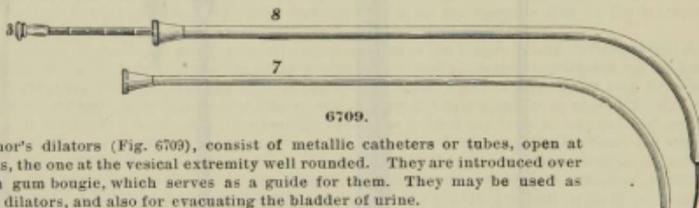


6706.



6708.

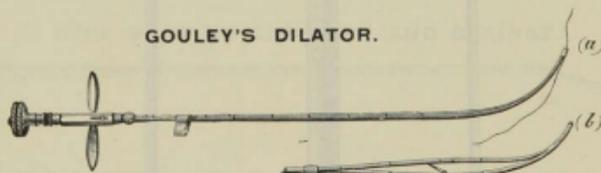
MINOR'S DILATORS.



6709.

Minor's dilators (Fig. 6709), consist of metallic catheters or tubes, open at both ends, the one at the vesical extremity well rounded. They are introduced over a filiform gum bougie, which serves as a guide for them. They may be used as stricture dilators, and also for evacuating the bladder of urine.

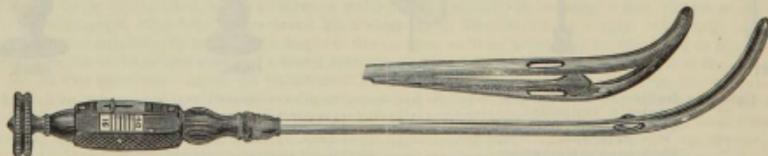
GOULEY'S DILATOR.



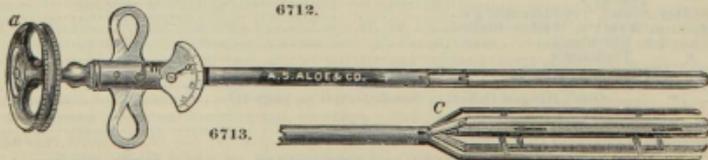
6710.

Dr. Gouley, believing the Thompson dilator too large for the treatment of very narrow strictures, has had it reduced in size, and modified it so that it can be used with a whalebone guide. The dimensions of the instrument, represented in Fig. 6710, are two millimetres at the extremity, and three and one-half millimetres at the part susceptible of greatest expansion. Another important modification he has made is in the blades, which instead of being flat or guttered on their inner surface for the first two inches from the point, are cylindrical, so that the urethral mucous membrane can not be pinched and torn in withdrawing the divulsor. The curve of the instrument should not exceed one-fifth of the circumference of a circle three inches and a quarter in diameter.

Those who have a preference for any of the other divulsors, may have them modified so that they can be used with a conductor.

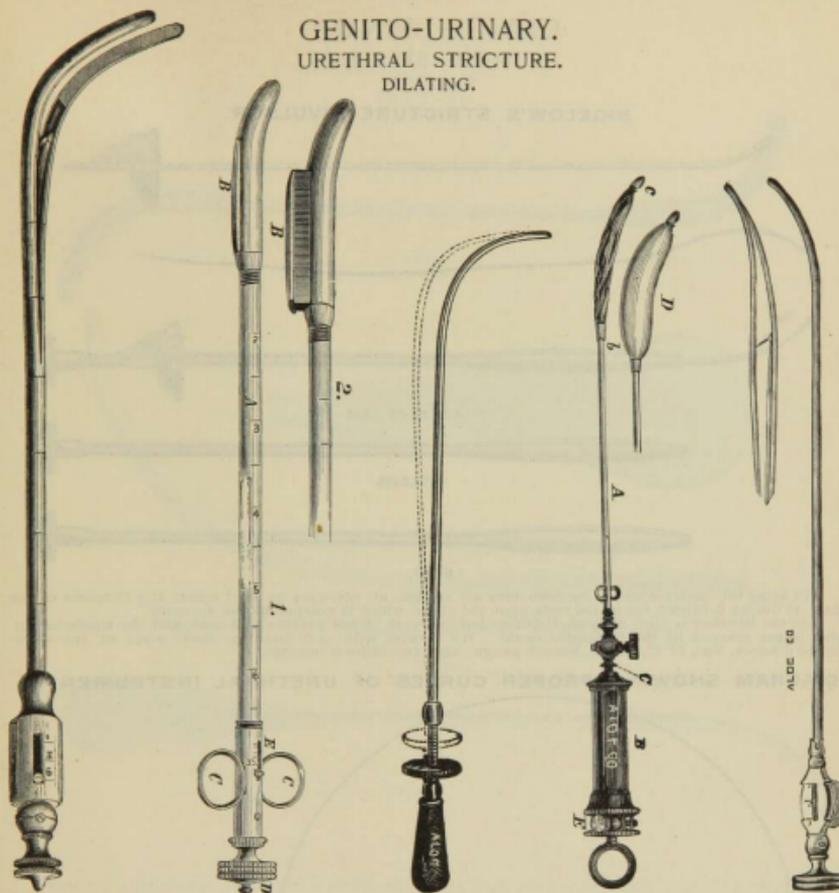


6712.



6713.

GENITO-URINARY.
URETHRAL STRICTURE.
DILATING.

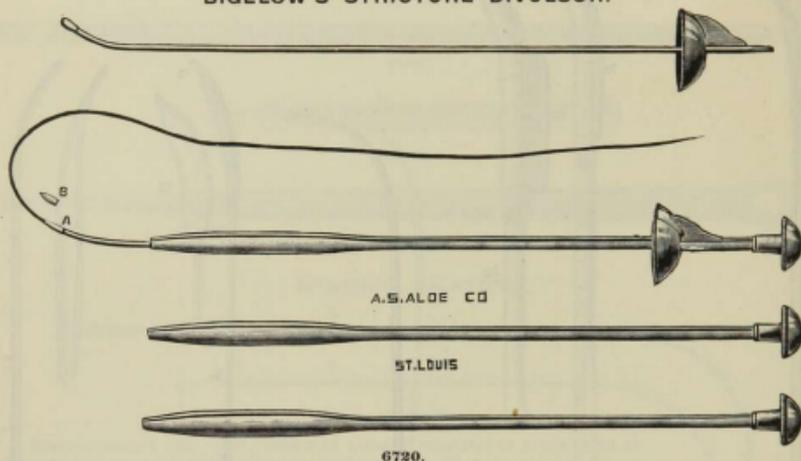


6711.	Bougie, Belfast Linen, Conical	\$ 0 50
6691.	" " " Cylindrical.....	50
6692.	" " " " ".....	50
6693.	" Cotton, Cylindrical.....	25
6694.	" " Olivary.....	25
6695.	" English Gum Elastic, Cylindrical, Nos. 4 to 12.....	15
6696.	" " " " " Above 12.....	25
6697.	" French Gum Elastic, Conicque.....	60
6698.	" " " " " Cylindrique.....	50
6699.	" " " " " Olivaire.....	60
6700.	" " " " " ".....	50
6701.	" Linen, Conical.....	50
6702.	" " Cylindrical.....	50
6703.	" " Olivary.....	50
6704.	" Silk, Cylindrical.....	75
6705.	" " Olivary.....	75
6706.	" Soft Rubber, Van Derveer's, Nos. 10 to 30, French Scale.....	65
6707.	" " " " " " 31 to 40, ".....	75
6708.	" Vermillion, Olivary.....	50
	Bougies above No. 15 American Scale priced according to size.....	2 50
6709.	Catheter-Dilator, Minor's.....	8 00
6710.	Dilator, Gouley's.....	9 00
6711.	" " Over Distender.....	10 50
6712.	" Gross'.....	26 25
6713.	" Powell's.....	10 50
6714.	" Priestly's.....	7 50
6715.	" Schweig's.....	5 00
6716.	" Stearns', Improved.....	6 00
6717.	" Steuer's.....	7 50
6718.	" Thebaud's.....	7 50
6719.	" Thompson's.....	7 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.
URETHRAL STRICTURE.
DILATING.

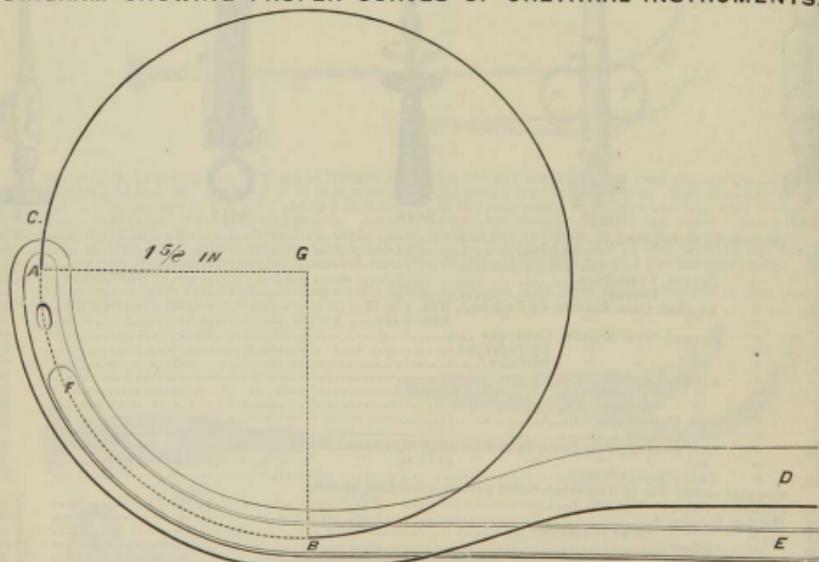
BIGELOW'S STRICTURE DIVULSOR.



In using this instrument the surgeon does not require an assistant to hold either the Divulsor or the penis, as during division the guard rests upon the glans, which is grasped by the operator.

As the Divulsor is olive-shaped, it dilates but one part of the urethra at a time, and the whole instrument is not grasped by the distended canal. We furnish with each Divulsor three sizes of the olive-shaped dilators, Nos. 23, 27, and 31, French gauge; also, two fliform bougies.

DIAGRAM SHOWING PROPER CURVES OF URETHRAL INSTRUMENTS.



Proper curves for unyielding urethral instruments, recommended by the following authorities, are as follows:

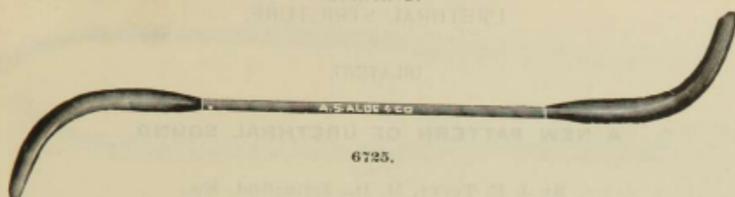
Dr. Thompson, A, B, E.
Dr. Béniqué, C, B, D.

Dr. Gouley, A, B, E.
Dr. Bumstead, F, B, E.

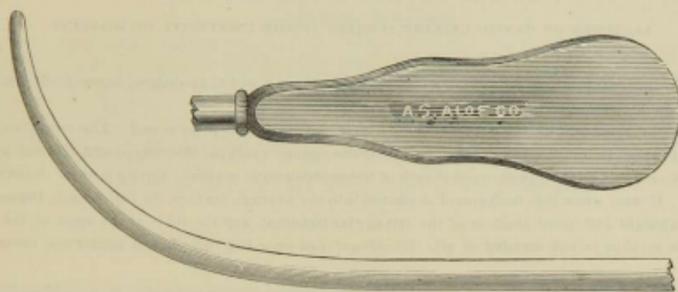
Dr. Van Buren, A, B, E.
Dr. Otis, F, B, E.

See the works of the above authors for particulars.

GENITO-URINARY.
URETHRAL STRICTURE.
DILATING.

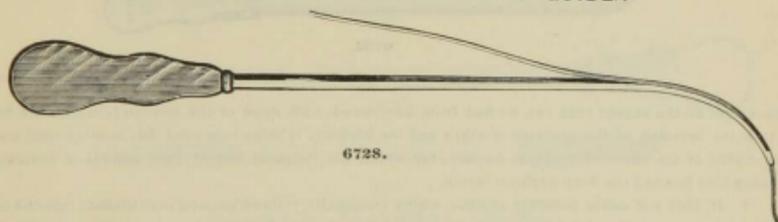


6725.



6727.

GOULEY'S TUNNELLED SOUND (AND GUIDE).



6728.

"This instrument was suggested by me in 1864, and I have used it very much and with great success. It is a grooved conical steel sound with a canal one eighth of an inch in length at the vesical extremity, and with a curve equal to one-fifth the circumference of a circle three and a quarter inches in diameter. The smallest (No. 3) is one and a half millimetres at the point. I have had large ones made (to No. 15), to fully dilate strictures complicated with false passages, and have named them tunnelled sounds."—"Diseases of the Urinary Organs."—GOULEY.

"When a capillary whalebone guide has passed through a tortuous or an eccentric stricture and has entered the bladder, the free end is slipped through the tunnel of the smallest sound, which is carried down to the obstacle, held in firm contact with it, precaution being taken to keep the guide in the groove of the staff, and in a few moments the instrument will pass, but no force or undue pressure should be used. It is desirable, after having accomplished this much, to carry on dilation rapidly, at the same sitting, to four or five higher numbers, to guard against the possibility of retention of urine from too great inflammatory swelling. The stricture should then be treated by gradual dilatation, and no other method thought of, unless dilatation fails after a thorough trial."—"Diseases of the Urinary Organs." Gouley. (See Gouley's Whalebone Filiform Bougies, page 399.)

6720.	Divulsor, Bigelow's, Stricture.....	\$ 12 00
6721.	" Bumstead-Holt's.....	15 00
6722.	" Voillemier's, Stricture.....	16 50
6723.	Sound, Béniqué's, Steel.....	1 00
6724.	" Bumstead's, Steel.....	1 00
6725.	" Fowler's, Double End.....	75
6726.	" Gilbert's, Bulbous.....	1 00
6727.	" Gouley's, Conical Steel.....	1 00
6728.	" " Tunnelled.....	1 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

URETHRAL STRICTURE.

DILATING.

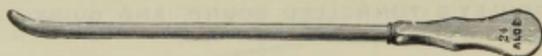
A NEW PATTERN OF URETHRAL SOUND.

By J. E. TEFFT, M. D., Springfield, Mo.,

LECTURER ON GENITO-URINARY SURGERY IN THE UNIVERSITY OF MISSOURI.

One who proposes to the profession a new instrument must needs apologize, hence I offer the proposition and the apology together.

I invite the attention of the profession to a new pattern of urethral sound. The straight shaft is six and one-half inches in length—the average length of the spongy urethra; the curved and conical part three-fourths of an inch in length—the average length of the membranous urethra; the tip is three-fourths the size of the shaft. Hence, when this instrument is passed into the average urethra its full length, the commencement of the straight full-sized shaft is at the triangular ligament, and the tip is at the apex of the prostate. The prostatic urethra is not invaded at all. Its advantages over the full curved sound are several; by its



6736.

use we get all the benefit that can be had from any sound, with none of the mischiefs which are liable to follow the invasion of the prostatic urethra and the bladder; it being conceded that in more than nineteen-twentieths of the cases of urethral disease, for which the frequent use of steel sounds is indicated, the disease is in front of the deep perineal fascia.

1. It does not cause prostatic cystitis, which frequently follows passing instruments into the bladder, and which is especially to be deprecated when the bladder is already affected with a mild chronic hyperæmia or inflammation, which is common in such cases.

2. It does not induce epididymitis, which only follows instrumentation which mechanically irritates the floor of the prostatic urethra.

3. It does not induce urethral fever. That rarely, if ever, follows instrumentation or operation below the deep perineal fascia, though further observations on that point are admitted to be desirable.

4. It causes less pain and no unnecessary pain. (See Dr. Weisse's article on the above subject in No. 25 of *The Record*, for December, 1884.) See page 407.

Its advantage over a straight instrument is: Facility of introduction when the disease is at the bulb of the urethra. I have always used a straight sound for the penile urethra, and prefer it, and only pass it through the diseased part; but for the disease at the bulb, a conical sound must pass through the triangular ligament. Here the sound proposed passes as readily as a full curved one, and a straight instrument is here with difficulty passed through both stricture and ligament, even by an expert. Further, the curved part is so short that, in the penile urethra, where a straight instrument is preferred, this sound answers the purpose about as well, and very much better than one with the full curve. I have a set of eight instruments—every third number of the French scale, from fifteen to thirty-six, inclusive, which answer my purpose. It is not claimed that the above presents any original points of doctrine, only that the instrument proposed better fulfills well-known indications.

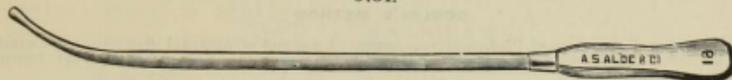
[Extract from *The Medical Record*, January 23, 1886.]

[Surgeons desiring every second number or any other combination of numbers can have them arranged as desired.—A. S. Aloe Co.]

GENITO-URINARY.
URETHRAL STRICTURE.
DILATING.



6734.



6735.

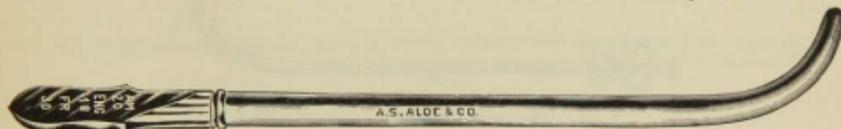
ROSER'S SOUND.

As seen in the accompanying cut (Fig. 6735), its striking features are the short beak and the beautiful curve, which glides over the floor of the urethra with surprising ease. In cases of stricture which are slowly dilated, the latter works admirably. The bulb at the end will prove, in extracting the instrument, how many strictures have been passed and where they are located.

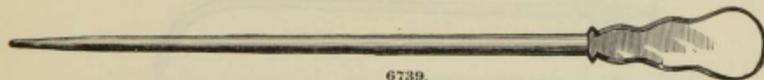
In the first attempts at sounding from the external meatus after external urethrotomy, I have often succeeded at once with this instrument where Otis' sound, carefully and very gently guided, repeatedly failed to enter the posterior urethra.

I have had these sounds made from No. 10 to No. 40 French. They are entirely of metal (nickel-plated) and in one piece. The length of the handle is three inches and three-quarters; the length of the sound is nine inches.

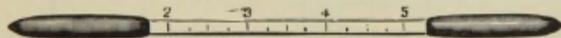
[Willy Meyer, M. D., in New York Medical Journal, August 6th, 1892.]



6738.



6739.



6740.

WEISSE'S URETHRAL SOUND.

FOR TREATING STRICTURES OF THE MALE URETHRA EXTERIORLY TO THE TRIANGULAR LIGAMENT.

"The sound portion at either end is two inches in length; the middle, for an inch, represents the full circumference, or size of the sound, in millimetres; the ends, for half an inch each, taper through several sizes. The staff portion has much less circumference and is four and a quarter inches in length; it is flattened on two sides (one for each of the end sounds), which are ruled in inches, with quarter inch divisions."—Faneuil D. Weisse, M. D., Medical Record, December 20, 1884.



6741.

6729.	Sound, Lawrence's.....	\$ 1 25
6730.	" Lister's, Olive-point, Conical.....	1 00
6731.	" Mastin's, Olive-point.....	1 85
6732.	" Mercier's, Rectangular.....	1 00
6733.	" Otis', Steel.....	90
6734.	" Pratt's, Double End.....	75
6735.	" Roser's.....	1 15
6736.	" Teff's.....	90
6737.	" Trendelenburg's, Catheter-Sound, see Fig. 6681, Page 401.....	3 00
6738.	" Van Buren's, Carved Conical Steel.....	75
6739.	" " Straight " ".....	75
6740.	" " Wire Stem.....	1 00
6741.	" Wyeth's, Carved Conical Steel.....	75
6742.	" " Straight " ".....	90

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

FOR SETS OF SOUNDS IN CASES SEE PAGES 436, 437, 438.

GENITO-URINARY.

URETHRAL STRICTURE.

EXTERNAL URETHROTOMY.

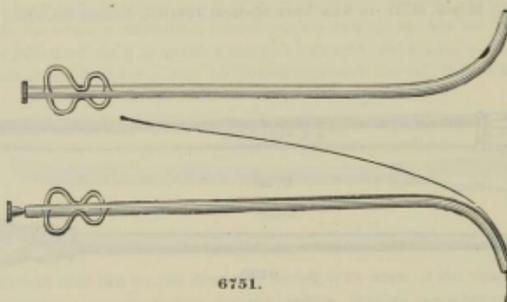
EXTERNAL PERINEAL URETHROTOMY, WITH CONDUCTOR.

GOULEY'S METHOD.

The following description of Prof. Gouley's improved method of external division of the urethra in perineo, for the relief of obstinate stricture, is extracted from the New York Medical Journal for August, 1869:

Operation: The perineum having been shaved, the patient is etherized. The urethra is explored with a flexible bulbous bougie, of proper size, to ascertain the exact seat of the obstruction. The canal is then filled with olive oil and a capillary probe-pointed whalebone bougie is introduced into the urethra. If its point becomes engaged in a lacuna it is withdrawn a little, and again carried onward with a rotary movement. If it enters a false passage it is retained in situ by the left hand, while another is passed by its side. If this second guide makes its way into a false passage it is to be treated precisely as was the first, and the operation repeated till one guide can be made to pass the obstruction and enter the bladder. Sometimes five or six guides are thus caught before the false passage is filled up and the natural route opened. As soon as a guide enters the bladder—which may be known by the ease with which the instrument may be moved in and out—the other guides are withdrawn.

GOULEY'S CATHETER-STAFF.



6751.

"The next step is to introduce a No. 8 grooved metallic catheter staff, with a quarter of an inch of its extremity bridged over, so as to convert the groove into a canal, the bridged portion itself being also grooved. Its introduction is accomplished by passing the tunnelled point over the free end of the retained guide; then, holding the latter steadily between the thumb and index finger of the left hand, and pushing the catheter staff gently into the urethra until its point comes in contact with the face of the stricture. The staff and guide are then kept in position by an assistant, who at the same time supports the scrotum. The patient is placed in a lithotomy position and held by two assistants, or, better, by Pritchard's anklets and wristlets.

"The surgeon, seated on a low chair, first makes a digital exploration per rectum, to ascertain, as far as practicable, the condition of the membranous and prostatic divisions of the urethra; then he makes a free incision in the median line of the perineum, extending from the base of the scrotum to within half an inch of the margin of the anus, involving only the skin and superficial fascia. A few well-directed cuts having brought into view the urethra, the operator, with his finger-nail, feels for the groove on the bridged portion of the staff, and opens the canal upon this groove longitudinally, in the median line, exposing to sight the instrument. A loop of silk is then passed through each edge of the incised urethra, close to the face of the stricture, and held by the assistant in charge of the corresponding limb. When the urethra is opened, and the loops are secured, the catheter staff is withdrawn a little, so as to bring into view the black guide; then the stricture, with about half an inch of the uncontracted canal behind it, is divided. This is best accomplished by means of the Beaked Bistoury, Fig. 6744.

GOULEY'S TENACULUM.

(USEFUL IN THE OPERATION).



6756.

GOULEY'S BEAKED BISTOURY.



6744.

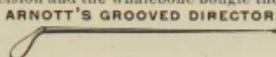
"It is a very narrow, beaked, straight bistoury, about the size of a small probe, and is made to enter the stricture alongside of the guide, as if it were a probe, and the incision is done by directing the edge downward.

The last step is to pass the catheter staff, guided by the whalebone bougie, into the bladder; but, should it be arrested in its course, the knife must be reintroduced and the incision extended further back. The operation is thus completed without unnecessary delay; the bladder is entered with the greatest gentleness, and, by the free flow of urine through the catheter, the surgeon is certain that the instrument has gone in the right direction, that he has divided the stricture, thoroughly, and that he has not simply enlarged a false passage.

GENITO-URINARY.
URETHRAL STRICTURE.
EXTERNAL URETHROTOMY.

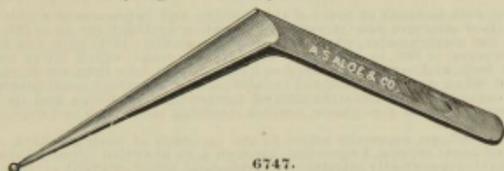
EXTERNAL PERINEAL URETHROTOMY WITH CONDUCTOR—CONTINUED.
GOULEY'S METHOD.

"Where the initial introduction of the whalebone guide is impossible, it may be passed through the perineal wound into the bladder, and the stricture divided as before; or Arnott's Grooved Director, Fig. 6745, may be used as a guide for the incision and the whalebone bougie then passed along its groove. In either

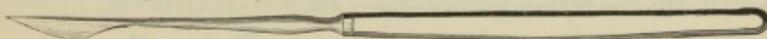


6745.

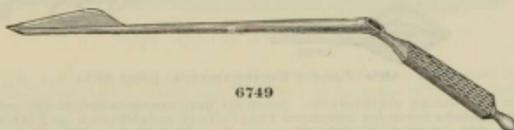
case, with the guide in the bladder after the incision, the point of the catheter staff may be protruded from the wound, the free end of the guide carried through the terminal canal and the bladder entered as before described."—"Diseases of the Urinary Organs." Gouley. 1873.



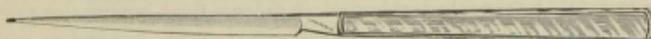
6747.



6748.



6749.



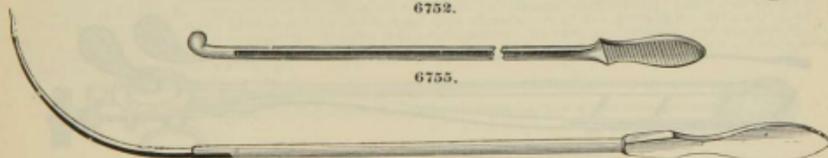
6750.



6751.



6755.



6753.

6744.	Bistoury, Gouley's, Beaked.....	\$ 1 00
6745.	Director, Arnott's, Probed Silver.....	1 00
6746.	" Gouley's, " ".....	1 00
6747.	Gorget, Teale's, Probed.....	1 90
6748.	Knife, Dick's, Urethrotomy.....	1 75
6749.	" Mastin's, ".....	4 50
6750.	" Walker's, ".....	1 35
6751.	Staff, Gouley's, Catheter.....	1 75
6752.	" Mastin's, Modification of Wheelhouse's.....	2 00
6753.	" Symes', Urethrotomy.....	1 50
6754.	" Walker's ".....	1 50
6755.	" Wheelhouse's Urethrotomy.....	1 50
6756.	Tenaculum, Gouley's (Sharp Hook).....	1 00

Urethrotome, Walker's, External, see Fig. 6750.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

URETHRAL STRICTURE.

INTERNAL DILATING URETHROTOMY.

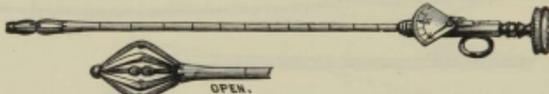
RÉSUMÉ OF SEVENTEEN YEARS' EXPERIENCE IN THE OPERATION OF
DILATING URETHROTOMY.

BY FESSENDEN N. OTIS, M. D.,

CLINICAL PROFESSOR OF GENITO-URINARY DISEASES IN THE COLLEGE OF PHYSICIANS AND SURGEONS,
NEW YORK; CONSULTING SURGEON TO CHARITY HOSPITAL, ST. ELIZABETH'S HOSPITAL,
THE MANHATTAN EYE AND EAR HOSPITAL, ETC.

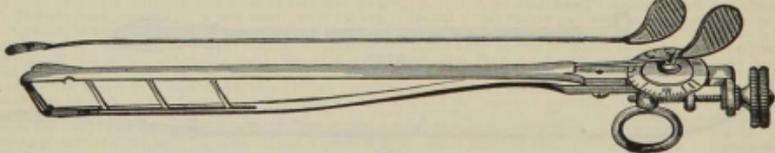
* * * I beg leave, first, to speak of some of the changes and improvements which have been made in instruments for diagnosis of stricture and operations by dilating urethrotomy up to the present time. After much experimentation the urethrometer, which was made originally (1874) with jointed metallic bars, was superseded in great measure, in 1875, by one made with steel springs, which latter had the advantage of giving a better shaped bulb, and could be made 5 or 6 mm. in size less than the former. It proved a very efficient instrument, and, when well made, seemed to fulfill all the necessary requirements; but the difficulty of having it well made, especially as to the strength and temper of the springs and its liability to rust and breakage proved a source of much annoyance, besides involving much care and expense to keep it in good working order.

A little more than a year ago, especially urged by the necessity of having a more enduring instrument for use in the military and naval service, I succeeded, through a competitive contest between the prominent instrument makers, in having a perfectly satisfactory instrument made, without springs and with a compass of from 18 to 45. This, when well made, lasts for many years, without the necessity for repair.



6687. Otis' Latest Urethrometer, page 401.

Next, in regard to the dilating urethrotome. Since its first presentation to the profession, in 1872, this instrument, through continued efforts for increased simplicity in construction and increased directness and accuracy in application, has necessarily undergone many modifications. One of these was fully twelve inches long, and curved, with an especial design to securing its more easy adaptation for the division of strictures at or beyond the bulbo-membranous junction. It was soon found, however, that while introducing into the curved portion of the urethra was facilitated, the dilatation by it thus curved was unequal and could not be correctly indicated on the dial, thus rendering it unreliable. And what was a still stronger reason for condemning it, a further experience with dilating urethrotomy proved that division of stricture, by any form of urethrotome, beyond the bulb was unsafe, and, in my opinion, distinctly not within the legitimate province of dilating urethrotomy. I have repeatedly condemned this long, curved, dilating urethrotome, in public and in private, to surgeons, students and instrument-makers, for the last ten years, but in spite of my efforts they continue to be called for, and consequently to be made and sold, for which reason I take this especial opportunity again to condemn, utterly, this form of dilating urethrotome.



6793. Otis' Dilating Urethrotome, page 415.

The one, and the only, dilating urethrotome I use and recommend for all operations of dilating urethrotomy is the short, straight instrument which I now exhibit, 8½ inches in length, circumference of shaft 16 mm., and capable of being expanded to 45, with a blade running 2 to 2½ mm. above the groove. I desire here to advise against the use of this delicate instrument as a divulsor, unless much more heavily made. When, in dilating strictures during operation, any undue strain is felt, it should be at once relieved by passing the blade through the stricture, then continuing the dilatation, and if necessary cutting again in a similar way until a dilatation of two or three millimetres may be made without marked resistance, a fact which, as a rule, indicates the complete sundering of the stricture. In cases where there is some uncertainty as to the exact point of binding during the operation, the use of the Bulbous Sound will define it, saving unnecessarily long incisions. In regard to the location of the incision, I do not hesitate to reiterate my former opinion in the strongest terms, that it should be always and only superiorly, i. e., on the roof of the urethra and as nearly as possible in the median line. A more generous vascular distribution in the peri-urethral tissues will account for the fact that hemorrhage is more liable to be severe when the incisions are made inferiorly, and is a sufficient reason why inferior incision should be avoided.

* * * And now, in regard to the accidents of hemorrhage. When incisions are made beyond three inches, I take the precaution of having the perineal crutch in position immediately after operation, so that, should hemorrhage occur subsequently, the patient can readily bear down upon it, and thus be promptly secured from any leakage back into the bladder. Effective pressure may be made at any desired point anterior, and thus always prevent any considerable loss of blood in any case.

GENITO-URINARY.

URETHRAL STRICTURE.

INTERNAL DILATING URETHROTOMY.

RÉSUMÉ OF SEVENTEEN YEARS' EXPERIENCE IN THE OPERATION OF
DILATING URETHROTOMY—CONTINUED.

6642. Otis' Hard Rubber Endoscope, page 397.

In cases where hemorrhage is not completely controlled by temporary pressure, I have found nothing better than the introduction of my Hard Rubber Endoscopic Tube, formerly recommended, any necessary counter-pressure being made by bandage. This may remain, if necessary, for two or three days, removing the tube only for cleansing, urination being readily effected by catheter passed through it on removal of the obturator.

* * * One point in connection with the operation of dilating urethrotomy which has been the source of much discussion and of some animadversion may, perhaps, be briefly considered to advantage at this time. This is in regard to divisions either of congenital or acquired contractions of the meatus urinarius externus. The experience and the study given to this matter since my early discussion and advocacy of this procedure, in 1875, have only confirmed the views then presented. The necessity of repeated passage of sounds of the full normal calibre of the urethra, subsequent to the complete division of stricture, in order to secure a permanent cure, renders enlargement of the orifice to that extent essential.

In this connection I would suggest that the dilating urethrotome should, in my opinion, never be used for the division of contractions within half an inch of the orifice, and that incisions for that purpose should



6541. Otis' Meatotome, page 375.

be made with a straight, blunt-pointed bistoury, and always on the inferior aspect or floor of the urethra, except where the meatus is placed so low that it is impossible to get sufficient room for the passage of the proper sized sound without incising the superior also.

This, for the reason, chiefly, that incisions superiorly in the glans recontract quickly, or, if they do not, absorption of the tissue of the glans may occur in the line of the incision, if at all extensive, which may result possibly in a distinct cleft, in one such case that came under my observation, some years since, giving the appearance of a bifid glans. The enlargement of the orifice should never be made by a sudden, quick stroke of the knife, as it is sometimes the custom of surgeons to do, but under cocaine or ether, very deliberately, and by repeated careful incisions, always downward and exactly in the median line, until by repeated trial with the bulbous sound the precise size required is attained. Should the frenum be in the way, if broad and flat, the incision may be carried through its centre as far as its base; if narrow, it should be snipped away to the same extent. When the meatus is situated too low to allow sufficient room, the surgeon must content himself with an inferior incision that shall not encroach upon the true floor of the canal, and will have to use the urethrometer, or its equivalent, instead of the sound, for keeping the sundered ends of the strictures from uniting until healing of the incision is complete. And now I wish to speak, lastly, of my experience and belief in regard to the permanence of results in dilating urethrotomy; that is, as to the validity of the claims which have been made for the radical cure of stricture of the urethra by this method of treatment. It is not unusual for surgeons to infer that cases treated by various methods, and apparently cured, are really so when they do not return to them for treatment. This proof, however, will not suffice where the radical cure of stricture is claimed.



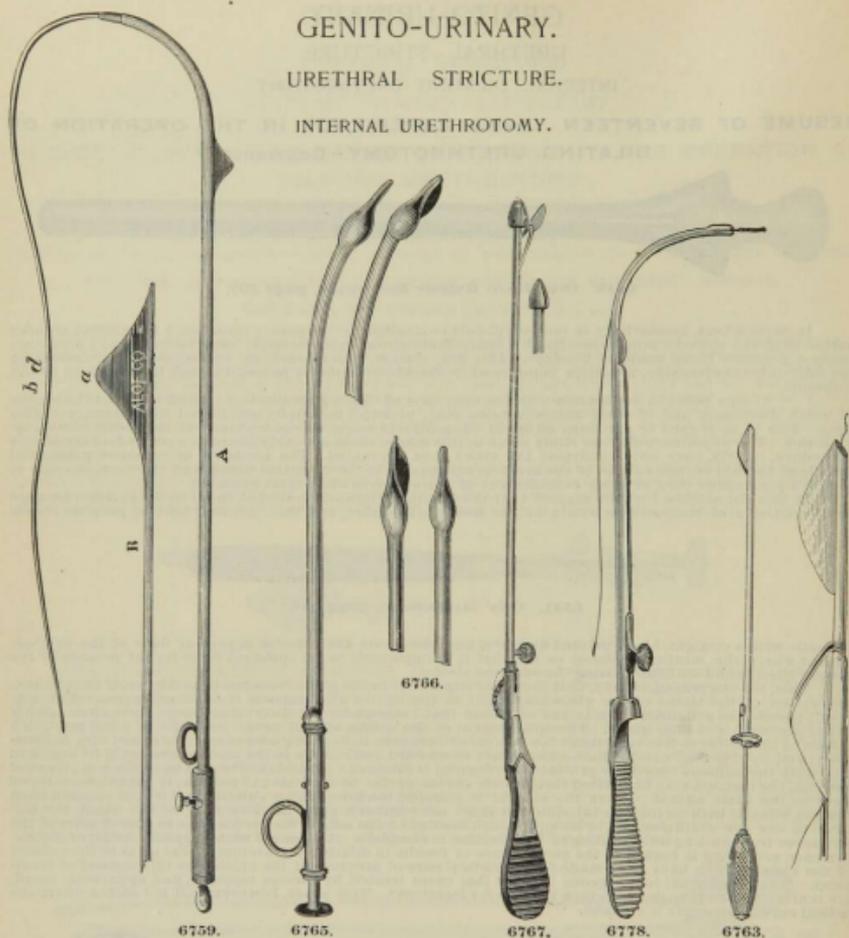
6673. Otis' Bougie à Boule, page 399.

A re-examination, with the bulbous sound, of the full size of the predetermined normal urethral calibre after many years, will alone give the necessary proof upon which such a claim can be sustained. The acknowledged failure of all methods, except that of dilating urethrotomy, to wholly and permanently remove the stricture-tissue is accepted by those without an ample experience in this, as a sufficient evidence that the radical cure of stricture is impossible by any method. Even Sir Henry Thompson says, the more freely he divides stricture the more permanent are the results; that he has never had trouble from cutting stricture too freely, while he has often had occasion to regret having cut too little; and that he has frequently seen cases where relief has continued for years after internal urethrotomy. Yet, he says, "I question very much if I have ever seen a case which has been completely cured by any treatment whatever." Under such a weight of testimony adverse to the probability of the radical cure of stricture, proof of facts claiming this for dilating urethrotomy must be full and conclusive. Preliminary to the production of such proof, it may not perhaps be out of place to call attention to the important fact that by no other method than dilating urethrotomy is complete sundering of the stricture at some one point insisted on; that upon the accomplishment of this, whether by means of the dilating urethrotome or by any other instrument, or by repeated operations, possibility of a radical cure solely depends; that occasional failure to secure against the return of stricture, after the operation of dilating urethrotomy, does not disprove this position, but simply indicates a miscalculation on the part of the surgeon as to the depth and extent of the incision required, resulting in a failure to completely sunder the stricture. The only exceptions I have met have been very rare, and apparently due to the extension of the stricture-tissue beyond the reach of any incisions which could be safely made.

GENITO-URINARY.

URETHRAL STRICTURE.

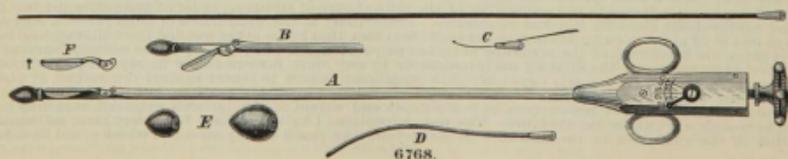
INTERNAL URETHROTOMY.



6767. GROSS' LATEST URETHROTOME.

"To use the Exploratory Urethrotome: The stricture having been passed, and its posterior face having been accurately defined by the projecting shoulder of the bulb, the latter is carried at least half an inch towards the bladder—as the object is to cut, along with the coarctation, the sound tissues to that extent behind and in front of it—when the blade is protruded by sliding the button, and the parts divided as the instrument is withdrawn, the penis being put upon the stretch to render the urethra tense. Should the tissues be thick or resistant, the section may be materially aided by counterpressure with the fingers of the left hand along the median line. The bulb is then used as an explorer to detect any undivided bands, which, if discovered, should next be severed, since thorough section of all constricting bands is essential to success."

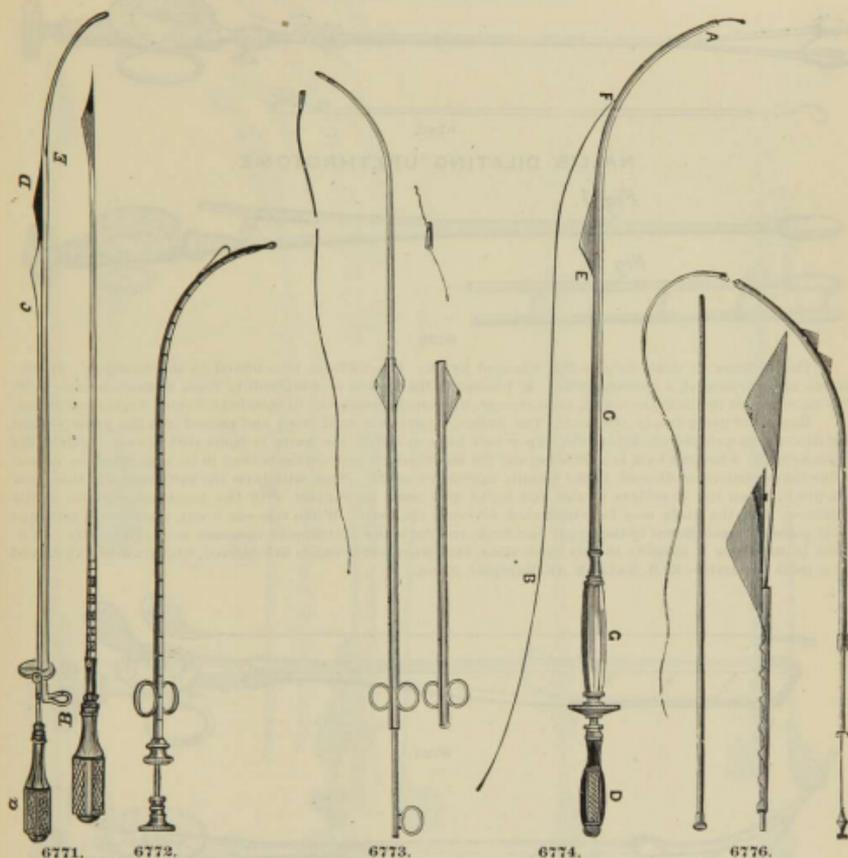
—SAMUEL W. GROSS, M. D. Medical Record, June 15, 1878.



GENTO-URINARY.

URETHRAL STRICTURE.

INTERNAL URETHROTOMY.



6771.	Urethrotome, Banks'.....	\$15 00
6772.	".....	11 25
6773.	Bumstead-Maisonneuve's.....	10 50
6774.	".....	37 50
6775.	Charrière's.....	10 50
6776.	Civiale's.....	9 00
6777.	Gouley's Tunnelled, Improved.....	9 00
6778.	"..... Plain.....	3 75
6779.	Gross', Curved.....	4 00
6780.	"..... Straight.....	4 00
6781.	"..... Latest.....	4 50
6782.	Kinloch's.....	18 75
6783.	Lienhardt's.....	6 75
6784.	Maisonneuve's.....	10 50
6785.	Mastin-Maisonneuve's.....	10 50
6786.	Peter's.....	4 50
6787.	Pritchett's Rotating.....	18 75
6788.	Teevan's Tunnelled.....	9 00
6789.	Trélat's.....	12 00
6790.	Voillmier's.....	12 00
6791.	Westmoreland's.....	9 00
6792.	White's.....	6 05
6793.	Whitehead's.....	11 20

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.
 URETHRAL STRICTURE.
 INTERNAL DILATING URETHROTOMY.



6780.

NALL'S DILATING URETHROTOME.

Fig 1.

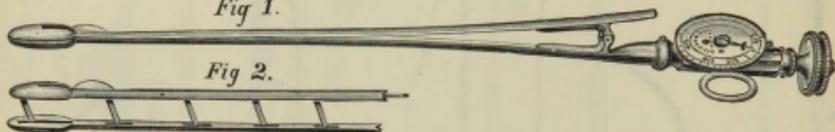
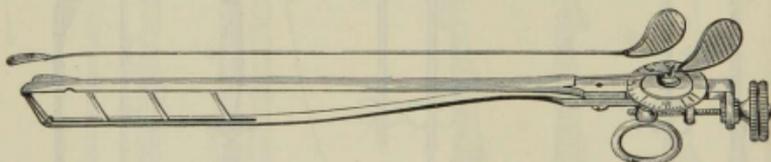


Fig 2.

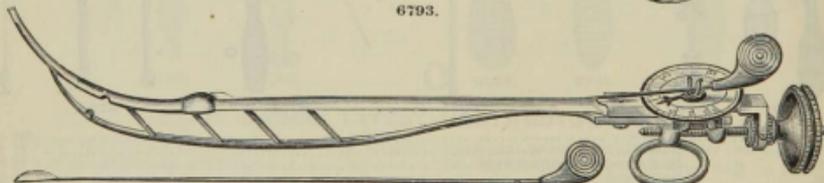
6789.

The instrument itself defines the diseased tissue. The incision is confined to the stricture. It subserves the purpose of a urethrometer. It possesses the power of adaptability from 26 French scale to 50. The functions of the bulbous sound, urethrometer and urethrotome are all blended into one single instrument.

Manner of using this instrument: The bulbous portion is well oiled and passed into the penis beyond the stricture in a closed condition, the upper half bulb in which the knife is concealed always against the superior wall; when the bulb is a little beyond the stricture the instrument is then to be separated by means of the thumb-button as desired, to the already calculated width. Now withdraw the instrument in this open condition, when the shoulders of the half-bulbs will come in contact with the posterior surface of the stricture; then the knife may be withdrawn, severing the band. When this one is cut, the knife is returned to its place of concealment in the upper half bulb, and then the instrument becomes a urethrometer. Continue to withdraw it steadily in this open state, and, when other bands are defined, withdraw the knife and treat them similarly.—R. B. NALL, M. D. Memphis, Tenn.

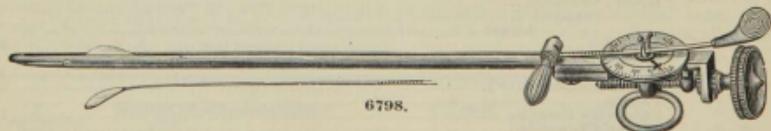


6793.



6797.

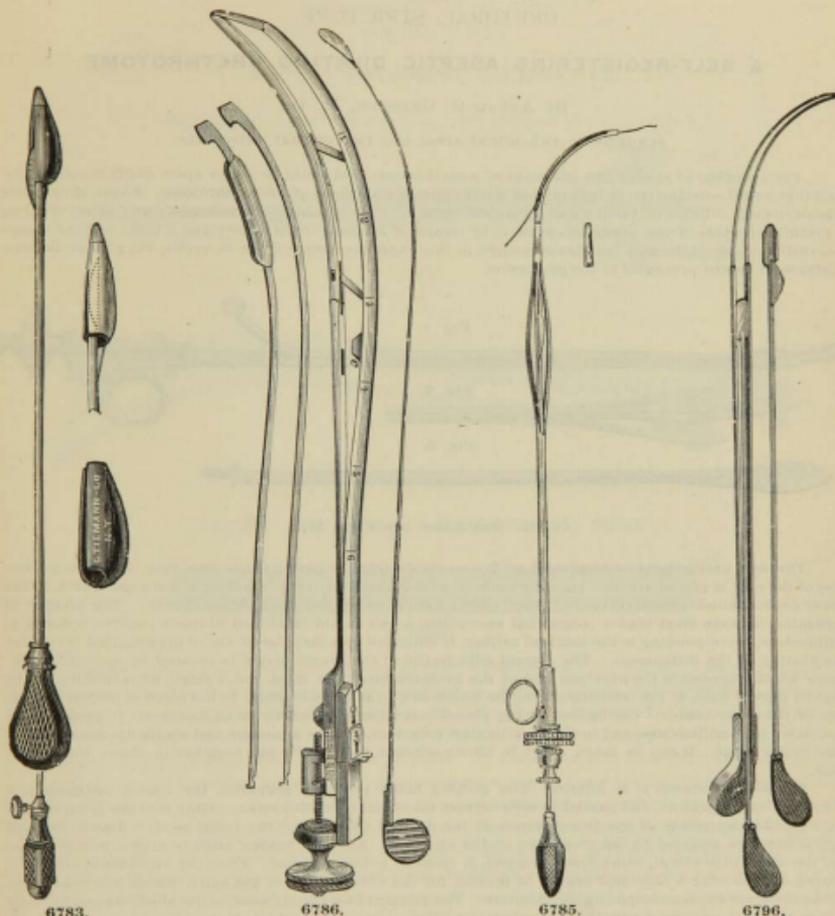
WYETH'S MODIFIED OTIS' DILATING URETHROTOME.



6798.

"Dr. Wyeth also exhibited a modification of Dr. Otis' Urethrotome. The modification consisted in the attachment of a cogwheel arrangement, by means of which the movements of the knife could be regulated and arrested at any desired point."—New York Pathological Society. Stated meeting, November 26, 1884. Medical Record, January 3, 1885.

GENITO-URINARY.
URETHRAL STRICTURE.
INTERNAL DILATING URETHROTOMY.



6780.	Urethrametome, Brown's.....	\$20 00
6781.	Urethrotome, Automatic, Stewart's.....	30 00
6782.	" " Bulbous, Banks.....	15 00
6783.	" " " Otis'.....	15 00
6784.	" " Dilating, Gerster's. See page 416.....	17 50
6785.	" " " Gonley's.....	11 25
6786.	" " " Hunter's.....	26 50
6787.	" " " Mastin's.....	26 50
6788.	" " " Milne's.....	13 75
6789.	" " " Nall's.....	30 00
6790.	" " " Otis', No. 1.....	30 00
6791.	" " " " No. 2.....	30 00
6792.	" " " " No. 3.....	22 50
6793.	" " " " No. 4, Latest. See page 410.....	18 00
6794.	" " " Rogers' and Urethrameter.....	30 00
6795.	" " " Smith's.....	22 50
6796.	" " " Stearn's.....	9 00
6797.	" " " Walker's.....	26 50
6798.	" " " Wyeth's.....	20 00
6799.	" " " Young's.....	37 50
6800.	" " Divulsing, Otis'.....	30 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

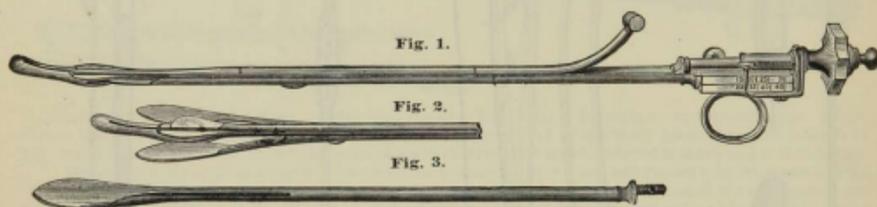
URETHRAL STRICTURE.

A SELF-REGISTERING ASEPTIC DILATING URETHROTOME.

BY ARPAD G. GERSTER, M. D.,

SURGEON TO THE MOUNT SINAI AND THE GERMAN HOSPITALS.

For a number of years I felt the want of a urethrotome that could be taken apart easily for cleansing, and that would combine the virtues of Otis' urethrameter with those of his urethrotome. I have abundantly demonstrated ("Rules of Aseptic and Antiseptic Surgery") the feasibility of completely and safely dividing a urethral stricture of the pendulous portion, by means of an Otis' urethrameter and a long-shanked, blunt-pointed tenotomy knife, and the idea embodied in this experiment served me to evolve the plan of the new instrument hereby presented to the profession.



6784. For Price See Page 415.

The new urethrotome is composed of five easily detachable parts; three steel rods and two screws. One of the rods is provided with a laterally grooved bulb of small size (Fig. 2) acting as a wedge, which, by the aid of a stout thumb-screw, serves to spring apart a pair of congruent steel blades (Fig. 3). The amount of separation of these steel blades (somewhat resembling a pair of old-fashioned draper's shears), reduced to millimetres, corresponding to the urethral calibre, is indicated by a dial placed above the ring that serves for the fixation of the instrument. The correct adjustment of the thumb-screw is secured by a small check-screw which represents the proximal end of the urethrotome. The third rod, a small knife, hidden in the slightly curved beak of the instrument, can be withdrawn so as to correspond to the place of widest separation of the shear-blades. The calibre of the closed instrument is exactly 15 millimetres. It permits of a distension to 45 millimetres, and in these particulars coincides with the minimum and maximum dimensions of Otis' urethrotome. It can be taken apart in fifteen seconds, and can be put together in about double that time.

The *modus operandi* is as follows: The urethra being properly prepared, the closed instrument is lubricated with glycerine, and passed in well beyond the stricture or strictures. After this the shear-blades are separated by means of the thumb-screw to the desired calibre, and the instrument is drawn forward until it becomes arrested by the resistance of the stricture. Now the hidden knife is drawn into position, and the whole instrument, being firmly grasped, is steadily pulled forward. Thus the stricture is gradually dilated so as to offer a favorable degree of tension for the effective use of the knife, which will readily cut all the resistant tissues composing the stricture. The moment that the stricture is cut along its entire linear extent, and to the proper depth, the distended part of the instrument, which serves the purpose of a bulb, will slide through the site of the stricture, thus indicating that an adequate amount of division has been accomplished. A series of strictures can thus be divided one after the other without the necessity of removing the instrument from the urethra.

I have tested the practical utility of this urethrotome in thirty-four cases of stricture, and have to add only one piece of advice, the importance of which has become manifest with widening experience. It is advisable in cases of comparatively tight and very dense stricture, where a great disproportion exists between the normal calibre of the urethra and the calibre of the undistended stricture, not to attempt a complete division of the stricturing bands at one stroke, as the great amount of traction required to accomplish a full distension of the stricture would threaten circular rupture of the urethra on a line just beyond the proximal limit of the stricture. It has been found much safer and also easier to cut such strictures *gradatim*. What I mean is this: That the instrument being introduced, the first cut is to be made at a moderate degree of dilatation. The knife being slipped back, and the instrument somewhat closed, it is again passed behind the stricture, when a second cut is made, the dial indicating this time five or ten millimetres more of dilatation than was accomplished by the first cut. And this should be repeated until thus gradually, full division is accomplished.

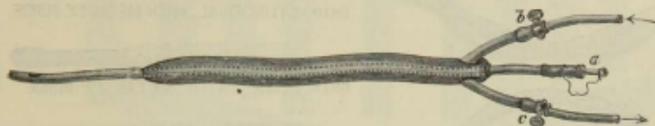
GENITO-URINARY.

URETHRAL STRICTURE.

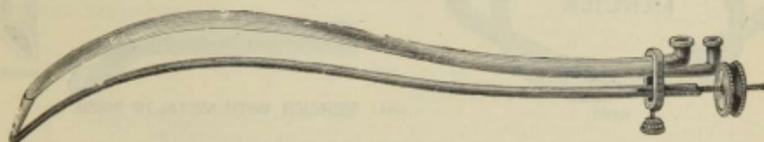
HÆMOSTATIC.

BATES' URETHRAL HÆMOSTAT,

FOR THE APPLICATION OF COLD BY MEANS OF ICE WATER.



6801.



6803.

OTIS' URETHRAL HÆMOSTATIC TUBE.



6802.

"In a small proportion of cases hæmorrhage has been quite profuse; not during or immediately following the operative procedure, but coming on after urination, or, more commonly, during erection. Especially from the latter cause, it is sometimes sudden and copious, but readily controlled. The fact that hæmorrhage, of any moment, ever occurs, leads me to use and to advise such precautionary measures, in all cases, as will give complete security against harm from this accident. My usual plan is to have an intelligent attendant instructed to watch the patient during sleep (when erections are most likely to occur), and to make prompt pressure of the penis at the incised locality. This is usually sufficient to arrest the flow. Applications of ice are also of value for the same purpose. In some cases I have found it necessary to introduce a tube into the urethra, making pressure upon it by means of a light bandage, and to have it retained until the hæmorrhagic tendency has passed. When an attendant is not available a soft rubber tube, one or two sizes smaller than the normal calibre of the canal, may be inserted and retained by a light bandage for one, two or three days, according to the necessities in any given case. If the tube is not worn from the first it may be introduced to protect the surface of the wound during urination, for a day or two. In very sensitive persons I have had the bladder habitually emptied by means of a small soft rubber catheter. An admirable method of arresting hæmorrhage in the pendulous urethra, and especially at or near the meatus urinarius, has been devised by Dr. Geo. K. Smith, Professor of Genito-Urinary Diseases in the Long Island Hospital Medical College. This consists of pressure applied to the sides of the penis by two thin pasteboard splints, an inch or so in width, padded with cotton and encircled, when in position, by half a dozen narrow india-rubber bands. Small notches in the splints keep the bands from slipping and the amount of pressure may be easily regulated by the number or size of the bands. Simple separation of the splints is sufficient to permit urination without removing them."—"Stricture of the Male Urethra." F. N. Otis, M. D. 1878.

6801. Hæmostat, Bates' Urethral.....	\$3 00
6802. Hæmostatic Tube, Otis' Urethral.....	60
6803. Tourniquet, Hunter's ".....	4 25
6804. " Otis' Perineal.....	3 75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

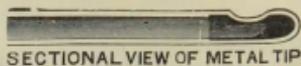
VESICO-URETHRAL.



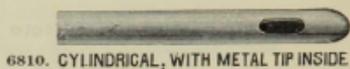
6806.



6807.



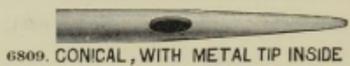
SECTIONAL VIEW OF METAL TIP



6810. CYLINDRICAL, WITH METAL TIP INSIDE



6812. OLIVE, WITH METAL TIP INSIDE



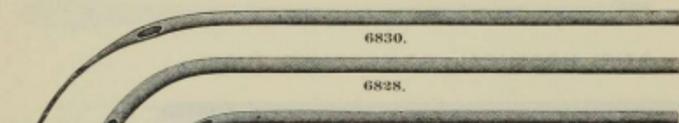
6809. CONICAL, WITH METAL TIP INSIDE



6811. MERCIER, WITH METAL TIP INSIDE



6838.



6830.

6828.

6829.

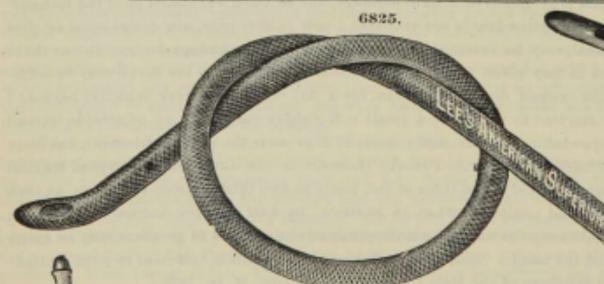
All of our metallic catheters have Prof. Gross' improved solid catheter end to prevent the carrying of disease which is done by the hollow end.



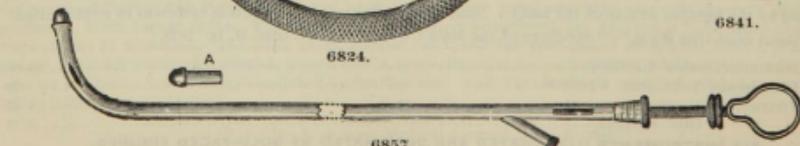
6842.



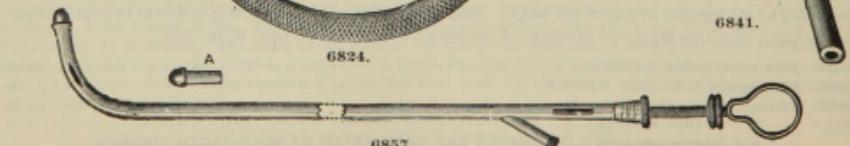
6856.



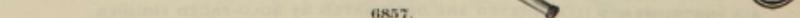
6825.



6824.



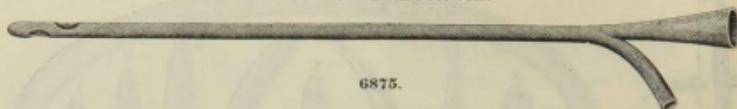
6841.



6857.

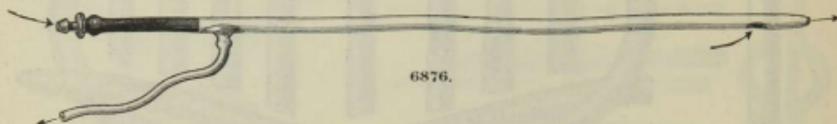
GENITO-URINARY.

VESICO-URETHRAL.



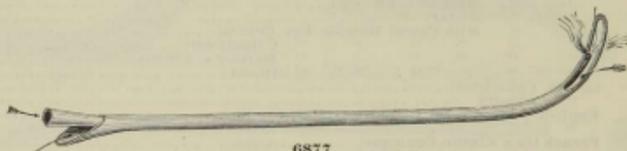
6875.

MARCY'S DOUBLE CURRENT SOFT RUBBER CATHETER.



6876.

The smaller varieties of these tubes (those numbers suitable for use in the male bladder) have been improved by furnishing a probe point and the "velvet eye" peculiar to Tiemann's catheters. This enables the instrument to be made smaller, since the direct current requires only a small stream. The efferent tube is relatively larger, and thus overstrain upon the bladder is prevented. Attachments have also been made so that the tubes may be lengthened at will. As now made and sold these tubes appear very nearly perfection.—The New York Medical Journal. H. O. MARCY, M. D., Boston.



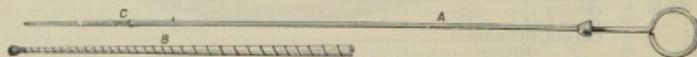
6877.



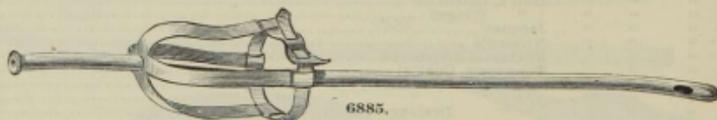
6880.

OTIS' PROSTATIC CATHETER GUIDE.

TO FACILITATE THE INTRODUCTION OF SOFT RUBBER CATHETERS. THE FLEXIBLE SPIRAL "B" IS MADE DETACHABLE FOR CONVENIENCE IN CARRYING.

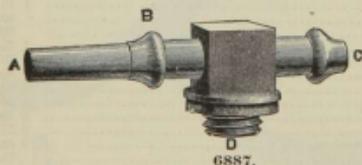


6884.

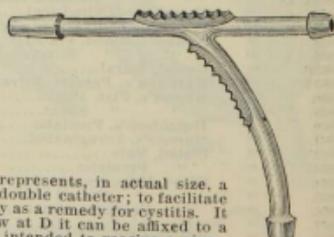


6885.

It is made of flat bands of rubber; where the bands cross over the meatus they are perforated by a minute hole, this being very elastic holds the instrument passed through it, while the strap of the muzzle is passed around the body of the penis.



6887.



6889.

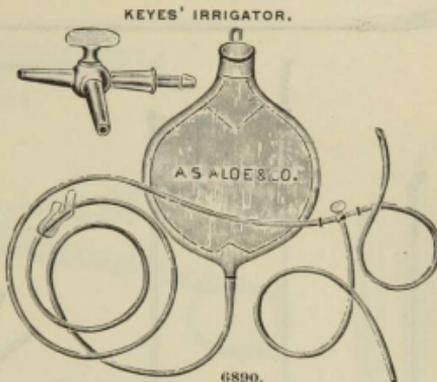
Hosmer's Catheter "T." Fig. 6887. The above wood-cut represents, in actual size, a simple contrivance designed to obviate the disadvantages of the double catheter; to facilitate the process of washing out the bladder, and to increase its efficacy as a remedy for cystitis. It is a "T," with short body and two arms. By means of the screw at D it can be affixed to a (No. 1) Davidson Syringe, in place of the nozzle. The arm C is intended to receive a piece, sixteen inches long, of 3-16-inch rubber tubing. The long conical tip, B A, is to be inserted into a catheter, the calibre of which may vary considerably.

GENITO-URINARY.

VESICO-URETHRAL.

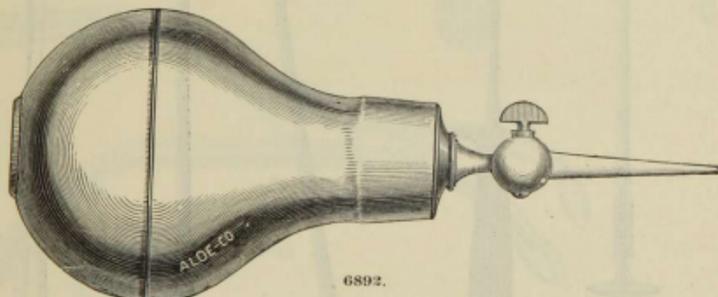
IRRIGATION OF THE BLADDER.

To the fountain-syringe bag holding a pint, and tube of variable length, so as to allow, if desirable, considerable pressure by elevating the bag, is attached a two-way stop-cock. Upon the tube is another stop-cock only useful when it is desired, having thrown a medicated solution into the bladder, to retain it there for a certain length of time, without either allowing the bladder to become over full or its contents to escape. The nozzle of the nickeled stop-cock is very large, nearly a quarter of an inch in diameter, and fits snugly into the expanded conical (also nickeled) mouthpiece. It is so large, and fits so easily, that the most clumsy fingers can readily adjust it almost unaided by sight. Upon this conical catheter mouthpiece is fitted a thin piece of rubber tubing covering its upper two-thirds. This allows the mouthpiece to be used with any metallic or other hard catheter, and prevents leakage. The fine conical point of the mouthpiece is to be screwed into any soft catheter before introducing the latter. The other branch of the two-way stop-cock is fitted into a short piece of rubber tubing, which conveys the urine and the washings into some convenient receptacle.



VAN BUREN'S METHOD OF IRRIGATING THE BLADDER.

The best method of washing out the bladder is as follows: The soft catheter through which the residuum has been drawn off is used. A double current catheter is not advisable, for with such an instrument no distention is brought to bear upon the bladder-walls, and the whole mucous surface is not brought into contact with the cleansing fluid. Warm water should be used, since it is soothing as well as cleansing, and does not



excite the bladder to speedy contraction upon being thrown into its cavity. A temperature of about blood heat should be aimed at—a little below 100° Fahr. The best style of syringe is a rubber bag holding about four ounces, provided with a nozzle tapering to a fine point (Fig. 6892), so that it may readily enter the calibre of any catheter, and with a stop-cock which works smoothly for convenience of manipulation.

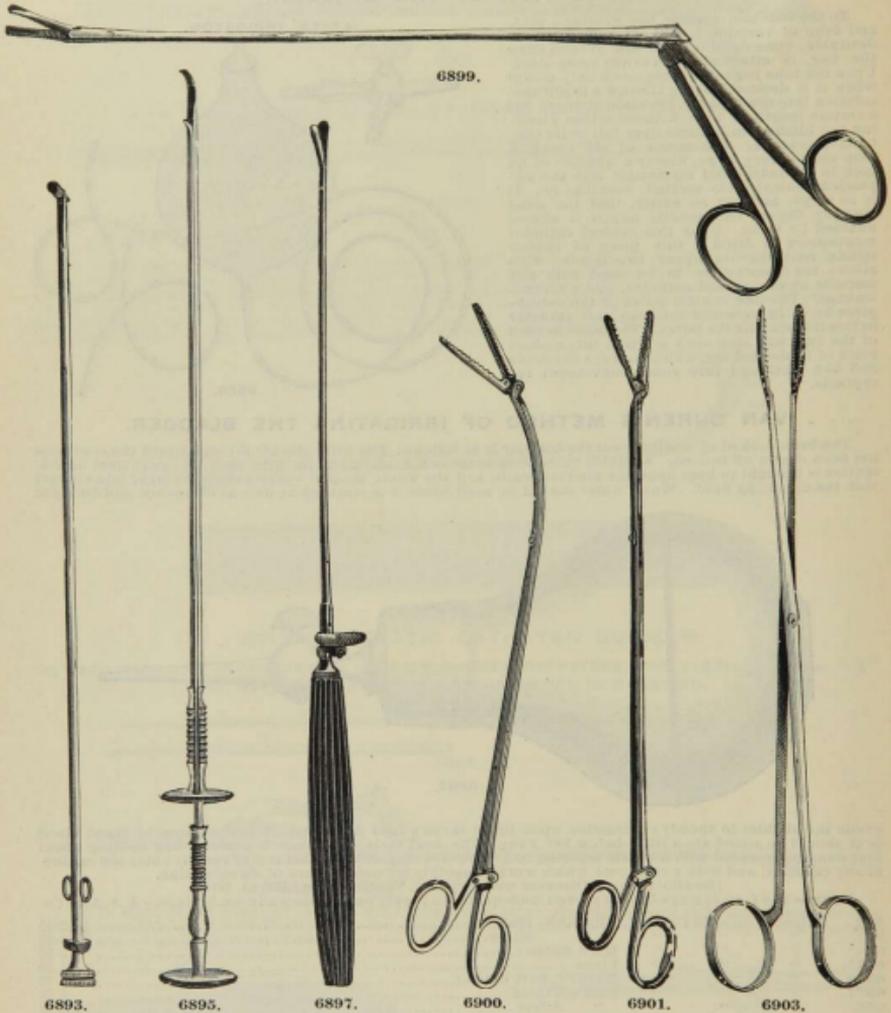
[Genito-Urinary Diseases with Syphilis, VanBuren and Keyes, 1874.]

Note.—The 4-oz. Syringe having proven inadequate, we supply on all orders an 8-oz. Syringe.—A. S. Aloe Co.

6872.	Catheter, Double Current, Billroth's, Plated.....	\$ 2 25
6873.	" " " " " Silver.....	3 75
6874.	" " " " " Hard Rubber.....	3 50
6875.	" " " " " Linen.....	1 50
6876.	" " " " " Marcy's, Soft Rubber.....	1 75
6877.	" " " " " Nott's, Plated.....	3 50
6878.	" " " " " " Silver.....	10
6879.	Catheter Box, Enamelled Metal, 1-1/2 in. diam., 14 in. long.....	10
6880.	" " " " " 1 1/2 " " " 14 " " " ".....	25
6881.	" " " " " Nickel-plated Metal, Round, for Pocket.....	75
6882.	" " " " " Papier Maché.....	75
6883.	Catheter Guide, Keyes'.....	60
6884.	" " " " " Otis', Prostatic.....	75
6885.	Catheter Holder, Soft Rubber.....	35
6886.	Catheter Scale, Pastebord Scale-Card gratis upon application.....	
6887.	Catheter "T," Hosmer's.....	60
6888.	Catheter "Y," Patten's.....	60
6889.	" " " " " Improved.....	75
6890.	Irrigator, Keyes', Bladder.....	3 50
6891.	Syringe, Peck's.....	2 00
6892.	" " " " " Van Buren's, Bladder.....	2 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

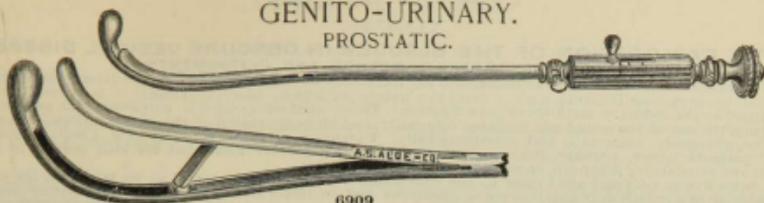
GENITO-URINARY.
VESICO-URETHRAL.
FOREIGN BODY EXTRACTING.



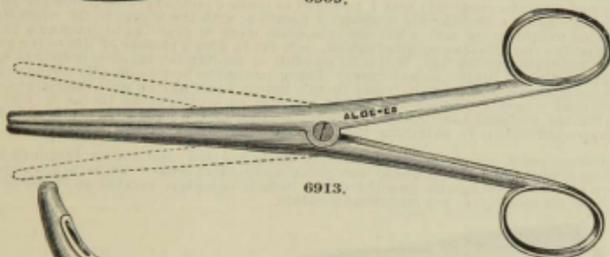
6893.	Curette, Leroy d'Etiolle's.....	\$ 9 00
6894.	" Langenbeck's.....	6 50
6895.	" Lier's.....	7 50
6896.	Duplicator, Mercier's, for removing Soft Rubber Catheters.....	18 75
6897.	Forceps, Collin's, Urethral.....	6 00
6898.	" Lier's, ".....	6 75
6899.	" Mathieu's, " Angular.....	5 00
6900.	" " " Curved.....	4 50
6901.	" " " Straight.....	4 00
6902.	" Thompson's, " Curved.....	1 50
6903.	" " " Straight.....	1 25
6904.	Foreign Body Instrument, Collin's.....	22 50
6905.	" " Nelaton's.....	30 00
6906.	Trilobe, Hunter's.....	15 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

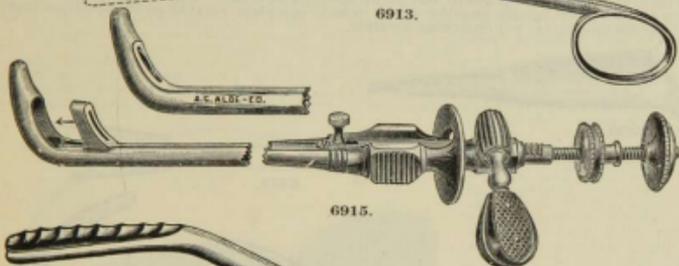
GENITO-URINARY.
PROSTATIC.



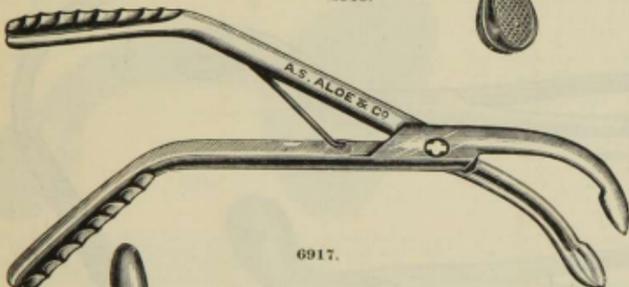
6909.



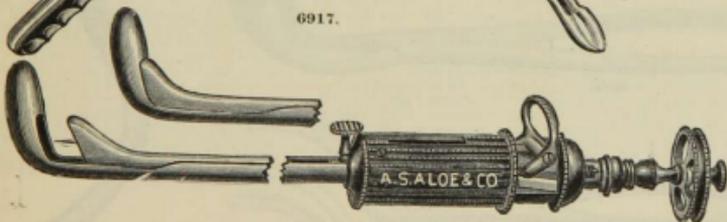
6913.



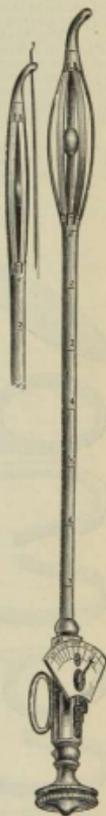
6915.



6917.



6919.



6912.

6907.	Catheter, Fitch's, Dome Trocar, for tunneling the prostate.....	\$ 4 50
6908.	Cysto-Pylometer, Gouley's.....	18 00
6909.	Dilator, Gouley's, Prostate Gland.....	12 00
6910.	" Harrison's, Prostatic.....	1 50
6911.	" Mercier's, Prostate Gland.....	7 50
6912.	" Walker's, ".....	26 75
6913.	Divulsor, Walker's, Prostatic.....	1 50
6914.	Excisor, Mercier's.....	30 00
6915.	" Latéol.....	37 50
6916.	Incisor and Ecraseur, Mercier's, Combined.....	45 00
6917.	Prostatectome, Bryson's (St. Louis).....	7 50
6918.	" Gouley's, Intra-Vesical.....	9 00
6919.	" " Urethral.....	30 00
	Prostatic Electrolizer. See index.	
6920.	Sound, Mercier's, Rectangular.....	1 00
6921.	" Thompson's, Prostate.....	3 75
6922.	Tube, Thompson's, Prostate.....	2 25

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

VESICAL CALCULI.

PERINEAL LITHOTRITY.

DOLBEAU'S OPERATION.

"The name of perineal lithotry was given, in 1862, by Professor Dolbeau, of Paris, to an operation completed in one sitting, by which the membranous portion of the urethra is opened, the prostate and neck of the bladder dilated instead of being cut (as in lithotomy), and a large stone crushed and the fragments immediately extracted. * * * * *

"The instruments necessary to perform perineal lithotry are: a broad, deep and centrally grooved staff; a strong, straight, lancet pointed bistoury, such as that used in median lithotomy; a six-branched (Dolbeau's) prostatic dilator; three or four lithoclasts of different shapes and strength; two or three pairs of small, straight and curved forceps; a scoop, and a long nozzled rubber syringe. Mr. Dolbeau advises that, in addition to the above-named instruments, the following should be within reach in case unforeseen difficulties should occur during the operation: A beaked bistoury, a single or double lithotome, a blunt gorget, strong forceps, and a canula à chemise. * * * * *

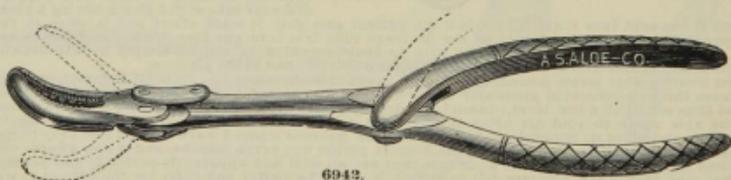
"The advantages claimed for the operation are: That the situation of the small wound exposes the patient to very little risk of hemorrhage; there is less suppuration, and the patient is less exposed to its bad effects, and in fact that it possesses all the advantages of median lithotomy without its disadvantages. Mr. Dolbeau urges that perineal lithotry has not been with him an operation of choice, but of necessity; that he has resorted to it only when lithotripsy by the natural route has been contraindicated, and where the larger incision in perineal lithotomy might prove serious."—
"Diseases of the Urinary Organs." John W. Gouley, M. D., etc.



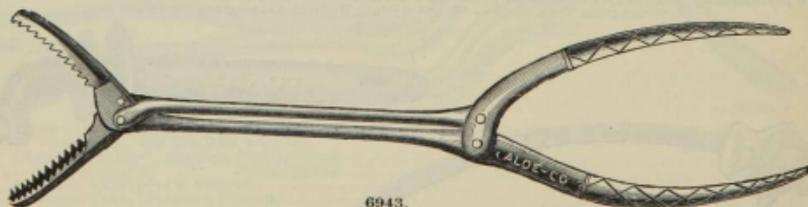
6940.



6941.



6942.

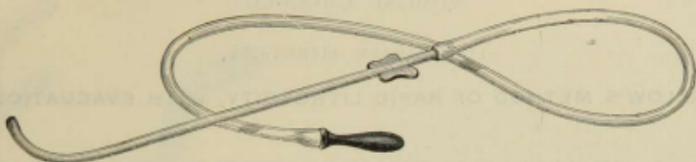


6943.

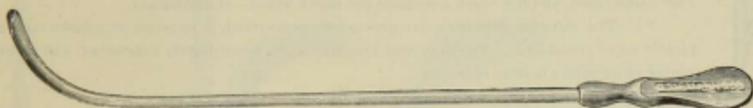


6937.

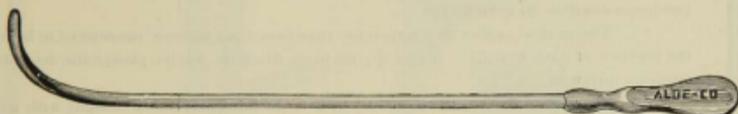
GENITO-URINARY.
VESICAL CALCULI.
EXAMINING.



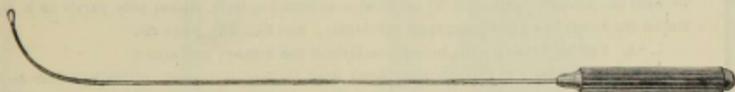
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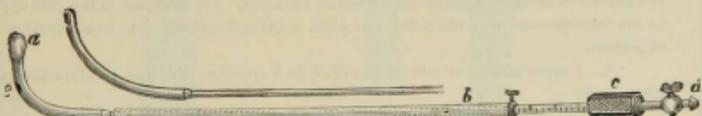
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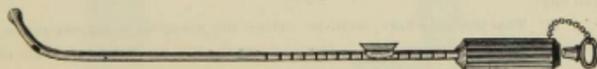
6950.



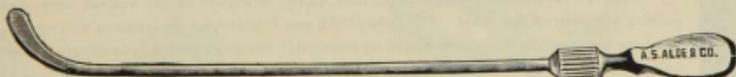
6952.



6953.



6954.



6955.

6937.	Dilator, Dolbeau's.....	\$ 18 00
6938.	" Duplay's.....	32 75
6939.	" Lier's.....	2 75
6940.	Guide, Dolbeau's, for Lithoclast.....	2 75
6941.	Lithoclast, Dolbeau's.....	5 25
6942.	" Gouley's, Double Lever.....	7 50
6943.	" " Single ".....	6 00
6944.	" " Lier's.....	5 25
6945.	Stone Crusher, Maissonneuve's.....	15 00
6946.	Stone Holder, Perforator and Breaker, DelRigal's.....	45 00
6947.	Stone Searcher, Andrews'.....	1 50
6948.	" " Billroth's, Sound and Sounding Board.....	2 00
6949.	" " Cylindrical, Steel.....	7 75
6950.	" " Gouley's.....	1 00
6951.	" " Keyes'.....	3 00
6952.	" " Little's.....	2 00
6953.	" " Otis', Exploring.....	4 00
6954.	" " Thompson's, Evacuating.....	2 00
6955.	" " " Latest.....	2 25
6956.	" " " Measuring.....	9 00

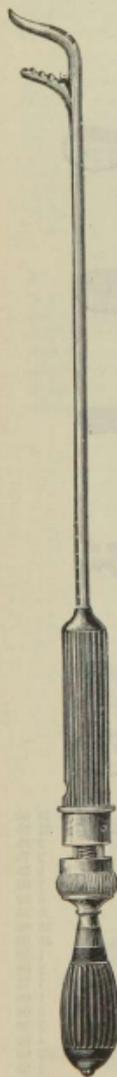
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

VESICAL CALCULI.

LITHOLAPAXY—LITHOTRITY.

BIGELOW'S METHOD OF RAPID LITHOTRITY, WITH EVACUATION.



"The following are the chief points connected with the modification in lithotry which I have described, and for which I propose the above name. (Litholapaxy.)

"1. The calculus, although not necessarily pulverized, is crushed as rapidly and completely as is practicable. The dust and fragments are immediately evacuated, and a serious source of irritation is thus removed.

"2. This can be effected in a single operation.

"3. The operation—performed, of course, under ether—may be, if necessary, of one or two hours duration, or even longer.

"4. The method applies to larger stones than have been hitherto considered to lie within the province of the lithotritist. It also applies to small stones, nuclei, phosphatic deposits and foreign substances.

"5. Evacuation is best accomplished by a large tube, preferably straight with a distal orifice, the extremity of which is shaped to facilitate its introduction, and, during suction, to repel the bladder wall—and by an elastic exhausting bulb, which acts partly as a siphon. Below the latter is a glass receptacle for debris. See Fig. 6975, page 430.

"6. The best size for the tube is the largest the urethra will admit.

"7. Such a tube is usually introduced with facility, if passed vertically as far as it will go toward the anus before changing its direction, and afterward directed almost horizontally, and passed by rotation through the triangular ligament. The first part of this rule applies also to the introduction of a lithotrite, and even a curved catheter. A free injection of oil is important.

"8. A small meatus should be enlarged, or a stricture divulsed, to allow the passage of a large tube.

"9. If the bladder be not small a large and powerful lithotrite is always better than a small one.

"10. That this may have room for action the escaping water should be replaced occasionally, through a tube inserted a few inches into the urethra by the side of the lithotrite. But the bladder should not be over distended.

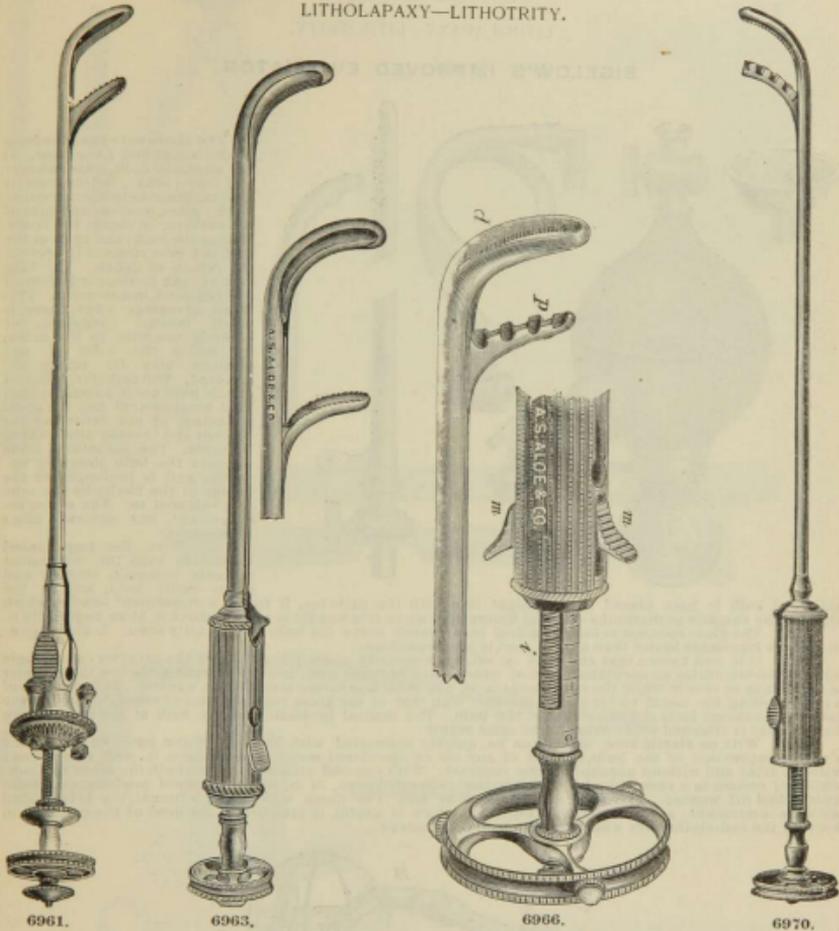
"11. To save time, and also to prevent undue dilatation of the vesical neck, a non-impacting lithotrite is desirable. The jaws of the non-fenestrated instrument will not impact, if the male blade is furnished with alternate triangular notches by which the debris is discharged laterally, and also with a long, thin spur at the heel fitted to a corresponding slot in the female blade—provided the floor of the female blade, especially at the heel, be made nearly on a level with its rim. To repel the bladder the female blade should be longer and a little wider than is usual. It should have also low sides easily accessible to fragments—relying for strength less upon these than upon a central ridge below the heel. In the male blade of such a lithotrite the apices of the triangles should be a little blunted. Lastly, a non-fenestrated female blade protects the floor of the bladder during a long sitting. A fenestrated instrument directs sharp splinters against it. The latter also delays the process of disintegration by delivering through its opening the same fragments many times.

"12. In locking and unlocking a lithotrite repeatedly in a long operation it takes less time and is easier to turn the right wrist, as in my instrument, than to displace the thumb of either hand in search of a button or a lever, as in previous instruments."—HENRY J. BIGELOW, M. D., Boston, May 25th, 1878.

GENITO-URINARY.

VESICAL CALCULI.

LITHOLAPAXY—LITHOTRITY.



The greater efficiency of the screw as a power and the ease and smoothness with which it acts, have led to its very general adoption for Lithotrites. All the instruments illustrated are operated in this way.

The mechanism controlling the motive power resides in the handles and may be applied or detached at will, so that the male blade can be withdrawn to the required extent, and then brought into connection with the screw by simply sliding the button on the handle of Gouley's, Keyes', and Thompson's instruments, or by giving a quarter turn to a movable disk attached to the handle of the female blade in Civiale's instrument.

6957.	Lithotrite, Urethral, Mathieu's.....	\$ 11 25
6958.	" " Reliquet's.....	11 25
6959.	Lithotrite, Vesical, Bigelow's, Improved.....	30 00
6960.	" " Chismore's, Evacuating.....	18 00
6961.	" " Civiale's.....	18 75
6962.	" " Ferguson's.....	18 75
6963.	" " Gouley's.....	18 75
6964.	" " Horteloup's, with Mallet.....	18 75
6965.	" " Jacobson's.....	22 50
6966.	" " Keyes', Large.....	26 25
6967.	" " " Small.....	26 25
6968.	" " Lever.....	18 75
6969.	" " Teevan's.....	26 50
6970.	" " Thompson's.....	26 25

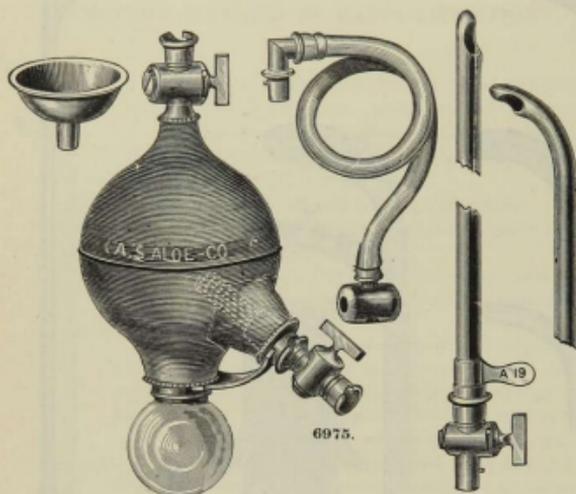
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.

VESICAL CALCULI.

LITHOLAPAXY—LITHOTRITY.

BIGELOW'S IMPROVED EVACUATOR.



6975.

The above cut shows the form of the simplified Evacuator. It has an elastic bulb, glass receiver and stop-cocks. Below there is a metal brace between the collar of the glass receiver and that of the catheter to steady the latter. Within the bulb, and open at the end, is a tube strainer to prevent the return of debris. The tube strainer can be removed, cleaned and replaced in a moment. This is an advantage when there is much mucus, coagulum, or shreddy material in the urine, by which the holes of any strainer may be partly obstructed. The catheter, tube and elastic bulb are in a straight line. This arrangement has the great advantage of not deflecting the current and thereby diminishing its force. The catheter is made to enter the bulb obliquely upwards, and is prolonged to the center of the cavity by the tube just referred to. The above arrangement has several other advantages:

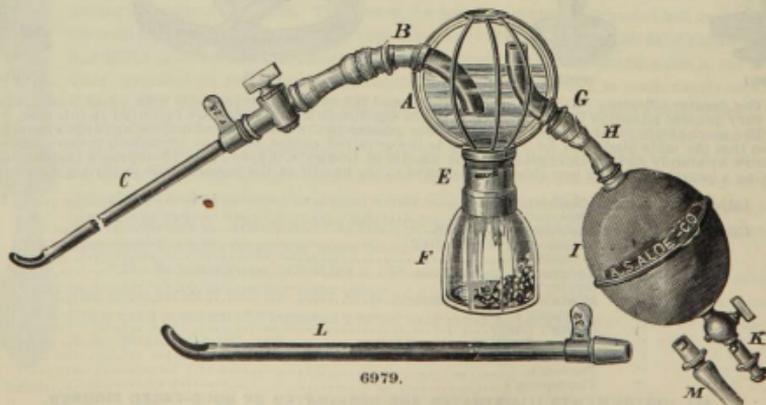
(1.) With the trap placed inside the bulb, the instrument is more compact, shorter and more easily held, and as the

spherical bulb is here placed in a straight line with the catheter, it forms a concentric handle, which enables the surgeon to direct the catheter better than when this handle is placed above it, at an angle with it.

(2.) The glass receiver is here attached immediately below the bulb and is easily seen. A glass cylinder shows fragments better than a globe, but is less capacious.

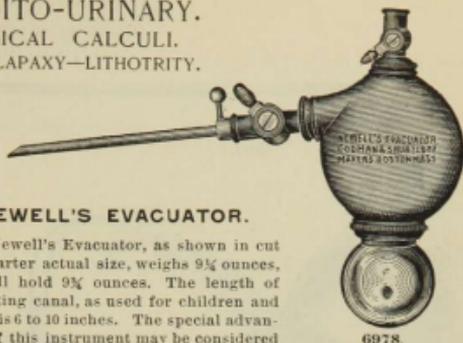
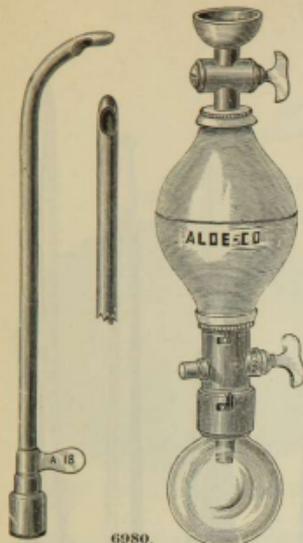
(3.) It is well known that the bulb in action, especially when placed above the catheter, at an angle with it, communicates an oscillation to it of which some patients complain. By a special device the catheter is here made so steady while the instrument is in use that a separate stand is not wanted. This consists of a brace uniting the metal collar of the catheter with that of the glass receiver, and so steadying it that the catheter no longer feels the movement of the bulb. The conical projection of the bulb at the point where the catheter is attached contributes to the same result.

(4.) With an elastic hose, which can be quickly connected with the top of the bulb, we can, with a single compression of the bulb, get rid of any air or discolored water, and replace it with clean water without delay and without uncoupling the catheter. With one end attached to the bulb the other can conveniently remain in a vessel placed between the patient's knees, or in any convenient position, or remain unattached till wanted. The hose may be used or not. For those who prefer a funnel, one is furnished with the instrument; as also a second stop-cock, which is useful, if attached to the head of the catheter, in keeping the bed-clothes dry when the bulb is to be removed.



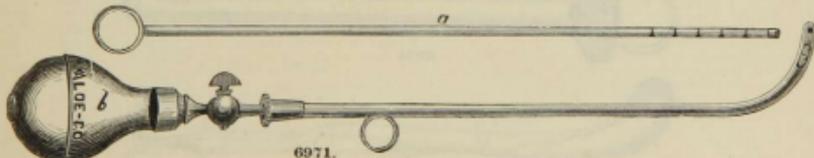
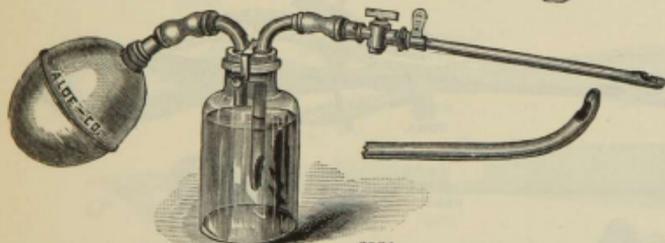
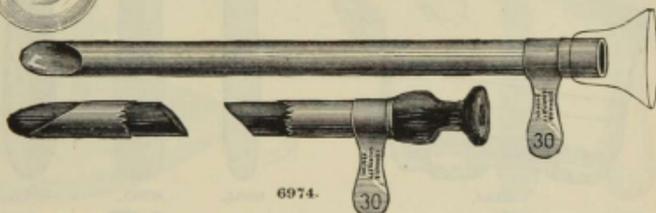
6979.

GENITO-URINARY.
VESICAL CALCULI.
LITHOLAPAXY—LITHOTRITY.



NEWELL'S EVACUATOR.

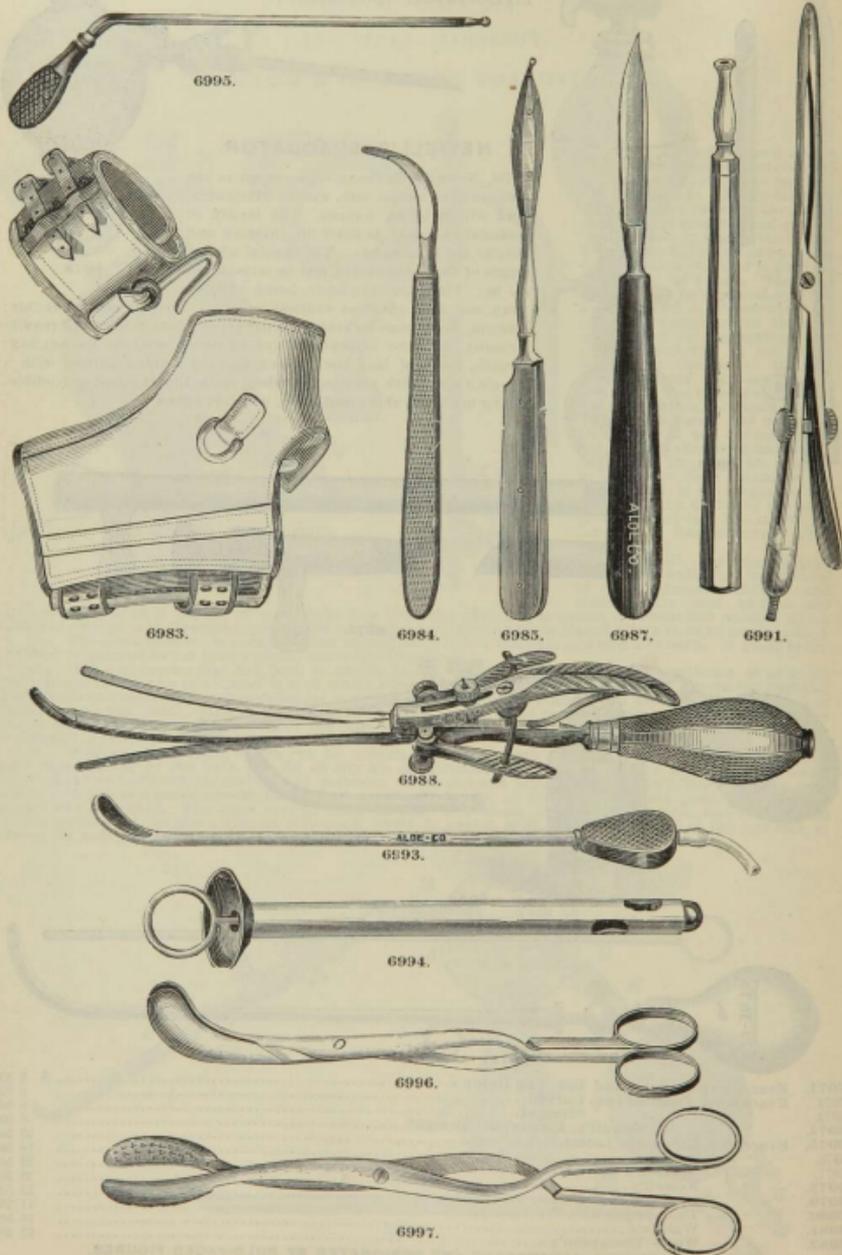
Dr. Newell's Evacuator, as shown in cut one-quarter actual size, weighs 9¼ ounces, and will hold 9¼ ounces. The length of evacuating canal, as used for children and adults, is 6 to 10 inches. The special advantages of this instrument may be considered to be: First, its simplicity, being without trap, and with shortest evacuating canal thus far made possible; second, its extreme lightness; third, taper joints, to admit of readily turning the tube orifices in any direction without uncoupling; fourth, form of stop-cock, which may be readily turned with a single finger; fifth, aluminium tubes; sixth, that it is non-corrodible, being made of rubber and glass, with two tubes.



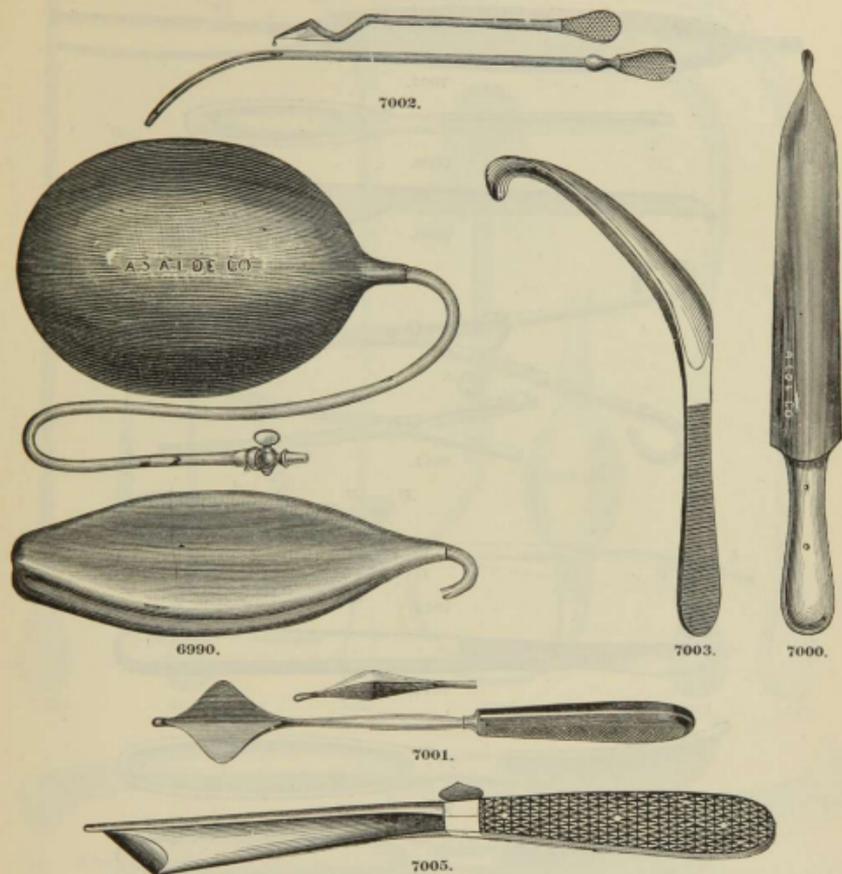
6971.	Evacuating Catheter and Bag, Van Buren's.....	\$ 5 25
6972.	Evacuating Tube, Keyes', Curved.....	6 00
6973.	" " Straight.....	8 00
6974.	" " Newell's, Aluminium, Straight.....	22 50
6975.	Evacuator, Bigelow's, Latest.....	10 50
6976.	" Clover's.....	22 50
6977.	" Nélaton's.....	25 50
6978.	" Newell's.....	22 50
6979.	" Otis'.....	11 25
6980.	" Thompson's.....	16 50
6981.	" Walker's.....	22 50
6982.	" Weiss-Thompson's.....	22 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GENITO-URINARY.
VESICAL CALCULI.
LITHOTOMY.



GENTO-URINARY.
VESICAL CALCULI.
LITHOTOMY.



6983.	Anklets and wristlets, Pritchard's. (See also Nos. 7080 and 7081).....	\$ 6 00
6984.	Aponeurotome.....	1 50
6985.	Bisector, Wood's.....	3 25
6986.	Bistoury, Little's.....	1 25
6987.	" Wyeth's.....	1 50
6988.	Bistoury Caché, Depuytren's, Double.....	18 00
6989.	Canula, à Chemise.....	1 00
6990.	Colpeurynter, Guyon's, Rectal.....	1 50
6991.	Compressor, Gross', Artery.....	1 75
6992.	Crutch, Clover's, for maintaining patient in lithotomy posture.....	11 00
6993.	Curette, Massey's, Débris.....	3 00
6994.	Débris Tube and Obturator.....	1 50
6995.	Director, Little's.....	1 00
	Director and Scoop. See Fig. 7019, page 434.	
6996.	Forceps, Lithotomy, Curved.....	2 25
6997.	" " Straight.....	2 25
6998.	" " Little's.....	2 25
6999.	" " Teevan's, Fenestrated.....	2 50
7000.	Gorget, Blunt, Lithotomy.....	1 90
7001.	" " Bush's.....	3 50
7002.	" " Dowell's, and Staff.....	4 50
7003.	" " Hooked, Lithotomy.....	2 25
7004.	" " Keyes', Blunt.....	1 90
7005.	" " Physick's, with 2 Blades.....	5 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

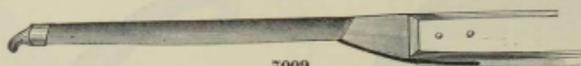
GENITO-URINARY.
VESICAL CALCULI.
LITHOTOMY.



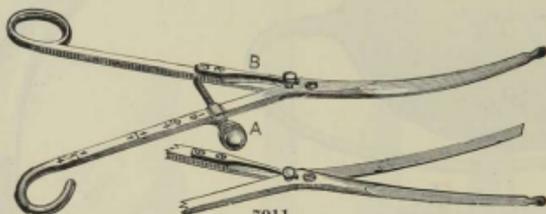
7007.



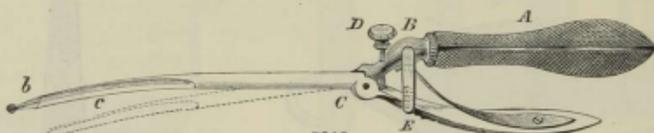
7008.



7009.



7011.



7012.



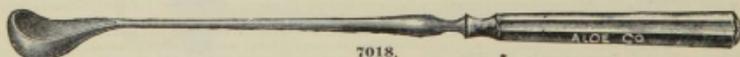
7014.



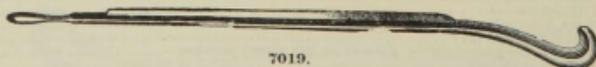
7015.



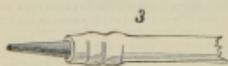
7016.



7018.



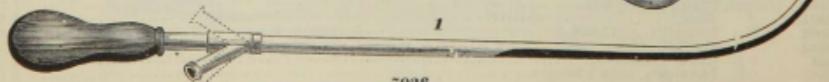
7019.



3



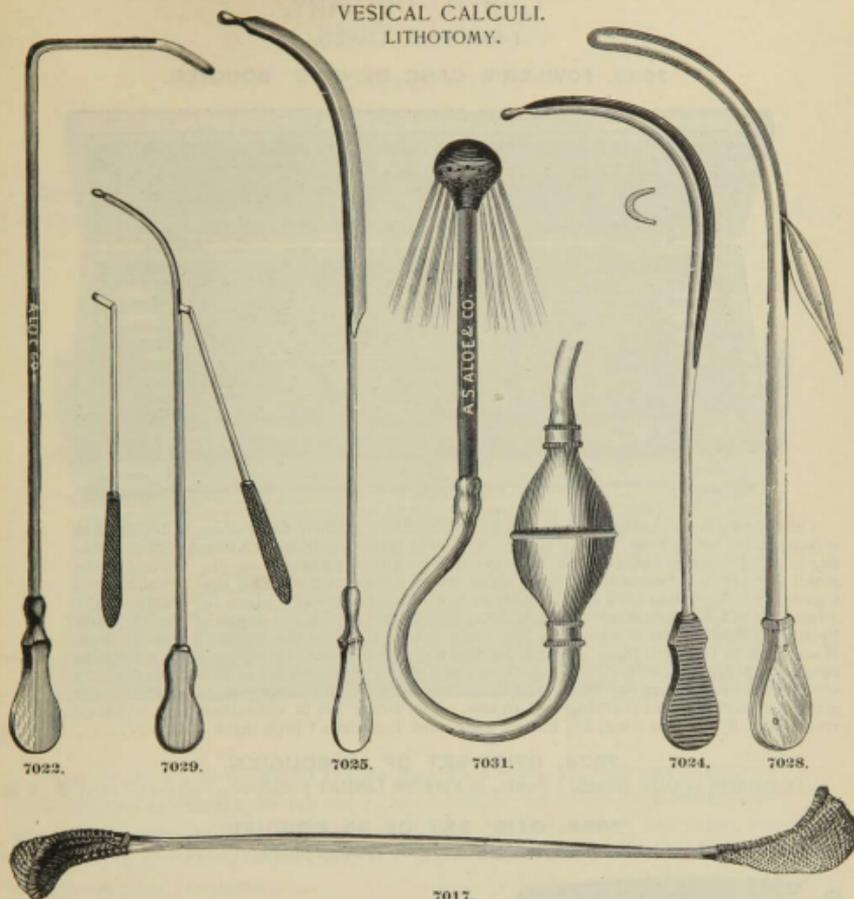
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7026.

GENITO-URINARY.
VESICAL CALCULI.
LITHOTOMY.

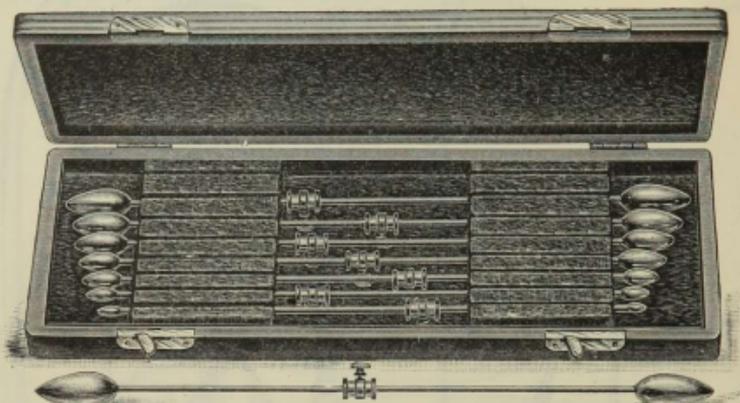


7005.	Hemostat, Brown's Air Tampon.....	\$3 00
7007.	Gonley's Hydro.....	2 00
7008.	Knife, Blizard's, Lithotomy (American Pattern).....	1 25
7009.	" " " " (English " ").....	1 50
7010.	" " Gross' " ".....	1 30
7011.	Lithotome, Briggs'.....	5 25
7012.	" " Hutchison's.....	5 25
7013.	" " Smith's.....	9 00
7014.	Scalpel, Deppytren's, Lithotomy.....	1 25
7015.	" " Probe Pointed " ".....	1 25
7016.	" " Sharp " ".....	1 25
7017.	Scoop, Davy's, Lithotomy, silk netting.....	3 50
7018.	" " Luer's, " ".....	1 75
7019.	Scoop and Conductor.....	1 75
7020.	Sonde à Dard.....	3 50
7021.	" " Helmuth's " ".....	4 50
7022.	Staff, Buchanan's, Rectangular.....	1 90
7023.	" " Lateral Lithotomy.....	1 50
7024.	" " Little's " ".....	1 50
7025.	" " Markoe's " ".....	1 50
7026.	" " Mason's, Catheter.....	3 75
7027.	" " Steel Lithotomy.....	1 50
7028.	" " Wood's " ".....	1 50
	Staff and Gorget, Dowell's, Fig. 7002, page 433.....	3 00
7029.	" " Knife, Hewitt's.....	9 00
7030.	" " " " Whitehead's.....	2 75
7031.	Syringe, Van Buren's Débris.....	1 50
7032.	Tenaculum, Keith's, Lithotomy.....	1 00

GENITO-URINARY.

URETHRAL CASES.

7033. FOWLER'S CASE OF OTIS' BOUGIES.



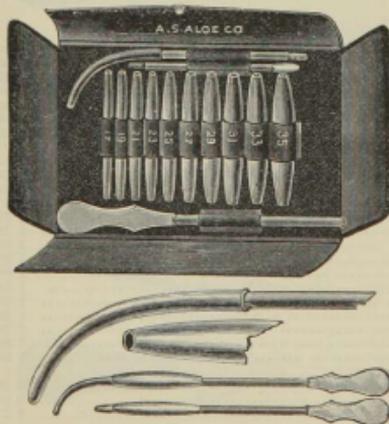
This case of Bulbous Bougies, for locating strictures of the male urethra, is designed as a companion set to Prof. Weisse's Pocket Case of Sounds. They are numbered according to the French scale, and comprise every even number from 16 to 40. Owing to the small difference between sizes in the scale, every alternate size is all that is considered necessary. The slide attached to each pair of bulbs serves as a place for stamping the numbers, and as an accurate and simple means of measuring the depth of the stricture by sliding it up to the meatus and fastening it by a turn of the screw, while the bulb is engaged in the stricture. Owing to the fact of the rare occurrence of strictures below the straight portion of the urethra, the rigidity of the stems in these instruments will very seldom be an objection, and their compactness and arrangement will be found a great convenience in carrying and in use. The entire set is contained in a polished wood case, $9\frac{3}{8}$ inches long, $3\frac{1}{2}$ inches wide, and less than 1 inch thick..... \$ 6 50

7034. OTIS' SET OF 18 BOUGIES.

Containing 18 Otis' Bougie à Boule, in Flexible Leather pouch..... \$ 7 50

7035. OTIS' SET OF 33 BOUGIES.

Containing 33 Otis' Bougie à Boule, in Flexible Leather pouch..... \$ 13 50



7036. RHOADS' IMPROVED SET OF INTERCHANGEABLE BOUGIES.

INCLUDING 10 CURVED AND 10 MEATUS.

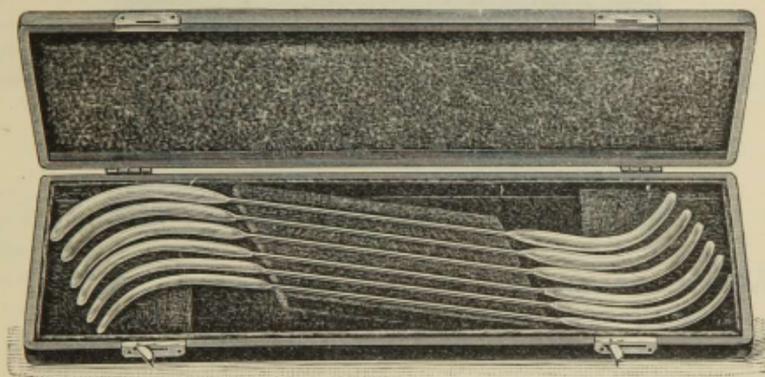
The set consists of Straight and Curved Bougies and also makes a very desirable set of Uterine Dilators. All the bulbs will fit either the straight or curved tips, which screw securely into the staff, making the set applicable for Prostatic, Urethral or Meatic strictures. To make the original set complete we have added two grooved bulbs (fully described on page 384), for conveying salve or other applications to the urethra. The complete set in Flexible Leather case, weighs about one and a quarter pounds, and can be sent by mail, \$ 10 00

GENITO-URINARY.

URETHRAL CASES.

7037. BÉNIQUÉ'S SET OF 12 STEEL SOUNDS.

Containing 12 Steel Sounds, Béniqué's Curve, Nickel-plated, in a Mahogany Case, Lined with Velvet..... \$15 00

7038. FOWLER'S SET OF 6 DOUBLE-END SOUNDS.

This set of Sounds comprises 12 sizes from No. 9 to No. 20, American Gauge, and while they are as effective as the old style of Sounds, the weight, bulk and expense are reduced nearly one-half. They have the regular Van Buren Curve and Taper, and are put up in a Polished Wood Case, $12\frac{1}{2}$ inches long, 4 inches wide, 1 inch deep. Weight complete, 20 ounces..... \$5 00

7039. LISTER'S SET OF 13 STEEL SOUNDS.

Containing 13 Olive Point Conical Steel Sounds, in Morocco Leather Case, lined with velvet..... \$13 50

7040. PRATT'S SET OF 8 DOUBLE-END SOUNDS.

Containing 8 Double-End Steel Sounds (16 sizes), in Morocco Leather Case, lined with kid..... \$7 50

7041. TEFFT'S SET OF 8 STEEL SOUNDS.

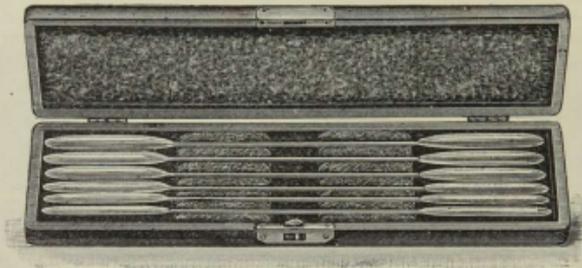
Containing 8 Steel Sounds, Tefft's Curve, in Morocco Leather Case, lined with kid..... \$10 50

GENITO-URINARY.

URETHRAL CASES.

7042. THOMPSON'S SET OF 12 CYLINDRICAL STEEL SOUNDS.

Containing 12 Cylindrical Steel Sounds, Thompson's Curve, in Morocco Leather Case, lined with Velvet. \$13 50

7043. WEISSE'S POCKET SET OF 6 DOUBLE-END SOUNDS.

This set of Sounds devised by Dr. Weisse of the University Medical College, New York, comprises twelve sizes, from No. 9 to No. 20, American gauge. They are well adapted to all purposes for which sounds are used in the straight portion of the urethra, and as almost nine-tenths of the treatment requiring sounds is confined to this portion of the canal, they will nearly fulfill all the requirements. The absurdity of introducing a curved instrument into the bladder for the purpose of dilating any part of the straight urethra is apparent. The Sounds are Nickel-plated, and put up in polished wood case measuring only $8\frac{1}{2}$ inches long, $2\frac{3}{8}$ inches wide and $\frac{7}{16}$ of an inch deep, so it can be readily carried in the pocket. Case and Sounds only weigh 10 ounces. \$4 00

7044. VAN BUREN'S SET OF 6 CONICAL STEEL SOUNDS.

Containing 6 Conical Steel Sounds, Van Buren's Curve, in Morocco leather case, lined with leather \$5 50

7045. VAN BUREN'S SET OF 8 CONICAL STEEL SOUNDS.

Containing 8 Conical Steel Sounds, Van Buren's Curve, in Morocco leather case, lined with leather \$7 50

7046. VAN BUREN'S SET OF 12 CONICAL STEEL SOUNDS.

Containing 12 Conical Steel Sounds, Van Buren's Curve, in a Morocco leather case, lined with leather \$10 50

GENITO-URINARY.

URETHRAL CASES.

7047. BUMSTEAD'S SET OF URETHRAL INSTRUMENTS.

Containing 1 Bumstead-Maisonneuve's Urethrotome; 1 set of Holt's Divulsors; 1 Bumstead's Retention Catheter; 12 Filiform Bougies, with screw-heads to fit all the above instruments; 1 Civiale's Bistoury Caché; 1 Trocar and Canula; 1 Thompson's Probe-pointed Catheter; 1 pair of Thompson's Urethral Forceps; 1 Silver Catheter, No. 8, French Scale; 1 Silver Catheter, No. 22, French Scale; 1 Silver Prostatic Catheter; 1 Silver Female Catheter; 1 Syme's Staff; 6 Gum Elastic Cylindrical Bougies; 6 Gum Elastic Olive-pointed Bougies; 6 Acorn-pointed Gum Elastic Bougies; 9 Bumstead's Steel Sounds, nickel-plated; 1 Bumstead's Gauge; 1 Rosewood case ... \$100 00

7048. GOULEY'S STRICTURE SET, No. 1.

Containing 4 Conical Steel Sounds; 3 Gouley's Tunnelled Sounds; 1 Gouley's Retention Catheter; 1 Gouley's Dilating Urethrotome; 1 Gouley's Meatotome; 1 Gouley's Catheter Staff; 1 Gouley's Beaked Bistoury; 1 Gouley's Grooved Probe Director, silver; 1 Mahogany case, with extra spaces \$ 37 50

7049. GOULEY'S COMPLETE STRICTURE SET, No. 2.

(SUPERIOR FINISH)

Containing 6 Conical Steel Sounds; 1 Gouley's Divulsor, nickel-plated; 1 Gouley's Retention Catheter; 1 Gouley's Catheter Staff; 6 Gouley's Tunnelled Sounds; 1 Gouley's Meatotome; 1 Gouley's Probe Director, silver; 1 Gouley's Beaked Bistoury; 5 English Bougies, à Boule; 12 English Olive-pointed Bougies; 6 English Gum Catheters; 5 Whalebone Guides; 2 English Tunnelled Catheters; 1 Metric Sound Gauge, German silver; 1 Gouley's Dilating Urethrotome, two points; 1 English and French Rule; 1 Rosewood case..... \$ 81 75

7050. U. S. A. GENITO-URETHRAL SET, No. 1.

Containing 1 Gouley's Dilating Urethrotome, with two points; 1 Gouley's Tenaculum; 1 Gouley's Beaked Knife; 1 Gouley's Silver Director; 3 Gouley's Tunnelled Sounds; 1 Double Current Catheter, silver; 1 Gouley's Grooved and Tunnelled Catheter Staff; 1 Gouley's Tunnelled Catheter; 6 Otis' Bougies, à Boule; 1 Thompson's Urethral Forceps; 1 set (4) Sounds, fitting one handle; 12 Gouley's Whalebone Guides; 1 Mercler's Gum Catheter; 1 Steel Gauge, French and American; 2 Pasteboard Gauges, French and American; 1 Otis' Whalebone Guide; 4 Patent Velvet-eye Catheters; 6 Gum Elastic Olive-pointed Bougies, English; 1 Crin de Florence; 1 Thompson's Urethral Dilator, modified by Gouley; 1 Rubber Catheter Yoke (Catheter Holder); 1 Rosewood case, lined with French rouge skin (chamois)..... \$ 56 26

GENITO-URINARY.

URETHRAL CASES.

7051. U. S. A. GENITO-URETHRAL SET, No. 2.

Containing 21 Otis' Short-Beaked Steel Sounds, Nos. 20 to 40, inclusive; 33 Otis' Bougies à Boule, metal, nickel-plated, Nos. 8 to 40, inclusive; 1 Otis' Dilating Urethrotome, straight; 1 Maisonneuve's Urethrotome, No. 8 Otis' Gauge, with two blades, 1 Tunnelled Tip for Whalebone Guides and 2 Tips with Filiform Bougies, 2 Otis' Whalebone Guides; 1 Otis' Urethrometer; 12 Rubber Covers for Urethrometer; 3 Otis' Endoscopes, hard rubber, Nos. 22, 26, 32; 1 Otis' Meatus Bistoury; 1 Otis' Steel Gauge; 1 Mahogany Case, lined with French rouge skin (chamois) and secured with two bolts and lock \$105 00

7052. VAN BUREN AND KEYES' COMPACT SET.

Containing 1 Grooved Staff; 3 Whalebone Guides, 1 long, 2 short; 4 Gouley's Tunnelled Sounds; 1 Thompson's Probe-Pointed Catheter, modified by Otis; 1 Silver Catheter, No. 12, short curve; 1 Tunnelled Divulsor; 1 Civiale's Bistoury Caché; 1 Civiale's or Maisonneuve's Urethrotome; 1 Gouley's Catheter Staff; 1 Silver Probe; 1 Small Scalpel; 1 Silver Probed Director; 1 Curved Trocar; 1 Double Supra-Pubic Drainage Tube, Silver; 1 Morocco Case, with extra spaces..... \$ 57 00

7053. VAN BUREN AND KEYES' COMPLETE SET.

Containing 1 American Gauge; 12 Conical Steel Sounds, nickel-plated; 3 Whalebone Guides, 1 long, 2 short; 1 Otis' Catheter; 1 Silver-Plated Catheter, No. 12; 2 Silver-Plated Prostatic Catheters; 1 Thompson's Tunnelled Divulsor; 1 Civiale's Bistoury Caché; 1 Civiale's Urethrotome; 1 Gouley's Catheter Staff; 1 Pair of Urethral Forceps; 1 Cupped Sound, No. 12, nickel-plated; 4 English Gum Elastic Catheters; 12 French Gum Elastic Conical Bougies; 6 French Gum Elastic Ovary Catheters; 4 Mercier's Elbowed Catheters; 17 Bougies à Boule; 1 Mahogany Case..... \$ 90 00

7054. WHITE'S STRICTURE SET.

Containing 7 Steel Sounds, conical; 5 Fine French Gum Elastic Exploring Bulbous Bougies; 12 Whalebone Filiform Bougies; 2 Gouley's Tunnelled Catheters; 2 Metal Catheters, plated; 1 Metal Prostatic Catheter, plated; 2 Jacques' Soft Rubber Catheters; 3 Olive-Pointed Gum Elastic Catheters; 1 Mercier's Gum Elastic Prostatic Catheter; 1 Gross' Urethrotome; 1 Gouley's Stricture Dilator; 1 Mahogany Case, with extra space for Elastic Bougies and Catheters \$ 33 50

STRICTURE AND LITHOTOMY SETS PUT UP TO ORDER.

GENITO-URINARY.

LITHOTOMY CASES.

7055. ALOE'S LITHOTOMY SET. No. 1.

Containing 2 Steel Sounds; 3 Lithotomy Staffs; 1 Little's Bistoury; 1 Blizzard's Bistoury; 1 Lithotomy Scalpel; 1 Scoop and Conductor; 2 Lithotomy Forceps, medium and small; 1 Double Current Catheter, silver; 1 Hard Rubber Syringe, with a stop-cock to fit the Catheter; 1 Mahogany or Rosewood Case..... \$35 25

7056. LITTLE'S MEDIAN LITHOTOMY SET.

Containing 4 Little's Staffs, Nos. 7, 9, 10 and 12; 1 Little's Straight, Sharp-pointed Bistoury; 1 Little's Director; 1 Pair Dressing Forceps; 2 Pairs Lithotomy Forceps; 1 Thompson's Stone Searcher; 1 Small Sound, for children; 1 Canula á Chemise; 1 Hard Rubber Syringe, with nozzle to fit Catheters; 1 Dolbeau's Stone Crusher; 1 Lürer's Lithotomy Scoop; 1 Mahogany Case..... \$40 50

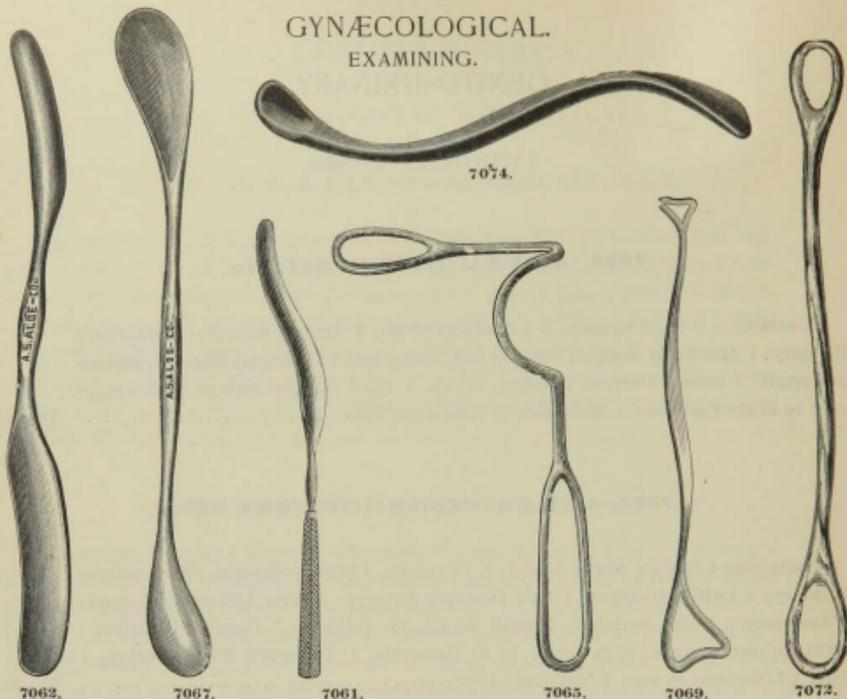
7057. MAY'S LITHOTOMY SET.

Containing 1 Pair of Lithotomy Forceps, large; 1 Pair of Lithotomy Forceps, medium; 1 Pair of Lithotomy Forceps, small; 3 Plain Steel Sounds; 2 Lithotomy Staffs; 1 Canula á Chemise; 2 English Gum Elastic Catheters; 1 Sharp-pointed Lithotomy Scalpel; 1 Probe-pointed Lithotomy Scalpel; 1 Probe-pointed Lithotomy Bistoury; 1 Hard Rubber Syringe, with nozzle to fit the Catheters; 1 Mahogany Case.. \$29 25

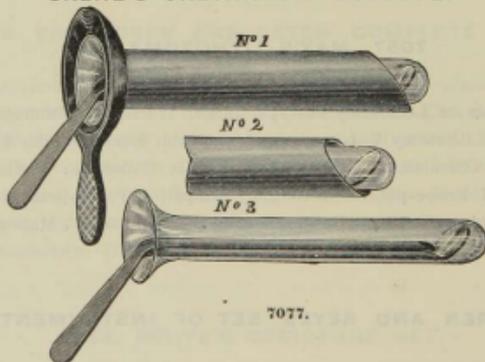
7058. VAN BUREN AND KEYES' SET OF INSTRUMENTS FOR STONE.

Containing 1 Thompson's Searcher; 1 Thompson's Lithotrite, heavy; 1 Thompson's Lithotrite, light; 1 Nott's Evacuating Catheter; 1 Pair Thompson's Urethral Forceps; 2 Lithotomy Staffs, lateral; 1 Median Lithotomy Staff; 1 Lithotomy Scalpel; 1 Little's Lithotomy Bistoury, straight, sharp-pointed; 1 Blizzard's Knife; 1 Blunt Gorget; 1 Little's Director; 1 Scoop; 1 Pair of Lithotomy Forceps, with crossed handles; 1 Pair of Lithotomy Forceps, with curved blades; 1 Pair of Crushing Forceps; 1 Tube, with globular head, for washing the Bladder; 1 Shirted Canula (á chemise); 1 Keith's Tenaculum; 1 Mahogany or Rosewood Case..... \$100 00

GYNÆCOLOGICAL.
EXAMINING.



SKENE'S URETHRAL ENDSCOPE.



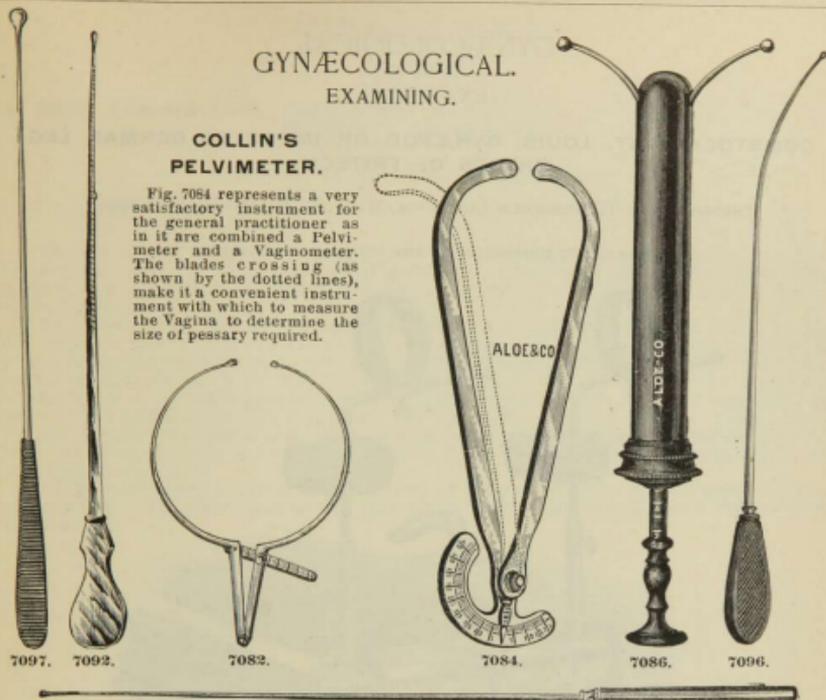
7077.

"Skene's Endoscope, for physical exploration of the urethra and bladder, is composed of three parts: 1st. A glass tube (2) in shape like the ordinary test tube used by chemists. 2d. A mirror and handle, *b*, which holds it. A piece of very thin silver plate is made to fit nearly the whole length of the inside of the glass tube, and about one-third its circumference, to one end of which the mirror is attached, at an angle of about one hundred degrees; the delicate handle at the other end projects at an obtuse angle. This piece is blackened inside, and, when placed in position for use, darkens one side of the glass tube. 3d. A fenestrated hard rubber speculum, open and beveled at the end. These specula are used in making applications to the urethra and bladder. The method of using this instrument is as follows: The tube, with the mirror inside, is introduced into the urethra, and bladder, also, if an examination of the latter is desired. Light is then thrown into the tube by aid of a concave mirror; and, by moving the mirror backward and forward, the whole of the parts to be examined are brought to view in regular succession. With this simple instrument I can accomplish all that is to be desired."

GYNÆCOLOGICAL.
EXAMINING.

**COLLIN'S
PELVIMETER.**

Fig. 7084 represents a very satisfactory instrument for the general practitioner as in it are combined a Pelvimeter and a Vaginometer. The blades crossing (as shown by the dotted lines), make it a convenient instrument with which to measure the Vagina to determine the size of pessary required.



7069.	Crutch, Clover's, for retaining patient in dorsal position, with flexed knees.....	\$11 00
7069.	Depressor, Bozeman's, Double, Hooked.....	2 25
7061.	“ “ Perineal with Handle.....	1 75
7062.	“ “ “ and Urethral.....	1 50
7063.	“ Dawson's, Mod. Hunters.....	1 50
7064.	“ Emmet's.....	1 00
7065.	“ Garrigue's.....	1 50
7066.	“ Hunter's, Aluminium.....	1 25
7067.	“ “ Nickel-plated.....	1 00
7068.	“ Nott's, Aluminium.....	1 00
7069.	“ “ Nickel-plated.....	75
7070.	“ Peaslee's.....	1 25
7071.	“ Sims', Double End Aluminium.....	1 00
7072.	“ “ “ Nickel-plated.....	75
7073.	“ “ “ Single “ Metal Handles.....	1 00
7074.	“ Whitney's Hard Rubber.....	1 25
7075.	Diagnosticator, Warren's.....	5 00
7076.	Elevator, Bozeman's, Perineal. (See also Bozeman's Intest Fig. 7101 page 446).....	3 75
7077.	Endoscope, Skene's, Urethral.....	2 25
7078.	Gynæpod, Comstock's (St. Louis). See description, page 44.....	15 00
7079.	“ “ “ complete with Simon's Speculum.....	18 75
7080.	Leg Holder, Kelly's. (See illustration and description, page 445).....	2 00
7081.	“ “ Robb's.....	1 25
7082.	Pelvimeter, Baudeloque's.....	6 00
7083.	“ “ Brelskey's Mod. Baudeloque's.....	7 00
7084.	“ “ Collin's.....	6 00
7085.	“ “ Davis', Disjointing.....	6 00
7086.	“ “ King's.....	3 00
7087.	“ “ Kuster's.....	6 00
7088.	“ “ Martin's.....	6 00
7089.	“ “ Reynold's.....	10 00
7090.	“ “ Schultze's.....	6 00
7091.	Probe, Budd's, Hard Rubber.....	35
7092.	“ “ Jenks', Spiral.....	1 00
7093.	“ “ Playfair's, Aluminium.....	1 75
7094.	“ “ Sims', “.....	65
7095.	“ “ “ Silver.....	75
7096.	“ “ Thomas', Elastic.....	75
7097.	“ “ “ Hard Rubber.....	25
7098.	“ “ “ Whalebone.....	35
7099.	“ “ Wyeth's, Copper, Nickel-plated.....	50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

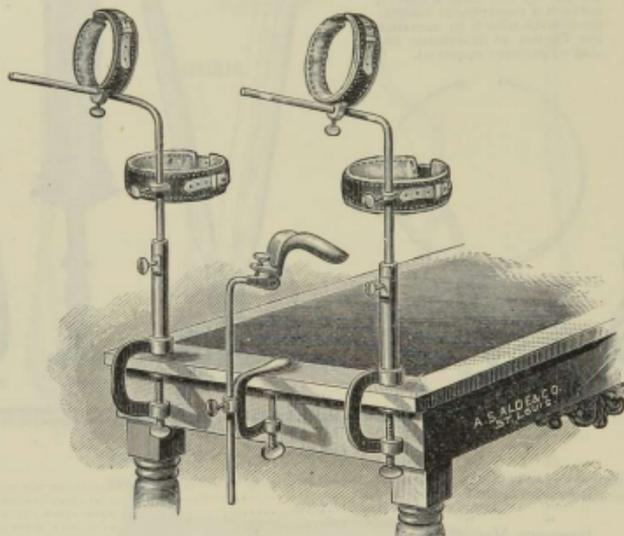
GYNÆCOLOGICAL.

EXAMINING.

COMSTOCK'S (ST. LOUIS) GYNÆPOD OR IMPROVED GERMAN LEG BRACES OF FRITSCH.

IMPROVED BY T. GRISWOLD COMSTOCK, M. A., M. D., Ph. D., St. Louis.,

MASTER OF OBSTETRICS OF THE UNIVERSITY OF VIENNA.



7078.

EXPLANATION.

The cushioned bands slide on the rectangular rods and are fastened by screws. They may be adjusted so as to fit any female who is examined, and will support her limbs and make her position one of perfect ease, so that the uterus, vaginal walls and perineum are all placed directly in front of the operator. The leg braces may be elevated or depressed in their sockets, to suit the operator, for the minor operations upon the vagina, uterus and urethra, and, especially for the more important operations, such as laceration of the cervix, vesico-vaginal fistula, fistula in ano, cystocele, rectocele, etc. It will also be found very practical in the lateral operations for lithotomy. We will suppose a patient to be placed upon her back (ano-dorsal position); the leg-braces, that are represented in the cut, are rectangular rods dropped into the two upright standards, which are made of gas pipe, and may be fastened to a table, or to any gynæcological chair, by means of simple clamps screwed to the table or chair; the rectangular rods are provided with cushioned bands for the limbs to rest in. The rods may be raised or lowered, and turn outwards or inwards to suit the convenience of the operator.

When the patient is placed in this position a Simon's adjustable gutter speculum may be introduced, and is held in position by a small clamp, also screwed to the table; this speculum is a perineal retractor, the same as Sims'; or the speculum of Bozeman may be used, one of the best vaginal retractors that I have ever tried. It is self-retaining and may be conveniently introduced, so that the screw is placed upwards and rests upon the mons veneris. If some minor operative proceeding is required, such as an intra-uterine application or the removal of a polypus, an ordinary bivalve speculum may be used, e. g., Brewer's, Hale's or Higbee's. In secondary operations upon the perineum the leg braces will be found very practical; in vesico-vaginal fistula, when using the gynæpod, the anterior wall of the vagina will be situated directly opposite to the operator, and he can freshen easily and completely the fistulous margins of the rent, and then insert the sutures with much greater facility and accuracy than when the patient is placed, as is usual, in the lateral position or upon her hands and knees.

GYNÆCOLOGICAL.

EXAMINING.

A NEW LEG-HOLDER, SECURING A PERFECT LITHOTOMY POSTURE WITHOUT ASSISTANTS.

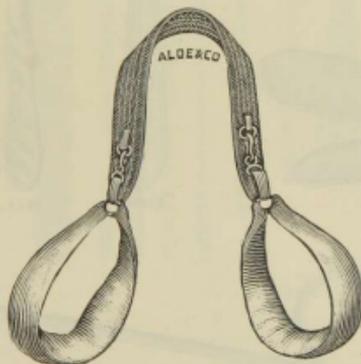
BY HOWARD A. KELLY, M. D., Baltimore,

PROFESSOR OF GYNÆCOLOGY AND OBSTETRICS IN THE JOHNS HOPKINS UNIVERSITY.

My intention to devise some simple apparatus to secure my gynæcological cases in a lithotomy position was formed some four years ago. I had been called to Port Richmond to operate upon a lacerated perinæum, and Dr. Jas. S. Carpenter, of Pottsville, went with me as my sole assistant.

Dr. Carpenter put the patient under ether, and we brought her hips down over the foot of the bed, and then, to dispose of the legs and expose the field of operation, we flexed the thighs upon the belly and passed an umbrella under the knees to give purchase to our rope, which we made out of a sheet caught diagonally across corners and twisted. The broad band of the center of the sheet passed around the neck, while the ends were tied around the two ends of the umbrella, holding the knees well up. I then operated alone, securing a perfect result. The Clover Crutch, in common use, has served me well at many operations since that time, but it has the serious objections of being heavy and very clumsy to carry about, and, above all, is expensive.

Of the instruments in use in Germany, that of Süsser, in which the collars on the knees are held fast by an attachment to the part of the table under the patient's head, is one of the best.



7080.

Fritsch's apparatus, and other similar forms, are convenient in clinics and hospitals; but made as they are of iron rods and clamps, they can hardly claim the merit of being portable.

I believe that the form which I describe here, and which is in use in my private hospital, answers all the requirements as to fixation as well as any holder in use, and in other important particulars is superior to any in use.

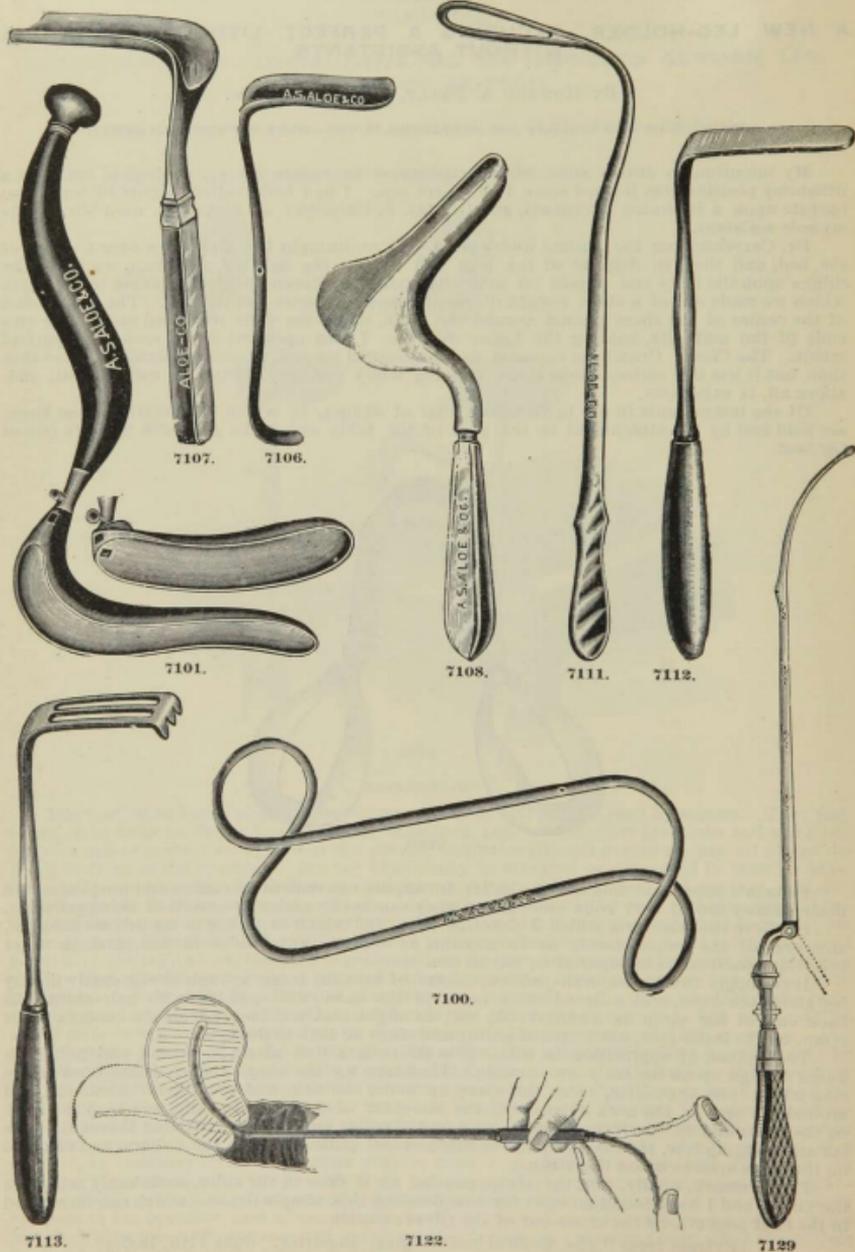
It is simply two broad, well-padded collars of muslin, large enough to slip easily up any leg above the knee, and a broad strap made of the same, well padded with hair-cloth. At each end of the strap is a snap-hook, and at eight and ten inches from the center of this strap, on the inner side, are fastened galvanized rings an inch in diameter.

The method of application is this: Slip the collars first above the knees, and pull both knees as high up on the belly as possible. Then take up the strap and snap one hook into a ring which is on the collar, carry the strap up under the arm and shoulder of that side, and around the back of the neck down over the shoulder of the opposite side, and snap the hook on the other end of the strap into the ring on the collar on that side. If this leaves the legs lax and hanging low, the hooks can be unsnapped and pulled through the collars, and snapped on the rings spoken of on the strap.

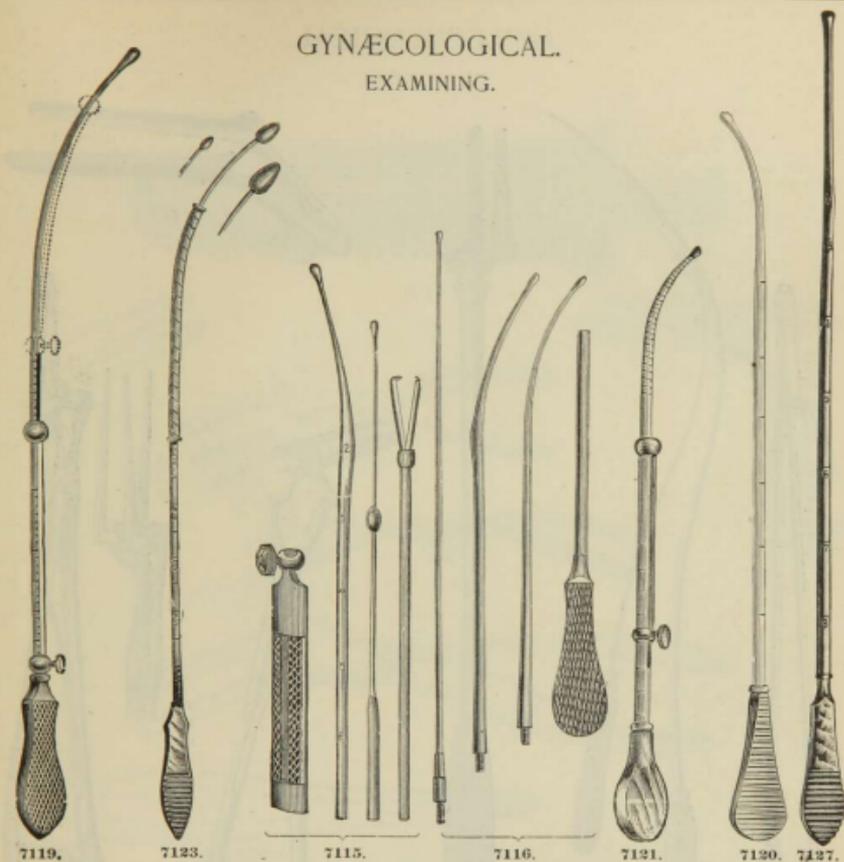
I will remark, finally, that the strap, passing as it does to the sides, sufficiently separates the knees, and I have found no need for complicating this simple device (which can be carried in the coat pocket), by the cross-bar of the Clover Crutch.

[Extract from "The Medical and Surgical Reporter," June 11th, 1887.]

GYNÆCOLOGICAL.
EXAMINING.



GYNÆCOLOGICAL.
EXAMINING.

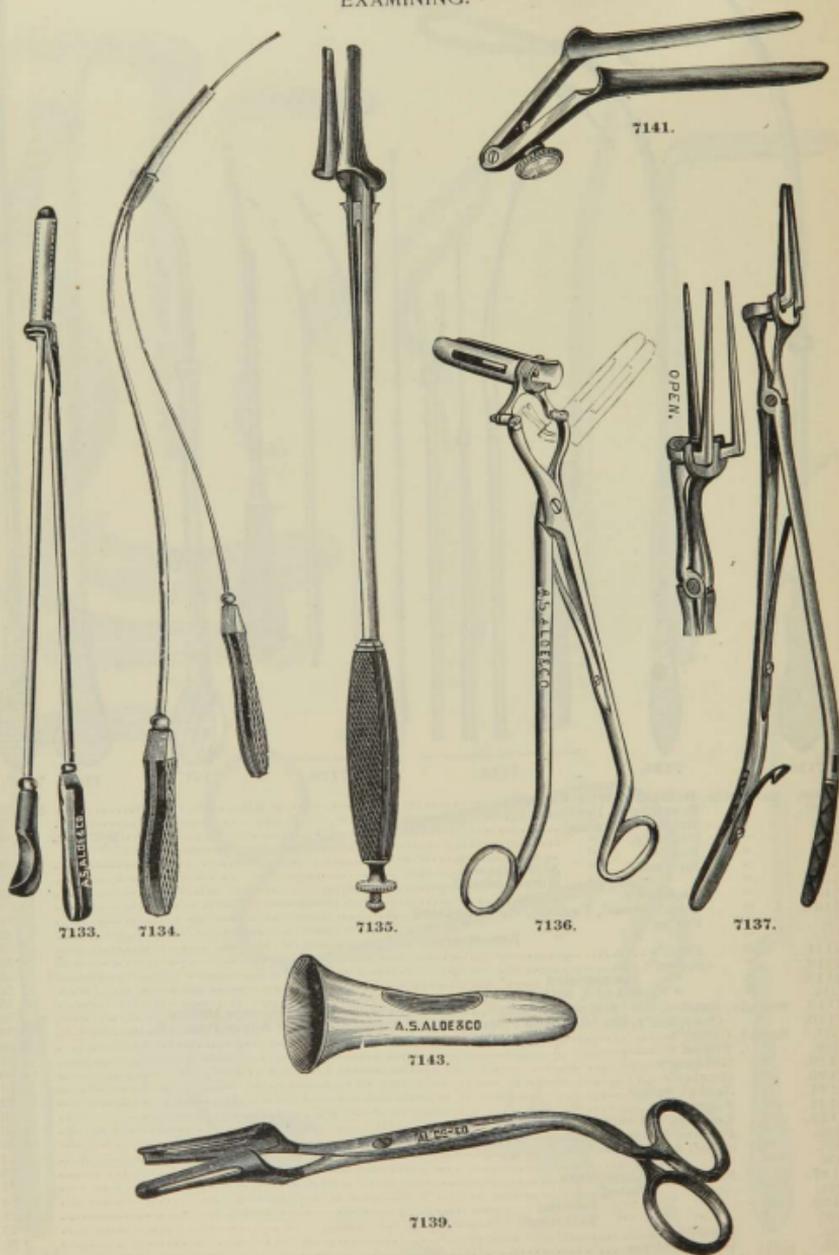


7119.	Retractor, Belfield's, Wire Vaginal	\$ 1 25
7101.	Bozeman's, Perineal.....	6 75
7102.	Brown's, Vaginal	per pair, 1 00
7103.	Byford's, "	1 50
7104.	Feig's, "	7 00
7105.	Jackson's, " Aluminium	1 75
7106.	" " Nickel-plated	1 25
7107.	Leonard's, "	1 75
7108.	Munde-Sims', Vaginal, Nickel-plated	3 00
7109.	Porter's, "	2 00
7110.	" " Fenestrated	2 25
7111.	Pratt's	1 00
7112.	Simon's	2 25
7113.	" Fenestrated	2 50
7114.	" Set of 5, with 1 Handle	6 75
7115.	Sounds, Buttes, Set (Simpson's Sound, Lente's Silver Probe and Sponge Holder).....	2 50
7116.	Chapman's, Set (Simpson's Sound, Sims' Sound and Sims' Silver Probe).....	2 50
7117.	Sound, Custer's.....	1 50
7118.	" Fitch's.....	1 25
7119.	" Gidding's.....	1 50
7120.	" Hunter's.....	1 00
7121.	" Jenks', Spiral.....	1 75
7122.	" Jennison's.....	3 00
7123.	" Leonard's, Uterometric.....	2 50
7124.	" Penslee's, Graduated	1 00
7125.	" Sims', Aluminium	75
7126.	" " Plated	50
7127.	" Simpson's, Aluminium.....	75
7128.	" " Plated	50
7129.	" " " Folding	1 25
7130.	" " " Telescopic	1 25
7131.	Skene's.....	2 00
7132.	Wylie's, Silver.....	1 75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

EXAMINING.



GYNÆCOLOGICAL.

EXAMINING.

7154. ALOE'S IMPROVED VAGINAL SPECULUM.

In presenting this new instrument to the profession, we do so confidently, knowing that it will meet with their approbation, as it is superior in every way to any Bivalve Speculum now in the market. Its advantages are numerous, among the most prominent of which are:

- 1st. Its simplicity.
- 2d. It can be taken apart in an instant and thoroughly cleansed.
- 3d. Its compactness.
- 4th. The great amount of dilatation obtainable at the mouth of the instrument, which makes it superior to any for operating, and the introduction of tents, tampons, etc.

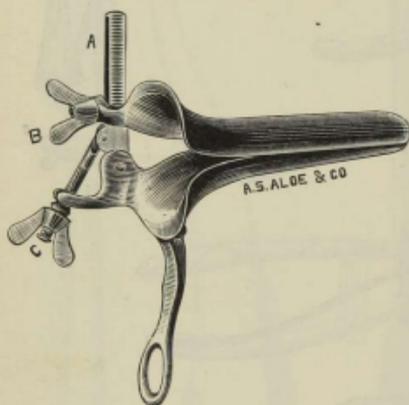


Fig. 1.

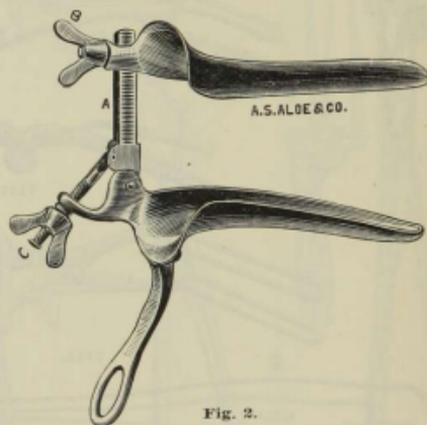


Fig. 2.

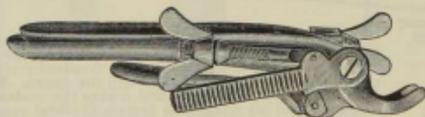


Fig. 3.

7154.

The accompanying illustrations show the Speculum in three different positions:

Fig. 1. Showing same ready for introduction.

Fig. 2. Showing greatest amount of dilatation to be had.

Fig. 3. Taken apart and folded for carrying.

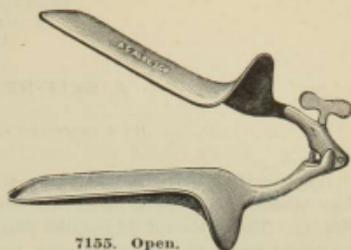
The Speculum consists of two blades, four and one-half inches long by one and one-fourth wide, the upper blade working on a steel rod, "A," with rack and pinion, as shown in illustration, and is controlled by a set screw, "B," working in conjunction with the steel rod. The set screw working on the steel rod gives a parallel dilation, and the lower set screw "C," a superior inclination, as shown in illustration (Fig. 2).

This Speculum can be introduced as shown in Fig. 1, and by means of set screw, "C," a dilatation of four and one-half inches at the distal end can be obtained. The opening at the mouth will be one and seven-eighths inches, thereby allowing room for examination and operating. Should more space be required, the mouth of the instrument can be opened by means of set screw, "B," to three inches, and a dilatation obtained at the distal end of six inches.

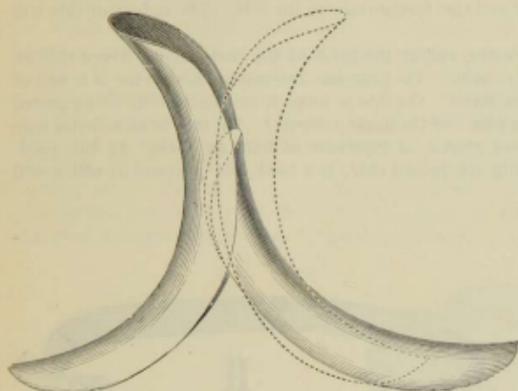
GYNÆCOLOGICAL.
EXAMINING.



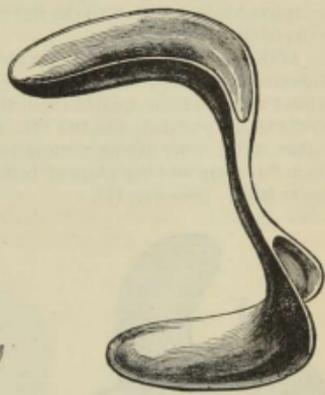
7155.



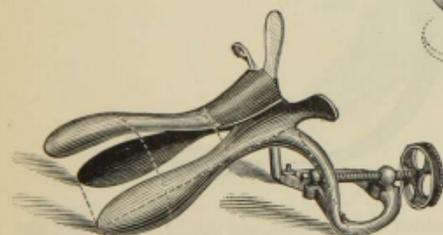
7155. Open.



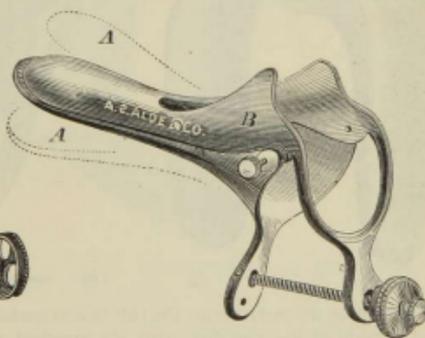
7157.



7160.



7162.



7163.

7154.	Speculum, Vaginal, Aloe's Improved	\$ 4 00
7155.	" " " Latest	3 00
7156.	" " Ball's	8 25
7157.	" " Barnes-Neugebauer's	1 90
7158.	" " Bozeman's Bivalve	7 50
7159.	" " " Columning	6 75
7160.	" " " Duck-Bill, Aluminium	2 50
7161.	" " " " Plated	1 50
7162.	" " " Trivalve	9 00
	Bozeman's Modified Simon's. See page 461.	
7163.	" " Brewer's Aluminium	3 50
7164.	" " " Plated	2 50
7165.	" " " Battle's Glass, Double End	75
7166.	" " " Byrnes'	8 25
7167.	" " " Cleveland's, with Belt. Described on pages 452 and 453	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

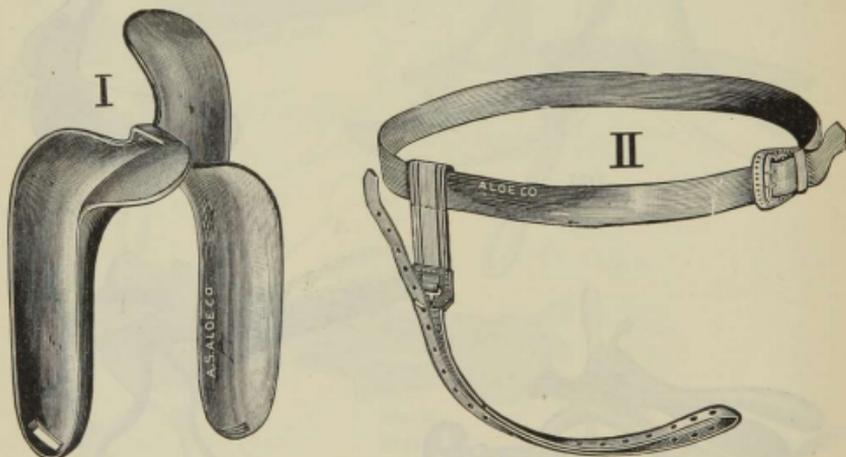
EXAMINING.

A SELF-RETAINING SPECULUM.

BY CLEMENT CLEVELAND, M. D., New York.

This instrument is designed as a so-called self-retaining speculum. It consists of two Sims' blades, each with a flange, and separated by an interval of one inch and three-fourths (Fig. I). These, though in parallel planes, looking at them from the side, will be seen to be at a slight angle to each other when held with the concavity of either toward the observer, the nearer blade deflected to the right, and the farther one to the left. The object of this will be explained further on.

At the point of each blade is a fenestra, and at the bend of the instrument, where the two blades come together, is a narrow metal band. To complete the instrument, there is a belt of webbed material to be applied about the waist. On this is looped, to admit of its being moved readily to any position upon the belt, a piece of the same material. To this is attached a long leather strap, with oblong perforations placed at intervals of half an inch. At the point where this strap and the piece of belting are joined there is a hook, the purpose of which will appear later. (See Fig. II).



7167. See page 451.

To apply the instrument, the belt is first buckled by the patient, not tightly, about her waist and outside of her clothing, with the attached strap behind and the hook turned outward. She is then placed in the Sims position. The operator selects the blade he thinks better suited to the case, and, holding the instrument with the right hand, with the left he passes the leather strap through the fenestra at the point of the other blade, and then under the metal band, leaving the strap quite loose between them. Then, holding the speculum still with the right hand, with the index finger extended along the concavity of the blade, it is introduced, care being taken to pass it back of the cervix. The instrument is then pushed firmly up against the perinæum, the outer blade reaching a point just at the bend of the coccyx. I would say here, in parentheses, that I have tried the instrument in over fifty women in my clinic at the Woman's Hospital, and find that the interval of one inch and three-fourths between the blades is enough, even in the stoutest women, to include all tissue between the posterior wall of the vagina and the integument between the nates. In very thin women it will even be found

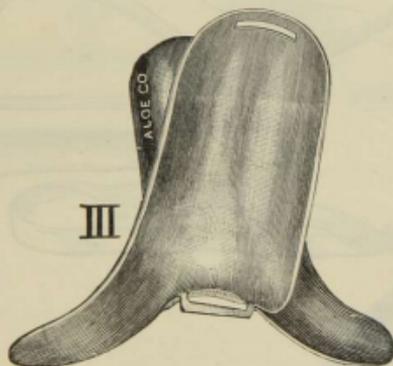
GYNÆCOLOGICAL.

EXAMINING.

A SELF-RETAINING SPECULUM.—CONTINUED.

advisable to place a folded towel under the external blade. The next step is to draw the leather strap tight, first through the fenestra and then under the metal band. The perinaeum is then retracted to the required degree by drawing the strap backward and securing it to the hook provided for the purpose, as here described. By now using the vaginal depressor the cervix is brought at once into view.

When the belt is applied outside the dress it may be necessary to pass the strap through the fenestra at the end of the blade. In many cases the clothing, pushed back from the buttocks, is bunched up so high that it is necessary to have the tension exerted from the two points. If the tension were from the metal band alone the speculum would be more likely to pull out. When the belt is applied merely over the nightdress, as in an operation, then it may be only necessary to pass the strap under the metal band, for then the tension is directly backward, and the speculum can not possibly pull out, as the strap presses firmly over the point of the blade. Still I should advise it always being passed through the fenestra. This I will explain below. To remove the speculum, detach the leather strap from the hook. The oblong perforations enable the operator to pull the strap off with the greatest ease. Then the speculum is withdrawn from the vagina and off of the strap at the same time.

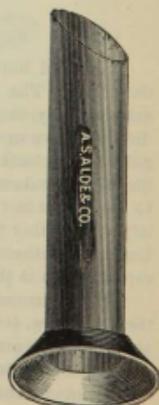
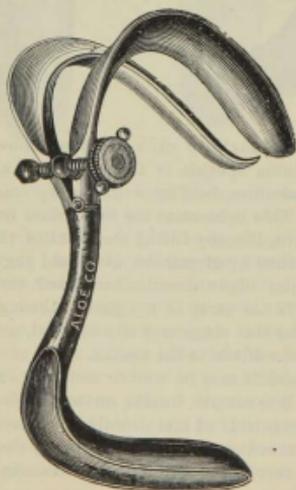
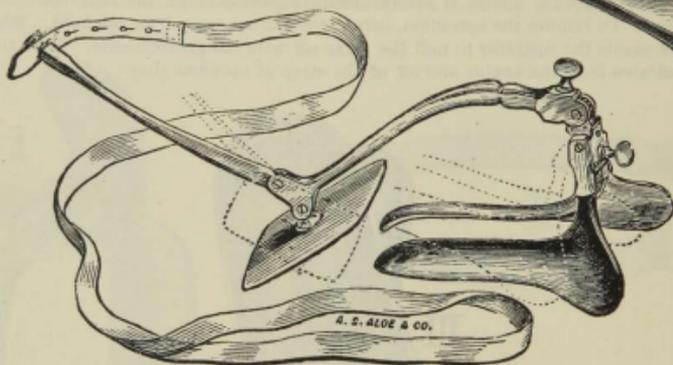
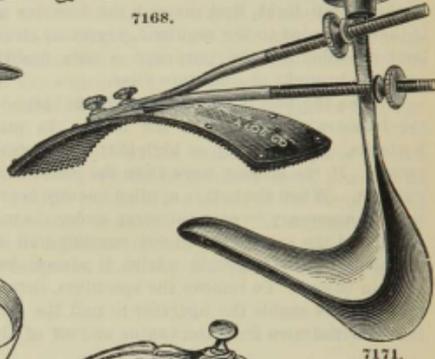
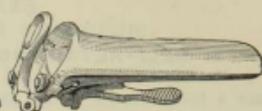
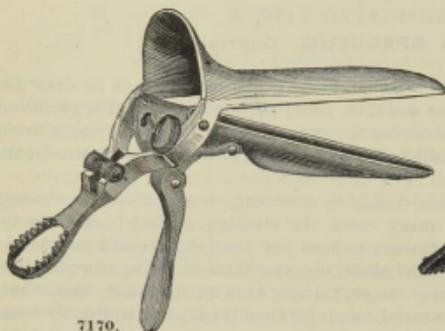


I should here explain why the blades are placed at an angle to each other, as above described. The chief fault to be found with all self-retaining specula is that, to see at all satisfactorily, one has to stoop; while with the Sims speculum, held by a nurse, we look directly down upon the cervix as we sit before the patient. This is because the nurse does not pull directly backward upon the perinaeum, but a little upward, thereby tilting the point of the blade a little downward. This is precisely what is accomplished by giving the aforesaid angle to the blades in this new speculum, the strap pulling the outer blade directly backward, thus tilting the other just enough downward. (See Fig. III.) If the strap is not passed through the fenestra there is danger that the point of the blade under the strap may slip upward, and especially so in thin women, thus deranging the position of the blade in the vagina.

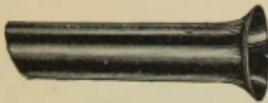
The instrument seems to possess several advantages which it may be well to mention. In the first place, it consists of two blades of different size. It is simple, having no mechanism about it to get out of order. It can be easily kept clean, being entirely of metal, and in one piece.

It is not claimed that it can take the place of a well-trained nurse, but it certainly does better than an indifferent one. It has been used in several cervix operations at the Woman's Hospital, with entire satisfaction to the operator.

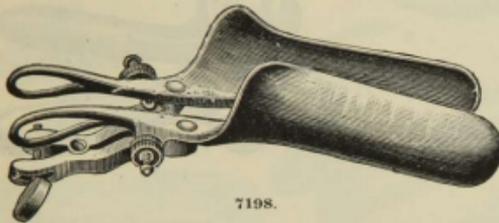
GYNÆCOLOGICAL.
EXAMINING.



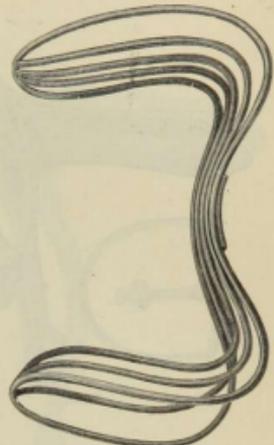
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EXAMINING.



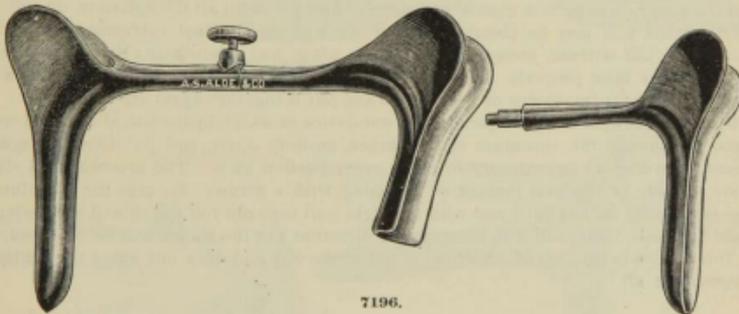
7188.



7198.



7195.



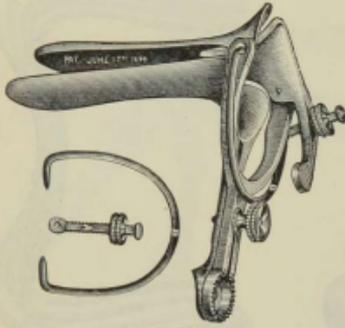
7196.

7168.	Speculum, Vaginal, Cusco's, Folding Handle, Aluminium..	\$ 3 50
7169.	" " " " Plated	2 50
7170.	" " " " Improved, Folding Handle, Plated.....	2 50
7171.	" " " " Darrow's, with 2 blades.....	9 00
7172.	" " " " Dawson-Ehrich's	10 00
7173.	" " " " Dawson-Sims', Dividing Blade.....	5 00
7174.	" " " " " " " "	4 00
7175.	" " " " Edebohl's, Aluminium.....	5 00
7176.	" " " " " " Plated	3 75
7177.	" " " " Emmet's, Self-Retaining	5 25
7178.	" " " " Emmet-Sims'	3 50
7179.	" " " " Ehrich's	6 50
7180.	" " " " " " Dividing Blade.....	9 00
7181.	" " " " " " " " with Depressor	10 00
7182.	" " " " Ethridge's.....	2 50
7183.	" " " " Ferguson's, Glass, Silvered	35
7184.	" " " " " " " " Extra Large.....	50
7185.	" " " " " " " " Fenestrated.....	50
7186.	" " " " " " " " Dome Top.....	75
7187.	" " " " " " " " Opaque (Milk-White Glass)	50
7188.	" " " " " " " " Hard Rubber.....each,	75
7189.	" " " " " " " " " " set of 4, nested	2 50
7191.	" " " " " " " " " " Metal Lined	1 25
7192.	" " " " " " " " Fitch's, Aluminium.....	4 00
7193.	" " " " " " " " " " Plated	3 00
7194.	" " " " " " " " French's, Resilient	1 00
7195.	" " " " " " " " Fryer's, Self-Retaining	9 00
7196.	" " " " " " " " Fryer-Sims'	1 50
7197.	" " " " " " " " Glasgow's (St. Louis)	4 50
7198.	" " " " " " " " Goelet's	2 50
	" " " " " " " " Goodell's	5 00

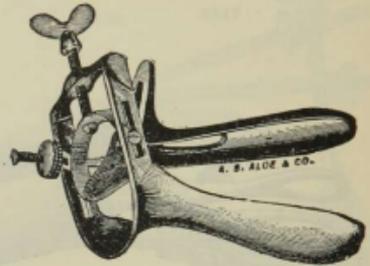
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

EXAMINING.



7199.

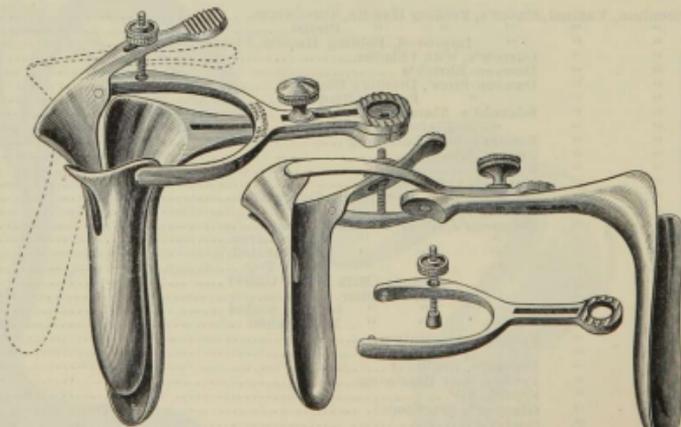


7203.

If there is any instrument that the physician uses, that should be thoroughly cleaned after its use it would seem to be a vaginal speculum. And yet, with all the agitation on the subject of instruments that may be cleaned, carried often to the greatest extremes, physicians have continued to use without protest Specula, year after year, often many times a day and never once have they been properly cleaned. No physician will go to the trouble of using a screw-driver to take apart the blades of a speculum and put it together again after use.

Fig. 7199 shows a Graves' Speculum of our device in which by the use of the steel spring B, instead of screws, the speculum can be taken entirely apart and put together again in a moment, affording an opportunity to clean every portion of it. The attachment A slips over a hook on side of the arm instead of fastening with a screw. To take the speculum apart, grasp the blades in left hand and with the right pull towards you the side of the spring B, till the pin slips out, then push it in the opposite direction and the blades will be detached.

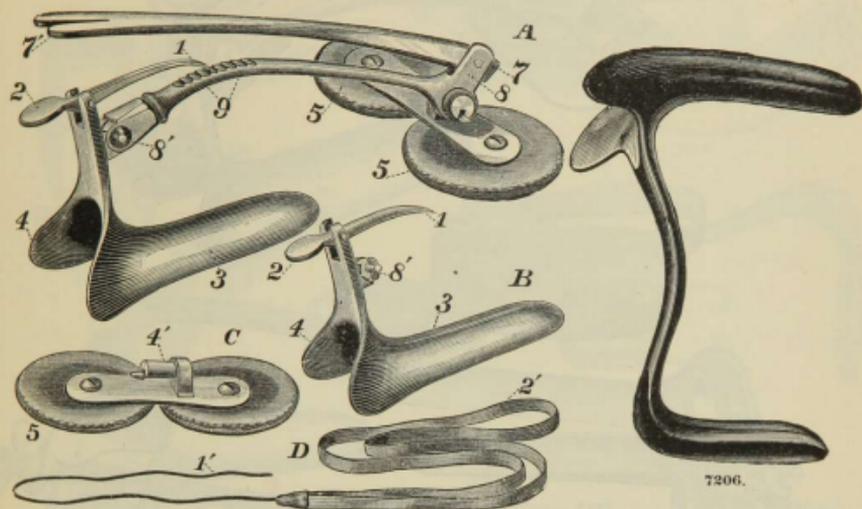
This device is simple and effective, is not in the way and does not affect the utility of the instrument at all.



7200.

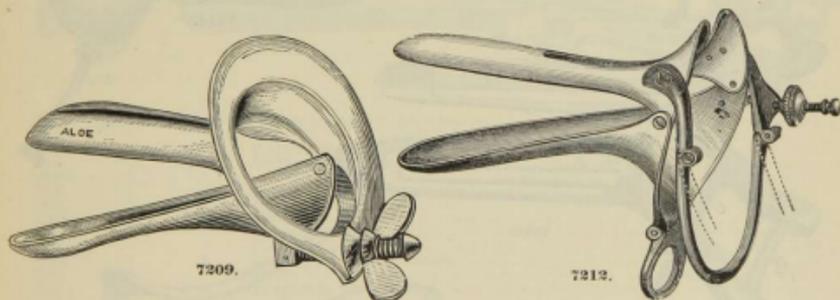
GYNÆCOLOGICAL.

EXAMINING.



7205.

7206.

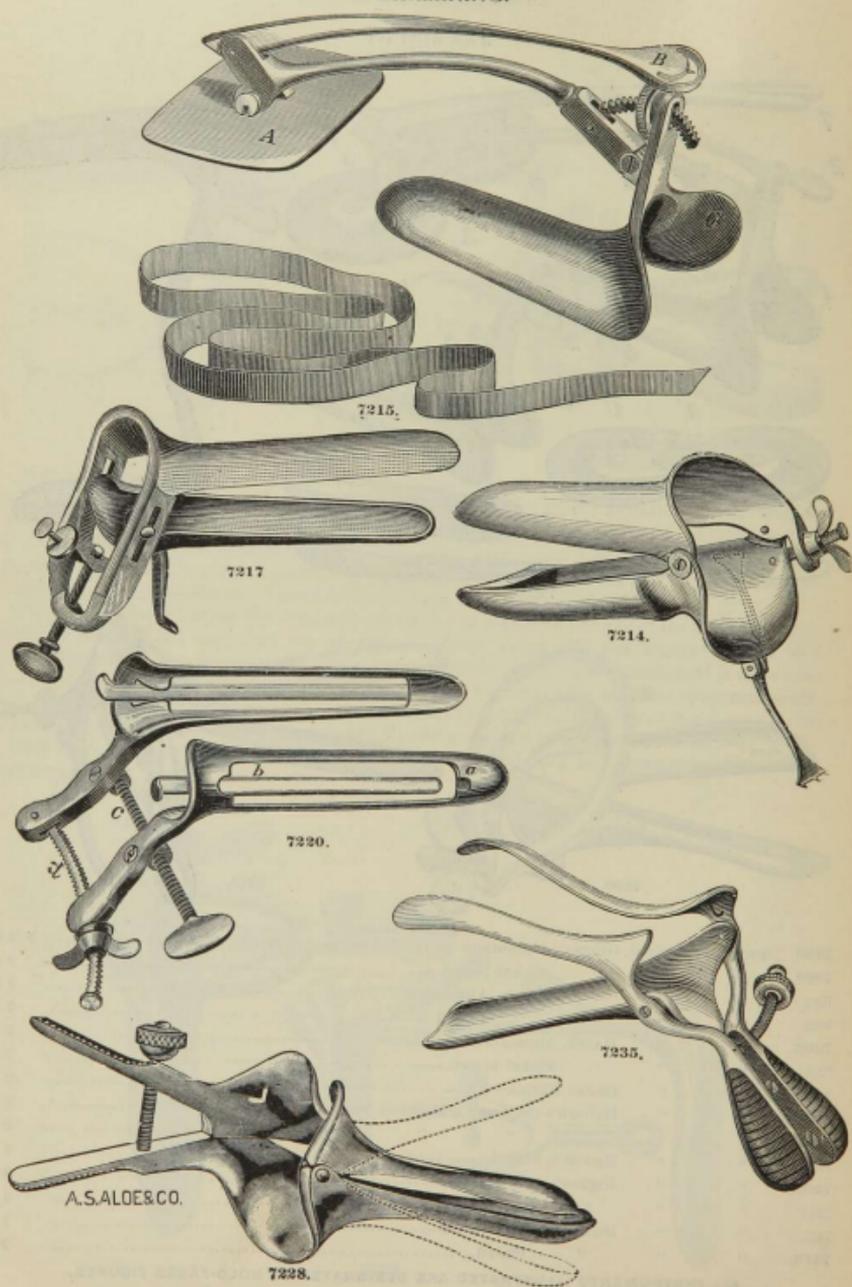


7209.

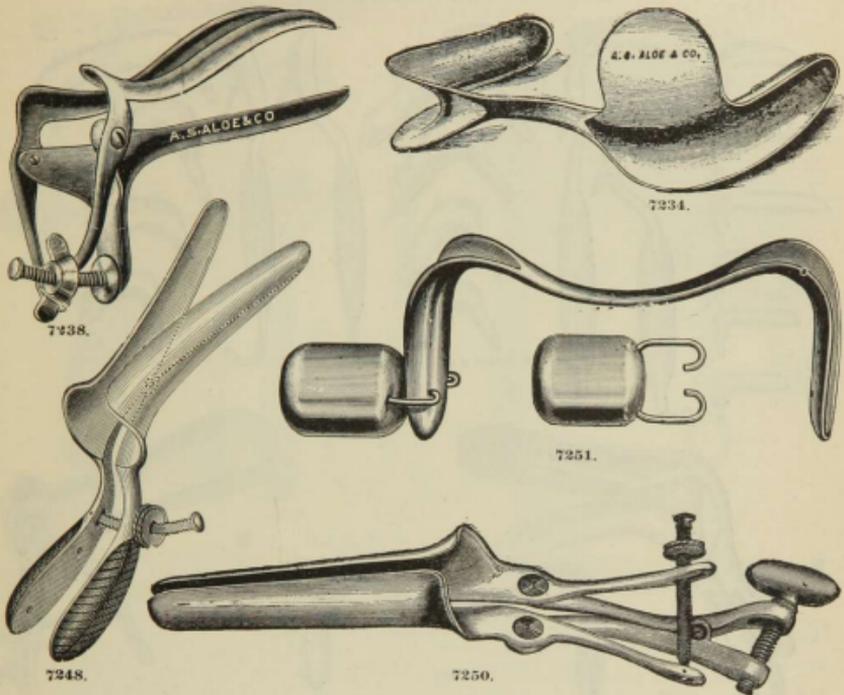
7212.

7199.	Speculum, Vaginal, Graves', Aluminium.....	\$ 3 50
7200.	" " " Nickel-plated.....	2 00
7201.	" " " Virgin, Aluminium.....	3 50
7202.	" " " Plated.....	2 00
7203.	" " " Hale's, Aluminium.....	3 50
7204.	" " " Nickel-plated.....	2 50
7205.	" " " Hanks-Ehrich's.....	9 75
7206.	" " " Heburn's (St. Louis), Modified Sims, Aluminium.....	3 50
7207.	" " " " " Plated.....	2 50
7208.	" " " Hewitt's, Plated.....	2 50
7209.	" " " Higbee's, Aluminium.....	3 00
7210.	" " " Plated.....	2 50
7211.	" " " Howard's, Aluminium.....	4 00
7212.	" " " Plated.....	2 50

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GYNÆCOLOGICAL.
EXAMINING.

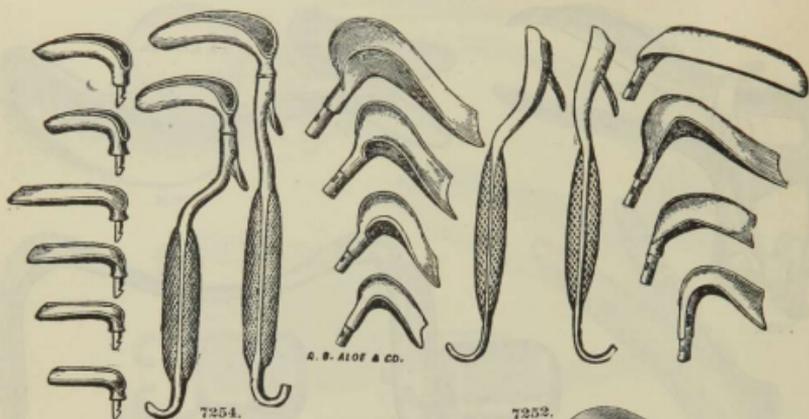
GYNÆCOLOGICAL.
EXAMINING.



7213.	Speculum, Vaginal,	Hunter's, Bivalve, Aluminium.....	\$ 5 00
7214.	"	" " Plated.....	4 00
7215.	"	Hunter-Ehrich's.....	6 75
7216.	"	Jackson's, Aluminium.....	4 00
7217.	"	" " Plated.....	3 00
7218.	"	Jenke's.....	6 00
7219.	"	Jones'.....	3 00
7220.	"	Keen's, Virgin.....	5 00
7221.	"	Leonard's.....	5 00
7222.	"	Ludlam-Cusco's.....	3 00
7223.	"	Mann's, Modified Thomas'.....	6 75
7224.	"	Martin's.....	4 50
7225.	"	Meadow's, Quartrivalve.....	11 25
7226.	"	" " Trivalve.....	7 50
7227.	"	McNutt's.....	2 00
7228.	"	Miller's, Aluminium.....	3 50
7229.	"	" " Plated.....	2 50
7230.	"	Miller's, Modified Edebohl's.....	2 50
7231.	"	Mitchell's, Aluminium.....	4 50
7232.	"	" " Plated.....	3 75
7233.	"	Mundé-Sims', Aluminium.....	3 50
7234.	"	" " Plated.....	2 50
7235.	"	Nelson's, Plated.....	2 50
7236.	"	Neugebauer's, Set of 4, Aluminium.....	6 50
7237.	"	" " 4, Plated.....	5 00
7238.	"	Nott's, Aluminium.....	3 50
7239.	"	" " Plated.....	2 50
7240.	"	Nunn's, Plated.....	9 00
7241.	"	Palmer's, Bivalve, Aluminium.....	4 00
7242.	"	" " Plated.....	3 00
7243.	"	Palmer-Sims', Aluminium.....	3 00
7244.	"	" " Plated.....	2 00
7245.	"	Palmer's Trivalve, Aluminium.....	4 00
7246.	"	" " Plated.....	3 00
7247.	"	Reid's.....	4 50
7248.	"	Ricord's.....	3 00
7249.	"	Schuyler's.....	9 00
7250.	"	Schlotterbeck's.....	5 25
7251.	"	Schmucker's Modified Sims', consists of a weight attachment, whereby the Sims Speculum can be used in the dorsal position without the aid of an assistant.....	2 50

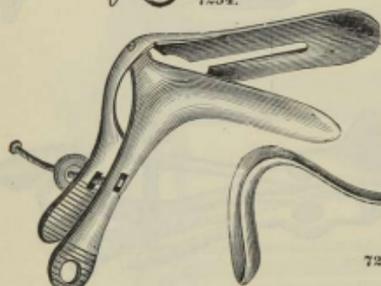
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.
EXAMINING.

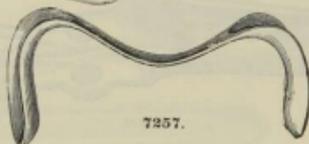


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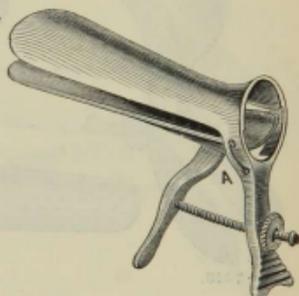
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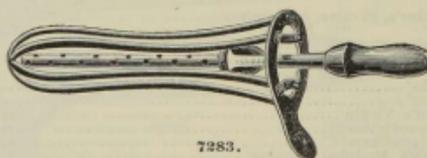
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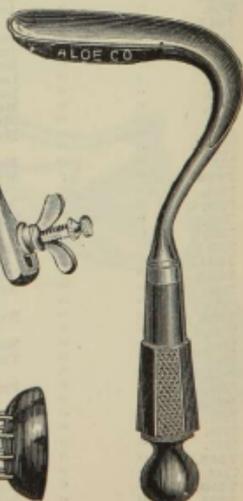
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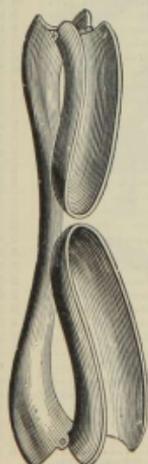
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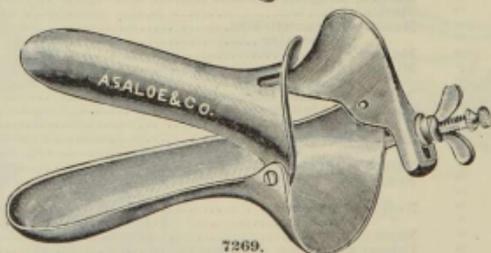
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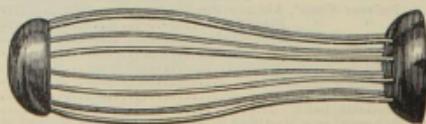
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7260.

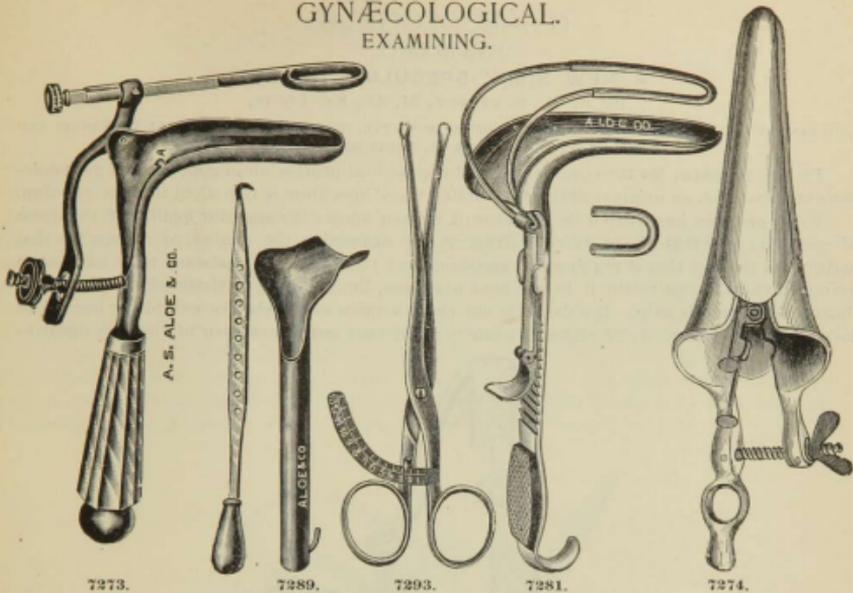


7269.



7284.

GYNÆCOLOGICAL.
EXAMINING.



7293. BAKER'S VAGINOMETER.

Designed for measuring the vagina to ascertain the size of pessary required. To find the length, use any sound, to get the distance from bottom of cul-de-sac to pelvic bone, the depth of the sound inserted can afterwards be measured in inches by the vaginometer. To get the width laterally, introduce the vaginometer and the distance that the knobs are held apart, will be indicated by the scale.

7252.	Speculum, Vaginal, Simon's, set of 8 Solid Blades and 2 Handles.....	\$12 00
7253.	" " " " set of 6 Fenestrated Blades and 2 Handles.....	13 50
7254.	Speculum, Vaginal, Bozeman's Modified Simon's, 4 Bozeman-Simon's, 4 Bozeman-Sims' Blades and 2 Simon's Socket Handles.....	13 50
7255.	Speculum, Vaginal, Bozeman's Modified Simon's, set of 5 Flat Solid Blades, with 2 Simon's Socket Handles.....	9 00
7256.	Speculum, Vaginal, Fritsch's Modified Simon's, 2 Solid and 1 Irrigating Blades, with 2 Simon's Socket Handles.....	10 50
7257.	Speculum, Vaginal, Sims', Aluminium.....	2 50
7258.	" " " " Hard Rubber.....	2 25
7259.	" " " " Plated.....	1 50
7260.	" " " " Folding.....	4 00
7261.	" " " " Wire.....	1 50
7262.	" " " " with Handle, Aluminium.....	3 50
7263.	" " " " " Plated.....	2 50
7264.	" " " " Woman's Hospital, Aluminium.....	3 00
7265.	" " " " " Plated.....	2 50
7266.	" " " " Stohman's.....	6 00
7267.	" " " " Storer's, Aluminium (can be used as Sims').....	3 50
7268.	" " " " " Plated.....	3 50
7269.	" " " " Taylor's, Aluminium.....	2 50
7270.	" " " " " Plated.....	2 50
7271.	" " " " Thomas-Cusco's.....	6 00
7272.	" " " " Thomas-Sims', with Depressor.....	7 50
7273.	" " " " " and Tenaculum.....	7 50
7274.	" " " " Tiemann's, 4 Blade.....	7 50
7275.	" " " " Wackerhagen's.....	7 50
7276.	" " " " Weber's.....	3 50
7277.	" " " " White's Modified Notz's, Aluminium.....	5 25
7278.	" " " " " Plated.....	2 50
7279.	" " " " " Sims', Aluminium.....	3 50
7280.	" " " " " Plated.....	2 50
7281.	" " " " Yarrow's.....	6 50
7282.	" " " " Bath, Hard Rubber.....	75
7283.	" " " " Improved French.....	2 00
7284.	" " " " Irrigating, Wire.....	1 00
7285.	" " " " " Edebohl's.....	3 75
7287.	" " " " " Jones'.....	3 50
7288.	" " " " " Marcy's.....	3 00
7289.	" " " " " Martin's.....	4 00
7290.	Speculum Holder, Foster's, with 2 Blades.....	11 25
7291.	" " " " Hunter's.....	4 00
7292.	" " " " Senecey's (St. Louis). See next page for illustration and description.....	6 50
7293.	Vaginometer, Baker's.....	2 75
7294.	" " " " Cutter's.....	5 00
7295.	Yoke, McBride-Packard's, for Retaining Patient in Dorsal Position.....	3 00

GYNÆCOLOGICAL. EXAMINING.

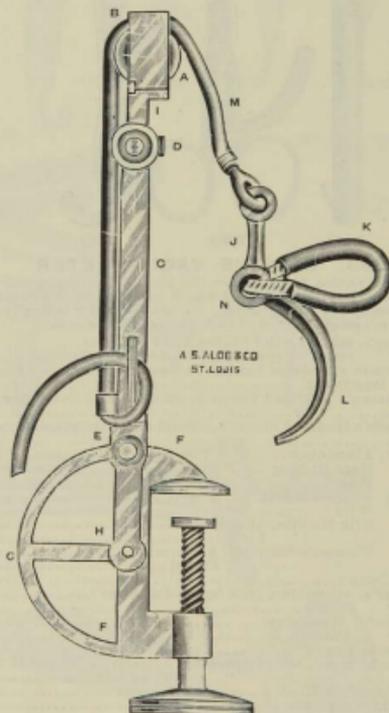
A NEW SIMS' SPECULUM HOLDER.

By E. M. SENSENEY, M. D., ST. LOUIS,

ASSISTANT IN GYNÆCOLOGICAL CLINIC MULLANPHY HOSPITAL, INSTRUCTOR IN PHYSICAL DIAGNOSIS AND PRACTICAL PHYSIOLOGY IN ST. LOUIS MEDICAL COLLEGE.

I wish to present for the consideration of the medical profession in general, and gynæcologists in particular, an original device for holding Sims' Speculum with patient in Sims' position.

Every one who has treated the diseases of women knows the superior quality of this form of speculum over that of any other instrument for examining the vagina, or rectum for that matter, yet the fact that it requires an assistant, and that even the assistant must have some practice before he can retain it in the best positions, limits its use to those who can provide themselves with this help. Besides, it is not every woman who feels like exhibiting herself to assistants. The majority of city and country physicians must make use of the very unsatis-



7292. See Page 461.

factory bivalve speculum, which, at best, is but a makeshift, as the greater part of the vaginal mucous membrane is covered up by its two blades. Other self-supporting specula are clumsy and inefficient. However, it is unnecessary for me to praise Sims' or to deride other makes, so I will now try to describe my holder and its clutch, which I believe is free from objection.

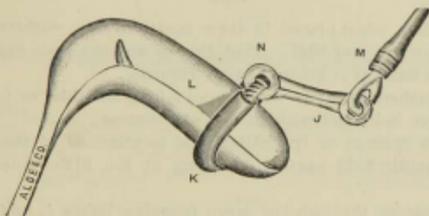
It consists of a clamp F, an upright part C, which divides at its lower end straddling the clamp F and pivoted at H, while its part above the thumbscrew E is a square tube with a square bar I, sliding up and down in it, and retained at any height by the thumbscrew D. On top of the sliding bar I is fixed a pulley carrier B, pivoted eccentrically, enabling the pulley A to turn in the direction of its pull. The whole apparatus rotates around H and can thus be in a moment swung down under the table when treatment is over with, and the patient can descend without catching her clothing on any projecting point.

GYNÆCOLOGICAL.

EXAMINING.

A NEW SIMS' SPECULUM HOLDER.—CONTINUED.

By swinging the part C around so that the thumbscrew E comes to the point G, the whole appliance can be clamped to side board of bed, and operations and applications made there instead of upon an operating table. The part of this holder that I especially claim priority of discovery in, is the clutch in J, L, K and its rubber cord M. The clutch consists of a sickle-shaped piece J, L. The part L is covered with a thick piece of soft rubber tubing and the surface that presses in the blade of the speculum is rounded off somewhat to give a greater bearing surface. The loop of this clutch is made of quarter inch cotton cord and covered with the same kind of rubber tubing as the end L. One end of Sims' speculum is inserted in the vagina or rectum in the usual way, and the opposite end through the loop K, with end L in advance and toward the shank of the speculum as shown in the illustration.



The rubber cord M is made as tense as necessary and made secure in the clamping device which explains itself and is quick and easy of application. A glance at the mechanical principle of my clutch shows it to be simply a lever, the fulcrum being where the part L presses in the blade of the speculum; the loop contains the weight and the part J is the lever, consequently the whole speculum rotates around the point N as a center, and the whole affair is drawn, by the elasticity of the rubber cord, toward the pulley of the support. By moving the clutch toward the shank of the speculum, the end in the vagina naturally moves from the sacrum toward the os uteri; but when placed as shown in cut, it is pressed firmly against the sacrum, thus dilating the vagina to its utmost. Now a word about the use of the rubber cord. It is a quarter of an inch in diameter and is easy to see that it is strong enough to stretch thoroughly the soft parts of the pelvis, and do all that the pull of an assistant could do. It has this additional advantage, that the patient can squirm and move around as much as she pleases, but the elastic cord prevents all injury to the parts, and causing no pain such as would inevitably be the result if no such medium was used; it at the same time keeps the speculum in its place in the vagina, so that the operator can go right on with his work. By slackening the cord M the clutch can be instantly removed and the speculum withdrawn. Another advantage of my speculum-holder, is that it does not have to be accurately in the plane of the vagina, but three or four inches in or out of this plane makes but little difference. It is, however, somewhat better to have it clamped nearer the operator than the vagina is. By raising and lowering the pulley, new vaginal areas are brought to view. When the apparatus is pushed together it is twelve inches in length and can be easily carried in the satchel of the physician and the country doctor has his assistant with him. This holder is being daily used in the Gynæcological Clinic at the Mullanphy Hospital and gives perfect satisfaction. Prof. Frank A. Glasgow, operator there, says: "No assistant's hand can hold a speculum better, and for prolonged operations it is far superior."

[Extract from the St. Louis Courier of Medicine, December, 1888.]

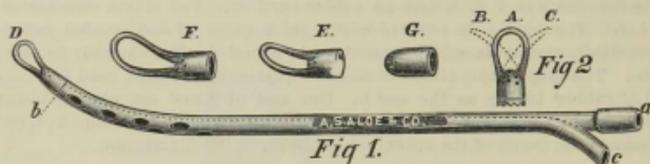
GYNÆCOLOGICAL.

APPLICATING—DRESSING—DOUCHING—IRRIGATING.

A COMBINED CURETTE AND DOUBLE CATHETER.

BY GEORGE E. ABBOTT, M. D., New York.

For curetting the anterior surface of the uterus or other cavity, screw the curette on as far as it will go, when it will be in position, as at D, Fig. 1, or A, Fig. 2. For the posterior surface, give the curette a half turn, when its concavity will look backward, and will attack the posterior surface well. For curetting the sides, unscrew the curette a quarter turn or a three-quarter turn, when it will have the position of Fig. 2, C or B.



7326.

It will at first seem that, when placed in these positions, the curette would not attack its work, but would turn this way and that. That this is not the case can be demonstrated by curetting the sides of the hand as it grasps the instrument.

The curettes are attached by a fine thread and a long shoulder or tenon, as at *b*, and thus allow of the position above indicated without loss of firmness.

In use, a Davidson's syringe or irrigating tube is attached to the catheter at Fig. 1, *a*, through which the antiseptic fluid passes, emerging at the little holes at the base of the curette D.

The return-current passes through the large fenestræ below *b*, and out at *c*, into a white receiving-vessel. (It will add much to the comfort of the surgeon to have a tube attached to *c*, and thus avoid wetting his hands, etc.)

The advantages gained are:

1st. In making the parts thoroughly aseptic. The antiseptic fluid being allowed to run before entering the cervical canal, and during the time of operating.

2d. The denuded surfaces are immediately covered by the antiseptic fluid before infection can possibly take place.

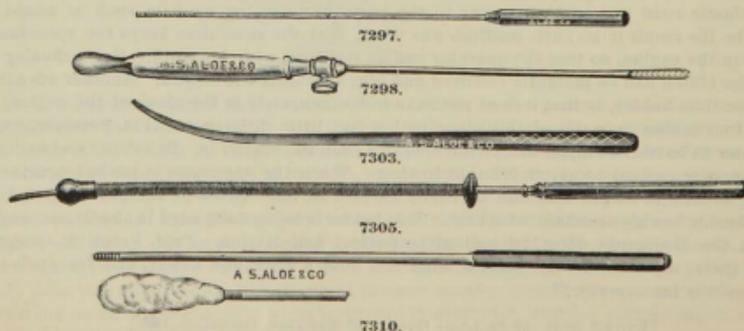
3d. The detritus is immediately and fully removed.

4th. The surgeon can see by the returns in his white receiving bowl what he is doing—fungosities, membrane, pure blood or clear antiseptic fluid.

5th. No bacteria are introduced, as in the use of the ordinary curette.

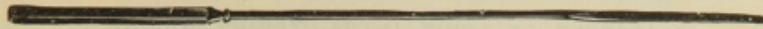
6th. No fungosities or detritus remain to decompose.

[Extract from The Medical Record, February 5, 1887.]

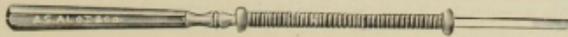


7310.

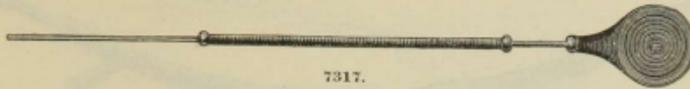
GYNÆCOLOGICAL.
 APPLICATING—DRESSING—DOUCHING—IRRIGATING.



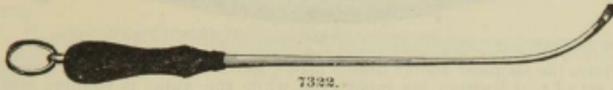
7313.



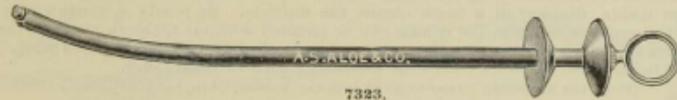
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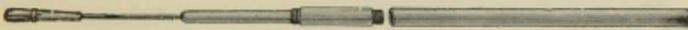
7317.



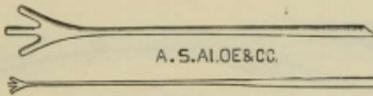
7322.



7323.



7330.



A. S. ALOE & CO.

7340.

7296.	Applicator, Aluminium, no Handle, Roughened Ends.....	\$ 25
7297.	“ “ Fixed Handle, Roughened End.....	40
7298.	“ “ Universal “ “ “.....	75
7299.	“ Barnes', Ointment, Opening in Side, Plated.....	1 50
7300.	“ “ “ “ “ “ Silver.....	2 25
7301.	“ “ “ “ “ “ “.....	1 50
7302.	“ “ “ “ “ “ “.....	2 25
7303.	“ Budd's, Flat, Hard Rubber.....	25
7304.	“ Emmet's, with Slide, Aluminium.....	1 00
7305.	“ “ “ “ “ “ Silver.....	1 25
7306.	“ Hard Rubber, Cotton Screw.....	25
7307.	“ Lee's, Granule (Uterine).....	1 50
7308.	“ Jackson's, Copper.....	25
7309.	“ Mitchell's, for Ointment Suppositories.....	1 50
7310.	“ Mundé's, Hard Rubber.....	35
7311.	“ Nott's.....	2 00
7312.	“ Nunn's.....	60
7313.	“ Papin's (St. Louis), Silver.....	1 50
7314.	“ Peaslee's, Tube and Stem.....	2 75
7315.	“ Phillips', Silver, with Slide.....	1 50
7316.	“ Parker's, Soft Rubber.....	1 00
7317.	“ Sponge Tent.....	75
7318.	“ Turner's, Whalebone, with Hard Rubber Slide.....	1 00
7319.	“ Wackerhagen's.....	10
7320.	“ Woodbury's, Glass.....	75
7321.	“ Wylie's. See Fig. 7134, Page 448.....	50
7322.	Bougie, Barker's, Ointment.....	1 00
7323.	“ “ Mundé's, “ “ “.....	1 00
7324.	Catheter, Uterine, Byrne's, Reflux, with Adjuster.....	2 00
7325.	“ “ “ “ “ “ Reliquet's, Double Current.....	2 75
7326.	Catheter-Curette, Abbott's.....	3 50
7327.	Caustic Cup, Lente's, Platina.....	2 25
7328.	Caustic Holder, Bandl's, Aluminium Burner.....	3 00
7329.	“ “ “ “ “ “ Silver.....	2 50
7330.	“ “ “ “ “ “ “.....	1 50
7331.	“ “ “ “ “ “ “.....	3 75
7332.	“ “ “ “ “ “ “.....	1 85
7333.	“ “ “ “ “ “ “.....	1 75
7334.	“ “ “ “ “ “ “.....	1 75
7335.	“ “ “ “ “ “ “.....	1 75
7336.	“ “ “ “ “ “ “.....	1 50
7337.	“ “ “ “ “ “ “.....	1 50
7338.	“ “ “ “ “ “ “.....	2 50
7339.	“ “ “ “ “ “ “.....	1 25
7340.	Caustic Probe, Lente's.....	1 00
	Colton Packer, Kelly's.....	1 00

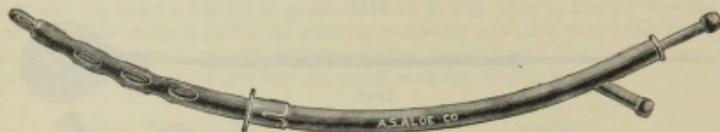
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

APPLICATING—DRESSING—DOUCHING—IRRIGATING.

GLASGOW'S (ST. LOUIS) INTRA-UTERINE DOUCHE.

It is a simplified double canula. I have made it so that it can be cleaned and washed out from inside within a second. There are no cracks or screw threads to catch dirt and no tips to unscrew.

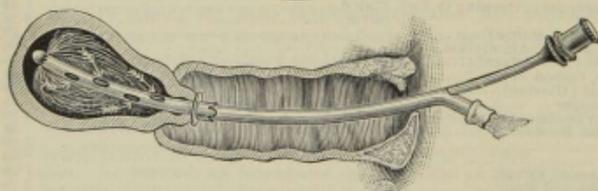
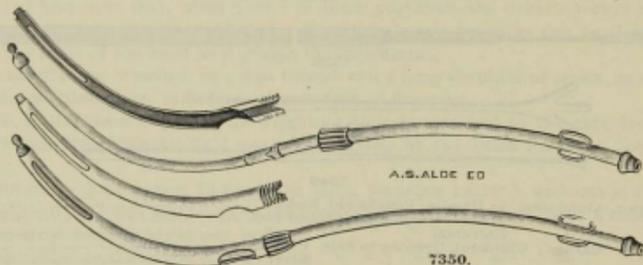


7346.

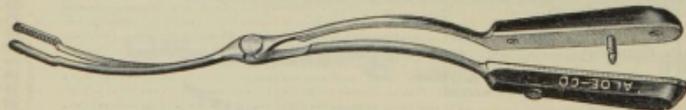
It is, I believe, the simplest double canula made, and the easiest and quickest cleaned when clogged. The act of withdrawing the inner tube while the water is running washes out the canula from inside, dipping in a basin cleans the outside. By partly withdrawing the inner tube while the water is flowing, the canula can be cleaned without removing it from the uterus.

The inner tube slides freely into the outer. The knob like end closes accurately one end of the outer tube, while the solid cone near the inlet closes the other end.

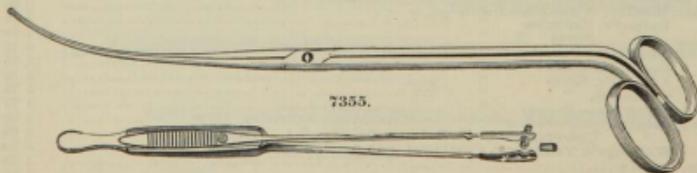
[From the American Gynæcological Journal, Toledo, Ohio, February, 1898.]



7349.



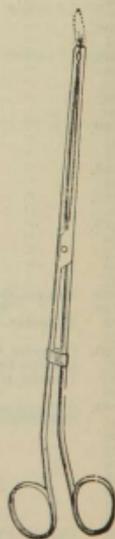
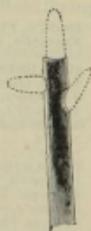
7354.



7355.



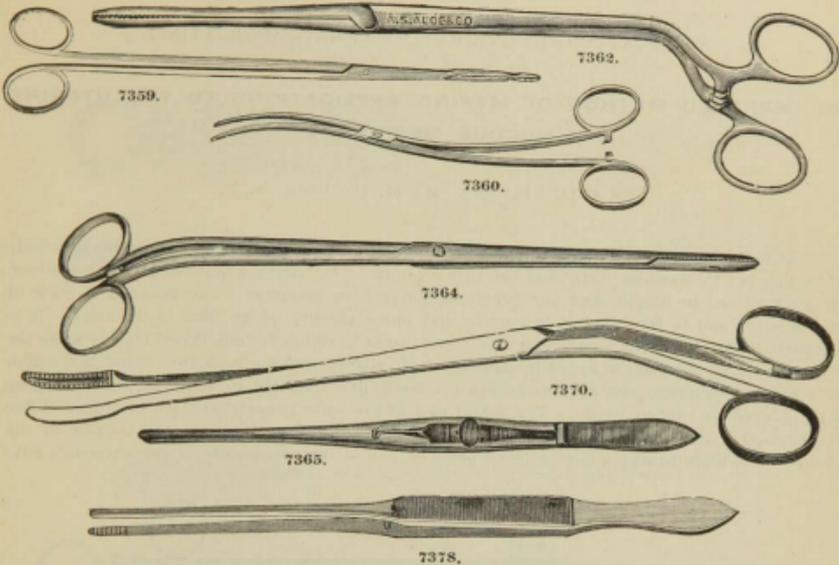
7356.



7357.

GYNÆCOLOGICAL.

APPLICATING—DRESSING—DOUCHING—IRRIGATING.



7341.	Douche, Intra-Uterine,	Bozeman's	\$ 1 75
7342.	"	Chamberlain's, Glass	1 75
7343.	"	Davis', Hard Rubber	2 75
7344.	"	Fritsch's	1 75
7345.	"	Gardner's, Soft Rubber	1 00
7346.	"	Glasgow's (St. Louis)	1 75
7347.	"	Hanks', Hard Rubber	1 00
7348.	"	Haynes'	1 50
7349.	"	Jennison's, Improved	1 50
7350.	"	Kelly's	3 00
7351.	"	Palmer's, Plated	3 50
7352.	"	" Silver	4 50
7353.	"	Webster's, with Curetting Tip	2 50
7354.	Forceps, Applying,	Jones'	4 50
7355.	"	Thomas'	1 75
7356.	"	Caustic, Emmet's, Slide Catch, Gold-Plated Points	3 50
7357.	"	Gardner's	2 25
7358.	"	Sims'	2 60
7359.	"	Dressing, Allen's, Straight, with Catch	1 50
7360.	"	Bozeman's	1 50
7361.	"	Byford's	1 50
7362.	"	Cheron's	2 00
7363.	"	Elliott's, Plain	1 50
7364.	"	" with Catch	1 75
7365.	"	Emmet's, Slide Catch	2 00
7366.	"	Hart's	1 75
7367.	"	Harvey's	2 00
7368.	"	Jones'	4 50
7369.	"	Leonard's, Plain	1 50
7370.	"	"	75
7371.	"	Newman's, Metrorganon	75
7372.	"	" with Catch	2 25
7373.	"	Nunn's, Folding	1 75
7374.	"	" Combined with Scissors	3 75
7375.	"	Shield's	1 75
7376.	"	Sims', Slide Catch	2 25
7376.	"	Thomas'	1 75
7377.	"	Thumb, 9-inch, Rat-Tooth	1 25
7378.	"	" 9-inch, Serrated	1 25
7379.	"	Wylie's	2 25
7380.	"	Gauze Packing, Garrigue's	2 65
7381.	Instillation Tube,	Skene's	35
7382.	Instrument Set,	Noti's, Uterine	7 50
7383.	Insufflator,	Gehrung's (St. Louis), Uterine, Silver Tube. See page 483	2 50
7384.	Porte Cautique,	Agnew's, Uterine, Silver. Same as Fig. 6596, page 390	2 50
7385.	"	Simpson's	2 00
7386.	Powder Blower,	Kelly's, Uterine	2 25
7387.	Sound, Cupped Ointment,	for Female Urethra	1 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

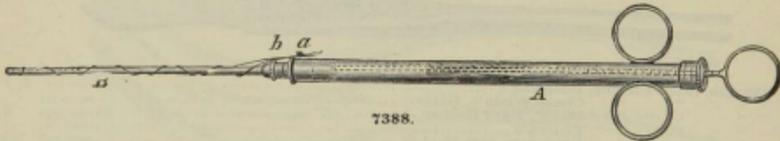
GYNÆCOLOGICAL.

APPLICATING—DRESSING—DOUCHING—IRRIGATING.

AN IMPROVED METHOD OF MAKING APPLICATIONS TO THE UTERINE MUCOUS MEMBRANE.

By J. D. KELLY, A. M., M. D., Utica, N. Y.

The instrument is, in general terms, a syringe and probe combined, and consists essentially of two parts; the syringe barrel and the probe point. The barrel A is made of sterling silver. It is six inches in length, and one-fourth of an inch in diameter. The point B is made of virgin silver and is four inches in length, and one-sixteenth of an inch in diameter. It is attached to the barrel by means of a screw-cut cap at *b*, which fastens down closely upon the leather-covered shoulder at *a*. It is made of virgin silver, in order to better resist the action of acids and caustics, and also to secure the flexibility required to adapt it to the varying directions of the uterine cavity. The distal end of the point is perforated by a number of fine pin-holes, for the escape of medicaments, upon operating the syringe. At one side of the shoulder *a* is a pin to which is attached a piece of fine silver wire suture or fine surgeon's silk.

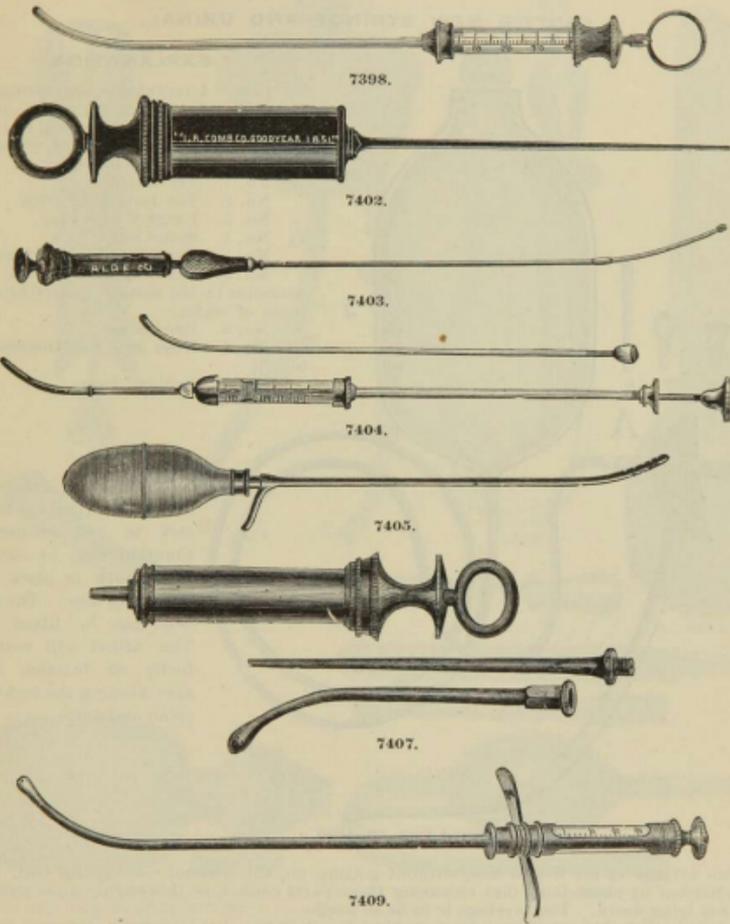


The method of using the instrument is as follows: The point B is screwed upon the barrel A, and, the direction of the uterine canal having been learned, the point is bent to the proper curvature. With the piston depressed the point is inserted in the liquid medicament, and a quantity drawn up into the barrel by withdrawing the piston. A bit of cotton is then wrapped loosely about the tip of the point covering the perforated extremity and held in place by a few turns of the silver wire or silk thread, which is then brought back and its extremity fastened at *a*. The instrument is then introduced through a speculum and the probe point passed through the os tincæ into the uterine cavity. When the cotton covered point is upon the part to be treated, the piston is depressed, thereby forcing the medicament through the pin holes, saturating the cotton, and therefore, placing it directly in contact with the parts to be operated upon. During treatment it is well to place a pledget of cotton under the posterior lip of the os to take up any excess of the application that may escape into the vagina upon withdrawing the instrument. After use, the cotton is readily removed from the point upon unwinding the wire or silk thread, avoiding thereby all force in detaching it which would be likely to injure the flexible and hollow point. After cleaning, the point may be unscrewed and be bound to the side of the barrel by a few turns of the wire or thread, to protect its flexibility in carriage.

The advantage of this instrument consists in the facility and directness with which it does its work. It is introduced but once at a treatment, whereas the usual method with a probe or sound wrapped with cotton required passage through the neck of the canal several times, thereby causing damaging irritation. Moreover, the medicament is hereby delivered directly *in situ*, whereas, by the usual method, the operator is usually obliged to witness the medicament squeezed out of the cotton in its passage through the os and run down before his eyes into the vagina, while his cotton is pushed on quite dry in the cavity of the uterus, where it is directly coated over with secretions and wholly incapable of the designed effect.

GYNÆCOLOGICAL.

APPLICATING—DRESSING—DOUCHING—IRRIGATING.



7388.	Syringe, Applying, Kelly's, Silver.....	\$ 3 75
7389.	" " Lawson's.....	3 00
7390.	" Drop, Buttle's, Hard Rubber.....	1 50
7391.	" " Woodbury's, Glass.....	75
7392.	" Mucus, Mundé's.....	1 50
7393.	" " Thomas's.....	1 00
7394.	" " Wylie's.....	3 40
7395.	" Ointment, Hutchison's, with 1 Hard Rubber Tube.....	2 25
7396.	" " " " 3 Plated Tubes.....	4 50
7397.	" " " " 3 Silver ".....	7 50
7398.	" Uterine, Brann's.....	1 50
7399.	" " Buttle's.....	1 50
7400.	" " Gehrung's (St. Louis). Illustrated and described on page 482.....	.....
7401.	" " Hard Rubber, $\frac{1}{2}$ -ounce.....	75
7402.	" " " " 2-ounce.....	1 00
7403.	" " " " 2 tubes.....	3 50
7404.	" " " " 2 tubes.....	5 00
7405.	" " Molesworth's.....	1 90
7406.	" " Mundé's.....	1 50
7407.	" " Nott's.....	1 75
7408.	" " Pierce's (for uterine catarrh).....	5 00
7409.	" " Woodward's (for nitrate of silver), Silver Tube.....	3 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

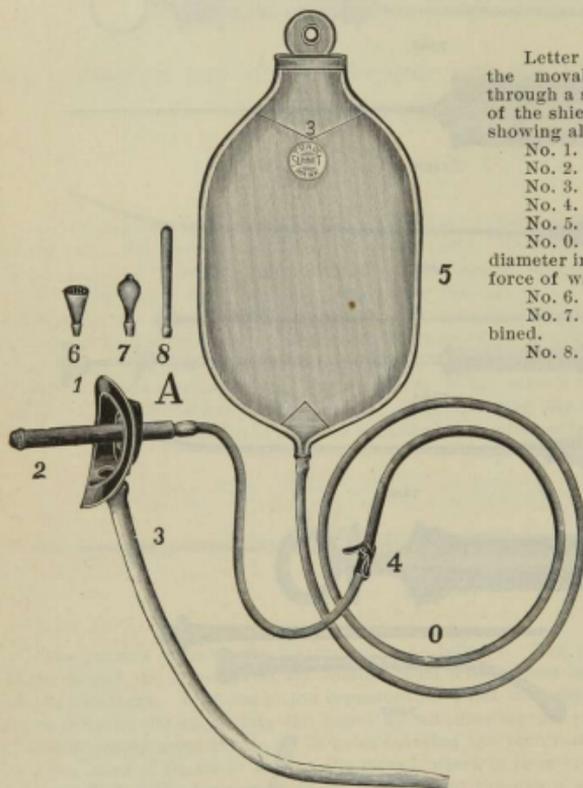
APPLICATING—DRESSING—DOUCHING—IRRIGATING.

FOOTE'S NEW SYRINGE AND URINAL.

EXPLANATION.

Letter A represents the syringe with the movable irrigating tube passing through a soft rubber packing in the top of the shield, arranged for a syringe and showing all the attachments:

- No. 1. The Shield.
- No. 2. The Irrigating Tube.
- No. 3. Large Waste Pipe.
- No. 4. Stop-Cock.
- No. 5. Large Rubber Fountain Bag.
- No. 0. The Supply Pipe, full $\frac{1}{4}$ -in. diameter inside measure, carrying a large force of water.
- No. 6. Eye Spray.
- No. 7. Nose and Ear Douche Combined.
- No. 8. Rectum Tube.



The shield can be used as a plain urinal for the very sick in bed without the fountain bag, by substituting a cork in place of the irrigating tube. The patient need not be lifted at all. The urinal will work perfectly on females at any age, keeping the bed-clothes clean and dry.

7412. Patented Sept. 29, 1885.

This syringe is for use in bed, without getting up, and without wetting the bed. It is a fact, admitted by physicians, that cleansing these parts cannot be thoroughly done unless the patient is lying down. This syringe is to be so used.

It is supplied with water by a large rubber fountain bag, but is entirely different from the common fountain syringe in all other respects. It has a water-tight shield, fitting perfectly and closely the form of any female. Through this shield the long irrigating tube passes, distributing thirteen jets of water, and while in use the tube can be moved back and forth, without removing the shield, washing every fold in the vagina, from the labia to the cervix.

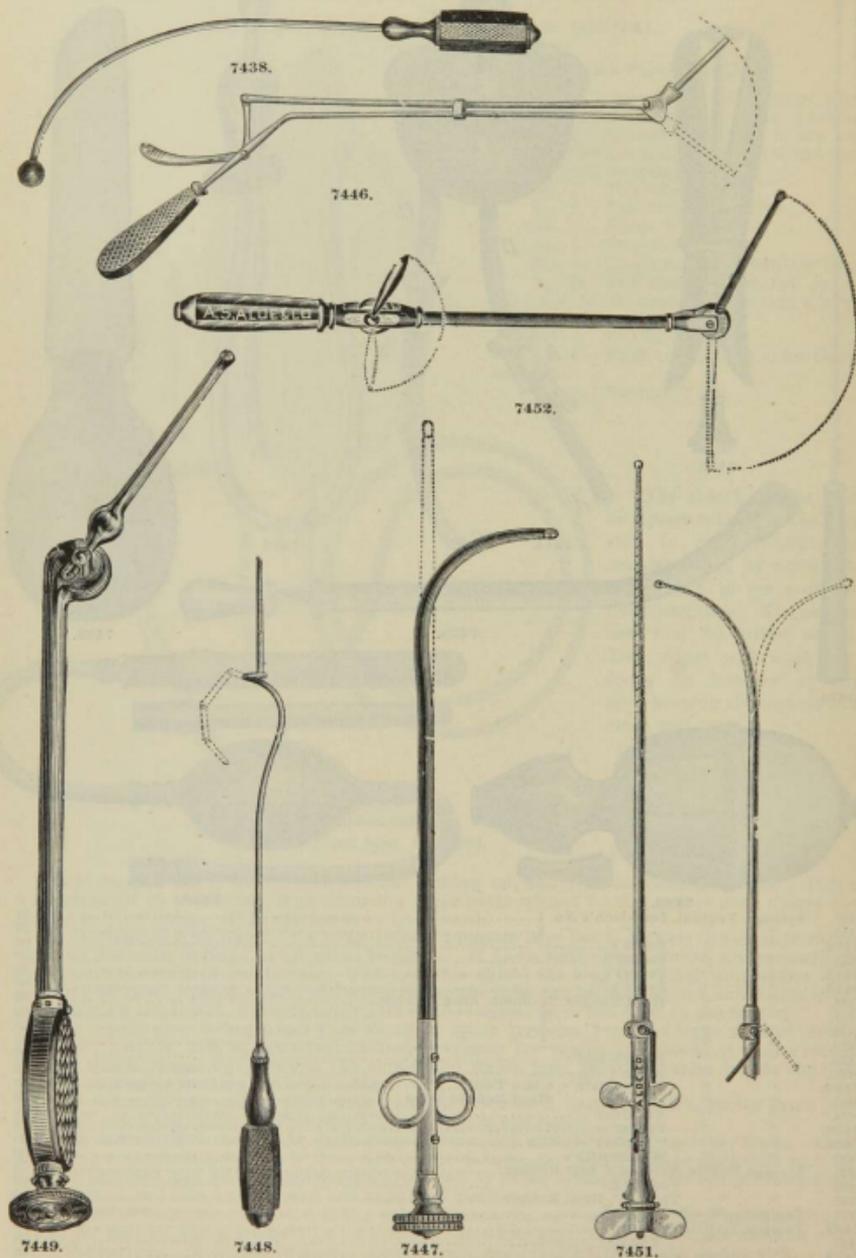
The supply pipe, being larger than those of other syringes, carries a large flow of water, and when used in bed, as intended, its force expands the vagina and floods it with a steady stream, which passes out through the shield and waste pipe, into the vessel beside the bed, without soiling or wetting the bed-clothes.

The fountain bag can be filled with medicated liquids if desired, which, by the same process, will reach the entire inner surfaces of the vagina and cervix.

This combination makes the most perfect, thorough and useful syringe ever made. Used in an easy recumbent position, it does not create fatigue, nor will it cause backache and the many unpleasant and serious complaints produced by using syringes which compel the patient to get out of bed into an awkward and unnatural position.

It can be instantly converted into a urinal, which can be used while lying in bed, without lifting the patient, the urine passing off through the waste-pipe into a vessel, the same as when using the syringe. This will be a great convenience and comfort, especially to the sick.

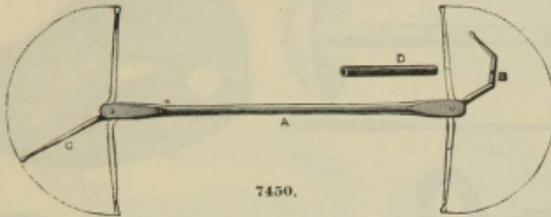
GYNÆCOLOGICAL.
MAL-POSITION.



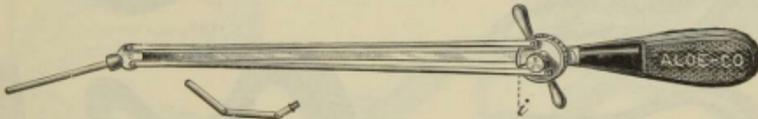
GYNÆCOLOGICAL.

MAL-POSITION.

KINGMAN'S REPOSITOR.



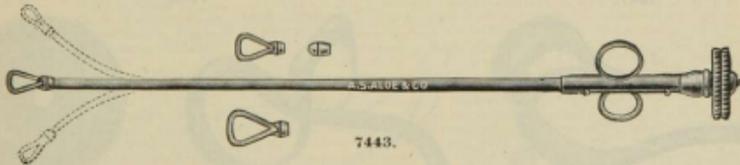
In this instrument, a straight bar of steel, working in a tube, transmits the power from one rack on a pinion to another exactly similar at the uterine end. The two ends being always parallel, as in the case Jensen's sound, the external tip serves as a guide to the position of the uterus, and the power being directly transmitted to the uterus without loss or addition, save as it is slightly affected by the friction of the parts, one's operating hand receives prompt notice of any adhesion or resistance and there can be no excuse for using undue violence. The instrument is reversible, the hard rubber tube D transforming the jointed tip into a rigid handle if desired. One of the Intra-uterine tips is straight and inflexible, the other, Dr. Emmet's jointed pattern, adapted to enter the canal when flexed. This instrument is of great value for replacing and holding in approximately correct position the dislocated uterus during firm packing, the progress towards a complete reposition being much more rapid than under other circumstances. It is strong, not liable to deteriorate or get out of order, and is easily cleaned.



7454.



7445.



7443.



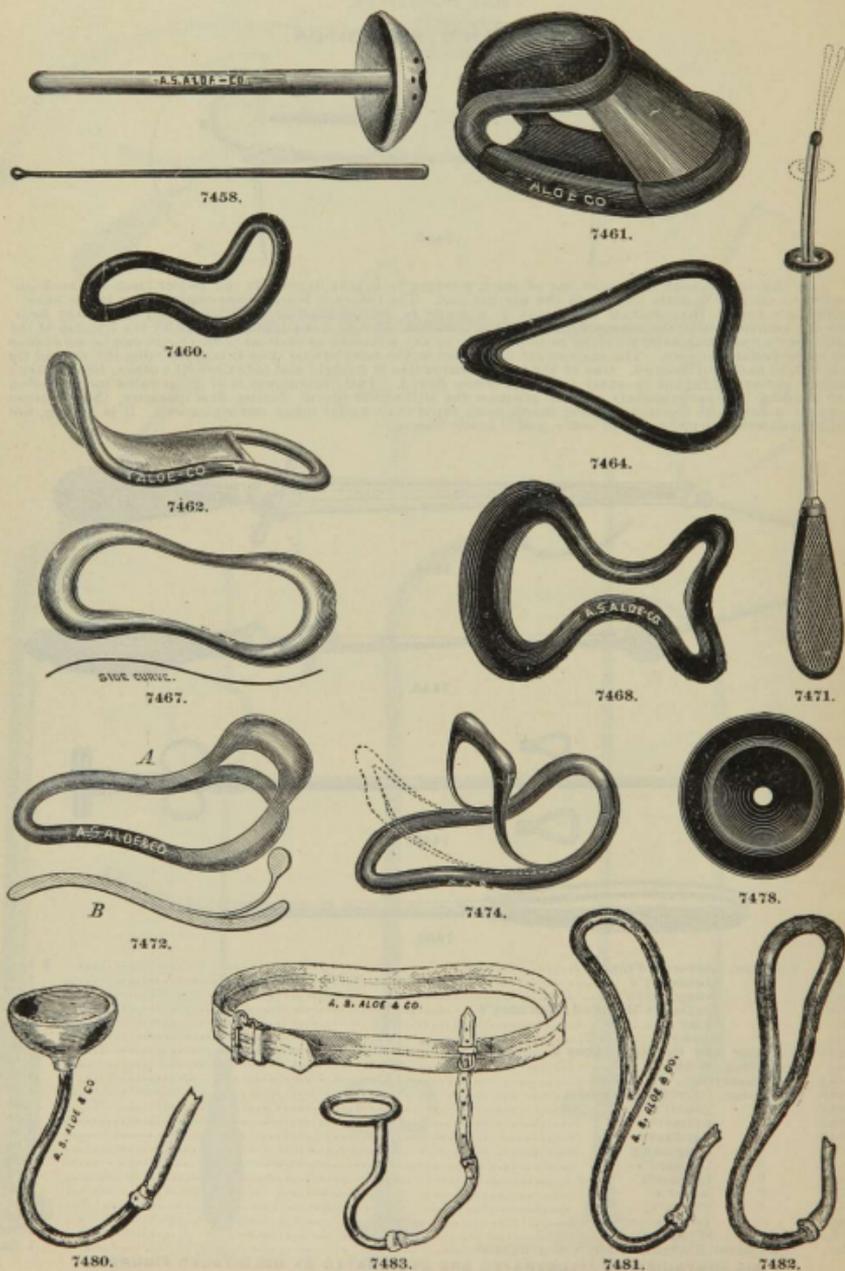
7455.

7437.	Elevator, Byford's Finger	\$ 2 50
7438.	" Guernsey's	1 00
7439.	" Noeggerath's	6 75
7440.	" Ludlam's Modified Guernsey's	1 00
7441.	" Sims'	4 50
7442.	" Stowe's	3 35
7443.	Elevator and Curette, Skene's	7 50
7444.	Metratrep, White's	10 50
7445.	Redressor, Sims' Improved	4 50
7446.	Repositor, Carroll's Uterine	2 50
7447.	" Elliott's	3 50
7448.	" Emmet's	3 35
7449.	" Gardner's	9 00
7450.	" Kingman's	4 00
7451.	" Leonard's	8 25
7452.	" Ludlam's	3 75
7453.	" Miller's	2 50
7454.	" Porter's	4 50
7455.	" Trélat's	2 00
7456.	" White's	3 75
7457.	Tenaculum-Elevator, Kelly's Corrugated	1 75

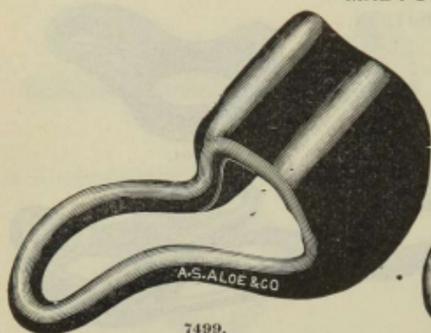
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

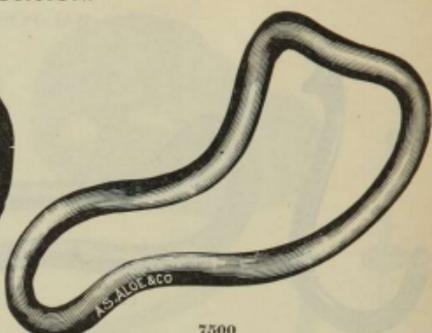
MAL-POSITION.



GYNÆCOLOGICAL.
MAL-POSITION.



7499.



7500.



7507.



7505.



7508.



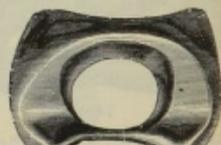
7512.



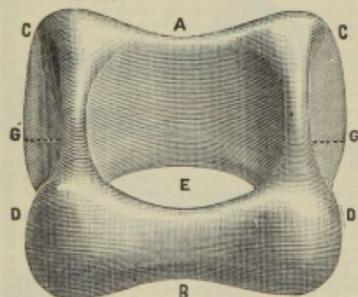
7515.



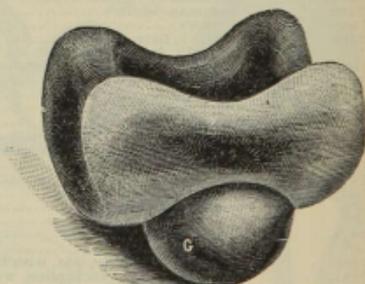
7517.



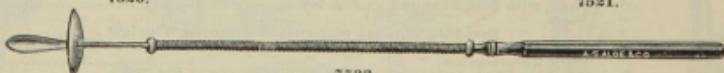
7518.



7520.



7521.



7533.



7529.

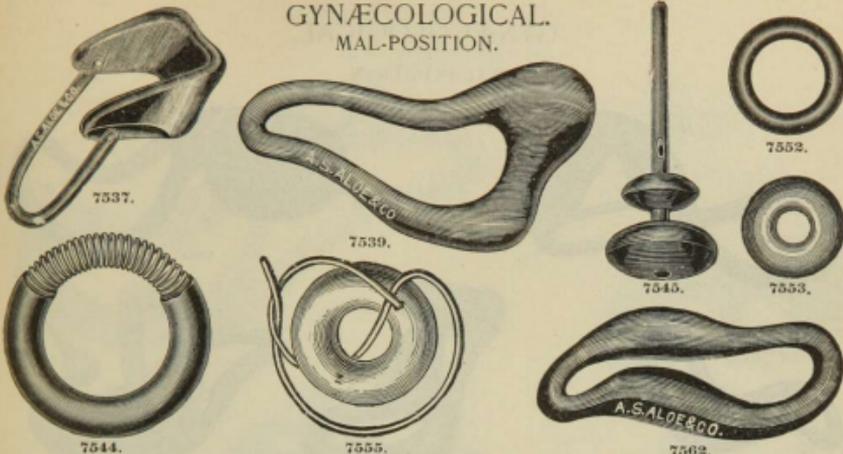


7536.



7540.

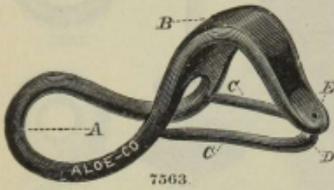
GYNÆCOLOGICAL.
MAL-POSITION.



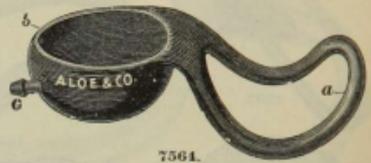
7499.	Pessary, Gehrung's (St. Louis)	Retroflexion	.....	\$ 1 50
7500.	"	Retroversion	.....	40
7501.	"	Gehrung-Smith's	.....	40
7502.	"	Globe, Glass	.....	25
7503.	"	Hard Rubber	.....	75
7504.	"	Silver	.....	\$6.00 to 7 50
7505.	"	Graily Hewitt's, Anteversion	.....	25
7506.	"	Hanks', Galvanic, Retroversion	.....	1 25
7507.	"	Hard Rubber, Intra-Uterine Stem	.....	25
7508.	"	Hewitt's, Cradle, Retroversion	.....	40
7509.	"	Ring, (Copper Wire Ring covered with Soft Rubber)	.....	25
7510.	"	Higbee's	.....	60
7511.	"	Hitchcock's Anteversion	.....	60
7512.	"	Hodge's	.....	25
7513.	"	Closed Lever	.....	25
7514.	"	Double S.	.....	25
7515.	"	Horse Shoe	.....	30
7516.	"	Open Lever	.....	30
7517.	"	S. S.	.....	25
7518.	"	Hoffmann's Original Anatomical, Soft Rubber	.....	1 00
7519.	"	Perfected	.....	3 00
7520.	"	"	.....	1 50
7521.	"	"	.....	1 50
7522.	"	Hornby's	.....	4 50
7523.	"	Hunter's, Retroversion	.....	1 15
7524.	"	Hurd's, Hard Rubber, Retroflexion	.....	1 25
7525.	"	Soft	.....	1 25
7526.	"	Jackson's Stem, Hard Rubber	.....	75
7527.	"	"	.....	35
7528.	"	"	.....	1 00
7529.	"	Kinloch's Anteversion	.....	1 00
7530.	"	"	.....	1 90
7531.	"	"	.....	1 50
7532.	"	Lyford's Aluminium Stem	.....	50
7533.	"	Set of 3, and 1 Introducer	.....	2 00
7534.	"	Meyer's Ring, Solid Soft Rubber	.....	50
7535.	"	Mossman's Intra-Uterine	.....	1 50
7536.	"	Mundé's Anteversion, Closed	.....	1 25
7537.	"	Open	.....	1 25
7538.	"	Ovarian, Double	.....	1 50
7539.	"	Right or Left	..... each,	1 50
7540.	"	Retroversion (Mundé's Mod. of Thomas' Mod. of Smith's)	.....	75
7541.	"	Noeggerath's	.....	1 50
7542.	"	O'Leary's, with Belt	.....	3 75
7543.	"	Ovarian, Right or Left or Double	.....	1 50
7544.	"	Peaslee's Ring	.....	25
7545.	"	Stem	.....	1 00
7546.	"	Pear shape, to Inflate, Pure Gum	.....	50
7547.	"	White Rubber	.....	30
7548.	"	Perry's Flexion	.....	3 75
7549.	"	Prati's Stem, Hard Rubber	.....	1 00
7550.	"	Ring, Copper Wire, Soft Rubber covered	.....	35
7551.	"	Elastic	.....	25
7552.	"	Hard Rubber	.....	25
7553.	"	Soft	.....	50
7554.	"	Inflated, Pure Gum	.....	50
7555.	"	White Rubber	.....	30
7556.	"	to Inflate, Pure Gum	.....	50
7557.	"	White Rubber	.....	30
7558.	"	Spiral Wire, Soft Rubber covered	.....	25
7559.	"	Rozzer's, with Belt	.....	4 50
7560.	"	Sims' Stem	.....	1 30
7561.	"	(H. Marion Sims)	.....	1 50
7562.	"	Skene's Bladder, for Prolapsus Vesicae	1 50

GYNÆCOLOGICAL.

MAL-POSITION.



7563.



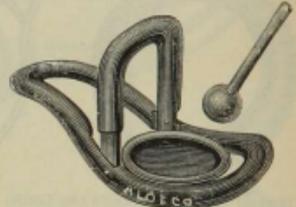
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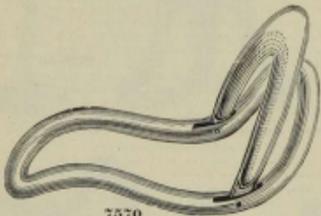
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7568.



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7570.



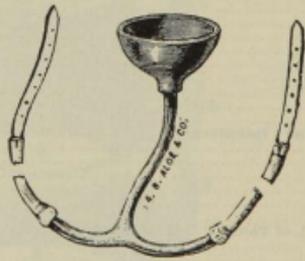
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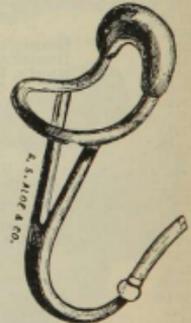
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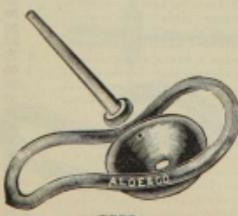
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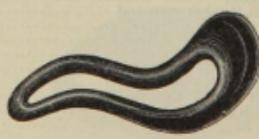
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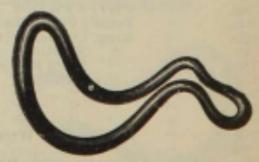
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7582.

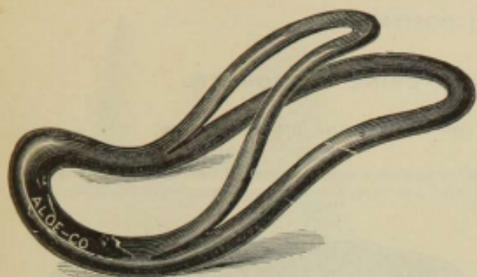


7584.



7585.

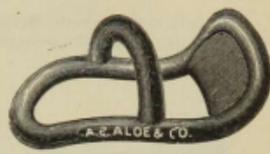
GYNÆCOLOGICAL.
MAL-POSITION.



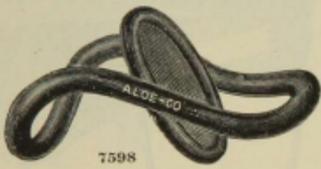
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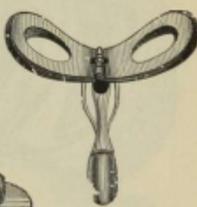
7587.



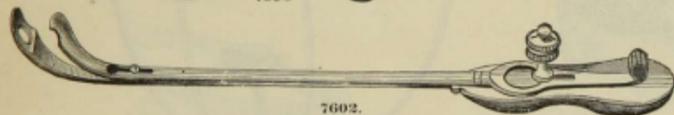
7597.



7598



7599.



7602.

7563.	Pessary, Skene's Cystocoele.....	\$1 50
7564.	" " Urinal Cup.....	1 75
7565.	" " Sleigh.....	50
7566.	" " Smith's, Retroversion, Hard Rubber.....	25
7567.	" " " " Soft ".....	75
7568.	" " Thomas', Anteflexion.....	1 50
7569.	" " " " with Intra-uterine Stem.....	1 75
7570.	" " " " Anteverion, 1st Pattern.....	75
7571.	" " " " " " 2d ".....	75
7572.	" " " " " " 3d ".....	75
7573.	" " Thomas-Cutter's, Anteverion.....	75
7574.	" " " " " " with Cervical Rest.....	2 00
7575.	" " " " " " Cup.....	2 25
7576.	" " " " " " Loop, Anteverion.....	2 00
7577.	" " " " " " Retroversion.....	1 50
7578.	" " " " " " with Cervical Rest.....	2 00
7579.	" " " " " " ".....	2 25
7580.	" " Thomas'-Hewitt's, Retroversion.....	75
7581.	" " Thomas'-Hodge's.....	60
7582.	" " Thomas', Latero-flexion.....	1 25
7583.	" " Thomas'-Noeggerath's.....	75
7584.	" " Thomas', Retroflexion.....	40
7585.	" " " " Retroversion.....	60
7586.	" " Thomas'-Smith's, See Fig. 7384.....	40
7587.	" " Thomas', Stem, Galvanic.....	1 00
7588.	" " " " " " Glass.....	25
7589.	" " Todd's, Retroversion.....	2 25
7590.	" " Van de Warker's, Anteflexion, with Stem.....	1 40
7591.	" " " " " " Retroflexion.....	1 40
7592.	" " Von Romdohr's.....	1 15
7593.	" " Wallace's.....	1 50
7594.	" " Weber's.....	40
7595.	" " Wilhoff's.....	3 75
7596.	" " " " Stem.....	60
7597.	" " Woodward's, Anteflexion.....	1 00
7598.	" " " " Retroversion.....	1 00
7599.	" " Zwank's, Hysterophore.....	1 00
7600.	Pessary Introducer, Chambers'. See Fig. 7471, page 474.....	1 00
7601.	" " " " Lyford's. See Fig. 7533, page 476.....	75
7602.	" " " " Sims'.....	60
7603.	Plugs, Cervical, Boldt's, Hard Rubber.....	60
7604.	" " " " Cleveland's, Glass.....	20
7605.	" " " " Hollow, ".....	25
7606.	" " " " Thomas', ".....	25
7607.	" " " " Wylie's, Hard Rubber.....	50

Prices
 Include Belt,
 as shown in
 Fig. 7483, page 474

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

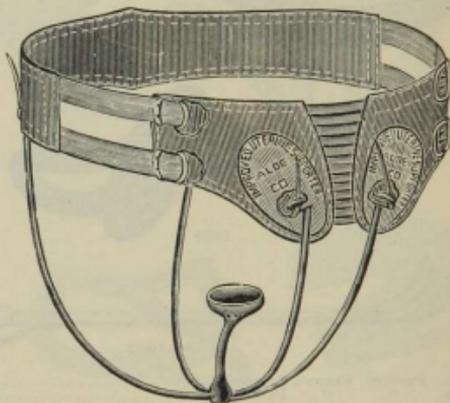
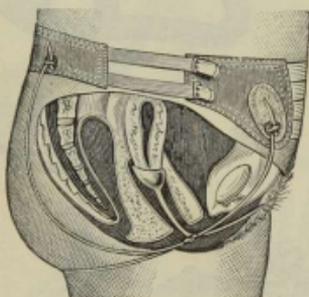
GYNÆCOLOGICAL.

MAL-POSITION.

ALOE'S NATURAL UTERINE SUPPORTER.

A PERFECT INSTRUMENT FOR ALL UTERINE DISPLACEMENTS.

The only objection to the McIntosh Supporter is now overcome. Instead of making the pessaries with a square base, the ends of the pessaries furnished with our Supporter are nicely rounded off, as shown in cut.



7608.

The Improved Uterine Supporter is an Abdominal Supporter, combined with the internal (or uterine) support, thus relieving the uterus of the weight of the abdomen, and assisting the internal uterine support most effectually. The cup and stem is made of polished hard rubber, attached to the abdominal belt by elastic rubber tubes, making it self-adjusting, and thus enables the patient to apply and wear it without causing pain or inconvenience; the cup is perforated, so that all secretions can pass out, and has no joints in which they can collect; it will not corrode like metal; can be bent to any curve or shape required by gently heating over a lamp, or in hot water, and will retain the shape when once changed.

In all cases the instruments should first be applied by a physician, so that the correct length of stem and size of cup may be ascertained and the supporter properly adjusted, but after proper application it can be removed and replaced by the patient without assistance or the least danger, as it is self-adjusting and self-supporting, and cannot cause the least irritation or pain.

It will not interfere with any of nature's needs; can be worn at all times; the patient can walk, sit or take any position of the body without inconvenience, and it does not provoke the disease by constricting or strangulating the neck of the uterus, as many ring pessaries do, nor does the cup enlarge, or distend the walls of the vagina.

The abdominal belt is often used alone in slight cases, and with great success, as it takes the pressure from the uterus, and with its elastic attachments, gently assists nature to bring the parts into their proper places.

The belts are made in three sizes, measuring respectively as follows: Small size, 24 to 28 inches; medium size, 30 to 36 inches; large size, 38 to 42 inches. The medium size will suit the majority of cases, and is sent where no instructions are given.

The medium cup, for prolapsus, as shown above, is $1\frac{1}{4}$ inches in diameter, with stem 3 inches long. This will also suit the majority of cases. The small cup is a little smaller, and stem a little shorter. The cups for retroversion or anteversion are the same in size, but have an extended lip on back or front as shown in the cut, Fig. 7619.

Special cups are furnished for cases of enlargement, ulceration, or any unusual flexion of the womb. In ordering for a case of anteversion or retroversion, or any unusual case, it will be best to describe the case, so that the proper cup can be sent.

Any physician will, on seeing the instrument, understand how to apply it, but full directions are sent with every instrument ordered.

GYNÆCOLOGICAL.

GEHRUNG'S (ST. LOUIS) GYNÆCOLOGICAL INSTRUMENTS.

A NEW INSTRUMENT FOR INTRA-UTERINE MEDICATION.

BY EUGENE C. GEHRUNG, M. D., St. Louis,

President and Gynæcologist to South Side Dispensary, Ex-President St. Louis Obstetrical and Gynæcological Society, Fellow American Gynæcological Society, Membre Titulaire Société Française d' Electro-Thérapie, Etc.

In consideration of the dangers accompanying the injection of fluids into the undilated uterus, by all the means at present in use, I take pleasure in presenting to the profession a new instrument, based on a principle not before applied in the practice of medicine and surgery, by means of which I am enabled to wash out the undilated womb, and make applications of medicinal agents with absolute safety (if such an expression can ever be applied to any procedure in the practice of medicine) to this and other cavities.

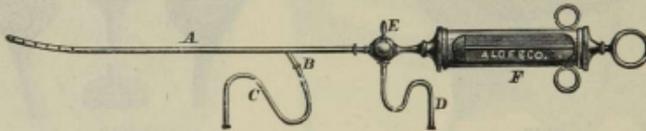


Fig. 1—Represents the entire apparatus, one-third the natural size. The letters A and B are applied to corresponding parts in both engravings.

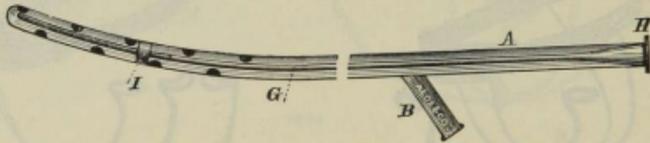


Fig. 2—Represents the Canula cut open lengthwise, natural size.
7400.

The instrument is simple in construction, and consists of a double canula. The outer canula, A, is made one-eighth of an inch in diameter, and is nine and three-fourths inches in length; the inner, G (Fig. 2), is about one-third this size, and is one-eighth of an inch shorter. The outer canula has also an arm or branch B, to which a piece of rubber tubing is attached, which dips into the vessel containing the fluid with which it is desired to inject the uterus. The inner canula has an enlargement at the extremity H, which causes it to fit the outer canula closely at this point, and make an air-tight joint, it being retained in its place by friction only, which permits it to be readily withdrawn and replaced for the purpose of cleansing. The extremity H of the inner canula has a conical finish on its inner aspect to receive an aspirator point and provide an air-tight fitting. The distal extremity of the outer canula is provided with four rows of openings extending one and one-half inches back from the point. At I (Fig. 2) the inner canula is provided with a diaphragm or metal plug fitting closely into the outer tube, and screwed on the inner canula by a thread running down from its point to I.

The aspirator, F terminates at its lower end in a screw point, to which is attached the stop-cock arrangement E (Fig. 1). This stop-cock is so arranged that, by placing the lever in the position as indicated in the cut, the aspirator is completely closed, while the canula A, is in direct connection through the stop-cock with the outlet tube D. By moving it towards and in a line with the syringe, this and the canula A are connected; by turning it to a point opposite to E, the canula A is closed, and connection between the syringe and the tube D (Fig. 1), is established.

GYNÆCOLOGICAL.

GEHRUNG'S (ST. LOUIS) GYNÆCOLOGICAL INSTRUMENTS.

ELECTROLYSIS,

ITS VALUE IN DIAGNOSIS AS WELL AS IN TREATMENT OF INTRA-ABDOMINAL AND INTRA-PELVIC TUMORS BY THE AID OF A NEW INSTRUMENT.

By EUGENE C. GEHRUNG, M. D., St. Louis.

* * * * * The instrument consists of a trocar and canula.

The trocar, including the handle of two and three-fourths inches, measures seven and one-half inches. The steel of the trocar reaches through the handle and terminates below in an expansion or bell to receive the tip of a rheophore. Its stem is four and three-fourths inches long, and rests, with the exception of the point, in the canula. Just behind the point, the stem is thinner than elsewhere, so that the canula, by means of spring power, produced by a split in its distal extremity, will be prevented from causing any unevenness that might impede the introduction. The canula measures four and three-fourths inches in length, and being arranged on the principle of a double canula, it has, inserted at an acute angle, an arm or canula one and one-half inches in length, almost parallel to the straight tube (see engraving), while the distal end of the tube is provided with a number of perforations or holes, like those in other drainage tubes, or like those in my aspirating uterine applicator. Lastly, there is an

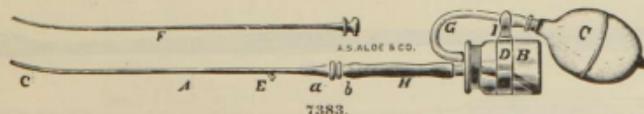


inner tube, which can easily be inserted and withdrawn, as it is fastened merely by a conical friction joint. Near the further end this tube carries a nut or septum which, when inserted into the outer canula, divides the perforated region into two nearly equal parts. A probe point may be attached to the inner canula so as to close the front openings of both canulae, therefore the inner one of these has a few holes in the side, beyond the septum.

All that is necessary beyond what is here described consists in two or three pieces of india-rubber tubing, provided at the ends with perforated metallic tips for the easy attachment to canula and an aspirator of some kind—one piece of tubing to connect a vessel or bottle with the outer or influx canula containing the fluids to be used; a short one to connect the aspirator to the inner or outlet canula, and a third piece to lead to a vessel to receive the waste. * * *

[Reprinted from the American Journal of Obstetrics and Diseases of Women and Children, Vol. XXI, August, 1888.]

DR. GEHRUNG'S INTRA-UTERINE INSUFFLATOR.



See also Dr. Gehrung's Pessaries, Figs. 7497, 7498, 7499 and 7500.

GYNÆCOLOGICAL.

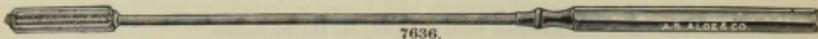
GENERAL OPERATING.

A NEW INSTRUMENT FOR REMOVING CERVICAL MUCUS.

By G. R. BLICKHAHN, St. Louis.

One of the difficulties frequently encountered by the practitioner, is uterine mucus (*mucus infranchissable*, as Pouchet aptly termed it) of such tenacity that it readily defies cotton-wrapped applicators and such other means generally employed for its removal.

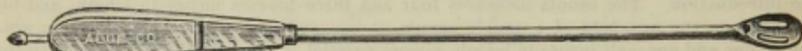
The gynecologist, though he may be equipped with curettes and mucus syringes of diverse patterns, must sometimes admit himself defeated after many unsuccessful attempts to rid the cervical canal of its excess of abnormal secretion.



7636.

With the instrument depicted in the above illustration this can now be easily accomplished. The instrument is to be applied to the os and introduced by a rotary movement, as one introduces a soft rubber catheter. The mucus becomes engaged and is wrapped around the wires, and is brought out with the instrument. The instrument is ten inches long, possessing an octagon handle of a size that admits of its being readily rotated between thumb and index finger. The diameter of the distal extremity equals that of a 15 French catheter, but can be made any size desired; or if the purchaser desires, it may be furnished with three stems of different sizes.

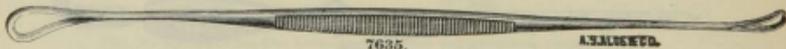
[Extract from Medical Fortnightly, June 1, 1893.]



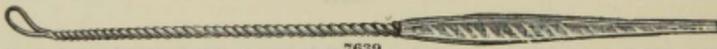
7632.



7634.



7635.

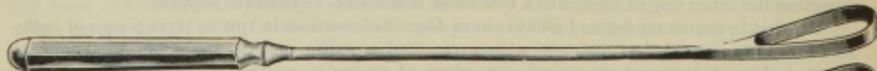


7639.

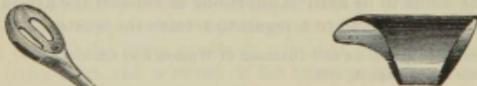


7650.

A. S. ALOE & CO



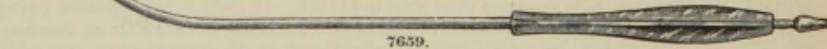
7657.



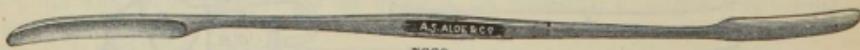
7655.

Actual Sizes.

A. S. ALOE & CO.



7659.

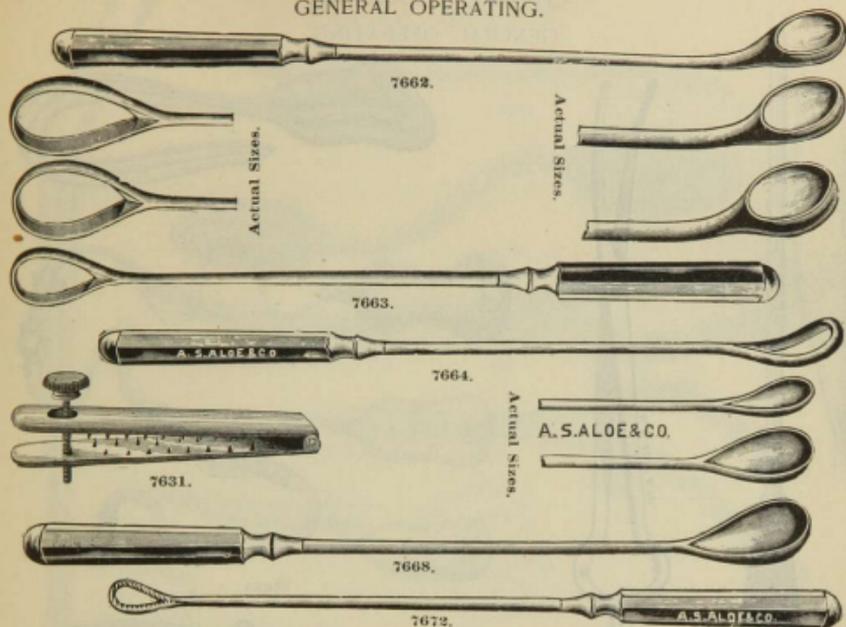


7660.



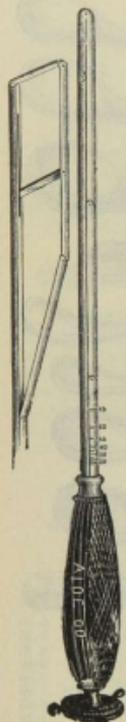
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GYNÆCOLOGICAL.
GENERAL OPERATING.

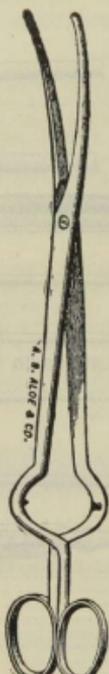


7629.	Cable Carrier, Foster's	\$ 6 00
7630.	Clamp, Noeggerath's, for Prolapsus of Vagina.....	5 25
7631.	Thomas' for Compressing Vaginal Wounds.....	4 25
7632.	Curette, Aloe's, Fountain.....	2 50
7633.	" " Set of 3 Rinsing (1 Skene's, 1 Sims', 1 Thomas')	3 00
7634.	" " Auvar'd's	3 00
7635.	" " Blake's, Double End.....	2 50
7636.	" " Blickhahn's, Mucous.....	1 50
7637.	" " " with 3 Stems, 1 each 10, 12 and 15 American Scale.....	3 00
7638.	" " Boldt's	1 50
7639.	" " Bozeman's	1 50
7640.	" " Burt's, Double End	2 50
7641.	" " Byford's	1 00
7642.	" " Cheatham's	2 00
7643.	" " Clark's, Set of 3, in 1 Handle, 1 Sims', 1 Skene's, 1 Thomas'	2 00
7644.	" " Dolore's, Rinsing, Dull.....	3 00
7645.	" " " " Sharp.....	3 00
7646.	" " Duke's, Mucous	1 50
7647.	" " Emmet's, Large, Medium or Small	each, 1 50
7648.	" " Engelman's (St. Louis). See Fig. 8179, page 524.....	2 00
7649.	" " Goodell's	1 00
7650.	" " Hanks'	1 50
7651.	" " Holbrook's, Rinsing (Holbrook's Mod. Auvar'd's).....	3 00
7652.	" " Marcy's.....	2 65
7653.	" " Martin's, Dull, Double End, like Fig. 7660.....	2 00
7654.	" " Mathieu's, Sharp, Metal Handle, like Fig. 7670, Blade like 7660.....	2 50
7655.	" " Motais', Finger.....	75
7656.	" " Munde's, Large, Medium or Small.....	each, 1 25
7657.	" " " " Set of 3 Sizes, to Fit one Handle.....	2 50
7658.	" " Recamier's	1 50
7659.	" " Reinstetter's, Rinsing	3 00
7660.	" " Roux's, Sharp, Double End	2 50
7661.	" " Simon's, Dull.....	1 50
7662.	" " Sharp, Large, Medium or Small.....	each, 1 75
7663.	" " Sims', Large, Medium or Small	" 1 25
7664.	" " " " Latest.....	1 75
7665.	" " " " Set of 3 Sizes, to Fit one Handle.....	2 50
7666.	" " " " Rinsing	1 50
7667.	" " Skene's, Large, Medium or Small	each, 1 25
7668.	" " " " Set of 3 Sizes, to Fit one Handle	2 50
7669.	" " " " Rinsing.....	1 50
7670.	" " Thomas', Sharp, Large, Medium or Small.....	each, 1 25
7671.	" " " " Rinsing	1 50
7672.	" " " " Serrated Wire	1 25
7673.	" " " " Set of 3 Sizes, to Fit one Handle, either style, Blunt or Serrated.....	2 50
7674.	" " Wylie's	1 75
7675.	Curette and Syringe Combined, Longyear's, 3 Pure Silver Canulated Curettes to Fit Hard Rubber Syringe.....	6 00

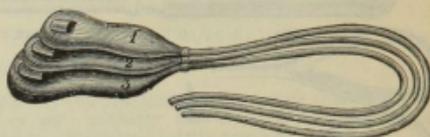
GYNÆCOLOGICAL.
GENERAL OPERATING.



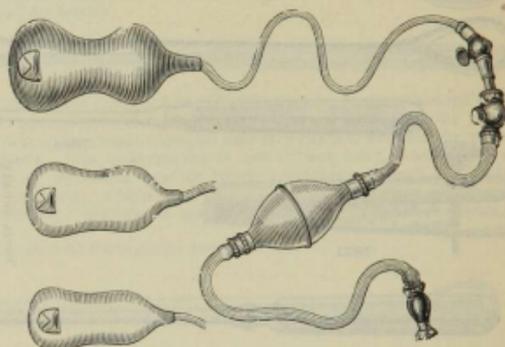
7678.



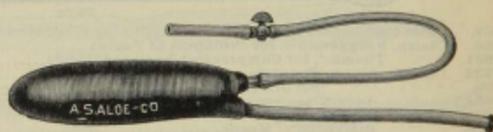
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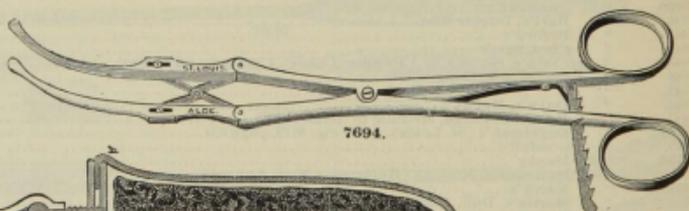
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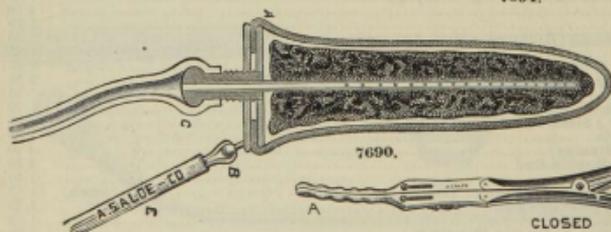
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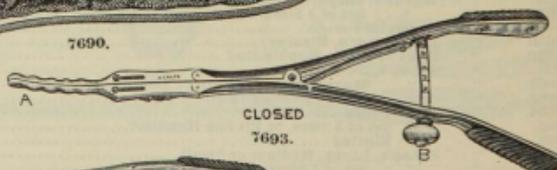
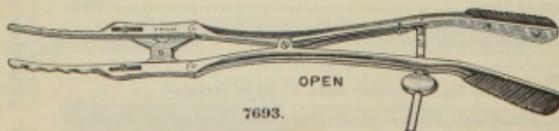
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7694.



7690.

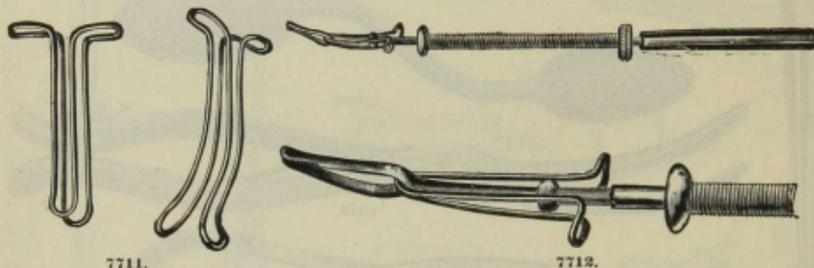
CLOSED
7693.OPEN
7693.

GYNÆCOLOGICAL.

GENERAL OPERATING.

OUTERBRIDGE'S UTERINE DILATOR,

FOR THE CURE OF STERILITY.



"The instrument I introduce in the cut is a very simple affair, consisting of a continuous steel wire made so as to form an anterior and posterior blade, with a slight eversion at one end, and at the other is bent at right angles. This shape adapts it admirably for the position it is to occupy in the cervical canal. The instrument is entirely self-retaining, and in consequence of its form, is not liable to change position. If, however, this should occur, it shows that it is not adapted to this special canal, and another should be selected. The dilators are made straight and curved, three lengths of each.

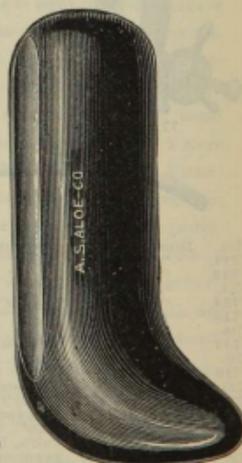
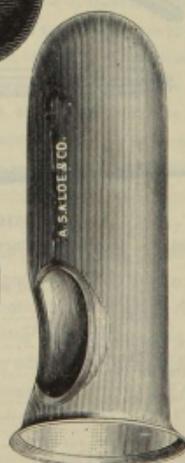
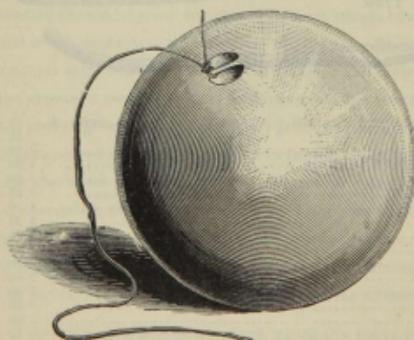
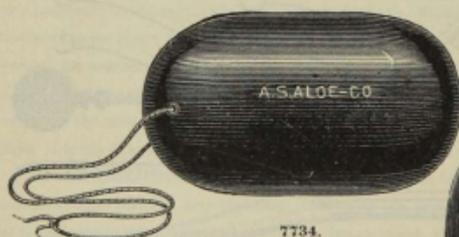
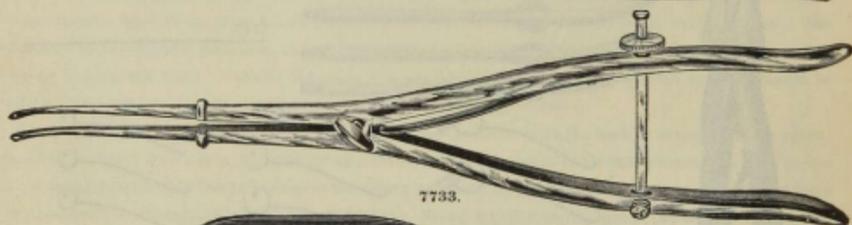
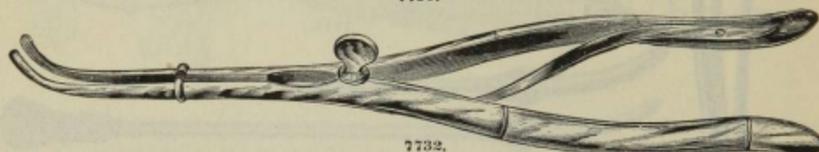
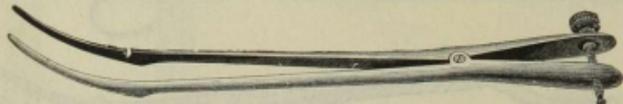
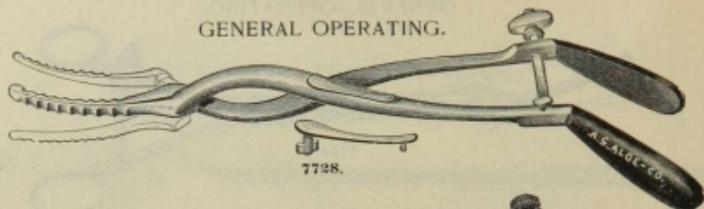
"For introduction, the patient can rest either in Sims' position or on the back, if using a bivalve speculum. The dilator is then put in the grasp of an instrument made especially for this purpose, as seen in the cut. A tenaculum should then be hooked in the cervix to steady it, and a sound passed to ascertain if there is any obstruction or irregularity of the cervical canal. Being satisfied on this point, the dilator can now be introduced in precisely the same way as an ordinary sound. It must be remembered that to obtain a successful result the mucous membrane of the cervix should be uninjured; hence, the operator must proceed with the gentlest kind of manipulation. The proper time for the introduction of the dilator is five or six days previous to the menstrual period, and it should be left *in situ* for at least from five to eight days following the period. During this time conception should be expected and the dilator should be removed at its expiration.

"If conception does not become manifest, the dilator should be introduced again prior to some subsequent menstrual period. Any discharge following the presence of the dilator in the cervix is an indication that the dilator is not properly chosen as to size or shape, and that it should be removed or changed. Great attention should be given to this point, for it stands to reason that if the instrument is not adapted to a given canal it may make decided inroad on the tissues. There are several advantages connected with this dilator: First, it is self-retaining and non-irritating (when properly adjusted), and, unlike all other instruments for this purpose, it permits perfect drainage from the uterine cavity. So far as my experience with this instrument goes, which extends over a period of four months, during which it has been used over eighty times, it has been introduced and worn without the slightest danger, causing no discomfort whatever to the patient. It has also been used with marked success in cases of obstructive dysmenorrhœa, in chronic metritis and endo cervicitis, also as a uterine drain following curetting of the uterus, and as a dilator after trachelorhaphy or amputation of the cervix, to prevent closure of the canal. In cases of pelvic and other abscesses, where complete drainage is essential to success, this instrument will be found valuable. It can, of course, be made sufficiently large for any case. In flexions of the uterus I believe there is a large field for it also."

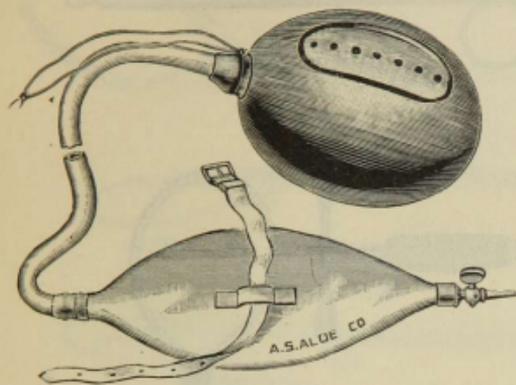
[Dr. Outerbridge's article, from which the above extracts are made, appeared in the Medical Record of April 20, 1889, and we refer those interested to it for further information and citation of cases.]

GYNÆCOLOGICAL.

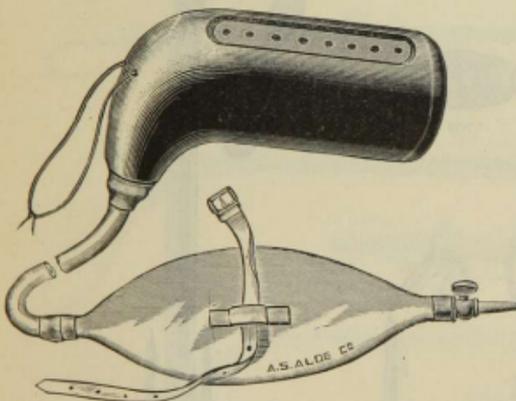
GENERAL OPERATING.



GYNÆCOLOGICAL.
GENERAL OPERATING.



7743.



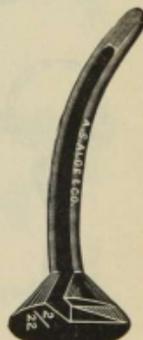
7744.



7751.



7747.

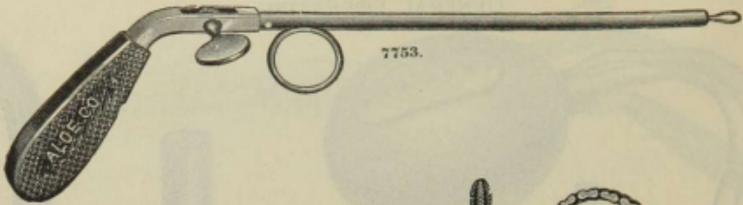


7749.

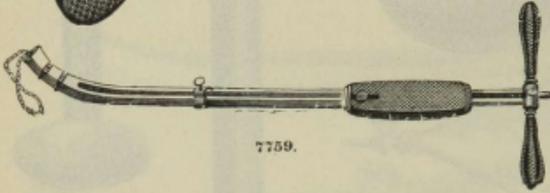
7728.	Dilator, Uterine, Wathen's.....	\$ 6 00
7729.	" " Wessinger's.....	3 50
7730.	" " White's.....	3 00
7731.	" " Wilson's.....	6 50
7732.	" " Wylie's, Plain.....	3 00
7733.	" " " with Set-screw.....	4 50
7734.	Vaginal, Bozeman's, Cylindrical, Hard Rubber.....	75
7735.	" " " Spherical, ".....	75
7736.	" " " Emmet's, Glass, Curved.....	50
7737.	" " " Sims'.....	40
7738.	" " " ".....	Set of 6 sizes, 2 25
7739.	" " " ".....	each, 60
7740.	" " " ".....	Set of 6 sizes, 3 00
7741.	" " Vulvo-Vaginal, Bozeman's.....	75
7742.	Dilator and Corrector, Ohr's.....	5 75
7743.	Drainage Dilator, Bozeman's, Intra-Vaginal.....	3 75
7744.	" " " Vulvo-Vaginal.....	4 50
7745.	Drainage Support, " Utero-Vesical.....	7 50
7746.	" " " Utero-Vesico-Urethral.....	7 50
7747.	Drainage Tube, Boldt's, Hard Rubber, Uterine.....	60
7748.	" " " Cleveland's, Glass, Cervical.....	20
7749.	" " " Wylie's, Hard Rubber, Uterine.....	50
	Wylie's Hard Rubber Uterine Drainage Tubes are designed to be used after rapid dilata- tion of the uterus, instead of glass plugs or stem passaries. They afford perfect drainage and thereby lessen the danger of septicæmia, etc., etc.	
7750.	Dry Copper, Thomas', Hard Rubber, Large, 1¼ inches diameter.....	1 50
7751.	" " " " Medium, 1 ".....	1 25
7752.	" " " " Small, ¾ ".....	1 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

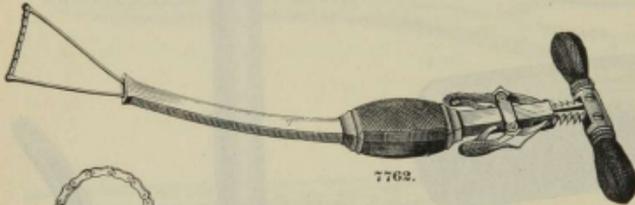
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GENERAL OPERATING.



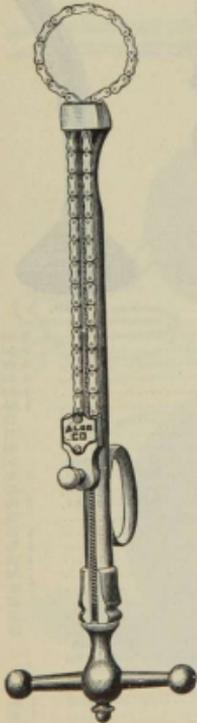
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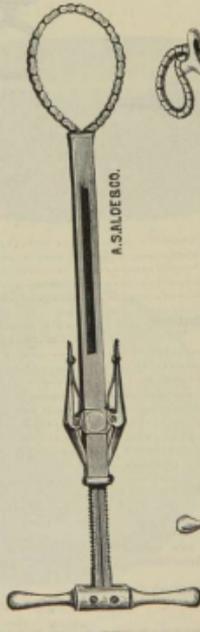
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7762.



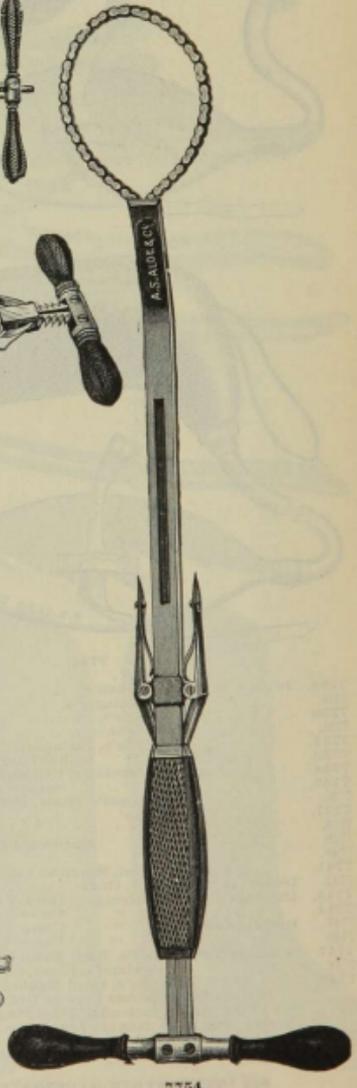
7760.



7757.



7758.



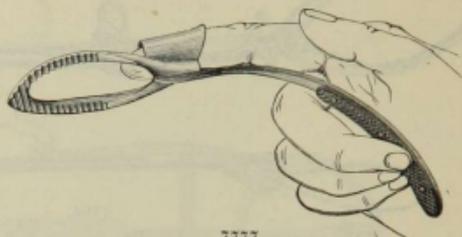
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GYNÆCOLOGICAL.

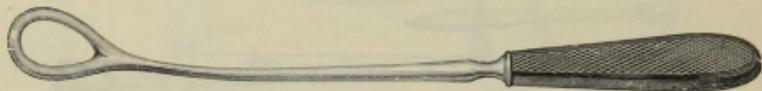
GENERAL OPERATING.



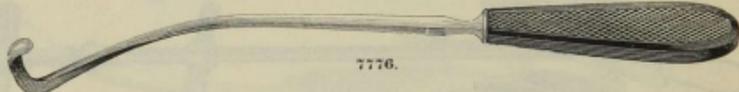
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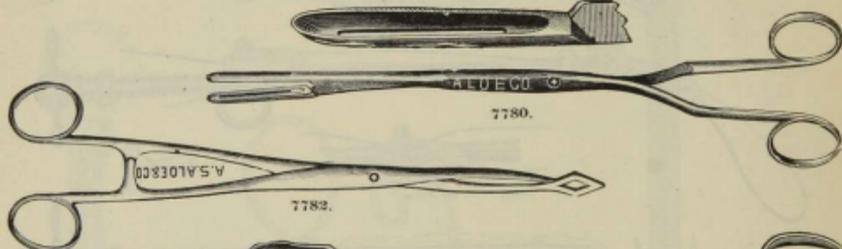
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7775.

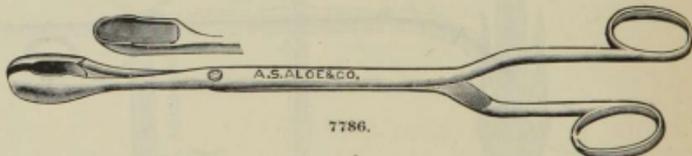


7776.

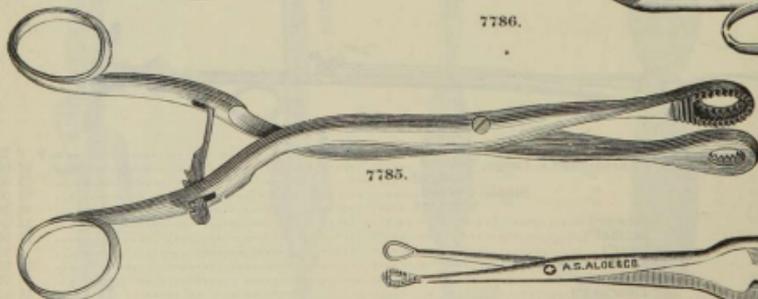


7780.

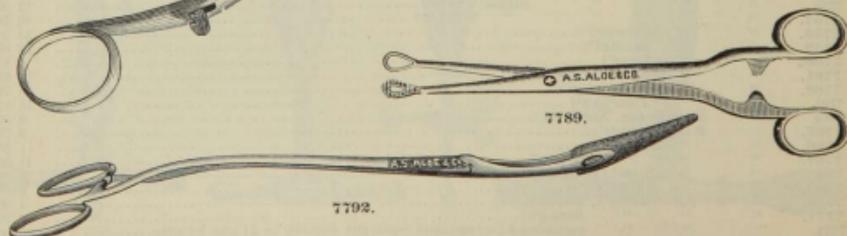
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7786.



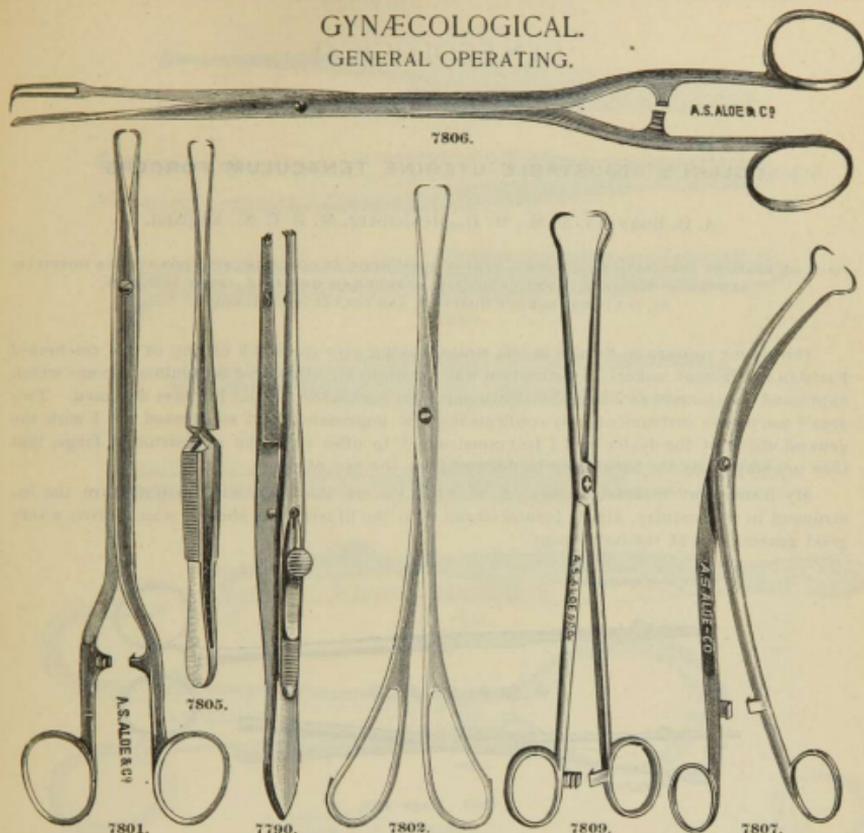
7785.



7789.

7792.

GYNÆCOLOGICAL.
GENERAL OPERATING.



7774.	Enucleator, Emmet's.....	\$ 1 20
7775.	" " Sims'.....	2 50
7776.	" " Simpson's.....	3 50
7777.	" " Yarrow's.....	3 50
7778.	Fixator, Byrnes', Uterine.....	1 75
7779.	Forceps, Angle, Wylie's.....	2 25
7780.	" " Curette, Emmet's.....	2 50
7781.	" " Dilating, Cushing's, Pelvic Abscess.....	4 25
7782.	" " Polypus, Baer's.....	3 00
7783.	" " Cheron's.....	2 50
7784.	" " Lier's.....	4 00
7785.	" " McClintock's.....	4 50
7786.	" " Schultz's, Cutting Edge.....	3 50
7787.	" " Sims'.....	2 75
7788.	" " Wales'.....	2 25
7789.	" " Wilson's.....	2 50
7790.	" " Seizing, Sims'.....	2 50
7791.	" " Sponge Holding, Byford's.....	2 00
7792.	" " Tent (Introducing), Collin's.....	2 00
7793.	" " " " Wilcox's.....	2 25
7794.	" " Tenaculum, Ball's.....	1 90
7795.	" " " " Braun's.....	2 50
7796.	" " " " Byrnes'.....	4 50
7797.	" " " " Collin's, Adjustable. See illustration and description, page 496.....	4 00
7798.	" " " " Courty's, Adjustable.....	3 00
7799.	" " " " " " with Setscrew.....	2 50
7800.	" " " " Emmet's.....	2 50
7801.	" " " " Engelman's (St. Louis).....	2 50
7802.	" " " " Hanks'.....	2 00
7803.	" " " " " " Double.....	2 50
7804.	" " " " Mastin's.....	2 25
7805.	" " " " Nott's, Cross-Acting.....	3 25
7806.	" " " " Schultz's, with One Point Probed.....	3 55
7807.	" " " " Skene's.....	2 00
7808.	" " " " Wooster's.....	1 90
7809.	" " " " Wylie's.....	2 25

GYNÆCOLOGICAL.

GENERAL OPERATING.

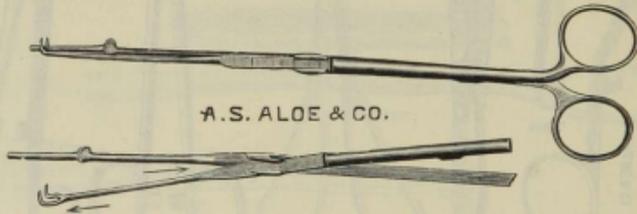
COLLIN'S ADJUSTABLE UTERINE TENACULUM FORCEPS.

A. C. BERNAYS, A. M., M. D., Heidelberg, M. R. C. S., England.

PROF. OF ANATOMY AND CLINICAL SURGERY, MARION-SIMS' MEDICAL COLLEGE; SURGEON TO PIUS HOSPITAL, LUTHERAN HOSPITAL, WOMAN'S HOSPITAL, REBEKAH HOSPITAL, CHIEF SURGEON ST. LOUIS EMERGENCY HOSPITAL AND POLYCLINIC, ST. LOUIS.

During my sojourn in France in '90, while looking over the stock of one of the celebrated Parisian instrument makers, my attention was drawn to an adjustable tenaculum forceps which impressed me at once, as being the instrument, *par excellence* for the purpose designed. Two year's use of the instrument only confirms my first impression, and so pleased am I with the general utility of the device that I feel constrained to offer it to the profession at large, that they too may enjoy the benefits to be derived from the use of same.

My instrument makers, Messrs. A. S. Aloe Co. of this city, who manufacture the instrument in this country, kindly furnished me with the illustration shown, which gives a very good general idea of the instrument.



7797. Page 495.

From a mechanical standpoint it is one of the most perfect products of the instrument makers' art. The feature of the instrument is the adjustable joint, which permits of the toothed blade being advanced or withdrawn as the operator may desire. It is also separable and permits of the ready cleansing and sterilization of the instrument, a fact of no small importance in these days of antiseptic surgery.

From the gynæcologists' point of view it has decided advantages over all other vulsellum forceps, and it works admirably in the field for which it is intended.

The one blade is a uterine probe, with a shoulder to prevent its introduction beyond the inner os, the other blade resembles an ordinary double tenaculum.

In using the forceps the probe blade is introduced in the os and by advancing or withdrawing the toothed blade it can be made to grasp any amount of the cervical tissue desired, on either the anterior or posterior lips of the womb, and by means of a single (step) catch can be securely held in whatever position caught.

It is the ideal instrument for the performance of the numerous gynæcological operations involving the cervix and the outer os. It is especially useful in bringing down the uterus in the performance of Emmet's operation (trachelorrhaphy).

By its use the operation is rendered more easy of accomplishment, as first one lip and then the other can be secured, and the denudation more easily completed.

GYNÆCOLOGICAL.
GENERAL OPERATING.

7810.



7811.



7812.



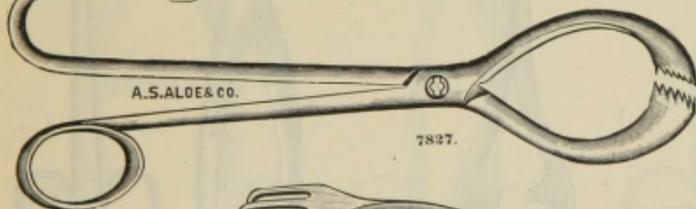
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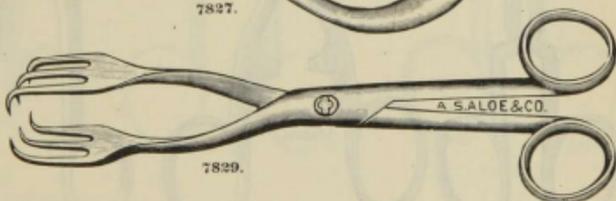
7823.



7825.



7827.

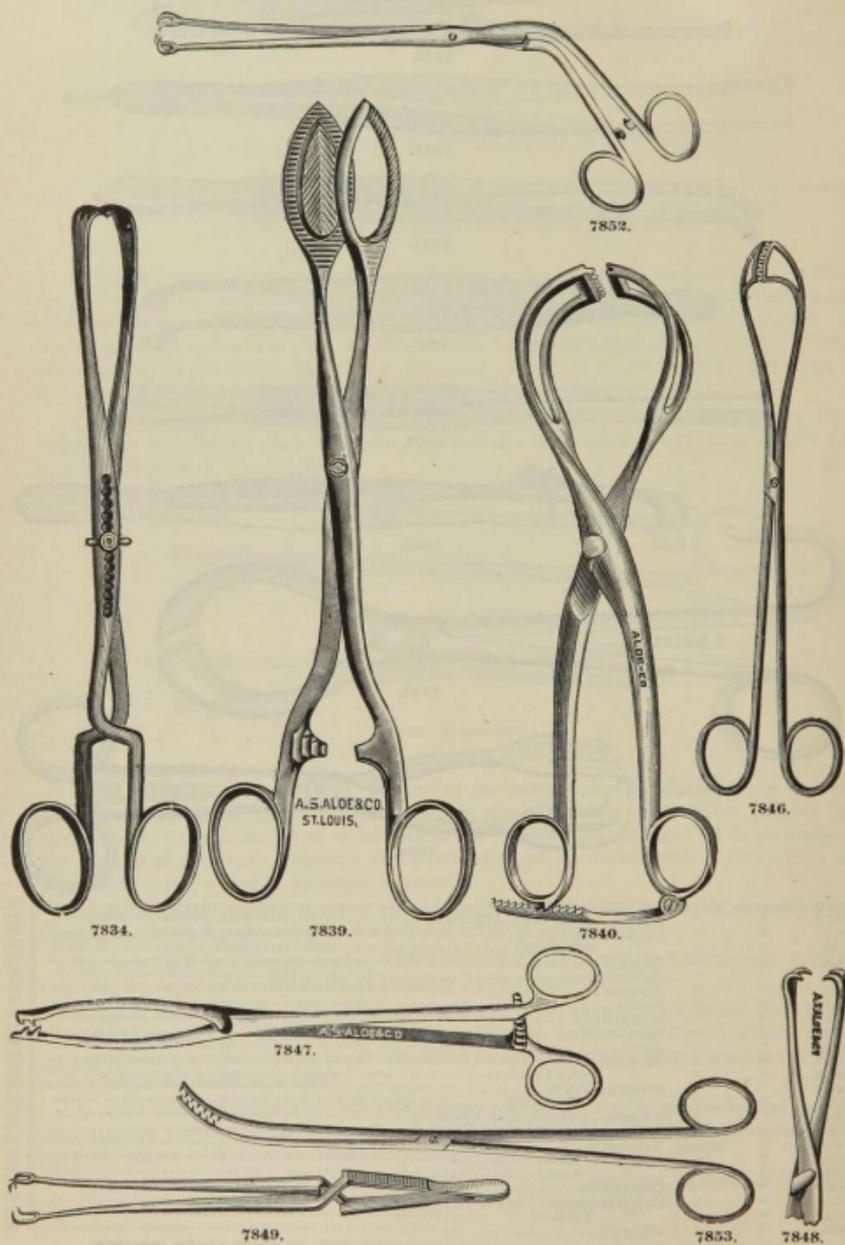


7829.

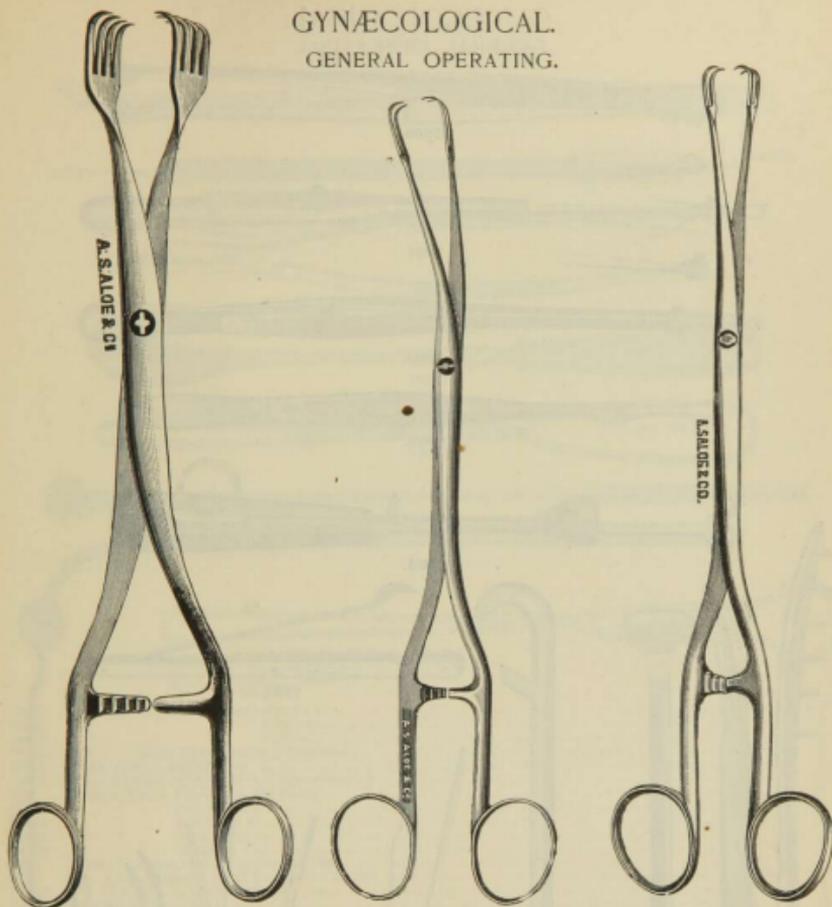
7810.	Forceps, Tissue, Adjustable, with Catch	\$3 00
7811.	“ Agnew's, with Wire Adjuster.....	2 00
7812.	“ Curved, Plain.....	1 50
7813.	“ “ with Catch	2 25
7814.	“ Dawson's	3 00
7815.	“ Jackson's	2 00
7816.	“ Manton's	2 25
7817.	“ Nott's	2 00
7818.	“ Schroeder's	3 00
7819.	“ Shentone's	3 25
7820.	“ Sims'	2 50
7821.	“ Skene's, Plain.....	1 50
7822.	“ “ with Catch.....	2 25
7823.	“ Straight, Plain.....	1 50
7824.	“ “ with Catch.....	2 00
7825.	“ Thomas', Curved, with Catch.....	3 00
7826.	“ “ Straight, with Catch.....	3 00
7827.	Tumor, Bellamy's	5 00
7828.	“ Billroth's, Large.....	4 50
7829.	“ “ Small	3 50
7830.	“ Campbell's.....	6 00
7831.	“ Collin's, Serrated Jaws.....	5 00
7832.	“ “ Toothed “	7 50
7833.	“ Guyon's.....	9 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.
GENERAL OPERATING.



GYNÆCOLOGICAL.
GENERAL OPERATING.



7842.

7855.

7857.

7834.	Forceps, Tumor, Greenhalge's.....	\$ 4 50
7835.	" " Nélaton's.....	2 50
7836.	" " Mathien's.....	5 00
7837.	" " Péan's.....	5 00
7838.	" " Reverdin's, 8 inch.....	4 50
7839.	" " " 10½ ".....	3 50
7840.	" " Up de Graff's.....	9 00
7841.	" " Wilson's.....	4 50
7842.	Vulsellum, Billroth's, 8-Prong, with Step Catch.....	2 50
7843.	" " Byford's, Large.....	2 75
7844.	" " " Medium.....	2 50
7845.	" " " Small.....	2 25
7846.	" " Byrnes'.....	3 00
7847.	" " Collin's, Serrated.....	3 00
7848.	" " " Toothed.....	3 00
7849.	" " Cross-Acting.....	2 25
7850.	" " Cushing's.....	2 25
7851.	" " Eastman's, Mammoth. Illustrated and described on page 518.....	6 50
7852.	" " Leonard's.....	2 50
7853.	" " Musseau's.....	1 75
7854.	" " Schroeder's, Curved, Plain.....	2 50
7855.	" " " " with Catch.....	2 25
7856.	" " " " Straight, Plain.....	2 00
7857.	" " " " with Catch.....	2 25
7858.	" " Schultz's.....	3 00
7859.	" " Steele's.....	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.
GENERAL OPERATING.



7860.



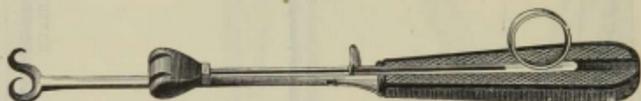
7861.



7862.



7863.



7864.



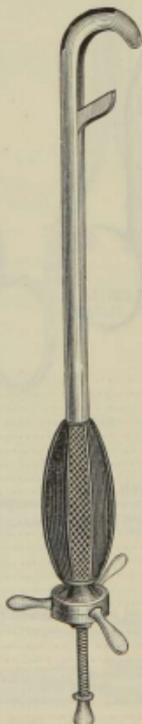
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7867.



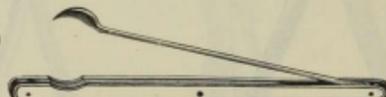
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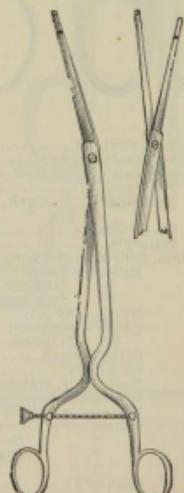
7876.



7868.



7881



7869.



7870.

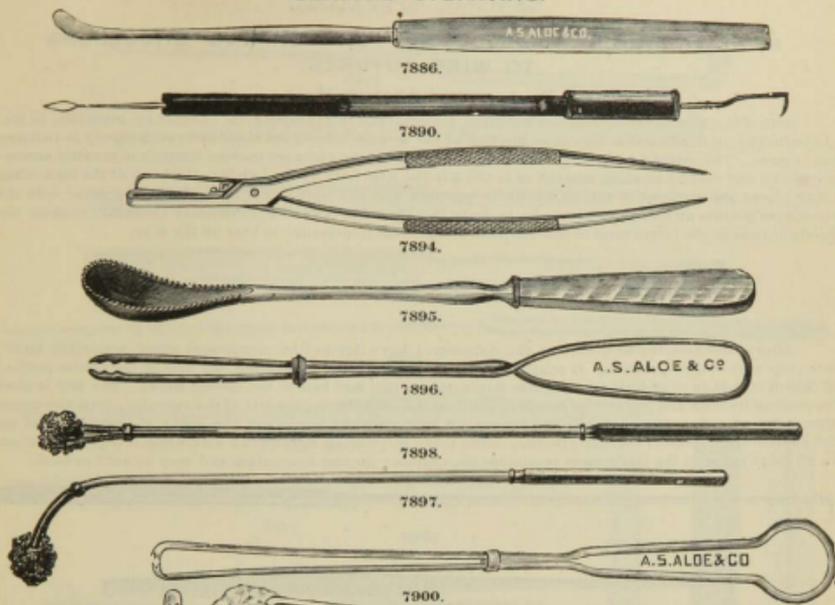


7879.



7880.

GYNÆCOLOGICAL.
GENERAL OPERATING.



7860.	Forceps, Wire Twisting, Emmet's.....	\$ 2 25
7861.	" " " Fitch's.....	3 25
7862.	" " " Nott's.....	2 25
7863.	" " Wire Shouldering, Thomas'.....	3 25
7864.	Hook, Sims', Vulsellum.....	4 25
7865.	Hook Retractor, Martin's, Colporrhaphy.....	1 75
7866.	Hysterotome, Bishop's, Dilating.....	10 00
7867.	" Peaslee's.....	3 50
7868.	" Simpson's.....	5 00
7869.	" Stohiman's.....	5 25
7870.	" White's.....	9 00
7871.	Knife, Lauenstein's, Colporrhaphy.....	1 50
7872.	" Leneker's, Scarifying, Right and Left.....each,	1 50
7873.	" Martin's, Colporrhaphy.....	1 75
7874.	Ligator, Cintral's.....	2 00
7875.	" Van Buren's, see Fig. 6329, page 346.....	5 25
7876.	Polypotome, Aveling's.....	6 00
7877.	" Parvin's.....	11 25
7878.	" Simpson's.....	5 50
7879.	Scarifier, Bittle's, Spear Point.....	75
7880.	" Chapman's.....	1 00
7881.	" " Folding.....	1 75
7882.	" " Cutter's.....	5 25
7883.	" " Fritsch's, Sichel Shape.....	1 25
7884.	" " Kelly's.....	1 00
7885.	" " Kristeller's, Spear Point.....	1 25
7886.	" " Nicaise's.....	2 25
7887.	" " Pinkham's.....	5 00
7888.	" " Storer's.....	4 50
7889.	Scarifier and Exhauster, Reese's.....	3 75
7890.	Scarifier and Tenuaculum, Bittle's.....	1 75
7891.	Scarifying Sound, Skene's.....	4 50
7892.	Scarifying Tenuaculum, Kelly's (Knife Blade).....	1 25
7893.	Scissors, Bozeman's, Angular Scarifying, for incising the cervix.....	2 50
7894.	" " Thomas', Double Uterine, for incising the cervix.....	4 50
7895.	Scoop, Thomas', Serrated (Spoon Saw).....	2 50
7896.	Sponge Holder, Bernays' (St. Louis), Steel.....	1 00
7897.	" " Emmet's, Curved.....	35
7898.	" " " Straight.....	35
7899.	" " Hart's.....	35
7900.	" " Husson's.....	1 00
7901.	" " Korte's.....	75
7902.	" " Kristeller's, with long Slide, to operate with one hand.....	75
7903.	" " Sims' Curved.....	1 00
7904.	" " " Straight.....	35

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

GENERAL OPERATING.

A NEW UTERINE TENACULUM FOR FORMING SHOULDERS TO WIRE SUTURES.

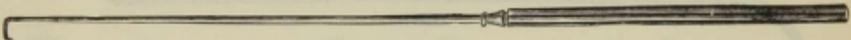
By AUGUSTIN ARANGO, M. D.

Both difficulty and inconvenience are often encountered in gynecological operations, especially in trachelorrhaphy, in bending the wire over the line of the wound to form the shoulders, preliminary to twisting the sutures. The method commonly resorted to by means of the ordinary uterine tenaculum is easily accomplished on one side by bending upward or to the left the wire held by the twister; the hook of the tenaculum being placed above the wire, acts as a counter-pressure and one shoulder is formed. On the other side the procedure is quite awkward, for, in order to make the shoulder here, it is sometimes necessary to cross the hands or change the instrument in the hands to bring counter-pressure to bear on the wire.



7905.

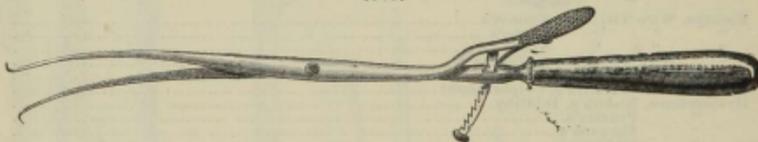
After experimenting to overcome the difficulty, I have devised an instrument which materially facilitates this part of the operation. It consists of a solid steel uterine tenaculum, the arm or horizontal portion of which is bent so as to form two angular depressions—the first below, the second above. The first is used for making traction and counter-pressure in forming the shoulder on the left of the operator, or on the upper side of the wound, as the case may be; the second facilitates the forming of the lower shoulder, or that on the right of the operator, counter-pressure being made by pushing against the wire while it is properly bent. In all other respects the instrument resembles the ordinary uterine tenaculum and may be used as such.



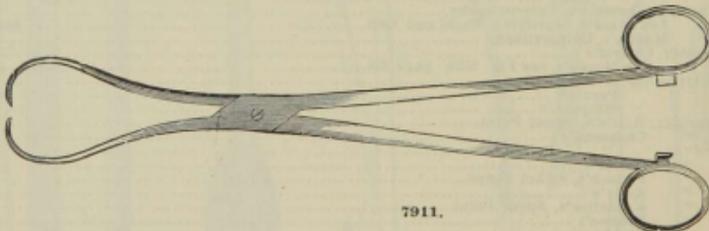
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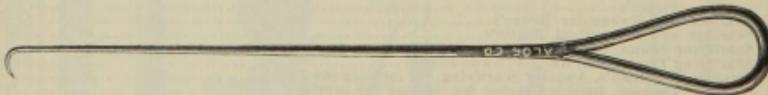
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7910.



7911.

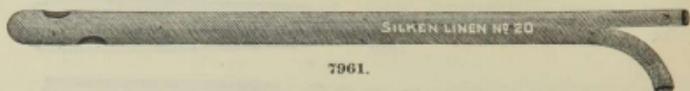


7913.

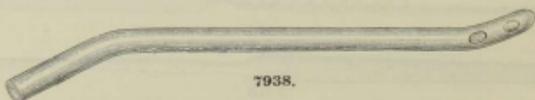


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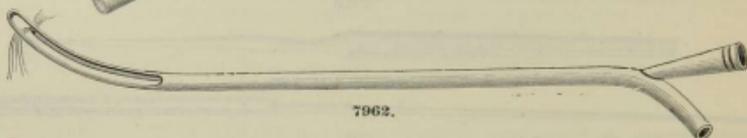
GYNÆCOLOGICAL.
 URETERAL—URETHRAL—URO-CYSTIC.



7961.



7938.



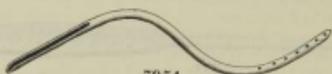
7962.



7948.



7939.



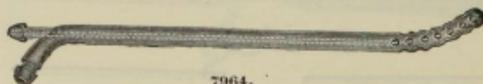
7954.



7955.



7978 and 7979.



7964.



7968.

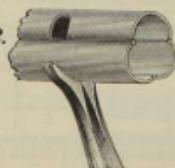


7970.



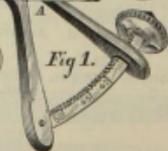
7972.

Fig 2.



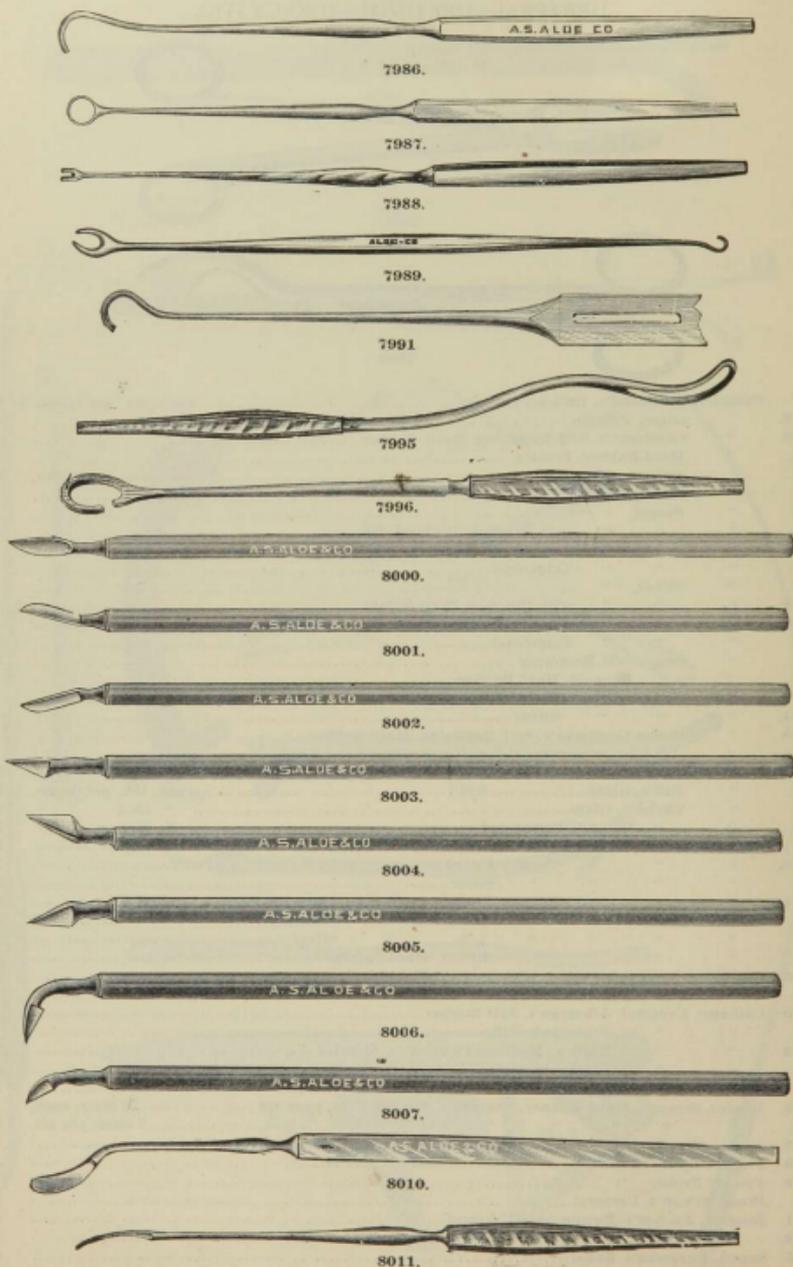
7977.

Fig 1.

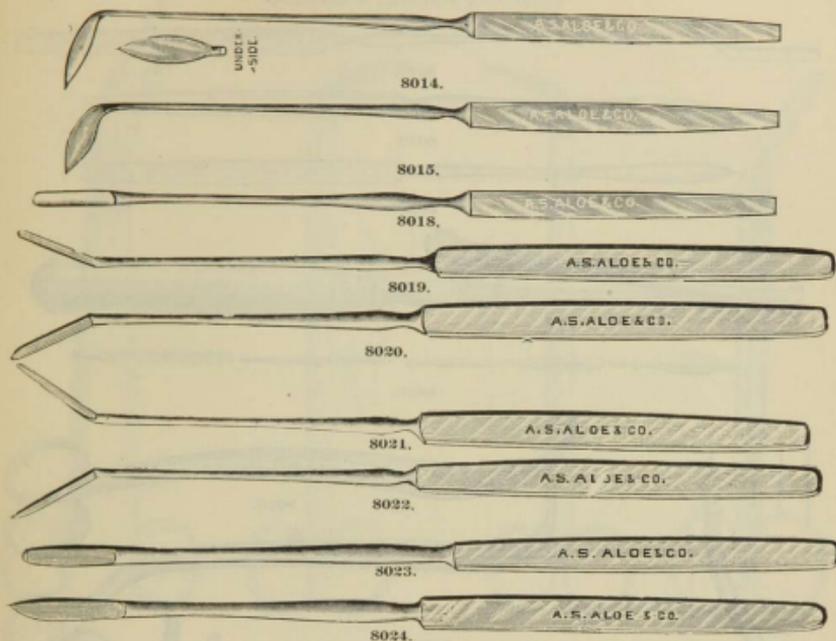


7983.

GYNÆCOLOGICAL.
VESICO-VAGINAL FISTULA.



GYNÆCOLOGICAL.
VESICO-VAGINAL FISTULA.



7984.	Blunt Hook, Bozeman's.....	\$ 1 00
7985.	" " Emmet's.....	1 00
7986.	" " Sims'.....	1 00
7987.	Counter-pressor, Skene's.....	1 15
7988.	Counter-pressor Fork, Sims'.....	1 00
7989.	Counter-pressor Fork and Tier, Nilson's.....	1 25
7990.	Counter-pressor Hook, Bozeman's.....	1 00
7991.	" " Emmet's.....	1 00
7992.	" " McDonald's.....	1 50
7993.	" " Sims'.....	1 00
7994.	" " Wylie's.....	1 00
7995.	Counter-pressor Staff, Harris'.....	1 50
7996.	Counter-pressor Tenaculum, Hanks'. See also Fig. 7924, page 503.....	1 50
7997.	Cystitis Eyelet, Emmet's, Glass.....	25
7998.	Dilator-Forceps, Thomas', for separating vagina and bladder.....	2 25
7999.	Fistula Tube, Emmet's.....	25
8000.	Knife, Boddart's, Convex, Fistula.....	1 50
8001.	" " " " Angular, Right.....	1 75
8002.	" " " " " Left.....	1 75
8003.	" " " " Lancet-shape, Fistula.....	1 50
8004.	" " " " " Angular, Right.....	1 75
8005.	" " " " " Left.....	1 75
8006.	" " " " " Full Curve.....	1 75
8007.	" " " " " Lesser Curve.....	1 75
8008.	" " Bozeman's, Angular, Fistula, Right.....	1 25
8009.	" " " " " Left.....	1 25
8010.	" " " " Bent, ".....	1 25
8011.	" " " " Delicate, ".....	1 25
8012.	" " " " Scalpel, ".....	1 25
8013.	" " Emmet's, Ball and Socket, Fistula.....	1 75
8014.	" " Nott's, Angular, Fistula, Double-edge.....	1 25
8015.	" " " " Curved, Fistula.....	1 25
8016.	" " Scott's, Bent, Fistula.....	1 50
8017.	" " " " Double-edge, Fistula.....	1 50
8018.	" " " " Straight Fistula, Blunt End.....	1 25
8019.	" " Simon's, Angular, Fistula, Blunt End, Right.....	1 50
8020.	" " " " " Left.....	1 50
8021.	" " " " " Sharp Point, Right.....	1 50
8022.	" " " " " " Left.....	1 50
8023.	" " " " Straight, " Blunt Point.....	1 50
8024.	" " " " " Sharp ".....	1 50
8025.	" " " " " Double-edge.....	2 00
8026.	" " " " " Lancet Shape.....	2 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.
VESICO-VAGINAL FISTULA.



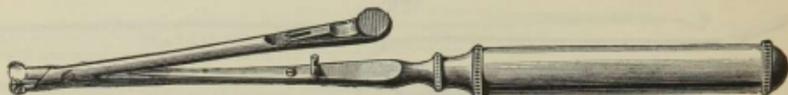
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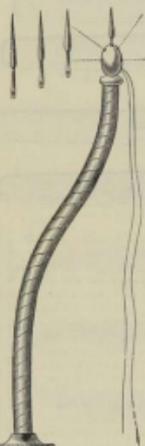
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8030.



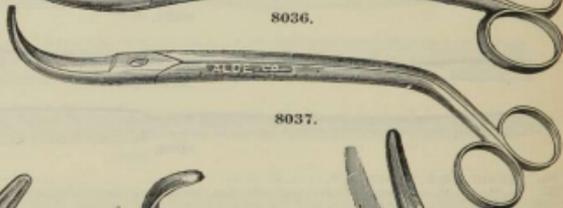
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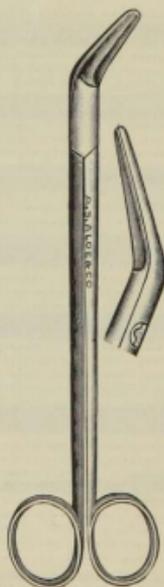
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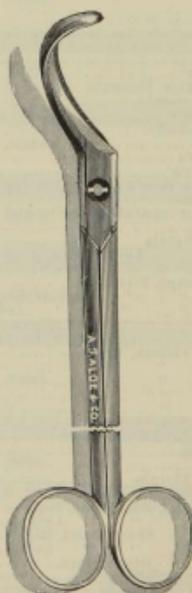
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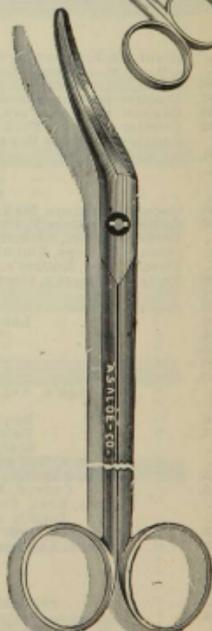
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8039.

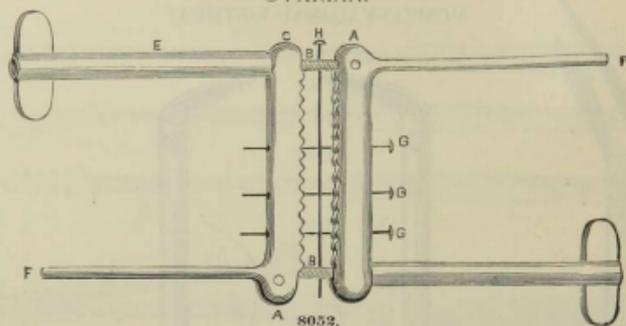


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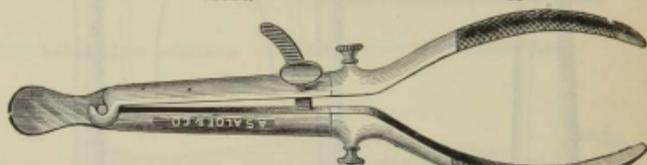


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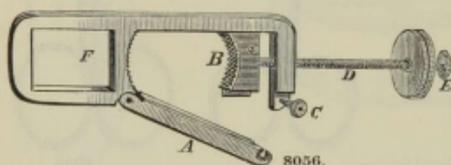
GYNÆCOLOGICAL.
OVARIAN.



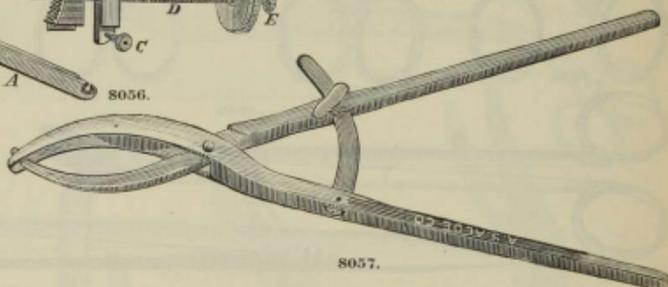
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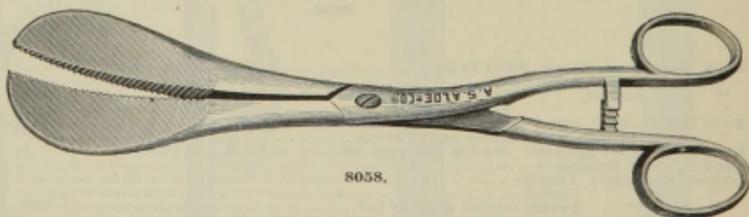
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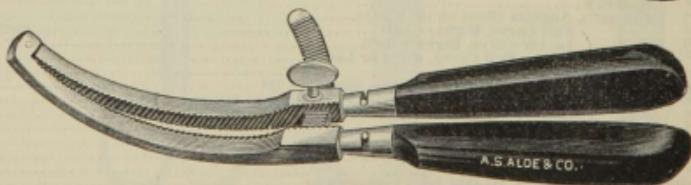
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8057.



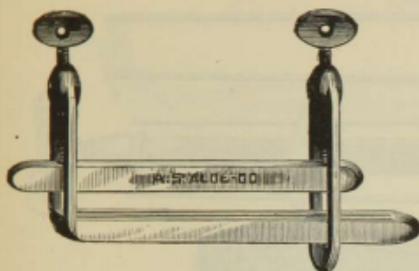
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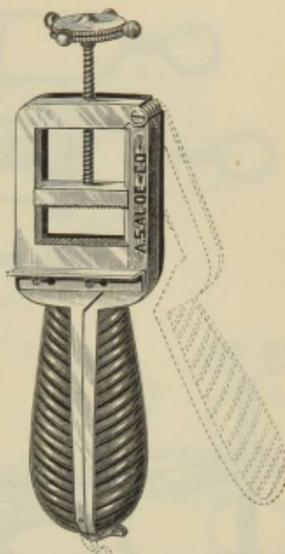
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GYNÆCOLOGICAL.

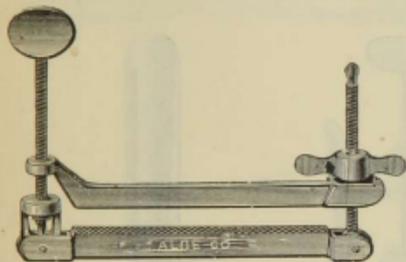
OVARIAN.



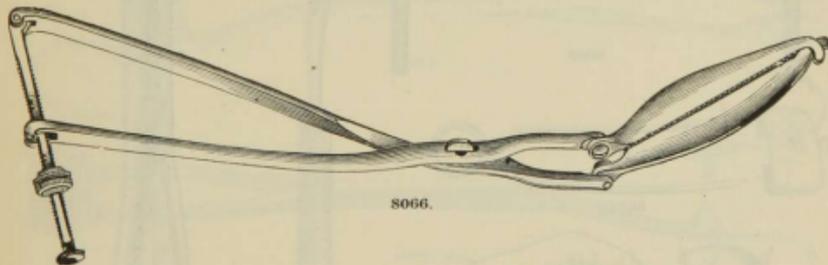
8059.



8064.



8070. See Page 513.



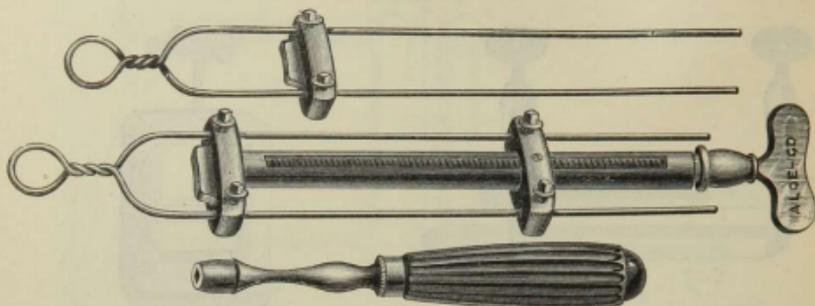
8066.

8052.	Clamp, Atlee's Ovarian.....	\$ 4 50
8053.	" Baker-Brown's Ovarian	9 00
8054.	" Byford's	13 50
8055.	" Darby's	5 25
8056.	" Dawson's	6 00
8057.	" Eastman's	6 50
8058.	" Esmarch's	4 50
8059.	" Guerride's	4 50
8060.	" Keith's	7 50
8061.	" Koeberle's	6 50
8062.	" Mixer's	24 00
8063.	" Nott's	9 00
8064.	" Skene's	11 25
8065.	" Smith's	7 50
8066.	" Storer's	8 25

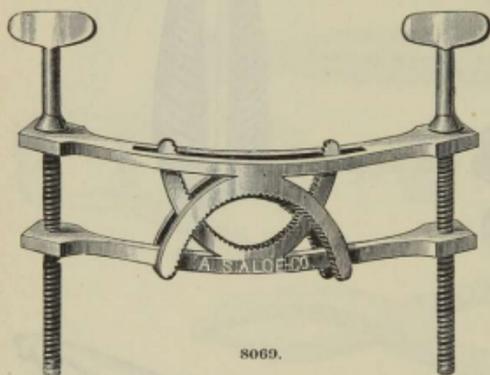
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

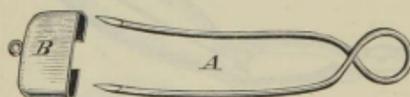
OVARIAN.



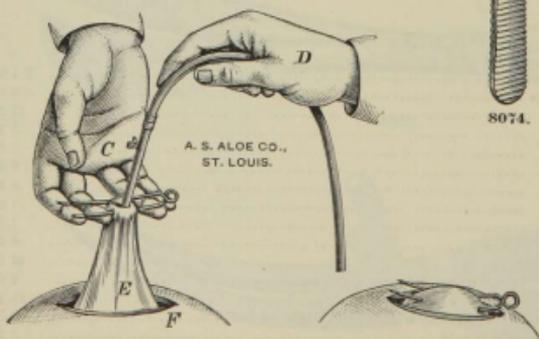
8067.



8069.



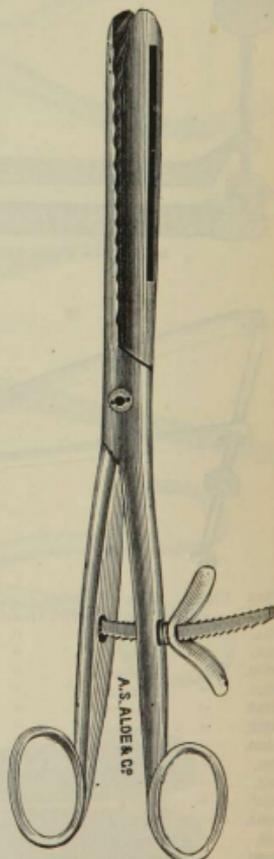
8072.

A. S. ALOE CO.,
ST. LOUIS.

8072. Showing Application.



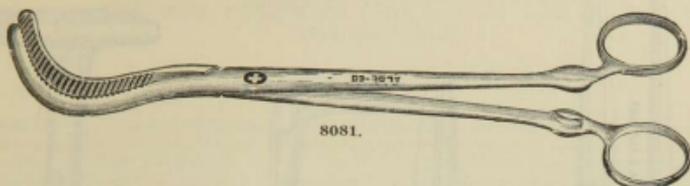
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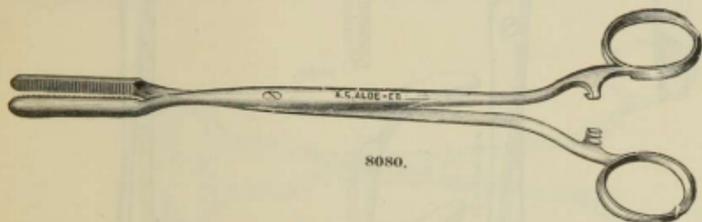
8075.

GYNÆCOLOGICAL.

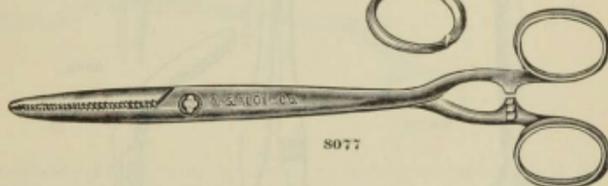
OVARIAN.



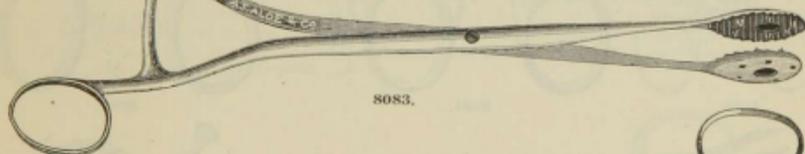
8081.



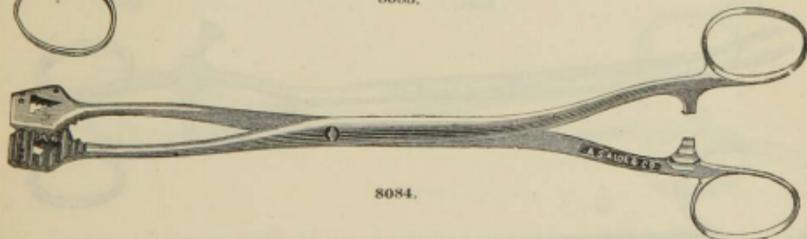
8080.



8077



8083.

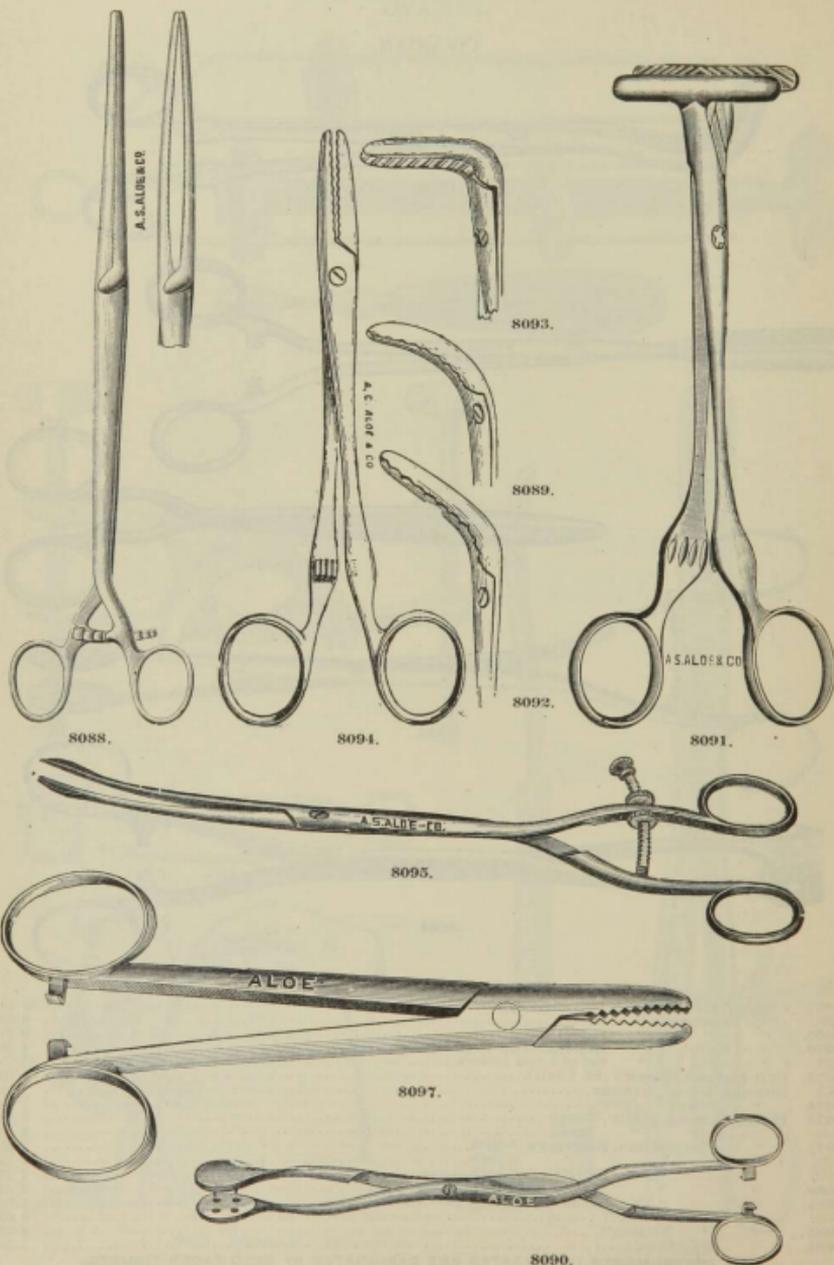


8084.

8067.	Clamp, Tait's, Ovarian.....	\$9 00
8068.	" Thomas', " 	4 50
8069.	" " " " Latest.....	9 00
8070.	" Wells', " Illustrated on page 511.....	4 50
8071.	" " " " Set of 3 and Levers.....	18 75
8072.	Cyst Elevator, Borch's (St. Louis).....	1 00
8073.	Director, Keyes', Ovarian.....	1 15
8074.	" Sims', " 	1 15
8075.	Forceps, Clamp, Wells', Large.....	6 00
8076.	" " " Small.....	4 50
8077.	" Compression, Ethridge's, 6-inch.....	2 25
8078.	" " " " 8-inch.....	2 75
8079.	" " " " Keith's, 6-inch.....	2 25
8080.	" " " " " 8-inch.....	3 00
8081.	" " " " Skene's.....	4 00
8082.	" Cyst, Collins'.....	4 50
8083.	" " Nclaton's.....	4 00
8084.	" " Péan's.....	4 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.
OVARIAN.

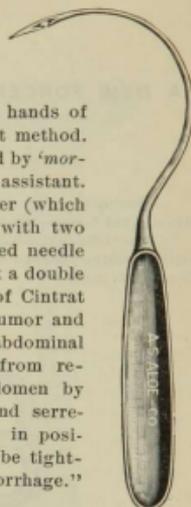


GYNÆCOLOGICAL.

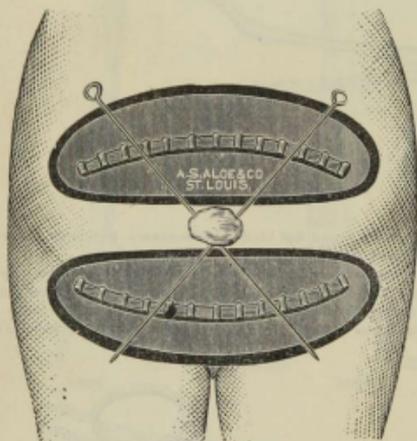
ABDOMINAL HYSTERECTOMY.

PÉAN'S PEDICAL NEEDLE.

"The extra peritoneal method has met with great success in the hands of Péan, of Paris, who has the merit of having elaborated it as a distinct method. He operates as follows: The tumor having, if necessary, been reduced by '*morcellement*,' it is drawn out of the abdomen and held perpendicularly by an assistant. The operator, having ascertained with a sound the relations of the bladder (which only in rare cases requires to be dissected of), transfixes the cervix with two strong pins at right angles to each other. Below these pins the curved needle (represented in Fig. 8109) is carried through the cervix and drags back a double wire. This wire is divided, and each half is fitted into a *serre-nœud* of Cintrat (Fig. 8118), by means of which it is both tightened and twisted. The tumor and uterus are amputated above the pins. The pedicle is placed in the abdominal wound, and is kept from retracting into the abdomen by means of the pins and *serre-nœud*; these are left in position so that they may be tightened in case of hæmorrhage."



8109.



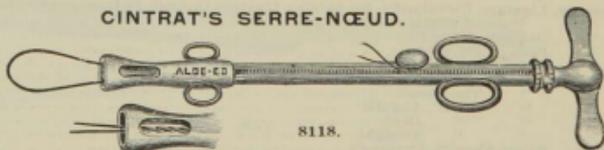
8117.

SIMS' HARD RUBBER ABDOMINAL PROTECTORS.

"The two rubber plates shown in the cut are for use in the operation of hysterectomy, where the stump of the uterus is drawn outside of the abdominal incision and transfixed by '*skewers*.' The tension is sometimes so great, especially in stout persons, that the skewers will cut into the flesh and cause deep furrows, which are extremely painful to the patient. To obviate this result the '*protectors*' were devised by Dr. H. Marion Sims. The plates are made of one piece of hard rubber, are about five inches

long, two and one-half wide and one-eighth-inch thick. Running along the centre in a curved line are locks, for the purpose of firmly holding the four ends of the '*skewers*.' These plates are an admirable protection to the abdominal walls, besides making the skewers hold the stump more firmly than they would do without their aid."

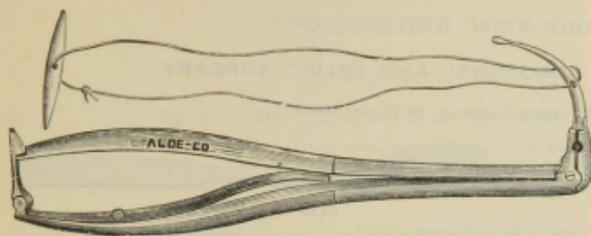
CINTRAT'S SERRE-NŒUD.



8118.

"The wire, after having been placed around the neck of the uterus or tumor, is fixed on the knob which travels on the thread of the screw. On turning the handle when the middle piece is held firm at the larger loops, we tighten the noose; when the head piece is held at the smaller loops, we twist the wire."—Leblond, "*Manual of Gynecology*," Vol. II. Hart and Barbour.

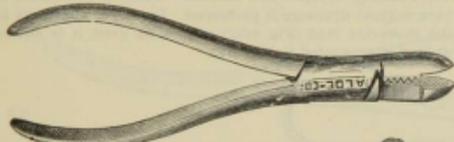
GYNÆCOLOGICAL.
ABDOMINAL HYSTERECTOMY.



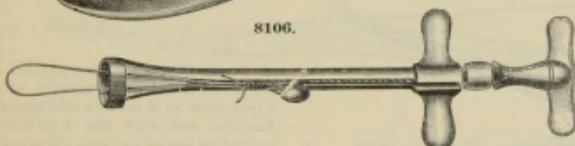
8105.



8113.



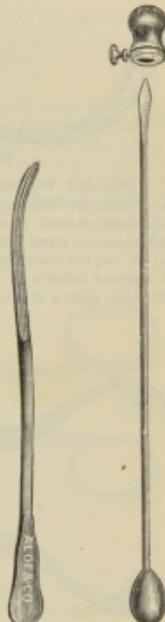
8106.



8119.



8108.



8113.



8115.

A NEW SURGICAL SCISSOR.

In the performance of abdominal hysterectomy, ovariectomy, laparotomy, etc., it frequently becomes necessary to extend the incision first made. For this purpose the scissor excels. However, a good scissor—one that will cut—is essential. This we are now able to supply the profession in the Henckel Patent Scissor, No. 3573. In using the old style scissor, if the abdominal walls were at all thick, the scissor, instead of cutting through, would slip back. This is not the case with the Henckel scissor. To the contrary, the upper blade in this scissor advances upon the tissue to be cut, and such is the power and force of this new invention that a piece of solid sole leather can be cut with as much ease with it as this sheet of paper can be cut with a scissor of the old pattern.

The new scissor, referred to as No. 3573, having a probe point on the lower blade and being bent at an obtuse angle, makes it especially desirable for the work in question. Introducing the index finger through the primary incision and resting the probe point of the scissor upon it, the incision may be readily extended in either direction as far as the operator may desire.

8105.	Forceps, Ligating, Thiersh's and Spindles	\$ 6 00
8106.	Wire Twisting and Cutting, Koeberle's	3 00
8107.	Pedicle Needle, Curved	1 50
8108.	" Kelly's, Spiral Curved	1 75
8109.	" " Pean's	1 25
8110.	" " Rectangular	1 50
8111.	Peritoneum Hook, Adams'	1 50
8112.	Pins, Hysterectomy, Brokaw's (St. Louis)	75
8113.	" " Koeberle's	75
8114.	" " Sims'. See Fig. 8117	75
8115.	" " Wilcox's	75
8116.	" " Wylie's	1 50
8117.	Protectors, Sims', Hard Rubber, Abdominal (per set of 2 Plates and 2 Skewers)	3 00
8118.	Serre-Noud, Cintrat's	7 50
8119.	" " Koeberle's	4 50
8120.	" " with Wire Cutting Forceps (8106) and 2 Pins (8113)	9 00
8121.	" " Price's, Phosphor Bronze	5 00
8122.	Staff, Eastman's, Lateral Hysterectomy. See description, next page	3 75
8123.	" " Posterior	5 50
8124.	Staff-Sound, Eastman's, Grooved Hysterectomy, for fixing and cutting broad ligaments	1 75
8125.	Wire, Phosphor Bronze, for use with Serre-Noud	10

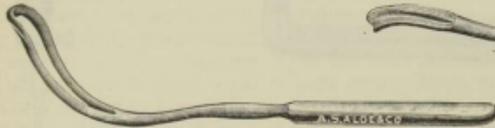
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

ABDOMINAL HYSTERECTOMY.

WORK IN ABDOMINAL AND PELVIC SURGERY.

BY JOSEPH EASTMAN, M. D., INDIANAPOLIS.

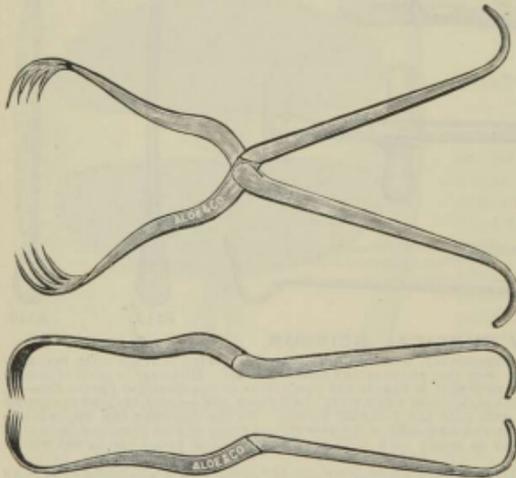


8123. See Page 517.



8122. See Page 517.

The staff (Fig. 8123) is passed up the vagina by an assistant, and carried behind the cervix; then, by depressing the handle, the grooved end is made to lift the floor of Douglas' cul-de-sac, well up toward the abdominal wound. A clip with sharp-pointed knife finds the groove. The operator then inserts his finger and begins to stitch and cut around the cervix, avoiding ureters and bladder. I also use this staff to open cul-de-sac for insertion of drainage tube, where vaginal drainage is preferred. In cases where, on account of nodular masses in Douglas' cul-de-sac, the Posterior Staff (Fig. 8123) cannot be used, it is advisable to enter the vagina at the side, using the Lateral Staff represented in Fig. 8122.

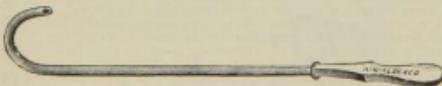


7851. Page 499.

Dr. Eastman has also devised a Mammoth Vulsellum Forceps, with a lock such as is used on Obstetrical Forceps, and with the handles curved on the end so that a firm hold is assured. This can easily be applied to a large tumor in the abdomen, either jointed together, or one blade at a time, serving as forceps, tenacula or retractors, and can be used to hold such a tumor while being ligated, and detached without danger of rupturing it.

EASTMAN'S METHOD IN VAGINAL HYSTERECTOMY.

The uterus having been separated from the bladder, and Douglas' cul-de-sac having been opened, a strong ligature is passed with the "hook needle" (Fig. 8145)—cautiously avoiding the intestines—around the ligaments. This ligature being tied, the ligaments are constricted to a round mass. The operator then



8145. See Page 521.

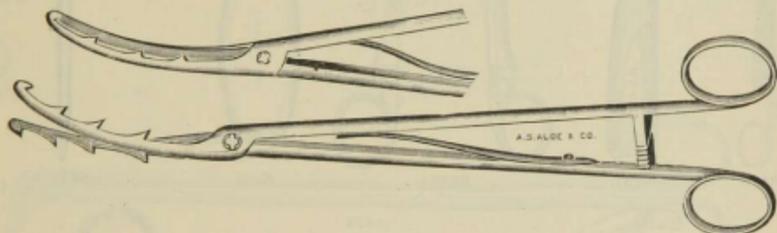
passes the index finger of one hand in front, the index of the other hand behind the uterus, when the assistant easily slides the forceps (Fig. 8131, page 520), guided by the operator's fingers, around ligaments, and locks them. The same is repeated on the opposite side, and the ligaments severed, leaving the forceps to be tied together side by side, as one forceps. The advantages claimed are: 1st. That by narrowing the ligaments their stumps are brought down into the vagina, so that the peritoneal cavity can be closed above the forceps. 2d. Only two forceps are necessary. 3d. In the inventor's hands the operation has been done in a very few moments, without the patient losing a half ounce of blood; which, in an experience of thirteen operations, he has not been able to do with other forceps.

GYNÆCOLOGICAL.
 VAGINAL HYSTERECTOMY.
 THE UTERO-TRACTOR.

By A. C. BERNAYS, A. M., M. D., Heidelberg, M. R. C. S. Eng.

PROFESSOR OF ANATOMY AND CLINICAL SURGERY, MARION-SIMS MEDICAL COLLEGE; SURGEON TO PIUS HOSPITAL, LUTHERAN HOSPITAL, WOMAN'S HOSPITAL, REBEKAH HOSPITAL, AND CHIEF SURGEON TO THE ST. LOUIS EMERGENCY HOSPITAL AND POLYCLINIC.

During a recent operation for the total extirpation of a cancerous womb through the vagina, I felt the want of an instrument by the use of which I could easily handle the womb without taking up too much space or darkening the field of view. It also appeared desirable to have the instrument strong and so constructed that it would hold the womb firmly even when the tissues had become friable by the cancerous growth. The following wood cuts represent the instrument which answers these indications. The drawings show the instrument open and closed thereby saving an elaborate description.



8156. Page 521.

The advantages offered by this new surgical tool are the following:

I. It takes away no space in the vault of the vagina surrounding the cervix, since it seizes the womb from within its cavity. When closed the scissor like handles approach one another so that they occupy but little space either within or without the vagina.

II. The instrument can be introduced into the cervical canal or the womb-cavity, any distance desired. Whatever amount of traction may be brought to bear upon the tissues of the womb, a corresponding resistibility can be created by opening the branches of the tractor more or less.

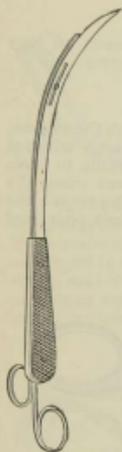
III. The four tooth-like prongs of each branch are not the only factors that resist tearing out, the wedge shape of the open branches also forms an important obstacle tending to prevent this accident. A glance at the figures will show the point of the wedge situated in or near the cervix while the broad end of the wedge looks towards the fundus.

IV. The Utero-Tractor can be held either in the left hand of the operator or can be intrusted to an assistant. A great advantage to be derived from the use of my instrument lies in the circumstance that traction is not solely made upon the vaginal portion as by the vulsellum or Musseux's forceps or by the loops of thread heretofore in use. The instrument has its point of attachment upon the whole length of the uterus if desired. We are thus enabled to move the organ in toto, from right to left and can put the opposite parametrian tissue, yes even the whole of the broad ligament on the stretch. This is of considerable importance for my method of Kolpo-hysterectomy (see the St. Louis Medical and Surgical Journal, April, 1884), and will, no doubt, be greatly appreciated by those operators who tie the bleeding points in the wound as they proceed with the extirpation.

V. The Tractor can be introduced as easily as the uterine probe, and can also be removed at any time with but little trouble. It may also be used to facilitate the tipping over or doubling up of the womb upon itself, through the anterior or posterior *cul-de-sac*.

The laceration of the organ which must be caused by the use of the instrument is of no importance as it is intended only for those operations which propose the total removal of the womb. My instrument also obviates the sometimes disagreeable sponging necessitated by the vulsellum or other forceps used for dragging down the womb. A little absorbent cotton wound around the joint of the blades stops all bleeding if there be any from within the womb.

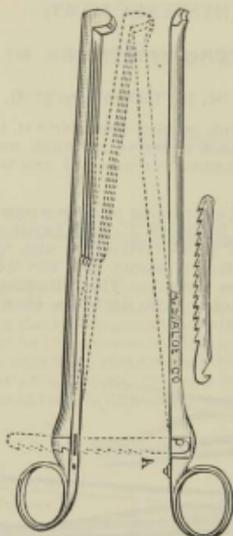
GYNÆCOLOGICAL.
VAGINAL HYSTERECTOMY.



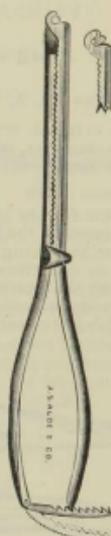
8136.



8127.



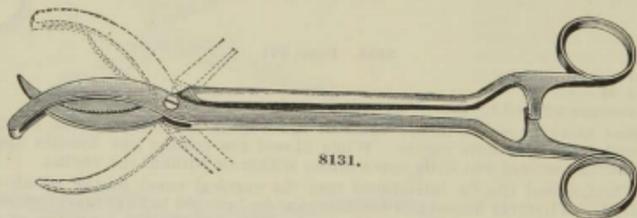
8132.



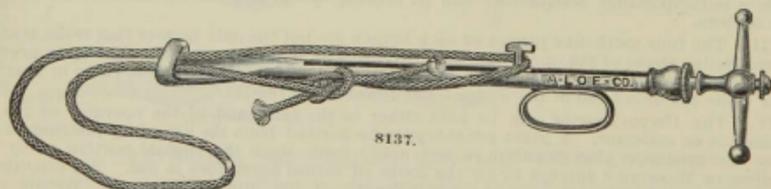
8134.



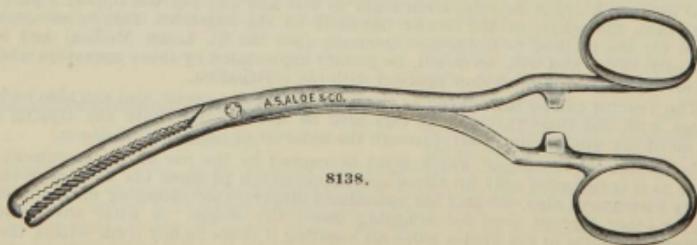
8147.



8131.

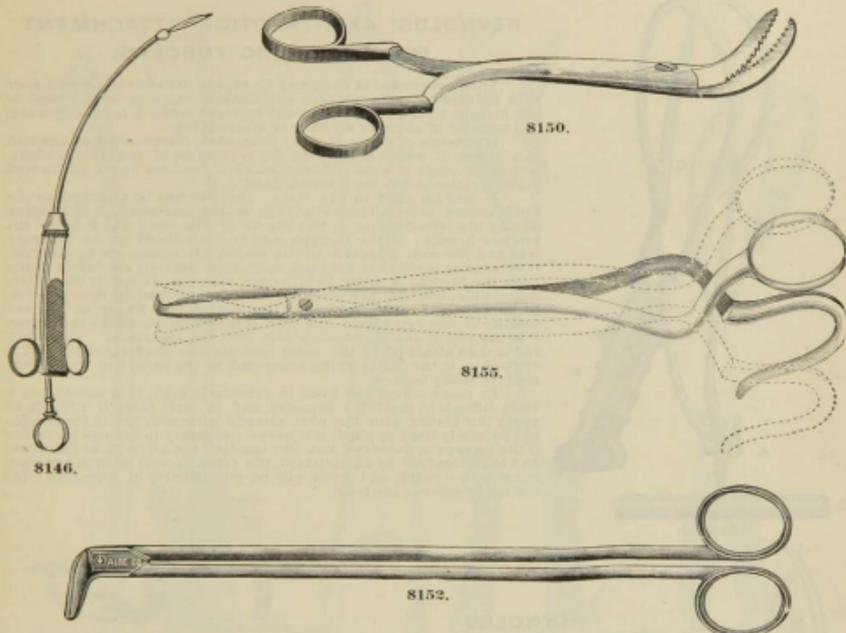


8137.



8138.

GYNÆCOLOGICAL.
VAGINAL HYSTERECTOMY.



8126.	Bistoury, Freund's, Extirpation.....	\$ 6 00
8127.	Clamp, Beatte's, Broad Ligament.....	3 00
8128.	" Byford's, "	3 00
8129.	" Cleveland's, "	3 00
8130.	" Doleris'.....	3 00
8131.	" Eastman's, Hysterectomy. Described on page 518.....	6 50
8132.	" Emmet's, Broad Ligament	4 00
8133.	" Hall's, Hysterectomy.....	6 00
8134.	" Kelly's, Broad Ligament	3 25
8135.	" Polk's	3 00
8136.	" Thomas'.....	2 75
8137.	Ecraseur, Jones', Rope.....	11 25
8138.	Forceps, Broad Ligament, Byford's	3 00
8139.	" " Cleveland's.....	3 00
8140.	" " Cervix Amputating, Thomas'.....	26 25
8141.	" " Extirpation, Freund's	6 50
8142.	" " Hysterectomy, Byford's.....	4 50
8143.	" " " Hall's, Right and Left	6 00
8144.	" " " Polk's.....	3 00
8145.	Hook-Needle, Eastman's. Illustrated and described on page 518.....	1 75
8146.	Needle, Extirpation, Freund's, Trocar.....	6 50
8147.	" " " Polk's.....	3 40
8148.	" " " Thomas'.....	3 40
8149.	" " Ligature, Janvrin's, for passing ligature around broad ligament.....	4 50
8150.	Scissors, Clark's, Tooth Edge.....	6 75
8151.	" " Dawson's	4 00
8152.	" " Freund's, Extirpation	4 50
8153.	" " Horwitz's	5 50
8154.	" " Kelly's, Cervix	3 50
8155.	" " Kuchenmeister's, Cervix	4 50
8156.	Utero-Tractor, Bernays' (St. Louis). Illustrated and described on page 519.....	4 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

OBSTETRICAL.

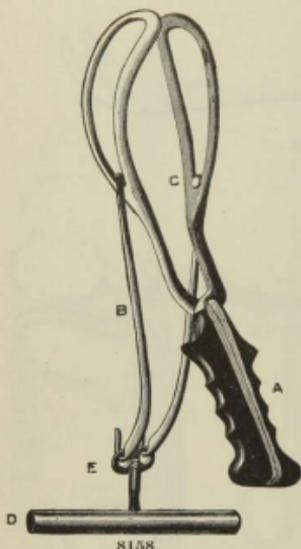
REYNOLDS' AXIS-TRACTION ATTACHMENT
FOR OBSTETRIC FORCEPS.

This instrument is designed to supply the general practitioner with an efficient axis-traction appliance, which can be attached to any forceps with a fenestra, at any moment when it may be needed, and without in any way altering or injuring them.

It consists of a pair of steel rods, each terminating at one end in a button, C, which hooks into the fenestra of the forceps blade, and at the other in a curved hook which is received by the perforated plate, E, attached to the traction-handle, D.

It may be used in two ways: the rod is attached to the blade before its introduction into the vagina, and retained in position during the introduction by the fingers of the hand which holds the forceps handle; or the forceps may be introduced in the ordinary way and the rods attached to the blades after they are in position. If this latter method is adopted, moderate traction should be made upon the forceps in order to bring the fenestra as low in the pelvis as possible, and the instrument should be steadied in that position by an assistant. The operator then passes one finger to the extremity of one fenestra, and with this as a guide, hooks the button C at the end of the appropriate rod, into the fenestra. The other rod is then attached in the same manner, the perforated plate E is slipped on to the hooks at the lower end of the rods, and the instrument is ready for use.

In cases where the head is extremely high, it is sometimes a little difficult to reach the fenestra, and in such cases it is better to apply the blades with the rods already attached, but if the blades have already been applied, it is never necessary to remove them, for if the forceps is unlocked and the handles are allowed to fall apart and then steadied by an assistant, the fenestra will be found to have come within reach, and there will be no difficulty in relocking after the application of the rods.

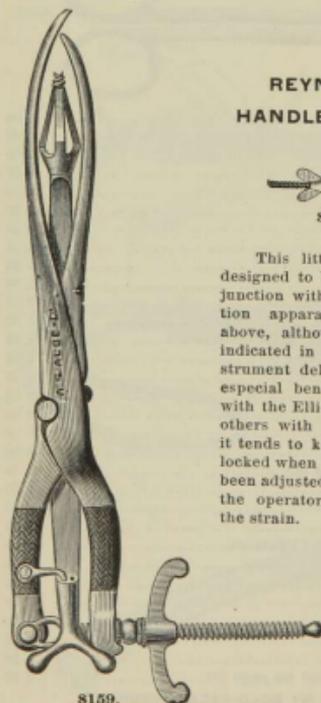


8158.

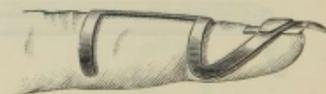
REYNOLDS'
HANDLE CLAMP.

8173.

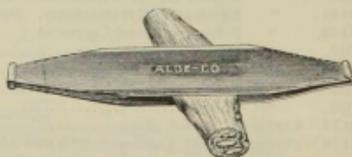
This little device was designed to be used in conjunction with the axis-traction apparatus described above, although its use is indicated in all cases of instrument delivery. It is of especial benefit when used with the Elliott forceps and others with similar lock, as it tends to keep the forceps locked when they have once been adjusted, thus relieving the operator's hands from the strain.



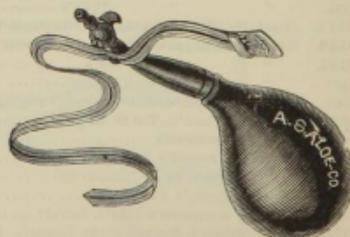
8159.



8157.

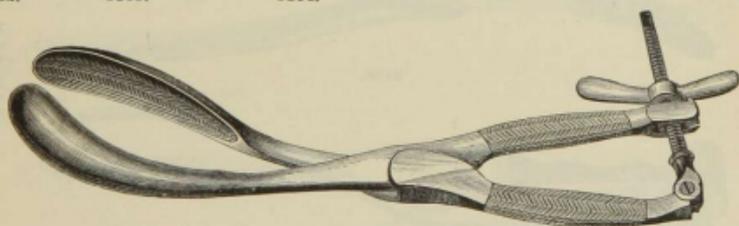
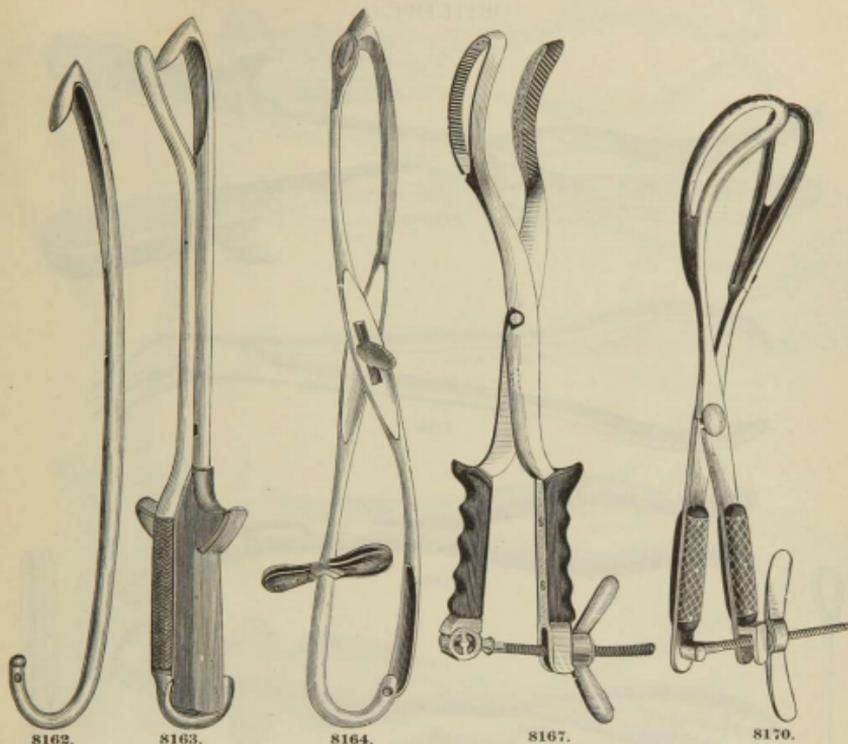


8172.



8174.

GYNÆCOLOGICAL.
OBSTETRICAL.



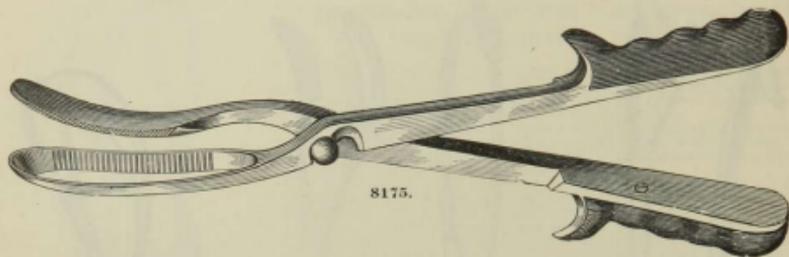
8171.

8157.	Amniontome, Wenck's.....	\$ 1 90
8158.	Axis-Traction Attachment, Reynold's.....	3 50
8159.	Basiotribe, Tarnier's.....	26 25
8160.	Bed Pan, Crandall's Obstetrical. See page 527.....	10 00
8161.	Blunt Hook, Taylor's.....	1 50
8162.	Blunt Hook and Crotchet, combined.....	1 00
8163.	" " " " Bedford's, Guarded.....	4 50
8164.	" " " " Budd's.....	3 25
8165.	Blunt Hook and Vectis, combined.....	1 50
8166.	Cephalotribe, Barnes'.....	13 50
8167.	" " Braun's.....	13 50
8168.	" " Hicks'.....	18 75
8169.	" " Hodge's.....	15 00
8170.	" " Lusk's.....	13 50
8171.	" " Simpson's.....	11 25
8172.	Clamp, Pulling's, Funis.....	30
8173.	" " Reynolds', Handle.....	1 50
8174.	Colpeurynter, Braun's, with Stop Cock.....	1 50

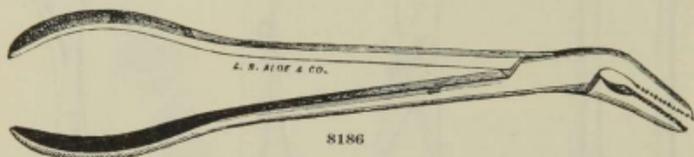
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

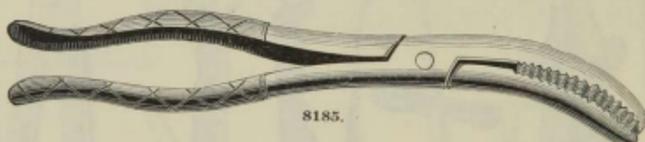
OBSTETRICAL.



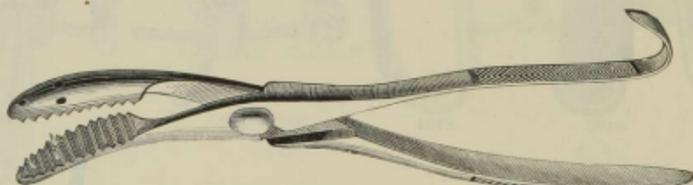
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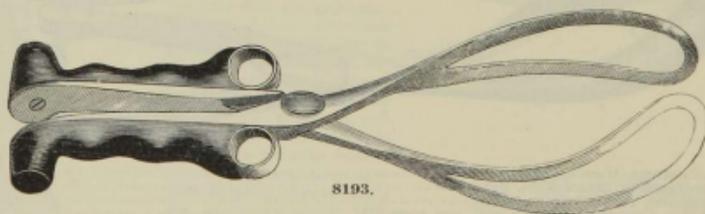
8186



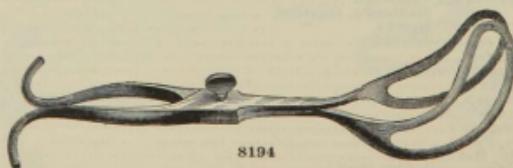
8185.



8188.



8193.



8194



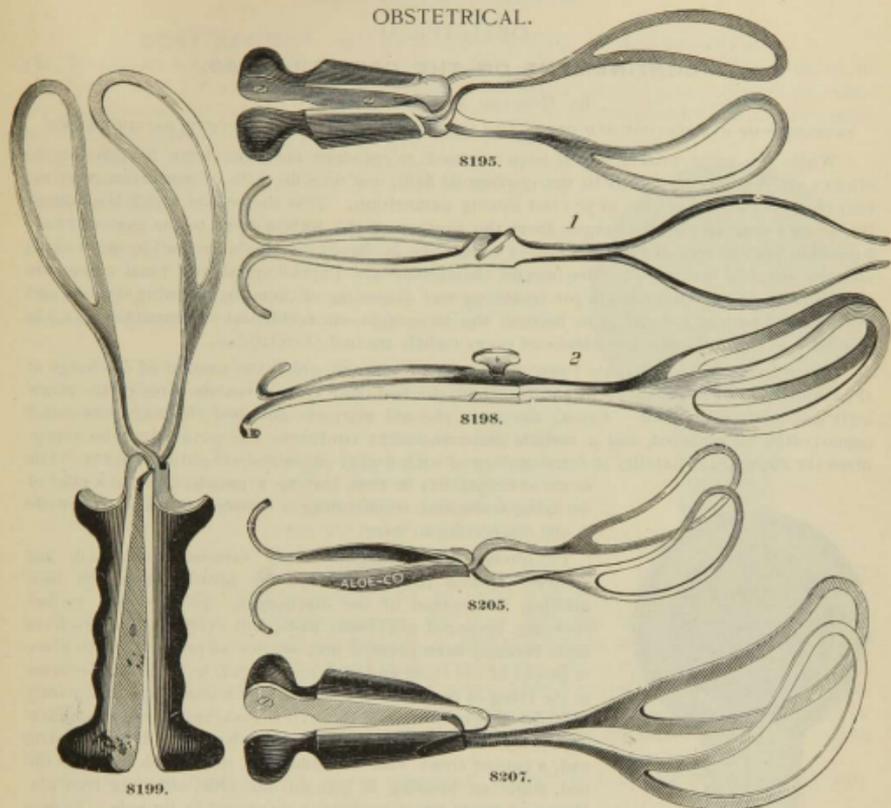
8180.



8179.

GYNÆCOLOGICAL.

OBSTETRICAL.



8175.	Cranioclast, Simpson's.....	\$ 7 50
8176.	Crochet, Elliott's.....	1 50
8177.	" Taylor's.....	1 50
8178.	Curette, Placental, Cheatham's.....	2 00
8179.	" " Engelman's (St. Louis).....	2 00
8180.	" " Mandé's.....	2 00
8181.	Cushion, Jackson's Obstetrical.....	4 00
8182.	" Kelly's Improved Obstetrical. Described on page 526.....	6 50
8183.	Dilator, Obstetrical, Lott's.....	.....
8184.	Forceps, Craniotomy, Budd's.....	3 75
8185.	" " Elliott's.....	2 50
8186.	" " Meigs', Curved.....	2 50
8187.	" " " Straight.....	2 50
8188.	" " Thomas'.....	4 00
8189.	" Embryotomy, Bacheider's.....	9 00
8190.	" " Tiemann's.....	2 25
8191.	" Obstetrical, Barnes'.....	6 00
8192.	" " Barnes' (St. Louis).....	6 00
8193.	" " Bedford's.....	6 00
8194.	" " Bethel's.....	6 00
8195.	" " Blake's.....	6 00
8196.	" " Boislanière's (St. Louis).....	6 00
8197.	" " Braun's.....	5 50
8198.	" " Brickell's.....	6 00
8199.	" " Budd's.....	6 00
8200.	" " Burdick's.....	6 75
8201.	" " Burgess' Axis-Traction.....	22 50
8202.	" " Byford's.....	6 00
8203.	" " Clark's.....	5 50
8204.	" " Cole's.....	6 00
8205.	" " Comstock's (St. Louis).....	6 00
8206.	" " Corning's Axis-Traction.....	9 00
8207.	" " Davis'.....	6 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

OBSTETRICAL.

CONFINEMENT ON THE OBSTETRIC PAD.

BY HOWARD A. KELLY, M. D.

PROFESSOR OF GYNÆCOLOGY AND OBSTETRICS IN THE JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD.

While the great profits which have accrued to modern medicine from bacteriological studies are realized most fully in the obstetrical field, one notable relic of barbarism remains, that is, the extensive soiling of the bed during parturition. That the bed on which the patient lies should soak up the discharges, from the rupture of the waters down to the gush of blood following the delivery of the placenta, is a practice in direct contradiction to the spirit of all modern surgical work. The discharges themselves are physiological and must come, the objection is to our preparation for receiving and disposing of them, by allowing the bed and bedding and patient's clothing to become the receptacle, an accidental concomitant which is repulsive to the antiseptic conscience of every rightly trained obstetrician.

When living in Philadelphia I saw and heard of cases in which the amount of discharge at the confinement was sufficient to saturate half the bed, and even percolate through the straw mattress, wetting the floor. Among the poor, the old mattress and bed clothing thus soiled cannot often be replaced, and a serious embarrassment confronts the physician, who recognizes the subsequent liability to fermentation of such highly organized albuminous fluids. The sense of culpability in thus leaving a patient lying in a pool of decaying secretions constituting a constant menace to her life is one distressing to bear.

To obviate these dangers every earnest obstetrician has adopted certain precautions for the protection of the bed, limiting the spread of the discharges. To this end, rubber sheeting, prepared absorbent pads, and even newspapers have more recently been pressed into service as protectives, in place of pieces of old cloth and rags and carpet, once familiar articles in the lying-in room; still, however, the nuisance is not entirely abated. I have overcome this evil for several years by conducting all my confinements on a specially devised rubber obstetric pad, a rubber sheet with an inflatable rim which protects the bed, while an opening is left on one side, allowing free discharge of fluids into a bucket or jar placed by its side. This is thus similar in general design to my ovariotomy, perineal, and general surgical pads now in wide use.

The first pad devised for this purpose has been in constant use by some of my friends, notably Dr. Robert L. Dickinson, of the Long Island College Hospital, and Dr. Hunter Robb, who has dwelt upon its advantages in an article published in the *Medical News* of Philadelphia, December 29, 1888. This pad was constructed with the intention that fluids should at once discharge as they escaped from the patient, over the apron of

the pad, hanging down the side of the bed, and into the bucket on the floor. Experience taught me, however, that the inequalities of some beds were so great that no escape of the discharges took place in this direction, the fluids, on the contrary, remained in the pad, and ultimately even overflowed into the bed.

After some further experimentation, I have settled upon the improved obstetric pad shown in the figures accompanying the text. This has a large inflatable rim, big enough to hold all the parturient discharges without overflowing. At the end of the labor it is picked up, and the blood and amnion with the placenta and membranes gravitate into the bag-like receptacle, which replaces the open apron to the first pad. The pad is then carried into the bath-room and emptied of its contents by letting down the hook which makes a bag of the tube while it is in use, it is then washed clean under a strong stream of water from the faucet. In using the



8182. Obstetric Pad—Open.
See page 525.

GYNÆCOLOGICAL. OBSTETRICAL.

CONFINEMENT ON THE OBSTETRIC PAD—CONTINUED.

pad, the patient will be most comfortable and the progress of labor can be best observed while she is lying upon her back, with the upper part of the sacrum resting on the inflated rim, thus leaving abundant pad-surface below the buttocks and between the patient's legs for the reception of fluids, child and afterbirth. It is a mistake to adjust the pad higher up so that the rim rests under the small of the back; it is not serviceable in this position, and by no means so comfortable.

Patients but rarely object to this new accessory to the obstetric wardrobe. I have often heard them express themselves as relieved by the constant elastic pressure made by the rim upon the lower part of the back. A little persistence and assurance will overcome any prejudice at the outset.

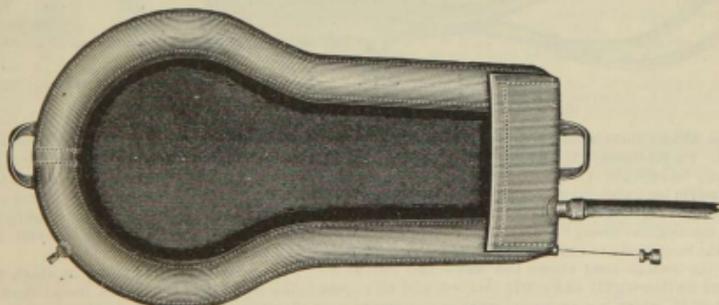
Before slipping the pad under the patient, her nightgown should be pulled well up to the thoracic region to clear the rim; she then raises herself upon her heels and shoulders while the warmed pad is placed under her in position as shown in the figure. It should not be brought into use until the bag of waters is about to be ruptured. After the first escape of the larger amount of the amnion, the pad may be removed, and further occasional gushes of fluid caught by large pledgets of absorbent cotton, placed under the vulva, and renewed from time to time, until just before the birth, when the pad, cleaned and warmed, should be again slipped under the patient and allowed to remain in position until the placenta and clots following have been discharged.

When labor is thus completed assist the patient in elevating her buttocks while the pad is drawn out, and the buttocks, vulva and thighs wiped clean with a sterilized towel or absorbent cotton, and a pledget of sterilized absorbent cotton placed beneath the vulva. She is thus allowed to rest at once and without the tedious annoying changes otherwise necessary, not to speak of dangers obviated by greater cleanliness, and, a minor but still important item, the saving in the wash.

The greatest inconsistency in our obstetrical practice is thus simply and conveniently removed.

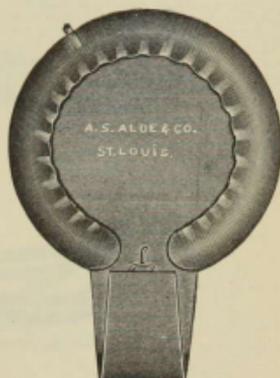
[Extract Medical Record, December 3d, 1892.]

CRANDALL'S OBSTETRICAL BED PAN.



8160. Patented Feb. 2d, 1892. See Page 523.

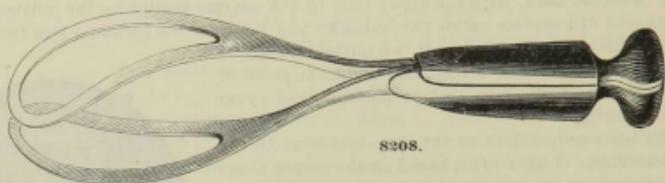
This Pan is made of soft red rubber with an inflatable rim surrounding three sides of the Pan. On the lower side a pocket, holding two or three quarts, is formed by the aid of a spring covered with rubber. The Pan is so constructed that it can be used with or without a four-foot piece of conducting tube.



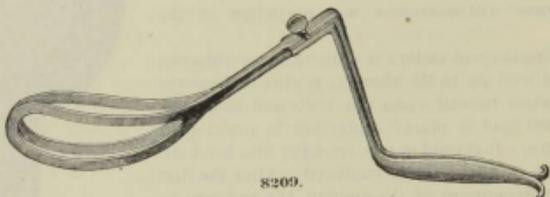
Obstetric Pad—Closed.

GYNÆCOLOGICAL.

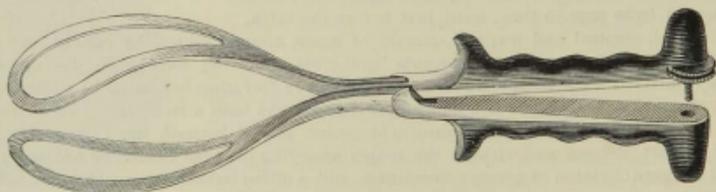
OBSTETRICAL.



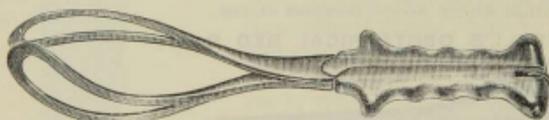
8208.



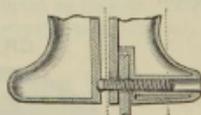
8209.



8211.



8212.



PAT. MAY 12, 1891.

The Elliott Obstetrical Forceps has been for many years the most popular of all the instruments for this purpose. Partly because the length and shape of the blades and handles are most satisfactory for general use, partly on account of the lock being very easily adjusted, and because of the screw attachment at the end of the handle by which the pressure of the blades can be adjusted to the size of the head. Within a comparatively short length of time the demand for aseptic instruments has caused some of the manufacturers to replace the original ebony handles of this instrument with those made of hard rubber or of metal, but no attempt has been made to render aseptic the device for regulating the pressure.

In the forceps here shown the screw and nut, as well as the cavity in the handle in which the screw runs, may be thoroughly and easily cleaned, and all access to the interior of the hollow metal handles is entirely avoided, which is a very important improvement over the other metal handles which have been put on this instrument.

In addition to the aseptic qualities of the forceps we have returned to the genuine Elliott pattern in length and shape of blades and handles, while the most of those now offered are very far from being correct the handles having been shortened and little attention being paid to retaining the original shape.

We feel sure the present style of Elliott's Forceps here offered will be found eminently satisfactory, and far superior to those now in the market, and invite comparison before purchasing.

GYNÆCOLOGICAL.

OBSTETRICAL.

A NEW OBSTETRICAL FORCEPS.

By J. A. ELSTON, M. D., ELSTON, MO.

I have the honor of presenting to the profession a new forceps, which will, I hope, be accepted as an improvement on the ordinary obstetric instruments. It has new features which, in my opinion, are strongly commendatory. This forceps, whilst doing everything claimed for the Tarnier Axis-Traction Forceps, accomplishes its work easily and with less exertion. The chief feature of the Tarnier Forceps is, that it directs the child's head backward and downward in the line of the axis of the superior strait, hence it is called an axis-traction forceps. It does this admirably. The force is applied from below. My forceps does the same, by a force applied from above, instead of below. Tarnier's Forceps has two traction rods attached to the lower part of the blades, just at their junction with the shanks.

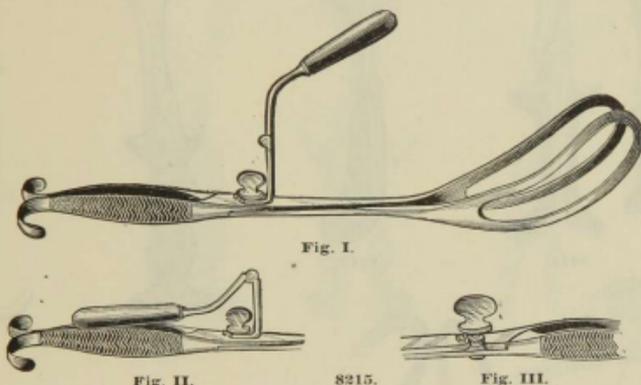


Fig. I.

Fig. II.

8215.

Fig. III.

I. Forceps with the Depressor in place.

II. The Shank with the Slide.

III. The Lock.

Total length, 17 inches; length of Fenestra, 5 inches; greatest width of Fenestra, 1 1-2 inches; narrowest, 1-2-inch; width of Cephalic Curve, 2-4 inches. Permanent Lock.

Internal surface of the blades very slightly roughened to secure a good hold on the head. Handles roughened to get a better grip.

The novel and chief feature of the forceps which I present consists in a depressor or lever, a sort of crutch, fitting by a slide in a groove placed above and in front of the lock. With one hand on the handle of the depressor, the head is guided downward and in front of the lock. With the other hand on the handle of the forceps until it has descended to the lower part of the excavation in the axis of the inferior strait. Then the "depressor" should be removed and the labor terminated as in an ordinary forceps application.

Without the depressor this Forceps can be used as any other forceps.

The blades present a marked but gradual pelvic curve, allowing them to penetrate the excavation in the direction of the axis of the superior strait, and owing to this gradual curve, the lower part of the blades does not present the projecting "heels" or shoulders so generally found in ordinary forceps; these heels of the blades being a constant menace to the perineum in the final delivery of the head.

The greater cephalic curve of the forceps permits a firm hold of the head and guards against the slipping of the blades, when applied at the superior strait, as so often happens with other forceps, even with the Hodge Forceps, otherwise a very good instrument in ordinary cases.

Moreover, the stronger material used in the blades prevents their "springing," as in Hodge's and many other forceps. The lock being permanent it cannot be lost, as often happens in the hurry of an operation.

This forceps is especially designed for difficult cases, when the head, after entering the upper part of the excavation, shows no disposition to descend lower.

This forceps does in a simple way what the Tarnier Forceps does, and also in an easier manner, what is accomplished by Pajot's well known method of pushing the head into the excavation downward and backward by firmly seizing the upper part of the shanks of any long forceps, avoiding rotation at first; traction is accomplished after rotation, not before.

To L. Ch. Boislinière, Emeritus Professor of Obstetrics in the St. Louis Medical College, I am indebted for his endorsement of my Forceps.

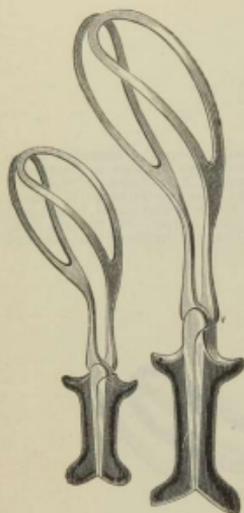
This Forceps is manufactured by Aloe, 415 North Broadway, St. Louis, where it can be seen.

[Reprint from The Weekly Medical Review, March, 1891.]

8208.	Forceps, Obstetrical, Denman's.....	\$ 5 25
8209.	" " Dewee's, Axis Traction.....	9 00
8210.	" " Draper's.....	6 35
8211.	" " Elliott's, Long, Hard Rubber Handles.....	4 50
8212.	" " " " Metal Handles.....	5 00
8213.	" " " " Short, Hard Rubber Handles.....	4 00
8214.	" " " " Metal Handles.....	4 50
8215.	" " Elston's, Axis-Traction.....	12 00
8216.	" " Felsenreich-Tarnier's, Axis Traction.....	16 00
8217.	" " Gillette's.....	7 25

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.
OBSTETRICAL.

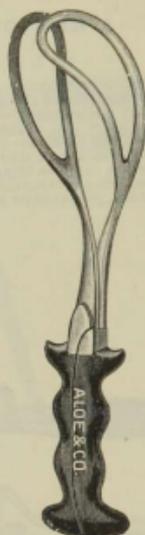


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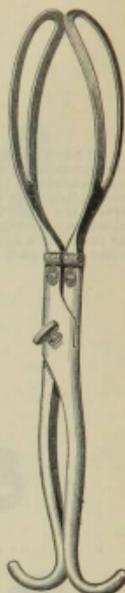
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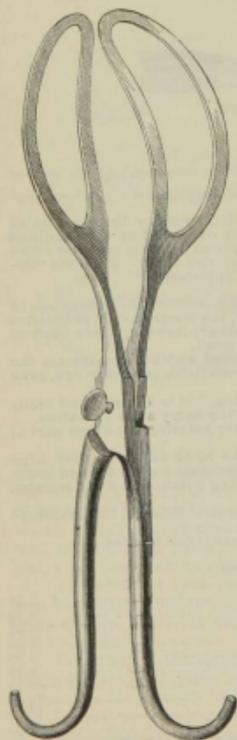
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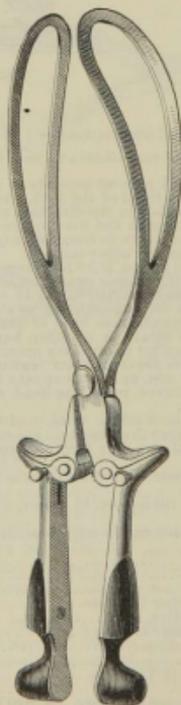
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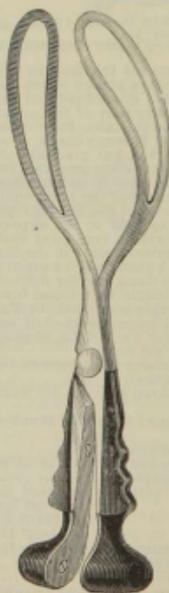
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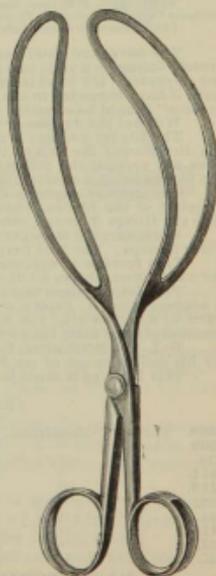
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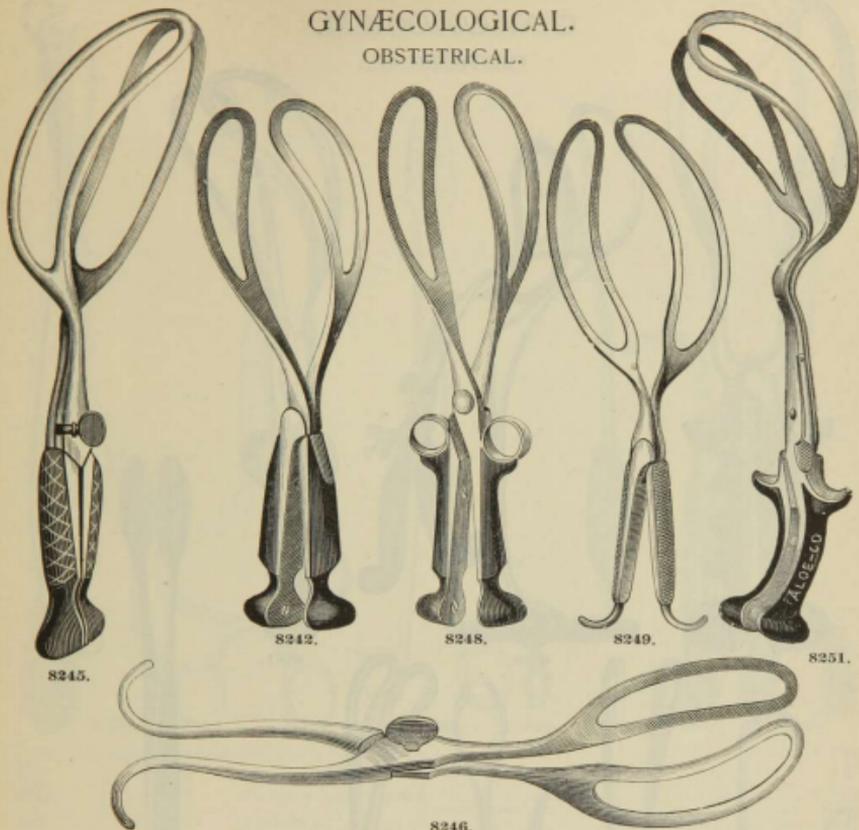


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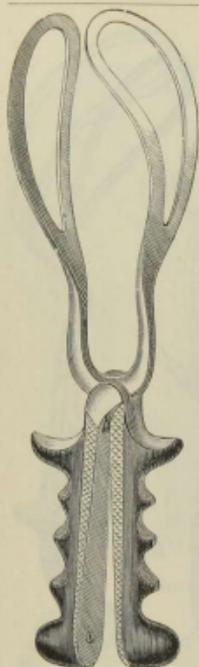
GYNÆCOLOGICAL.
OBSTETRICAL.



8218.	Forceps, Obstetrical, Hale's, Long	\$ 6 50
8219.	" " " Short	4 00
8220.	" " " " "	4 50
8221.	" " " " "	6 75
8222.	" " " " "	5 00
8223.	" " " " "	5 25
8224.	" " " " "	6 25
8225.	" " " " "	4 50
8226.	" " " " "	7 50
8227.	" " " " "	8 00
8228.	" " " " "	5 00
8229.	" " " " "	6 50
8230.	" " " " "	15 00
8231.	" " " " "	18 00
8232.	" " " " "	6 00
8233.	" " " " "	9 00
8234.	" " " " "	10 50
8235.	" " " " "	6 25
8236.	" " " " "	5 50
8237.	" " " " "	10 50
8238.	" " " " "	6 00
8239.	" " " " "	6 00
8240.	" " " " "	14 00
8241.	" " " " "	5 00
8242.	" " " " "	6 00
8243.	" " " " "	11 50
8244.	" " " " "	6 00
8245.	" " " " "	6 00
8246.	" " " " "	6 00
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8248.	" " " " "	6 00
8249.	" " " " "	4 00
8250.	" " " " "	5 00
8251.	" " " " "	9 00
8252.	" " " " "	4 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

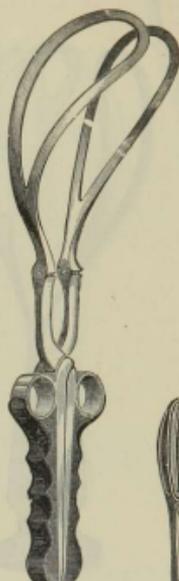
GYNÆCOLOGICAL.
OBSTETRICAL.



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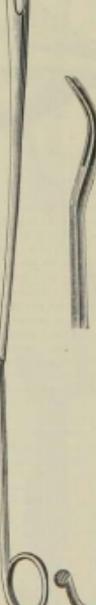
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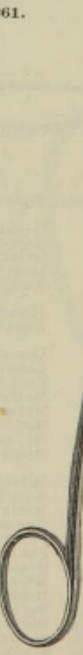
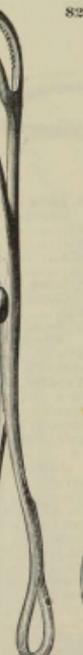
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8274.

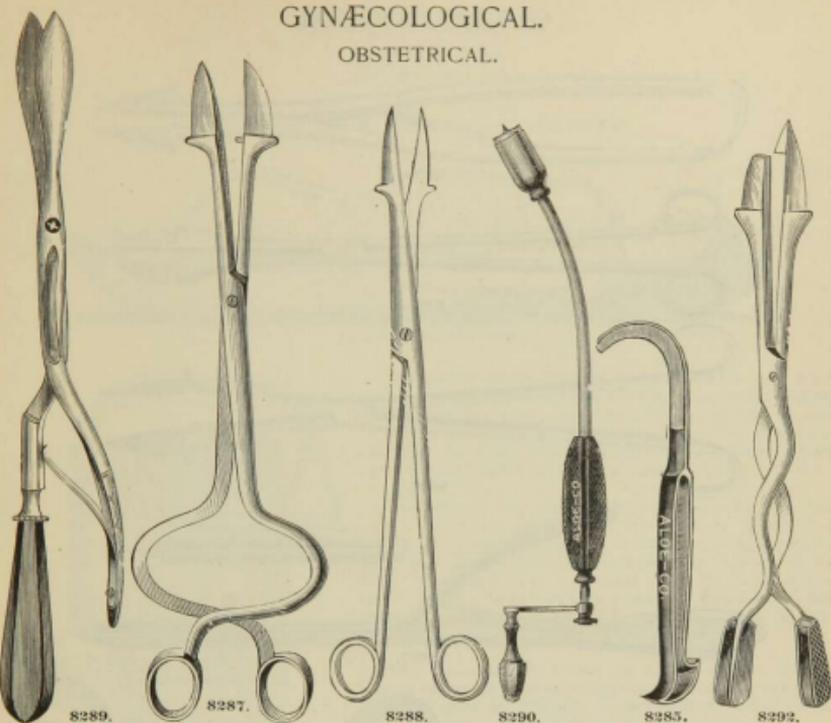


8273.



8266.

GYNÆCOLOGICAL.
OBSTETRICAL.



8253.	Forceps, Obstetrical, Simpson's, Long.....	\$ 5 00
8254.	" " " Stone's..... Short.....	4 50
8255.	" " " Tarnier's, Axis-Traction.....	20 00
8256.	" " " " " latest model.....	22 50
8258.	" " " Taylor's.....	8 25
8259.	" " " Thomas's.....	5 25
8260.	" " " Trueheart's.....	9 00
8261.	" " " Vedder's.....	9 75
8262.	" " " Von Ramdohr's.....	6 75
8263.	" " " Wallace's.....	6 00
8264.	" " " White's.....	6 00
8265.	" " Ovum, Carey's.....	2 70
8266.	" " Heywood-Smith's.....	2 50
8267.	" " Placental, Bond's.....	1 75
8268.	" " " Bozeman's.....	2 25
8269.	" " " Budd's.....	2 25
8270.	" " " Chamberlain's.....	3 25
8271.	" " " Clark's.....	2 00
8272.	" " " Hart's.....	2 25
8273.	" " " Leonard's.....	3 75
8274.	" " " Loomis's.....	3 75
8275.	" " " Munde's.....	2 25
8276.	" " " Parvin's.....	2 25
8277.	" " " Schuetter's.....	4 50
8278.	" " " Curette, Hook and Forceps combined.....	3 00
8279.	Hook, Decapitating.....	2 00
8280.	" " " Braun's.....	2 25
8281.	" " Placental, Clark's.....	2 50
8282.	" " " Dewee's and Carey's, Lever.....	75
8283.	" " " Leavett's, Double End.....	1 00
8284.	Inhaler, Smith's, Obstetrical.....	10 00
8285.	Knife, Galbiate's, Symphysiotomy.....	3 00
8286.	" " Harris'.....	3 50
	Manikin and Fœtus. Write for price.....	
8287.	Perforators, Bacheider's.....	3 75
8288.	" " Bedford's.....	2 25
8289.	" " Blot's.....	4 50
8290.	" " Braun's, Trepphine.....	10 00
8291.	" " Hodge's, Scissor.....	4 00
8292.	" " Holmes'.....	3 75
8293.	" " Ireland's.....	3 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

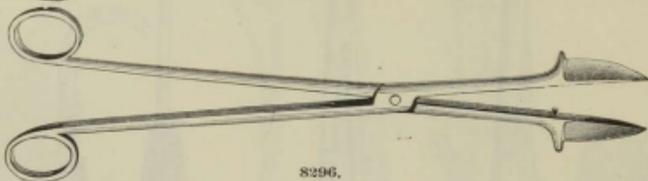
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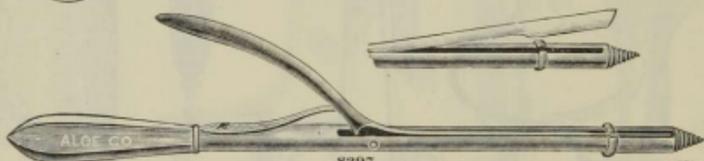
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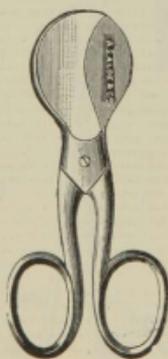
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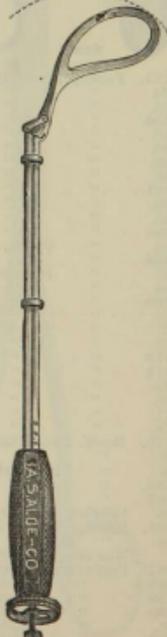
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8312.

GYNÆCOLOGICAL.

OBSTETRICAL.

DR. KLINE'S OBSTETRIC SLIPPER.

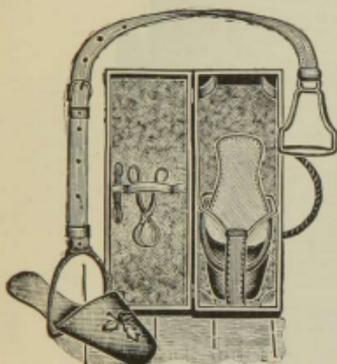


PATENT APPLIED FOR.

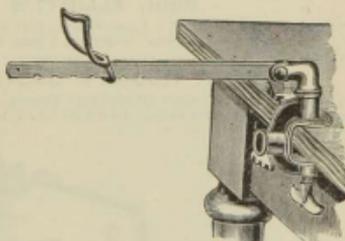
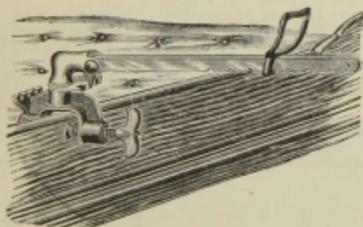
We present for the consideration of the profession, a neat, simple, perfect device, which, as every experienced physician sees at a glance, does away with hand-pulling, and all crude cumbersome makeshifts, and greatly facilitates labor by providing the means for a good "pull," thus giving the woman a measure of comfort during the most trying time of her life.

The slipper was invented by an experienced physician, and is the result of his many contrivances to relieve his patients. It consists of a pair of stout slippers connected by adjustable straps connected to nicked steel handles; they are easily put on and off, are not in the way if left in the bed, and can be used by the patient in any posture. One pair will last a lifetime, and as their utility is apparent, no argument is necessary.

The first engraving shows the slipper in use, while the second engraving shows the slippers in a handsome case, which also has space for Catheter, Probe, Scissors, Umbilical Silk, bottles for Ergot, Ether, Chloroform, etc.



8304.



8308.

8294.	Perforator, Nageli's.....	\$ 3 00
8295.	" Simpson's.....	2 00
8296.	" Smellie's.....	1 75
8297.	" Thomas's (Trepine).....	5 00
8298.	" Truohart's.....	5 00
8299.	" White's.....	3 25
8300.	Perforator, Cephalotribe and Cranioclast, Anvard's, Combined.....	20 00
8301.	Scales, George's, Obstetric.....	50
8302.	Scissors, Craniotomy, Hodge's.....	4 00
8303.	" Umbilical, American.....	1 25
8304.	Slippers, Kline's, Obstetric, with Case.....	6 00
8305.	" " " without Case.....	5 00
8306.	" Patton's, Aseptic, Obstetric.....	7 50
8307.	Stirrups, Barnum's, Aluminium.....	10 00
8308.	" DePew's, Nickel-plated.....	5 00
8309.	" Nedöök, " ".....	5 00
8310.	Vectis, Folding.....	2 75
8311.	" Plain.....	1 75
8312.	" Ryerson's.....	5 50
8313.	" White's.....	2 00

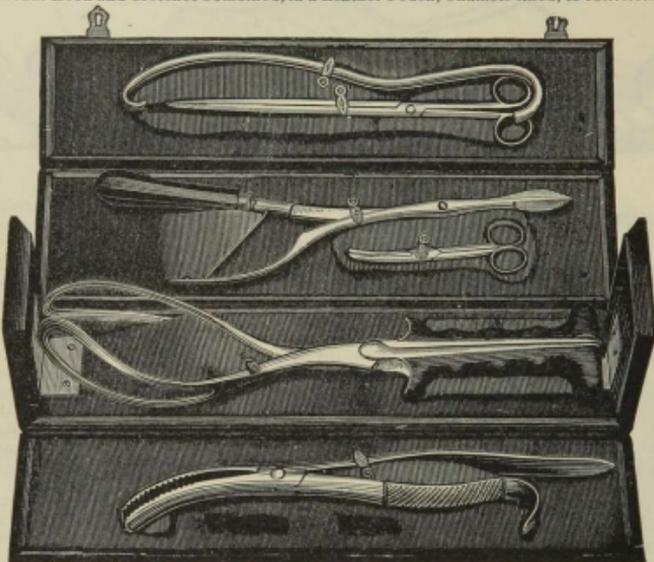
GYNÆCOLOGICAL.
OBSTETRICAL CASES.

8314. BEDFORD'S OBSTETRICAL POUCH.

Containing 1 pair Bedford's Obstetrical Forceps; 1 Bedford's Perforator; 1 pair Budd's Placental Forceps; 1 Blunt Hook and Crotchet Combined, in a Leather Pouch, Chamois lined, to roll \$ 13 50

8315. ELLIOTT'S OBSTETRICAL POUCH.

Containing 1 pair Elliott's Obstetrical Forceps; 1 Blot's Perforator; 1 pair Budd's Placental Forceps; 1 Blunt Hook and Crotchet Combined, in a Leather Pouch, Chamois lined, to roll \$ 12 00

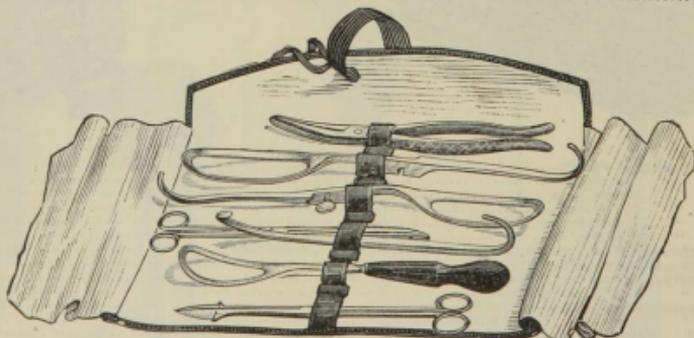


8316. ELLIOTT'S OBSTETRICAL SET.

Containing 1 pair Elliott's Long Obstetrical Forceps; 1 Blot's Perforator; 1 Blunt Hook and Crotchet; 1 pair Budd's Placental Forceps; 1 pair Thomas' Craniotomy Forceps; 1 pair Flat Curve Umbilical Scissors \$ 22 50

8317. HODGE'S OBSTETRICAL POUCH, No. 1.

Containing 1 pair Hodge's Obstetrical Forceps; 1 Smellie's Perforator; 1 Blunt Hook and Crotchet Combined, in a Leather Pouch, Chamois lined, to roll \$ 10 00



8318. HODGE'S OBSTETRICAL POUCH, No. 2.

Containing 1 pair Hodge's Obstetrical Forceps; 1 Blunt Hook and Crotchet; 1 pair Budd's Placental Forceps; 1 Plain Vectis; 1 Smellie's Perforator; 1 pair Elliott's Craniotomy Forceps, in a Leather Pouch, Chamois lined, to roll \$ 16 50

OBSTETRICAL CASES OF ANY KIND MADE TO ORDER.

GYNÆCOLOGICAL.
PERINEORRHAPHY.



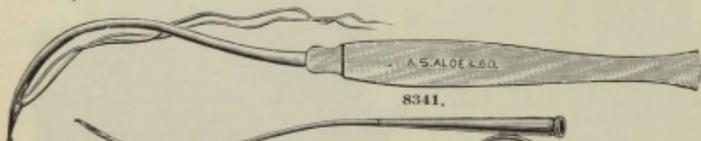
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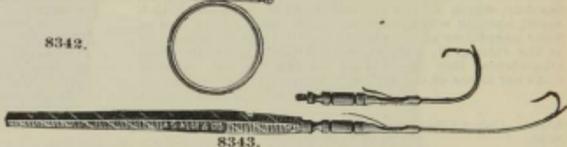
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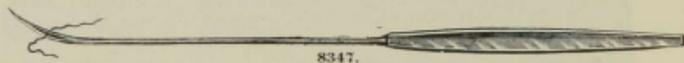
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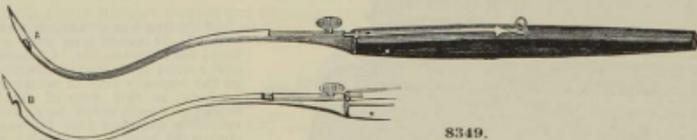
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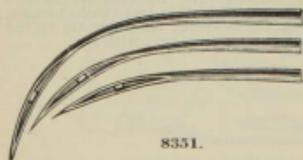
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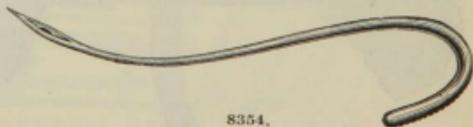
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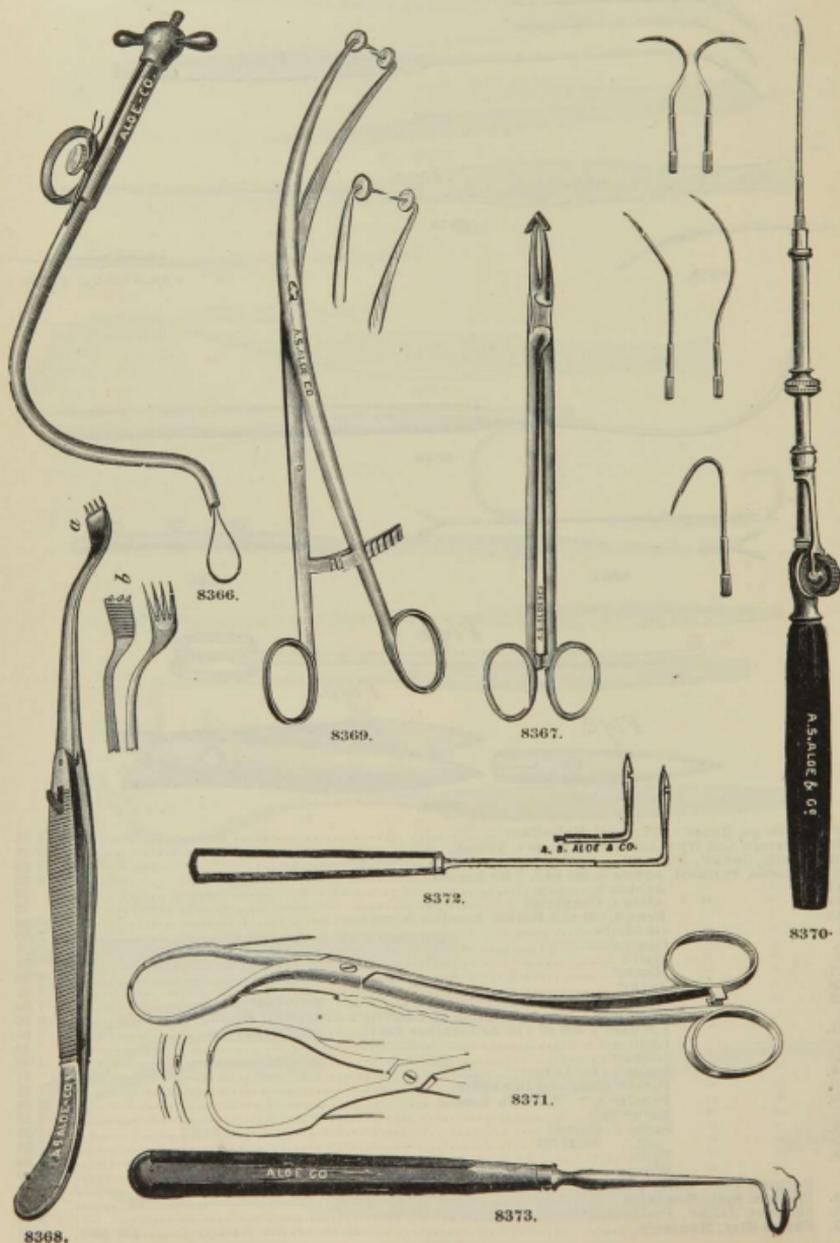
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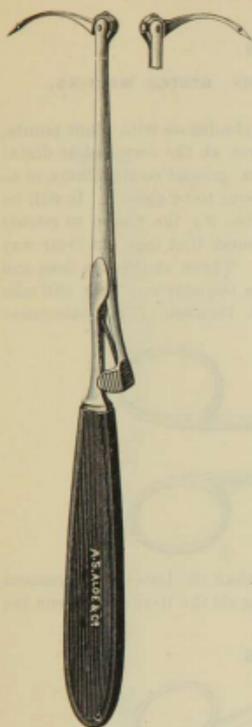
GYNÆCOLOGICAL.

TRACHELORRHAPHY.

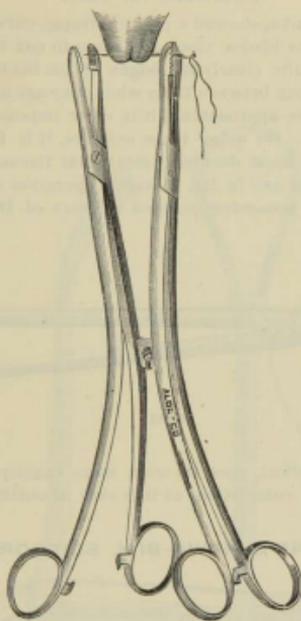


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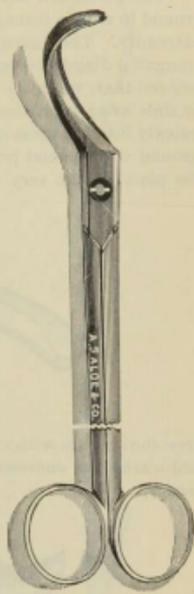
TRACHELORRHAPHY.



8374.



8377.



8381.



8383.

8366.	Constrictor, Ady's, Uterine	\$ 3 00
8367.	Forceps, Plug, Pratt's, "V" Shape	2 00
"	Tenaculum, Collin's, Adjustable and others. See page 495.	
8368.	" Trachelorrhaphy, Cowan's	3 00
8369.	" " Hanks'	2 65
8370.	Needle, Collin's, Set of 6 (for Silver Wire) in Case	13 50
8371.	" Currie's, Canulated	5 25
8372.	" Jackson's, Set of 2	2 25
8373.	" Peaslee's, Right or Left	each, 1 50
8374.	" Reverdin's, Adjustable to Right or Left	6 00
8375.	" Wilson's, Right or Left	each, 1 50
8376.	Needle Forceps, Van De Warker's	5 25
8377.	" " Von Ramdohr's	7 50
8378.	Scissors, Boldt's, Trachelorrhaphy	2 75
8379.	" Byford's, " Blunt or Sharp Points	each, 2 25
8380.	" Dawson's, "	3 75
8381.	" Emmet's, Full Curve, Right or Left	each, 3 00
8382.	" " Latest, Right or Left. See Fig. 8042, page 609	3 50
8383.	" " Lesser " Right or Left	" 3 00

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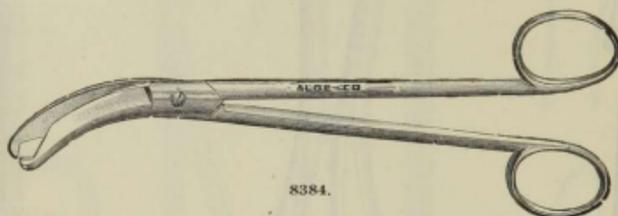
GYNÆCOLOGICAL.

TRACHELORRHAPHY.

TRACHELORRHAPHY SCISSORS.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK, STATED MEETING,
NOVEMBER 15, 1887.

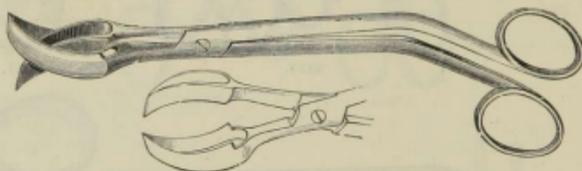
The President, Dr. H. T. Hanks, showed a pair of strong, curved scissors with blunt points, ground in such a manner that the blades meet and begin to cut first at the very end or distal extremity. The figure shows quite clearly the edges of the blades, ground so that there is an elongated diamond-shaped opening between them when they are about to be closed. It will be noticed that, when the blades are approaching, it is quite impossible for the tissue to retract or slide away from the scissors. On using these scissors, it is found that they cut their way quickly into the most dense and most decidedly cicatricial tissue. These shown are bent and ground with special reference for use in Dr. Emmet's operation on the cervix. They will take the place of the very excellent tenaculum-pointed scissors of Dr. Dawson. The instrument



8384.

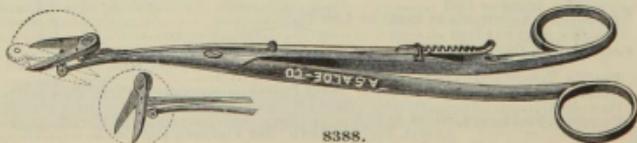
here shown cuts with even less effort, does its work more exactly than the Dawson instrument and leaves less unevenness after completion, as it is sure of cutting all the tissues between the blades.

SKENE'S HAWK-BILL SCISSORS.



8386.

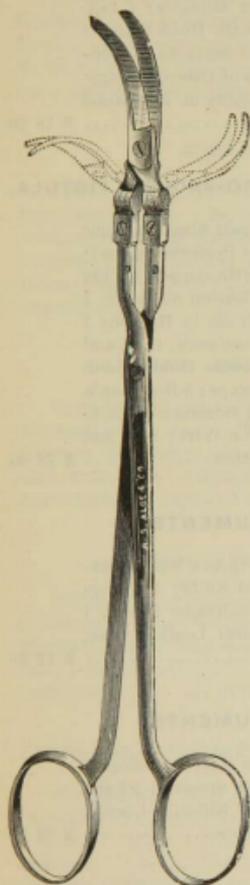
The parts of these scissors are made to seize the angle formed by the junction of the two flaps, as far as appears necessary. The flaps are brought together by the aid of the forceps on each side, so as to bring the tissues more within the grasp of the scissors. The blades of the scissors are then closed, and a strip is removed from above downwards on each flap. It frequently happens that a portion of the tissue to be so removed escapes from the scissors at the lower portion of the flaps, on one or both sides; but that can be easily trimmed off with curved scissors. The most difficult part of the denudation is at the angle formed at the juncture of the flaps, if the curved scissors are used; but with the hawk-bill scissors that portion of the denudation can be accomplished accurately and with facility.



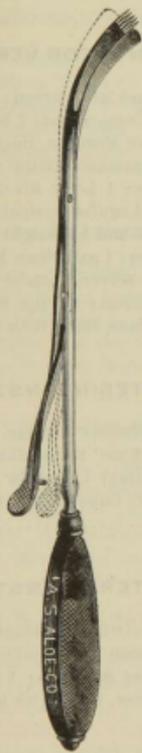
8388.

GYNÆCOLOGICAL.

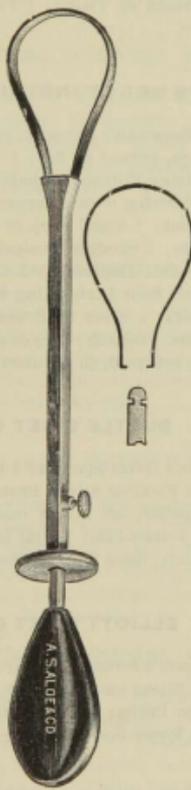
TRACHELORRHAPHY.



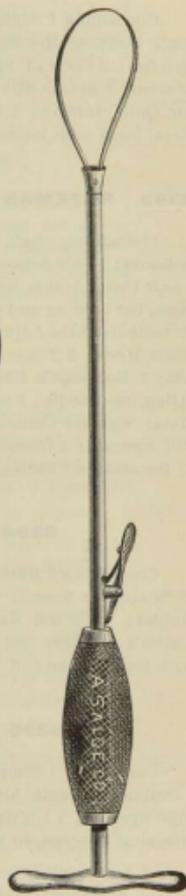
8387.



8389.



8390.



8391.

8384.	Scissors, Hanks' Trachelorrhaphy, Right and Left.....	each, \$ 3 00
8385.	" Pratt's, Double Curve (Latest).....	2 50
8386.	" Skene's, Hawk-Bill.....	7 00
8387.	" Smith's, Jointed	9 00
8388.	" Tieman's, Movable Point.....	6 50
8389.	Sector, Skene's, Uterine.....	8 25
8390.	Tourniquet, Ady's, Uterine.....	3 00
8391.	" Emmet's, "	4 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

GYNÆCOLOGICAL.

GYNÆCOLOGICAL INSTRUMENT CASES.

8392. AGNEW'S SET OF INSTRUMENTS FOR RUPTURED PERINÆUM.

Containing 1 Scalpel; 1 pair Agnew's Tissue Forceps, with Wire Adjuster; 1 Ash-ton's Perineal Needle; 4 Curved Suture Needles, 1 Agnew's Needle Holder and 3 Needles; 2 Coils of Silver Wire; 1 Shot Compressor; 1 pair Curved Scissors; 1 Tenaculum; 2 Skeins Silk Ligature; 1 Probe-Pointed Bistoury; 6 Pieces of Cane or Bougie for Quill Sutures; 1 Skein of Twine; 1 Piece of Wax, in a Mahogany or Rosewood Case, lined with leather \$ 18 50

8393. BOZEMAN'S SET OF INSTRUMENTS FOR VESICO-VAGINAL FISTULA.

Containing 2 pair Bozeman's Scissors, right and left, curved; 1 pair Sims' Straight Scissors; 1 pair Scissors, curved on flat; 1 Shot Compressor; 1 Shot Perforating Awl; 1 pair Cross Action Seizing Forceps; 1 pair Curved Forceps, lined with copper on the jaws, for holding and drawing wire sutures; 1 Bozeman's Clamp or Button Adjuster; 1 Bozeman's Wire Adjuster; 1 Sims' Fork or Pulley; 1 Long Steel Probe in Handle; 1 Blunt Hook; 2 Tenacula; 2 Straight Scalpels; 2 Angular Scalpels, one each, right and left; 1 Bozeman's Urethral Depressor; 1 Curved and 1 Straight Needle Holder, both fitting one handle; 1 pair Shot Perforating Forceps; 1 pair Plain Forceps; 3 Bozeman's Metal Sigmoid Catheters; 5 Sizes of Bozeman's Silver Buttons; 2 Bozeman's Duck-Bill Specula; 1 Common Probang; 2 Sponge Holders; 3 Coils Silver Wire; Silk and 12 Bozeman's Needles, assorted, in a Rosewood Case, lined with leather..... \$ 75 00

8394. BUTTLE'S SET OF UTERINE INSTRUMENTS.

Containing 2 Buttles Glass Specula; 1 Hard Rubber Syringe, with two long pipes; (1 Simpson's Sound; 1 Flexible Silver Probe; 1 Sims' Razor-Shaped Knife; 1 Sponge Holder; 1 Cotton Expeller, all fitting one handle); 1 Budd's Whalebone Probe; 1 Buttles Scarifier and Tenaculum; 1 Vial to Carry Caustic, in a Russet Leather Case, with metal hinge and lock, lined with leather..... \$ 17 50

8395. ELLIOTT'S SET OF UTERINE INSTRUMENTS.

Containing 1 Simpson's Sound; 1 Guarded Scarifier; 1 Sanger's Porte Caustique; 1 Ointment Bougie, all fitting one handle; 2 Ferguson's Silvered Glass Specula; 1 Long Pipe Syringe; 1 Uterine Probe; 2 Vials with Glass Stoppers; 1 pair Elliott's Uterine Dressing Forceps, in a Rosewood or Mahogany Case, lined with leather \$ 18 75

8396. EMMET'S SET OF INSTRUMENTS FOR VESICO-VAGINAL FISTULA.

Containing 1 Sims' Hospital Speculum; 1 Sims' Virgin Speculum; 1 Emmet's Depressor; 1 Emmet's Sponge Holder; 1 Sims' Sigmoid Catheter, silver; 1 Emmet's Uterotome; 2 Emmet's Tenacula; 1 Perry's Tenaculum; 6 Emmet's Scissors; 1 Emmet's Wire Pressing Forceps; 2 Bistouries; 1 Scalpel; 1 Emmet's Needle Forceps; 1 Emmet's Dressing Forceps; 1 Emmet's Wire Twisting Forceps; 1 Sims' Blunt Hook; 1 Sims' Shield; 1 Sims' Wire Carrier; 1 Coil Silver Wire; 1 Dozen Emmet's Needles, in a three-fold Morocco Case, lined with chamois, red or drab; in the middle compartment are placed the scissors and other instruments, which would be injured by being twisted in the rolling or folding of the case; beneath these is space for the Speculum and Sponge Holders .. \$ 60 00

GYNÆCOLOGICAL.

GYNÆCOLOGICAL INSTRUMENT CASES.

8397. GARDNER'S SET OF UTERINE INSTRUMENTS.

Containing 1 Gardner's Manifold Instrument (Uterine Repositor); 1 pair of Gardner's Caustic Forceps; 1 Uterine Sound; 1 Barker's Ointment Bougie; 1 Sponge Holder; 1 Tiemann's Quadrivalve Speculum; 1 Long H. R. Uterine Syringe; 2 Ferguson's Glass Specula; 2 bottles for Oil, etc. In a Rosewood or Mahogany case, lined with oil-dyed velvet..... \$35 00

8398. GOODELL'S GENERAL UTERINE SET.

Containing 1 Goodell's Speculum; 1 Ferguson's Speculum, hard rubber; 1 Simpson's Sound; 1 Sims' Silver Probe; 2 Aluminium Applicators, with set screw handles; 1 Uterine Dressing Forceps; 1 Long Pipe Syringe; 1 Elliott's Repositor; 1 Thomas' Blunt Curette; 1 Simon's Sharp Curette; 1 Buttle's Scarifier; 1 Goodell's Dilator, light; 1 Sims' Tenaculum; 4 Glass Stopped Bottles. In a leather satchel, chamois lined..... \$30 00

8399. KELLY'S EXAMINING AND APPLYING SET.

Containing 2 Sims' Specula; 1 Nelson's Trivalve Speculum; 1 Kelly's Corrugated Tenaculum-Elevator; 1 Uterine Sound, graduated in inches and centimetres; 1 Kelly's Delicate Tenaculum Forceps, with catch; 1 Thomas' Delicate Uterine Dressing Forceps, with catch; 1 Kelly's Gauze and Cotton Packer; 2 Glass Catheters; 1 Playfair's Aluminium Applicator; 1 Kelly's Knife Blade Tenaculum-Scarifier..... \$16 50

8400. KELLY'S APPLYING AND OPERATING SET.

Containing in addition to the above, the following for Dilating and Curetting: 1 Goodell's Dilator, heavy; 1 Ellinger's Dilator, light; 1 Simon's Curette, sharp; 1 Martin's Double Curette; 1 Placental Forceps; 1 Garrigue's Gauze Packing Forceps; 2 Scalpels; 1 Uterine Knife, double edge, curved on flat; 2 Scalpels, bent angular, right and left; 1 Thomas' Long Tissue Forceps, slide catch; 1 Needle Holder; 1 Scissors, long, curved on flat; 1 Scissors, long, bent at angle; 1 Blunt Hook; 1 Shot Compressor; Cervix and Perineal Needles; Silk Wire, Silk Worm Gut and Perforated Shot. In a leather satchel, with space for dressings, anaesthetics, etc... \$58 00

8401. MONTGOMERY'S GENERAL GYNÆCOLOGICAL OPERATING SET.

Containing 1 Sims' Speculum; 1 Goodell's Speculum; 1 Two-pronged Vulsellum Forceps; 2 Tenacula; 1 set of Pratt's Uterine Dilators, sixteen sizes; 1 Curette, sharp; 1 Curette, dull; 1 Placental Forceps; 1 Garrigue's Gauze Packing Forceps; 2 Scalpels; 1 Uterine Knife, double edge, curved on flat; 2 Scalpels, bent angular, right and left; 1 Thomas' Long Tissue Forceps, slide catch; 1 Needle Holder; 1 Scissors, long, curved on flat; 1 Scissors, long, bent at angle; 1 Blunt Hook; 1 Shot Compressor; Cervix and Perineal Needles; Silk Wire, Silk Worm Gut and Perforated Shot. In a leather satchel, chamois lined, with the knives in a compact case..... \$53 00

8402. MUNDE'S POCKET CASE, FOR EXAMINATIONS AND APPLICATIONS.

Containing 1 Dawson's Double-Hinge Sims' Speculum; 1 Double Depressor; 2 Tenacula; 2 Mundé's Hard Rubber Applicators; 2 Straight Hard Rubber Cotton Sticks; 1 Curved Dressing Forceps, with catch; Absorbent Cotton, Tampons. In leather case, leather lined..... \$12 00

GYNÆCOLOGICAL.

GYNÆCOLOGICAL INSTRUMENT CASES.

8403. NOTT'S SET OF UTERINE INSTRUMENTS.

Containing 1 Nott's Speculum with Tenaculum; 1 Nott's Depressor; 1 Roux's Needle Holder; 1 Applicator and Expeller; 1 Sponge Holder; 1 Lead Sound; 1 Scarifying Knife; 1 Simpson's Sound; 1 Sims' Uterine Probe, pure silver; 1 Nott's Uterine Dilator; 1 Nott's Uterine Catheter; 1 Double Spring Tenaculum; 1 Hard Rubber Syringe, for cleansing Vagina and Uterus; 1 Lente's Ointment Syringe; 1 Lente's Platina Cup; 1 pair of Uterine Dressing Forceps; 1 pair Needle Forceps; 1 pair Seizing Forceps; 1 Straight Scalpel; 1 Curved Scalpel; 1 pair Emmet's Scissors; 1 Sims' Wire Adjuster; 1 Sims' Wire Pulley; 1 Sims' Blunt Hook; 1 Sims' Sigmoid Catheter, tin; 1 Sims' Sigmoid Catheter, hard rubber; 1 Sims' Sigmoid Catheter, silver; 1 Bittle's Scarifier; 1 Thomas' Dry Copper; 1 Smith's Wire Ecraseur; 1 Long Delicate Tenaculum; 1 pair Long Straight Scissors; 1 Curette, for scooping out the uterus; 6 Emmet's Needles; 3 coils of Silver Wire; 1 Whalebone Cotton Applicator; 12 Sea Tangle and Carbolized Sponge Tents; 2 Glass Bottles for Caustic, etc.; Silk for Sutures. In a Rosewood case, lined with oil-dyed velvet..... \$ 94 00

8404. PEASLEE'S SET OF UTERINE INSTRUMENTS.

Containing 1 Sims' Speculum; 1 pair of Dressing Forceps; 1 Uterine Tenaculum; 1 Peaslee's Sound; 1 Emmet's Applicator; 1 Peaslee's Metrotome (hysterotome); 1 pair Curved Scissors; 1 Uterine Scarifier; 1 Intra-Uterine Applicator; 1 Uterine Syringe; 1 Catheter; 1 Peaslee's Curved Needle; 1 Emmet's Needle; 1 pair Needle Forceps; 2 Ferguson's Glass Specula; 1 Peaslee's Depressor; 1 Simpson's Sound; 1 Whalebone Probe. In a Rosewood, Mahogany or Morocco covered case, lined with oil-dyed velvet..... \$ 45 00

8405. SIMS' SET OF INSTRUMENTS FOR VESICO-VAGINAL FISTULA.

Containing 2 Silver Sigmoid Catheters; 2 Metal Sigmoid Catheters; 1 Sims' Speculum, plated; 1 pair of Sims' Needle Forceps; 1 pair of Straight Long-handled Scissors; 1 pair of Curved Long-handled Scissors; 1 pair of Small Smooth-pointed Scissors; 1 pair of Twisting Forceps, slide catch; 1 pair of Seizing Forceps; 2 Sims' Scalpels; 2 Sims' Tenacula; 1 Sims' Blunt Hook; 1 Sims' Suture-carrier; 1 Sims' Wire-adjuster; 6 Sims' Needles; 1 coil Silver Wire; 2 Sponge-holders; some Lead Wire; 1 Mahogany, Rosewood or Morocco covered case, lined with oil-dyed velvet... \$ 42 00

8406. SIMS' SET OF INSTRUMENTS FOR VESICO-VAGINAL FISTULA AND UTERINE OPERATIONS.

Containing 1 Sims' Speculum; 1 Sims' Depressor; 1 Silver Caustic Probe; 1 Simpson's Sound; 2 Sponge-holders; 1 pair of Sims' Twisting Forceps; 1 pair of Sims' Seizing Forceps; 1 pair of Scissors, curved to the right side; 1 pair of Scissors, curved to the left side; 1 pair of Sims' Needle Forceps; 1 pair of Straight Scissors; 1 Sims' Revolving Knife; 1 Sims' Wire-adjuster; 1 Sims' Suture-carrier; 1 Sims' Uterine Repositor; 2 Sims' Scalpels; 2 Sims' Tenacula; 1 Sims' Blunt Hook; 1 Sims' Silver Sigmoid Catheter; 4 Metal Sigmoid Catheters; 4 coils Silver Wire; 12 Sims' Needles; 1 Mahogany, Rosewood or Morocco covered case, lined with oil-dyed velvet. \$ 56 00

GYNÆCOLOGICAL.

GYNÆCOLOGICAL INSTRUMENT CASES.

8407. SIMS' SET OF INSTRUMENTS FOR UTERINE SURGERY.

Containing 1 Sims' Curette; 2 Sponge Holders; 1 Pair McClintock's Polypus Forceps; 1 Pair Sims' Polypus Forceps, 1 Sims' Porte Chain Ecraseur; 1 Pair Curved Scissors; 1 Sims' Movable Blade Knife; 1 Priestly's Dilator; 1 Pair Tenaculum Forceps; 1 Uterine Repositor; 1 Sims' Tampon Screw; 1 Forked Sound; 1 Vaginal Dilator. In a Mahogany, Rosewood or Morocco covered Case, lined with oil-dyed velvet, \$ 93 50

8408. SKENE'S SET OF UTERINE INSTRUMENTS.

Containing 1 Sims' Speculum; 1 Skene's Needle Holder; 1 Skene's Scarifyer and Sound; 1 Skene's Elevator; 1 Long Pipe Syringe; 1 Nott's Depressor; 1 Uterine Dressing Forceps; 1 Straight Scissors; 1 Curved Scissors; 1 Tenaculum; 1 Uterine Applicator with Slide; 1 Skene's Curette; 1 Sponge Holder; 1 Simpson's Sound. In a Russet Leather Case, lined with oil-dyed velvet..... \$ 40 00

8409. THOMAS' SET OF UTERINE INSTRUMENTS.

Containing 1 Thomas-Cusco's Speculum; 1 Thomas-Sims' Speculum; 1 Caustic Holder; 1 Pair Uterine Dressing Forceps; 1 Thomas' Cotton Expeller; 1 Small Uterine Probe; 2 Whalebone Applicators; 2 Sponge Holders; 1 Long Pipe Syringe; 1 Small Vial for holding solid Caustic; 12 Sponge Tents; 1 Uterine Scarificator. In a Rosewood, Mahogany or Morocco covered Case, lined with oil-dyed velvet..... \$ 35 00

8410. WARDER'S POCKET UTERINE CASE.

Containing 1 Higbee's Bivalve Speculum; 1 Simpson's Sound, separating in two parts; 1 Uterine Dressing Forceps, folding; 1 Silver Applicator and 1 Sims' Silver Probe, fitting in Set Screw Handle; 1 Sims' Tenaculum, in Folding Shell Handle with Slide Catch; 1 Sims' Scalpel, in Folding Shell Handle with Slide Catch. In Morocco Leather Case, Chamols lined..... \$ 16 50

8411. WYLIE'S BELLEVUE HOSPITAL CLINIC SET.**(GYNÆCOLOGICAL OPERATING INSTRUMENTS.)**

1 Sims' Speculum, short bladed; 1 Sims' Depressor; 2 Sims' Tenacula; 12 Sponge Holders; 2 Scissors, curved flatwise, blunt and sharp pointed; 2 Knives; 1 Thumb Forceps; 6 Hæmostatic Pressure Forceps; 1 Angular Forceps; 3 Sims' Currettes, assorted; 1 Sims' Shield; 1 Sims' Wire Twister; 2 Applicators, whalebone; 1 Applicator, pure silver; 1 Sims' Rectal Speculum; 1 Sims' Uterotome; 1 Wylie-Sims' Dilator; 3 Glass Plugs; 12 Sims' Cervix Needles, 1 inch long; 12 Suture Needles, straight; 5 Coils Silver Wire (Nos. 26 and 27) and Silk; 2 Coils Catgut, Nos. 2 and 3; 1 Leather Pouch, to hold most of the above instruments..... \$ 75 00

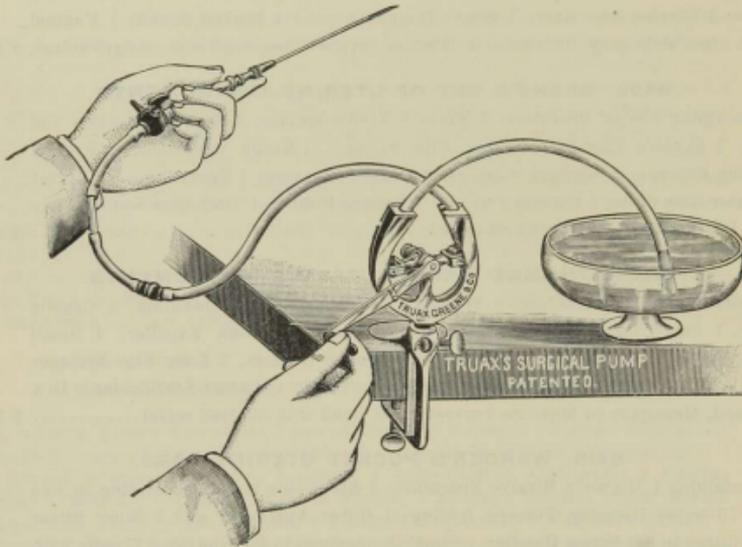
8412. WYLIE'S POLYCLINIC SET.**(OFFICE EXAMINING INSTRUMENTS.)**

1 Long-bladed Sims' Speculum; 1 Sims' Depressor, double; 1 Sims' Dressing Forceps; 2 Tenacula; 1 Simpson's Uterine Sound, graduated; 1 Wylie's Sound, pure silver; 1 Sims' Repositor; 1 Emmet's Applicator, pure silver; 1 Wylie's Cervical Protector; 1 Sims' Curette, small; 1 Wylie's-Sims' Dilator; 1 Wylie's Mucus Syringe; In Leather Pouch, to roll up..... \$ 33 75

THE TRUAX SURGICAL PUMP.

(THE IMPROVED ALLEN.)

BEWARE OF INFRINGEMENTS.



Showing Aspirating Attachment.

This Surgical Pump possesses all the advantages of the original "Allen" Surgical Pump with none of its disadvantages. The improvements claimed for the new Pump are:

1st. A system of double rollers, thus decreasing the pulsation of the fluid when used as a vacuum pump or aspirator.

2d. A smaller number of parts, with less liability to get out of order.

3d. A pressure device allowing any degree of compression, on any sized tube.

4th. Compactness, giving as efficient service with a smaller instrument.

5th. Affording an easier method of changing tubes.

By means of suitable attachments it forms an Aspirator, Injector, Stomach Pump, Bladder Syringe, Cupping Pump, Dilator, Universal Syringe, Breast Pump and Force and Vacuum Pump, all combined in one instrument.

With our improved attachments we claim for this pump:

1st. The most powerful, rapid, safest and only aseptic aspirator in use.

2d. The only injector that can be used without admitting air with the fluid injected.

3d. The most effective stomach pump in the market.

4th. A safe bladder syringe that may be used with an ordinary catheter.

5th. A reliable cupping pump of great power.

6th. A dilator (uterine, rectal, vaginal, etc.) superior to any.

7th. A tamponing or plugging instrument for arresting hæmorrhage.

8th. A universal syringe without valves, giving a steady, uniform current.

9th. A breast pump that will always work.

10th. A vacuum pump capable of raising mercury in a vacuum to a height of twenty-eight inches.

THE TRUAX SURGICAL PUMP.

(THE IMPROVED ALLEN.)

11th. A force-pump that will force up (and sustain) a column of mercury to a height of twelve feet (equal to a column of water over one hundred and sixty feet in height).

(A pump and all the above-mentioned attachments can be purchased in one outfit. See Outfit No. 11, page 555.)

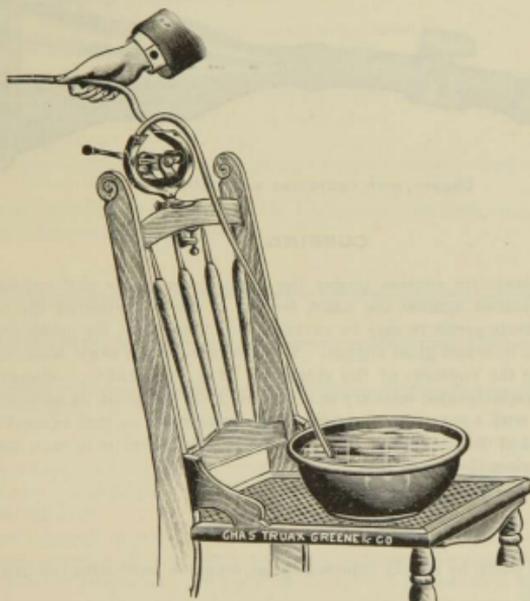
12th. The only perfect blood transfuser yet devised.

13th. An improved instrument for rectal injection.

14th. The cleanliest and most effective embalming syringe made.

15th. A douche having a continuous current that can be made slow or fast, as desired.

16th. A superior saliva evacuator for dental use.



Showing the Pump Attached to a Chair.

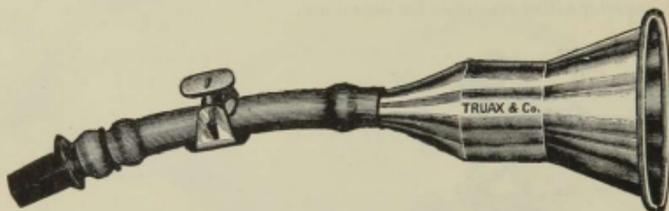
This device consists of a horseshoe-shaped part, on the inner surface of which is clamped a piece of rubber tubing, so adjusted as to describe the form of a letter "U." Passing through the case is a shaft moved by a suitable crank, and to which is attached a rotating arbor carrying two rollers. These rollers are connected through the center of the arbor by a double threaded rod, moved by a milled-edged wheel. By turning this small wheel, any degree of pressure desired can be produced upon the rubber tube. By properly adjusting the screws, each revolution of the crank will displace twice as much fluid as is contained in that portion of the rubber tubing forming the half loop. As the rollers in passing around the circle rest on the tubing, completely closing it at some one point, there is no necessity for valves. If one end of the tubing be attached to a vacuum bottle and the crank turned so as to force the air in the tubing in the opposite direction, a powerful vacuum will soon be formed; or if the same end be attached to an air receiver and the crank turned toward it, a high pressure of condensed air may be obtained. The apparatus is adapted for pumping both gases and liquids, and is either a force or vacuum pump, depending only on the direction in which the crank is turned.

THE TRUAX SURGICAL PUMP.

(THE IMPROVED ALLEN.)

It has no valves or stop-cocks, and the current may be instantly reversed. It has sufficient power to force a column of water to a height of one hundred and sixty feet, maintaining it at that height, and the smallest size will easily pump one quart of liquid per minute.

There are no delicate or complicated parts to get out of order. The rubber tubing will not wear out, and should it deteriorate after a few years' use, it may be replaced at the cost of a few cents. Our best outfits are supplied with duplicate tubes, so that the surgeon may be provided with one for septic and another for aseptic use.



Cupper, with Connector and Cut-Off.

CUPPING.

In order to demonstrate its suction power the cupper, connector and cut-off may be attached and the cupper placed against the hand, temple or other portion of the body. Then, by turning the small wheels pressure may be exerted upon the roller, the crank revolved and a vacuum produced in the tube and glass cupper. This pressure is the same force used in aspirating, and in evacuating the contents of the stomach. It is sufficient to collapse soft tubing, and will, if properly attached, raise mercury in a vacuum to a height of 28 inches. Each complete outfit is provided with a set of five coppers, with connectors, so that several of them may be, if necessary, applied at the same time. In addition to this, there is in each outfit a uterine cupper suitable for cupping the cervix.

STOMACH PUMP.

It forms a stomach pump by simply connecting the stomach tube with the instrument. As such its advantages are:

1st. That there is no loss of time in creating a vacuum or turning a stop-cock after each stroke of the piston, as is the case when an ordinary stomach pump is used.

2d. Its great power enables the operator to draw semi-solids and particles of undigested food through the openings.

3d. Its reversible current enables him, if these openings become clogged, to reverse the crank and free them.

4th. It may be used for washing out the stomach and diluting its contents by simply placing the free end of the instrument in a basin of water and reversing its current, thus filling up and evacuating the stomach as often as desired.

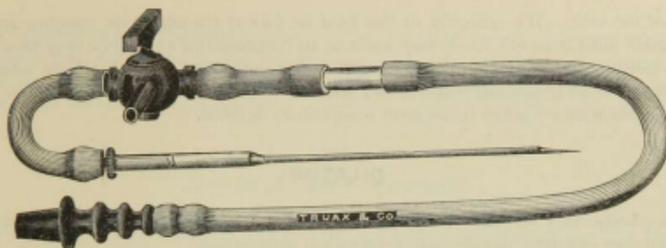
It may be used successfully in treating diseases of the stomach, and in all other work of this class.

ASPIRATOR.

To convert the Truax pump into an aspirator, it is only necessary to connect with rubber tubing the piece of small glass tubing, two-way stop-cock and trocar, and attach them to the pump, when the instrument is ready for work.

THE TRUAX SURGICAL PUMP.

(THE IMPROVED ALLEN.)

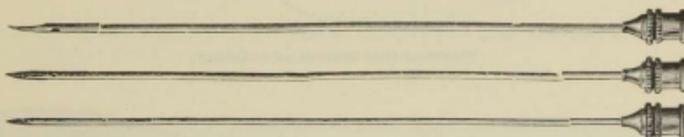


Aspirating Attachment.

As the Truax Surgical Pump possesses no piston (requiring frequent packing), valves or stop-cocks, and, as it is used without a vacuum bottle, both the time usually employed in producing the vacuum and in emptying the bottle is saved.

Its advantages as an aspirator are:

- 1st. Its great power enables the operator to use a smaller sized needle than he otherwise could.
- 2d. Its reversible current enables him, if the needle becomes clogged, to reverse its action and force out the occluding substance.



Plain Aspirating Needles.

3d. There is no loss of time in operating it, as there is no vacuum bottle to be exhausted. The instrument commences to work as soon as the crank is turned, and continues to do so without interruption.

4th. The amount of power exerted may be always the same, and is constantly under the control of the operator and may be made weak or strong, as desired. In using an ordinary aspirator a vacuum must first be created in the bottle; as fast as it fills the power decreases, and when the bottle is full it must be disconnected, emptied and a new vacuum created. If the aspirator fails to work properly much delay and annoyance is encountered, all of which is avoided when using the Truax Pump.



Emmet's Small Trocar.

ASPIRATOR CHANGED TO AN INJECTOR.

If the operator desires to inject and wash out the cavity (while his assistant is still turning the crank and creating a vacuum) he has but to turn the stop-cock and close the opening to the needle; the free end of the tube may then be placed in the fluid to be injected and the current reversed. This will force the air out at the side opening of the stop-cock and permit the

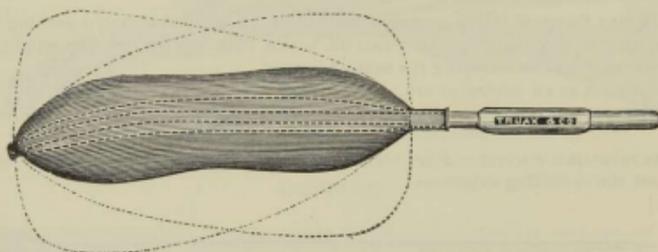
THE TRUAX SURGICAL PUMP.

(THE IMPROVED ALLEN.)

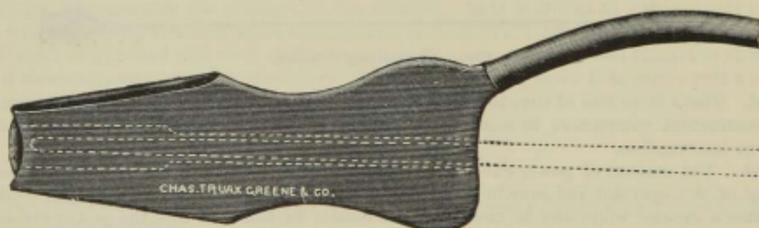
cleansing of the tube. If a quantity of the fluid be forced through this opening and the current continued until it passes freely and without air bubbles the stop-cock may then be turned as before, and the cavity injected, with a positive certainty that no air has been admitted. In many cases this is an important feature, and one that should not be under-estimated, for it can be accomplished with no other instrument ever before devised.

DILATOR.

This apparatus may be made available in dilating the cervix uteri and, with our improved dilator, forms an effective, durable and economical instrument.



Showing Our System of Dilating.



Truax's Dilating Bags.

This modification of the original Barnes bag consists of a fiddle-shaped soft rubber bag having an inner chamber, into which may be inserted a slender stem or elevator. This serves to stiffen the bag for introduction. The outer or upper corners of the bag are tucked or folded in while the dilator is being inserted, thus admitting of its use in cases where the old-style bag could not be inserted.

BLADDER WASHER.

As a bladder washer the advantages of this instrument are:

- 1st. The injection of fluid without the introduction of air.
- 2d. Accurate means of measuring the amount of fluid injected.
- 3d. The distending of the bladder, causing a complete irrigation.
- 4th. The withdrawing of the fluid without danger of injury to the mucous lining.

THE TRUAX SURGICAL PUMP.

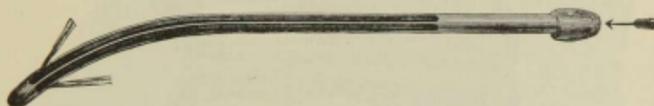
(THE IMPROVED ALLEN.)

5th. The using of a catheter that may be either new and aseptic, or easily made aseptic. It is well known that a double channel catheter is usually the most uncleanly instrument in a physician's armamentarium, and when introduced, unless it be plugged or otherwise stopped up, only irrigates the portion of the bladder surrounding the eyes of the instrument.

SYRINGE AND DOUCHE.

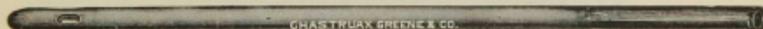
The advantages of this invention, when used as a syringe or douche, are too apparent to require a lengthy discussion.

Each No. 11 outfit (see page 555) is supplied with five syringe pipes—rectal, vaginal, uterine, ear and post nasal—so that the physician has all the advantages of a universal syringe.



Skene's Reflux Catheter.

This consists of a hard rubber aseptic uterine catheter provided with two external lateral slots, allowing the reflow of fluid injected into the uterine cavity.



Rectal Injecting Tube.

This rectal pipe is made from a high grade of pure maroon rubber. It will be found useful in rectal injections.

BREAST PUMP.

As a breast pump it acts easily and perfectly, and as such possesses advantages over all ordinary instruments of this class.

TAMPONING AND PLUGGING.

By attaching one of the rubber bags, this instrument forms a tamponing or plugging outfit superior to any other in the market. As such it may be used for arresting hæmorrhage by the introduction of cold water, or for reducing inflammation by being filled with hot water. This supply of water may be introduced, evacuated and again introduced as often as its temperature changes, remembering that the same number of revolutions that will expand the bag to a certain size before introduction, will accomplish the same result afterwards. If, however, the operator desires to avoid over-distension, and accurately measure the amount of dilation produced, he has but to attach one of the rubber bags and expand it to the size desired. Then attach to the other end of the instrument the bag which he desires to use in the operation,

THE TRUAX SURGICAL PUMP.

(THE IMPROVED ALLEN.)

introduce it, reverse the current, and force the contents of the first one into the second, after the second one has been introduced. These bags may be introduced directly into the body of the uterus in many cases, and they may be used in the vagina, rectum and other cavities of the body.

The nine instruments, or sets of instruments, described in the foregoing pages—copper, stomach pump, aspirator, injector, tamponing and plugging dilator, bladder washer, syringe and douche and breast pump, with the necessary attachments, together with a No. 2 pump—all are all included in one outfit.



8413. Showing the No. 9 (\$15.00) Outfit.

PHYSICIANS' OUTFIT No. 9.

Containing 1 3-inch Pump and Tube; 1 Clamp to fasten to table, chair, etc.; 2 Universal Connectors; 1 Glass Cupper; 1 Connector and Cut-off for same; 1 Stomach Tube and Connector; 3 Aspirating Needles; 2 Tampons; 1 Uterine Dilator, small; 1 Uterine Dilator, large; 2 Silk Covers for same; 2 Extra Rubber Bags, for Tampons, Dilators, etc.; 1 Olive Tip Catheter and Connection, all in a neat velvet-lined leather-covered case..... \$ 15 00

SIZES OF PUMPS AND PRICES.

8414.	Pump No. 2.	Diameter of Cylinder, 3 inches,	price of pump only	\$ 9 00
8415.	“ “ 4.	“ “ “ 6 “ “ “ “ “	(Allen pattern)	15 00
The above prices include one Tube and a set of Universal Connectors.				
In	Case, like Fig. 8413,	extra .....	.....	1 75
“	“ “ “ “ 8416,	“ .....	.....	5 00

THE TRUAX SURGICAL PUMP.

(THE IMPROVED ALLEN.)



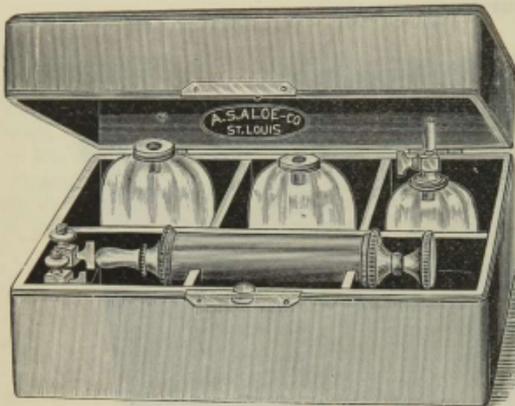
8416. Showing the No. 11 (\$25.00) Outfit.

PHYSICIANS' OUTFIT NO. 11.

Containing 1 3-inch Pump and Tube; 1 extra Tube for same; 1 Clamp to fasten to table, chair, etc.; 4 Universal Couplings; 2 Glass Cuppers; 2 Connectors and Cut-offs for same; 1 Stomach Tube and Connector; 1 Emmet's Trocar; 4 Aspirating Needles; 1 Two-way Cock, for injecting; 2 Tampons; 1 Uterine Dilator, small; 1 Uterine Dilator, large; 4 Silk Covers for same; 4 extra Rubber Bags, for Tampons, Dilators, etc.; 1 Olive Tip Catheter and Connector; 5 Syringe Pipes (ear, post nasal, vaginal, rectal and uterine); 1 Breast Pump; 1 Skene's Reflux Catheter; 1 Rectal Catheter; 1 Truax's Dilating Bag; 1 Uterine Cupper. All in a neat, velvet lined, solid leather case, with lock and key..... \$ 25 00

The No. 11 outfit contains nine sets of instruments, each one of which is more perfect and possesses greater advantages than any one instrument of its class to be purchased elsewhere. In other words, a physician may purchase the nine best instruments for these several operations, to be found in the market, and will find on comparison that this one outfit is a better one, for not only one, but all of the various operations for which it is recommended, than the entire nine; and these nine can not be purchased for less than six times the sum asked for this one set.

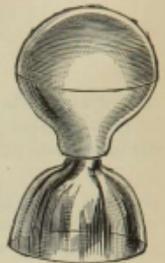
PHLEBOTOMY.
CUPPING—DRY CUPPING—LEECHING.



8428.



8431.



8433.



8439.



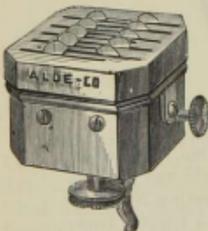
8449.

THOMAS' DRY CUPPER.

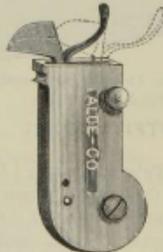
Dr. Thomas, on "Diseases of Women," says: "The cervix uteri may, by the application of an exhaustor or dry cup, have a marked hyperæmia excited within it, which extends to the uterine body and replaces that which should have occurred from physiological causes. A very simple method for producing it is to enclose the cervix within the mouth of the cylinder of hard rubber represented in Fig. 8449, and then to exhaust the air by withdrawing the piston. Before the introduction of this instrument the uterus should be exposed by means of the speculum."



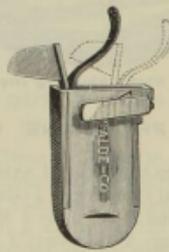
8456.



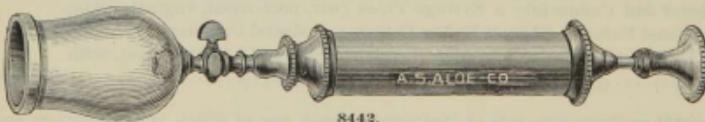
8455.



8458.



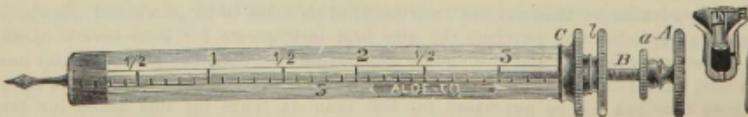
8459.



8442.

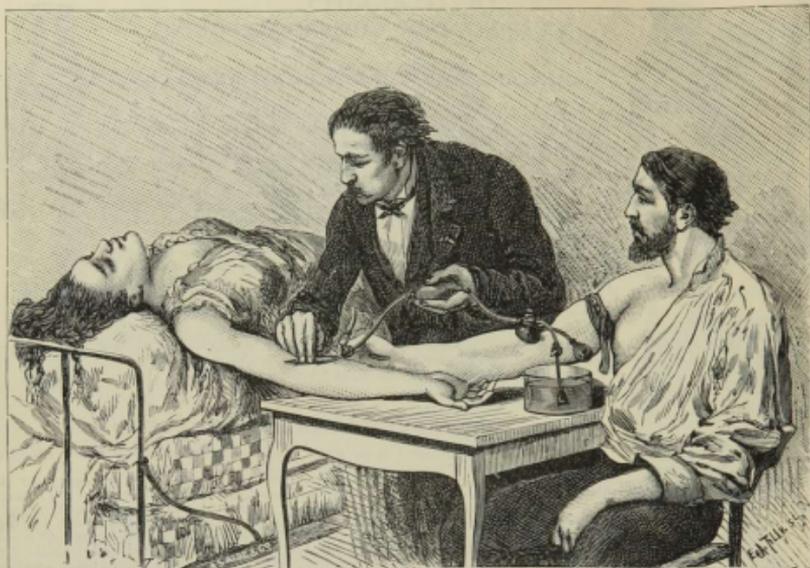


8447.



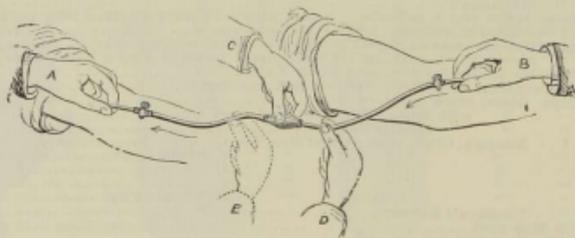
8424.

TRANSFUSION.



Transfusion of blood from the veins of one person into those of another is imperatively demanded when a patient is rapidly sinking from hemorrhage, whether the result of disease, accident or operation. It has hitherto been more particularly employed in profuse and exhausting flooding, and there are many cases on record where it was thus instrumental in saving life. In such an event it is the last recourse of the obstetrician, and no one should hesitate to perform it, even although the woman should literally be in the act of dying, or when, to borrow the language of an eminent writer, "the vital spirit is fluttering with tremulous delay upon the lips."—"System of Surgery," Gross. Vol. I., p. 457. 1882.

AVELING'S TRANSFUSION APPARATUS.



8461.

MODE OF OPERATION.—First place the apparatus in a basin of tepid water, and, while completely under the water, to fill it and insure its cleanliness, compress the bulb until the air is expelled.

The patient having been brought to the side of the bed, and the arm bared, a fold of skin over a vein, at the bend of the arm, should be raised, transixed and divided. The flattened vein now brought into view, should be seized with a pair of fine forceps, raised while an incision is made in it, and the bevel-pointed silver tube inserted. In taking this tube out of the basin, it should be kept full of water, by placing the tip of the thumb over its larger opening. While the operator is doing this an assistant should prepare the arm of the blood-donor, as in ordinary bleeding, making an incision direct into the vein, and passing the round-pointed tube into it, with its point towards the fingers. This person should then be brought to the bedside of the patient, and seated in a chair. It is better not to secure the tubes in the veins by ligatures. B represents the hand of an assistant holding the efferent tube and the lips of the small wound together, and A shows the afferent tube secured in the same manner. The india-rubber portion of the apparatus, filled with water, and kept so by turning the cock at each end of it, is now fitted into the two tubes.

TRANSFUSION.

AUELING'S TRANSFUSION APPARATUS.—

CONTINUED.

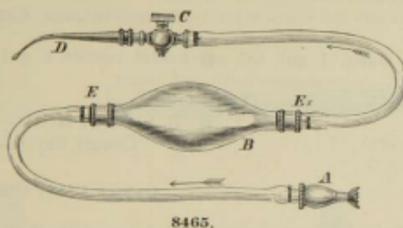
The cocks are then turned straight, and the operation commenced by compressing the india-rubber tube on the efferent side, D, and squeezing the bulb C; this forces two drachms of water into the afferent vein. Next shift the hand D to E, and compress the tube on the afferent side, then allow the tube to expand slowly, when blood will be drawn into it from the efferent vein. By repeating this process any quantity of blood can be transmitted, at any rate, the amount being measured by counting the number of times the bulb is emptied.

The advantages of this method of transfusing blood are:

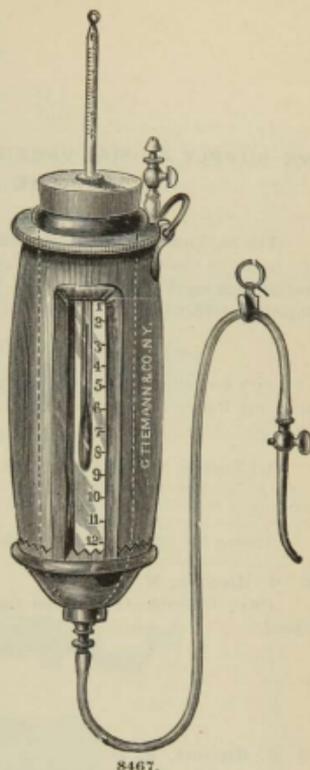
1st. The chances of coagulation are small, because the blood is removed from the action of the living vessels for only a few seconds, and glides smoothly through the india-rubber pipe without being exposed to the air.

2d. The apparatus is effective, simple, portable, inexpensive and not likely to get out of order.

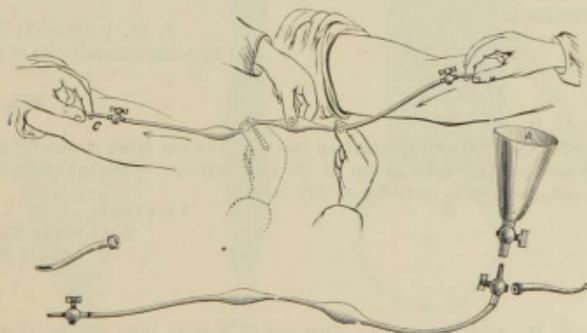
3d. The operation is safe, easy, uninterrupted, and a close imitation of nature.



8465.



8467.



8464.

8461.	Transfusion Apparatus, Aveling's.....	\$ 3 00
8462.	" " " in Case, with Scalpel and Forceps.....	6 00
8463.	" " Collin's.....	15 00
8464.	" " Fryer's.....	4 75
8465.	" " Garrigues'.....	3 00
8466.	" " Heuter's.....	7 50
8467.	" " Hutchison's.....	18 75
8468.	Harrington's Apparatus for Intra-Venous Injection of Salt.....	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

VACCINATING.

VACCINE.

**WE SUPPLY ANIMAL VACCINE VIRUS PREPARED BY R. M. HIGGINS, M. D.
OF THE MISSOURI VACCINE FARM.**

The St. Louis Board of Health for 17 years past has used this Vaccine exclusively, with the result as shown by statistics of the National Board of Health of the United States, of having less small-pox by far in St. Louis than any other city in the Union. This fact alone is sufficient evidence of the virtue of the virus.

PRICE LIST.

1 Ivory Point (1 vaccination only)	\$ 20
10 Ivory Points (10 vaccinations).....	1 00

ONLY FRESH AND RELIABLE VIRUS SUPPLIED.

All Vaccine wanted in PRIMARY cases.

REFERENCES:

Among the numerous certificates received, the following are offered:

R. M. HIGGINS, M. D.

FORT GARLAND, COLO.

DEAR DOCTOR—Out of 600 vaccinations made, I got 585 successful results in primary cases.

Yours truly,

W. E. PRATT, M. D.,
County Physician.

CANON CITY, COLO.

R. M. HIGGINS, M. D.

DEAR SIR—From your Vaccine I have obtained much more satisfactory results than from any other Vaccine used.

J. W. DAWSON, M. D.,

Physician Colorado State Penitentiary.

MEMPHIS, TENN.

R. M. HIGGINS, M. D.

DEAR SIR—We have finished vaccinating and the virus has given more uniform satisfaction than any I ever used. Three failures out of 300 vaccinations. Voucher to cover your account has been made out, and awaits approval by city council.

Very truly,

WM. KRAUSS, M. D.,
Sec'y Board Health.

JOPLIN, MO.

R. M. HIGGINS, M. D.—Of 12 primary vaccinations made with your vaccine, 11 were successful. Such results are highly satisfactory.

A. B. FREEMAN, M. D.

We also refer to the Boards of Health in St. Louis, Cincinnati, Nashville, Memphis, Mobile, New Orleans, Kansas City and Denver.

A. S. ALOE COMPANY,

WHOLESALE AND RETAIL AGENTS,

ST. LOUIS, MO.

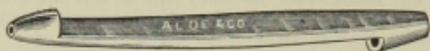
DERMIC.



8487.



8483.



8485.



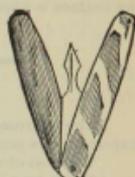
8484.



8486.



8492.



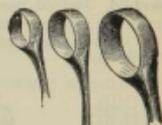
8482.



8506.



8513.



8508.



8496.



8498.



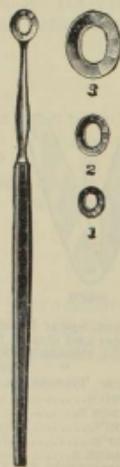
8499.



8500.



8501.



8490.



8489.

DERMIC.

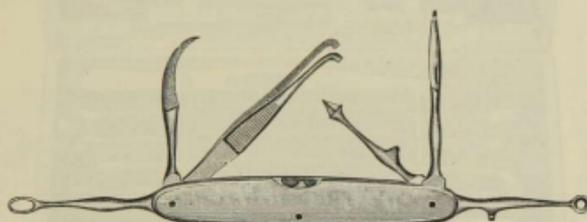


8512.



8502.

McMURRAY'S DERMIC KNIFE.



8503.

The knife, in shape and size, resembles an ordinary pocket penknife, which permits it to be readily carried. It is constructed of German silver, nickel-plated handle, giving it a neat and elegant appearance and is easily sterilized without injury to component parts. The combination contains six instruments. At one extremity there is a curette, curved bistoury and pair of epilating forceps; at the other a Kaposi acne lance, comedo extractor and dermatome. In length it measures $3\frac{1}{2}$ inches, $\frac{1}{2}$ inch at greatest breadth, and weighs $1\frac{1}{2}$ ounces.



8507.

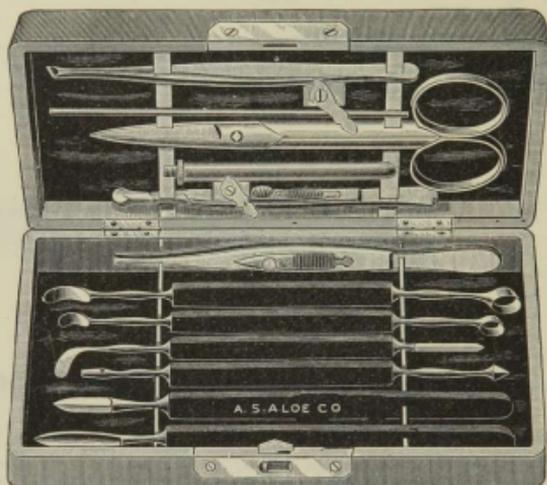
8482.	Acne Lancet, Hardaway's (St. Louis).....	\$ 50
8483.	Acne Lancet and Comedo Extractor, Piffard's.....	1 75
8484.	Comedo Extractor, Hardaway's (St. Louis).....	50
8485.	" " Ohmann Dumesnil's (St. Louis).....	50
8486.	" " Piffard's.....	50
8487.	" " Unna's.....	75
8488.	Curette, Dermal, Fox's.....	1 35
8489.	" " Piffard's.....	1 75
8490.	" " Lupus, Wolff's.....	1 35
8491.	Curette and Dry Dissector, Wright's, Dermal.....	1 00
8492.	Cutipuncture, Sherwell's.....	3 75
8493.	Cutisector, Fox's.....	1 30
8494.	" " Jackson's.....	1 15
8495.	" " Ohmann-Dumesnil's (St. Louis).....	1 50
8496.	" " Piffard's.....	3 75
8497.	Discotome, Watson's, for eradicating powder marks.....	3 00
8498.	Forceps, Depilating, Henry's.....	1 75
8499.	" " Epilating, Bergh's.....	1 25
8500.	" " Epilating, Greening's.....	1 00
8501.	" " Piffard's.....	1 15
8502.	" " Grappling.....	2 25
8503.	Knife, McMurray's, Dermic.....	6 00
8504.	Needle, Iridio-Plating, Piffard's.....	75
8505.	" " Milium, Ohmann-Dumesnil's (St. Louis).....	1 50
8506.	" " Piffard's.....	1 00
8507.	" " Navus.....	40
8508.	Pleximeter, Hesse's, Glass, for observing the skin under pressure.....	40
8509.	Punch, Keyes', Cutaneous. See illustration and description next page.....	1 25
8510.	Scarifier, Ohmann-Dumesnil's (St. Louis).....	2 00
8511.	" " Squire's, Multiple.....	7 50
8512.	Scoop, Auspitz's, Dermal.....	1 50
8513.	Spud-Scarifier, Piffard's.....	1 00
8514.	Tattooing Instrument, Piffard's.....	3 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

DERMIC.

SKIN GRAFTING—COUNTER IRRITATION—MERCURIAL FUMIGATION.

MORROW'S DERMAL CASE.



Containing 1 Scalpel; 1 Double-edge Lancet; 1 Combined Aene's Lancet and Comedo Extractor; 1 Fine Double-edged Lancet and Scarifier Combined; 1 Combined Hebra's Scoop and Vidal's Curette, small; 1 Combined Hebra's Scoop and Vidal's Curette, large; 1 Grappling Forceps; 1 Needle Forceps; 1 Millimetre Needle; 1 Straight Scissor, Charrière's Lock; 1 Aluminium Applicator; 1 Epilating Forceps; in aseptic wooden case..... \$ 25 00

KEYES' CUTANEOUS PUNCH.



8509. Page 563.

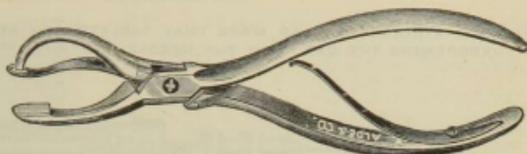
"For eradicating powder-marks, by entirely taking away the portion of integument involved in the colored scar. They are small cutaneous trephines, or punches, with a sharp cutting edge; the diameter of the cutting edge varying from one millimetre upwards—each larger trephine having a diameter one-half a millimetre greater than the next one below it. These little instruments, by being placed upon the skin and sharply rotated, will cut out a circular piece of integument of the size corresponding to their own lumen, and the depth of the portion to be excised can be varied according to pressure.

"After the colored spot has been surrounded by the circular incision made by the punch, and shows slightly above the surface, it is seized by a pair of fine toothed forceps, slightly pulled upon, and snipped away with a pair of small scissors curved on the flat. The little bloody pits in the skin are allowed to fill with coagulated blood, and left without any dressing, as the bleeding promptly ceases.

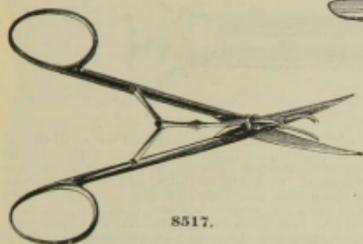
"I have also used the instrument to take away from the face of young ladies, and fastidious young gentlemen, small moles and other disfigurements. I have found it possible, in some instances, by carefully circumscribing the pigmented area, to cut away the colored deposit through the continuity of the true skin, without destroying the entire thickness of the felted sub-papillary layer beneath, in this way removing the discoloration with a minimum of the resulting scar. I think that these uses, and a number of other similar ones which readily suggest themselves, are sufficient to commend this little instrument for general adoption among dermatologists."—KEYES.

DERMIC.

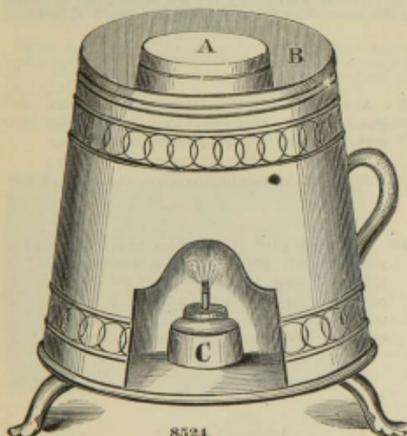
SKIN GRAFTING—COUNTER IRRITATION—MERCURIAL FUMIGATION.



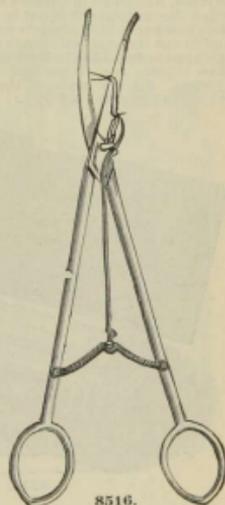
8519.



8517.



8524.



8516.

BAUNSCHEIDT'S INSTRUMENT FOR COUNTER IRRITATION.



8520.

The needles of this instrument are connected to a spiral spring concealed in the case; they are propelled by drawing the spring back with the right hand, whilst holding the instrument, applied with the left, then suddenly letting it go. After this a drop or two of the oil is applied.

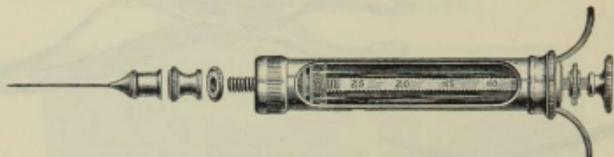
8515.	Skin Grafting Retractors, McBunney's	per pair, \$	5 25
8516.	Skin Grafting Scissors, Piffard's		7 50
8517.	" " " Smith's		6 00
8518.	Skin Grafting Set, Mixer's		25 00
8519.	Transplantation Punch, Carmalt's		4 50
8520.	Baunscheidt's Instrument for Counter Irritation		1 85
8521.	Baunscheidt's Oil, Genuine	per ounce bottle,	1 75
8522.	" " Imitation	" "	1 00
8523.	Klee's-Baunscheidt's Instrument		3 75
8524.	Bumstead-Lee's Lamp for Mercurial Fumigation		2 25
8525.	Maury's Lamp for Mercurial Fumigation		9 00
8526.	Van Buren's Lamp for Mercurial Fumigation		2 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

HYPODERMIC.

HYPODERMIC SYRINGES.

ALL OUR SYRINGES ARE SO MADE THAT TABLETS CAN BE DISSOLVED IN THEM, SIMPLY BY UNSCREWING THE CAP FROM THE NEEDLE END AND DROPPING THEM IN THE BARREL.



This syringe differs from all others in the construction of the piston, which is provided with an oil chamber between the exhausting and ejecting sections of the packing, which, when filled with oil, will distribute the same along the inner surface of the glass cylinder. The leather packing, in passing along this surface, will come in contact with the oil and be continually lubricated. This will be found of great advantage when the instrument is not in constant use, because as soon as the piston is withdrawn, the oil contained in the chamber is immediately brought in contact with the leather packing, which renders it soft, distends it and keeps the syringe always ready for use. The chamber should be refilled occasionally. To refill, unscrew the upper cap and withdraw the piston just enough to expose the chamber, drop in a small quantity of oil, then replace the piston and screw the cap down firmly. A small screw cap covers the needle end of every syringe. All are made of the best seamless material, by the best skilled mechanics, and every syringe is tested and guaranteed by us.



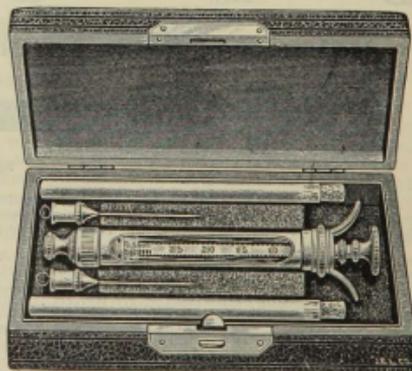
8528.

8527. Aloe's No. 1 Oil, Hypodermic Syringe, has glass barrel, protected by a fenestrated metal cylinder, showing graduations on the piston rod; in Morocco case, hook catch; with bottle for solution.....\$ 1 25

8528. Aloe's No. 2 Oil, Hypodermic Syringe, has glass barrel, protected by a fenestrated metal cylinder, graduations on the piston rod, with finger rests and metal cap on end to prevent drying out of plunger; in Morocco case, spring catch; with bottle for solution..\$ 1 50

8529. Aloe's No. 3 Oil, Hypodermic Syringe, has glass barrel, protected by a metal cylinder, open both sides, with graduations on piston rod, with finger rests and cap on end to prevent drying out of plunger; in Morocco case, spring catch; with bottle for solution..\$ 1 75

8530. Aloe's No. 4 Oil, Hypodermic Syringe, has glass barrel protected by fenestrated metal cylinder, with finger rests; is graduated on piston, two needles, and two vials for tablets. This is one of the most satisfactory patterns yet offered to the profession. Put up in a fine Morocco case, spring catch.....\$ 2 00

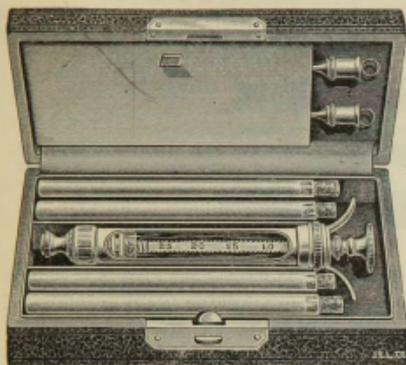


8530.

ALL OUR LIQUID VIALS ARE FURNISHED WITH THE IMPROVED RUBBER STOPPER AND HARD RUBBER CAP. ALL CASES CONTAIN EXTRA WIRES AND WASHERS.

HYPODERMIC.

HYPODERMIC SYRINGES.



8531.

8531. Aloe's No. 5 Oil, Hypodermic Syringe, has glass barrel, protected by metal cylinder, fenestrated on both sides, with graduations on piston rod, with finger rests and cap on end, in leather-lined Russia leather-covered case, with 4 vials for tablets.

Price..... \$2 25

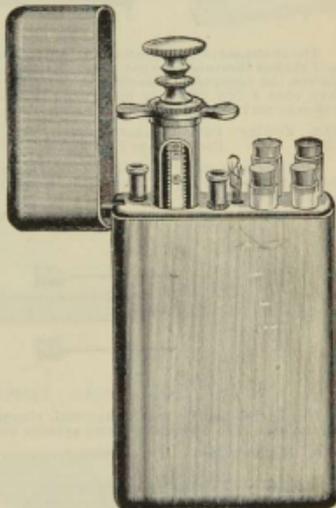
8532. Aloe's No. 6 Oil, Hypodermic Syringe has glass barrel, protected by a metal cylinder, open both sides, with graduations on piston rod, with finger rests and cap on end to prevent plunger drying out, with 6 small tablet vials, in leather-lined Morocco-covered case, snap catch.

Price..... \$2 50

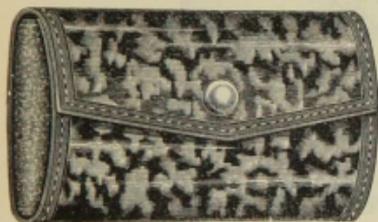
8533. Aloe's No. 7 Oil, Hypodermic Syringe. Same as No. 5, in fine nickel case with spring cover; needles screw into case; with 4 vials for tablets. This is the most compact and neatest case in the market.

Price..... \$2 50

8534. Aloe's No. 7½ Oil, Hypodermic Syringe. Same as No. 7, but case made of aluminium, and with a neat chamois cover..... 3 00



8534.



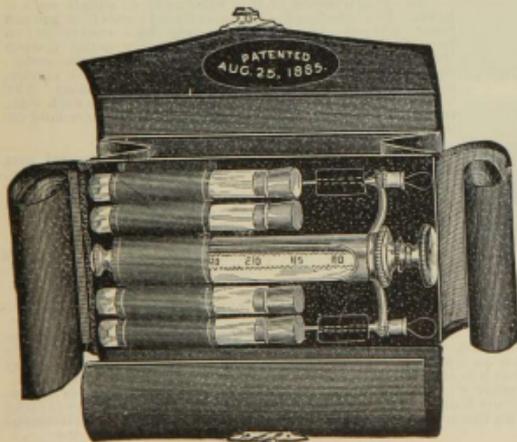
8537.

8535. Aloe's No. 8 Oil, Hypodermic Syringe. This has proven one of the most desirable patterns of hypodermic syringes yet offered to the profession, and it is meeting with an increasing demand. The syringe is the same as our No. 5 Oil, while the case is of fine Morocco, made quite flexible. The illustration is full size, and as the syringe has soft and elastic corners and edges, it is particularly adapted for carrying in the vest pocket.

Price..... \$2 50

8536. Aloe's No. 9 Oil, Hypodermic Syringe. Same as No. 8, but in flexible alligator leather case..... 2 75

8537. Aloe's No. 10 Oil, Hypodermic Syringe. Same as No. 8, but in celluloid case..... 2 50



8535.

ALL OUR LIQUID VIALS ARE FURNISHED WITH THE IMPROVED RUBBER STOPPER AND HARD RUBBER CAP. ALL CASES CONTAIN EXTRA WIRES AND WASHERS.

HYPODERMIC.
HYPODERMIC SYRINGES.
FOWLER'S HYPODERMIC SYRINGE.
FOR THE POCKET OR POCKET CASE.

This Syringe consists of a hard rubber barrel and piston (b), a needle (a), whose mounting screws into the barrel, and a hard rubber tube (c) with a cap (d). This second barrel serves the double purpose of a protection for the needle, and a receptacle for tablets, a dozen of which, of a quarter of a grain each of morphine, can be placed in it.

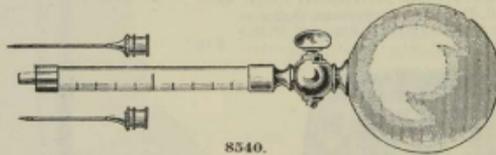


The instrument, all screwed together, is represented at e, and is about the size and shape of an ordinary hard rubber thermometer case, and occupies no more room in the pocket. To give a hypodermic injection, remove the receptacle, unscrew the needle, draw back the piston and drop one of the tablets into the barrel. Then pour a few drops of water into the barrel, replace the point, and after giving the instrument a few shakes to make sure that the morphine is all dissolved, it is ready for use.

- | | |
|--|---------|
| 8538. Fowler's Pocket Hypodermic | \$ 2 50 |
| 8539. " " Pocket Case Hypodermic | 2 00 |

The instrument for the pocket case has all the features of the pocket syringe except the receptacle for tablets, the needle being protected by a pointed cap. The piston is graduated, that it may be used for solution if desired.

KOCH'S ASEPTIC HYPODERMIC.



The barrel can be easily removed, cleaned and sterilized. The absence of the piston and oily packing and the ease with which the entire syringe may be disinfected renders it especially desirable.

- | | |
|---------------------------------------|------|
| 8540. Koch's Aseptic Hypodermic | 2 00 |
|---------------------------------------|------|



8541.

LEITER'S HYPODERMIC SYRINGE.

The construction of this Syringe is as simple as it is novel. It consists of a glass cylinder, which is ground conic on the inside of each end; into these sockets fit two hard rubber cones. The glass cylinder being ground conical (making the opening larger at the extreme ends), makes the introduction of the piston a very easy matter, after being taken apart for cleaning or lubricating. The barrel has also two concave surfaces ground on each side, thereby enabling the physician to obtain a better hold on the syringe.

The advantages of this Syringe are:

- 1st. It has no metal to corrode, the only metal part being the needle, which, if wire is introduced after using, is easily kept clean.
- 2d. The ease with which the Syringe may be taken apart for cleaning and lubricating.

- | | |
|---|---------|
| 8541. Leiter's Hypodermic Syringe, in Hard Rubber Case..... | \$ 2 75 |
|---|---------|

MCKEE'S VACUUM HYPODERMIC SYRINGE.

This Syringe is so made that it may be easily and quickly cleaned, which has never yet been possible on any other pattern of hypodermic syringe. A graduated glass barrel is made with the thread molded directly on the glass tube; we thus avoid cementing on the metal end, as is usually done. The entire syringe may be instantly taken apart, and is so simple that it is almost impossible to get out of order unless broken.

By having no interior plunger or leather packing to get out of order (which alone is a very great improvement), interior of barrel is kept entirely free from oil and small particles of leather, thus preventing any foreign, objectionable matter mixing with the medicine. (See Index for page of Pilling's advertisement showing illustration of Syringe.)

- | | |
|---|---------|
| 8542. McKee's Vacuum Hypodermic Syringe | \$ 2 50 |
|---|---------|

HYPODERMIC.
HYPODERMIC SYRINGES.

P. D. & CO.'S IMPROVED HYPODERMIC SYRINGE.

Case is made of pure Aluminum—light, compact, convenient shape, and will not tarnish.

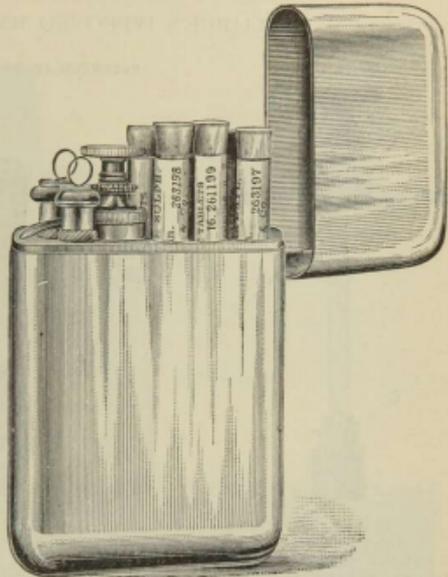
We would mention the following points of excellence in this syringe:

1st. The arrangement which provides against leakage should the plunger become dry through disuse. Attached to the piston-rod on the upper side of the plunger is a small nut which, on the rod being drawn up to the cap, fits there into a socket. If the rod is now turned towards the left, the nut, prevented from turning with the rod by the recess into which it fits, is forced against the leather to the degree necessary to spread the plunger so as to prevent leakage.

2d. The ease with which the needle is cleansed. On insertion of the wire into the screw-cap it is immediately guided by bevelled sides to the opening into the needle proper. Other syringes have the floor of the cap chamber cut so squarely that it is often after many probings and much vexations delay that the wire can be guided to the opening.

3d. The fortified needle. The needle is strengthened in the part most liable to give way by a sheath embracing the upper half.

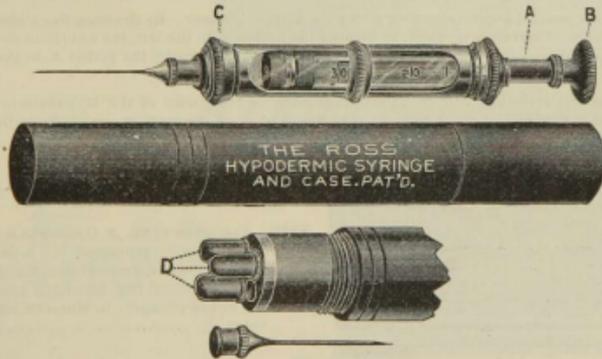
4th. The facility with which new parts can be supplied to replace others which have become broken or lost.



8543.

8543. P. D. & Co.'s Hypodermic Syringe ..\$3 50

ROSS' HYPODERMIC SYRINGE AND CASE.



8544.

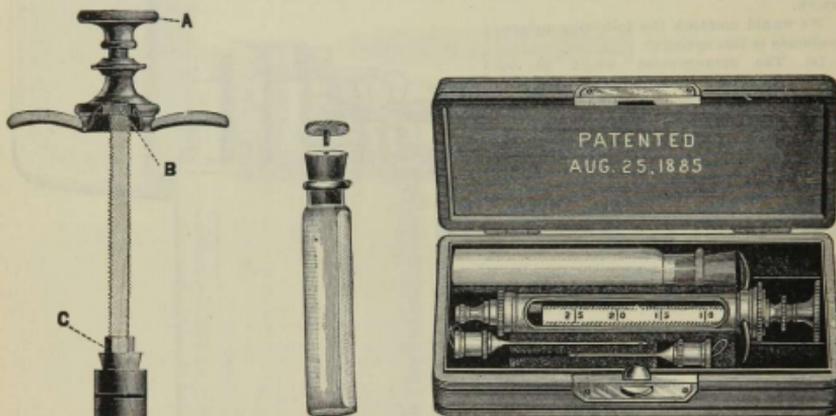
The latest and best in the market. Points of excellence: The Syringe is beautiful in design, style and finish. The piston (A) is hollow its entire length, forming a receptacle for tablets. The piston-cap (B) removes easily. Tablets can be quickly obtained. By removing screw cap (C) on needle end of Syringe, tablet can readily be dropped in barrel for solution. No bottle or spoon required. Strictly first-class and standard form of needles used. Being hermetically sealed, when in the case, the piston is always moist and ready for use, and easily kept strictly antiseptic. The Case is very attractive, being new, novel and elegant; made of polished hard rubber. It is very convenient in size and shape for the pocket. The reserve end holds three colored bottles (D) for extra tablets (atropia, apomorphia, etc.), also an extra needle. A moment's study of the above cuts will give a clear understanding of this model of compactness and convenience.

8544. Ross' Hypodermic Syringe and Case..... \$ 2 50

HYPODERMIC.

TAGLIABUE'S IMPROVED HYPODERMIC SYRINGES.

PATENTED AUGUST 25, 1885.

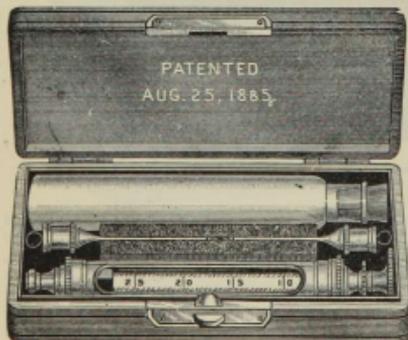


8545.

The above cuts illustrate a perspective view of the syringe and case—showing full size of both—and also a sectional view of the piston and top of syringe. The improvements we desire to call attention to are as follows: The arms extending each way from top of syringe to rest against the fingers, while the thumb placed upon the head of the piston A, enables the operator to hold the syringe steady while using it in one hand. A small cap closes the syringe air-tight when not in use, and prevents the "drying out" which has been complained of so much. The ingenious contrivance for expanding and tightening the plunger in the glass barrel, without taking the syringe apart, is the most important improvement, and is as follows:

The nut C, has conical point extending under the leather plunger. By drawing the piston A, out to full extent, the nut C, fits into wrench B; then, by turning the piston A, to the left, the nut is run down, expanding the plunger in every direction, making it as tight as desired. By turning the piston A, to the right, the nut is run up and the pressure relieved.

The value of this invention will be apparent at once to every user of the Hypodermic Syringe. The glass barrel is made true and of equal calibre. The metal parts of the syringe are made in the best manner and nickel-plated—fenestrated on both sides; graduations on piston.



8545.

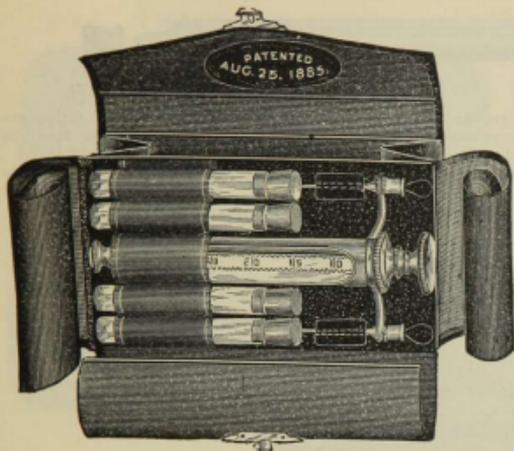
8545. Tagliabue's No. 2 Hypodermic Syringe, glass barrel, protected by a fenestrated metal cylinder, graduations on the piston rod, with metal cap on end to prevent drying out of plunger; in Morocco case, spring catch.....\$ 1 75

8546. Tagliabue's No. 3 Hypodermic Syringe, glass barrel, protected by metal cylinder, open both sides, with graduations on piston rod, with finger rests and cap on end to prevent drying out of plunger; in Morocco case, spring catch\$ 2 00

ALL OUR LIQUID VIALS ARE FURNISHED WITH THE IMPROVED RUBBER STOPPER AND HARD RUBBER CAP.
ALL CASES CONTAIN EXTRA WIRES AND WASHERS.

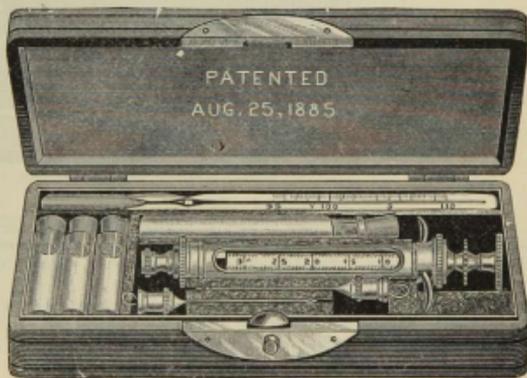
HYPODERMIC.

TAGLIABUE'S IMPROVED HYPODERMIC SYRINGES.

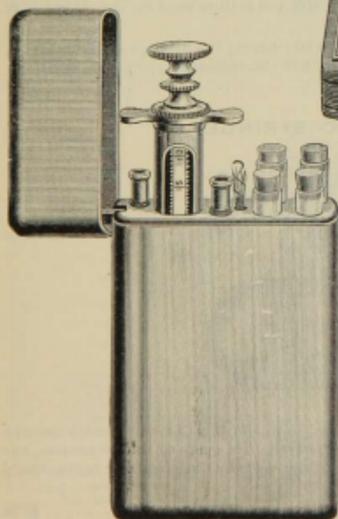


8547. Tagliabue's No. 8. Hypodermic Syringe. This has proven one of the most desirable patterns of hypodermic syringes yet offered to the profession, and it is meeting with an increasing demand. The syringe is the same as our No. 3, while the case is of fine morocco, made quite flexible. The illustration is full size, and, as the syringe has soft and elastic corners and edges, it is particularly adapted for carrying in the vest pocket... \$2 75

8548. Tagliabue's No. 9 Hypodermic Syringe. Combination case, containing 1 of our No. 3 syringes, 2 needles, 1 vial for liquids, 3 vials for tablets, and a 4-inch Self-Registering Indestructible Index Fever Thermometer, guaranteed correct, in neat Morocco, velvet-lined case.. \$3 50



8548.



8549.

8549. Tagliabue's No. 37 Hypodermic Syringe, has glass barrel, protected by a metal cylinder, open both sides, with graduations on piston rod, finger rests same as cut, and cap on end to prevent drying out of plunger, in Aluminium case with spring cover, containing 4 vials for tablets; needles screw into the case..... \$3 00

The Aluminium case hypodermic No. 37 is provided with a chamois cover.

ALL OUR LIQUID VIALS ARE FURNISHED WITH THE IMPROVED RUBBER STOPPER AND HARD RUBBER CAP. ALL CASES CONTAIN EXTRA WIRES AND WASHERS.

HYPODERMIC.

HYPODERMIC SYRINGES.

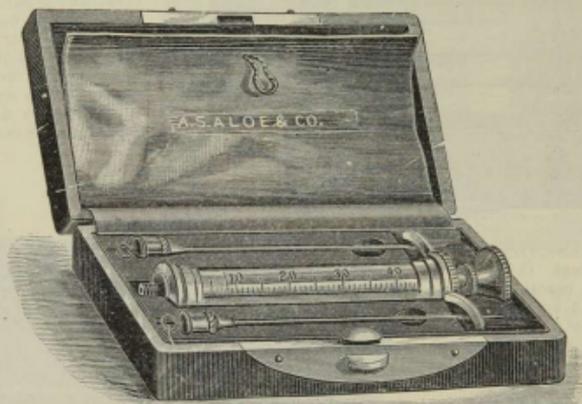


8550.

This syringe has a solid silver barrel, graduated on piston with nickel-plated, steel needle fitting into end of piston. This syringe has become quite popular owing to its durability and compactness. It can be carried in the vest pocket, under the loop of a pocket medicine case, or in a pocket instrument case.

8550. Stimson's Silver Hypodermic Syringe..... \$2 00

TYNDALE'S INTRA-PULMONARY HYPODERMIC SYRINGE.



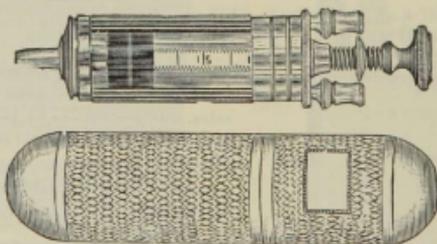
8551.

Tyndale's Syringe is made to hold 45 minims, and is used for both intra-pulmonary and hypodermic injection of antiseptics, the packing being of a kind not readily affected by them. Curved finger bearings are attached to the syringe. The hypodermic needles are of ordinary size and calibre used for the injection of antiseptics into the abdominal wall and thighs.

For intra-pulmonary injection, puncture through the thoracic walls direct; the needle used is $2\frac{1}{4}$ inches (7 centimetres) in length, stronger and with a somewhat larger bore than the ordinary hypodermic needle.

8551. Tyndale's Intra-Pulmonary Hypodermic Syringe \$4 25

VEST POCKET HYPODERMIC SYRINGE.



8552.

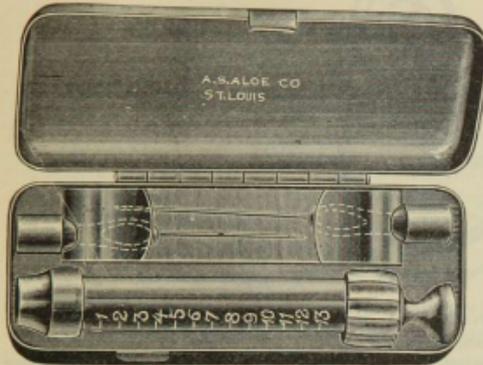
We have often had calls for a compact hypodermic syringe, and to supply this demand furnish the one shown in cut, which shows the full size of the syringe and case. The syringe is made to hold 30 minims, has two fine steel nickel-plated needles fitting into spaces at the side of the barrel. Case made of brass, finely nickel-plated and engraved, with space for initial or name.

8552. Vest Pocket Hypodermic Syringe \$2 00

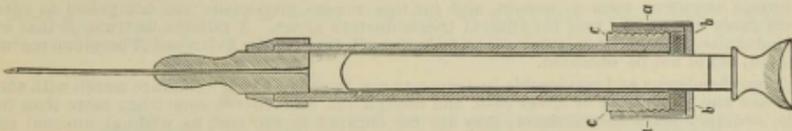
HYPODERMIC.

HYPODERMIC SYRINGES AND ACCESSORIES.

WALCHER'S ASEPTIC HYPODERMIC SYRINGE.



The absence of any oil-soaked leather, and the simple construction of this new Hypodermic, will be found to meet all the requirements of an aseptic instrument. It consists of a graduated glass barrel, with metal mountings at both ends, and a metal piston which is, throughout its length, the same diameter as the lumen of the barrel. At the proximal end of the Syringe is a metal cap *a*, containing a cork washer *b*, which fits snugly around the piston, and when the cap *a* is tightly screwed on the fitting *c* it presses the cork washer firmly against the metal mounting and thus prevents any retrogressive action of the contents of the barrel. The Syringe is supplied with two re-inforced steel needles with flattened hubs to facilitate adjustment and made to slip in—a method of adjustment both quick and firm. They are held in the case by a removable spring clip, by means of which the points are also protected against damage. Extra wire and cork washers are furnished with each Syringe.



8553.

8553. Walcher's Aseptic Hypodermic Syringe..... \$ 2 25

ACCESSORIES.

8554.	Hypodermic Syringe Bottle, improved with Soft Rubber Stopper and H. R. Plug. See page 570.	15
8555.	" " " Letter's	50
8556.	" " " Tiemann's Patent.....	20
8557.	" " " Case, Alligator Leather, Flexible, as No. 8536, page 567.....	1 25
8558.	" " " Aluminum, as No. 8534, page 567.....	1 00
8559.	" " " Celluloid, " 8537, " 567.....	85
8560.	" " " Hard Rubber, " 8541, " 568.....	75
8561.	" " " Morocco Covered, with Snap Catch.....	50
8562.	" " " Flexible, as No. 8535, page 567.....	1 00
8563.	" " " Needle, Aloe's Regular, Gold.....	75
8564.	" " " " " Platinum.....	75
8565.	" " " " " Steel.....	25
8566.	" " " " " Re-inforced, Gold.....	1 00
8567.	" " " " " Platinum.....	1 00
8568.	" " " " " Steel.....	35
8569.	" " " " " Excelsior.....	40
8570.	" " " " " Fowler's, Platinum.....	75
8571.	" " " " " Steel.....	60
8572.	" " " " " Green's.....	40
8573.	" " " " " Letter's.....	25
8574.	" " " " " P. D. & Co.'s, Gold.....	1 00
8575.	" " " " " " Platinum.....	1 00
8576.	" " " " " " Steel.....	35
8577.	" " " " " Ross'.....	35
8578.	" " " " " Slide, to slip on. Same prices as Screw Needles.	
8579.	" " " " " Tagliabue's, to screw in case.....	25
8580.	" " " " " Tiemann's, Gold.....	75
8581.	" " " " " " Steel.....	40
8582.	" " " " " Walcher's.....	50
8583.	" " " " " W. T. & Co.'s, Gold.....	60
8584.	" " " " " " Platinum.....	85
8585.	" " " " " " Steel.....	35
8585.	Hypodermic Syringe Stopcock.....	1 25
8586.	Hypodermic Syringe Trocar and Canula.....	75
8587.	Needle Wires..... per bundle,	05
8588.	Reamers for Clearing Needles.....	10

REPAIRING HYPODERMIC SYRINGES.

If the Glass Barrel is broken and you want it replaced, always send the fittings. If any other part of Syringe is wanted send your Syringe to us and we will supply the missing parts. Always enclose card with address to avoid loss and confusion.

DIAGNOSTIC.

CLINICAL.

IMMISCH'S AVITREOUS CLINICAL THERMOMETERS.



8609. Page 577. Exact Size.

Does not vary with age.

Is economical, as it is not liable to break.

Accuracy guaranteed by Kew certificates.

The old fashioned glass thermometers so long in use, are of necessity so frail that many are broken almost as soon as bought, and for this reason physicians are compelled to spend considerable sums every year for clinical thermometers alone. A reliable instrument that will last indefinitely has always been desired, but until Immisch's Avitreous Thermometer was invented, could not be obtained.

These handsome and serviceable instruments are in shape like a miniature watch with thick glass face and either gold or silver case, and though the first cost is somewhat more than that of the ordinary glass thermometer, they are far cheaper in the end, as without unusual care they will last a lifetime.

The figures on the face or scale are clearly marked in both Fahrenheit and Celcius, and the temperature can be read far easier than on any other thermometer; in fact, in this respect alone, the Avitreous Thermometers possess the greatest possible advantage over the best glass tube instruments ever made.

On account of their shape and size they can be either worn on the watch chain as a charm, or carried in a neat case in the vest pocket; while, if preferred, they may be attached to a small cord round the neck, which will allow the instrument to be inserted either in the mouth or axilla without fear of being swallowed or falling.

As a surface thermometer it is unsurpassed for readily recording the temperature; its sensitive nature is shown by the slightest breath on the case causing the indicator to move.

For use internally it can neither injure nor receive injury, and is, consequently, convenient and safe. Before being applied the instrument can be brought by friction to about normal; this saves much time with a restless patient or fractious child. No shaking down is required, the instrument readily accommodating itself to the altered temperature. A recent improvement in the thermometer consists of an arrangement for registering the temperature by means of a stop-catch through the handle, which, upon being withdrawn, arrests the dial-hand, and when pressed back releases it. By this simple device the exact temperature of the body can be registered for any length of time desired. They are perfectly water-tight, and can be rinsed in disinfecting fluid.

The mechanism is so simple that it would be hardly possible for it to get out of order, and even in so unlikely an event it can be easily repaired. The action of the instrument depends upon the opening and closing of a metallic tube which is filled with highly expansive liquids; this being the case, it is insensible to barometric changes, as has been proved to the satisfaction of the highest scientific authorities. It received the only first-class award for thermometers at the International Medical Congress, 1881, and is endorsed everywhere as the standard for accuracy.

The authorities at Kew have satisfied themselves as to the permanency and reliability of these instruments and the usual caution applying to glass thermometers pointing to their liability to change with time is omitted in these certificates as unnecessary.

Possessing so many advantages over the ordinary thermometer, the glass of which is generally made so thin over the bulb that it becomes often dangerous to use, it cannot be wondered at, that it has received the highest praise from the Medical Press and Profession, while the Meteorological, Engineering and other Scientific Journals unite in recommending it to the public generally, as an accurate, ingenious and sensitive instrument.

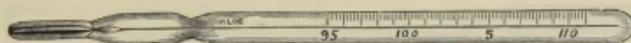
DIAGNOSTIC.

CLINICAL.

SELF-REGISTERING FEVER THERMOMETERS,

WITH ABSOLUTELY INDESTRUCTIBLE REGISTER.

The great improvement made in Self-registering Fever Thermometers, by forming an indestructible register, has within the past year or two practically driven from the market the old style of Fever Thermometer, which registered by means of a piece of mercury detached and separated from the main column by a small air space. The indestructible register is formed by a very small contraction of the caliber near the bulb, which allows the column to rise, but upon contraction of the mercury the column breaks at the contraction in the caliber, thus leaving that part of the column above it a stationary register, until shaken down by the operator. We particularly recommend this Thermometer to the trade. All of our Clinical Thermometers are made from seasoned tubes, and put up in hard rubber cases. Certificates from the Thermometric Bureau of Yale College, will be furnished if desired.



A FEW REMARKS ABOUT CLINICAL THERMOMETERS.

The normal temperature of the human body, at completely sheltered parts of its surface, amounts to 98.4° Fahr., or a few tenths more or less, and a rising above 99.5° Fahr., or a depression below 97.3° Fahr., are sure signs of some kind of ailment, if such increase or decrease is persistent.

The average temperature of the trunk of the body in the tropics is nearly one degree higher than in temperate climates.

The increase of temperature above 99° F., as measured by the Thermometer is the best index of the amount of fever present in any disease.

The temperature of the body in disease is much more readily and rapidly influenced than either the pulse or respiration. The co-relation of the pulse, respiration and temperature is of the utmost importance to be known in many diseases. For example, in pneumonia, if the mean of the temperature is not above 104° Fahr., and that of the pulse is not above 120 in a minute, and the mean of the respirations not over 40 in same time, the case must be considered a slight one, and if the patient is healthy otherwise, he will surely commence to get well in from eight to twelve days, without any medical treatment beyond attention to diet and rest.

Each disease which runs a definite course (scarlet fever, measles, small-pox, typhoid fever, rheumatism, acute phthisis, etc., etc.) has a characteristic and distinctive range of temperature.

The necessity of using a reliable Thermometer is, therefore, of the utmost importance.

. DIAGNOSTIC.
CLINICAL.
CLINICAL THERMOMETERS.

PLEASE READ AND CAREFULLY OBSERVE THESE DIRECTIONS.

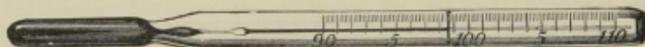
Thermometers are in working order, and always ready for application when the top part of the small bit of mercury that forms the Index is below the arrow point. After using it, and in order to bring the Index again below the arrow point and ready for use, take the top part of the stem of the Thermometer (near the 105) between the thumb and first finger, with the bulb turned downward, or inclined toward the floor. In this position quietly swing from you (like a pendulum) from the elbow down, leave wrist hang as loose as possible. Always look at the position of your Index after each swing, until you again see the top part of it below the arrow point, and it is again ready for application. If it be found that one or two quiet swings is not sufficient to bring the top part of the Index below the arrow point let your swing be somewhat forcible. Don't shake the Index lower than is necessary, and never subject it to a sudden jar by striking the hand holding it, on a table, desk or other solid article, as it is liable to fracture the walls of the tube and render the instrument useless.

One or more separations of the column does not put the instrument out of order. Always take the top part of the top separation for a reading, and so long as any separation remains the instrument is good for years.

By observing these directions you will have no trouble with your Thermometer.

SPECIAL NOTICE.

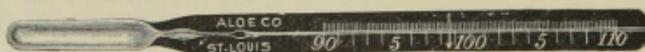
In order that customers may clearly understand our position in regard to fever thermometers that are broken in transit, we state here, that under no circumstances will we become responsible for their safe delivery. We will pack them with the greatest care, and will use our best endeavors to prevent their becoming broken, but customers must in all cases assume risk of breakage.



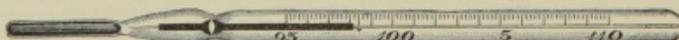
8589.



8590.



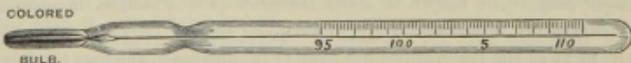
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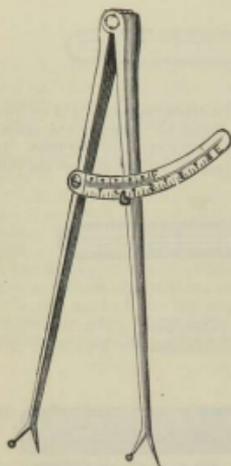
8598.



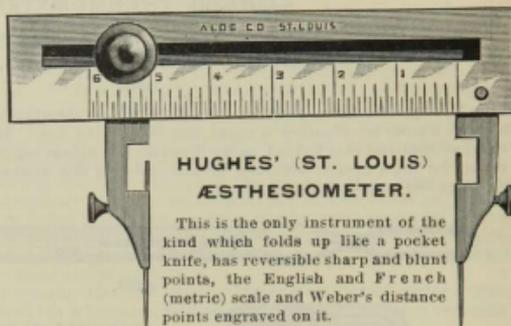
8601.

DIAGNOSTIC.

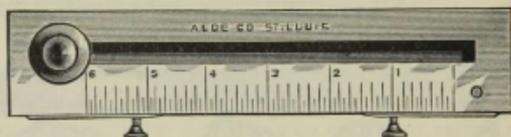
GENERAL.



8617.



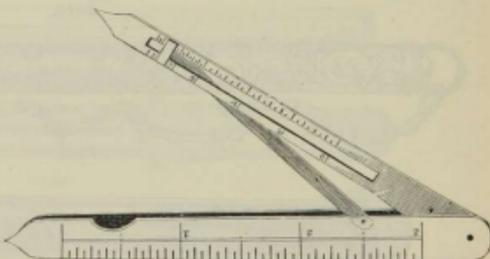
8620.

**ÆSTHESIOMETERS.**

For investigating the condition of the tactile sensibility of patients suspected of having brain disease. The earliest attempt in this direction was made by Dr. Sieveking, of London, who, in 1878, described an instrument for this purpose, which he called an aesthesiometer. This was simply a modification of the common beam-compass employed by carpenters, and is yet in common use among physicians interested in the pathology of the cerebro-spinal organs.

The class of cases in which it is useful were thus enumerated by Dr. Sieveking:

1. "In actual paralysis, to determine the amount and extent of sensational impairment.
2. "As a means of diagnosis between actual paralysis of sensation and mere subjective anæsthesia, in which the tactile powers are unaltered.

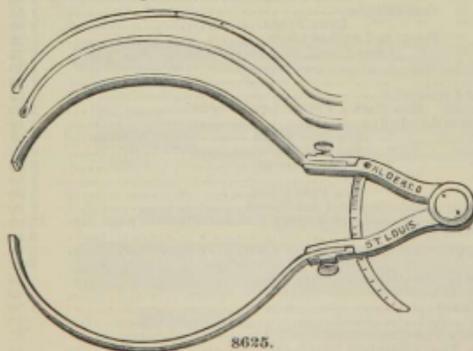


8623.

3. "As a means of determining the progress of a given case of paralysis for better or for worse.

The diagnostic value of an instrument of this nature, in cases where sensibility is affected, depends upon the fact that the capability of distinguishing two impressions made simultaneously varies in different regions of the body, according to the distance they are apart.

"For instance, the two points of a pair of compasses can be distinguished at about the sixth of an inch apart when applied to the end of the finger, while on the back of the hand only one point is felt, though they are an inch apart."



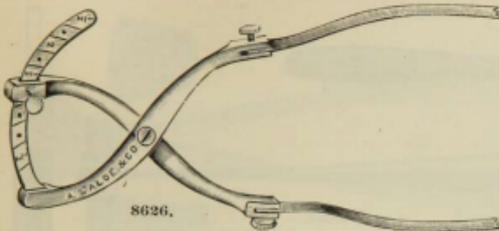
8625.

DIAGNOSTIC.

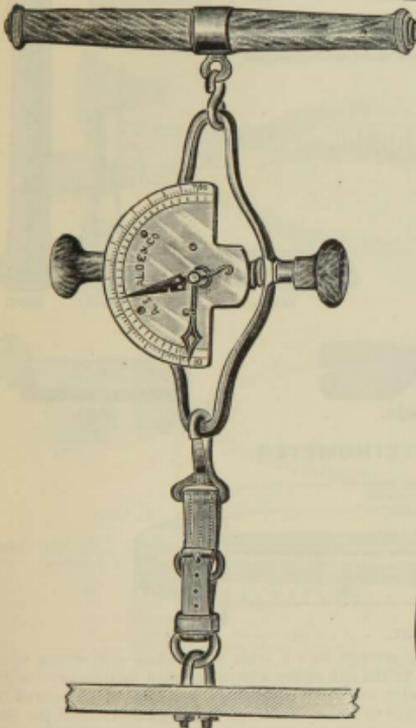
GENERAL.

CYRTOMETERS.

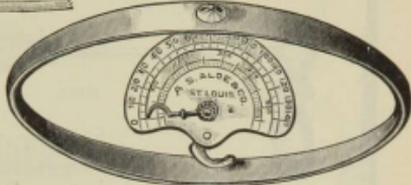
Instruments for taking the shape of the chest, with short arms—compasses—holding narrow strips of aluminium or lead, long enough to encircle the chest. An indicator may be set at any point by a thumb-screw. The strips of lead are easily moulded so as to fit any depression or elevation of the chest; the thumb-screw is then loosened and the instrument removed; after removal the arms of the compass are brought together at the same point of the indicator as when applied, fastened, and when placed on paper the exact shape of the chest can be traced by a pencil.



8626.



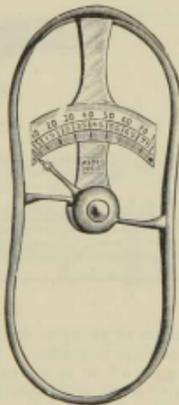
8633.



8631.



8630.



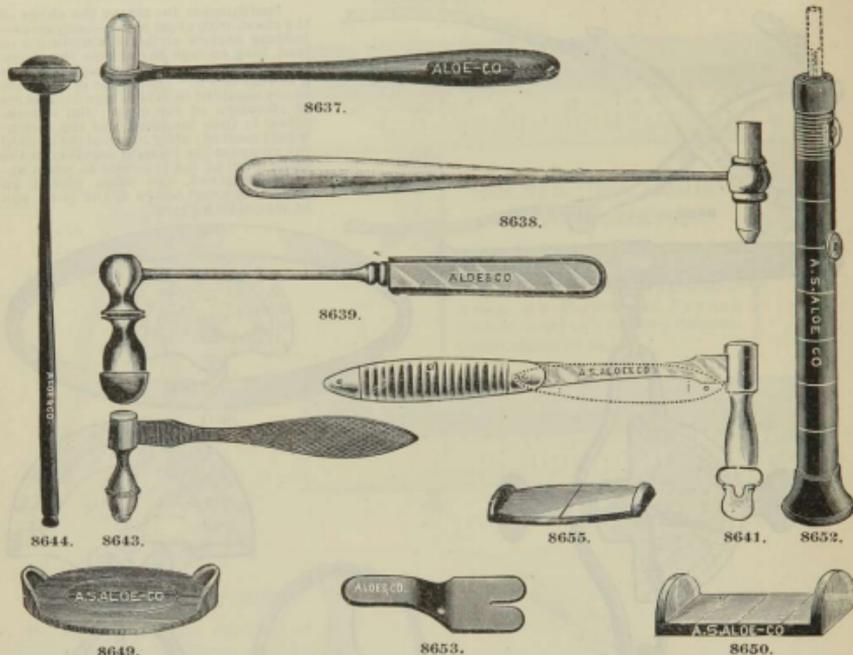
8628.

8616.	Esthesiometer, Birdsell's.....	\$ 2 65
8617.	" Carroll's.....	3 00
8618.	" Dana's.....	8 00
	" Elsborg's. See page 303.	
8619.	" Hammond's.....	2 25
8620.	" Hughes' (St. Louis).....	5 00
8621.	" Peckham's.....	3 75
8622.	" Sieveking's.....	3 00
8623.	" Vance's.....	3 75
8624.	Conformator, Warren's.....	4 50
8625.	Cyrtometer, Flint's.....	6 00
8626.	" Wood's.....	7 50
8627.	Dynamometer, Aubry's, Axilla.....	.....
8628.	" Collin's.....	6 00
8629.	" Hamilton's.....	3 75
8630.	" ".....	7 50
8631.	" Mathieu's.....	6 00
8632.	" Standard. See illustration, Fig. 9459, page 640.....	10 00
8633.	" Universal.....	50 00

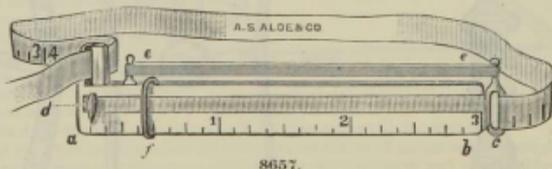
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

DIAGNOSTIC.

GENERAL.

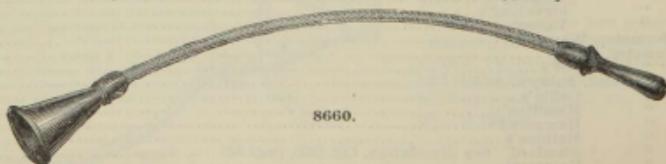


CARROLL'S STETHOMETER.



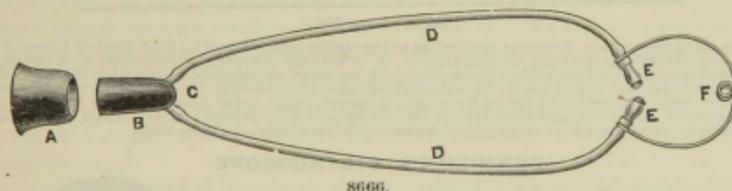
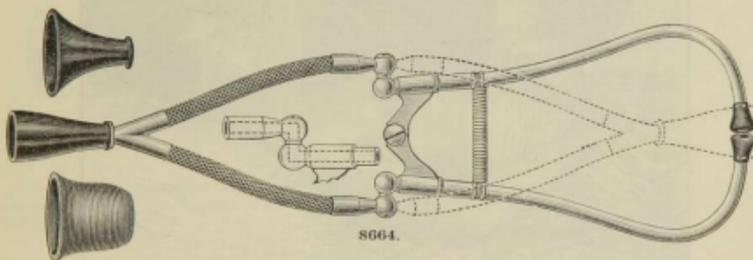
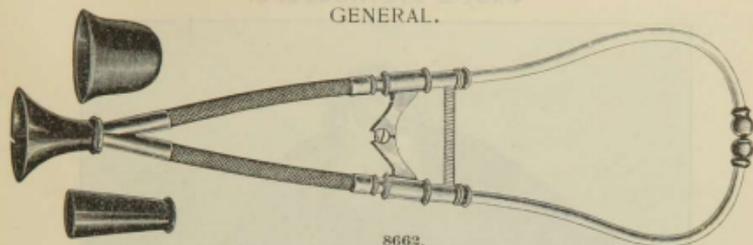
Carroll's Stethometer consists of an outer case, marked with a scale of 3 inches, *a, b*, within which moves a slide, *c, d*, bearing a gnomon or indicator, *d*. To the end of this slide is attached an ordinary measuring tape, the first 3 inches being cut off, so as to render the scale continuous, which is passed around the chest and drawn through the catch at the opposite end of the instrument. As the lungs are inflated the slide is drawn out and the indicator shows the exact amount of expansion. A hard rubber ring, *f*, sliding easily over the scale, may be used to render the stethometer self-registering, and the makers have added, also, an elastic band, *e, e*, to draw the two portions of the instrument together. This elastic band, if used at all, must be very slight, as I have found that even the thin envelope rings prevent the full expansion of the chest. I therefore remove the band before applying the stethometer, which thus registers itself without the hard rubber slide.

[Extract from New York Medical Journal, February, 1868.]



DIAGNOSTIC.

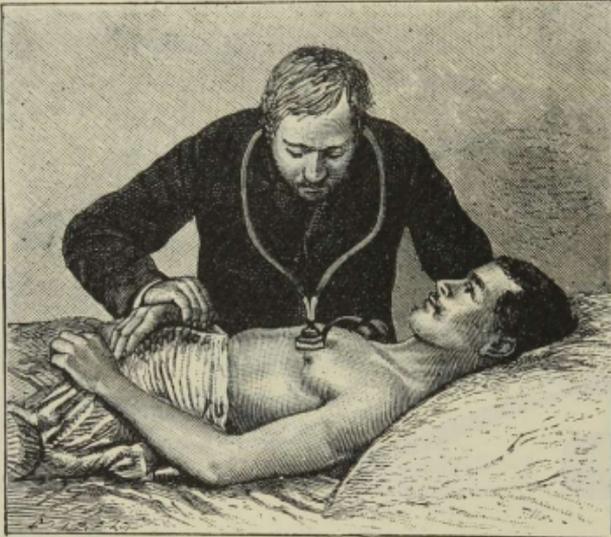
GENERAL.



8634.	Manometer, Dennison's. See Fig. 9466, page 640.....	\$1 50
8635.	Percussor, Bartlett's.....	60
8636.	" Finger, Hard Rubber Shell to fit over finger, with Soft Rubber Tip.....	35
8637.	" Flint's, Hard Rubber Handle.....	50
8638.	" Flint's, Metal Handle.....	75
8639.	" Niemeyer's.....	1 50
8640.	" Roosevelt's, Automatic.....	3 50
8641.	" Salz's, Folding Metal Handle.....	1 75
8642.	" Taylor's.....	1 50
8643.	" Traube's, Ebony Handle.....	1 25
8644.	" Vernou's, Whalebone Handle.....	75
8645.	" Wells', same as Fig. 8644, but has Metal Handle.....	90
8646.	" Winterich's, same as Fig. 8643, but has Metal Handle.....	1 50
8647.	Piesmeter, Beard's, for measuring sense of pressure.....	2 65
8648.	Pleximeter, Bartlett's, Hard Rubber, ends covered with Soft Rubber.....	60
8649.	" Flint's, Hard Rubber.....	25
8650.	" Hesse's, Glass, Graduated.....	40
8651.	" Hoffmann's.....	1 00
8652.	" Péter's, with Dermographic Pencil.....	1 50
8653.	" Seitz's, Hard Rubber (one end bifurcated).....	25
8654.	" Traube's, Ivory, Graduated.....	1 50
8655.	" " Plain.....	75
8656.	Resonator, Holden's.....	2 00
8657.	Stethometer, Carroll's.....	2 25
8658.	" Quain's.....	7 50
8659.	Stethoscope, Allison's, Differential.....	2 50
8660.	" Arnold's, Flexible.....	1 00
8661.	" Camman's, with Elastic.....	2 00
8662.	" " Spring.....	2 00
8663.	" " Set Screw-spring, Adjustable.....	2 75
8664.	" Folding, Silk Tubing.....	3 00
8665.	" Perfected, Soft Rubber Tubing.....	2 25
8666.	" " Soft Rubber Tubing.....	2 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

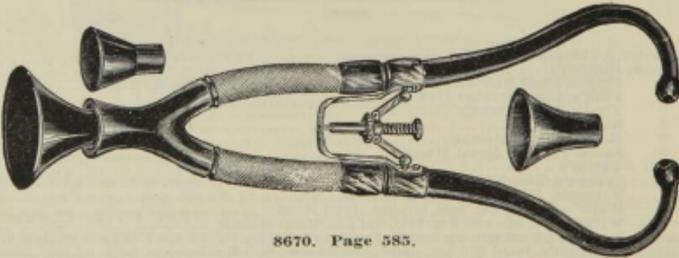
DIAGNOSTIC.
GENERAL.
PAUL'S STETHOSCOPE.



8678. Page 585.

The above illustration shows the application of the stethoscope devised by Prof. Paul of Lyons, France, the latest modification in this class of instruments. It is entirely different in construction to the Camman pattern, and consists of a hard rubber chest piece with an inner chamber communicating directly with the ear by means of two soft rubber tubes. Surrounding the inner chamber is an outer one, to which is connected a soft rubber bulb. Compressing the bulb produces a vacuum in the outer chamber which retains the chest piece in position. The particular advantage of this instrument over others is that foreign sounds can not penetrate to the inner chamber; consequently a more accurate diagnosis can be made.

DENNISON'S STETHOSCOPE.



8670. Page 585.

This stethoscope is the invention of Chas. Dennison, A. M., M. D., of Denver, Colo., and is the result of several years of careful research and experiments. Its advantages consist in the non-metallic quality of the sounds transmitted; its power of concentrating as well as conducting the waves of sound; the improved shape of the ear pieces and bell endings, and its use in stethoscopic percussion. The arms and joints are made of hard rubber, thus avoiding the perversion of the natural sounds and elevation of the pitch, as is the case where metal tubes are used. So much care is exercised in this particular, that even the spiral wire linings of the flexible tubes are carefully laid between thin tubes of soft rubber, and the two then vulcanized together. All the parts of this instrument are conical, so that they form a gradually decreasing channel from the bell endings to the ear. This gives to the instrument the power of concentrating the waves of sound as well as that of transmitting them. In addition to the two bell endings that accompany most stethoscopes, it is provided with two additional ones, one of soft rubber and intended to use on uneven surfaces, as in emaciated patients, and the other for use in stethoscopic percussion. This bell is three inches in diameter, and for this use is held by the patient about three inches in front of his open mouth while the examiner makes forcible percussion (chiefly during expiration), thus obtaining the "cracked metal" and hollow sounds diagnostic of bronchial dilations, and cavities connected with the bronchial tract. The certainty with which these can be traced and mapped out by this means is astonishing to those who have never tried this method. We have no hesitancy in recommending this instrument to those who value a stethoscope for its real merits, as an aid in obtaining accurate results in chest examinations, and not for the outward scientific show so often made use of with these instruments as advertising mediums.

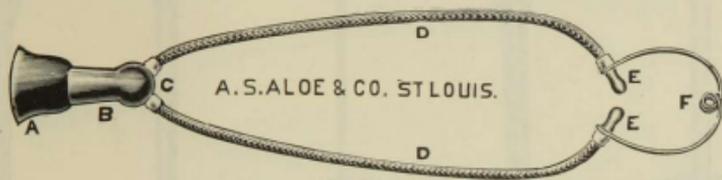
DIAGNOSTIC.

GENERAL.

A SERVICEABLE STETHOSCOPE.

BY WM. PORTER, A. M., M. D.,

PROFESSOR OF PHYSICAL DIAGNOSIS ST. LOUIS COLLEGE PHYSICIANS AND SURGEONS.



8679, Page 585.

A, Soft rubber cup permanently fixed to hard rubber bell B, metal ferrules C, with openings of large diameter for attachment of soft rubber silk-covered tubes D, D, which are of equal caliber E, E, hard rubber ear tips with wire spring F, fastened so as to permit of easy and firm adjustment to the ear.

Most physicians use a stethoscope in physical diagnosis; doubtless more would if all of the many instruments were satisfactory. The advantage in being able to locate a particular sound, to eliminate extraneous sounds, to hear without putting the head in contact with a dirty patient, or to examine the chest of a modest woman without causing her annoyance, to allow the patient and examiner to be in comparatively natural positions so as to get the best results from auscultation, are certainly enough to warrant an investment in so cheap an instrument as a good stethoscope.

A stethoscope should fit any part of the chest, especially should it be adapted to the intercostal spaces; the diameter of the tubes should be large throughout; the tips should enter the auditory canal easily and press firmly but not too hard; it should be convenient to carry, and it need not be expensive.

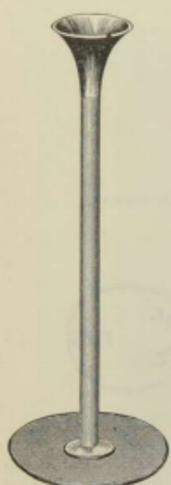
The instrument known as the "Snowden" is made upon an excellent principle, but as now manufactured is faulty in many respects. The tubes are small, especially at the tips, the manner of insertion into the bell hinders the transmission of sounds, the rubber ends on the ear tips are easily lost, and the wire which constitutes the spring is too weak. When these faults have been removed (as can easily be done) we have an instrument which answers the demands of the diagnostician better, I think, than any other.

Taking the old "Snowden" as a model, I have had an instrument made with small metal ferrules firmly inserted in the bell and the rubber tubes drawn over them as far as possible, to preserve the full, free caliber of the tube. The tube itself is of large diameter; the ear tips are of hard rubber, smooth and oval, while the wire spring is strong enough to hold the tips firmly in the ear and can be so bent as not to exert too much pressure. The wire spring is bent around the tips in a groove so that it cannot be displaced and yet permits of movement in adjusting. The soft rubber cup is cemented to the bell.

I have used this modified stethoscope for two years, and find it practically without fault. It is easily carried and inexpensive.

DIAGNOSTIC.

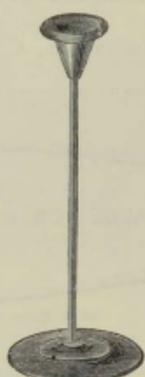
GENERAL.



8673.



8667.



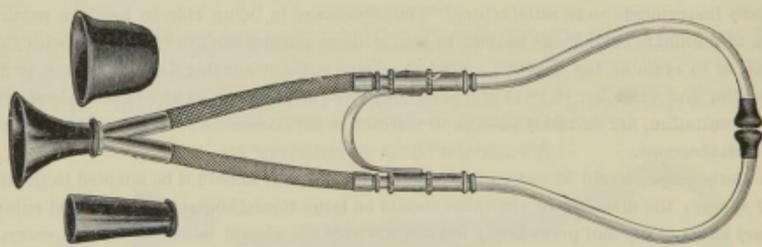
8668.



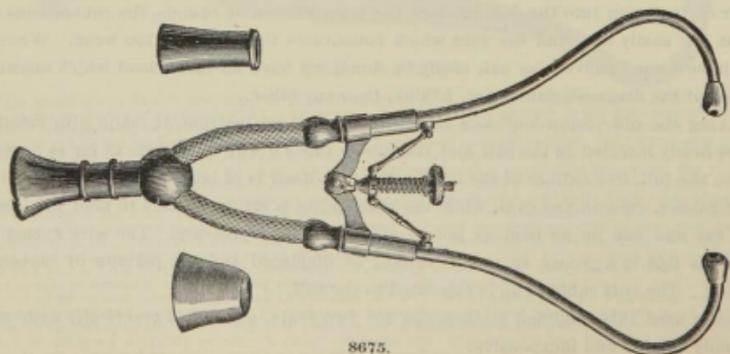
8671.



8677.



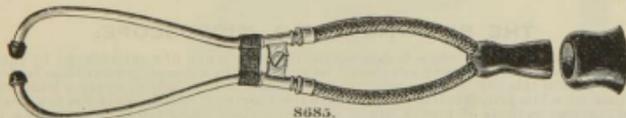
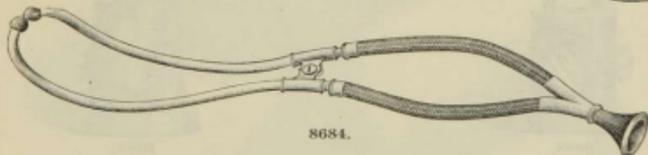
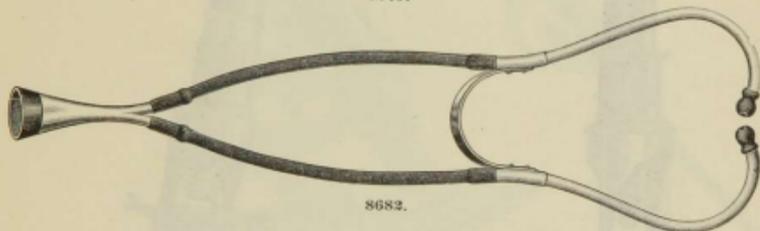
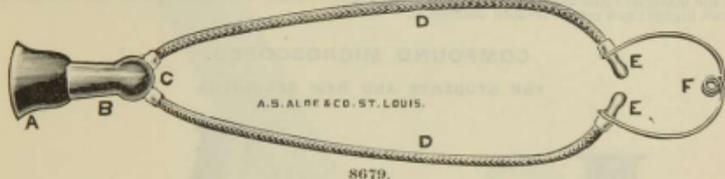
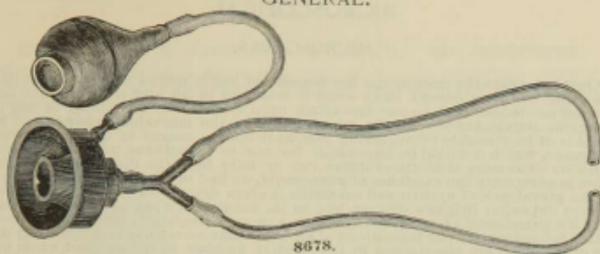
8669.



8675.

DIAGNOSTIC.

GENERAL.



8667.	Stethoscope, Cedar	\$ 0 40
8668.	DaCosta's Autophonic	3 00
8669.	Davis'	2 00
8670.	Dennison's. See illustration and description, page 582.....	4 00
8671.	Ebony.....	75
8672.	Hard Rubber.....	75
8673.	Hawksley's.....	1 00
8674.	" with Ear-shaped Celluloid Ear Piece	1 50
8675.	Knight's	3 00
8676.	Laënnec's.....	4 00
8677.	Martin's Hard Rubber, combined with Percussor and Pleximeter.....	2 00
8678.	Paul's. See description, page 582.....	2 50
8679.	Porter's (St. Louis). See description, page 583.....	2 50
8680.	Powell's Mod. Camman	2 50
8681.	Quain's Hard Rubber Telescopic.....	1 00
8682.	Snofton's.....	2 00
8683.	Snowden's.....	2 50
8684.	University	2 00
8685.	" Improved	2 25
8686.	Valentine's.....	3 75
8687.	Stethoscope Bell, Snellen's Soft Rubber.....	25

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.

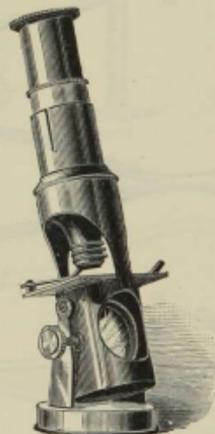
Within the last few years the microscope has become so firmly rooted among us that little need be said in its praise. The time has long passed away when it was held in no higher estimation than an ingenious toy; but it is now acknowledged that no one can attain even a moderate knowledge of any physical science without a considerable acquaintance with the microscope and the marvellous phenomena which it reveals. To the physician it is of inestimable value, giving him, as it does, a means of making a positive diagnosis in a certain class of cases, which it would be impossible for him to do without its aid. To verify his diagnosis of tubercular phthisis what more absolute evidence can he have than the discovery of the bacillus tuberculosis; to determine to a certainty the existence of pneumonia, we find indisputable proof in the presence of the pneumococcus; the prevalence of cystitis and urethritis is often diagnosed by the epithelial shreds and cells found in the urinary deposits: Bright's disease has as its usual accompaniment casts of the degenerating kidney structure; the gonococci of gonorrhoea, which is so very frequently met with, cannot escape the eye of the investigating microscopist; pus formations of all kinds may be readily and definitely determined; diseased conditions of the blood are ascertained by the relative number of the red and white blood corpuscles. Thus all the material signs and symptoms in diagnosis may be easily ferreted out, with this instrument as the physician's highest and most valuable accessory.

COMPOUND MICROSCOPES.

FOR STUDENTS AND NEW BEGINNERS.



8688.



8689.

THE SELECTION OF A MICROSCOPE.

"A common mistake with novices is to appreciate the excellence of a microscope by the amount of its magnifying power. Now, in truth, no object should be viewed with a power greater than sufficient to clearly show its structure, and if this can be done with twenty diameters it is folly to apply a hundred. And this is especially the case with low priced instruments, where the apertures of the objectives are small and the corrections not so exact as in those of higher grade, rendering them more liable to give false impressions of the object under examination. And it is impossible to view an opaque object by reflected light satisfactorily by any of the cheapest forms of compound microscopes; the lenses are too small to admit of a proper illumination of the object.

8688. ALOE'S COMPOUND MICROSCOPE, NO. 1.

Furnishes the most convenient, complete and powerful microscope ever offered for the price. It is six inches high, made of highly polished brass, with a slide tube for adjusting the focus; one compound eye-piece, one object glass, one mirror for illuminating, and has a power of 50 diameters, equalling 1000 times.* Packed in a neatly polished Mahogany box, with one pair of brass tweezers, three mounted objects and two plain glass slides..... \$ 3 00

8689. ALOE'S TILTING COMPOUND MICROSCOPE, NO. 2.

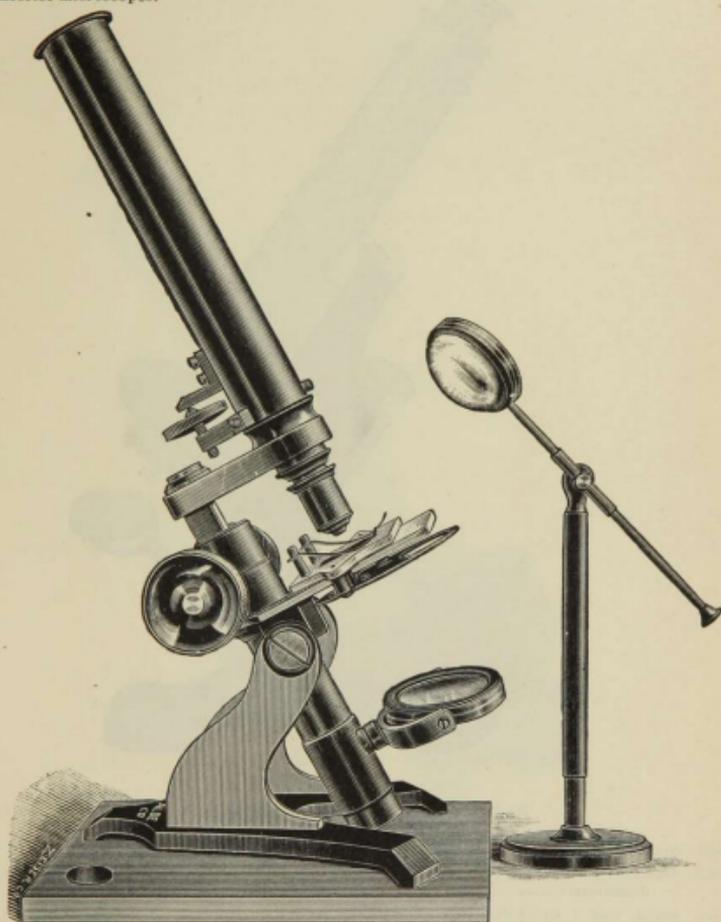
Six inches in height, with tubular lacquered brass stand, having joint affording any angle of inclination, a triple (separable) objective and one eye-piece, affording powers of 40, 60 and 80 diameters; complete, with one prepared object, two glass slips and a pair of brass forceps, in polished Mahogany box..... \$ 6 00

*The magnifying power, as understood by microscopists, is in diameters. A popular way is to give the area of superficies, and as the object is magnified equally in all directions the power is obtained by squaring the diameter, thence commonly called so many times.

DIAGNOSTIC.
MICROSCOPICAL.
MICROSCOPES.

8690. ALOE'S ENGLISH STUDENT MICROSCOPE.

An admirable instrument, giving a flat, though small field, great magnifying powers, clear definition, and is quite acromatic, i. e., without those fringes of rainbow coloring which are always seen surrounding the objects in inferior microscopes.



ALOE'S ENGLISH STUDENT MICROSCOPE.

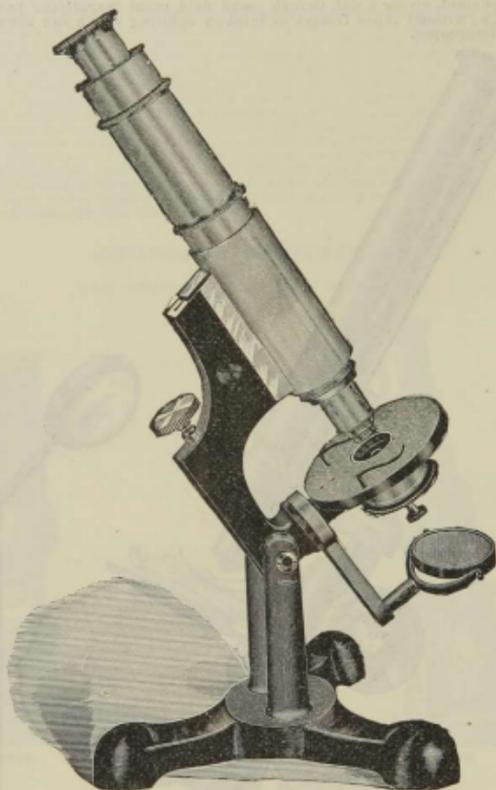
This instrument is made with a broad iron base, handsomely bronzed, set in a piece of Mahogany, $5\frac{1}{2} \times 6\frac{1}{2}$, and with two brass uprights, supporting the main stand, having a joint affording any angle of inclination. It has a large square stage with brass slide carrier, having spring clips to hold object-slide in position when instrument is inclined, and below the stage is secured a revolving diaphragm. The main body of the instrument is of highly polished brass, and is furnished with revolving diaphragm, and with rack and pinion movement for obtaining focus and micrometer screw for fine adjustment. A simple and conveniently adjusted mirror-holder contains one $\frac{1}{2}$ inch concave mirror. It has a triple (separable) objective, dividing into 1 inch, $\frac{1}{2}$ inch and $\frac{1}{4}$ inch, with respective powers of 60, 150 and 300 diameters. With the instrument are supplied an inch condensing lens, mounted on an adjustable brass stand, one-half dozen 3×1 glass slides, half a dozen No. 2 glass circles, brass forceps, and a live box or animalcule cage. The complete outfit is packed in a handsomely polished Mahogany box, with drawer for holding 30 objects and having an extra space for accessories..... \$ 30 00

The body is provided with the "Society" screw so that objectives of any European or American make can be used as well as those furnished with the stand.

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.



ALOE'S CLINICAL MICROSCOPE No. 1.

8691. Stand, with 1 Eye-piece, in case, no objective	\$23 00
8692. Stand, with 1 Eye-piece, in case, $\frac{1}{4}$, $\frac{1}{2}$ and 1 inch Dividing Objective, giving 100, 200 and 350 diameters.....	31 00
8693. Stand, with 1 Eye-piece, in case, with $\frac{1}{4}$ and 1 inch Dividing Objective, giving 100 and 500 diameters	35 00

This microscope is designed to meet the wants of schools, colleges, and those who need a well-made instrument at a low price. It is equally well adapted for all kinds of laboratory and clinical work. Height with draw-tube closed, $11\frac{1}{2}$ inches; draw-tube open, 14 inches. The base, arm and pillars are neatly japanned; the arm is securely held between two pillars by a strong steel pinion, which allows the inclination of the body at any angle. It possesses the following special features, without which no instrument can fill the requirements of a good working Microscope:

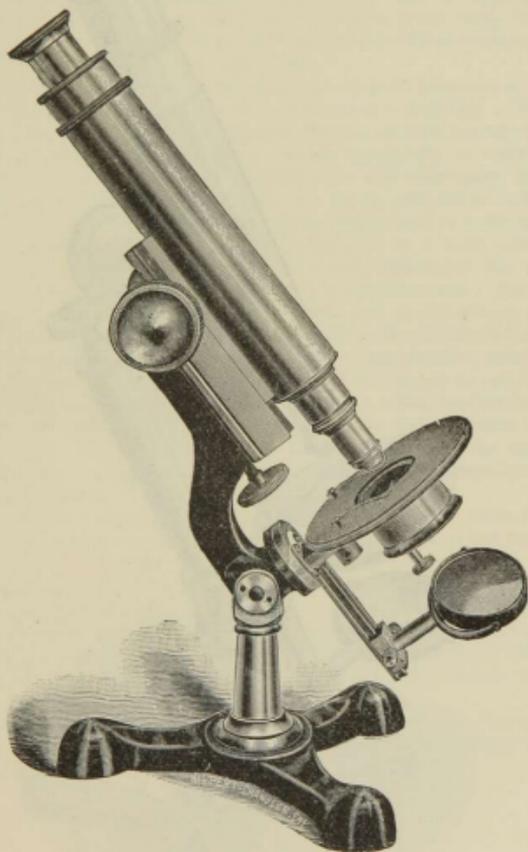
1st. The body tube is large ($1\frac{1}{4}$ inches diameter), and carries the draw-tube ($1\frac{1}{4}$ inches inside diameter), which holds the eye-piece. When the draw-tube is closed and perpendicular, it is low enough to make the work easy. This is an important feature in laboratory work.

DIAGNOSTIC.
MICROSCOPICAL.
MICROSCOPES.

2d. This instrument takes the same size eye-piece as our Diagnostician, Nos. 1 and 2, and professional stands. The sub-stage ring is the same size as the above-mentioned instruments, and carries an adjustable diaphragm. All accessories, namely, Abbe Condenser, Parabolic Reflector, Dark Well, Spot Lens, Polariscopes, etc., can be used on this stand without any change. It has a mirror bar, carrying plane and concave mirror, swinging on the center, with the object above or below the stage.

3d. The coarse adjustment is by means of a sliding tube, which gives a smooth and firm movement. The fine adjustment is delicate, and will do the work of the finest instruments.

The Microscope is characterized by great simplicity in its working parts, while at the same time is provided with means for careful and delicate adjustment.



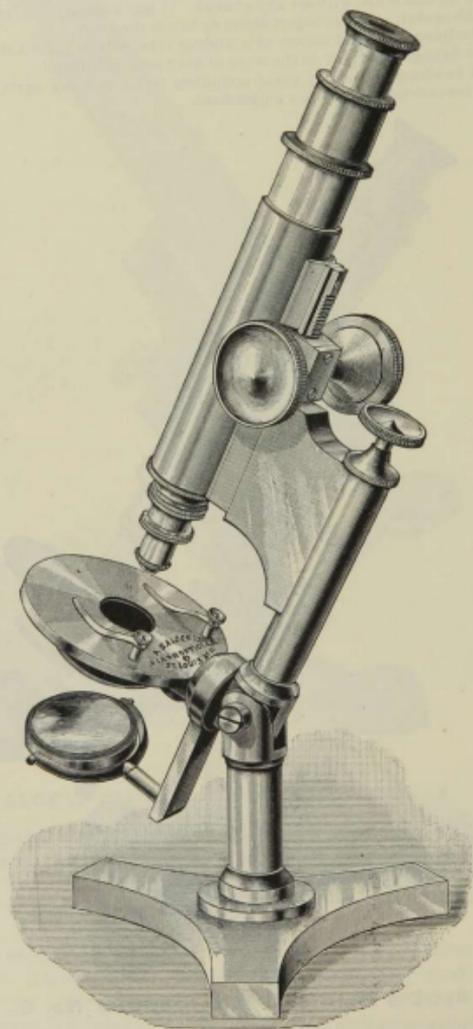
ALOE'S CLINICAL MICROSCOPE No. 2.

8694.	Stand, with 1 Eye-piece, in case, no objective	\$28 00
8695.	Stand, with 1 Eye-piece, $\frac{1}{4}$, $\frac{1}{2}$ and 1 inch Dividing Objective, giving 100, 200 and 300 diameters...	36 00
8696.	Stand, with 1 Eye-piece, in case, with $\frac{1}{4}$ and 1 inch Dividing Objective, giving 100 and 500 diameters	40 00

This Microscope is constructed after the same model as our Clinical No. 1—is the same size and the working parts are the same, with the addition of a rack and pinion movement of long range, which works perfectly smooth and steady.

We believe there is no Microscope in the market for the above price that will compare with this instrument.

DIAGNOSTIC.
MICROSCOPICAL.
MICROSCOPES.



ALOE'S DIAGNOSTICIAN MICROSCOPE No. 1.

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.

ALOE'S DIAGNOSTICIAN MICROSCOPE No. 1.

"The Diagnostician" is pre-eminently the practicing physician's Microscope, having lenses of such power and quality as will clearly show the diagnostic test of consumption (Bacillus Tuberculosis) and, being amply efficient for urinary analysis, blood tests, etc., and general work in Bacteriology, it is well adapted for all the wants of physicians, professors and pharmacists who require an instrument of average high grade.

The Diagnostician may be considered the pioneer of modern American Microscopes, combining the features of a first-class high-priced instrument at a moderate cost. The different parts are strong and firm, and in the parts subject to friction we have introduced new compensating bearings which enables the instrument to endure any amount of work and still retain smooth and reliable movements. Working microscopists will understand the value of this quality. When contracted it stands 11 inches high, but can be extended to 17 inches.

The entire Microscope is composed of brass, highly finished and of most perfect workmanship; the base is of tripod form, pillar and arm connected by a solid joint which allows inclination of body to any angle, rack and pinion for coarse adjustment, fine adjustment by a delicate micrometer screw, truly working and suitable for high powers. The main tube, provided with the society screw, has draw tube, which works with an exceedingly agreeable movement in the cloth lining of the main tube. The stage is of brass, circular in form, thin to allow great obliquity, but of sufficient strength to be firm under manipulation, attached to its lower side is a sub-stage ring and revolving diaphragm, both of which may be removed. Plane and concave mirrors of large size are adjustable on the mirror bar, which is a feature of considerable importance from the fact that a change in the distance of the light requires a corresponding adjustment of the mirrors; the mirror bar swings on a large bearing (the axis of which lies in the plane of the stage) to any obliquity below and above the stage—the latter for the illumination of opaque objects.

The spring clips (on the stage) are made in such a way that under them the slide may be moved with perfect ease and smoothness—an apparently trifling matter but really of great importance to the worker.

The stand we can recommend as well adapted for work of even the very highest grade, as, for example, bacteriological investigations (which require the highest power lenses, with suitable illuminating apparatus, and a stand having extremely accurate adjustment for both).

The instrument has enjoyed an excellent reputation since its first introduction. We believe that we are, therefore, in a position to claim that no instrument of equal efficiency is offered for the price.

With each complete outfit we supply Microscopic Forceps, Slides, Cover Glasses and an Upright Mahogany Case, finely polished, with handle and lock, and having drawer for accessories and receptacles for Eye-pieces and Objectives.

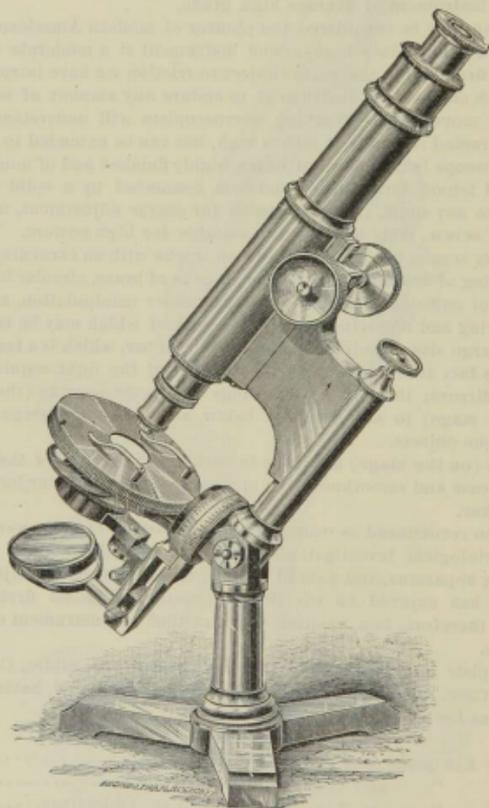
8697.	Stand, with 1 Eye-piece (any power).....	\$ 37 00
8698.	“ “ 1 “ and $\frac{3}{4}$ in. and $\frac{1}{5}$ in. Objectives	60 00
8699.	“ “ 1 “ “ 2 in., $\frac{3}{4}$ in. and $\frac{1}{5}$ in. Objectives.....	66 00
8700.	“ “ 2 Eye-pieces and $\frac{3}{4}$ in. and $\frac{1}{5}$ in. Objectives.....	64 00
8701.	“ “ 2 “ “ 2 in., $\frac{3}{4}$ in. and $\frac{1}{5}$ in. Objectives.....	70 00
8702.	“ “ 2 “ “ $\frac{3}{4}$ in., $\frac{1}{5}$ in. and $\frac{1}{12}$ in. Oil Immersion Objectives, 109 00	
8703.	“ “ 2 “ “ 2 in., $\frac{3}{4}$ in., $\frac{1}{5}$ in. and $\frac{1}{12}$ in. Oil Immersion Objectives.....	115 00

FOR TABLE OF MAGNIFYING POWERS REFER TO PAGE 607.

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.



ALOE'S DIAGNOSTICIAN MICROSCOPE, No. 2.

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.

ALOE'S DIAGNOSTICIAN MICROSCOPE, No. 2.

The base is of the tripod form and made of brass. The bronze pillar is large, and connected by joint for inclination of the arm. A heavy thumb-screw permits the instrument to be fastened in any position on the base. The coarse adjustment is by rack and pinion of long range; the fine adjustment is by micrometer screw acting on our patent frictionless motion. The main tube has two draw-tubes, one being graduated, provided with cloth-lining. The stage has concentric, revolving motion with removable spring clips. The mirrors are plane and concave and of large size, and both these and the sub-stage, carrying dome diaphragm, are adjustable on their respective bars; the circular bearings of these are large and are graduated to degrees and silvered. The mirror and sub-stage bars have their axis in the plane of the stage and move independent of one another or together to any obliquity below or above the stage. A steel pin for centering stage and sub-stage accompanies the instrument.

Upright polished case with drawer for accessories and receptacles for eye-pieces and objectives, with handle and lock, accompanies each outfit.

With every complete outfit (stand and objectives) we supply an oblong eye-piece micrometer free, this cannot be used on powers less than C or 1 in.

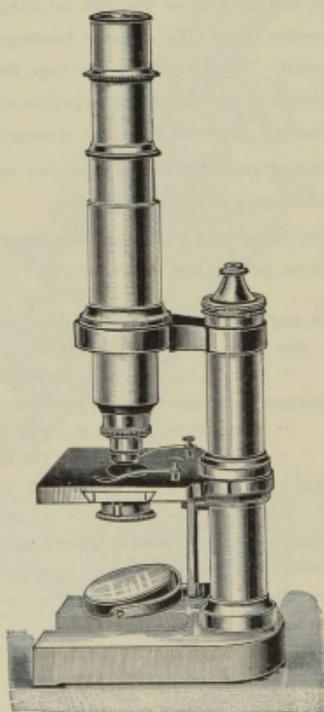
8704.	Stand, with 1 Eye-piece, any power.....	\$ 55 00
8705.	“ “ 1 “ and $\frac{3}{4}$ in. and $\frac{1}{5}$ in. Objectives	78 00
8706.	“ “ 1 “ “ 2 in., $\frac{3}{4}$ in. and $\frac{1}{5}$ in. Objectives.....	84 00
8707.	“ “ 2 Eye-pieces and $\frac{3}{4}$ in. and $\frac{1}{5}$ in. Objectives.....	82 00
8708.	“ “ 2 “ “ 2 in., $\frac{3}{4}$ in. and $\frac{1}{5}$ in. Objectives.....	88 00
8709.	“ “ 2 “ “ $\frac{3}{4}$ in., $\frac{1}{5}$ in. and $\frac{1}{12}$ in. Oil Immersion Objectives,	127 00
8710.	Stand, with 2 Eye-pieces and 2 in., $\frac{3}{4}$ in., $\frac{1}{5}$ in. and $\frac{1}{12}$ in. Oil Immersion Objectives	133 00
	Glass Stage and Slide-carrier, which slips over brass stage, extra.....	5 00
	Mechanical Stage in place of the regular.....	17 00
	Double Nose-piece, brass finish, extra.....	5 00
	Triple Nose-piece, brass finish, extra.....	9 00
	Abbe's Condenser, 1.20 N. A. in mounting No. 8820, extra.....	14 00
	Abbe's Condenser, 1.42 N. A. in mounting No. 8820, extra.....	16 00
	Rack and pinion adjustment to the sub-stage, extra.....	15 00
	Centering adjustments by micrometer screw to either stage or sub-stage, extra for each	15 00

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.

The majority of the stands catalogued on the following pages are of what is known as the Continental Model. They are manufactured by the Gundlach Optical Co., of Rochester, N. Y. We select this model of a microscope because of the general and growing demand for such instruments. They combine the most desirable points of the various instruments as put out by the best European makers, and for accuracy and excellence of workmanship, beauty of finish and general design, reflect great credit on the factory from which they emanate.



THE CONTINENTAL MICROSCOPE, No. 1.

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.

COARSE ADJUSTMENT.

The coarse adjustment on stands I and II is accomplished by means of a sliding tube, while on stands III, IV, IVA, a rack and pinion is used. In connection with this rack and pinion we would call attention to the fact that it is cut "diagonal" and not "straight," as is used by all other American makers. The advantage of the diagonal rack is that it works much smoother, the motion being very uniform. In stands fitted with these racks and pinions when using objectives of moderate power, the micrometer adjustment need not be employed.

FINE ADJUSTMENT.

As with every other part of these stands great attention has been paid to the micrometer adjustment. It is constructed after the most approved models and in the most careful manner, so as to eliminate all lateral motion. Any wearing of the parts is provided for and is at once taken up. On stands No. IV and IVA the milled head is graduated and an index provided so that micrometric measurements can be made. Each division on the graduation equalling $\frac{1}{100}$ millimetre.

The stage on all these stands is very large and firm.

The draw-tubes are arranged for the short and long standards, and Nos. III, IV and IVA are graduated into millimetres.

THE CONTINENTAL MICROSCOPE, No. I.

This microscope is constructed of brass throughout. It has no joint for inclination. The coarse adjustment is by use of the draw tube, while the fine adjustment is by micrometer screw. The draw tubes at their shortest length give the Continental standard, and when drawn out give the "long" tube. The stage is square and large, and to its under side is fitted a slide which carries the diaphragm. The mirrors are plane and concave and can be swung to any obliquity beneath the stage. The eye-pieces are of the Continental style, and when no especial directions are given we will furnish the one inch. The price includes one eye-piece.

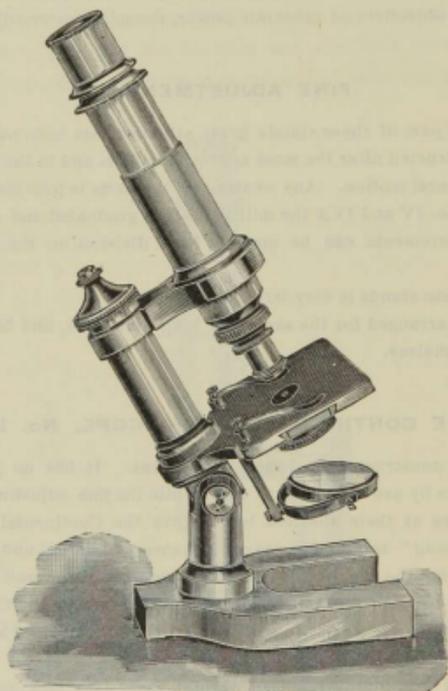
The stand is packed in a highly-polished upright case, with lock and key, and provided with a drawer for accessories.

8711.	Stand, with 1 Eye-piece, any power.....	\$ 20 00
8712.	“ “ 1 Eye-piece, $\frac{2}{3}$ and 1 in. Dividing Objective (No. 38).....	26 00
8713.	“ “ 1 “ $\frac{2}{3}$ and 1 in. Dividing, and $\frac{1}{5}$ in. Objectives (Nos. 38 and $50\frac{1}{2}$)	38 00
8714.	Stand, with 1 Eye-piece, 2 in., $\frac{2}{3}$ and 1 in. Dividing, and $\frac{1}{5}$ in. Objectives (Nos. 28, 38 and $50\frac{1}{2}$)	44 00
	Extra Continental Eye-pieces, any power.....	3 00

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.



THE CONTINENTAL MICROSCOPE No. II.

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.

THE CONTINENTAL MICROSCOPE No. 1.

This stand is similar in construction to Continental No. I, but has a joint for inclination of the body, as shown in cut. The coarse adjustment is by means of the draw tube, while the fine adjustment is by a micrometer screw. The base is of the "horse-shoe" pattern, and has a projection at the back of the pillar to give more stability, when the instrument is used in an inclined position. A slide carrying cylindrical diaphragms is provided underneath the stage, which is large, square and firm.

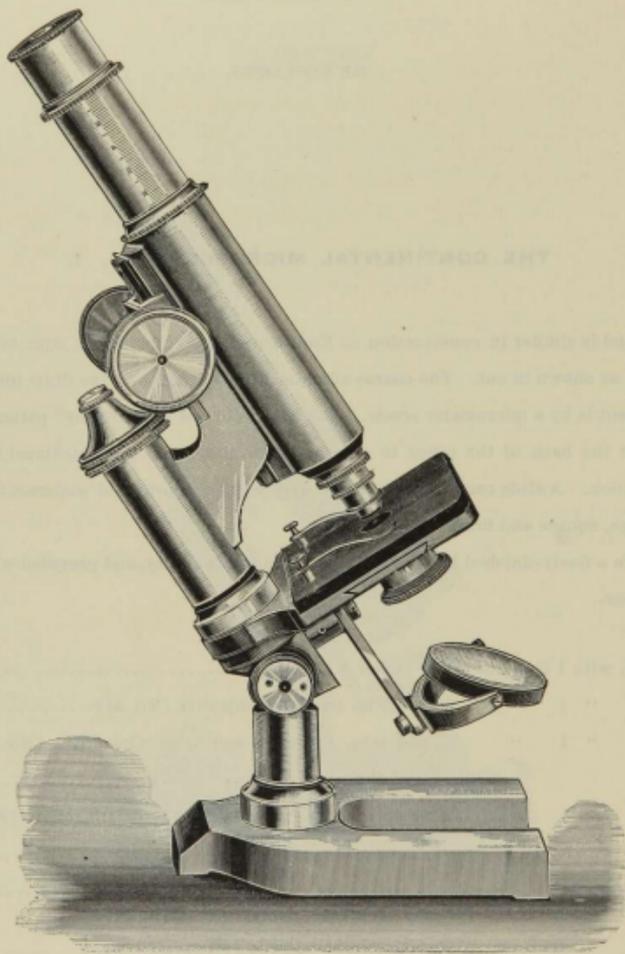
Packed in a finely-finished hard wood case, with lock and key, and provided with a drawer for accessories.

8715.	Stand, with 1 Eye-piece, any power	\$ 23 00
8716.	“ “ 1 “ $\frac{2}{3}$ and 1 in. Dividing Objective (No. 38).....	29 00
8717.	“ “ 1 “ $\frac{2}{3}$ and 1 in. Dividing, and $\frac{1}{5}$ in. Objectives (Nos. 38 and $50\frac{1}{2}$)	41 00
8718.	“ “ 1 “ 2 in., $\frac{2}{3}$ and 1 in. Dividing, and $\frac{1}{5}$ in. Objectives (Nos. 28, 38 and $50\frac{1}{2}$)	47 00
	Extra Continental Eye-pieces, any power	3 00

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.



THE CONTINENTAL MICROSCOPE, NO. III.

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.

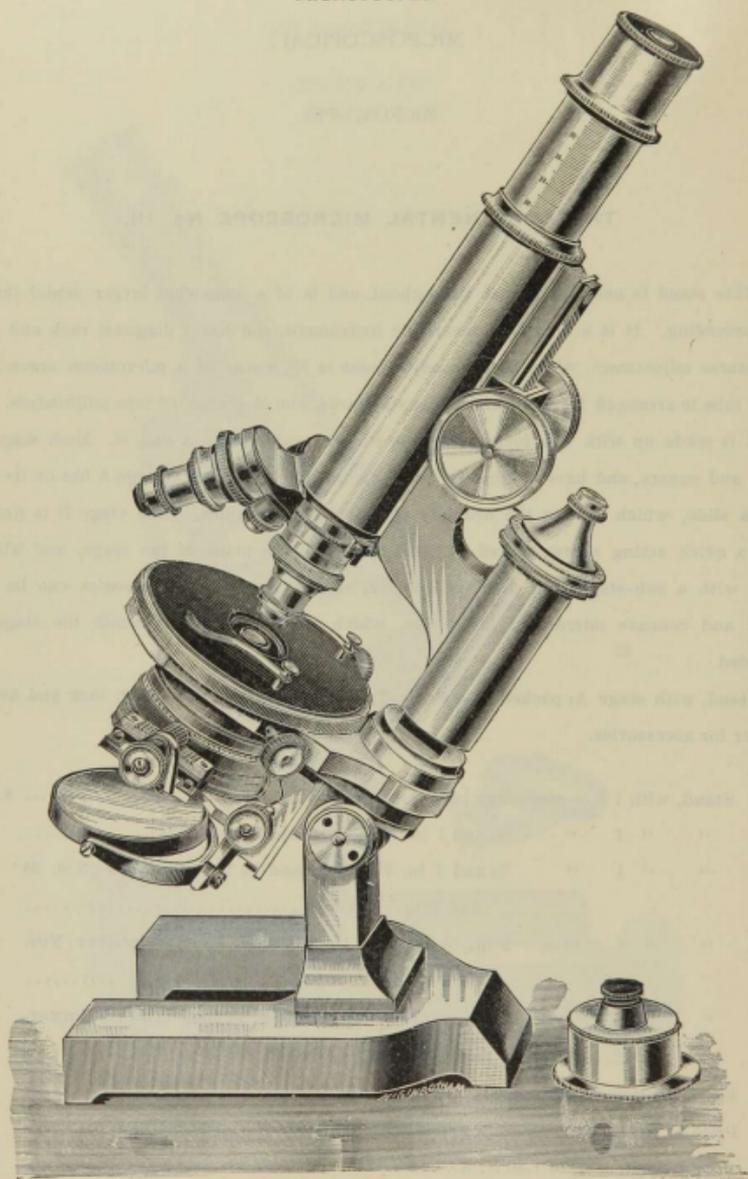
THE CONTINENTAL MICROSCOPE No. III.

This stand is made of bronze throughout, and is of a somewhat larger model than the two preceding. It is a very firm, reversible instrument, and has a diagonal rack and pinion for coarse adjustment, while the fine adjustment is by means of a micrometer screw. The draw tube is arranged for long and short standards, and is graduated into millimetres. This stand is made up with two forms of stage, which we designate A and B. Both stages are large and square, and have a vulcanite plate on the upper surface. Stage A has on its under side a slide, which carries the ordinary cylindrical diaphragms, while stage B is provided with a quick acting screw, placed at right angles to the plane of the stage, and which is fitted with a sub-stage ring of standard size, so that sub-stage accessories can be used. Plane and concave mirrors of large size, which swing above or beneath the stage, are provided.

Stand, with stage A, packed in a finely-finished hard wood case, with lock and key and drawer for accessories.

8719.	Stand, with 1 Eye-piece, any power	\$ 35 00
8720.	“ “ 1 “ $\frac{2}{3}$ and 1 in. Dividing Objective (No. 38)	41 00
8721.	“ “ 1 “ $\frac{2}{3}$ and 1 in. Dividing, and $\frac{1}{5}$ in. Objectives (Nos. 38 and $50\frac{1}{2}$)	53 00
8722.	“ “ 1 “ 2 in., $\frac{2}{3}$ and 1 in. Dividing, and $\frac{1}{5}$ in. Objectives (Nos. 28, 38 and $50\frac{1}{2}$)	59 00
8723.	“ “ 1 “ 2 in., $\frac{2}{3}$ and 1 in. Dividing, $\frac{1}{5}$ and $\frac{1}{12}$ in. Oil Immer- sion Objectives (Nos. 28, 38, $50\frac{1}{2}$, $63\frac{1}{2}$)	99 00
	Extra Continental Eye-pieces, any power	3 00
	Price of Stand, with stage B, extra.	2 00
	Abbe's Condenser, of 1.40 N. A., extra	12 00
	Iris Diaphragm, extra	6 00

DIAGNOSTIC.
MICROSCOPICAL.
MICROSCOPES.



THE CONTINENTAL MICROSCOPE, NO. IV A.

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.

THE CONTINENTAL MICROSCOPE, NO. IV.

This stand, like all of those on the Continental model, is made up entirely of brass and is very elegant in design, as well as being of the finest workmanship. The draw tube, which slides in the main tube, is graduated so that either the long or short standard can readily be obtained. The coarse adjustment is by rack and pinion and, as in the preceding stands, is of the diagonal type. The fine adjustment is on the triangular bearing, and the milled head is graduated into fifty parts. The head of the micrometer screw is such that each one of these graduations represents $\frac{1}{2540}$ part of an inch or the $\frac{1}{100}$ part of a millimetre in the adjustment of the instrument. This can readily be used in measuring cover thicknesses, etc. An index is provided for the graduation on the milled head.

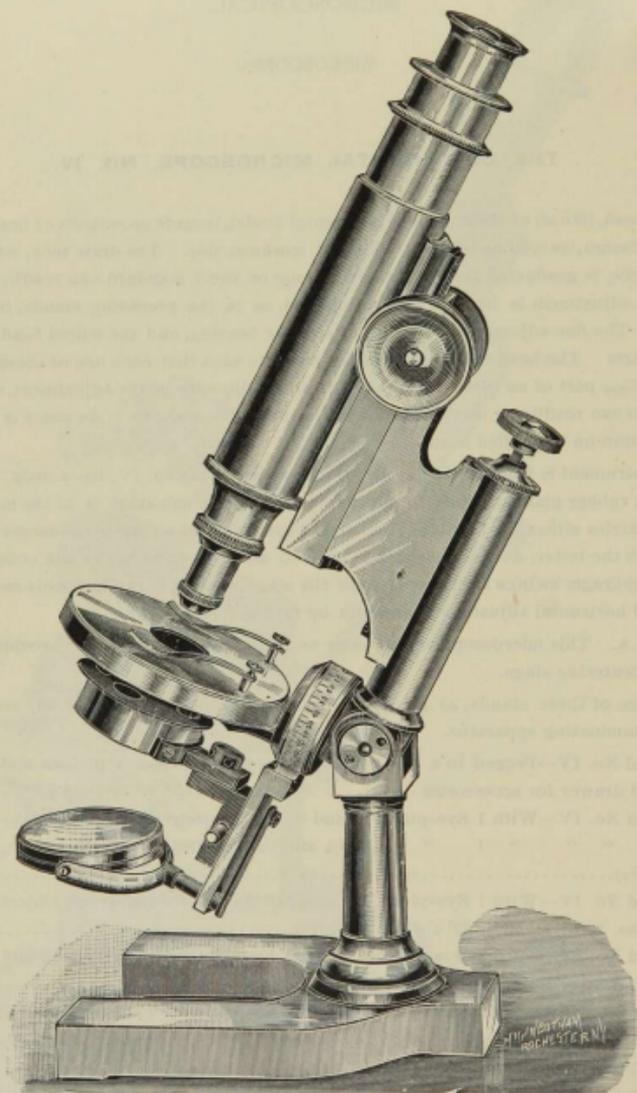
The instrument is made in two styles, the first of which, No. IV, has a plain, square stage with a hard rubber plate attached to the upper side. The sub-stage is of the most complete form. It carries either the regular cylindrical diaphragms or an Abbe condenser and, in connection with the latter, an iris diaphragm, as well as the regular plane and concave mirrors. The iris diaphragm swings from underneath the stage, so that it can be easily removed. The vertical and horizontal adjustments are both by rack and pinion.

No. IV A. This microscope is the same as No. IV, except that it is provided with a rotating and centering stage.

The price of these stands, as given below, includes one eye-piece, of any power and the complete illuminating apparatus.

8724.	Stand No. IV—Packed in a finely finished hard wood case, with lock and key and drawer for accessories	\$ 90 00
8725.	Stand No. IV—With 1 Eye-piece, $\frac{2}{3}$ and $\frac{1}{5}$ inch Objectives (Nos. 32, $52\frac{1}{2}$)....	115 00
8726.	“ “ “ “ 1 “ 2, $\frac{2}{3}$ and $\frac{1}{5}$ inch Objectives (Nos. $29\frac{1}{2}$, 32, $52\frac{1}{2}$).....	127 00
8727.	Stand No. IV—With 1 Eye-piece, 2, $\frac{2}{3}$, $\frac{1}{5}$ and $\frac{1}{12}$ inch Oil Immersion Objectives (Nos. $29\frac{1}{2}$, 32, $52\frac{1}{2}$, $63\frac{1}{2}$)	167 00
8728.	Stand No. IV A—Packed in a finely finished hard wood case, with lock and key and drawer for accessories.....	100 00
8729.	Stand No. IV A—With 1 Eye-piece, $\frac{2}{3}$ and $\frac{1}{5}$ inch Objectives (Nos. 32 and $52\frac{1}{2}$)	125 00
8730.	“ “ “ “ 1 “ 2, $\frac{2}{3}$ and $\frac{1}{5}$ inch Objectives (Nos. $29\frac{1}{2}$, 32 and $52\frac{1}{2}$).....	137 00
8731.	Stand No. IV A—With 1 Eye-piece, 2, $\frac{2}{3}$, $\frac{1}{5}$ and $\frac{1}{12}$ inch Oil Immersion Objectives (Nos. $29\frac{1}{2}$, 32, $52\frac{1}{2}$ and $63\frac{1}{2}$).....	177 00
	Extra Continental Eye-pieces, any power.....	3 00

DIAGNOSTIC.
MICROSCOPICAL.
MICROSCOPES.



THE PHYSICIAN'S MICROSCOPE.

DIAGNOSTIC.

MICROSCOPICAL.

MICROSCOPES.

THE PHYSICIAN'S MICROSCOPE.

This stand is made up in two styles. The first, which we designate as No. 1, has a japanned iron base, the rest of the stand being bronze, while No. 2 is of bronze throughout. The rack and pinion for coarse adjustment are of the diagonal pattern, while the fine adjustment is by means of a micrometer screw. This adjustment works in a slide, and while the movement is perpendicular to the plane of the stage, there is absolutely no lateral or lost motion. The stand has a joint for inclination of the body. The draw tube works in cloth, and is provided with the society screw to which an amplifier or other apparatus can be attached. The sub-stage is movable and the mirror bar carries a plane and a concave mirror. The mirrors can be used above the stage for "opaque illumination," the axis of motion being in the plane of the stage. The stage is of ample size and circular in form. If desired a rotating glass stage can be substituted for the plain stage.

The price of the stand includes one Huyghenian eye-piece, and unless otherwise ordered we will supply one of one inch focus.

The instrument is put up in a beautifully finished upright hard wood case, with lock and key, and drawer for accessories.

8732.	Stand No. 1, with 1 Eye-piece, any power.....	\$ 40 00
8733.	“ “ “ 1 “ $\frac{3}{4}$ and $1\frac{1}{4}$ in. Dividing, and $\frac{1}{5}$ in. Objectives (Nos. $37\frac{1}{2}$ and $50\frac{1}{2}$).....	59 00
8734.	Stand No. 1, with 1 Eye-piece, 2 in., $\frac{3}{4}$ and $1\frac{1}{4}$ in. Dividing, and $\frac{1}{5}$ in. Objectives (Nos. 28, $37\frac{1}{2}$ and $50\frac{1}{2}$)	65 00
8735.	Stand No. 1, with 1 Eye-piece, 2 in., $\frac{3}{4}$ and $1\frac{1}{4}$ in. Dividing, $\frac{1}{5}$ in. and $\frac{1}{12}$ in. Oil Immersion Objectives (Nos. 28, $37\frac{1}{2}$, $50\frac{1}{2}$ and $63\frac{1}{2}$).....	105 00
8736.	Stand No. 2, with 1 Eye-piece, any power.....	43 00
8737.	“ “ “ 1 “ $\frac{3}{4}$ and $1\frac{1}{4}$ in. Dividing, and $\frac{1}{5}$ in. Objectives (Nos. $37\frac{1}{2}$ and $50\frac{1}{2}$).....	62 00
8738.	Stand No. 2, with 1 Eye-piece, 2 in., $\frac{3}{4}$ and $1\frac{1}{4}$ in. Dividing, and $\frac{1}{5}$ in. Objectives (Nos. 28, $37\frac{1}{2}$ and $50\frac{1}{2}$).....	68 00
8739.	Stand No. 2, with 1 Eye-piece, 2 in., $\frac{3}{4}$ and $1\frac{1}{4}$ in. Dividing, $\frac{1}{5}$ in. and $\frac{1}{12}$ in. Oil Immersion Objectives (Nos. 28, $37\frac{1}{2}$, $50\frac{1}{2}$ and $63\frac{1}{2}$)	108 00
	Extra Huyghenian Eye-piece, any power.....	4 00
	Rotating Glass Stage, extra.....	5 00

DIAGNOSTIC.

MICROSCOPICAL.

OBJECTIVES.

Our list of Objectives has been added to, from time to time, and now embraces a variety from which a suitable selection may be made for every field of investigation. Our Objectives are all carefully computed for the utmost freedom of color, largest amount of light, greatest working distance, and extreme flatness of field for their respective angular apertures and magnifying powers. The process of production is carried out on a system which was developed after constant efforts to reach the highest results, and eliminates every possibility of chance, so common to optical work generally. A faulty Objective never leaves our hands, and every opportunity for improvement is utilized. The glass employed is of the celebrated Jena production, but only such is used, which after years of constant use has proven itself to be not liable to the least deterioration. The many thousands of Objectives which are in constant use, and the constantly increasing demand, fully attest their comparative merits as well as moderate prices.

Our Microscope Objectives are classified after their optical peculiarities, and, without exception, the greatest care is exercised in their optical and mechanical construction. We do not distinguish between first and second class, professional or students' Objectives, but offer only lenses of the highest optical grade and of strictly first-class workmanship.

Although we are well aware and perfectly satisfied that all our Objectives, as given in the list below, compare favorably with any other production, without regard to cost, the prices of our Objectives will be found to be lower than those of any other first-class lenses.

SINGLE SYSTEM DOUBLET.

No.	Power.	Adjustment.	Numerical Aperture.	Price.
8740.	25.....1 inch.....	Non-adjustable.....	0.13.....	\$ 5 00

CLASS A.—TRIPLET.

No.	Power.	Adjustment.	Numerical Aperture.	Price.
8741.	26.....4 inch.....	Non-adjustable.....	0.08.....	\$ 8 00
8742.	27.....3 ".....	".....	0.11.....	8 00
8743.	28.....2 ".....	".....	0.13.....	6 00
8744.	29.....1½ ".....	".....	0.16.....	6 00

CLASS B.—DIALYTIC.

No. 1—Non-dividing.

No.	Power.	Adjustment.	Numerical Aperture.	Price.
8745.	29½.....2 inch.....	Non-adjustable.....	0.13.....	\$12 00
8746.	29½a.....1½ ".....	".....	0.19.....	15 00
8747.	30.....1 ".....	".....	0.32.....	20 00
8748.	30½.....1 ".....	".....	0.20.....	12 00
8749.	31.....¾ ".....	".....	0.32.....	12 00
8750.	32.....⅔ ".....	".....	0.32.....	9 00
8751.	33.....½ ".....	".....	0.35.....	10 00

DIAGNOSTIC.
MICROSCOPICAL.
OBJECTIVES.

CLASS B.—DIALYTIC.

No. 2.—Dividing.

The front system of these objectives can be removed and the back system is the objective of the second named power and angle.

No.	Power.	Adjustment.	Numerical Aperture.	Price.
8752. 34	.....3 and 5 inch	.....Non-adjustable	.....0.11 0.08	.....\$20 00
8753. 35	.....2 " "	....."	.....0.16 0.09	.....20 00
8754. 36	.....1 1/2 " "	....."	.....0.20 0.11	.....18 00
8755. 37	.....1 " "	....."	.....0.20 0.11	.....12 00
8756. 37 1/2	.....3/4 " 1 1/4 "	....."	.....0.21 0.13	.....7 00
8757. 38	.....2 3/4 " "	....."	.....0.21 0.13	.....6 00
8758. 39	.....1 1/2 " "	....."	.....0.24 0.14	.....7 00
8759. 39 1/2	.....1 1/4 " "	....."	.....0.54 0.14	.....12 00

OBJECTIVES FOR RESOLUTION.

CLASS D.—THREE SYSTEMS.

No. 1.—Dry Working.

No.	Power.	Adjustment.	Numerical Aperture.	Price.
8760. 47	.....1/2 inch	.....Non-adjustable	.....0.82	.....\$50 00
8761. 48	.....4/10 "	....."	.....0.82	.....40 00
8762. 49	.....9/10 "	....."	.....0.58	.....15 00
8763. 50	.....1/4 "	....."	.....0.61	.....12 00
8764. 50 1/2	.....1/5 "	....."	.....0.61	.....12 00
8765. 51	.....1/6 "	....."	.....0.65	.....14 00
8766. 51 1/2	.....1/6 "	....."	.....0.87	.....16 00
8767. 52	.....1/4 "	....."	.....0.92	.....15 00
8768. 52 1/2	.....1/5 "	....."	.....0.92	.....16 00
8769. 52 3/4	.....1/5 "	....."	.....0.92	.....19 00
8770. 53	.....1/5 "	.....Adjustable	.....0.92	.....20 00
8771. 53 1/2	.....1/8 "	....."	.....0.92	.....22 00
8772. 54	.....1/10 "	....."	.....0.92	.....25 00
8773. 54 1/2	.....1/12 "	....."	.....0.99	.....30 00

* Can be had in adjustable mounts at an additional cost of \$3.00.

No. 2.—Water Immersion.

No.	Power.	Adjustment.	Numerical Aperture.	Price.
8774. 55	.....1/6 inch	.....Adjustable	.....1.06	.....\$22 00
8775. 56	.....1/10 "	....."	.....1.06	.....26 00
8776. 56 1/2	.....1/12 "	....."	.....1.06	.....30 00
8777. 57	.....1/16 "	....."	.....1.06	.....35 00

No. 3.—Glycerine Immersion.

No.	Power.	Adjustment.	Numerical Aperture.	Price.
8778. 58	.....1/8 inch	.....Adjustable	.....1.10	.....\$30 00
8779. 59	.....1/10 "	....."	.....1.10	.....25 00
8780. 59 1/2	.....1/12 "	....."	.....1.10	.....30 00
8781. 60	.....1/16 "	....."	.....1.10	.....35 00

No. 4.—Homogeneous Immersion.

REMARKABLE FOR LONG WORKING DISTANCE.

No.	Power.	Adjustment.	Numerical Aperture.	Price.
8782. 61	.....1/4 inch	.....*Non-adjustable	.....1.20	.....\$60 00
8783. 62	.....1/6 "	....."	.....1.20	.....45 00
8784. 63	.....1/10 "	....."	.....1.20	.....35 00
8785. 63 1/2	.....1/12 "	....."	.....1.20	.....40 00
8786. 64	.....1/16 "	....."	.....1.20	.....50 00
8787. 65	.....1/20 "	....."	.....1.20	.....75 00
8788. 66	.....1/25 "	....."	.....1.20	.....120 00

* These objectives will be furnished with an adjustable mount, the same as Class E, at an additional cost of \$5.00 each. No. 61, on account of its large diameter, cannot be mounted in an adjustable mount.

DIAGNOSTIC.

MICROSCOPICAL.

OBJECTIVES.

CLASS E.—FOUR SYSTEM.

Homogeneous Immersion.

No.	Power.	Adjustment.	Numerical Aperture.	Price.
8789. 72	..... 1/8 inch.....	*Non-adjustable.....	1.40.....	\$ 80 00
8790. 72½	..... 1/10 "	"	1.40.....	85 00
8791. 73	..... 1/12 "	"	1.40.....	90 00
8792. 74	..... 1/16 "	"	1.40.....	120 00
8793. 75	..... 1/20 "	"	1.40.....	160 00
8794. 76	..... 1/25 "	"	1.40.....	220 00

* The objectives in Class E will be provided with an improved adjustment, which is entirely free from lost motion, at an additional cost of \$5.00. With Class E objectives we give a hemispherical lens for oblique illumination.

THE CARE AND USE OF MICROSCOPIC LENSES.

The risk to valuable objectives from handling, by those unacquainted with the delicacy and care required to prevent serious injury, calls for some suggestions to those who are about to commence the study of Microscopy. A paper on this subject, read by William Wales before the New York Microscopical Society, contains many good points; we make the following extract:

"However good the lenses of an instrument may be, they will not do their best work except when properly cared for and properly used. Yet I have met with reputable microscopists who do not in practice appreciate this obvious truth. Let me show you how a lens is cleaned. My implements are four—an old, soft, silk handkerchief, a small stick of soft wood, a vial of alcohol and a watchmaker's glass of two powers. I have here an eye-piece. I will first examine it with the magnifying glass, by reflected light, to learn its condition. If it be found to need cleaning, alcohol is to be applied with the handkerchief. This liquid must not be allowed to touch the lacquer, but the cell which holds the lens will not be harmed by it, since that has been burned black with acid. If, after the cleaning, fibers from the cloth be found adhering to the lens, they may be blown off by a quick breath.

I have brought an objective which was sent to me to be cleaned. I will attach it to an instrument, and will place under it a slide of familiar diatoms. Now view the object through the lens. It looks so obscure that you will all exclaim, 'Well, this is a very poor objective;' whereas it is of excellent quality, as you shall presently see. In it are eight pieces of glass. The back combination is composed of two crowns and the flint; the middle of a double concave flint and a double convex crown; the front of two crowns, with a flint between them. It has, probably, not been cleaned for twenty years. Suppose your watch to have been thus neglected! I will now clean this objective. I begin the work by unscrewing the cells. I then moisten a part of the handkerchief with alcohol, and with the help, if needed, of the stick of wood in searching the corners, carefully clean each combination, and I then screw each cell back accurately to its place. The work is now finished, and I will attach the objective again to the microscope, and will again ask you to view the slide of diatoms through it. The dimness is now, you perceive, all gone. Indeed, you can hardly believe it the same objective, and you have ocular proof that cleanliness is essential to the best performance of a lens, and are witnessing an instance of the dependence of important results on attention to little things."

DIAGNOSTIC.

MICROSCOPICAL.

EYE-PIECES.

IMPROVED HUYGHENIAN.

8795.	Improved Huyghenian Eye-piece, 2 inch.....	price,	\$ 5 00
8796.	“ “ “ “ 1 1/2 “	“	4 00
8797.	“ “ “ “ 1 “	“	4 00
8798.	“ “ “ “ 3/4 “	“	4 00
8799.	“ “ “ “ 1/2 “	“	4 00
8800.	“ “ “ “ 1/4 “	“	5 00
8801.	“ “ “ “ 1/6 “	“	6 00
8802.	“ “ “ “ 1/8 “	“	8 00

These eye-pieces are mounted in a finely lacquered brass mount, but will be mounted specially to fit any microscope or telescope at an additional cost of \$1.00

CONTINENTAL.

8803.	Continental Eye-piece, 2 inch... ..	price,	\$ 3 00
8804.	“ “ “ “ 1 1/2 “	“	3 00
8805.	“ “ “ “ 1 “	“	3 00
8806.	“ “ “ “ 3/4 “	“	3 00
8807.	“ “ “ “ 1/2 “	“	3 00
8808.	“ “ “ “ 1/4 “	“	4 00
8809.	“ “ “ “ 1/6 “	“	5 00
8810.	“ “ “ “ 1/8 “	“	7 00

SOLID.

8811.	Solid Eye-piece, 1/2 inch.....	price,	\$ 6 00
8812.	“ “ “ “ 1/3 “	“	6 00
8813.	“ “ “ “ 1/4 “	“	6 00
8814.	“ “ “ “ 1/6 “	“	6 00
8815.	“ “ “ “ 1/8 “	“	6 00

DIRECTIONS FOR ORDERING EYE-PIECES.

In ordering eye-pieces in special mounts, great care must be taken that we may know the correct measurement of the necessary mount. Experience has demonstrated that the best way to obtain such measurement is to cut a piece of writing paper which will just meet around an eye-piece of the desired size. From this we can make a mount which will fit.

TABLE OF MAGNIFYING POWERS.

LINEAR, FOR TUBES TEN INCHES IN LENGTH.

OBJECTIVE.	2 in.	1 1/2 in.	1 in.	3/4 in.	2/3 in.	1/2 in.	1/4 in.	1/5 in.	1/6 in.	1/8 in.	1/10 in.	1/12 in.	1/16 in.
2 inch.....	24.0	33.6	54.0	73.8	84.0	114.0	258.0	294.0	354.0	474.0	594.0	714.0	954.0
1 1/4 “	30.6	51.0	69.0	94.5	107.3	145.6	299.0	372.3	448.4	605.6	759.0	912.3	1219.0
1 “	44.0	73.3	99.0	135.3	154.0	209.0	429.0	539.0	649.0	869.0	1089.0	1309.0	1749.0
3/4 “	57.3	95.5	128.7	175.9	200.6	272.3	559.0	702.3	848.7	1132.3	1419.0	1705.6	2279.0
1/2 “	84.0	117.6	189.0	258.3	294.0	399.0	903.0	1029.0	1239.0	1659.0	2079.0	2499.0	3339.0

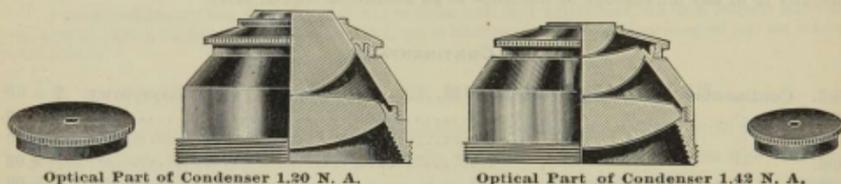
DIAGNOSTIC.

MICROSCOPICAL.

CONDENSERS—CONDENSER MOUNTINGS—NOSE-PIECES—MECHANICAL STAGES.

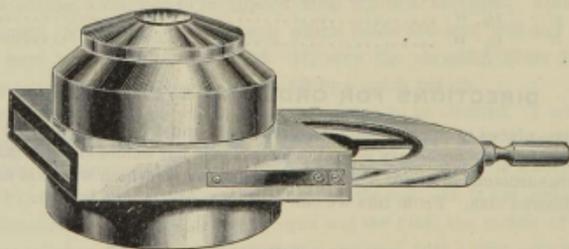
ABBE'S SUB-STAGE CONDENSERS.

The lenses composing these Condensers are of such a size that they will utilize almost all the rays which may pass through the sub-stage ring. Their numerical aperture is about 1.20 and 1.42, the former suitable for objectives of medium angular aperture, the latter will do justice to objectives of the largest angular aperture. Its volume of light is sufficient with the highest amplification, and although it gives an intense light at the focal point, it may be distributed over a larger space, or its volume decreased, by varying its distance from the object. It will work both dry and immersion. The pin-hole cap provides means for exactly centering the Condenser. These Condensers can be fitted to Condenser Mountings Nos. 8819 and 8820, as desired. The Condensers are reversible and adjustable in the adapters, thus they can be used on any stand having standard size of sub-stage.



- | | |
|--|---------|
| 8816. Abbe's Sub-stage Condenser, 1.20 N. A., in plain sub-stage adapter, without means for regulating light, with pin-hole cap, in Morocco Case | \$ 8 00 |
| 8817. Abbe's Sub-stage Condenser, 1.42 N. A., same as above in Morocco Case | 10 00 |
| 8818. Abbe's Sub-stage Condenser, Achromatic 1.0 N. A., with pin-hole cap, in Morocco Case..... | 20 00 |

This Condenser gives a colorless image of the source of light. While desirable for general work, it is particularly useful in photo-micrography. It is specially adapted to Mountings Nos. 8819 and 8820, and when so used the mounting is placed between the systems of the Condenser.



8819.

Cut shows Condenser Mounting with Condenser Fitted. Price is for Condenser Mounting only.

- | | |
|--|---------|
| 8819. Condenser Mounting, with 5 stops and diaphragms and blue glass | \$ 5 00 |
|--|---------|

The mounting is of new construction and simplified to the greatest extent. It can be used either in adjustable sub-stage, or by reversing, in one fixed to the stage. The diaphragms are separate, and may be used so or in conjunction with a blue glass, by dropping into the slide, which passes diametrically below the Condenser. A click is provided when it is in central position.

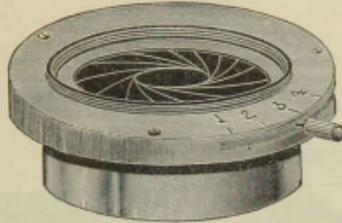
We adapt the Condenser to any stage, but when ordered for sub-stages, which are fixed to the stage, we should know the distance from top of stage to bottom of sub-stage.

It can be used with Condensers Nos. 8816, 8817, 8818.

DIAGNOSTIC.
MICROSCOPICAL.

CONDENSERS—CONDENSER MOUNTINGS—NOSE PIECES—MECHANICAL STAGES.

CONDENSER MOUNTING, WITH IRIS DIAPHRAGM.



8820.

8820. Condenser Mounting, with Iris Diaphragm..... \$ 6 00

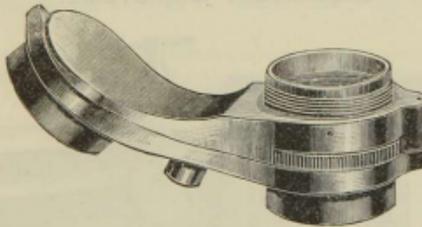
This mounting offers a ready means for controlling the volume of light and is well suited to the ordinary needs of the physician and student. The diaphragm may be decreased from full opening to a pin hole by means of a lever, and a graduated scale is provided for making record of the aperture used; central stops and blue glass accompany same. The mounting is reversible and can be attached to any sub-stage, and may be used with condensers Nos. 8816, 8817 and 8818.

8821. Mechanical Stage, graduated and silvered on edge with vernier and with silvered graduations for the rectangular movements 27 50

8822. Mechanical Stage, as above, with vernier and with silvered graduations provided for the rectangular movements..... 40 00

The advantages of mechanical stages for every variety of work, now generally conceded and particularly in original research, are as follows: The ability to systematically examine the entire surface of an object; the easy manipulation of an object, especially with high powers; the ability to count objects within a given space; its use as a finder after repeated examinations. Further than this there is nothing in their construction which would prevent their use as ordinary stages. The mechanical movements are entirely contained in the upper surface of the stage, and this, being revolving, may be completely rotated on its axis. They are of the same thickness as our ordinary stages, and therefore offer no obstruction to extreme oblique illumination. The movements are all extremely delicate.

DOUBLE, TRIPLE AND QUADRUPLE NOSE PIECES.



8824.

Since the introduction of these nose pieces they have become very popular and are now in general use. This is no doubt due to the perfection of their construction and practical adoption in the first place, and then to the low price at which they are offered. The advantages of using two, three or four objectives on an instrument, either of which can be used without the removal of one and attachment of the other, are so apparent that they need no argument. Further than this, when objectives are ordered with the apparatus they are exactly centered, which is ordinarily not the case, even in objectives of the same manufacture. We also adjust objectives to correspond exactly in focus with a certain eye-piece, so that they require no adjustment except with the micrometer screw. On account of the work involved to obtain this convenience we make an extra charge of \$1.00 for each objective.

8823.	Nose-piece, Double, Aluminium	\$ 6 75
8824.	" " Brass	5 00
8825.	" Triple, Aluminium.....	11 00
8826.	" " Brass.....	9 00
8827.	" Quadruple, Aluminium.....	18 00
8828.	" " Brass.....	12 00
8829.	Polariscope, with 1 Selenite, in Morocco Case.....	5 00
8830.	Revolving Glass Stage, with Slide Carrier, to slip over Brass Stage.....	12 00

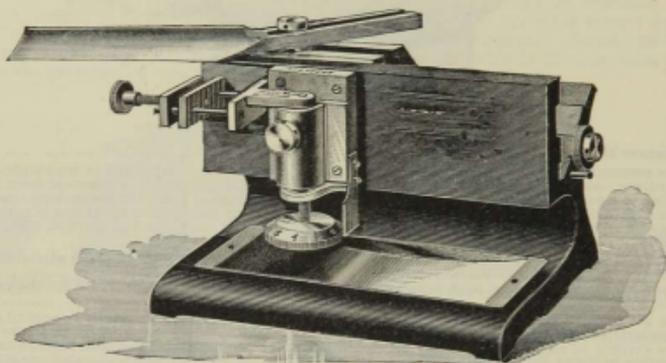
Can be used on Aloe's Diagnostician, Nos. 1 and 2, and on the Physician's Microscope.

DIAGNOSTIC.

MICROSCOPICAL.

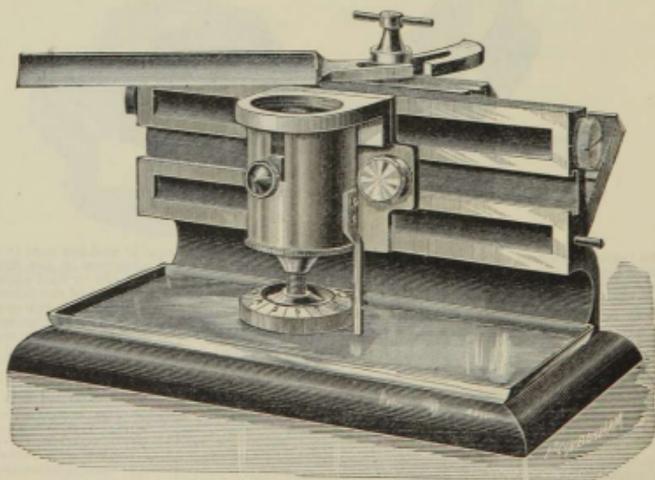
MICROTOMES.

STUDENT MICROTOME.



8831. Cut One-third of Actual Size.

LABORATORY MICROTOME.



8833. Cut One-third of Actual Size.

DIAGNOSTIC.

MICROSCOPICAL.

MICROTOMES.

In the Laboratory, the base, curved arm, upright and V-shaped beds are made of one continuous casting, thus insuring extreme rigidity, without excessive weight. The knife carrying block, is fitted in the angular way in such a manner that the knife moves steadily through it without deviating from its plane and without requiring any extra pressure. Stop-screws with soft rubber cushions are fastened at the ends of the way, which serve to overcome any sudden concussion, and thus prevent a vibration of the knife. The upper surface of the block is provided on its entire length with a grooved slot, to which is fitted a sliding thumb-screw, so that the knife may be fastened at any point upon it.

The front vertical bed is planed and polished, and is arranged with a grooved slot its full length. The adjustable carriage is fitted to it, and may be securely fastened at any point upon it by means of two heavy screws. The tightening pin for these, when not in use, has a receptacle in the solid bed. It will thus be seen that whether it is desired to make a straight or very oblique cut, the carriage with object may be placed at such a point where it is the most convenient in its relation to the cutting edge.

To the carriage are directly fitted the micrometer screw with graduated disc and a slide which is acted upon by the former. A provision is made for taking up the possible wear on the screw. At one side of the carriage a spring is attached which works in the grooves on the edge of the disc with a pronounced click, so that the feed may be controlled without watching it; this may be loosened so that it will not act when it is desired to use the index only. A lever with ivory handle is connected with the slide in the large size, so that this may be returned after the screw has come to the limit of its motion.

The slide is provided with a grooved slot, which admits of the quick vertical adjustment of the universal joint and clamp for specimens of different lengths. The universal joint permits inclination in any direction, and the clamp is arranged in such a manner that it swings on an axis and may be independently adjusted for height, thus giving five different adjustments for the specimens.

The Student Microtome is of smaller dimensions, but the construction of bed, curved arm, V-shaped bed and knife carrying block is the same. The feed-screw attachment is placed at one end of the bed, and for all ordinary work the best position of clamp is as shown in cut.

A drip-pan is countersunk in the upper surface of the bed, and is easily removable for the purpose of cleaning.

It is impossible to use a knife with a thin edge for all kinds of work, it will invariably nick or be otherwise damaged when such a one is used on hard substances: a knife with an edge not ground as thin as they usually are, should be used expressly for cutting hard substances. The knives we furnish are made of the very finest English steel and carefully tempered.

8831.	Student Microtome (no case), with Knife in Cherry Case	\$18 00
8832.	Laboratory Microtome, Small Size, with Knife in Morocco Case, the whole packed in Polished Case, with Lock and Key	42 50
8833.	Laboratory Microtome, Large Size, with Knife in Morocco Case, the whole packed in Polished Case, with Lock and Key	50 00
8834.	Microtome Knife, cutting edge $3\frac{1}{4}$ in., in Cherry Case	each, 3 00
8835.	“ “ “ “ 4 in., in Morocco “	“ 8 00
8836.	“ “ “ “ 6 in., “ “	“ 10 00

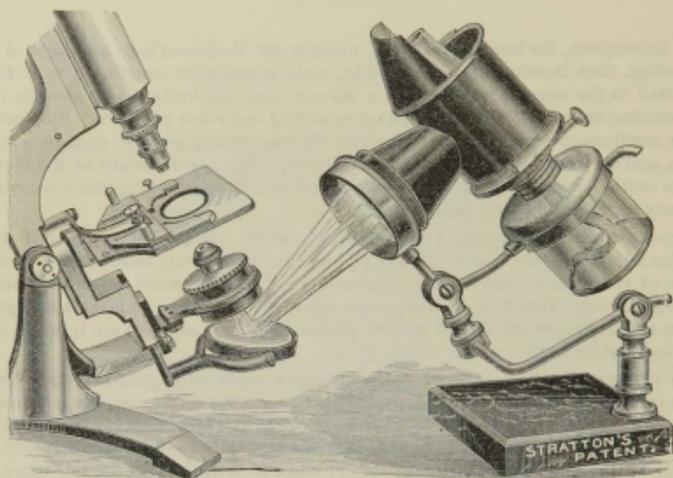
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

DIAGNOSTIC.

MICROSCOPICAL.

ILLUMINATORS.

STRATTON'S MICROSCOPE ILLUMINATOR.



8841.

Stratton's Microscope Illuminator is a combination of microscope lamp and condenser, with adjustments that can be easily and readily made to any height or angle of inclination, by frictional joints, and without the use of set-screws.

Various modifications of light are provided, for either direct or oblique illumination of opaque or transparent objects, without altering the position of the microscope, the mirror or the sub-stage condenser.

The illuminator has a revolving lamp and burner, by means of which the edge, flat side, or any angle of the flame from the half-inch wick can be used with the condenser.

It also has a revolving shade that surrounds the light. This shade consists of a metal cylinder with a lateral cone, that carries the blue and ground glass mediums and directs the light to the condenser, and a movable light shield to intercept all reflection from the chimney. The condenser, which is nearly three inches in diameter, has an independent support from the revolving shade and lamp; this allows the use of the light direct from any angle of the flame in almost any position without the use of the condenser.

The illuminator rests upon a heavy base and is perfectly steady at any height.

We furnish a neat Cedar case of the general shape of a microscope box, of sufficient size to hold the apparatus without derangement of any of its parts.

8837.	Acme Lamp Illuminator.....	\$ 3 50
8838.	Durkee's Electric Illuminator, with Battery.....	18 00
8839.	“ “ “ without Battery.....	8 00

This illuminator may be attached to the mirror-bar of any microscope having a swinging bar, and be employed for central or oblique illumination. The construction is such that when the lamp is burned out it can be replaced at small expense. It is provided with a pin-hole diaphragm cutting off all rays except those passing through the object; a condensing lens and a disc of blue glass.

8840.	Stratton's Microscopic Illuminator, Complete, with Case.....	5 50
8841.	“ “ “ without Case.....	5 00

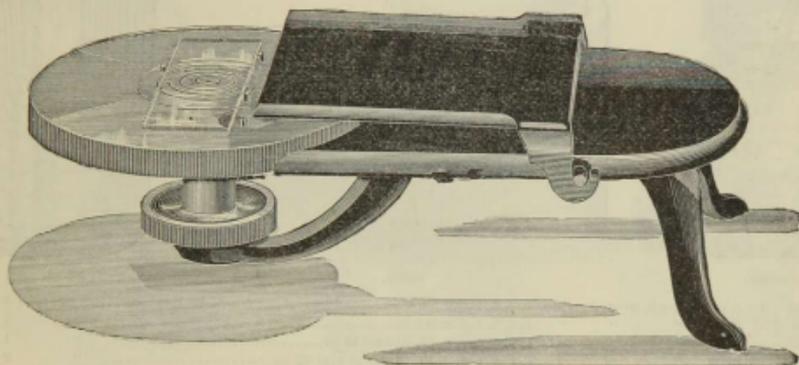
Trouvé's Electric Illuminator. See Fig. 9574, page 677.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

DIAGNOSTIC.
MICROSCOPICAL.

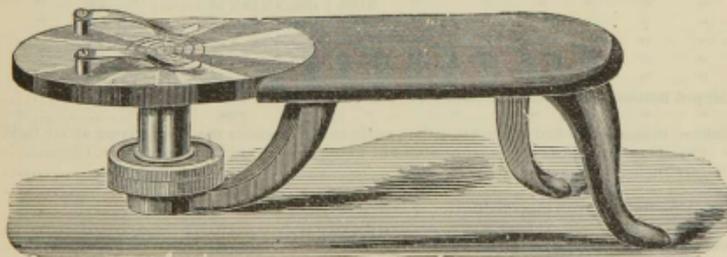
TURNTABLES.

GRIFFITH'S SELF-CENTERING TURNTABLE.



8843.

This Turntable is a new device, and accomplishes its purpose perfectly. A partially revolving disc is fitted into the plate, provided on its surface with two projecting studs. The slide is placed between these and forced by an internal spring against two stops, one for width, the other for length. This arrangement is quick-acting, and is not liable to get out of order.



8846.

8842.	Turntable, Beck's, Self-Centering, for all Slides. The most perfect Turntable yet produced...	\$ 7 00
8843.	" Griffith's, Self-Centering, with Detachable Hand-Rests.....	7 00
8844.	" National.....	2 50
8845.	" " with Detachable Hand-Rests.....	3 00
8846.	" " Centering	3 50

The centering arrangement of this table consists of three stops, against which the slide is placed, and is held in position by the spring clips. While not strictly centering it is approximately so, on the usual slide, and, for all ordinary purposes, quite efficient.

8847.	Turntable, Shadbolt's, with Spring Clips and Concentric Rings, for Centering	2 00
8848.	" Williams', Improved, Self-Centering. Very delicate and accurate, the best cheap Turntable made	2 50

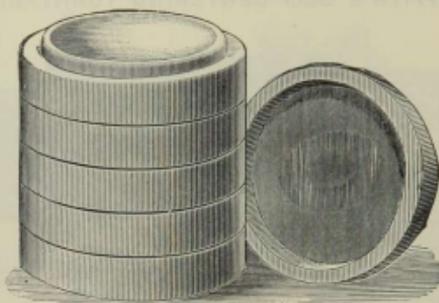
DIAGNOSTIC.

MICROSCOPICAL.

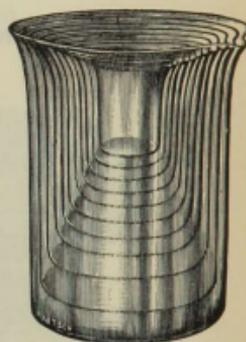
GLASSWARE.



8869.



8905.



8852.

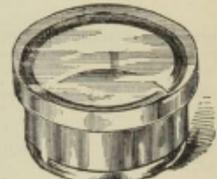
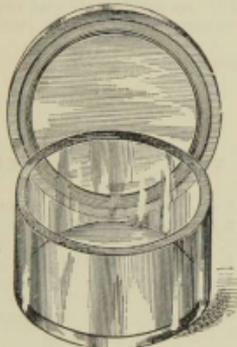
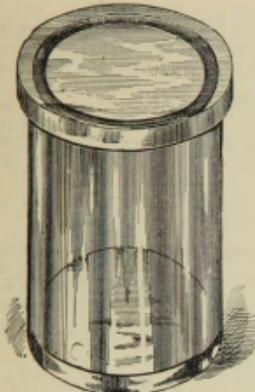
8849.	Beaker Glasses, nested, wide, 1, 2, 3, 4 and 6 oz.....	per nest,	\$ 0 75
8850.	" " " " " 1, 2, 3, 4, 6 and 8 oz.....	"	1 00
8851.	" " " " " 1, 2, 3, 4, 6, 8, 10, 12 and 16 oz.....	"	1 75
8852.	" " " " " 1, 2, 3, 4, 6, 8, 10, 12, 16, 24 and 32 oz.....	"	2 50
8853.	" " " " " 1, 2, 3, 4, 6, 8, 10, 12, 16, 24, 32 and 48 oz.....	"	3 00
8854.	" " " " " 1, 2, 3, 4, 6, 8, 10, 12, 16, 24, 32, 48 and 64 oz.....	"	3 75
8855.	" " " " " wide, with pour-out, capacity, 1 oz.; size, 2 x 1½ in.....	each, 15c; per doz.,	1 60
8856.	" " " " " " 2 oz.; size, 2½ x 1½ in.....	" 15c; "	1 60
8857.	" " " " " " 3 oz.; size, 2½ x 1½ in.....	" 18c; "	1 75
8858.	" " " " " " 4 oz.; size, 2½ x 2 in.....	" 18c; "	1 80
8859.	" " " " " " 6 oz.; size, 2½ x 2½ in.....	" 20c; "	2 00
8860.	" " " " " " 8 oz.; size, 3¼ x 2½ in.....	" 20c; "	2 10
8861.	" " " " " " 10 oz.; size, 3½ x 2½ in.....	" 22c; "	2 20
8862.	" " " " " " 12 oz.; size, 4 x 3 in.....	" 25c; "	2 50
8863.	" " " " " " 16 oz.; size, 4½ x 3 in.....	" 30c; "	3 00
8864.	" " " " " " 24 oz.; size, 5 x 3½ in.....	" 35c; "	3 50
8865.	" " " " " " 32 oz.; size, 6 x 4 in.....	" 45c; "	5 15
8866.	" " " " " " 48 oz.; size, 6½ x 4½ in.....	" 60c; "	6 00
8867.	" " " " " " 64 oz.; size, 7¼ x 4½ in.....	" 80c; "	8 00
8868.	Capped Bottles, with triangular stopper, to prevent gumming, 1 oz. capacity.....		35
8869.	" " " " " " 2 oz. ".....		50
8870.	Culture Dishes, composed of two flat dishes, made to fit one within the other, giving an air-tight chamber, for holding a number of slides or watch glasses containing cultures, large.....		75
8871.	Culture Dishes, medium.....		50
8872.	" " small.....		35
8873.	Dropping Bottles, with glass bulb.....		20
8874.	" " " " rubber top.....		25
8875.	Evaporating Dishes, Glass, plain, diameter, 2 in.....	each, 25c; per doz.,	2 00
8876.	" " " " " 3 in.....	" 30c; "	2 50
8877.	" " " " " 4 in.....	" 35c; "	3 00
8878.	" " " " " 5 in.....	" 40c; "	3 50
8879.	" " " " " 6 in.....	" 50c; "	4 50
8880.	" " " " " nested, diameter, 2 to 4 in.....	per nest,	75
8881.	" " " " " " 4 to 6 in.....	"	1 00
8882.	" " " " " " 2 to 6 in.....	"	1 25
8883.	" " " " " with lips, diameter, 2 in.....	each, 45c; per doz.,	4 50
8884.	" " " " " " 3 in.....	" 50c; "	4 75
8885.	" " " " " " 4 in.....	" 60c; "	6 00
8886.	" " " " " " 5 in.....	" 70c; "	6 75
8887.	" " " " " " 6 in.....	" 80c; "	7 50
8888.	" " " " " nested, diameter, 2 to 4 in.....	per nest,	1 25
8889.	" " " " " " 4 to 6 in.....	"	1 75
8890.	" " " " " " 2 to 6 in.....	"	2 50

DIAGNOSTIC.

MICROSCOPICAL.

GLASSWARE.

PREPARATION JARS, WITH GROUND GLASS TOPS.



The above illustration represents our new preparation jars, which we are now prepared to supply, with accurately ground tops fitting absolutely air-tight upon the glass rim of the jar. These jars have no lip or contraction at the top, being made perfectly straight and are specially adapted for holding delicate tissues, which can be removed from them without danger of tearing. As they are absolutely air-tight, volatile liquids can be kept in them for any length of time.

Owing to the fact that we are now importing these jars in great quantities, we are enabled to supply them at the following extremely low prices, and can compete with the lowest rates of foreign manufacturers. They are made of clear flint glass, and are in every way adapted to microscopical purposes.

8891.	Glass Baths, 3 x 1 inch.	For immersing and washing slides	.....	\$ 0 25
8892.	" " 3½ x 1 "	" " " " " "	.....	35
8893.	" " 3½ x 1½ "	" " " " " "	.....	50
8894.	" " 4½ x 1½ "	" " " " " "	.....	60
8895.	Glass Boxes, with Ground Glass Covers, 1½ in. diameter	.....	.....	25
8896.	" " " " " " 1¾ "	.....	.....	30
8897.	" " " " " " 2 "	.....	.....	35
8898.	" " " " " " 2½ "	.....	.....	40
8899.	" " " " " " 3 "	.....	.....	50
8900.	" " " " " " 3½ "	.....	.....	50
8901.	" " " " " " 4 "	.....	.....	50
8902.	" " " " " " 4½ "	.....	.....	50
8903.	" " " " " " 5 "	.....	.....	75
8904.	" " " " " " 5½ "	.....	.....	1 00
8905.	Porcelain Saucers, 2½ in. diameter, in nests of 5, with Cover	.....	per nest.	60
8906.	" " 2½ " " " " 5, " "	.....	" " "	70
8907.	" " 3½ " " " " 5, " "	.....	" " "	80
8908.	" " 3½ " " " " 5, " "	.....	" " "	1 00
8909.	" " deep, 2½ in. diameter, in nests of 3, with Cover	.....	" " "	1 25
8910.	" " " 3½ " " " " 3, " "	.....	" " "	1 50
8911.	" " " 3½ " " " " 3, " "	.....	" " "	1 75
8912.	Preparation Jar, large, 3½ in. high, 2½ in. diameter	.....	each, 22c; per dozen,	2 40
8913.	" " medium, 1 in. high, 2½ in. diameter	.....	" 20c; " "	2 15
8914.	" " small, ¾ " " " 1¾ " " "	.....	" 18c; " "	2 00
8915.	Watch Glasses, medium sizes	.....	" " "	1 00

MUSEUM JARS FOR PRESERVING SPECIMENS, SEE PAGE 25.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

DIAGNOSTIC.

MICROSCOPICAL.

CELLS—COVER GLASSES—SLIDES—SLIDE LABELS AND COVERS.

CELLS.

8915.	Atwood Rubber Cells, for mounting opaque objects.....	per dozen,	\$ 0 30
These Cells are made by us. They are exceedingly neat, require but little time in mounting, and have the advantage that objects can be mounted and preserved independent of the slip. They are made for half-inch covers.			
8916.	Block Tin Cells, various sizes and depths	"	20
8917.	Glass " " " " " "	"	1 00
8918.	Rubber " " " " " "	"	15
8919.	Zylonite " " " " " transparent.....	"	25

THIN GLASS COVERS.

8920.	Cover Glasses, in Circles, No. 1, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ or 1 in. diameter.....	per dozen, 20c.; per oz.,	\$ 2 25
8921.	" " " " " " 2, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ or 1 in.	" 18c.;	" 1 80
8922.	" " " " " " 3, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ or 1 in.	" 16c.;	" 1 40
8923.	" " " " " Sheets, " 1, $\frac{1}{100}$ to $\frac{1}{100}$ in. thick.....	"	1 00
8924.	" " " " " " 2, $\frac{1}{100}$ to $\frac{1}{100}$ in.	"	65
8925.	" " " " " " 3, $\frac{1}{100}$ to $\frac{1}{100}$ in.	"	50
8926.	" " " " " Squares, " 1, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ or 1 in. diameter.....	" 18c.;	" 1 80
8927.	" " " " " " 2, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ or 1 in.	" 16c.;	" 1 40
8928.	" " " " " " 3, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$ or 1 in.	" 14c.;	" 1 00
8929.	" " " " " Oblong Sizes, $\frac{1}{100}$ to $\frac{1}{100}$ in. thick, 10 x 15 mm.....	" 20c.;	" 1 40
8930.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 15 x 20 mm.....	" 20c.;	" 1 40
8931.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 18 x 25 mm.....	" 25c.;	" 1 40
8932.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 18 x 27 mm.....	" 25c.;	" 1 40
8933.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 20 x 25 mm.....	" 25c.;	" 1 40
8934.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 21 x 24 mm.....	" 25c.;	" 1 40
8935.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 23 x 50 mm.....	" 45c.;	" 1 40
8936.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 24 x 32 mm.....	" 40c.;	" 1 40
8937.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 26 x 34 mm.....	" 40c.;	" 1 40
8938.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 30 x 40 mm.....	" 45c.;	" 1 40
8939.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 40 x 50 mm.....	" 50c.;	" 1 40
8940.	" " " " " " $\frac{1}{100}$ to $\frac{1}{100}$ in. " 50 x 60 mm.....	" 75c.;	" 1 40

GLASS SLIPS.

8941.	Glass Slides, Crown, 3 x 1 in., Cut edges, extra white	per doz. in pkg., 12c.; per gr. in box,	\$ 1 00
8942.	" " " " " 3 x 1 in., Ground edges, Rounded, extra white, "	" 15c.;	" " 1 75
8943.	" " " " " " 3 x 1 in., " " Square, " " " " " "	" 14c.;	" " 1 40
8944.	" " " " " " 3 x 1 in., Thin, Grn'd " Rounded, " " " " " "	" 20c.;	" " 2 00
8945.	" " " " " " 3 x 1 in., " " Square, " " " " " "	" 18c.;	" " 1 80
8946.	" " " " " " $1\frac{1}{2}$ x 1 in., Ground " Rounded, " " " " " "	" 20c.;	" " 2 00
8947.	" " " " " " 2 x 1 in., " " " " " " " " " "	" 20c.;	" " 2 00
8948.	" " " " " " 3 x 2 in., " " " " " " " " " "	" 40c.;	" " 4 00
8949.	" " " " " " 5 x 4 in., Cut edges, extra white	" 50c.;	" " 4 75
8950.	" " " " " " 5 x 4 in., Ground edges, extra white.....	" 75c.;	" " 7 50
8951.	" " " " " " or Plate, 3 x 1 in., Ground bevels	" 40c.;	" " 4 00
8952.	" " " " " " " 3 x 1 in., Polished "	" 50c.;	" " 5 00
8953.	" " " " " " 3 x 1 in., with Ground edges and concave centres, extra white....	per dozen,	1 00

LABELS AND COVERS FOR SLIDES.

8954.	Adhesive Labels, White, Round or Oval	per 100 in box,	\$ 0 10
8955.	" " " " " Square with black border	"	15
8956.	" " " " " Square with fancy border, assorted colors.....	"	25
8957.	" " " " " Gilt Fronts, for covering Slides	per 100,	25
8958.	" " " " " Backs.....	"	25
Backs and Fronts, if with holes punched, extra.....			15

DIAGNOSTIC.
MICROSCOPICAL.

CULTURE, MOUNTING AND STAINING MEDIA AND CEMENTS.

CULTURE MEDIA.

Our Culture Media is prepared freshly for each order.

8969.	Agar Agar, in Tubes, carefully Sterilized, ready for Inoculation.....	\$ 25
8960.	" " in ½ pint flasks.....	2 30
8961.	Nutrient Gelatine, in Tubes, carefully Sterilized, ready for Inoculation.....	25
8962.	" " in ½ pint flasks.....	2 50

MOUNTING AND STAINING MEDIA.

	Oz. Bottle Solution.
8963. Alcohol, Dr. Squibbs', Absolute.....	\$
8964. Ammonia, Carmine, Beale's.....	25
8965. Aniline, Blue.....	20
8966. " Green.....	20
8967. " Red.....	20
8968. " Violet.....	20
8969. Aniline Oil, pure, for use in preparation of Bacillus Tuberculosis.....	20
8970. Asphaltum.....	20
8971. " quick drying.....	35
8972. Benzole, pure.....	20
8973. Bismarck Brown.....	20
8974. Borax, Carmine.....	25
8975. Brunswick Black.....	25
8976. Burri's Stain for Bacillus Tuberculosis, with directions.....	35
8977. Canada Balsam, in Benzole.....	25
8978. " " in Chloroform.....	50
8979. " " in Xylol.....	50
8980. " " Paper Filtered, in Flexible Tubes.....	25
8981. Carbonate of Potash, 0.3 per cent Solution.....	25
8982. Carmine Injecting Gelatine, Dr. Seiler's.....	1 00
8983. Caustic Potassa, 0.5 per cent Solution.....	25
8984. Cedar Oil, for microscopic purposes.....	50
8985. Celloidine.....	1 25
8986. Damar, in Benzole.....	1 oz. box,
8987. Deane's Medium.....	35
8988. Eosine.....	20
8989. Farrant's Medium.....	50
8990. Fuchsin.....	25
8991. Gentian Violet.....	50
8992. Gibbs' Double Stain for Bacillus Tuberculosis.....	50
8993. Gold Size.....	25
8994. Glycerine, Camphorated, for delicate Vegetable Tissues.....	25
8995. Glycerine, pure.....	25
8996. Glycerine Jelly.....	50
8997. Hematoxylin.....	20
8998. Iodo-Iodide Potassa, 0.3 per cent Solution.....	25
8999. King's Lacquer Finish and Cell, Blue, with directions.....	50
9000. " " Scarlet, with directions.....	50
9001. Methyl, Blue.....	20
9002. Methyl, Green.....	20
9003. Methyl, Violet.....	20
9004. Nitric Acid in Alcohol, 3 per cent Solution.....	25
9005. Oil of Cloves.....	35
9006. Osmic Acid.....	1/32 oz. or 1 gramme,
9007. Paraffine, Pure, Hard, melting point 123° F.....	2 50
9008. " " Soft, " " 109° F.....	50
9009. Phenolphthaleine.....	25
9010. Picro, Carmine.....	25
9011. Pot. Ferro-Cyanide, with 0.1 per cent Acetic Acid.....	25
9012. Safranin.....	25
9013. Sulpho-Indigotate Soda.....	20
9014. Turpentine.....	25
9015. Vesuvium.....	25
9016. Xylol, pure.....	20

These media we guarantee to be of the quality best suited for microscopical purposes and are put up in the neatest possible manner; each bottle is plainly labeled and enclosed in paper cartons.

SPECIAL NET QUOTATIONS IN EXTRA LARGE QUANTITIES.

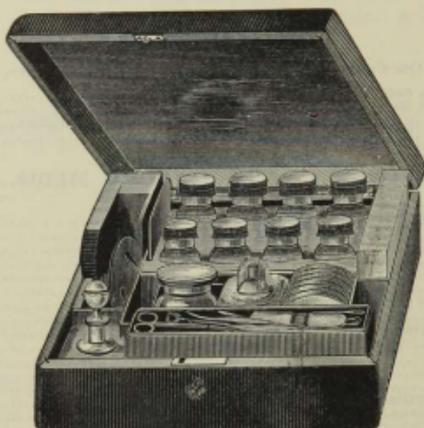
CEMENTS.

9017.	Cement, Brown's, Transparent, Rubber.....	\$ 35
9018.	" King's, Amber, Transparent, with directions.....	25
9019.	" White, " " ".....	25
9020.	" White Zinc.....	30
9021.	Glue, Hollis'.....	50
9022.	" Marine, Colorless.....	40
9023.	" " Fluid.....	35
9024.	" " Hard, melting point 250° F..... per box,	35

DIAGNOSTIC.

MICROSCOPICAL.

MOUNTING CABINET—MOUNTING SET.



9025.

9025. Mounting Cabinet, as arranged by Mr. Walmsley, containing 6 compressors, wood, 6 ditto Nickel-plated, Steel Forceps, Scissors, Knife, Needles, Turntable, Brass Table and Lamp, $\frac{1}{2}$ gross Slips, $\frac{1}{2}$ ounce assorted Squares and Circles, 1 dozen Hard Rubber Cells, 1 dozen Block Tin Cells, 3 Watch glasses, Dropping Tube, Tube of Balsam, Damar or Balsam, Glycerine, Glycerine Jelly, Hematoxylin, Brunswick Black, Gold-size, Oil of Cloves, White Zinc Cement, Dropping bottle, 1 nest of Saucers, wide mouth Glass Jar for Solutions, 2 Camel's hair Brushes in long handles. The whole packed in a polished Mahogany cabinet, with lock..... \$ 25 00

9026. ALOE'S SET FOR MOUNTING AND PREPARING BACILLUS TUBERCULOSIS.

This set is supplied packed in wooden box, and is substantially what is used in the best laboratories. 1 bottle Aniline Oil, 1 bottle Fuchsine, 1 Straight, Minim Dropper, graduated, 1 pair Forceps, 1 small Culture Dish, 1 medium Culture Dish, 1 Minim Graduate, 1 Test Tube, $\frac{1}{2}$ dozen Watch glasses, 1 nest of 5 Porcelain Saucers, 3 small, glass-stoppered Bottles for holding alcohol and distilled water, 1 Small Funnel, 1 dozen sheets Filter paper. Directions for use accompanying each box. Set complete..... \$ 3 00

DIRECTIONS FOR STAINING AND PREPARING SPUTUM FOR DETECTION OF BACILLUS TUBERCULOSIS.

Obtain fresh sputum—coughed up in the morning. Spread a small portion upon one surface of a thin cover-glass and dry in the air. Pour a few drops of the Magenta stain into a watch glass. Hold the watch-glass over a spirit lamp for a few seconds until the stain becomes warm, and place the cover-glass, sputum downward, upon its surface—leave it in for five to ten minutes—then wash it in dilute Nitric Acid (1 to 3) until all color perceptible to the eye has disappeared. Wash in distilled water to remove all traces of acid. Then float the glass, sputum downward, for two or three minutes upon a few drops of Methyl Blue stain; again wash in distilled water; then immerse in Absolute Alcohol for a few minutes to remove all trace of water. Dry thoroughly in the air.

If the Magenta stain be used cold the cover-glass must be left in it for half an hour.

When dry place a drop of Balsam solution on the cover-glass and lay it carefully on a glass slide. If wanted for examination at once or with oil immersion, run Hollis' Glue round the edges of the cover.

DIRECTIONS FOR STAINING BACILLUS TUBERCULOSIS WITH DR. GIBBES' DOUBLE STAIN.

Pour a little stain into a test tube and warm; as soon as it begins to steam pour into a watch glass and invert the cover-glass, with the sputum on the stain; allow it to remain for five minutes, then wash in Methylated Spirit until no more color comes away; dry and mount in Balsam solution.

DIRECTIONS FOR STAINING ALL OTHER BACTERIA.

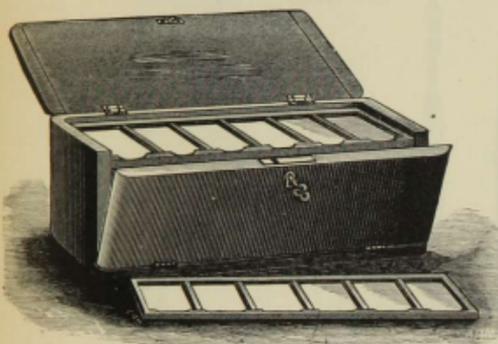
For Fluids, such as Urine, Pus, Sputum, etc., containing Bacteria, spread a small portion of the fluid on one surface of a cover-glass and dry in air. Warm over a spirit lamp to make it adhere. Float the cover-glass, object downward, on a small quantity of the New Purple Stain. Hold the watch-glass over a spirit lamp for a few seconds until the stain becomes warm; leave for five minutes. Then wash in spirits, dry and mount in Balsam solution.

If the stain be used cold the cover-glass must be left in for half an hour.

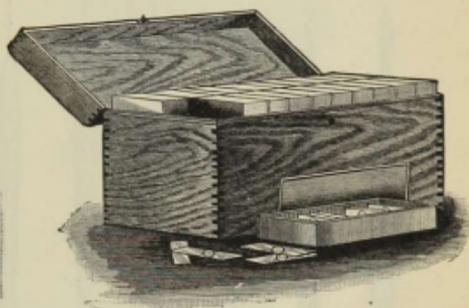
DIAGNOSTIC.

MICROSCOPICAL.

CABINETS—MAILING BOXES—SLIDE BOXES.



9028.



9031.

9027.	Cabinet, Portable, Mahogany, 6 Trays, holding 36 Objects.....	\$ 2 00
9028.	“ “ “ “ 12 “ “ 72 “	3 25
9029.	“ “ “ “ 12 “ “ 144 “	5 00
9030.	“ “ Pillsbury's, containing 10 boxes for 250 slides.....	3 00
9031.	“ “ “ “ 20 “ “ 500 “	4 00

The Pillsbury Cabinet consists of a finely polished Cherry Case, containing ten or twenty boxes, grooved on the inside, to receive twenty-five slides each, and provided with a lock. When the boxes are in place in the cabinet, the slides lie horizontally, thus avoiding all liability of damage to slides in top.

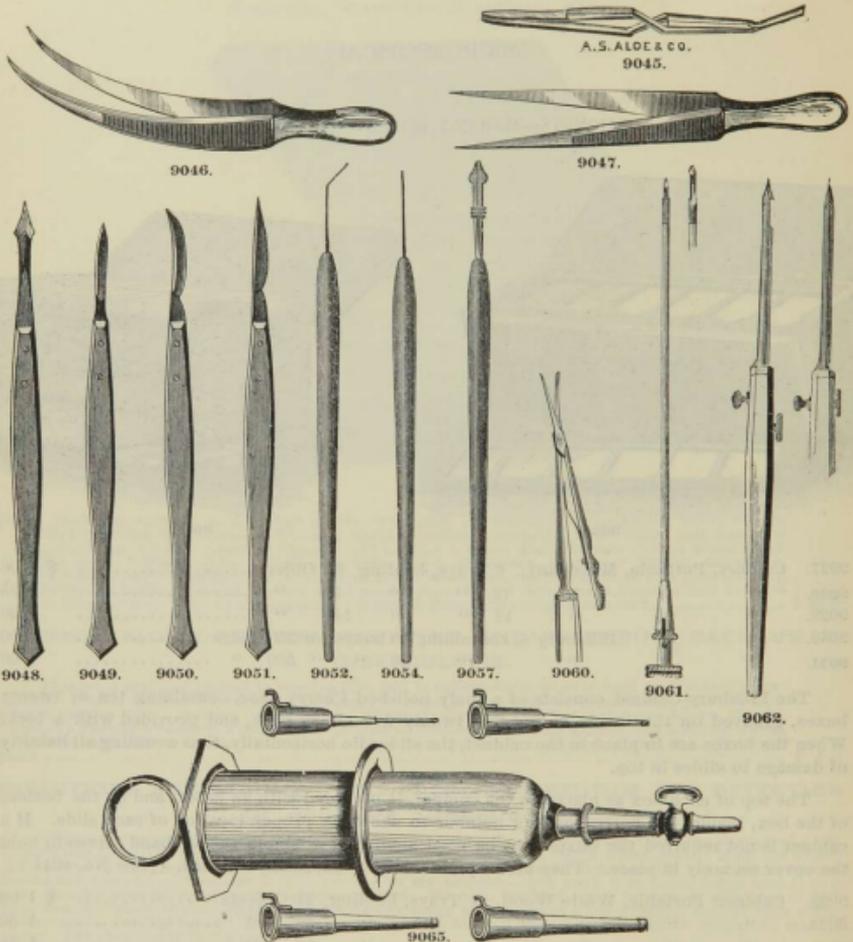
The top of each box as placed in the cabinet, is provided with an index, and on the bottom of the box, inside, is a corresponding number to show the proper location of each slide. If a cabinet is not required the boxes may be used singly, as a simple rubber band serves to hold the cover securely in place. They are of plain white wood, neatly finished. (See No. 9044.)

9032.	Cabinet, Portable, White Wood, 4 Trays, holding 24 Objects.....	\$ 1 00
9033.	“ “ “ “ 6 “ “ 36 “	1 50
9034.	“ “ “ “ 8 “ “ 48 “	1 75
9035.	“ “ “ “ 10 “ “ 60 “	2 00
9036.	“ “ “ “ 12 “ “ 72 “	2 50
9037.	“ “ “ “ 12 “ “ 144 “	3 50
9038.	Mailing Boxes, Wood, to hold 3 Objects, 3x1 in.....per dozen, \$ 80; each,	07
9039.	“ “ “ “ 6 “ “ “	85; “ 08
9040.	“ “ “ “ 12 “ “ “	90; “ 09
9041.	“ “ “ “ 25 “ “ “	1 00; “ 10
9042.	Mailing Cases, Bradley's, Tops, Bottoms and Centers.....	“ 06
9043.	Slide Boxes, Cloth Covered, with Lid and Sliding Cover and Numbered Index to hold 25 Objects, 3x1 in.....each,	35
9044.	Slide Boxes, Pillsbury's, White Wood, 3x1 in., to hold 25 Slides.....	10

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

DIAGNOSTIC.
MICROSCOPICAL.

DISSECTING AND MOUNTING INSTRUMENTS AND ACCESSORIES.



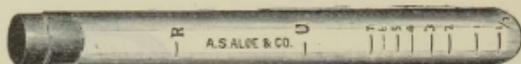
9045.	Cover Glass Forceps, Cross-acting.....	\$ 0 75
9046.	Dissecting Forceps, Curved, Nickel-plated.....	40
9047.	Dissecting Forceps, Straight.....	35
9048.	Dissecting Knife, Spear Point.....	65
9049.	Dissecting Knife, Medium Point.....	65
9050.	Dissecting Knife, Convex Point.....	65
9051.	Dissecting Knife, Sharp Point.....	65
9052.	Dissecting Needle, Angular, Round-pointed.....	25
9053.	Dissecting Needle, Curved, Round-pointed.....	25
9054.	Dissecting Needle, Straight.....	25
9055.	Dissecting Needle, Spear-pointed.....	50
9056.	Dissecting Needle, Triangular-pointed.....	50
9057.	Dissecting Needle Holder, with 4 Needles.....	35
9058.	Dissecting Scissors, Curved.....	1 00
9059.	Dissecting Scissors, Straight.....	1 00
9060.	Dissecting Scissors, with Ivory Handle and Spring.....	6 00
9061.	Exploring Trocar, Duchenne's.....	2 00
9062.	Exploring Trocar, with Ivory Handle.....	2 75
9063.	Injecting Syringe, Nickel-plated, 1/2 ounce, with 4 Pipes and Stop-cock in Morocco Case.....	7 00
9064.	Injecting Syringe, Nickel-plated, 1/4 ounce, with 4 Pipes and Stop-cock in Morocco Case.....	8 00
9065.	Injecting Syringe, Nickel-plated, 1/4 ounce, with 4 Pipes and Stop-cock in Morocco Case.....	10 00

DIAGNOSTIC.

URINARY.

ESBACH'S ALBUMINOMETER.

FOR THE QUANTITATIVE ESTIMATION OF ALBUMEN IN URINE.



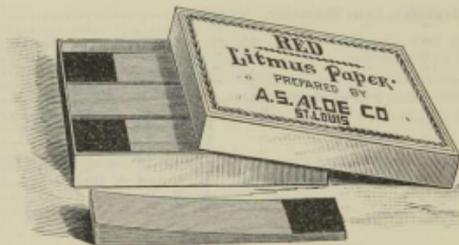
9112.

DIRECTIONS FOR USING THE INSTRUMENT.

To use the instrument, fill the same to U with the urine, and to R with the test solution; then mix by agitating. Close the tube by a rubber stopper and lay the whole aside for 24 hours to obtain a perfect and well-settled precipitation.

Each of the main lines of division to which the accumulated precipitation reaches, represents one gramme of Albumen in one litre of urine.

The test solution consists of 10 grammes Picric Acid, to coagulate the Albumen; 20 grammes Citric Acid, to keep the Phosphates in solution; Water sufficient to make one litre; 2 grammes of Picric Acid represents one gramme of Albumen.



9116.

TYREE'S LITMUS PENCIL.

A NEW, CONVENIENT AND PRACTICAL FORM OF LITMUS.

A pencil made of litmus, not of the ordinary litmus, but of chemically pure litmus which has been separated from all the impurities used in the manufacture of litmus. This chemically pure litmus is put in pencil form—one half of the pencil is for detecting acids, and the other half for alkalis—and it is so sensitive to the action of acids and alkalis that it will detect them in any proportion that they may exist. No precaution is necessary in keeping the pencil. It is unchangeable when exposed to light, heat or air, and is to be carried as an ordinary pencil. Sharpen the ends as you would any pencil, dampen the litmus with the tongue or water, rub it on a strip of any kind of unglazed white paper, insert the strip of paper in the urine or solution to be examined. If the blue end is used and it turns red, acid is present; if the red end is used and it turns blue, alkali is present. In making delicate tests, allow the paper to remain in the solution some time. Never put the pencil in the solution, or the paper before using the pencil.



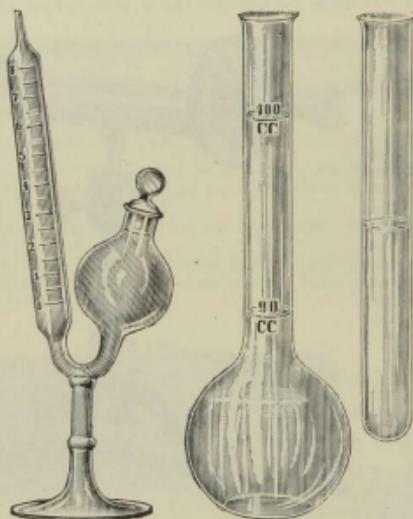
9119.

Litmus, as it is found in commerce, is a coloring matter prepared from various species of lichens by treating them with ammonia, potash, stale urine, chalk and indigo. It contains four distinct coloring principles, viz.: Azolitmin, erythrolitmin, erythrolein, spaniolitmin. Since spaniolitmin occurs rarely in litmus, and erythrolein is colored reddish purple and not blue by alkalis, azolitmin and erythrolitmin may be considered the essential coloring matters of litmus. It will be seen why such a complex substance containing so many impurities is unfit for preparing what is known as litmus paper which is unfit for accurate use even when freshly prepared, as it will not keep, nor will it determine the presence of acids and alkalis when they exist in small proportions, from the fact of its being impossible to prepare a solution of litmus of sufficient strength to impart to paper, litmus enough to stand exposure and produce a correct impression upon acids and alkalis.

DIAGNOSTIC.

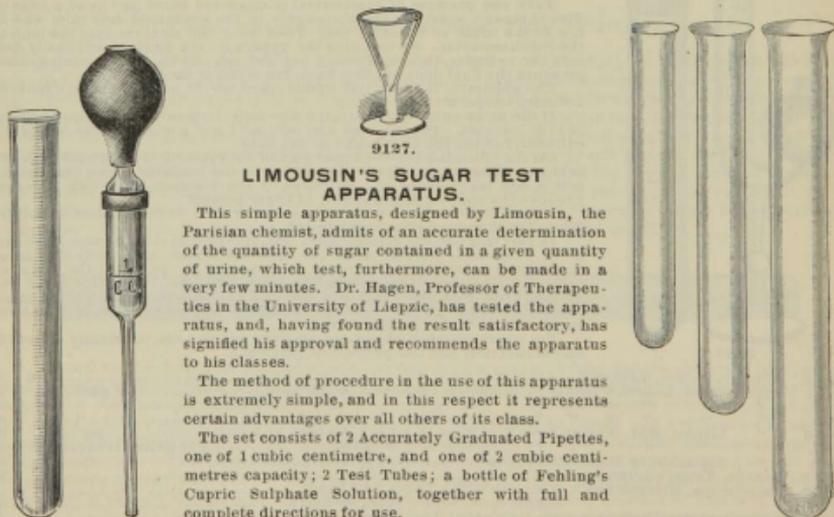
URINARY.

FIEBIG'S FERMENTATIVE SACCHAROMETER.



9124.

Fig. 9124 illustrates Dr. Fiebig's modification of Einhorn's instrument for determining, by the fermentative method, the quantity of sugar contained in urine. A complete description of the apparatus, with full directions for its use, furnished with each set, which consists of 1 Fiebig's Saccharometer, 1 Graduated Measuring Flask, 1 Graduated Test Tube.



9127.

LIMOUSIN'S SUGAR TEST APPARATUS.

This simple apparatus, designed by Limousin, the Parisian chemist, admits of an accurate determination of the quantity of sugar contained in a given quantity of urine, which test, furthermore, can be made in a very few minutes. Dr. Hagen, Professor of Therapeutics in the University of Liepzig, has tested the apparatus, and, having found the result satisfactory, has signified his approval and recommends the apparatus to his classes.

The method of procedure in the use of this apparatus is extremely simple, and in this respect it represents certain advantages over all others of its class.

The set consists of 2 Accurately Graduated Pipettes, one of 1 cubic centimetre, and one of 2 cubic centimetres capacity; 2 Test Tubes; a bottle of Fehling's Cupric Sulphate Solution, together with full and complete directions for use.

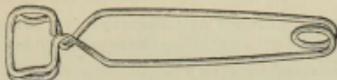
9125.

9138.

DIAGNOSTIC.

URINARY.

STODDARD'S TEST TUBE HOLDER.

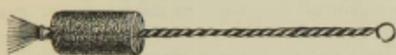


9151.

Dr. J. T. Stoddard, in his Note to the Journal of Analytical Chemistry, says: "The annoyance experienced in using the common wooden test tube holder led me some years ago to attempt to devise a holder which should serve its purpose more perfectly. The wooden holder is clumsy, its rubber band rots and is liable to give way at awkward moments, the peg becomes unglued and drops out, and even in its best estate it holds securely only medium sized test tubes. Tubes of more than two centimetres can not be inserted sideways, larger ones are not taken at all, and a separate holder must be used for small test tubes and ignition tubes.

The new holder has been in use in my laboratory for four years now and has given such good satisfaction that I venture to call attention to it in a form recently somewhat improved. It is made of brass wire and opens by pressure on the straight sides of the handle; its jaws open to the width of 5 cm., and it holds firmly any tube from 5 mm. up. It thus serves for ignition tubes as well as for all sizes of test tubes.

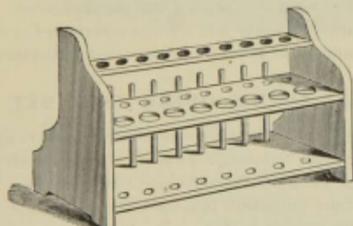
I have recently had a larger size made of stiffer wire for the purpose of holding flasks, etc. It proves very convenient as a holder of wash bottles when one is washing with boiling water, and also for holding beakers when decanting hot solutions."



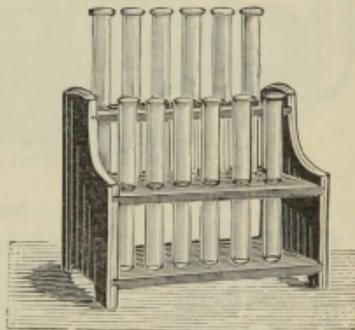
9148.



9152.



9155.



9153.

9124.	Saccharometer, Fiebig's.....	\$ 2 00
9125.	Sugar Test Apparatus, Limousin's.....	3 50
9126.	Test Glass, Conical, Urine, 2 Oz.....	30
9127.	" " " " " 4 Oz.....	35
9128.	" " " " " 6 Oz.....	40
9129.	" " Tubes, 3 inch.....	per dozen, 15
9130.	" " " 4 ".....	20
9131.	" " " 5 ".....	25
9132.	" " " 6 ".....	30
9133.	" " " 7 ".....	35
9134.	" " " 8 ".....	40
9135.	" " " 9 ".....	75
9136.	" " " 10 ".....	1 00
9137.	" " " 12 ".....	1 50
9138.	" " Nested, 4 to 6 inch, 3 in a nest.....	nest, 30
9139.	" " " 3 to 6 " 4 " ".....	30
9140.	" " " 3 to 7 " 5 " ".....	40
9141.	" " " 3 to 9 " 7 " ".....	50
9142.	" " " on Foot, 3 inch.....	dozen, 80
9143.	" " " " " 4 ".....	90
9144.	" " " " " 5 ".....	1 00
9145.	" " " " " 6 ".....	1 25
9146.	" " " " " 8 ".....	2 00
9147.	" " " " " 10 ".....	2 80
9148.	Test Tube Brush.....	05
9149.	" " Holder, Melott's.....	40
9150.	" " " Stoddard's, Large.....	20
9151.	" " " " Small.....	15
9152.	" " " " Wooden.....	05
9153.	" " Racks, for 12 Tubes.....	40
9154.	" " " " 24 ".....	50
9155.	" " " " 18 " with 8 pins, for draining.....	65
9156.	" " " " 24 " " 12 ".....	75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

DIAGNOSTIC. URINARY.

APPARATUS FOR THE RAPID ESTIMATION OF UREA.

Designed by CHARLES DOREMUS, M. D., PH. D.

PROFESSOR ADJUNCT OF CHEMISTRY AND TOXICOLOGY, BELLEVUE HOSPITAL
MEDICAL COLLEGE.

The apparatus shown in the cut is designed for the rapid approximate estimation of urea. It yields, when the test is carefully made, results closely in accord with the theoretical.

Make a solution of Sodium Hydrate, 6 ounces to the pint of water. Keep this in a bottle with a paraffined or rubber stopper.

Sodium Hypobromide is prepared by adding 1 volume of Bromide to 10 volumes of this Sodium Hydrate solution and diluting with 10 volumes of water.

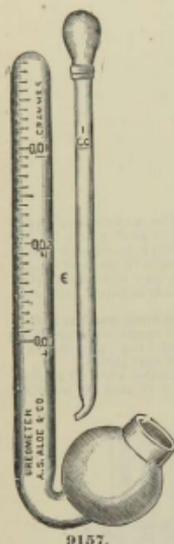
It is convenient to pour the Sodium Hydrate solution into the ureometer to the mark, then by means of the nipple pipette to add its measure of Bromide and dilute with sufficient water to fill the long arm and bend.

Tilt the ureometer and allow the Hypobromide to flow into the long arm, filling it completely.

Draw the urine to be tested into the pipette to the graduation. Pass the pipette into the ureometer, as far as the bend and compress the nipple slowly, the urine will rise through the Hypobromide and the gas evolved will collect in the upper part of the tube.

Each division indicates one grain of urea in a fluid ounce of urine.

The quantity of urea voided in twenty-four hours is ascertained by multiplying the result of the test by the number of ounces of urine passed during that period.



9157.

No. 9161. ALOE'S URINE TEST SET.

This new Test Set has in addition to the contents of Fehling's test set described on page 629 the following: Esbach's Albuminometer, No. 9112; Einhorn's Saccharometer, No. 9122; Doremus' Ureometer, No. 9157; Test Tube Brush, No. 9148, and Stoddard's Improved Test Tube Holder, No. 9151, in place of the ordinary wooden holder.

BARTLEY'S POCKET URINE TEST SET.

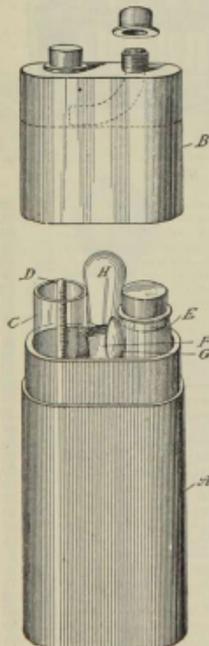
This case is made of hard rubber with Nickel Plated top, containing Alcohol lamp. Dimensions, $4\frac{1}{2} \times 1\frac{1}{2} \times 1\frac{1}{2}$ inches.

The set consists of a scientifically correct urinometer enclosed in a cloth bag to prevent breakage, a heavy glass test tube serving as an urinometer jar and test tube, a package of Litmus test papers, a pipette for convenience in handling the urine, two vials to contain the test powders, and a spoon. With these the following points may be determined at the bedside, viz.: The quantity of urine passed, the color, transparency, reaction, specific gravity, total solids passed, and the presence or absence of sugar and albumen.

The re-agents (Powders) are prepared from the formulæ of Dr. E. H. Bartley, of the Long Island College Hospital, and chemist to the Board of Health of the City of Brooklyn.

Each bottle contains sufficient powders for some 50 tests.

A small handbook containing instructions, formulæ for the powders and valuable information obtained by recent investigations of Dr. Bartley and others, accompanies the case.



9162.

WRITE FOR OUR PAMPHLET ON URINARY ANALYSIS.

DIAGNOSTIC.

URINARY.

FEHLING'S URINE TEST SET.



9164.

The case is made of hard wood, finely polished, and is constructed on a new principle which possesses many advantages. The upper part, which forms the testtube rack when in use, can be closed down and fastened; the hollow slats holding the funnels, slide into the case; the drawer can be returned to its socket, thus forming a neat, compact box, that guards its contents from breakage and protects them from the injurious effects of dust, light and air, so that the contents may be kept clean and always ready for use.

Two of the re-agent bottles contain the two solutions now used in making Fehling's Test; one a solution of Sodio-Potassic Tartrate, the other a solution of Cupric Sulphate, both so adjusted that, with the directions that accompany the case, a physician may easily make both a qualitative and quantitative analysis for glucose, thus enabling the practitioner not only to detect sugar in suspected cases, but to make comparative tests, from time to time, in known cases of diabetes. They are always ready for use, and will keep for any length of time.

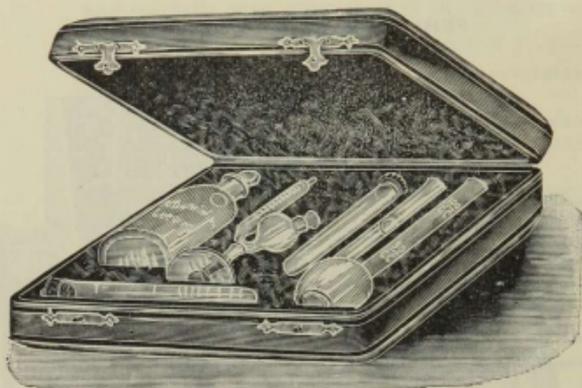
The case contains: 8 1 oz. Re-agent Bottles, 1 empty and 7 filled, as follows, Sol. Sodio-Potassic-Tartrate, Sol. Cupric Sulphate, Acidi Hydrochloric C. P., Acidi Acetic C. P., Acidi Nitric C. P., Ammonium Hydrate, Potassium Hydrate; 2 Glass Funnels; 1 Alcohol Lamp, 4 oz., complete; 2 Beakers; 1 Porcelain Evaporating Dish; 2 Small Glass Evaporating Dishes; 14 Test Tubes (assorted sizes); 1 Test Tube Holder; 1 Fine Urinometer, with Graduated Jar; 1 Graduated Pipette, 1 to 30 minims.; Filter and Litmus Paper.

A VERY COMPLETE PAMPHLET ON URINARY ANALYSIS ACCOMPANIES EACH SET.

9157.	Ureometer, Doremus'.....	\$ 1 00
9158.	Urine Glass, Conical, 2 oz.....	30
9159.	" " " 4 oz.....	35
9160.	" " " 6 oz.....	40
9161.	Urine Test Set, Aloe's.....	9 00
9162.	" " " Bartley's.....	2 00
9163.	" " " Dunn's.....	7 00
9164.	" " " Fehling's.....	6 00

WRITE FOR OUR PAMPHLET ON URINARY ANALYSIS.

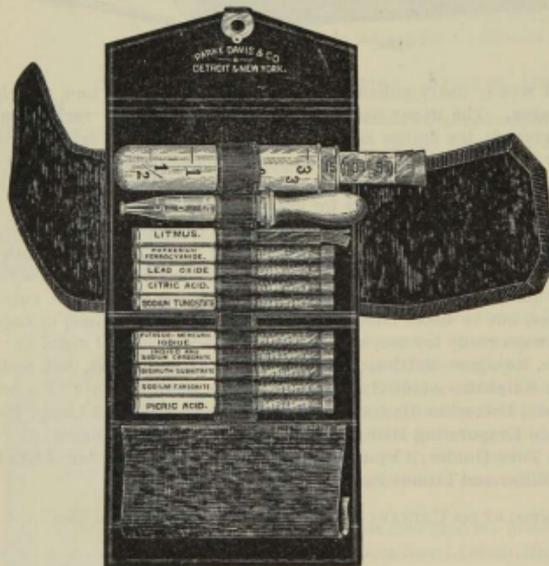
DIAGNOSTIC.
URINARY.
FIEBIG'S URINE TEST SET.



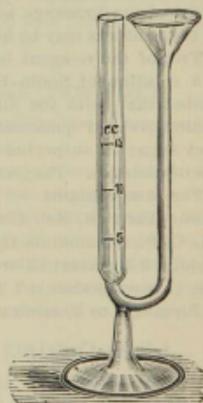
9165.

Fiebig's Urine Test Set contains, in addition to Dr. Fiebig's Modified Einhorn's Saccharometer, with Graduated Measuring Flask and Test Tube, an Esbach Albuminometer and a bottle containing the necessary Picric and Acetic acid solution for making the test, with complete descriptive matter, in fine case.

P. D. & CO.'S URINE TEST SET.



9167.

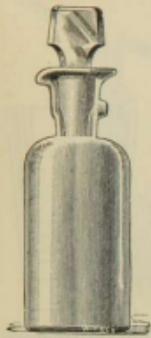


9182.

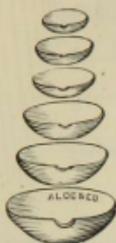
Parke, Davis & Co.'s Pocket Urinary Test Case contains, in addition to the series of urinary test tablets manufactured by them, a comprehensive book of instructions for the use of Dr. Oliver's bedside tests, and all the necessary apparatus for making the qualitative and approximate quantitative analysis of abnormal urine. The apparatus consists of 2 Test Tubes, one of which is graduated; a graduated Minim Pipette and a set of 6 Specific Gravity Beads, corresponding with specific gravities respectively of 1.005, 1.010, 1.015, 1.020, 1.025 and 1.030. These will be found more convenient to use than the ordinary urinometer, which is, moreover, a very fragile instrument.

WRITE FOR OUR PAMPHLET ON URINARY ANALYSIS.

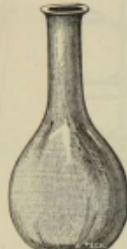
CHEMICAL APPARATUS AND GLASSWARE.



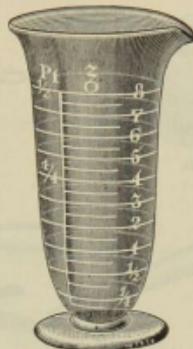
9250.



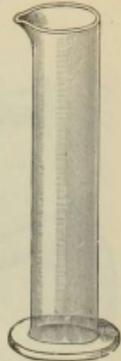
9254 to 9259.



9262.



9287.



9296.

9249.	Dropping Bottle, 1 oz.	.....	\$	20
9250.	" " " 2 "	.....		25
9251.	Evaporating Dish, Glass (watch crystals), 1 1/2 inch.	..... per dozen,		75
9252.	" " " 2 "	.....		1 00
9253.	" " " 2 1/2 "	.....		1 10
9254.	" " Porcelain, with Lip, 1 oz.	..... each,		20
9255.	" " " 2 "	.....		25
9256.	" " " 4 "	.....		35
9257.	" " " 8 "	.....		45
9258.	" " " 16 "	.....		50
9259.	" " " 32 "	.....		85
9260.	Flask, Chemical, Best Bohemian, Flat or Round Bottom, 4 oz.	.....		15
9261.	" " " 8 "	.....		20
9262.	" " " 16 "	.....		25
9263.	" " " 32 "	.....		35
9264.	Funnel, Glass, Plain, 1 oz.	.....		10
9265.	" " " 2 "	.....		15
9266.	" " " 4 "	.....		20
9267.	" " " 8 "	.....		25
9268.	" " " Pint	.....		30
9269.	" " " Quart	.....		40
9270.	" " " Ribbed, 4 oz.	.....		10
9271.	" " " 8 "	.....		15
9272.	" " " Pint	.....		20
9273.	" " " Quart	.....		25
9274.	" " " Stopped, Half-Pint, 4 1/2 inch.	.....		35
9275.	" " " Pint, 5 1/2-inch	.....		40
9276.	" " " Quart, 7 "	.....		50
9277.	" " " Hard Rubber, Half-Pint	.....		60
9278.	" " " Pint	.....		80
9279.	" " " Quart	.....		1 00
9280.	Graduate, Glass (Cone-shape), 60 minim.	.....		25
9281.	" " " 1 "	.....		25
9282.	" " " 2 "	.....		30
9283.	" " " 3 "	.....		35
9284.	" " " 4 "	.....		40
9285.	" " " 6 "	.....		50
9286.	" " " 8 "	.....		60
9287.	" " " 12 "	.....		75
9288.	" " " 16 "	.....		80
9289.	" " " 18 "	.....		1 10
9290.	Hydrometer, Acid.....	..... each,		50
9291.	" " Coal Oil.....	.....		50
9292.	" " Milk.....	.....		50
9293.	" " Spirits.....	.....		50
9294.	" " Syrup.....	.....		50
9295.	Hydrometer Jar, on Foot, 8 inches high.....	.....		30
9296.	" " " 10 "	.....		40
9297.	" " " 12 "	.....		50
9298.	Percolator, Conical, Heavy Glass, Pint.....	.....		30
9299.	" " " Quart.....	.....		40
9300.	" " " Half-Gallon.....	.....		50
9301.	" " " Gallon.....	.....		75
9302.	" " " 2 Gallon.....	.....		2 00
9303.	" " " 3 Gallon.....	.....		3 75
9304.	Pipette, Accurate, VantWoud's.....	.....		15
9305.	" " Graduated, in fifths, 10 c. c.....	.....		1 00
9306.	" " " 25 c. c.....	.....		1 75
9307.	" " " 50 c. c.....	.....		2 50
9308.	" " " 100 c. c.....	.....		4 00
9309.	" " Minim, Graduated, 1 to 30 minims.....	.....		25
9310.	" " Plain, Curved.....	.....		05
9311.	" " " Straight.....	.....		05
9312.	" " Volume, 5 c. c.....	.....		50
9313.	" " " 10 c. c.....	.....		55
9314.	" " " 25 c. c.....	.....		60
9315.	" " " 50 c. c.....	.....		75
9316.	" " " 100 c. c.....	.....		1 00

ANTHROPOMETRIC.

ANTHROPOMETRIC INSTRUMENTS, AND HOW THEY ARE USED.

Extract from an Address by Dr. W. G. Anderson, delivered at the Brooklyn Normal School for Physical Education.

The special committee, appointed by the American Association for the Advancement of Physical Education, to report on a system of physical measurements, recommend the use of dynamometers, or instruments for testing the strength of certain muscles or groups of muscles.

The old and cumbersome "lifts" or weights that were used at one period for this purpose have been replaced by accurate spring dynamometers, which are at the same time easily handled on account of their compactness and are exact in their markings.

It is at once seen why a beautifully made spring dynamometer, which weighs only a few ounces, is of more value than a weight lift that registers over 200 pounds. One can be carried in the hand, the other requires an express to move it. One will test the strength of hands, arms, chest, back, legs or particular parts of the body; the other is generally used to show "how much one can lift."

Inasmuch as a very essential part of any one's physical education is based upon anthropometry, or the measurements of man, and as an important factor in anthropometry is the strength of muscles, it is therefore seen that all strength tests should be standard, so that at some time, if the various physical instructors will bring together the results of these tests, they will better serve to show the strength of the "typical man."

We take pleasure in calling your attention to the new and improved instruments for this purpose. They are arranged for both the English and French (metric) systems, and are carefully tested and pronounced accurate.

The Universal Dynamometer seen in Fig. 9462 can be used first, to ascertain the

STRENGTH OF CHEST.—The subject, with his elbows extended at the sides, until the forearms are on the same horizontal plane, and holding the dynamometer so that the dial will face outward and the indicator point upward, should take a full breath and push vigorously against the handles, allowing the back of the instrument to press on the chest.

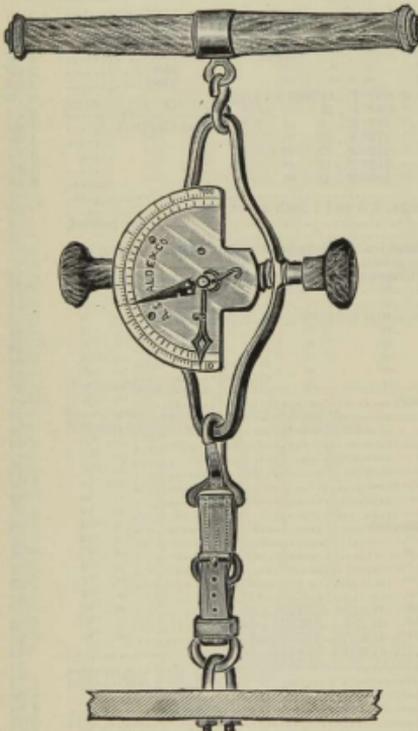
The Dynamometer can be attached to the floor, and used to test the

STRENGTH OF LEGS.—The subject, while standing on the foot rest with body and head erect, and chest thrown forward, should sink

down, by bending the knees, until the handle grasped rests against the thighs, then taking a full breath, he should lift hard, principally with the legs, using the hands to hold the handle in place.

Or, the same instrument can be used to test the

STRENGTH OF BACK.—The subject, standing upon the iron foot rest with the dynamometer so arranged that, when grasping the handles with both hands, his body will be inclined forward at an angle of 60°, should take a full breath, and without bending the knees, give one hard lift, mostly with the back.



9462. Page 641.

ANTHROPOMETRIC.

ANTHROPOMETRIC INSTRUMENTS, AND HOW THEY ARE USED—CONTINUED.

Mathieu's Hand Dynamometer (Fig. 9459, page 640) can be used to test the

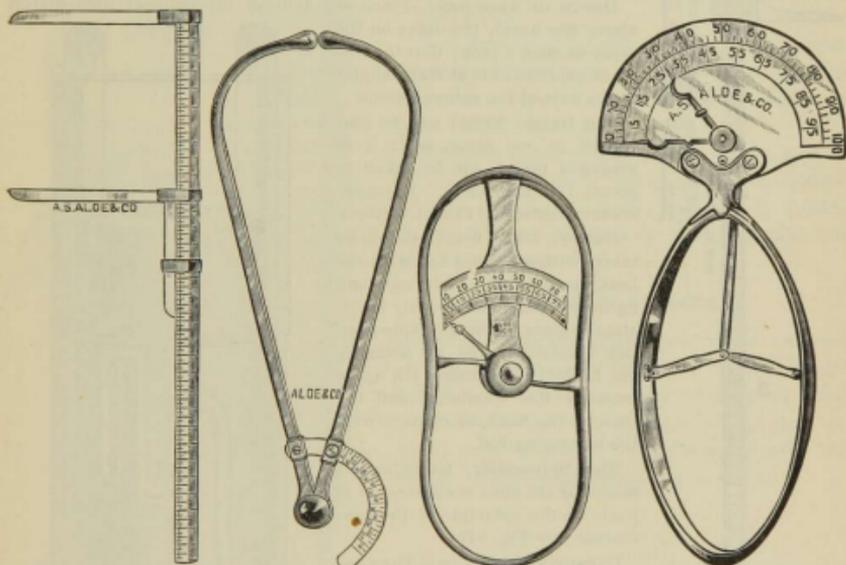
STRENGTH OF FOREARMS.—The subject, while holding the dynamometer so that the dial is turned inward, should squeeze the spring as hard as possible, first with the right hand then with the left. The strength of the muscles between the shoulders may be tested with the same instrument. The subject, while holding the dynamometer on a level with the chest, should grasp it with handles and pull with both arms from the centre outward.

Handles are furnished with this dynamometer for the second test or for using it as a test of strength of the back and legs. The dial has two sets of markings. See No. 9460, page 641.

The Breadth Measure, seen in Fig. 9451, is used to take the

BREADTH OF HEAD.—The breadth of head should be taken at the broadest part. In taking the breadth measurements, stand behind the subject.

BREADTH OF NECK.—Taken at the narrowest part, with the head of the subject erect and the muscles of the neck relaxed.



9451. Page 641.

9452. Page 641.

9457. Page 641.

9458. Page 641.

BREADTH OF SHOULDERS.—With the subject standing in a natural position, elbows at the side, shoulders neither dropped forward nor braced backward, measure the broadest part, two inches below the acromion processes.

BREADTH OF WAIST.—Taken at the narrowest part.

BREADTH OF HIPS.—Measure the widest part over the trochanters, while the subject stands with feet together, the weight resting equally on both legs.

BREADTH OF NIPPLES.—Taken from centre to centre with the chest in a natural position.

This instrument registers both the English and French (metric) systems.

For taking the depth of the various parts of the trunk, the nickel-plated calipers are used (see Fig. 9452). They are curved to conform to the lines of the body.

DEPTH OF CHEST.—Taken after a natural inspiration. Place one foot of the calipers on the sternum, midway between the nipples, and the other foot on the spine at such a point that the line of measurement is at right angles with the axis of the spinal column. When it is desirable to ascertain the extent of the antero-posterior movement of the chest, measurements may be taken from the same points after the fullest inspiration and after the fullest expiration.

ANTHROPOMETRIC.

ANTHROPOMETRIC INSTRUMENTS, AND HOW THEY ARE USED—CONTINUED.

For making accurate chest measurements and for determining the elasticity of the walls of the chest, the Stethometer shown in Fig. 9477 is used.

GIRTH OF CHEST.—Pass the tape around the chest so that it shall embrace the scapulae and cover the nipple. The arms of the subject should be held in a horizontal position while the tape is being adjusted and then allowed to hang naturally at the sides. Take the girth here before and after inflation.

Where it is desirable to test the elasticity or extreme mobility of the walls of the chest, a third measurement may be taken after the air has been forced out and the chest contracted to its greatest extent. To test the respiratory power, independent of muscular development, pass the tape around the body below the pectoral line and the inferior angles of the scapulae, so that the upper edge shall be two inches below the nipples. Take the girth here before and after inflation.

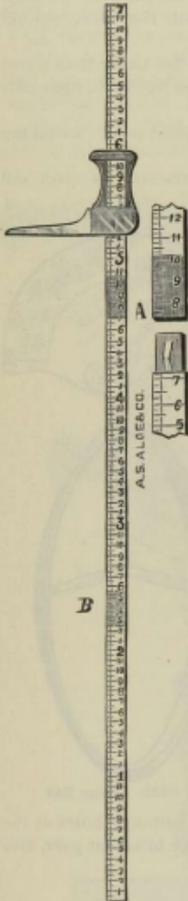
DEPTH OF ABDOMEN.—Place one foot of the calipers immediately above the navel, the other on the spine at such a point that the line of measurement is at right angles to the axis of the spinal column.

The Height Tester can be purchased in one piece, or it is so arranged that it can be taken to pieces (see Fig. 9465). It registers the English and French systems.

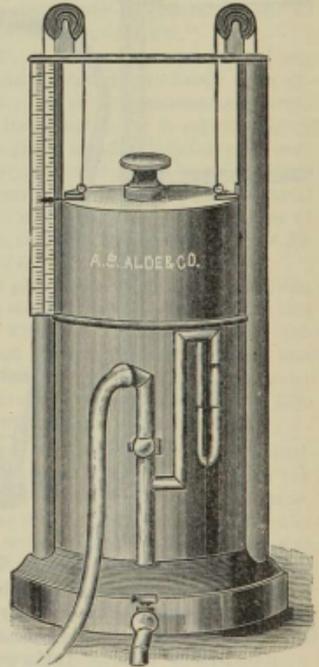
HEIGHT.—The height should be taken without shoes and with the head uncovered. The head and figure should be held easily erect, and the heels together. This position is best secured by bringing the heels, the buttocks, the spine between the shoulders and the back of the head, in contact with the measuring rod.

The Spirometer, Hutchinson's model, is the most accurate. It is made on the principle of the gasometer (see Fig. 9474).

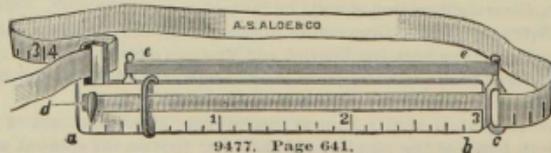
CAPACITY OF LUNGS.—The subject, after loosening the clothing about the chest and taking a full inspiration, filling the lungs to their utmost capacity, should blow slowly into the spirometer. Two or three trials may be allowed.



9465. Page 641.



9474. Page 641.



9477. Page 641.

Fig. 9481, page 641 shows the tape used in taking measurements.

Fig. 9471 is the Pleximeter, and Fig. 9469 the Percussor, used to test the lungs.

Fig. 9478, the Stethoscope.

ANTHROPOMETRIC.



9463. Page 641.

LEWIS' HEIGHT MEASURE.

THE EXAMINER'S READY MEASURE FOR GETTING
THE EXACT HEIGHT OF MAN.

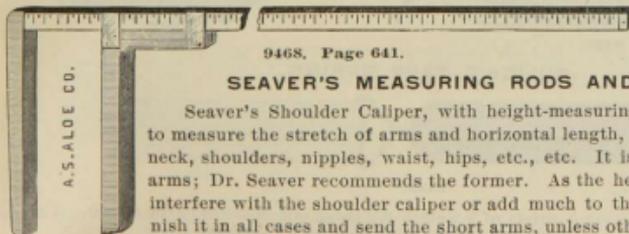
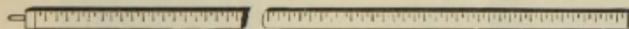
Is now being used in offices of examining physicians for pensions, life insurance, etc.; in hospitals, police stations, jails, armorys, gymnasiums and similar places.

This is the only height measure that is cheap and also perfect, giving the exact height, and by means of a sliding spring retaining the registered height as long as desired.

Always in its place and ready for use; taking up no room in the office; being screwed to window or door casing, and giving the correct height, when put up according to the directions furnished with each measure.

A CORRECT CHART,

Giving the average chest measure, the relative average maximum and minimum weights to the height, will be given free with every Ready Measure purchased. This chart is approved by many of the leading examiners in the United States. No examining physician should be without one.

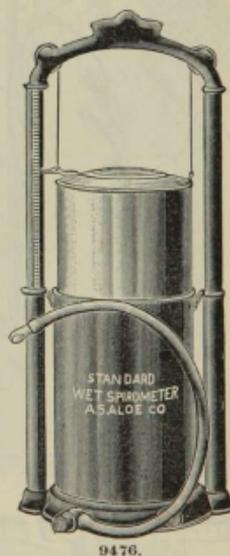
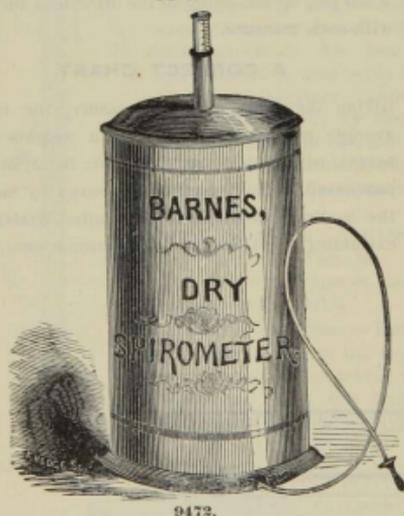
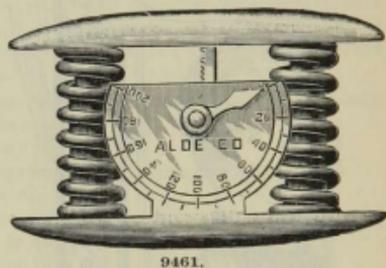
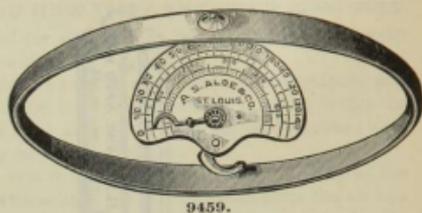
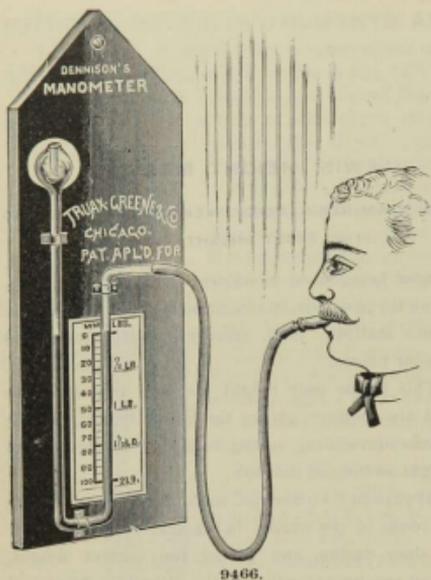


9468. Page 641.

SEAVER'S MEASURING RODS AND CALIPERS.

Seaver's Shoulder Calper, with height-measuring attachment, is adapted to measure the stretch of arms and horizontal length, and for breadth of head, neck, shoulders, nipples, waist, hips, etc., etc. It is made with 5 or 9-inch arms; Dr. Seaver recommends the former. As the height extension does not interfere with the shoulder caliper or add much to the expense, we shall furnish it in all cases and send the short arms, unless otherwise ordered.

ANTHROPOMETRIC.



GULICK'S TAPE SPRING.

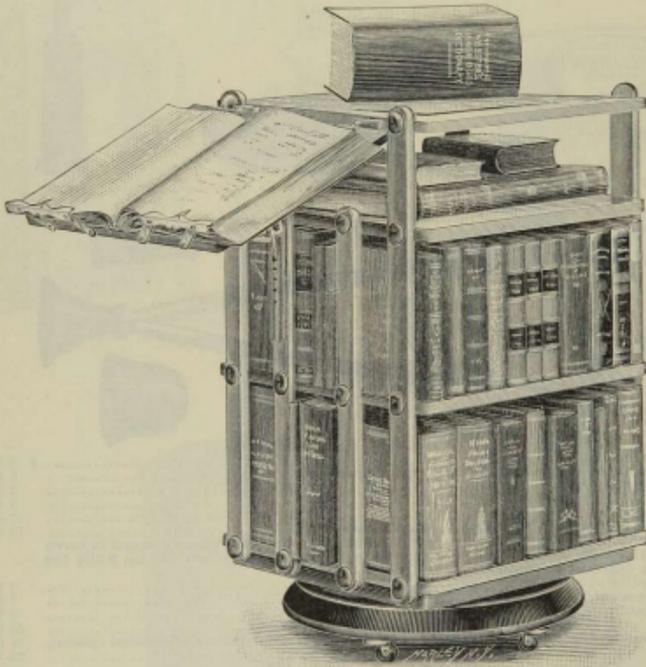


Dr. Gulick's Tape Spring consists of a weight weighing one-seventh of an ounce. This is attached to an ordinary tape, producing a uniform tension of six ounces.

OFFICE FURNITURE.

BOOK CASES.

SARGENT'S ROTARY BOOK CASE.



9487.

This is an admirable case for the physician who wishes to have at his elbow such books as are needed for ready reference. The above cut shows No. 3 Case. It has altogether 9 shelves, 4 of which are the full width of the case, and four other short shelves occupying the space on the sides between the backs of the long shelves, and one open top shelf the full size of the case, designed for extra large books or an atlas. Total length of shelving of sufficient depth and height to accommodate any ordinary library or law books, 8 feet.

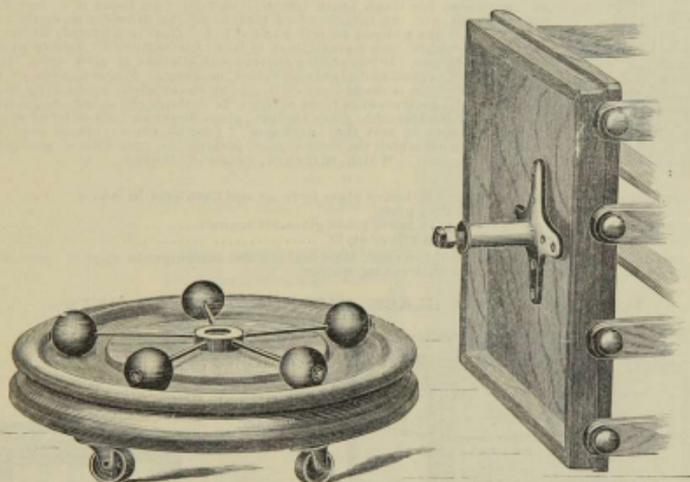
The principle, which, with the aid of the accompanying illustrations and the following description, will be readily understood, is that of a Ball-bearing Turntable. The base (which is of wood built up of different planks, with grains running counterwise to insure strength and protection from warping,) is turned in circular shape, with a groove on top, near the outer edge

On the top of the base there is what we will term a rotary axle (technically known as a spider), having a hub and five radiating round steel spokes, on the end of each of which is a turned hard wood ball, two and one-quarter inches in diameter. These balls are placed in the groove, while the spokes keep them at equal distances apart, with the hub directly over the center of the base. The vertical spindle which is affixed to the center of the bottom of the case projects downward through the center of the hub and also through base, where it is secured. The rotary axle revolves loosely on the spindle, while the case, resting with equal bearing on the balls, revolves with the minimum of friction.

OFFICE FURNITURE.

BOOK CASES.

SARGENT'S ROTARY BOOK CASE.



The adjustable shelf, as illustrated, is an attachment which can be applied to any of our cases, and is a most valuable device to facilitate the reading of books that are too unwieldy to hold in the hand. The shelf is adjustable to any inclination and is serviceable either as a reading easel, a writing desk or a level shelf. When not required for use it can be dropped flat against the side, occupying no additional space. To adjust it you have only to raise it and it locks automatically at any desired point. It is also arranged so as not to interfere with the removal of books from the side shelves.

9487. SARGENT'S ROTARY BOOK CASE, No. 3.

DIMENSIONS.—Size, 20x20 inches; height, 36 inches; shelves for two tiers of books, and open top atlas shelf for atlas or large books; size of front shelves (full width), $19\frac{1}{2} \times 7\frac{1}{2}$ inches; side shelves, 4 inches; height of sections; lower, $11\frac{1}{4}$, upper, $10\frac{3}{4}$; height of atlas section, 6 inches. Price, in Antique Oak or Black Walnut..... \$ 15 00
Adjustable Shelf, extra..... 3 50

9488. SARGENT'S ROTARY BOOK CASE, No. 4.

The No. 4 case is precisely the same in every respect as No. 3 excepting it is one section higher. In many instances this case is preferable to No. 3, for the reason that it accommodates half as many more books without occupying any more floor space. It has a total length of 12 feet of shelving.

DIMENSIONS.—Size, 20x20 inches; height 48 inches; shelves for three tiers of books, and open top shelf for atlas or large books, size of front shelves (full width), $19\frac{1}{2} \times 7\frac{1}{2}$ inches; size of side shelves, 4 inches; height of sections: lower, $11\frac{3}{4}$, middle, $10\frac{3}{4}$; upper, 10; atlas, 6 inches. Price, in Antique Oak or Black Walnut..... \$ 17 50
Adjustable Shelf, extra..... 3 50

OFFICE FURNITURE.

CABINETS.

THE HARVARD ROLL-TOP INSTRUMENT CABINET.

This Cabinet has unique features not heretofore found in a piece of furniture of this character, particularly the swinging shelves, six in number, which are open each shelf may swing out independently of the others, turning upon its pivotal point. When the door is pivoted at the front left corner. The illustration shows the Cabinet open with the lower shelf swung out. This is more desirable than the method heretofore adopted of using drawers, fixed shelves or a series of shelves all swinging together, as, in the method adopted by us, each shelf swinging independent of the others and being placed in the upper part of the Cabinet, the shelf may be readily inspected and any instrument selected without the necessity of stooping to look between the shelves, thereby saving in point of space, and making it much more convenient to distinguish any instrument in the Cabinet. On the six swinging shelves combined, is space for the reception of instruments equal to a table 30x44 inches. Each shelf has a flange surrounding it, the lower ones being deeper than the upper ones to prevent the instruments from falling off. The shelves are covered and the whole interior of the Cabinet above the drawers is lined with Hartford plush.

The swinging shelves are placed in the upper part of the Cabinet, the lowest swinging 27 inches from the floor.

The Cabinet mounted upon casters is 4 feet 4½ inches from the floor to top, not including in this measurement the ornamental railing or the roll-top. Width of the front, 25 inches. From the front to the back, 15½ inches. From the floor to top of ornamental railing, 5 feet 4½ inches.

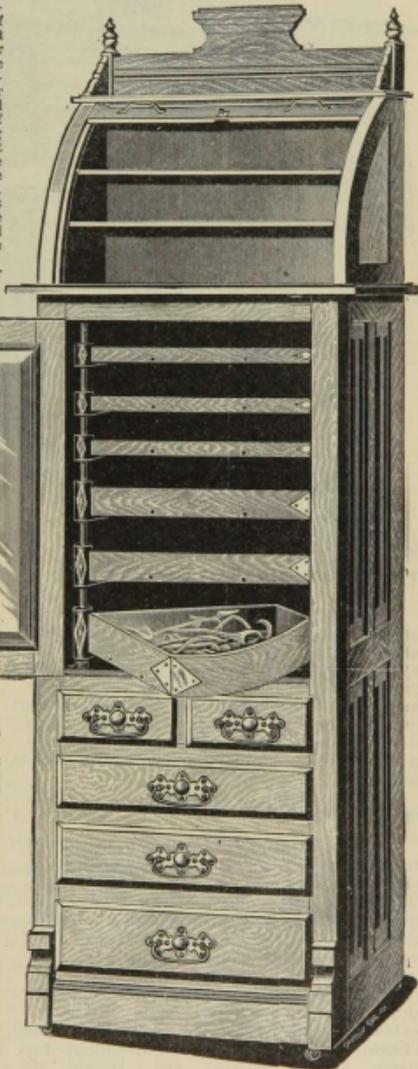
The Cabinet has five drawers, as illustrated, the lower drawer being 16½ inches wide, 15½ inches from front to back, and 5½ inches deep; the second drawer from the bottom is 16½ inches wide, 15½ inches from front to back, 2¾ inches deep; the third drawer from bottom is 16½ inches wide, 15½ inches from front to back, 2¾ inches deep. The double upper drawers are each 7½ inches wide, 15½ inches from front to back, 2¾ inches deep.

Each drawer is provided with a flange setting in front of the opening, thus making them as nearly as practicable dust-proof. The drawers are made of hard wood finished inside and out and are fitted with Yale locks, one key opening the door or either of the drawers.

STYLE OF FINISH.

This Cabinet is well made in every part, the back is paneled and finished same as the sides of the Cabinet. The finish is of the highest order, the hardware and trimmings being oxidized brass, making on the whole, an elegant piece of office furniture. We are prepared to furnish them in Antique Oak, 16th Century Oak, Cherry or Black Walnut.

These Cabinets are also manufactured without the roll-top and with an ornamental railing in place thereof. This style, while made of good stock and first-class in every respect, is not as finely finished as those listed below, nor are the drawers provided with the Yale locks, and they are furnished at correspondingly lower prices, \$53.00, \$35.90, \$37.00 and \$40.00 respectively for Style 6, with Panel Door, Style 5, with Plain Glass Door, Style 7, with French Plate-Glass Door and Style 9, with French Plate Mirror Door.



9497.

9485.	Harvard Roll-Top Cabinet, Style No. 13x, with Panel Door.....	\$ 53.00
9496.	" " " " " " " " 15x, " Plain Glass Door.....	55.00
9497.	" " " " " " " " 17x, " French Bevel Plate-Glass Door.....	57.00
9498.	" " " " " " " " 19x, " French Bevel Plate Mirror Door.....	60.00

If wanted with roll front instead of door, add to these prices, \$5.00.

OFFICE FURNITURE. CABINETS.



9499.

THE PHYSICIAN'S CABINET No. 1.

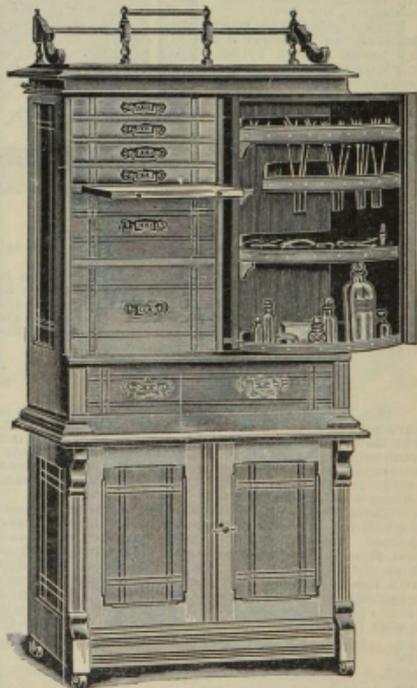
Fig. 9499 shows Cabinet No. 1. It comprises five drawers and four shelves; the latter are so arranged that when open the operator has the instruments conveniently within reach. It can be easily removed to any part of the office, being mounted on boxwood castors. It is made of solid walnut or of oak, with Antique finish. Railing made of brass rods, highly polished and nickel-plated.

Height to top of railing, 40 inches; size of top, 16x28.

The Physician's Cabinet No. 2 (Fig. 9500) is made as shown in the accompanying cut, and is of a very neat and handy design. The upper section contains one large drawer, two large and four small side drawers and a sliding leaf. The right upper section has a revolving quadrant compartment with four shelves for instruments. By closing and locking revolving compartment the opposite drawers are also secured. The base of the cabinet is made in the form of a double door closet, and will be found convenient for basin, towels, napkins, etc. Height, 63 inches; width, 28 inches; depth, 16 inches. Made of walnut or antique oak, with nickel-plated mountings and boxwood casters.

THE PHYSICIAN'S CABINET.

We wish to call attention to the Physician's Cabinet as shown in illustrations on this and the opposite page. They will be found a very tasty and convenient article of furniture for office use.



9500.

OFFICE FURNITURE.

CABINETS.

THE PHYSICIAN'S CABINET.

The Physician's Cabinet No. 3 (Fig. 9501) is a very neat and convenient piece of furniture for office use, specially for the general practitioner. It comprises a desk top, five drawers, four revolving shelves, a towel rack and a sliding table. The revolving compartment contains four shelves. Shelves are so arranged, when open the operator has his instruments conveniently within reach (see cut below). By closing and locking revolving compartment the four opposite drawers are also securely fastened. Mountings are nickel-plated or brass (stylish patterns), boxwood casters. We make them in antique oak and solid walnut.

Height of cabinet, including desk top railing, 60 inches; width of cabinet, 28 inches; depth of cabinet, 16 inches.



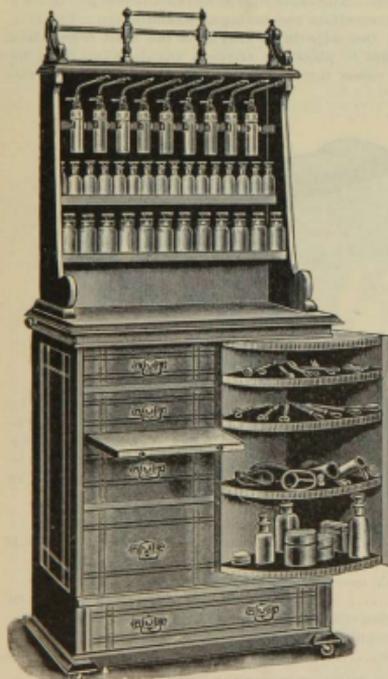
9501. The Physician's Cabinet No. 3, with Desk Top.

THE PHYSICIAN'S CABINET No. 4.

We have lately added another style to our very popular Physician's Cabinets. This pattern will be found a very convenient one for the Nose and Throat Specialist, for the top space has a row of nickel-plated clamps for holding spray tube bottles. Below this are two open shelves for bottles containing the many different solutions, washes and sprays found necessary. The lower part of this cabinet is essentially the same as the one described above.

PRICE.

9499. Physician's Cabinet No. 1, Solid Walnut or of Oak.....	\$15 00
9500. Physician's Cabinet No. 2, Solid Walnut or of Oak.....	25 00
9501. Physician's Cabinet No. 3, Solid Walnut or of Oak.....	25 00
9502. Physician's Cabinet No. 4, Solid Walnut or of Oak.....	25 00

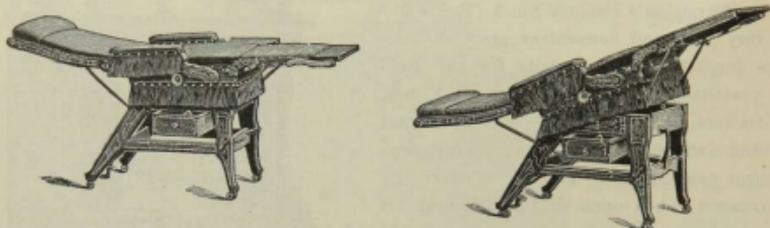


9502. Cabinet No. 4, with Top Shelves.

OFFICE FURNITURE.

CHAIRS.

THE ALLISON PHYSICIAN'S CHAIR.



ANÆSTHESIA NARCOSIS.

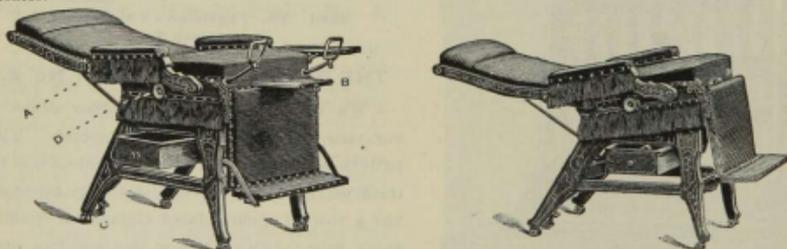
Head lowered in case of hemorrhage or suspended animation, to rush the blood to the head.

This position is obtained by placing the foot on the lever, C, while the chair is in a horizontal position and letting the head lower to the desired position. When you release the lever it will fasten rigidly at that position.

To bring it back to a horizontal position you simply press on the lever, C, again releasing the ratchet, and raise the head to a level with the seat. This can be done with perfect ease, as the chair is on a balance and can be managed with one hand. This is a very important position in cases of hemorrhage, or suspended animation owing to the use of chloroform or other anesthetics.

DORSAL POSITION.

The chair is placed in the dorsal position by pushing the back forward slightly and raising the lever, A, thus unlocking the ratchet; the back is then lowered to a horizontal position. The stirrup bars are drawn out to the required distance, and the stirrups placed in position. The table B, is a convenient receptacle for a basin, sponge, surgical instruments, or anything needed for immediate use during an examination. The step is also convenient as a shelf upon which to lay instruments. Our adjustable stirrup is the most convenient stirrup ever placed upon a chair. The bars can be drawn out to place the stirrups any distance from the edge of the seat, and they can be spread apart or placed closer together to suit the convenience of the operator.



LATERAL OR SIMS' POSITION.

This position, so important to gynecologists, and in treatment of rectal diseases, is easily obtained by turning the knob D, to the left when the seat can be tilted to either side and fastened securely. It can be used in that position with the foot rest elevated to a horizontal position, or with the foot rest hanging down. The side table is an important feature not found on other chairs. It is covered with leather, and can be adjusted to either side. It is useful in the Sims position as a leg rest, and in the other positions as an instrument table.

9503. Allison's Physician's Chair No. 1, leather or imported mohair plush (plain, crushed or embossed) with movable pillow, metal parts nickel-plated..... \$ 70 00
9504. Allison's Physician's Chair No. 2, fine imported pattern plush, variegated colors (patterns made especially for chair), or embossed leather; with movable pillow; metal parts nickel-plated..... 75 00
9505. Allison's Physician's Chair No. 3, fine pattern embossed leather, artistic designs, made especially for chair; movable pillow; nickel cuspidor and holder; metal parts nickel-plated or finished in antique brass, or royal copper..... 80 00

Antique or 16th century oak, or ebony, walnut, cherry or imitation mahogany finish.

SEND FOR DESCRIPTIVE CATALOGUE.

OFFICE FURNITURE.
CHAIRS.
THE DE PEW GYNÆCOLOGICAL CHAIR.



Fig. 1. In Position for Gynæcological Operation.

In presenting our Operating Chair to the profession with new and important attachments, we are confident it will be received and adopted, as furnishing the most complete Chair and Operating Table for the gynecologist and surgeon, which upon examination will at once convince an operator of its practicability. The seat is pivoted upon two semi-circular springs. It cannot break or get out of order, and is the only chair made so simple in construction that it can be readily changed to various positions without the crank, screw or cog-wheel, from either side of the chair. No disconnection necessary to change from chair to table, or vice versa. The fastening which adjusts the tipping of the chair backward is perfectly under the

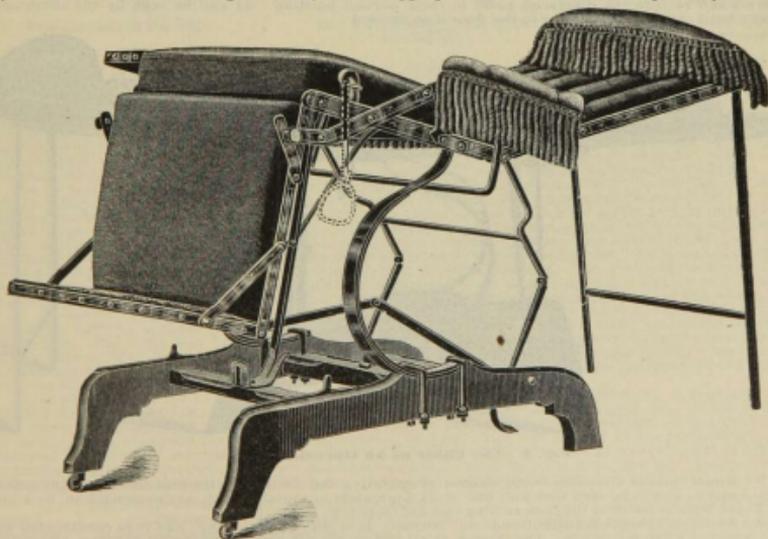


Fig. 2. Shows the Front of Seat Raised.

control of the operator. The chair fills all claims made for it, and makes an absolutely solid table. We make no extra charge for attachments, which include stirrups, pillow and table for Sims' position. If necessary to give chloroform the operator will feel great confidence in this chair, knowing he can immediately force the blood to the brain by lowering the head and correspondingly elevating the lower extremities, which together with the vibratory motion will produce the desired effect. We present this chair to the physician as a scientific as well as a pecuniary addition to his profession.

OFFICE FURNITURE.

CHAIRS.

THE DE PEW GYNÆCOLOGICAL CHAIR.



Fig. 3. The Chair in Position for Reducing Uterine Displacement and Hernia.

The operation for reducing uterine displacement and Hernia is as follows: The patient is seated in the chair inclined to any point, as, for instance, to the position seen in Fig. 3. The operator, taking hold of the chair, as seen in Fig. 3, gives it a backward and forward motion. The bending of the supporting springs under this motion, and the weight of the patient also, give the chair an up and down movement. This combined motion more or less powerfully applied being just what is required to reduce the uterine displacement, or Hernia and restore the displaced parts to their normal position. As can be seen by the above cut the patient's head can be carried clear to the floor if so desired.

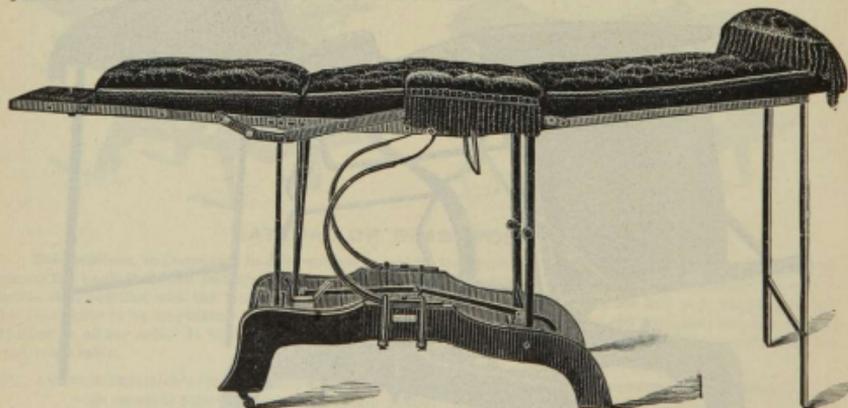


Fig. 4. The Chair as an Operating Table.

We would call the attention to the manner of operating and controlling the foot and leg rest by referring to Figs. 1 and 3. It will be seen that they may work separately or together without disconnection, by a hinged bar. As the back is lowered the foot and leg rest are raised, as in Fig. 3.

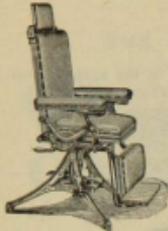
We would call particular attention to our stirrup. It is put on every chair, and is so constructed that it can be removed when not in use. The frames of all chairs are all made of best wrought iron, and are made complete in every particular.

9506. De Pew Gynecological Chair, upholstered in genuine leather, with attachment for Sims' Position, Patent Stirrups and Pillow \$ 50 00

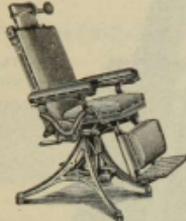
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OFFICE FURNITURE. CHAIRS.

THE HARVARD PHYSICIANS' AND SURGEONS' CHAIR.



A. Normal Adjust-
ment.



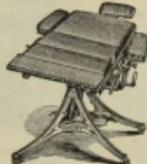
B. Tilted back, showing
oculist's head rest.



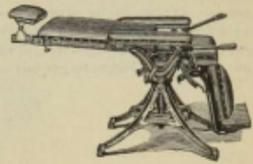
C. Full length reclining position.



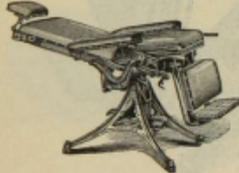
D. Anesthesia Narcosis Position.



E. Sims' position.



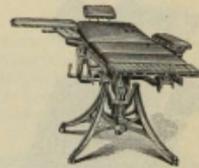
F. Dorsal position.



G. For elevating the hips.



H. Three-quarter length
Reclining.



I. For operating on
hand or arm.

**THE HARVARD IS CAPABLE OF EVERY POSITION DESIRABLE IN THE PRACTICE OF THE SURGEON,
GYNECOLOGIST, THE OCULIST OR AURIST.**

It is the only Surgical Chair capable of being rotated. It is the only chair capable of the lateral motion, Sims' position, as seen in figure E, (in this the head may be lowered more than seen in the cut and the step dropped out of the way, as in figure H, if desired); the only one capable of the backward inclinations, figures B and D, or of the hip elevation, figure G, or of the arm support, figure I; it is the only one devoid of noisy and unsightly ratchets, cranks and levers; it is the only one so balanced that any position may be attained with ease, while the patient is in the chair, features recognized by the profession as most important.

It perfectly balances with or without a patient upon it, and consequently all its various positions are quickly attained with ease to the patient and operator. The heaviest patient can be placed in any position with the slightest effort. Set upon a large (1½ inch) steel screw, it may be set at any desired height or rotated, to get the direct light. When in the lowest reclining position the chair forms an operating table 29¼ inches high and may be so adjusted, by means of the screw (which rises one inch to two revolutions) that the elevation shall be anywhere from 29½ inches the lowest, to 34½ inches the highest. By means of a set screw, it may be rigidly bound to the base when desired, to prevent its turning. The head rest is universal in its movements; may be raised, lowered, extended backward or forward, moving to the right or left, and rigidly set to any position by means of a single set screw. Either side arm may be turned out of the way in the use of the speculum. The step is at all times horizontal, and, with the rest of the chair, forms an even plane, presenting nothing against which a patient can brace himself or struggle while under the influence of anesthetics. The chair may be fastened at any of the points designated in the cuts, their opposites, or any intermediate points. It is noiseless in its operations. It may be operated with equal facility from either side. The working parts are under the seat, rendering it impossible to catch or tear the garments of the patient or pinch the hands of the patient or operator.

It is always ready for any position; no extra parts to be brought in and hitched on. It is set upon a base so broad it will not overturn. It has no cogs or cog wheels. It has no cranks or levers. It has no complicated parts. No lifting the patient to position. It has no ratchets to rasp the nerves of the patient. The Harvard is the most ornamental as well as convenient surgical chair ever offered to the profession. It is the latest and best work of mechanical skill, aided by a thorough study of the requirements, and so highly is it appreciated, by the profession, that there are now being more than twice as many Harvard Chairs sold as all other gynaecological and operating chairs and tables made in the United States.

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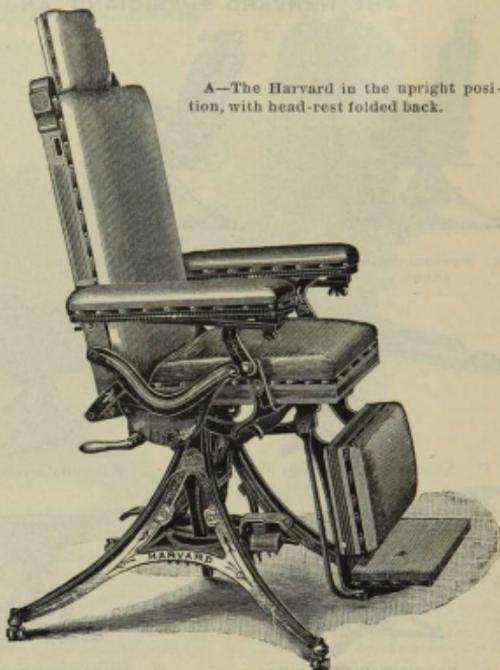
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OFFICE FURNITURE. CHAIRS.

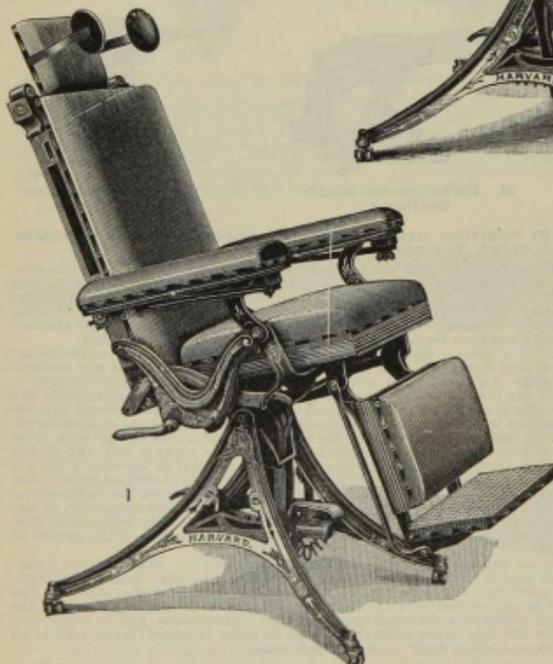
THE HARVARD PHYSICIANS' AND SURGEONS' CHAIR.

The Harvard Chair is convertible to every position desirable to the practitioner. Over 10,000 Harvard Chairs now in use attest this fact.

The vertical adjustment of this chair is made by a $1\frac{1}{4}$ inch steel screw. It is not designed to be changed when occupied by a patient. It is as easily adjusted vertically as any office chair, and is not like those cheap and noisy pedal lever chairs, always scaring the patient and liable to get out of order.



A—The Harvard in the upright position, with head-rest folded back.



B—Tilted back for operations upon the throat or eye; showing oculist's head rest; turned one-fourth round, presenting side to the light, for operations upon the ear. Attained while foot-plate at back of base is pressed down with the foot.

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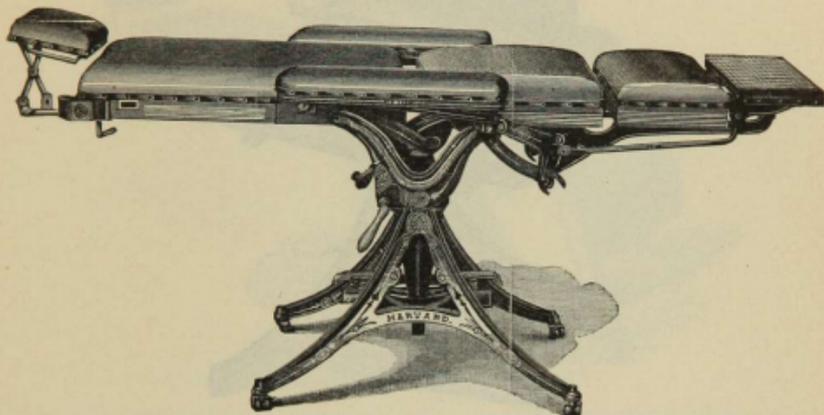
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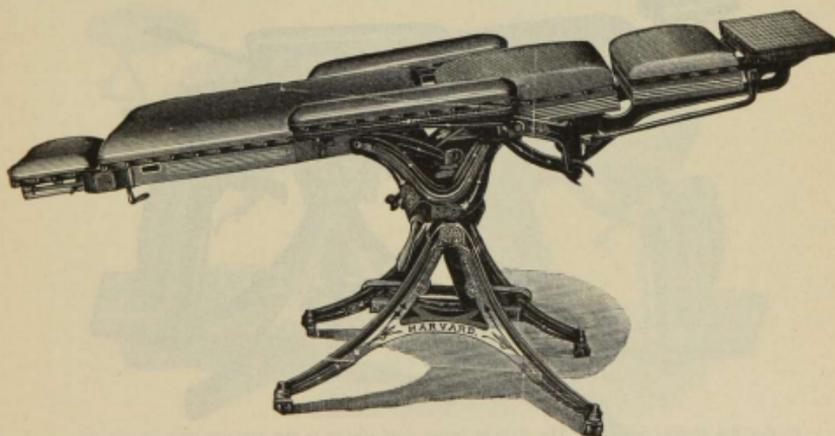
OFFICE FURNITURE.

CHAIRS.

THE HARVARD PHYSICIANS' AND SURGEONS' CHAIR.



C—Full length reclining position; head-rest elevated, making an operating table 80 inches wide, 6 feet long, which may be extended, by means of the head-rest, to 6 feet 6 inches. Set upon a powerful ($1\frac{1}{2}$ inch) steel screw, it may be adjusted in height from 29 $\frac{1}{4}$ to 34 $\frac{1}{4}$ inches. This position is attained by simply lowering the back of the chair, whereby the seat is elevated 4 inches and the whole chair brought to one common plane. The chair is so balanced that this is easily accomplished with a heavy person upon it.



D—Head lowered in case of hæmorrhage or when desired to revive a person from the influence of anæsthetics, by rushing the blood to the head. The value of this position will suggest itself to the profession. It may be attained when the foot-plate at back of base is pressed down with the foot.

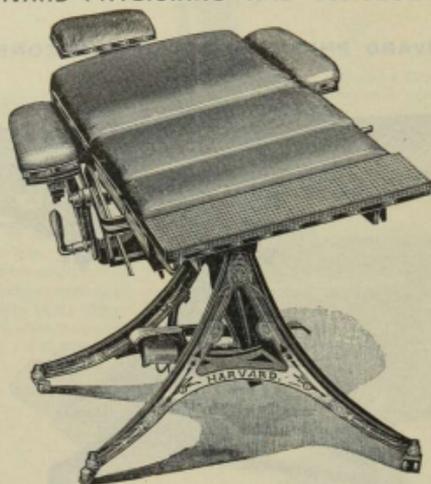
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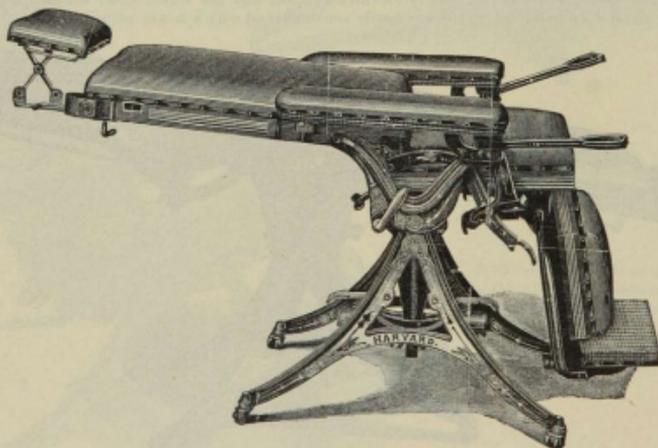
OFFICE FURNITURE.
CHAIRS.

THE HARVARD PHYSICIANS' AND SURGEONS' CHAIR.



[Our engraver, owing to the reversing process of photography, makes this incline to the left whereas the right was intended; it can be inclined either way.]

E—For the Latero abdominal (Sims) position with side arm turned out of the way of the speculum, the chair may be inclined directly or obliquely with the head elevated or lowered by pressing with the foot upon foot-plate at side of base.



F—For the Dorsal position. The patient being first seated in the chair, by throwing down the back, the whole chair is extended, as at Fig. C, the feet of the patient are then placed in the stirrups, which are turned from under the arms; then, by slightly lifting on the step, the brace under the seat is raised from its bearing, allowing the seat and leg-rest to be lowered entirely out of the way of the operator, and permits free use of the speculum. The patient lies comfortably upon the back of the chair. By simply lifting the step, it and the seat assume again the extended position. The upholstered part of the seat may be removed, thereby preventing liability to become soiled and leaving a tray for basin, cotton or instruments.

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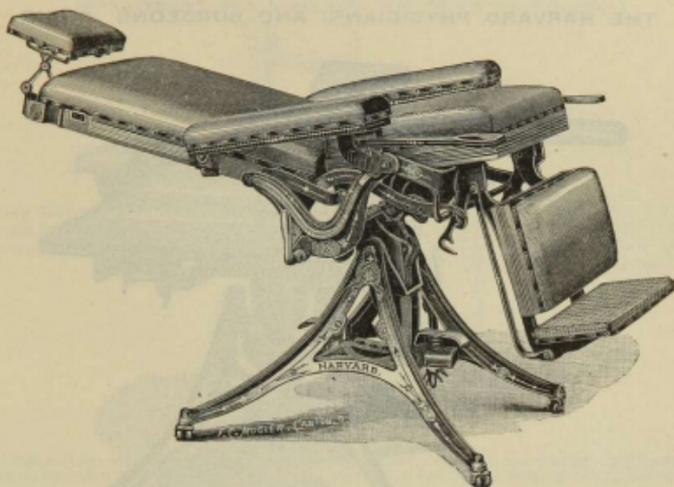
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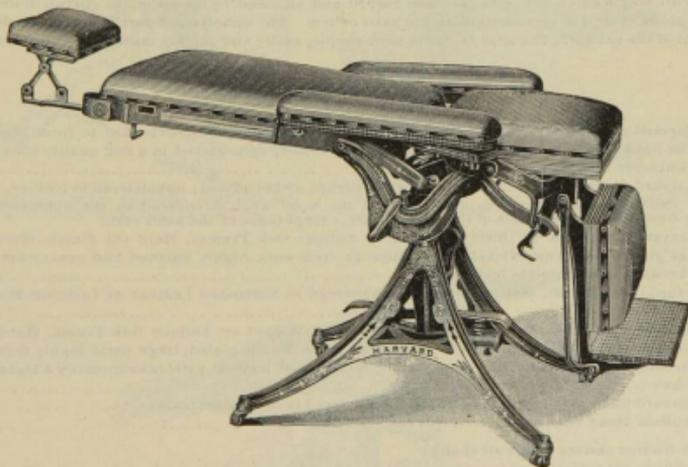
OFFICE FURNITURE.

CHAIRS.

THE HARVARD PHYSICIANS' AND SURGEONS' CHAIR.



G—Reclining position with hips held elevated as desired for reducing anteversion or ante flexion of the uterus or for reducing hernia. The head may be brought down lower and the hips elevated more than seen in the view. Attain this position by lowering back to about three-fourths reclining; then set clamp and complete the prostration while the foot presses down the foot-plate.



H—Three-quarter length operating table, attained by raising the small brace under leg-rest, while the step is raised to relieve the pressure.

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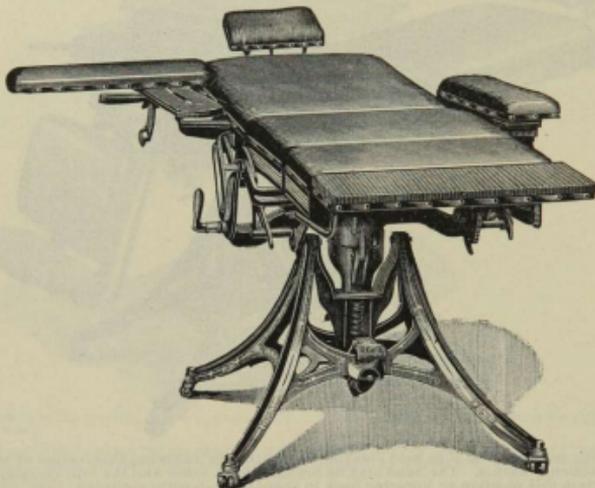
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OFFICE FURNITURE.

CHAIRS.

THE HARVARD PHYSICIANS' AND SURGEONS' CHAIR.



I—Full length extension, with side arm turned and attached by means of the stirrup in the mortise in the back of the chair, for operations upon the hand or arm. The upholstered part slides up or down to suit the height of the patient. The adjustment is most simple, easily and quickly made with either arm.

REVISED PRICE LIST.

9507.	Harvard Chair, No. 1, without Harvard Head-rest, the back being extended to form support for the head; iron work painted and neatly ornamented; upholstered in a fine quality of imitation leather.....	\$ 48 00
9508.	Harvard Chair, No. 13, same as No. 1, with stirrups nickel-plated; upholstered in leather.....	65 00
	Numbers 1 and 13 are so made that all the wood work is covered by the upholstering. They have all the movements of the other chairs, except those of the head-rest.	
9509.	Harvard Chair, No. 17, Cherry, Walnut or Antique Oak Frames, Hard Oil Finish, Harvard Nickel-plated Head-rest, Nickel-plated Stirrups, iron work highly finished and ornamented in gold bronze; upholstered in leather.....	70 00
9510.	Harvard Chair, No. 22, same as No. 17; Upholstered in Embossed Leather or Crimson Mohair Plush.....	75 00
9511.	Harvard Chair, No. 33, Cherry, Mahogany Stain, Walnut or Antique Oak Frame, Hard Oil Finish, Harvard Nickel-plated Head-rest, small irons Nickel-plated, large parts highly finished and ornamented in gold bronze, upholstered in embossed leather, patterns especially adapted to the Chair.....	85 00
9512.	Harvard Chair, No. 44, same as No. 33; upholstered in decorated leather.....	100 00
	Oculists' Head-rest, extra.....	5 00

Anti-friction casters under all chairs.

The above are prices for chairs properly packed for shipment, and on board the cars at Canton, Ohio. For chairs to match office furniture, write for estimates, giving style and upholstery desired.

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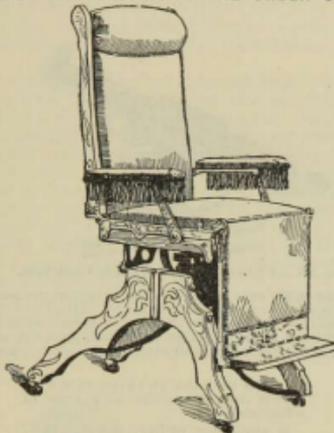
OFFICE FURNITURE.

CHAIRS.

THE "NEW INDIANAPOLIS" SURGICAL CHAIR.

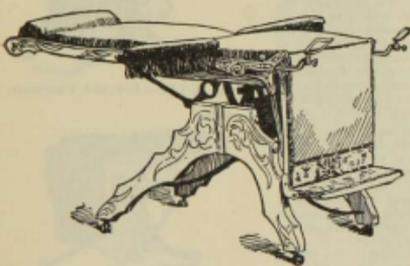
"IMPROVEMENT AND SIMPLICITY THE ORDER OF THE AGE."

The "New Indianapolis" has no equal for simplicity and ease of operation.

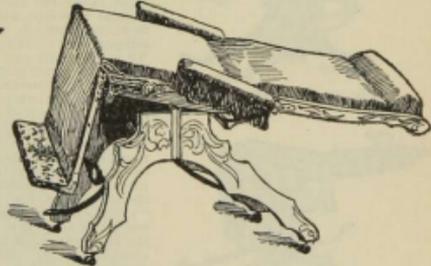


Here are a few positions of the "New Indianapolis" Chair and all others are quickly and easily obtained.

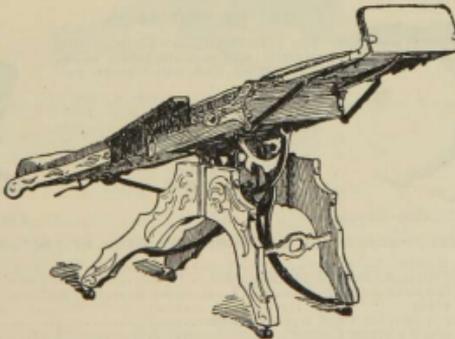
An elegant Office Chair, simple in Operation and the handsomest Chair on the market. The only Chair that can be operated with one hand, from either side, when the patient is in the Dorsal position.



Dorsal or Gynaecological Position. Our Stirrups are adjustable in every direction.



Sims' Position. Every chair finished in hand-buffed leather and will never wear out.



For Anesthesia Narcosis. Quickly obtained.

9513, New Indianapolis Surgical Chair, Upholstered in Hand-buffed Leather, Stirrups and metal parts nickel-plated..... \$40 00

WRITE FOR SPECIAL EASY TERMS.

OFFICE FURNITURE.
CHAIRS.

THE IMPROVED YALE SURGICAL CHAIR.

Pronounced the *ne plus ultra* by the Surgeon, Gynecologist, Oculist and Aurist.



Fig. I.—Normal Position.

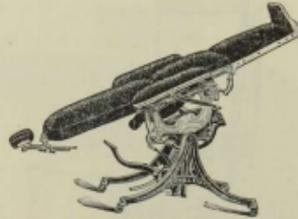


Fig. IX.—Chloroform Narcosis Position.



Fig. III.—For Examinations.

The Yale is the most complete chair ever offered to the surgeon, gynecologist, oculist or aurist. Every position known to the profession is easily and quickly obtained. Has the largest range of movements. Can be firmly locked in any desired position. Does away with moving patient to get dorsal position. Secures the most desirable inclinations for the Sims position. Can be raised, lowered, revolved or tilted with patient in position, to get the best lights. It is the strongest and most substantial chair made.

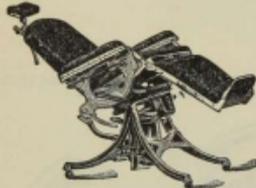


Fig. V.—Semi-Reclining.

It has no equal in range of movements and positions and ease of adjustment. It embodies utility, beauty, convenience and durability.

Each chair is supplied with the most complete stirrups for gynecological practice, also with the Gould head-rest, which is universal in its adaptations for the aurist and oculist. No other chair can compare with the Yale in completeness, strength, adaptation, convenience and finish. We challenge competition, and solicit an investigation of its merits.

Hundreds sold every year, and every one giving the best of satisfaction, is the best evidence that they are not only the best, but are just as represented. Do not be deceived in buying any other that is "just as good" as the Yale; it can not be done. We have features in the Yale patented to us, that no one else can use. Decidedly the best chair on the market for the price.

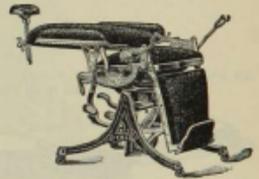


Fig. XVII.—Dorsal Position.

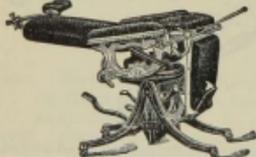


Fig. XV.—Elevating the Hips.



Fig. XI.—X Length.



Fig. VII.—Horizontal Position—Elevated.

TO THE PROFESSION.

The Yale Physician's Chair is fully protected and manufactured under the following U. S. and foreign patents:

- June 13, 1882.
- Dec. 4, 1883.
- July 7, 1885.
- June 8, 1886. Re-issue, Aug. 24, 1886.
- June 2, 1891. Canada, Oct. 21, 1891.
- England, June 2, 1891.
- France, June 2, 1891.
- Oct. 9, 1888.
- Jan. 29, 1889.
- March 5, 1889.

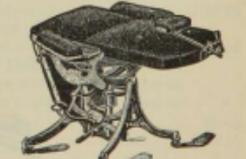


Fig. XIII.—Sims' Position.

PRICES, PACKED AND DELIVERED ON CARS AT FACTORY:

9514.	Yale Chair, No. 10, leather, set pattern.....	\$90 00
9515.	" " " No. 11, embossed maroon leather.....	80 00
9516.	" " " No. 12, frieze mohair plush.....	87 00
9517.	" " " No. 14, plain " ".....	85 00
9518.	" " " No. 15, crushed cardinal mohair plush.....	82 00
9519.	" " " No. 16, plain maroon leather.....	75 00

If wanted with oculist's head-rest, as shown in Fig. I, add \$5.00.

A. S. ALOE COMPANY, Selling Agents,

WRITE FOR SPECIAL TERMS.

ST. LOUIS.

OFFICE FURNITURE.

CHAIRS.

THE IMPROVED YALE SURGICAL CHAIR.

The Yale Surgical Chair is to-day regarded as the *ne plus ultra* by the Surgeon, Gynæcologist, Oculist and Aurist, no other surgical chair being so quickly adapted to any position in which the human body can be placed, without extra adjustments of the chair or incommoding the patient.

We are the pioneers in providing a chair possessing all these advantages, viz.: 1st, swinging the back, seat and leg-rest to a level surface on a line with the arms, thus taking the place of a table (Fig. VII.) 2d, providing a chair with a "drop-seat," by means of which the Dorsal position (Fig. XVII.) can be obtained without moving the patient about, as is necessary when a table is used for Gynæcological examination. 3d, adapting the chair to tilt backwards while in any position, especially to revive patients (Fig. IX.) 4th, providing it with means of rotating about on its base, and at the same time stop it at any angle in order to obtain the best lights (Fig. VII.) 5th, to provide means of raising and lowering the upper part of the chair without inconvenience to the patient (Fig. VII.) 6th, providing a head rest for each chair for the use of the Oculist and Aurist (Fig. I.) 7th, using metal for the base to provide against its shrinking and becoming rickety, as is unavoidable in wooden structures. 8th, making the base so broad that it cannot be overturned while in use.

All these original features are found in the "Yale," and, as is usually the case, when anything is offered having commanding merit, we soon had numerous imitators in the field of invention, and a score of Gynæcological and Surgical chairs made their appearance, but none could obtain the desirable features we offer without encroaching on the numerous rights patented to us by the United States.

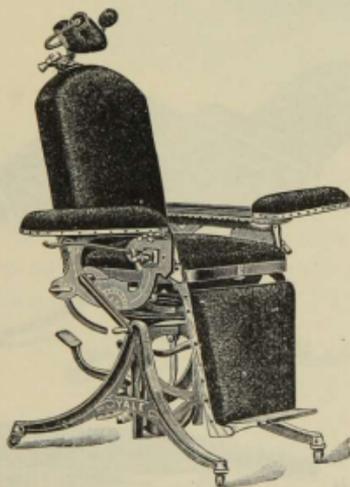


Fig. I. Position with the Oculist Head Rest Adjusted for Operating upon the Eye.

In this position the seat is $26\frac{1}{2}$ inches above the floor, and can be elevated to $39\frac{1}{2}$ inches. Arms are turned out, forming a seat for the operator while operating on the throat, etc.

SPECIAL FEATURES OF THE YALE.

It can be rotated upon its base (see Fig. XIII.), and is capable of the lateral movements, as seen in Fig. XIII. It can be tilted backwards when in the horizontal or other positions; see Figs. V, IX, XIII and XV.

The hips can be elevated, see Fig. XV., the arm rests can be rotated about the back or moved straight back when desired, see Figs. I., XIII. and XVII., or can be adjusted around as seen in Fig. VII.

The Dorsal position is obtained without moving the patient forward, see Fig. XVII. If desired it can be used as a table, see Fig. VII., or as a Dental Chair, see Figs. I., III. and V., or to obtain side movements, see Fig. XIII.

A. S. ALOE COMPANY, Selling Agents.

OFFICE FURNITURE.

CHAIRS.

THE IMPROVED YALE SURGICAL CHAIR.

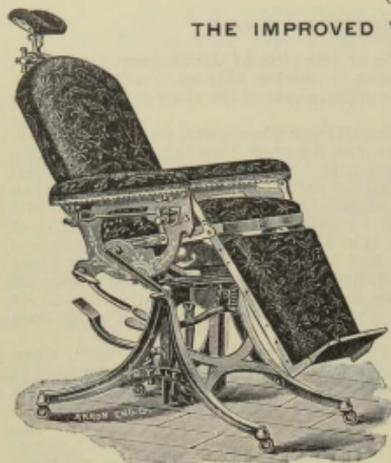


Fig. III.

Position for examination of the eyes, ears, nose, throat or chest. Obtained by loosening handle at rear lower corner of back, and reclining the back.

Tilted back, for operating on the teeth, eyes, etc.

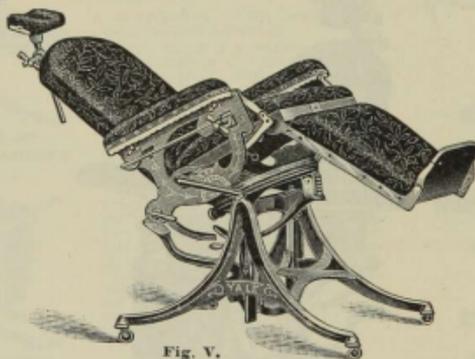


Fig. V.

Obtained from Fig. III. by putting foot on lock and tilting chair-body backward.

Full length—high operating table. Obtained from Fig. III. by reclining the back until it assumes a flat position. It also shows chair in highest position, $39\frac{1}{2}$ inches from the floor, raised by pedal lever, found at rear of chair; arm is also turned out to operate on hands.

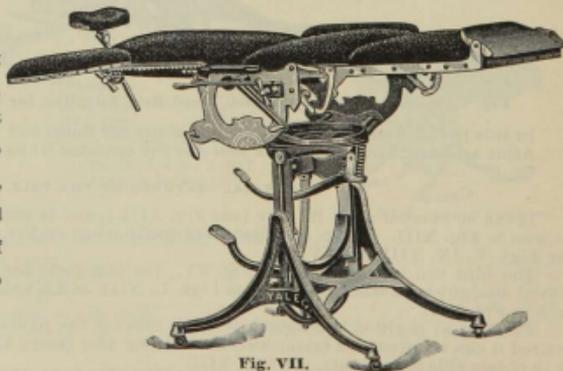


Fig. VII.

A. S. ALOE COMPANY, Selling Agents.

OFFICE FURNITURE.

CHAIRS.

THE IMPROVED YALE SURGICAL CHAIR.

ANÆSTHESIA NARCOSIS POSITION.

HEAD OF PATIENT AT A DOWNWARD
ANGLE OF 45 DEGREES.

Very convenient in re-
viving patient from asphyx-
iated condition, during the
administering of anæsthe-
tics.

Obtained by pressing
down lock lever at rear leg
and lowering head.

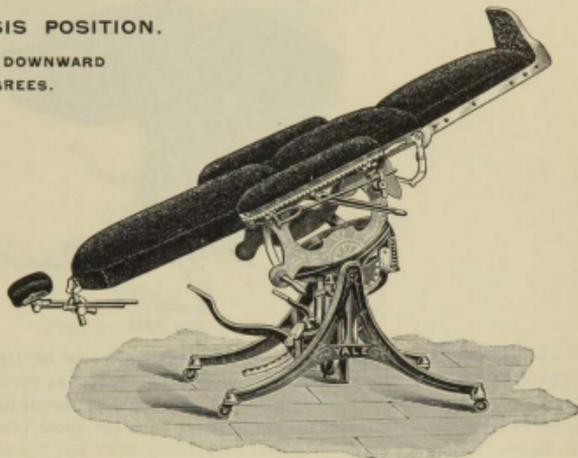


Fig. IX.

Our Yale Surgical Chair, we believe, has been brought nearer to a degree of perfection than has been attained by any other surgical chair, and the ever steadily increasing demand for it is an assurance that it has been appreciated by the progressive practitioner and the unsolicited indorsements which are ever being received by us from those who had previously used chairs of other makes, shows that our chairs are not only the best, but are just as represented, and that to be copied by others is additional proof that our Yale is considered by them as the standard of surgical chairs.

THREE-QUARTER LENGTH OPERATING
TABLE.

Obtained from Fig. VII. by letting leg rest
down to vertical position.

TRENDELENBURG'S POSTURE

May be obtained from Fig. XI. by pressing
lever at rear leg and lowering chair until the
desired angle is secured.

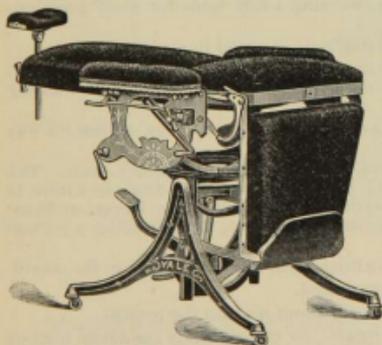


Fig. XI.

A. S. ALOE COMPANY, Selling Agents.

OFFICE FURNITURE.

CHAIRS.

THE IMPROVED YALE SURGICAL CHAIR.

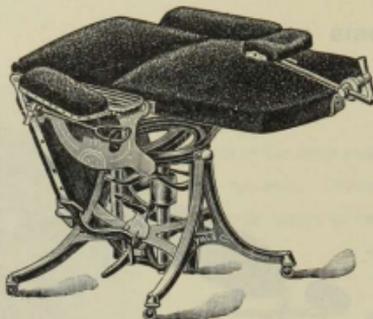


Fig. XIII.

Sims' position, wherein the double tilt, as suggested by Dr. Sims, is perfectly secured. Obtained from Fig. XI. by unlocking thumb nut, found at back of seat, and turning it one-fourth around on base and pushing down lock, found at rear of base, and inclining sideways as much as required. Head rest turned over on back for short person; arm turned out for rest for feet.

THE FOLLOWING MOVEMENTS AND FEATURES ARE FOUND ONLY IN THE
"YALE SURGICAL CHAIR."

- 1st. Being raised by the foot and lowered by automatic lowering device. Fig. I.
- 2d. Raising and lowering without revolving the upper part of the chair about its pivotal center support. Fig. VII.
- 3d. Obtaining the desirable height of 39½ inches above the floor. Fig. VII.
- 4th. Being just as strong and substantial in the highest elevations as when in the lowest. Fig. VII.
- 5th. Successfully raising, lowering, tilting or rotating while the patient is in position.
- 6th. Having heavy steel springs to balance the chair, whether occupied or not.
- 7th. Possessing arm rests that are not depending upon the back for support while in use, as Fig. VII.—are always ready for use; can be pushed back while using stirrups—Fig. XVII.—or can be placed at and away from the side of chair, forming a side table for Sims' position. Fig. XIII.
- 8th. Quickest and easiest operated and most substantially secured in positions.
- 9th. Having stirrups that are universal in adjustment, secured to the frame of the chair, not liable to be loosened by the struggling patient during operation, but are firmly and securely held by a single locking device.
- 10th. Successfully folding the leg rest, as well as the foot rest, out of the operator's way at any time. Figs. XI., XV. and XVII.
- 11th. The most complete universal head rest ever furnished with a surgeon's chair. The cushion pad can be raised 12 inches above the back of the chair or brought down to within 14 inches of chair seat, thus adapted to the shortest stature. When using the Dorsal or Sims' position it can be placed under the head, or, during any operation, thus forming a perfect support. Figs. XIII. and XV.
- 12th. A greater number of positions and modifications than any other chair in the world.
- 13th. Stability and firmness while being raised or rotated.
- 14th. Obtaining the only successful Dorsal position without moving the patient.
- 15th. Having a broad turntable upon which to rotate the chair, which cannot be bent or twisted and become useless.
- 16th. Stands upon its own merits and not upon the reputation of others.

A. S. ALOE COMPANY, Selling Agents.

OFFICE FURNITURE.

CHAIRS.

THE IMPROVED YALE SURGICAL CHAIR.

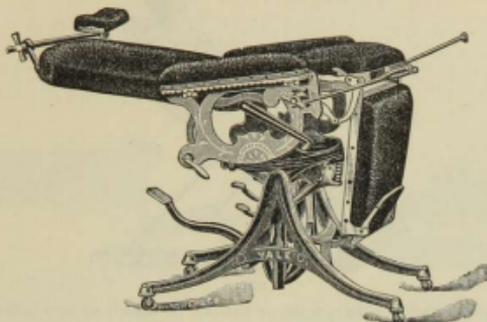


Fig. XV.

GENITO-URINARY POSITION.

A very desirable position when an operator wishes to work at the front edge of his chair. This is obtained from Fig. XI. by putting chair into semi-reclining position; bring out stirrup and tilt the chair-body backwards to the degree required.

DECIDEDLY THE BEST POSITION EVER INVENTED.

The following shows the "Yale" in Dorsal position, with the seat and leg rest lowered, stirrups adjusted, foot rest folded and arms resting at side of back, giving the operator perfect freedom of action. Can be tilted forward or backward or to either side.

This position shows seat lowered 5 inches, which at once relieves the gynæcologist from all embarrassment from the presence of the patient's clothing, in the use of the speculum. This position is obtained without moving the patient forward. It is also convenient for the knee chest position.

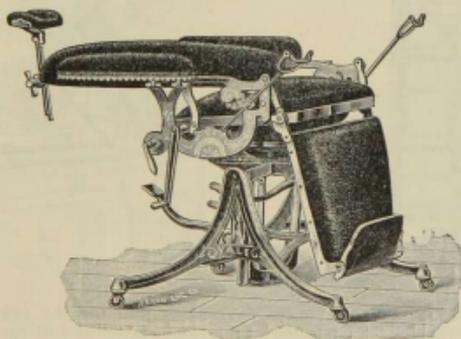


Fig. XVII.

DORSAL POSITION.

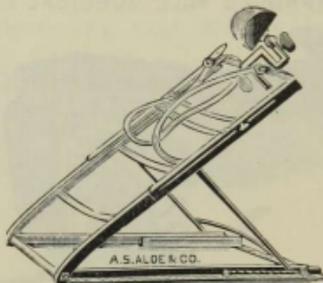
Obtained from Fig. XI. by lowering seat and leg rest by handle seen at side of chair, after the lock has been released from the hook under the seat. The arms are also pushed back out of the way and the stirrups brought into place.

A. S. ALOE COMPANY, Selling Agents.

OFFICE FURNITURE.

PORTABLE OPERATING FRAMES.

DENCH'S OPERATING FRAME, FOR WORK ABOUT THE HEAD.

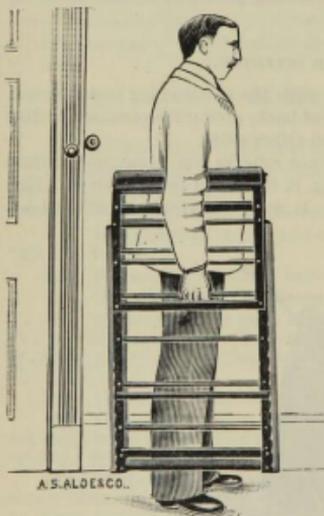


9520.

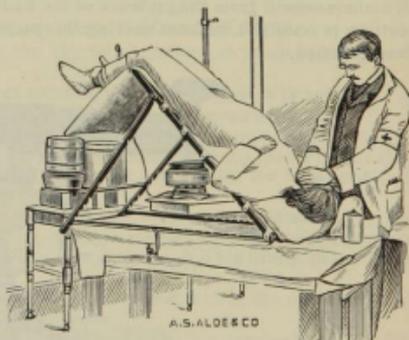
For operations about the eye, ear, nose or throat, in which an anæsthetic is necessary, the patient is placed in a semi-recumbent position, at an inclination suitable to the operator, and is maintained in this position by means of the straps which pass under the axillæ. The head-rest is adjustable to any angle.

9520. Dench's Operating Frame..... \$15 00

KRUG'S PORTABLE FRAME FOR TRENDELENBURG'S POSTURE.



A.S.ALOE & CO.



A.S.ALOE & CO.

9521.

Dr. Florian Krug's Portable Frame, as devised by him for the use of Trendelenburg's Posture, is made of galvanized iron and has a removable cover of sail canvas on which straps are provided to hold the patient's knees and ankles. It weighs about 20 pounds only, can be folded together, and is easily carried or taken along in a street car or doctor's carriage. In this way it is particularly adapted for emergency cases, or whenever a laparotomy must be performed in the patient's house. It can be attached to a kitchen or ordinary table, as well as to any kind of surgical table. It thus meets with all requirements for hospital practice as well as for outside operations. Briefly told, its advantages are: 1. It is easily cleansed and sterilized. 2. While strong enough for the heaviest patient, it is very light and easily portable. 3. While answering every requirement it is incomparably cheaper than other appliances devised for that purpose.

9521. Krug's Portable Operating Frame..... \$20 00

OFFICE FURNITURE.

TABLES.

THE ALLISON OPERATING TABLE.

The cuts below represent some of the different positions in which this table can be placed. It is safe to assert that this appliance stands without a peer in the estimation of its numerous patrons throughout the length and breadth of this country. To see it is only necessary to induce the wise physician to join the army of its admirers and possessors. It is very simple in construction, and can be easily and quickly adjusted to the different positions without any inconvenience to the operator or patient.

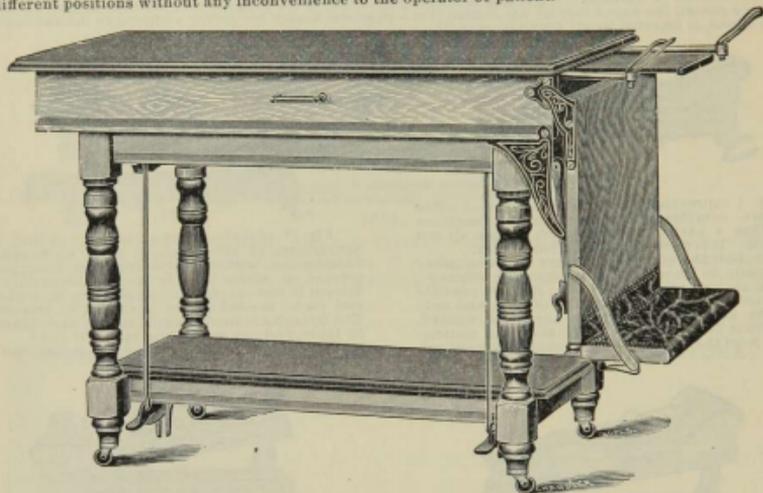
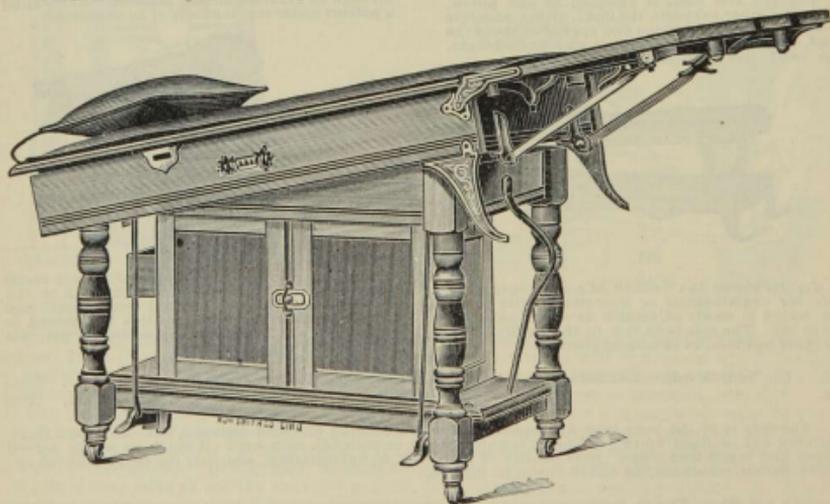


Table without cushion or upholstery, with instrument slide and adjustable stirrups drawn out as used in the Dorsal position. It has all the movements, and as fine a finish as the more expensive tables. All the tables are mounted on large ball-bearing casters.

DIMENSIONS: Height, 32 in.; length, 44 in.; width, 27 in.; with leg rest extended, length 66 in.



Position for Anæsthesia Narcosis.

WRITE US FOR PRICES AND TERMS.

OFFICE FURNITURE.

TABLES.

THE NEW (ST. LOUIS) TABLE.

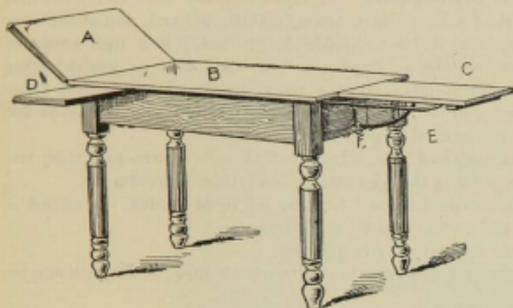


Fig. I.

Fig. I. shows working parts of the table, and clearly demonstrates its simplicity.

A represents head leaf, which may be lowered to a level with the body B, or dropped parallel with the legs. C is the foot leaf extended. The foot stirrups E draw out diagonally, [not straight as appears in the above cut,] thus giving ample room for the operator's arms. The leaf is readily dropped out of the way when necessary, and the stirrups easily slide under the table. F is an armature brace that moves through an iron escutcheon, thus supporting the leaf. D is a strong slide leaf. When a hand or arm is not to be operated on it

is convenient to place instruments upon. It moves out from either side of the table.

In the New Table there is no machinery to get out of order. No rattling and clapping noises, or rolling and swinging motions to make your patient nervous. No drawers in which to accumulate the odds of a doctor's shop, disease germs, and dust and dirt generally. No perishable plush to get worn, faded and soiled. The New Table is just what it claims to be—plain, practical and economical, and nothing septic about it.

This table is not a mechanical puzzle, nor is it necessary to have an engineer to run it. Its construction is so simple that any physician can operate it.

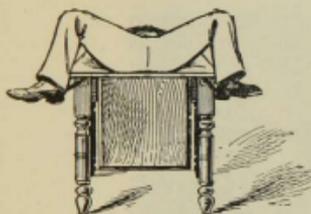


Fig. II.

Fig. II. shows foot end of table with the foot leaf down and the stirrups drawn out, and shows a patient in Whitehead's position for examination of, or operation on, rectum, vagina, bladder and adjacent parts, without deranging the toilet. For douching this is a capital position.

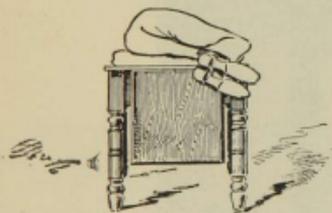


Fig. III.

Fig. III. shows a good one—Sim's position—obtained by means of a pillow placed under the hip. If the patient is large the head of the table should be used, dropping the head leaf and withdrawing the slide leaf for patient's limbs and feet to rest upon. To get your patient in any position raise the leaves level with the body of the table; then let your patient place herself on it with hand and hip. It is not so high as to require a step-ladder, or even a step, yet it is high enough to prevent the "lumbago pains" from attacking the wrong person—the doctor.

The elevated head-rest A with a pillow gives an excellent position for examinations and operations about the head and neck, with patient in recumbent position.

Fig. IV. shows the table with leaves down, occupying a space 38x24 inches. Its weight is only 65 pounds, so that it is easily moved. This figure shows the table as a natural piece of furniture in the office, completely disguised of its functions other than an ordinary table for writing, or for lamp or water pitcher. The table is of standard dimensions and well finished.

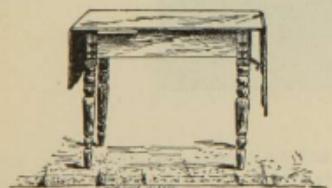


Fig. IV.

9524.	The New (St. Louis) Table, Natural Finish.....	\$12 00
9525.	" " " Upholstered in Rubber Cloth. The Rubber Cloth is very durable, can be washed with impunity and looks quite as well as leather.....	17 00
9526.	The New (St. Louis) Table, Upholstered in Leather.....	20 00

OFFICE FURNITURE.

TABLES.

THE DAGGETT POSTURING TABLE.

CONSTRUCTION.

These tables are made of cherry and quartered oak; the grain is filled with silex, covered with four coatings of varnish and rubbed with pumice stone, making a hard, non-absorbing, aseptic and antiseptic surface. The hospital tables and cushions are baked in a high grade of paraffine wax, which renders them impervious to fluids, so that they may be flushed after operations. The tops of both the Star and Standard grades are constructed alike; they differ only in the conformation of their bases and the finish of the metal trimmings. The tops are tilted by means of sliding levers, with the patient in position.

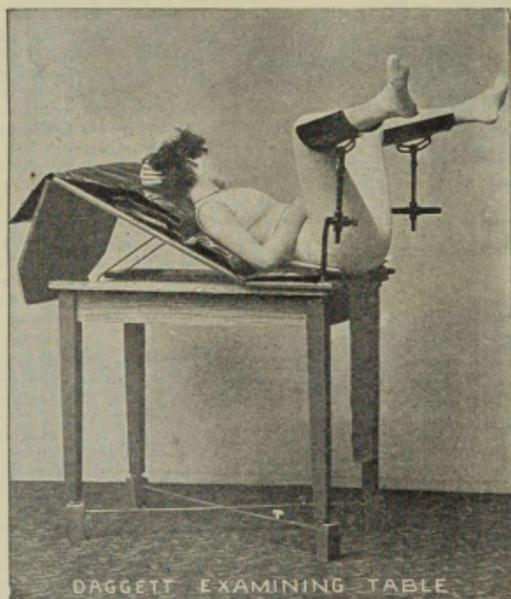
The spool crutches are a new feature, and are more efficient and satisfactory than the beinhalter (leg-holders) or stirrups for holding the legs during operation or treatment.

An unique folding cushion was especially designed for use on these tables. It covers a 6 foot top, and folds to make a pillow and covers the 40 inch top.

All tops are finished in wood, unless upholstering is ordered.

We furnish a pad especially designed for and adapted to the table tops, and which can be tacked to the table at any time.

THE DORSAL POSITION.



9527.

Fig. 9527 illustrates the Leader, raised by stilts, and the model postured in the back position, the shoulders being raised, and the legs supported by the splint-crutches. The Kelly pad is adjusted for carrying off the drainage. The stilts are used to make the table higher for operative purposes, and are adapted to all of our tables.

Send for a copy of Posture, the Handmaid of Medicine, which gives a complete exposé of the subject of posturing for examination, treatment and operation, containing over 40 illustrations, with a full explanation and description of the subject known to modern medicine.

OFFICE FURNITURE.

TABLES.

THE DAGGETT POSTURING TABLE.

THE LITHOTOMY POSITION.



9529.

Figure 9529 illustrates the Star Platform Table with the model placed in the exaggerated lithotomic posture, the thighs and legs being fully flexed and abducted and supported by the spool crutches. The patient is given the anæsthetic in the horizontal position, when the top is raised as illustrated in this figure and is supported by the props seen therein. The crutches are adjusted as desired, the legs are then carried over and placed upon them, and the slide is pushed in out of the way.

9527.	Daggett's Posturing Table, The Leader, with Stilts.....	\$23 00
9528.	" " " " The Star.....	35 00
9529.	" " " " The Star Platform.....	40 00
9530.	" " " " The Star Cabinet.....	60 00

The Spool Crutches add \$10.00 to these prices.

An Awning Cloth Cushion.....	5 00
An Imitation Leather Cushion.....	10 00
A Genuine Leather Cushion.....	20 00
The Stilts.....	5 00
An Awning Cloth Pad, short.....	3 00
An Awning Cloth Pad, long.....	5 00
An Imitation Leather Pad, short.....	5 00
An Imitation Leather Pad, long.....	10 00
A Genuine Leather Pad, short.....	10 00
A Genuine Leather Pad, long.....	20 00
The Arm Attachment for Irrigating Bag and Light.....	5 00

Send for a copy of Posture, the Handmaid of Medicine, which gives a complete exposé of the subject of posturing for examination, treatment and operation, containing over 40 illustrations, with a full explanation and description of the subject known to modern medicine.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

OFFICE FURNITURE.

TABLES.

THE DAGGETT POSTURING TABLE.

SIMS' POSTURE.

The Side Posture, as described by Dr. Sims and named after this eminent man, is theoretically well known and practically but little used, for the reason that a skilled assistant or suitable posturing device, manipulative tact and experience are required.

These objections may be overcome by attention to the explicit details given, which, if followed, will teach a useful, practical lesson. M. D. Mann, the editor of *The American or Mann's System of Gynecology*, and other eminent gynecologists, make use of this posture in all cases except for bimanual examinations and certain operative procedures. The general practitioner and surgeon should also be practically familiar with this method of posturing, for diagnostic purposes, at least.

The patient is instructed to mount the step with her left side toward the table and adjust her drapery, resting it on the top (so that it will not bind the limbs or obstruct the examination), rest her thigh across its end, recline upon her left side, carry the left arm backward over the table edge, her left ankle upon the rest, her right knee over and above its fellow, wedging it between the padded guide and the table top, and her head upon the pillow. The operator tilts with the sliding levers, the pelvis is raised, and the posture complete. After assistance in one or two lessons, the patient will learn to posture herself without aid.

THE SIMS POSITION.



9532.

Figure 9532 illustrates the Standard with the model postured in the side position. It will be noticed the chest is turned downward; the pelvis dipped forward to an angle of forty-five degrees, the left ankle is supported by the Spool Crutch arranged for that purpose and the left knee is carried over and above its fellow and wedged between the padded knee-rail and table-top. The inclines are given to the table-top after the patient has taken her position upon it, and they should be let down before she descends.

Send for a copy of *Posture, the Handmaid of Medicine*, which gives a complete exposé of the subject of posturing for examination, treatment and operation, containing over 40 illustrations, with a full explanation and description of the subject known to modern medicine.

OFFICE FURNITURE.

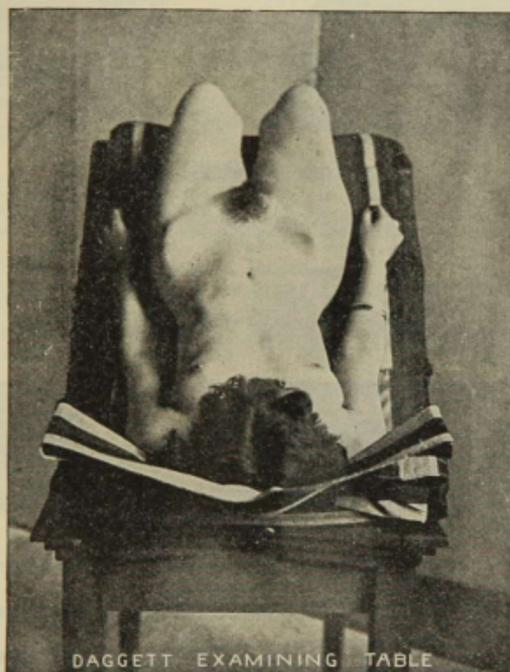
TABLES.

THE DAGGETT POSTURING TABLE.

TRENDELENBURG'S POSTURE.

In the Trendelenburg Posture the pelvis is elevated to an angle of 40 to 50 degrees; the legs are flexed; the shoulders are braced, and the head is supported by the stretcher.

THE TRENDELENBURG POSITION.



9531.

Figure 9531 illustrates the Leader with the subject postured after the manner of Trendelenburg. This cut shows the shoulder brace and head rest, also the flattening of the lower abdomen, caused by the sinking of the intestines upon the diaphragm. It beautifully illustrates the use and object of this posture.

9531.	Daggett's Posturing Table, The Leader (without Stilts)	\$18 00
9532.	" " " The Standard	60 00
9533.	" " " The Standard Cabinet	80 00

The Spool Crutches, add \$10.00 to these prices.

An Awning Cloth Cushion	5 00
An Imitation Leather Cushion	10 00
A Genuine Leather Cushion.....	20 00
The Stilts.....	5 00
An Awning Cloth Pad, short	3 00
An Awning Cloth Pad, long	5 00
An Imitation Leather Pad, short.....	5 00
An Imitation Leather Pad, long	10 00
A Genuine Leather Pad, short	10 00
A Genuine Leather Pad, long	20 00
The Arm Attachment for Irrigating Bag and Light.....	5 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTROLYTIC.

ACCESSORIES FOR THE REMOVAL OF SUPERFLUOUS HAIRS, WINE MARKS, WENS AND OTHER FACIAL BLEMISHES.



9536.



9537.

NEEDLE CASES.

Case No. 1, Fig. 9536, contains an assortment of gold-plated needles, adapted to the various electrolytic operations in which needles are employed. Case No. 2, Fig. 9537, is designed expressly for removal of hair, and contains two Hardaway's (St. Louis) fine iridio-platinum needles, 4 steel broaches, insulated handle, epilation forceps and magnifying glass.

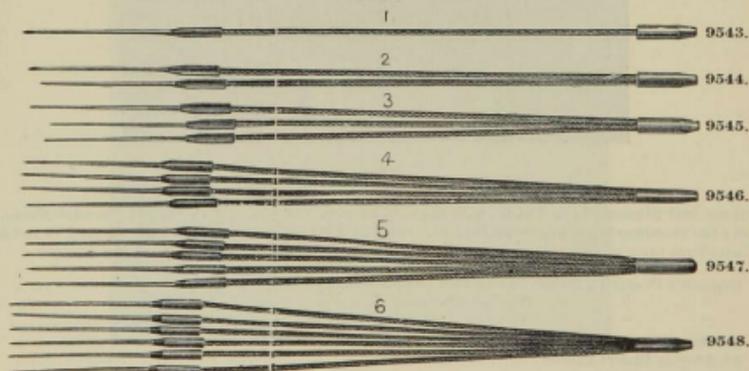
NEEDLE DISC.

For the removal of "Pigmentary Navus," or wine marks.

This we put up in neat hard rubber case to protect the needle points.



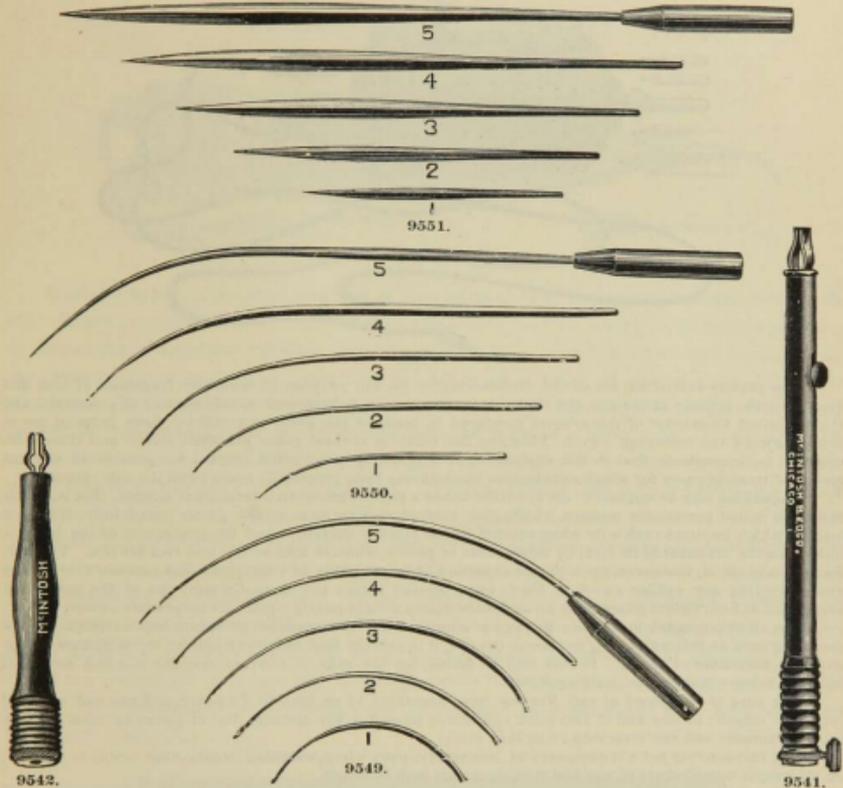
9538.



9540.

ELECTROLYTIC.

ACCESSORIES FOR THE REMOVAL OF SUPERFLUOUS HAIR, WINE MARKS, WENS AND OTHER FACIAL BLEMISHES.

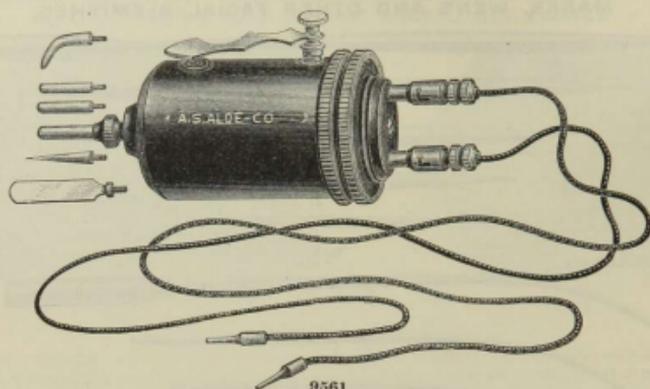


9534.	Carbon Hand Electrode	per pair,	\$3 00
9535.	Epilating Forceps, McIntosh's .....	.....	40
9536.	Needle Case, McIntosh's, No. 1 .....	.....	6 00
9537.	Needle Case, " " " 2 .....	.....	4 00
9538.	Needle Disc .....	.....	5 00
9539.	Needle Holder, Fox's .....	.....	2 00
9540.	" " Hardaway's (St. Louis) .....	.....	2 50
9541.	" " McIntosh's, Interrupting .....	.....	2 00
9542.	" " " " Plain .....	.....	1 50
9543.	Needle Holders, with cord and tip to hold 1 needle .....	.....	40
9544.	" " " " " tips " 2 needles .....	.....	50
9545.	" " " " " " " 3 " .....	.....	75
9546.	" " " " " " " 4 " .....	.....	1 00
9547.	" " " " " " " 5 " .....	.....	1 25
9548.	" " " " " " " 6 " .....	.....	1 50
9549.	Needle, Electrolysis, Full Curved, Flattened Steel, (cut shows full size), Extra Heavy Triple Gold-plated	each,	75
9550.	Needle, Electrolysis, Half Curved, Flattened Steel, (cut shows full size), Extra Heavy Triple Gold-plated	each,	75
9551.	Needle, Electrolysis, Full Curved, Flattened Steel, (cut shows full size), Extra Heavy Triple Gold-plated	each,	75
9552.	Needle, Electrolysis, Platinum, Half Curved or Straight, Size No. 1 .....	.....	2 00
9553.	" " " " " " " 2 .....	.....	2 50
9554.	" " " " " " " 3 .....	.....	3 00
9555.	" " " " " " " 4 .....	.....	4 00
9556.	" " Fox's, for removing hair	per dozen,	75
9557.	" " for removing wine marks by Electrolysis .....	.....	5 00
9558.	" " Hardaway's (St. Louis) Iridio-Platinum, for removing hair .....	.....	40
9559.	" " Improved Bulbous Pointed, for removing hair .....	.....	20
9560.	" " Steel, for removing hair	per dozen,	1 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-MAGNETIC.

THE ELECTRO-MAGNET IN OPHTHALMIC SURGERY.



9561.

The rapidly extending use of the electro-magnet for the purpose of removing fragments of iron and steel from the interior of the eye, the slight attention previously bestowed on this method of procedure, and the imperfect knowledge of the subject displayed in many of the published articles, have induced me to bring forward the following views. They are the result of several years' practical study; and their main object is to demonstrate that in the application of a properly constructed magnet we possess an efficient means of treating cases for which enucleation has hitherto been practically considered the sole resort:

Magnetism may be applied to the eye from either a permanent or an intermittent source; that is, either from a so called permanent magnet, which, once excited, retains its magnetic power indefinitely, or from a magnet which becomes such only when excited by the electric current. And the superiority of the latter is incontestable. It exceeds its rival by many times in power, when of less weight and smaller size. The permanent magnet is, moreover, open to the objection of being liable to a constant dissipation of its energy upon receiving any sudden shock or blow, upon moving across the magnetic meridian of the earth, and even when at rest, unless guarded by an armature whose weight nearly equals its suspensive power.

The electro-magnet must then be the one employed for the purposes of ophthalmic surgery. And in modeling such an instrument for use about the eye, it is evident that we must combine the minimum of size with the maximum of power. To this may be added, for the sake of convenience, the smallest and most compact battery that proves itself available. * * *

The core is composed of soft Norway iron, one-third of an inch in diameter, and two and one-half inches in length; to one end of this solid cylinder is riveted a flat circular disc of the same material, one inch in diameter and one-sixteenth of an inch thick.

The surrounding helix is composed of insulated copper wires, weighing twenty-nine grains to the foot, making eight convolutions of one and three-quarters inch in length.

The polar extensions are respectively five, four and three thirty-seconds of an inch in diameter, and one-half inch in length; their suspensive power equals twenty, sixteen and eleven ounces each, when an armature of soft iron, one inch by one tenth in diameter is used, which is within two ounces of the saturation point. These points can be made of any size or shape to suit.

The battery used is a single bichromate of potash cell, having eight square inches of negative surface. The magnet weighs about five ounces, and the intensity of its field by the addition of another cell is made as great as that of a magnet capable of lifting a ton. See the Grenet Battery No. 3 or 4, page 774.

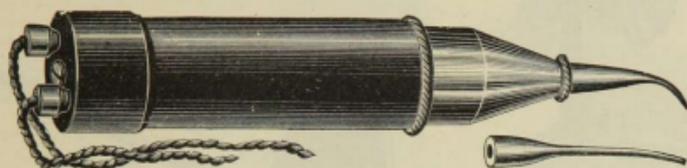
* * * the larger the fragment the more probable its removal, and, conversely, the smaller the fragment the more difficult its extraction. Finally, a point may be reached where the resistance to be overcome exceeds the amount of polarity capable of being induced. This is illustrated in the case of minute foreign bodies in the cornea, where the magnet is of no avail. All incisions for removal of foreign bodies anterior to the plane of the lens should be marginal incisions of the cornea, those that concern the vitreous should be scleral, and made posterior to the ciliary border; in both cases, by so doing, the ciliary body is avoided, and in the latter case the surrounding tissues form the best support for the wound.

One important point in regard to all incisions made for the entrance of the magnet, and the removal of a foreign body from the eye, is that the cut should be, not one with parallel edges, but T shaped, as in the former case, when the extraction of the foreign body takes place, it is invariably stripped off the end of the magnet, and is retained at the site of the wound, or drops into the interior of the eye. This is a foregone conclusion unless the lips of the wound be held apart, and no amount of skill or carefulness upon the part of the operator can guard against it, unless the incision is of the above mentioned shape.—HENRY W. BRADFORD, M. D., in the Boston Medical and Surgical Journal, March 31, 1881.

9561. Bradford's Electro-Magnet	\$18 75
9562. Hirschberg's Electro-Magnet.....	13 50

ELECTRO-MAGNETIC.

McINTOSH'S ELECTRO-MAGNET.



This instrument is for removing bits of iron or steel from the cornea and chambers of the eye. Every surgeon and oculist knows from experience how difficult it is to remove particles of iron or steel filings and turnings from the cornea, even after they have been loosened, and the impossibility of extracting them from the posterior chamber of an eye with ordinary instruments. With the aid of this instrument these operations are easy and simple. To use the magnet the conducting cords are connected with the poles of a battery cell (a cell with zinc-carbon element is the best), and the small stylet brought near or in contact with the particle, which adheres to the magnet and is removed. If the particle of iron is imbedded in the cornea, it may be necessary to loosen it and then remove it with the magnet, which can be done without contact with the eye. If iron or steel has penetrated either chamber, it is then necessary to introduce the small stylet of the magnet, which attracts the particle, which is easily removed. The connections are made so that it can be connected to the cell of any Faradic Battery, but its magnetic force is greatly increased by adding several cells. This is the more easily done with a McIntosh combined battery, as one or more cells can be connected at pleasure.

When connected with one cell the magnet will lift 300 grains; by adding six cells, 720 grains. The instrument is shown full size in the cut. It is furnished with long and short stylet and conducting cords.



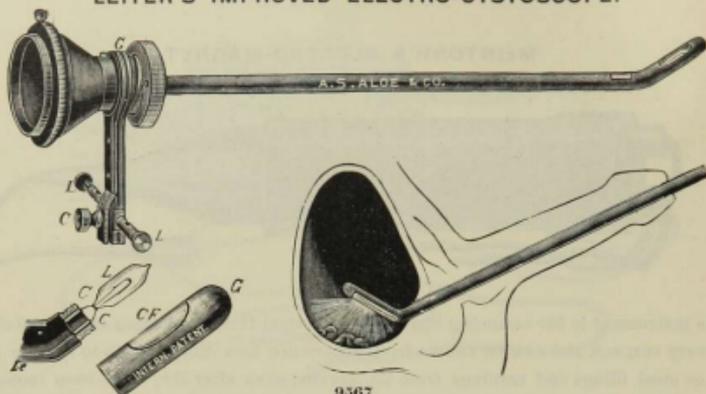
9563.

9563. McIntosh's Electro-Magnet, complete, with extra Stylet and Cords, in velvet lined Morocco Case \$8 00

For a suitable single cell to operate the McIntosh Magnet, see the Grenet Battery, Nos. 3 and 4, listed on page 774.

ELECTROSCOPIC.

LEITER'S IMPROVED ELECTRO-CYSTOSCOPE.



9567.

LEITER'S MODIFICATION OF NITZE'S CYSTOSCOPE, WITH THE IMPROVED HANDLE AND CONTACT,

SUGGESTED BY DR. FENWICK, of London.

This instrument, which has been used for several years with the greatest success, consists of a catheter tube bent at an angle convenient for the work intended, and a telescope which is inserted in the catheter tube. The lamp has its place in the elbow, protected by a cap which can be unscrewed for the purpose of replacing a lamp which may have been burned out.

Leiter's latest improvement consists in adjusting the handle by means of the spring *G*, in such a manner that the cords, which are attached at *LL*, are not liable to become entangled when the instrument is rotated during an examination.

Contact in this new pattern of Leiter's Cystoscope is made (by pressing together by the thumb and fingers of the hand that holds the instrument) the three lateral bars of the handle or by means of the set-screw *C*.

We quote from the "Post Graduate" the following extract of an article, entitled,

SOME OF THE DIFFICULTIES IN THE USE OF THE CYSTOSCOPE.

BY L. BOLTON BANGS, M. D.

Surgeon to St. Luke's and Charity Hospitals; Consulting Surgeon to the M. E. Hospital, Brooklyn; Professor of Genito-Urinary and Venereal Diseases, New York Post Graduate Medical School and Hospital.

There can be no doubt about the value of the Cystoscope as an aid to diagnosis. Since its scientific improvement by the instrument makers under the suggestion of Nitze and others, it may be regarded as mechanically, almost perfect. Improvements of a minor kind are being made from time to time, and no doubt others will be made as experience suggests their necessity. The mechanical differences between the Cystoscope made by Leiter, of Vienna, and the one made under the personal direction of Nitze by P. Hartwig, of Berlin, are slight; but they are sufficient to render the Leiter instrument the more practical and the more easily repaired.



9569.

9570.

**ELECTROSCOPIC.
TROUVÉ'S ELECTRIC ILLUMINATOR.**

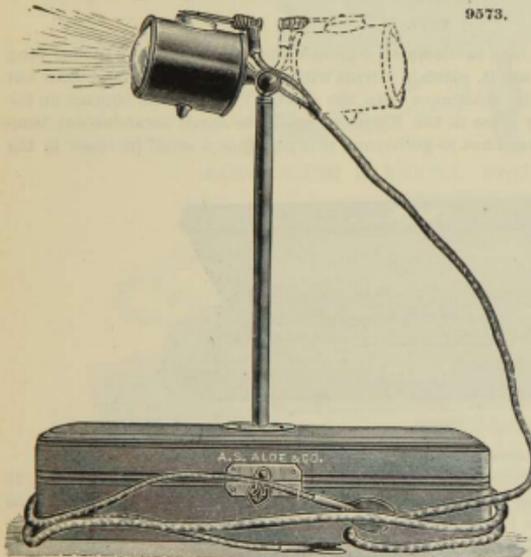
Trouvé's Electric Illuminator is an excellent outfit for the general practitioner. With it is furnished a headband, as shown in Fig. 9573, with ball and socket joint, and by its use one may be independent of the oily German student lamp and the heating gas lamp commonly employed in the examination of nose and throat. In operations about the vagina or rectum, or in fact any part of the body, at night or during the day, in cloudy weather when good light is not available, this outfit will be found admirable. By means of the ball and socket joint and the telescopic tube which screws into a metal plate fitted into the top of the case, a strong light (equal to 4 candle power) can be directed to any part the operator may choose, and so thoroughly illuminate the field of the operation as to leave nothing to be desired. Fitted in this way, as shown in the illustration Fig. 9574, it makes a very convenient lamp for microscopic illumination.



9573.

ALOE'S CAVITY LAMP.

Aloe's Cavity Lamp, Fig. 9566, is a very convenient adjunct in the exploration and examination of the various cavities of the body, such as mouth and throat, vagina, rectum, etc. This convenient lamp holder has a silver lined socket into which the $\frac{1}{8}$ candle power lamp is fitted. The light is considerably augmented by the silver shell, the polished inner surface of which presents a very brilliant reflector.



9574.



9566.

Aloe's Converter for illuminating small Lamps by means of the Alternating Current. See page 689.		
9564.	Bladder Phantom, Dittel's.....	\$28 50
9565.	" " Leiter's Modified Dittel's.....	20 00
9566.	Cavity Lamp, Aloe's, with Cords.....	4 00
9567.	Cystoscope, Leiter's, Electric.....	37 50
9568.	Gastroscope, Leiter's Electric. Write for price.....	
9569.	Hand Lamp, McIntosh's, Electric.....	7 50
9570.	" " Trouvé's, Electric, Extension Handle, Ball and Socket Joint.....	20 00
9571.	Head Band, Leiter's Incandescant Lamp.....	15 00
9572.	" " Phillips' Electric Light.....	13 50
9573.	" " Trouvé's, ".....	15 00
9574.	Illuminator, " " complete with Trouvé's Electric Light Head Band, with Cord, in fine Morocco Case, Velvet Lined.....	20 00

Extra Lamps for the different Electric Light Apparatus Listed. See page 685.

ELECTROSCOPIC.

McINTOSH'S ELECTRIC LARYNGOSCOPE AND RHEOSTAT.



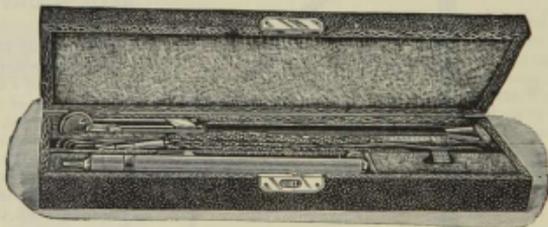
9576.

The above cut shows the Laryngoscope about one-half size. This is the lightest, neatest and most convenient instrument yet brought out. The hard rubber handle is vulcanized on the metal conductors, thus making the rubber and metal virtually one solid piece. It can be used with or without the mirror; or both incandescent lamp and mirror can be removed and electrolytic needles, small cautery electrode, or tooth-dryer, used in the handle. The current breaker allows the operator to control the light at will. With the Rheostat in circuit with the lamp, a current from two to four cells can be so perfectly controlled that all danger of burning out the lamp is avoided.



9579.

The Rheostat is about one-half inch in diameter, 6 inches long when closed, 8 inches long when drawn out at full length. To use it, place in circuit with the Laryngoscope and draw out to its full length (this throws all the resistance into the circuit.) Press the contact on the Laryngoscope handle, then gradually press in the Rheostat until the small incandescent lamp gives a white light. Care must be used not to go beyond this point, as a small increase in the current will destroy the lamp.



9575.

9575.	McIntosh's Electric Laryngoscope, Conducting Cords and Rheostat, in a neat Morocco case.....	\$11 25
9576.	McIntosh's Electric Laryngoscope only.....	7 50
9577.	“ “ ½ Candle Power Incandescent Lamp only.....	1 00
9578.	“ “ Laryngoscope Cords only.....	75
9579.	“ “ Laryngoscope Rheostat only.....	2 25

The Electric Laryngoscope can be used on three or four cells of McIntosh's Combined Battery, or on any battery of equivalent electro-motive force.

(See M. B. 2 and 3 Cell Storage Battery and Aloe's Converter.)



9580.

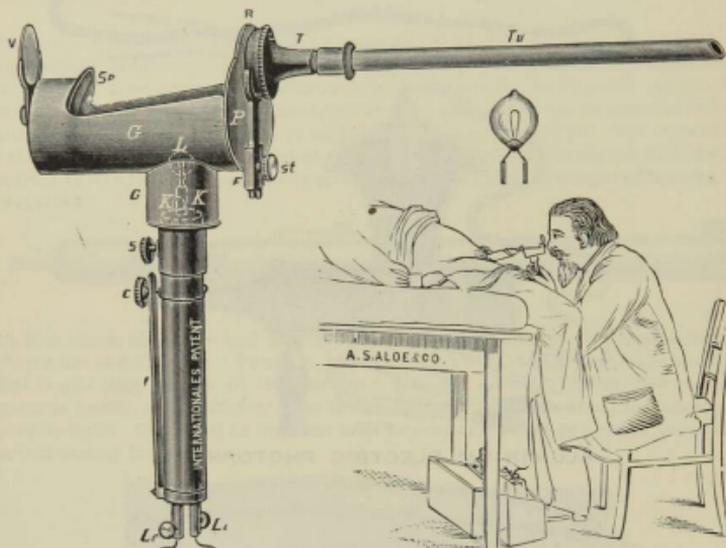
9580.	McIntosh's Post-Nasal or Laryngeal Electric Illuminator, complete with cord and ½ C. P. lamp.....	\$6 00
5581.	McIntosh's Post Nasal Electric Illuminator, with Rheostat, in Morocco Case.....	8 75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTROSCOPIC.

LEITER'S PAN-ELECTROSCOPE.

Leiter's Pan (Universal) Electroscopic can be supplied with tubes or specula for the ears, nose, throat, rectum or vagina. It is, however, particularly adapted for the male urethra, and it is this combination of the instrument we illustrate.



9586.

In the mode of reflection, this instrument is a distinct innovation. In other Endoscopic instruments the lamp was usually placed in front of a perforated mirror, and the operator looked at the object through the perforation; but in Leiter's Pan-Electroscopic the mirror *Sp.* is placed behind the lamp *L.*, and its concavity permits of the concentration of the rays of the light coming from the lamp, upon the object, the operator looking over the upper edge of the mirror through the lens *V.* into the tube *Tu.*, fixed to the instrument. In this way he is enabled, even in the case of such narrow and long canals as the male urethra, to observe and to use the operating instruments, knife or platinum burner at the same time. This arrangement also makes it possible with the aid of a cotton holder to apply acids, caustic, etc., exactly on the spot where their effect is most wanted, or with a pair of forceps to seize foreign bodies in the oesophagus, urethra, etc., and to extract or destroy them. To observe and operate at the same time has never been accomplished before by any of the numerous apparatus designed for these purposes, and in this respect, as well as on account of its higher illuminating power and lighter weight, this apparatus by far supercedes other Endoscopes. A further advantage is that the lamps can burn for hours without perceptibly heating the apparatus.

It is chiefly employed for lighting up the male and female urinary organs, the ear, nose, oesophagus, rectum and vagina. In removing the metal plate *R.*, *P.* and screwing on a mirror in its place the same apparatus may be conveniently used for lighting up the nasal cavity.

The circuit is closed either by pressing down spring *f.* in which case it remains closed as long as the pressure lasts, or by screwing down screw *C.*

To generate the light, a battery of $4\frac{1}{2}$ to 5 volts is required (G. F. Double Element Cautery, or a three cell M. B. Storage). See pages 685 and 688 for description of these batteries. An alternating electric lighting current can be conveniently employed by means of the Aloe Converter.

The instrument is furnished, as shown in illustration, with one extra lamp and an assortment of tubes of any calibre desired, nicely fitted in velvet-lined case.

ELECTROSCOPIC.

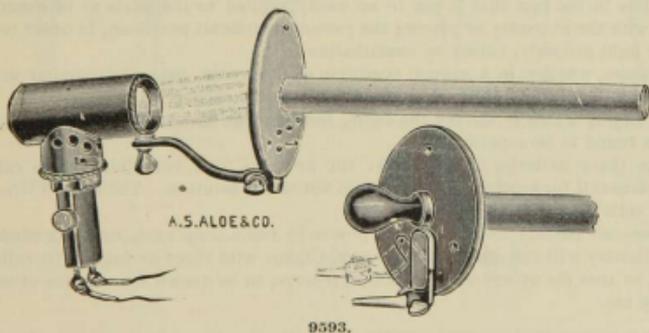
MCINTOSH TONGUE DEPRESSOR
AND ELECTRIC ILLUMINATOR.

For illuminating the cavity of the mouth and throat, and for transillumination of the antrum of Highmore. Intended to be attached to the McIntosh cautery handle. The instrument can, however, be altered to fit any style cautery handle.

OTIS' PERFECTED ELECTRIC URETHROSCOPE.

This instrument consists of a metal tube or cylinder, 1 1/4 inches in length by 1/2 inch in diameter, closed at one end. A quarter of an inch from the opening of this tube is a plano-convex lens, so arranged that it may be easily removed for cleaning. On the interior surface, near the closed end of the tube, an elbow is let in, 1/4 inch in length and 1/8 inch in diameter, through which the source of illumination (a small incandescent electric lamp) is introduced, a row of holes being bored at its base to allow of ventilation. The handle of the instrument consists of a piece of hard rubber 1 inch long by 1/2 inch wide, the electrical connections running through it to the lamp which is placed on top. This handle fits into the elbow by means of a bayonet joint, bringing the lamp immediately behind the plane side of the lens. A thumb-screw "switch" in the handle places the lamp under control, so that it may be turned on or off at pleasure. The instrument is attached to the urethroscopic tube by means of a stout wire 1 1/2 inches in length, with hinged joints at each end which swing in opposite directions, and are furnished with set screws, thus allowing the instrument to be put in any position, though when once adjusted it will rarely be necessary to move it. If the ordinary form of tube is used, the distal end is provided with a simple ring sliding joint; but, as I have already said, I greatly favor the use of the tube of Dr. Klotz. I have arranged the instrument for this form of tube. When the instrument is in position and the lamp illuminated, a strong beam of light is thrown down the urethroscopic tube and the urethral mucous membrane more easily and clearly observed than with any other form of urethroscope with which I am familiar. The advantages of this instrument are:

1. The exclusion of all extraneous light, the presence of which is a most annoying fault, both in the urethroscope of Leiter and in my own improvement upon it.



2. A very much more ready access to the urethral field, both to the eye and for instrumental applications.
3. Increased illumination.
4. By abandoning the funnel and sliding joint, 1 1/2 inches in distance is gained from the source of illumination to the distal end of the urethroscopic tube, increasing the illumination and allowing the eye to be placed just so much nearer the mucous membrane to be examined.
5. Its extreme compactness and lightness, weighing less than one ounce, even when constructed of brass.
6. Its great simplicity, which should insure a moderate cost.

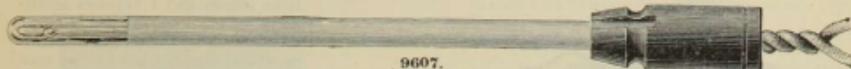
[Extract from an article in N. Y. Medical Journal, Dec. 17, 1892.]

9590.	Tongue Depressor, Bleyer's, with Cords.....	\$ 9 00
9591.	" " McIntosh's, designed to be used with Fig. 3684, page 604.....	4 50
9592.	" " Somoff's, with Cords.....	12 00
9593.	Urethroscope, Otis' Electric ".....	10 00
	" Tuttle's. Write for price.	

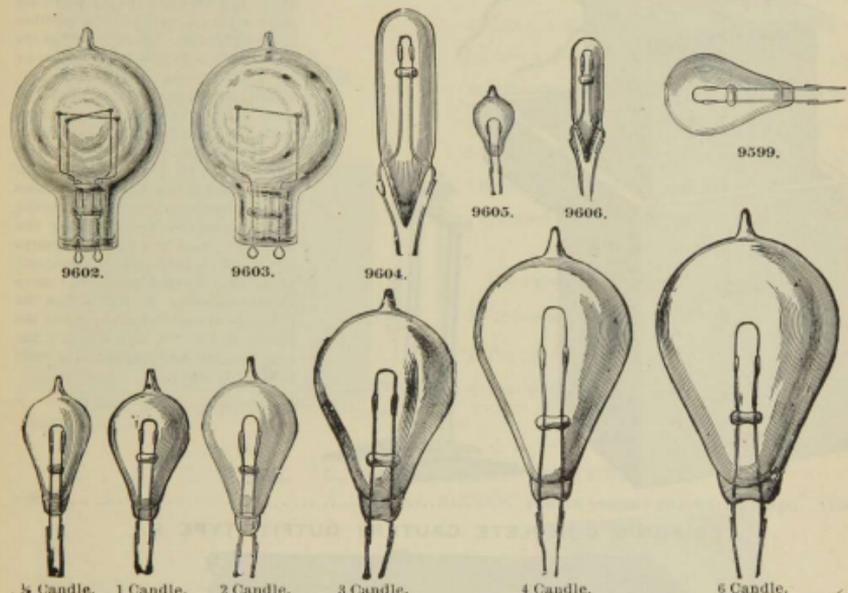
ELECTROSCOPIC.

SOMOFF'S ASEPTIC SURGICAL LAMP.

This Lamp is made entirely of glass; the part surrounding the filament of crystal, and that constituting the handle of opaque glass. The two kinds of glass are joined by fusion. The walls of the glass tube are from 1/16 to 3/32 inch thick, and consequently very strong and capable of sustaining rough handling. The back end of the lamp is encased in a short piece of hard rubber tube, protecting the platinum terminals and their joint with the cord. The value of such an instrument as this lamp, in the examination of diseases of infectious character, is self-evident for it can be washed with acids and alcohol and all uncleanness effectively removed.



9607.



9600.

The following table of voltage, current and resistance respective to candle power is applicable to all lamps listed unless otherwise mentioned.

Candle Power.	Resistance.	Electro-Motive Force.	Approximate Current Required.
	Ohms.	Volts.	Amperes.
1/2 Candle.....	1.3 to 2	3 to 4.5	1 to 1.50
1 ".....	2.9 to 4.5	3.5 to 5.5	1 to 1.50
2 ".....	3.3 to 5	4.5 to 5.5	1 to 1.50
3 ".....	3.6 to 4.5	5.5 to 7	1 to 1.50
4 ".....	5 to 6.5	7 to 9.5	1 to 1.50
6 ".....	6 to 7	9 to 12	1 to 1.50

We can furnish Lamps requiring less current, 200 milliamperes being the least possible number.

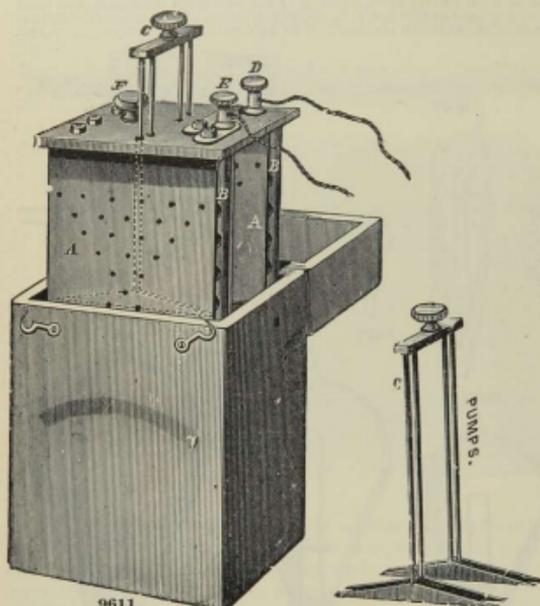
9596. Cavity Lamps.....	\$1 00
9597. Cystoscope Lamps.....	1 50
9598. Laryngoscope Lamps.....	1 00
9599. Otoloscope Lamps.....	1 00
9600. Pear Lamps, 1/2, 1, 2, 3, 4 or 6 candle.....	each, 1 00
9601. Photophore Lamps.....	1 50
9602. Sphere Lamps, Double Filament.....	2 00
9603. " " " Single ".....	1 50
9604. Surgical Lamps, Somoff's, Large.....	1 00
9605. " " " Pea (Shape).....	1 00
9606. " " " Small.....	1 00
9607. " " " Aseptic.....	2 50
9608. Tongue Depressor Lamps.....	1 00
Trouvé Illuminator Lamps. See Sphere Lamps.	
9609. Tulip Lamps.....	2 00
9610. " " with Reflector.....	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-SURGICAL.

GALVANO-CAUTERY BATTERIES.

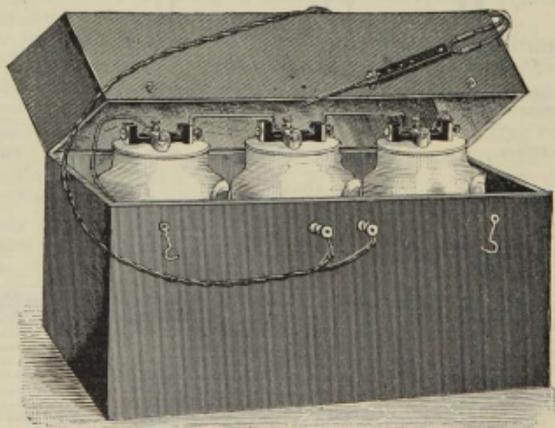
DAWSON'S GALVANO-CAUTERY BATTERY.



9611.

9611. Dawson's Galvano-Cautery Battery.....\$60 00 ||

EDISON'S COMPLETE CAUTERY OUTFIT, TYPE P.

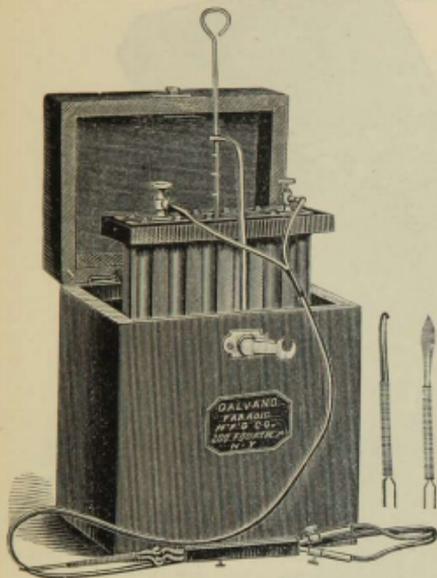


9612.

Outfit complete includes 3 Edison-Lalande Cells, type P, contained in a handsome case; 1 pair Cautery Cords; 1 Edison Cautery Handle; 1 Edison Cautery Knife. This is the most complete, economical and efficient Cautery Battery in the market. One charge will last one year, with absolutely no attention.

9612. Edison's Cautery Outfit, Type P, complete.....\$25 00

ELECTRO-SURGICAL.
GALVANO-CAUTERY BATTERIES.
THE "G. F." CAUTERY BATTERY.



9613.

THE "G. F." CAUTERY BATTERY.
(DOUBLE ELEMENT.)

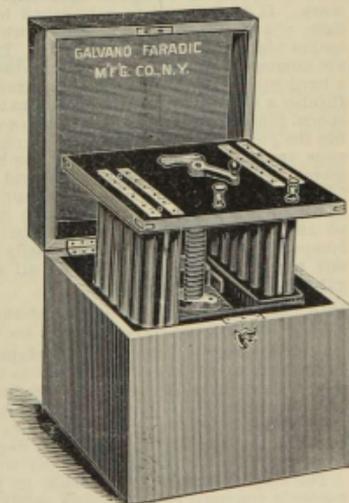
This Battery is intended expressly for office use, and will give a current of sufficient power to heat ordinary-sized electrodes or a loop. It will also light a four-volt incandescent lamp. The heat is regulated by immersion, the elements being arranged to raise and lower by means of a coarse-threaded screw. When necessary to close the cover, the base holding the elements is given a quarter turn and lowered into the drip-cells.

Furnished in a black walnut case, with heavy conducting cables.

This Battery is intended for eye, ear, nose, throat and other minor cautery work. It is small and compact, can be carried about with the fluid in the cell without danger of spilling, and will fully meet the requirements of the specialist. The cut shows the elements (one large zinc and twelve carbons) suspended over the jar containing the fluid, the other jar serving as a drip-cup for the elements when not in use. The heat may be regulated by immersion.

We furnish with this battery:

- 1 Universal Handle, with Current Breaker.
- 1 Pair of Conducting Cords.
- 3 Platinum Instruments.

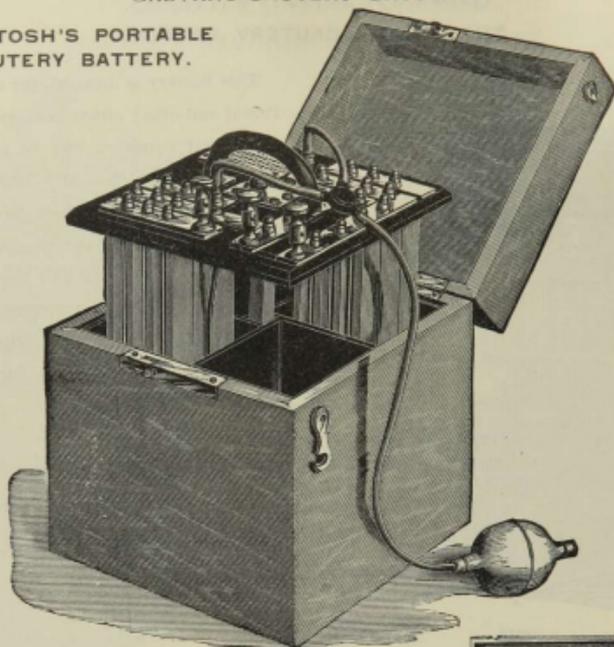


9615.

9613.	"G. F." Cautery Battery, outfit complete	\$ 26 00 ||
9614.	"G. F." Cautery Battery (Battery only).....	18 00 ||
9615.	"G. F." Double Element Cautery Battery.....	30 00 ||

ELECTRO-SURGICAL.
GALVANO-CAUTERY BATTERIES.

McINTOSH'S PORTABLE
CAUTERY BATTERY.



9616.

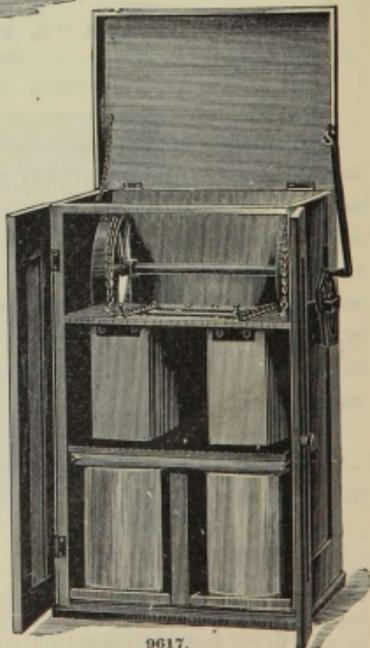
This battery is designed expressly for cautery work. It is inclosed in a polished black walnut case, $8\frac{1}{2}$ inches long, $8\frac{1}{2}$ inches wide and $10\frac{1}{2}$ inches high, and weighs 21 pounds. The elements are composed of zinc and platinum, fastened upon a hard rubber base. They are constructed so as to furnish a very large surface in the smallest possible space, thereby lessening the resistance and increasing the power of the battery. The cells and drip cups are made of hard rubber. The base and elements can be fastened at any height by a spring bolt that slips into slots in a central upright metallic tube; by this means the current can be graduated to any required intensity. This battery is very compact, portable, and can be easily managed by any physician. It is adapted to all cases where galvano-cautery is applicable.

9616. McIntosh Portable Galvano-Cautery Battery.....\$75 00 ||

Our Stationary Cautery Battery stands on a base 12x20 inches, 26 inches high, and is inclosed in a neat walnut case. The elements are large zinc and carbon plates, which are raised and lowered in the fluid by means of a lever on outside of cabinet, thus enabling the operator to obtain any degree of heat desired. It is best adapted to office work.

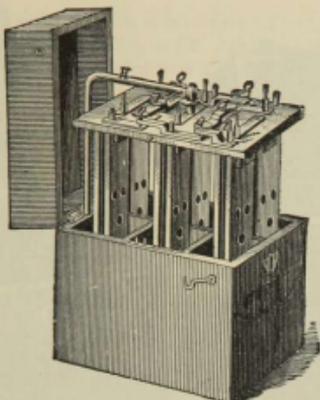
The improvements lately made in this battery render it the most desirable and profitable battery for the physicians whose limited need for galvano-cautery does not warrant the purchase of a storage battery.

9617. McIntosh Stationary Cautery Battery, \$75 00 ||



9617.

ELECTRO-SURGICAL.
GALVANO-CAUTERY BATTERIES—STORAGE BATTERIES.
THE PIFFARD GALVANO-CAUTERY BATTERY.



9618.

Size, 9 inches long, 6 $\frac{1}{4}$ inches wide, 10 inches high; weight, 15 pounds.

This Battery has been constructed from suggestions made by Professor H. G. Piffard.

The Galvano-Cautery Battery is a very complete and reliable instrument, at once powerful, portable, compact and so free from complications and easy of management that any physician can understand it and operate with it. It is adapted to meet all cases usually performed with this class of instruments. This Battery is a wonder and delight to all who see it, and has successfully stood the most critical tests. One of our most eminent physicians, after operating with it, remarked that it was "*multum in parvo*."

In its construction we have aimed to utilize each element to its fullest extent, and we have overcome all the inconveniences attending the use and management of those large, unportable and troublesome instruments which have been manufactured, and many of those which have been imported into this country. The parts can be easily replaced, and the surgeon living at a distance can duplicate them and adjust them without difficulty.

9618. Piffard Galvano-Cautery Battery \$50 00 ||

STORAGE BATTERIES.

A storage battery or accumulator is a convenient apparatus for those physicians and surgeons who in their practice may be in daily need of a cautery current, and who may be located in towns where there is no electric light plant in operation, and consequently cannot avail themselves of the advantages offered by the use of the electric current in connection with Aloe's Converter (see page 689).

The general impression that electricity is stored is erroneous, though it is technically spoken of in that way; in reality, the current of electricity obtained from a storage battery after being charged is derived solely from the chemical reactions taking place within the battery.

The efficiency of the storage battery shows itself in two directions, technically called volts and amperes. Volts indicate the power of the battery, while amperes indicate the duration of such power.

Now, as experience has shown that the limit of power of a storage cell is two volts, the only other factor to be considered is the duration of this amount of force stored, and with a view to that, storage cells of various dimensions, containing a greater or lesser number of plates, have been constructed. Thus, a storage cell containing 5 plates will have 2 volts and 50 amperes; a cell containing 11 plates will have 2 volts and 120 amperes, and a cell containing 17 plates will have 2 volts and 180 amperes, in consequence of which, 1 cell of 17 plates will only heat a small cautery knife, but will do so for 180 ampere hours, while 2 cells of only 5 plates each will heat a large cautery or loop, or run a motor, but will only do so for 50 ampere hours.

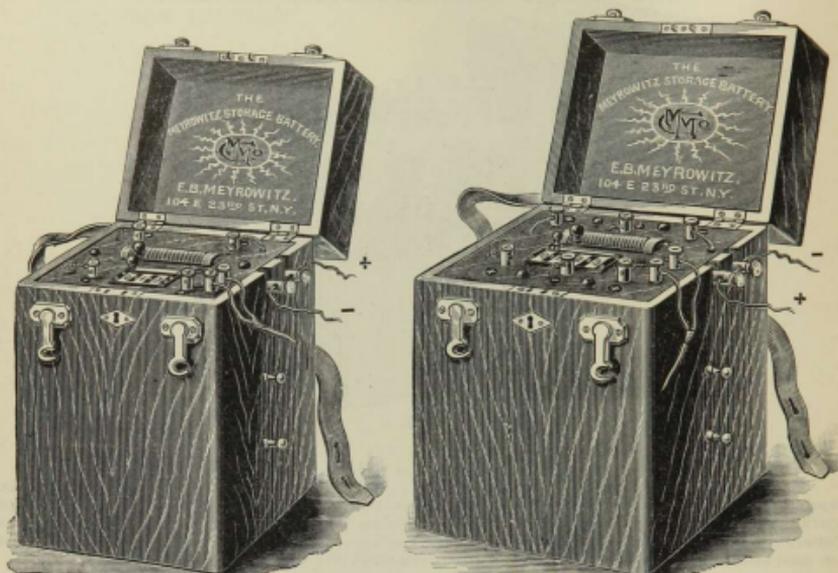
It must be borne in mind, however, that the successful use of a storage battery depends upon its daily use.

Because we are never desirous of selling batteries or supplies only for the sake of the profit such sale may bring to us; but, are anxious in every case, that what we sell should be such as will serve the practitioner as a valuable accessory in his professional work; we urge, that physicians who desire only on rare occasions to use the cautery current, should not purchase a storage battery. Get clearly fixed in your mind the theory of "Electrical Storage," then you will readily perceive why a Storage Battery must be made to do work, or, at least, like a horse must be "exercised" in order to "keep it in good health."

A Storage Battery is *par excellence*, the battery for constant work in galvano-cautery, while a Plunge Cautery Battery is the only correct thing for the physician whose practice requires galvano-cautery only at brief intervals.

ELECTRO-SURGICAL.

STORAGE BATTERIES.



9624.

9627.

For the Oculist and Aurist, who require the battery only for the heating of delicate electrodes and the use of the electro-magnet, we furnish the

9619.	Meyrowitz 1 Cell Battery, with 5 plates, giving 2 volts for 50 ampere hours, Price, \$20 00
9620.	“ 1 Cell “ “ 11 “ “ 2 “ “ 120 “ “ “ 22 50
9621.	“ 1 Cell “ “ 17 “ “ 2 “ “ 180 “ “ “ 27 50
	Four Crow-foot Cells (primary cells, necessary for charging either of the above 1 Cell Batteries), add to price..... 3 00

For the Rhinologist and Laryngologist, who require the heating of large cauteries, the platinum snare and the illumination of small diagnostic lamps—as are also used in the cystoscope—we manufacture the

9622.	Meyrowitz 2 Cell Battery, with 5 plates per cell, giving 4 volts for 50 ampere hours.....Price, \$35 00
9623.	Meyrowitz 2 Cell Battery, with 11 plates per cell, giving 4 volts for 120 ampere hours.....Price, 40 00
9624.	Meyrowitz 2 Cell Battery, with 17 plates per cell, giving 4 volts for 180 ampere hours.....Price, 45 00
	Eight Crow-foot Cells (necessary for charging 2 Cell Batteries), add..... 6 00

For the illumination of large electric lamps, such as are used in the Trouvé Lamp and the Electric Photophore, and for the running of motors requiring from 5 to 6 volts, we make the

9625.	Meyrowitz 3 Cell Battery, with 5 plates per cell, giving 6 volts for 50 ampere hours.....Price, \$45 00
9626.	Meyrowitz 3 Cell Battery, with 11 plates per cell, giving 6 volts for 120 ampere hours.....Price, 50 00
9627.	Meyrowitz 3 Cell Battery, with 17 plates per cell, giving 6 volts for 180 ampere hours.....Price, 60 00
	Twelve Crow-foot Cells (necessary for charging 3 Cell Batteries), add..... 9 00

ELECTRO-SURGICAL.

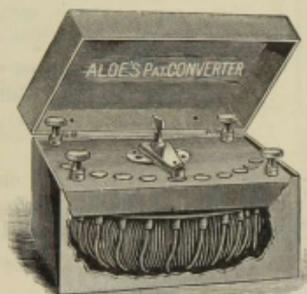
ELECTRO-CAUTERY APPARATUS.

CONVERTING THE INCANDESCENT ELECTRIC LIGHT ALTERNATING
CURRENT TO PRACTICAL USE FOR CAUTERY PURPOSES
AND THE ILLUMINATING OF SMALL LAMPS.

By L. P. ALOE, St. Louis.

The general introduction of the alternating current for commercial and domestic lighting makes it possible for any one to secure, by means of the Aloe Patent Converter, from the lighting circuits, currents of any desired voltage.

In this instrument the gradations of voltage are very fine, making it possible to obtain the most exact regulation of current, which is important in the use of cauteries and lamps. This instrument is vastly superior to resistances for the alternating current, as there is practically no waste of energy in its use.



9628.

The size of the converter is 7x7x3 inches, mounted on polished slate base; it is furnished with attachment cord and plug, which can be inserted in any lamp-socket where the alternating current is in use, without additional wiring. The instrument is graded to a capacity of 5 volts and current amperes from 0 to 30, so the current can be regulated with the greatest facility from 0 to as powerful as may be desired. The Converter can be used on either the 104 or 52 volt alternating system, but, in ordering, the system which is to be used must be specified. I find by actual test, using the volt-meter and ampere-meter, that the average cautery electrode requires a current of $2\frac{1}{2}$ volts and 18 amperes. The object in having my Converter wound to 5 volts is for the purpose of using also the small electric lamps, which require an average current of not less than 4 volts nor more than 5 volts. The value of the small lamp as a means of diagnosis is to well known to require discussion here.

The advantage of this instrument to practitioners must be apparent. It affords, at one's absolute control, a cautery current, with none of the objections or annoyances attending a cautery battery, it being an absolute impossibility for it to get out of order, and it obviates the necessity of a continual expense from time to time in re-charging and repairing, as in the old cautery battery. The extensive use of this current now-a-days by general practitioners and specialists, demands an instrument of precision and thorough reliability, consequently the Converter supplies a "long felt want."

[Extract from Medical Fortnightly.]

In construction the Converter is a model of simplicity, and cannot be destroyed, except by wilful neglect or gross carelessness.

By its use the expense for the current consumed is reduced to a minimum; for instance, should same be operated for one hour continuously, the actual expense would be 3 cents per hour.

Special windings to any voltage or amperage made to order.

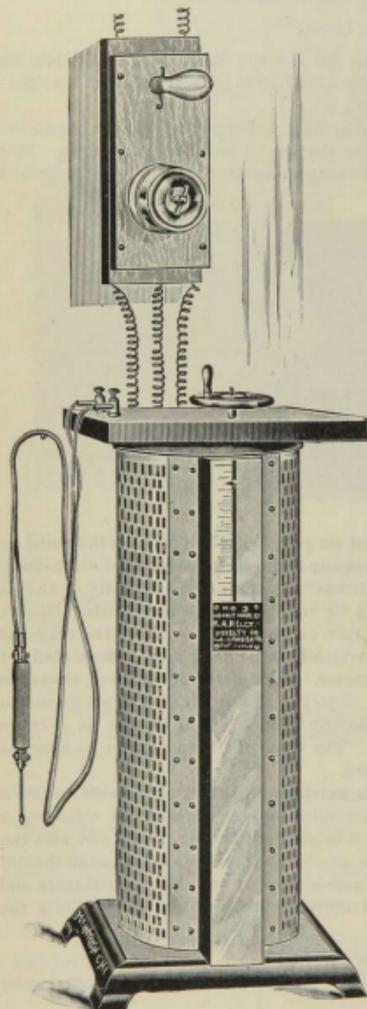
The Converter is a controller of both voltage and amperage.

9628. Aloe's Patent Converter, with plug and cord attachment. \$ 35 00

ELECTRO-SURGICAL.

ELECTRO-CAUTERY APPARATUS.

THE K. A. P. DYNAMIC CAUTERY AND ELECTROLYTIC APPARATUS.



9629.

This instrument is designed to be used on incandescent circuits for the purpose of heating cautery knives and burning small, low volt surgical lamps, such as are used by physicians for examining the throat, etc., and for all electrolytic purposes.

It is regulated with perfect ease by the operator, to burn a small lamp requiring less than one ampere of current, or to heat the largest cautery knives.

It is made to operate on any current for 50 to 500 volts and will require a supply current of 20 to 35 amperes for the heaviest cautery work.

The cost of operation is very small compared with batteries.

It does all electrolytic work perfectly, without the slightest shock to the patient, from the destruction of superfluous hair requiring a current of from 2 to 4 milliamperes, to the removal of uterine fibroma by the Apostoli method in which a current of 200 milliamperes is sometimes used.

There is nothing about the instrument to wear out, but should it get out of order at any time, it will be repaired free of charge, except cost of transportation to and from factory.

We send directions with each instrument, giving size of wire to use and how to connect up.

McINTOSH BATTERY AND OPTICAL CO.,

141 and 143 Wabash Avenue,

CHICAGO, ILL., U. S. A.

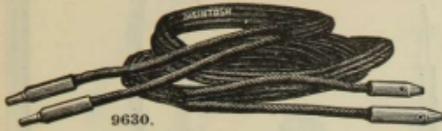
9629. K. A. P. Dynamic Cautery and Electrolytic Apparatus..... \$60 00

A. S. ALOE COMPANY, St. Louis, Selling Agents.

ELECTRO-SURGICAL.

CANULÆ, CORDS AND ELECTRODES FOR GALVANO-CAUTERY AND ELECTRO-CAUTERY.

McINTOSH'S GALVANO-CAUTERY CORDS.

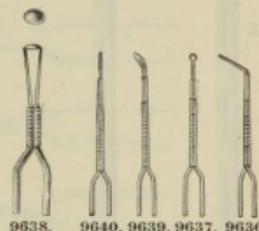
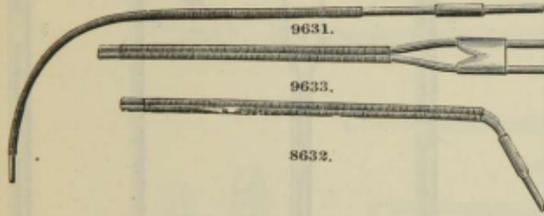


The powerful current required for galvano-cautery makes it necessary to have special cords with large conducting surface. The conducting cords furnished with ordinary batteries are inadequate to convey a cautery current.

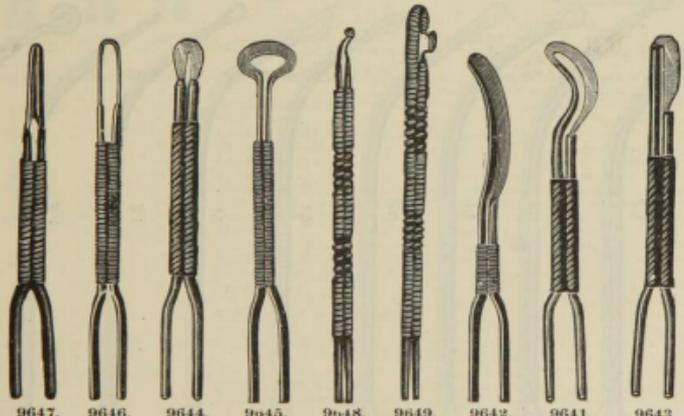
These Galvano-Cautery Cords are furnished with the McIntosh Portable Cautery Battery and consist of a bundle of copper wires, insulated by a heavy silk cover, with large tips, which secure the ends of the wires and offer no impediment to the passage of the current. These

cords are very flexible, and, being perfect conductors, they do not become heated while the battery is being operated.

9630. McIntosh Galvano-Cautery Cords..... \$3 50 ||



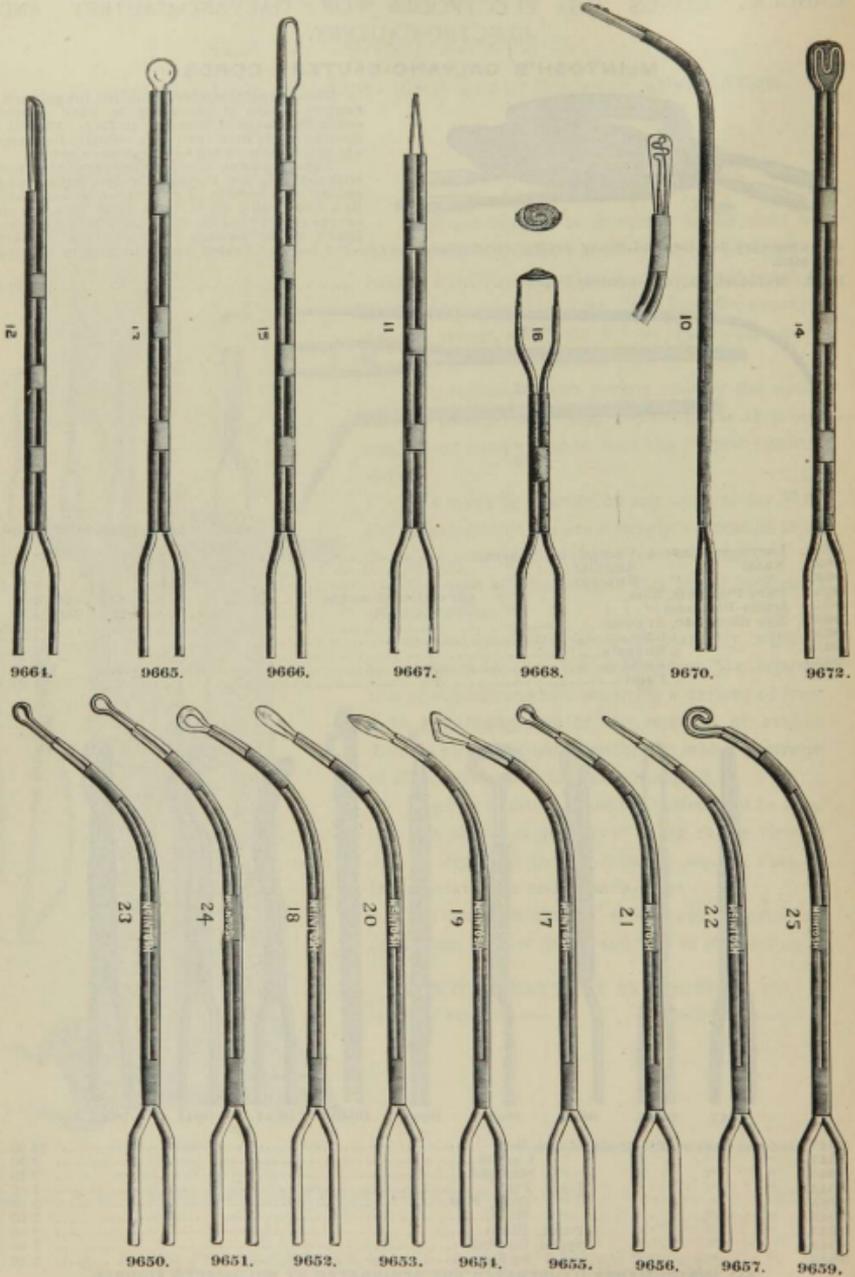
9631.	Laryngeal Canula, Curved, for Sparing.....	\$2 66
9632.	Nasal " Angular, " "	2 00
9633.	" " Straight, " "	2 00
9634.	Pure Platinum Wire, " "	2 00
9635.	Iridio-Platinum " " per coil of 16 inches.....	1 25
9636.	Eye Electrode, Angular.....	1 25
9637.	" " Bulb.....	1 33
9638.	" " Knapp's.....	1 33
9639.	" " Knife.....	1 33
9640.	" " Point.....	1 33



9641.	General Cantery Electrode, Knife, Bent.....	\$2 50
9642.	" " " " Curved.....	2 50
9643.	" " " " Straight.....	2 00
9644.	" " " " Loop, Flat.....	2 00
9645.	" " " " Oval, Flat.....	2 00
9646.	" " " " Wire.....	2 00
9647.	" " " " Point, Blunt.....	2 00
9648.	" " " " Spiral, Curved.....	2 00
9649.	" " " " on Side.....	2 00

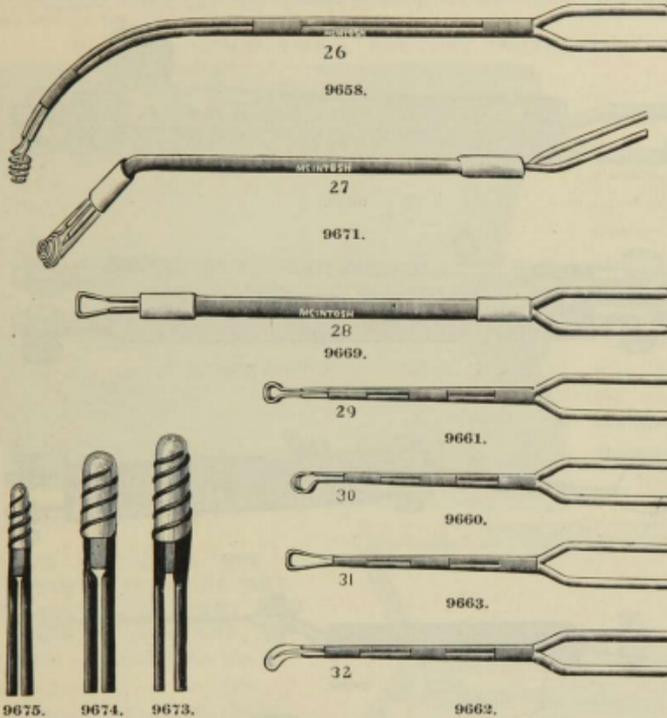
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-SURGICAL.
ELECTRODES FOR GALVANO-CAUTERY AND ELECTRO-CAUTERY.



ELECTRO-SURGICAL.

ELECTRODES FOR GALVANO-CAUTERY AND ELECTRO-CAUTERY.



9650.	Laryngeal Cautey Electrode,	Curved Curette.....	\$2 50
9651.	" " " "	Straight ".....	2 50
9652.	" " " "	Broad Loop Knife.....	2 50
9653.	" " " "	Flat Knife.....	2 50
9654.	" " " "	Lancet Knife.....	2 50
9655.	" " " "	Oblique Knife.....	2 50
9656.	" " " "	Loop.....	2 50
9657.	" " " "	Point.....	2 50
9658.	" " " "	Dome Spiral.....	2 50
9659.	" " " "	Flat Spiral.....	2 50
9660.	Nasal	Curved Curette.....	2 00
9661.	" " " "	Straight ".....	2 00
9662.	" " " "	Curved Knife.....	2 00
9663.	" " " "	Square Knife, flat on top.....	2 00
9664.	" " " "	Right or Left Knife.....	2 00
9665.	" " " "	Loop.....	2 00
9666.	" " " "	" Right or Left.....	2 00
9667.	" " " "	Sharp Point, for Follicies.....	2 00
9668.	Naso-Pharynx Cautey Electrode,	Spiral End.....	2 50
9669.	" " " "	Side, Bosworth's.....	2 50
9670.	" " " "	Cohen's Protected, for Vault of Pharynx.....	2 00
9671.	Post-Nasal Cautey Electrode,	Bosworth's.....	3 00
9672.	" " " "	Spiral, with Shield.....	2 50
9673.	Tonsil	Porcelain Core, Large.....	3 33
9674.	" " " "	" " Medium.....	3 33
9675.	" " " "	" " Small.....	3 33
9676.	" " " "	" " Right.....	3 33
9677.	" " " "	" " Left.....	3 33
9678.	Aseptic	Dessar's Laryngeal (curved).....	2 06
9679.	" " " "	" Nasal (straight).....	2 00

Dessar's Electrodes are metal finished, without the customary thread insulation and can be dipped into an antiseptic solution without injury to the Electrode.

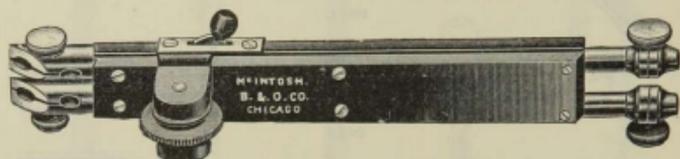
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-SURGICAL.

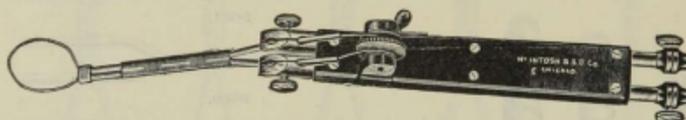
HANDLES FOR GALVANO-CAUTERY AND ELECTRO-CAUTERY.



9680.



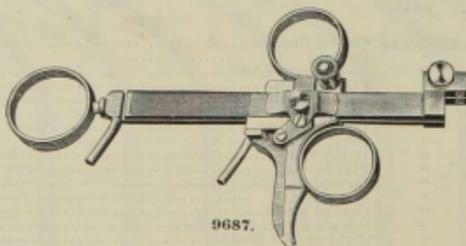
9684.



9685.



9686.



9687.

9680.	Edison Cautery and Snare Handle.....	\$ 5 00
9681.	“ “ “ “ with Canula and Wire.....	7 50
9682.	“ Interrupting Cautery Handle, same as Fig. 9680, without Wheel.....	4 00
9683.	Holz's Cautery Handle and Cords, for Ophthalmic work.....	10 00
9684.	McIntosh Cautery and Snare Handle.....	8 00
9685.	“ “ “ “ with Canula and Wire.....	10 00
9686.	Plain Interrupting Cautery Handle, for Eye, Laryngeal and Nasal Electrodes.....	3 50
9687.	Sattler-Nieden Cautery and Snare Handle, with Canula and Wire.....	16 00
9688.	Schech's Cautery and Snare Handle, with Canula and Wire.....	12 00
9689.	“ “ “ “ without Canula and Wire.....	10 00
9690.	White's Cautery and Snare Handle, without Canula and Wire.....	10 00

White's Handle is adjustable to any angle and can also be used as Cold Snare.

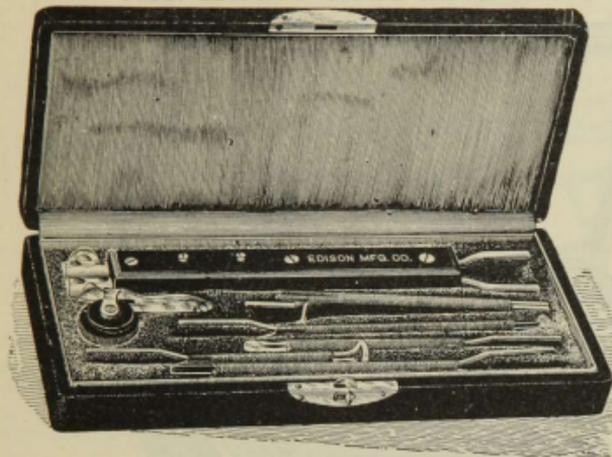
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

**ELECTRO-SURGICAL.
CAUTERY INSTRUMENT SETS.**

9691. EDISON'S LARGE CAUTERY INSTRUMENT SET.

This set contains an Edison Cautery Snare Handle, with Platinum Wire, and one each curved and straight Canula, and one each of the following Cautery Electrodes: Nos. 9644, 9645, 9646, 9648, 9654, 9659, 9665, 9667 and 9672. In fine Morocco Case.....\$25 00 ||

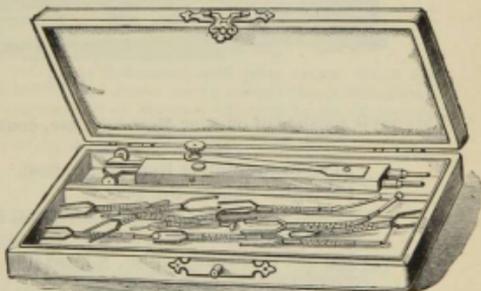
9692. EDISON'S SMALL CAUTERY INSTRUMENT SET.



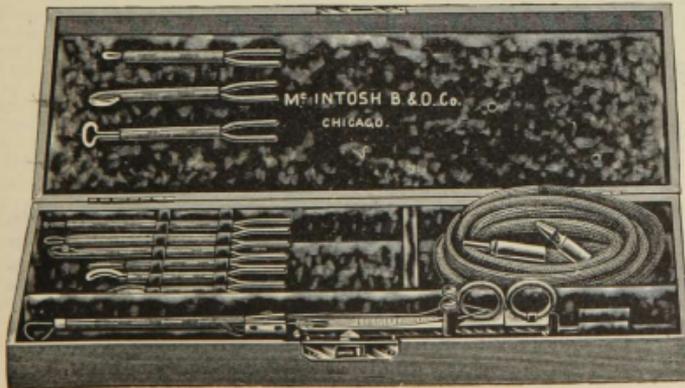
Edison's Small Set of Cautery Electrodes and Handle, consists of a fine Morocco Leather Case, containing one Edison Cautery and Snare Handle, with Canula and Platinum Wire, and one each Nos. 9644, 9645, 9646 and 9648 Cautery Electrodes.....\$16 00 ||

**9693. THE M. B. EYE
CAUTERY ELECTRODE SET,
FOR GALVANO-CAUTERY AND
ELECTRO-CAUTERY.**

This outfit consists of a fine Morocco Leather Case and the Plain Interrupting Cautery Handle No. 9686, 1 Pair Fine Silk Covered Cautery Cables and Eye Electrodes, Nos. 9636, 9637, 9639, 9640 \$10 00



9694. McINTOSH'S CAUTERY INSTRUMENT SET.

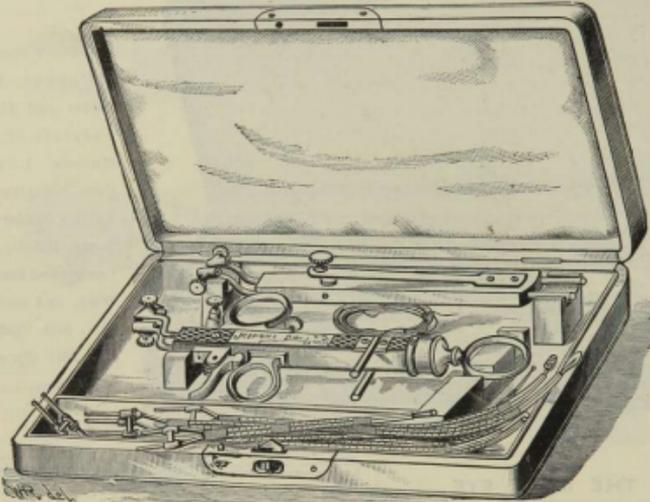


This case contains one McIntosh Cautery Snare and Handle, with Canula and Platinum Wire, McIntosh Cautery Cords, and an assortment of nine Electrodes for general cautery work.....\$30 00 ||

ELECTRO-SURGICAL.

ELECTRO-CAUTERY AND GALVANO-CAUTERY ACCESSORIES.

9695. THE M. B. NASAL AND LARYNGEAL CAUTERY ELECTRODE SET.



9695.

This outfit consists of one fine Morocco Case, containing:

- 1 Plain Interrupting Handle, No. 9686.
- 1 Schech's Handle, No. 9688.
- 5 Nasal Electrodes, straight, Nos. 9644, 9647, 9660, 9662 and 9665.
- 5 Laryngeal Electrodes, curved, Nos. 9650, 9652, 9653, 9654 and 9657.
- 1 Tonsil Electrode, curved, No. 9674.
- 3 Canulæ, Nos. 9631, 9632 and 9633.
- 1 Coil of Platinum Iridium Wire, No. 9635..... \$35 00

KNIGHT'S ELECTRIC TONSIL SNARE.



9697.

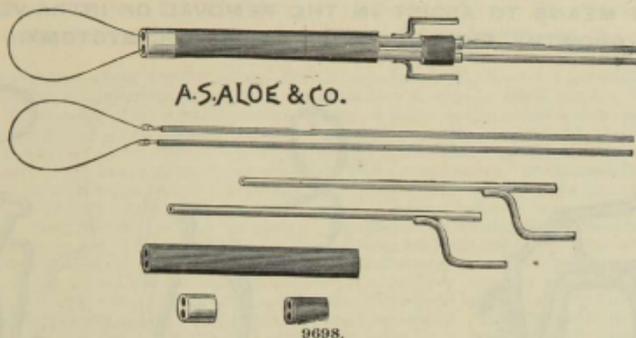
This instrument consists of a cautery canula, braced by an insulated metallic guide, ending in a fenestrum similar to the Mackenzie Tonsillotome. The platinum wire is tied to the ring by a fine silk thread, which holds it in position to properly grasp the tonsil. The heating of the wire burns the thread, and the metallic ring protects the surrounding parts during the operation. This snare is adapted for use with any cautery handle.

- 9696. Knight's Electric Tonsil Snare, without Wire..... \$3 00
- 9697. " " " " complete with 18 inches of Irido-Platinum Wire.. 4 00

ELECTRO-SURGICAL.

ELECTRO-CAUTERY AND GALVANO-CAUTERY ACCESSORIES.

LOEB'S (ST. LOUIS) ASEPTIC CAUTERY SNARE.



The advantages of this instrument are:

1st. Easily cleaned. Every portion is readily removable (as cut shows). It is therefore easy to treat the different parts by immersion as with all other instruments.

2d. Less wire required. In the old style snare 12 to 15 inches of platinum wire is needed—quite a costly item when often broken or burnt out. In the above snare but 3 or 4 inches are required.

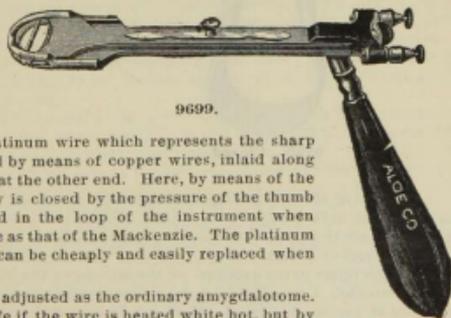
3d. Less current consumed. The current required is beyond a doubt considerably less. This has been verified a number of times, for when my storage battery was out of order, I used on several occasions one of the cells instead of the two, which I have found necessary with all other snares.

4th. No short circuiting. This difficulty is by no means uncommon with other snares, for it not infrequently happens that when a body is engaged and the wire drawn taut no current passes through the wire, therefore no action results. This is due either to connection of the wires below or to the absence of any current passing from the canule to the wire above. In my instrument the connection is made and maintained by means of the copper wire, and is not at all dependent upon the canule at their orifice.

9698. Loeb's (St. Louis) Aseptic Cautery Snare..... \$4 00

WRIGHT'S ELECTRIC AMYGDALOTOME.

* * * * * As will be seen at a glance, it is the adaptation of an ordinary Mackenzie amygdalotome to galvano-cautery purposes. Instead of the steel blade with the convex cutting edge, a non-conducting material (compressed paper) is used, and one end hollowed out into a crescent. Across this is stretched a platinum wire which represents the sharp edge of the cutting instrument. This is connected by means of copper wires, inlaid along the sides of the blade, with the binding screws at the other end. Here, by means of the ordinary spring, the circuit from a cautery battery is closed by the pressure of the thumb as the blade is driven against the mass included in the loop of the instrument when adjusted. The frame of the instrument is the same as that of the Mackenzie. The platinum and copper wires are so arranged that the former can be cheaply and easily replaced when by accident it is burned through.



Of course this instrument can be as easily adjusted as the ordinary amygdalotome. The tonsil can be severed as quickly as with a knife if the wire is heated white hot, but by regulating the current the operation can be done as slowly as may be thought desirable. It must be remembered that more of the tonsil is destroyed than is represented by the part cut away, the cauterization of the stump causing marked retraction after healing. With the galvano-cautery snare the edges of the faucial pillars are apt to be severely cauterized, often causing great pain for several days after the operation. This is entirely avoided by the galvano-cautery amygdalotome. * * * * *

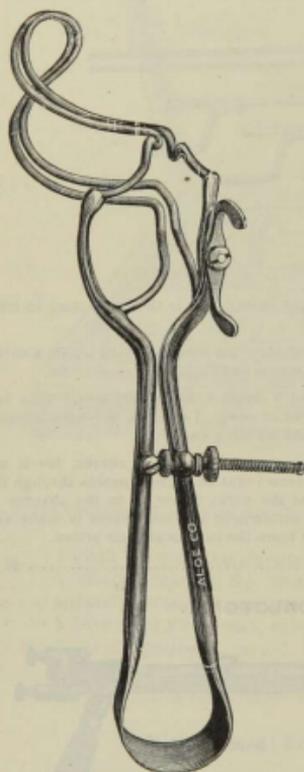
[Jonathan Wright, M. D., Brooklyn, in N. Y. Medical Journal, August 30, 1890].

9699. Wright's Electric Amygdalotome..... \$10 00

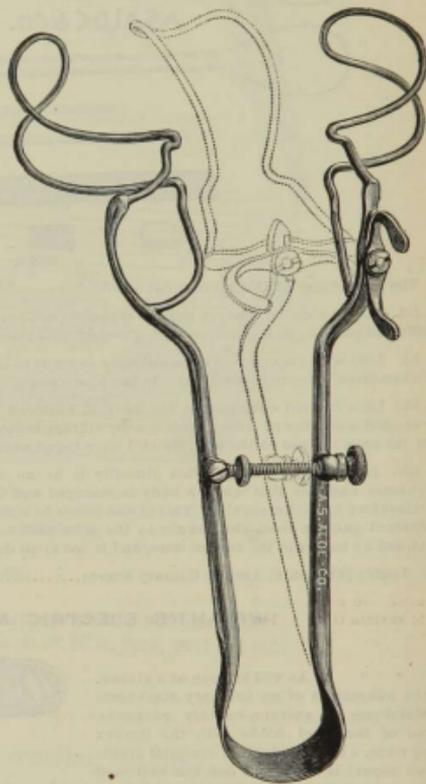
ELECTRO-SURGICAL.

ELECTRO-CAUTERY AND GALVANO-CAUTERY ACCESSORIES.

A NEW MEANS TO ASSIST IN THE REMOVAL OF INTRA-VESICAL
GROWTHS THROUGH A SUPRA-PUBIC CYSTOTOMY.



9700. Closed.



9700. Open.

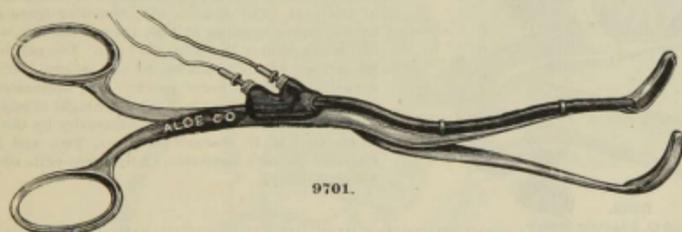
In spite of the various improvements that have been applied to Supra-pubic Cystotomy since its revival in 1890, which have brought its technique so nearly to perfection, I have thought that a still further advance might be made in regard to some of its steps, when the operation is undertaken for the removal of the intra-vesical tumors or prostatic hypertrophies. The steps of the operation which I have sought to improve are those which relate to the exposure of the interior of the bladder after it has been opened, and to the removal of the growths. I was led to make these modifications by the objections experienced in the use of the methods at present employed. With reference to the exposure of the interior of the bladder, the method of Trendelenberg seems to me cumbersome and awkward. The use of tenacula, or threads, or spatulae to sustain and open the bladder to view, calls for a number of assistant's hands, which are in the operator's way. The assistants frequently displace the spatulae or écarteurs and let them assume faulty positions. Furthermore, solid-bladed écarteurs like those used by Bazy, cover up a portion of the bladder wall and interfere with the view of the growth and its removal by instruments. To obviate these difficulties I have devised a Bladder Speculum (Figure 9700) which seeks to accomplish, by one instrument, all the objects, both for sustaining the bladder and exposing its interior to view, now gained by tenacula, threads, sutures, écarteurs, or posture of the patient, while doing away with the objections to the use of the latter methods enumerated above.

ELECTRO-SURGICAL.

ELECTRO-CAUTERY AND GALVANO-CAUTERY ACCESSORIES.

A NEW MEANS TO ASSIST IN THE REMOVAL OF INTRA-VESECAL GROWTHS THROUGH A SUPRA-PUBIC CYSTOTOMY—CONTINUED.

The speculum consists of two strong wire blades, which, when closed, can be readily introduced into the bladder through an incision of one inch or a little more in length. Above, the wire blades are attached to either side of a stout steel shaft or handle which terminates at its farther end in a strong spring, the action of which is to separate the two sides of the shaft, and consequently, also, the wire blades of the speculum attached to either of them. About the middle of the shaft, and connecting its two sides, is a screw by which their separation can be controlled by governing the action of the spring. The blades of the instrument are introduced closed into the bladder. The speculum is then opened by rotating the inner blade upon a pivot by the thumb and one finger; this blade then assumes a position opposite to its fellow, at the same time moderately distending the cavity of the bladder. The sides of the abdominal and bladder incisions can now be still further separated, and the bladder at the same time further distended by turning the screw outward along its thread, thus allowing the spring to push the handles apart. The instrument then takes the position shown in figure, and between its blades a free view of the field of operation is obtained. To withdraw the speculum, its blade is rotated back again and the sides of the shaft approximated by the screw; the position is then again as in Fig. 9700, closed, and it can be easily withdrawn. With the blades opened, the inner surface of the bladder incision rests upon the shoulder formed by the angle at the junction of the upper and lower portion of each wire blade. The bladder consequently cannot collapse or fall downward behind the



pubes, but is held close up to the abdominal wound, and firmly fixed in that position, even when no hand holds the handle of the instrument at all. This does away with the necessity of having two or more hands to sustain the bladder with tenacula, or threads, and dispenses with sutures also, which require time to place, and may tear out under strain. By grasping the shaft of the instrument with one hand the operator can raise or lower the bladder at will, and by turning the handle from side to side can expose to view and operative manipulation all parts of the interior of the organ. In using the speculum the bladder should be sustained by a tenaculum below the peritoneal fold while it is being incised, and until the speculum is introduced and its blades opened. The tenaculum is then withdrawn. The open, widely fenestrated wire blades allow the best view; do not cover up portions of the surface against which they rest, and give room between their sides for the passage of instruments. * * *

The second step relates to a device for the removal of the growths, and is based on the assumption that when practicable, it is desirable to effect their removal by galvano-cautery action. The instrument shown in Fig. 9701 is designed as a more convenient and more easily applied form of cautery than we have at present.

It has the form of a short, right-angled, bladed pair of scissors, the curves of which are such that the burning surface, which is a platinum wire lying in the center of one of the blades, can be applied easily to a growth in whatever part of the bladder it may be situated. This is its principal advantage. The wire is insulated by a bit of slate of triangular form, upon the apex or inner surface of which it lies; the opposite blade is similarly furnished with another piece of slate. The triangular form of these bits of slate serves to protect the bladder wall from injury by the heated wire by holding it away from the mucous membrane by about one-eighth of an inch. The cautery can be passed between the blades of the speculum or through their sides, and the growth seized and burned off; as an extra precaution against burning the bladder wall, it is well to interrupt the current frequently, especially if dealing with a tough-based growth, which requires sometime to burn through. * * *

[Francis S. Watson, M. D., Boston, in a System of Genito-Urinary Diseases, Syphilology and Dermatology, Vol. I. Genito-Urinary Diseases.]

9700. Watson's Bladder Speculum	\$12 00
9701. Watson's Cautery Scissors	20 00

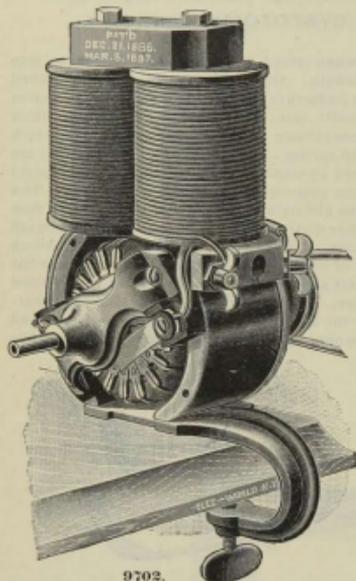
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-SURGICAL.

ELECTRIC MOTOR OUTFITS.

THE C. AND C. ELECTRIC MOTOR.

FOR THE RUNNING OF DENTAL ENGINES, STATIC MACHINES, NASAL DRILLS AND BURRS, AND WHEREVER A SMALL MOTOR EQUAL TO MAN-POWER CAN BE ADVANTAGEOUSLY USED.



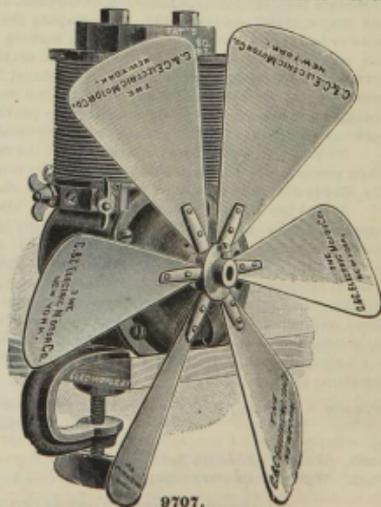
9702.

9702.	C. and C. Electric Motor.....	\$20 00
9703.	Flexible Shaft and Hand-piece.....	15 00
9704.	Connecting Cords, with interrupting Push Button.....	5 00
9705.	A Complete Outfit, consisting of C. and C. Motor, flexible shaft, hand-piece and 2 burrs, connecting cords and push button.....	40 00
9706.	C. and C. Electric Motor, arranged for use with Edison Current.....	35 00

C. AND C. MOTOR AND FAN OUTFIT.

The Fan manufactured expressly for use with this Motor will be found a wonderfully convenient and effective means of creating a circulation of air, or throwing a stream of air upon a patient, and is particularly useful in the sick-room. It is like a large pin-wheel, and is fastened by a set-screw directly upon the shaft of the Motor. It revolves noiselessly. The blades are placed at an angle so that the Fan acts on the air as a propeller.

9707. C. and C. Motor and Fan Outfit..... \$27 00



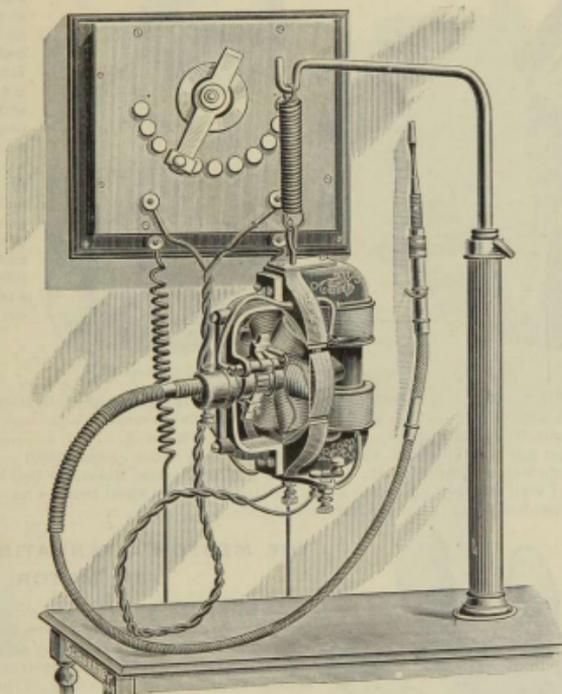
9707.

ELECTRO-SURGICAL.

ELECTRIC MOTOR OUTFITS.

THE EDISON SURGICAL MOTOR OUTFIT.

Comprising: Motor, with Suspension Spring and Coupling; Flexible Shaft, with Extra Flexible Extension and Hand-piece; Regulating Motor Rheostat and Connecting Cords to Motor; Adjustable Standard, with Bent Arm.



9708.

9708. Edison Surgical Motor Outfit, complete.....\$42 00

PRICES OF SEPARATE PARTS.

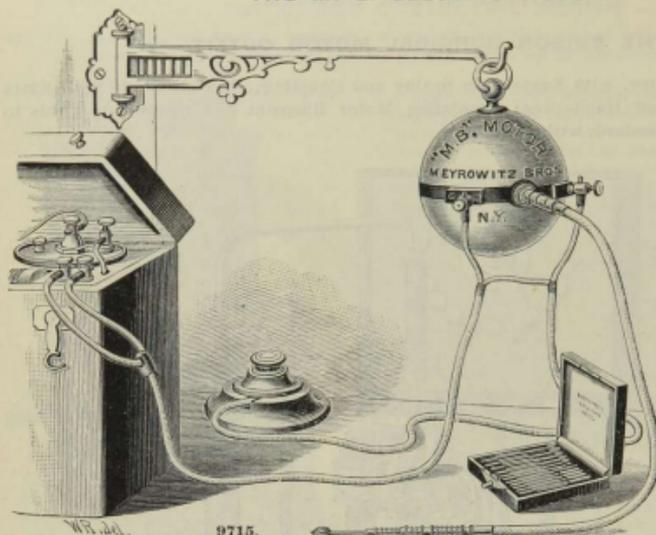
Motor with Coupling and Suspension Spring	\$15 00
Flexible Shaft with Extra Flexible Extension and Hand-piece.....	17 00
“ “ with Hand-piece but without Extra Flexible Extension.....	15 00
Adjustable Standard, with Bent Arm.....	6 00
Regulating Motor Rheostat.....	6 00

9709. Battery of 6 Edison-Lalande Cells, Porcelain Jars, Type P, with charge for same,
which will run motor 200 hours with absolutely no attention... 29 00

This battery is also suitable for cautery work when used with a Regulating Cautery Rheostat made specially for this purpose, which could be supplied, together with heavy leads and cautery cords, at an extra cost of \$16.00.

9710. Battery of 6 Edison-Lalande Cells, Porcelain Jars, Type K, with charge for same,
which will run motor 100 hours.....\$17 00

ELECTRO-SURGICAL.
ELECTRIC MOTOR OUTFITS.
THE M. B. ELECTRIC MOTOR.



This motor has been especially designed for operations upon the nose and teeth. It is made in the shape of a highly finished nickel-plated sphere, with all its mechanism perfectly protected and hidden from view. It is 5 inches in diameter and weighs only 6½ pounds complete with flexible shaft and hand-piece. The motor presents a compact and elegant appearance; it can be suspended from a bracket and swung in any position, or placed upon a table, as may be desired by the operator.

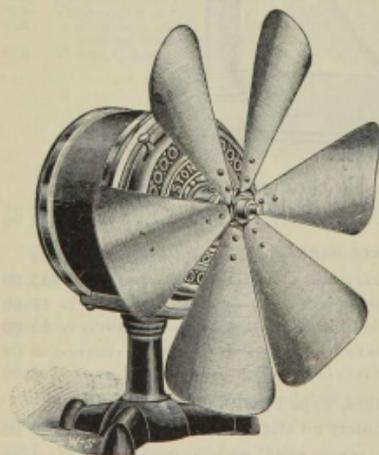
9711.	The M. B. Electric Motor, for operating Burrs, Drills and Trephines with M. B. Storage Battery, \$20 00	
9712.	“ “ “ “ for use with Edison Incandescent Current.....	35 00
9713.	Flexible Shaft, Hand-piece, 2 Burrs or Drills, fitted to any Motor.....	15 00
9714.	Wall Bracket with Swinging Arm, to hold motors, as shown in cut, nickel-plated.....	5 00
9715.	M. B. Electric Motor Outfit, No. III., consists of 1 M. B. Electric Motor, 1 4-Cell M. B. Storage Battery, 1 Wall Bracket, 1 Flexible Shaft and Hand-piece, 4 Nasal Drills, 4 Nasal Trephines and 1 Conducting Cable and Push Button, complete.....	120 00

THE MESTON ALTERNATING CURRENT
FAN MOTOR.

To be cool during the hot and sultry days of summer is equally as desirable as to be warm in winter. We have secured this comfortable result by using the Meston Fan Motor, and can recommend the instrument to our friends among the profession. Thousands of them are in constant service, and their users are universal in their recommendation of them. The Meston Fan Motor is the only one possessing a regulating and reversing device.

MESTON'S REVOLVING FAN MOTOR.

For small offices, drug stores, and more especially hospitals and the sick-room, where continuous ventilation is desired, the motor shown in Fig 9718 is particularly desirable, and, when mounted on a pedestal, at once makes a neat and attractive ornament, as well as producing a regular and gentle ventilation throughout the room. The entire motor revolves on its base 20 to 25 times per minute, throwing a mild current of fresh air 10 to 15 feet in every direction.



9716.	Meston's Alternating Current Fan Motor, Nickel-plated.....	\$35 00
9717.	“ “ “ “ “ “ Polished Bronze.....	30 00
9718.	“ “ “ “ “ “ Polished Bronze.....	40 00
9719.	“ “ “ “ “ “ Wire Guard for Motor, add, for Nickel-plated.....	7 00
9720.	“ “ “ “ “ “ Polished Brass.....	5 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

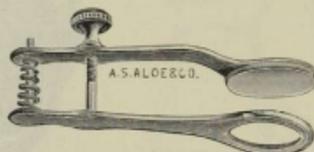
ELECTRO-SURGICAL.

ACCESSORIES FOR USE WITH ELECTRIC MOTORS.

A NOVEL HÆMOSTATIC SEPTAL COMPRESSORIUM AND TUBULAR CROWN DRILL.

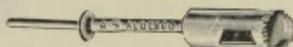
BY WILLIAM C. JARVIS, M. D., New York.

The annoyance caused by the occasional occurrence of persistent nasal hæmorrhage in operations upon the septum has induced me to construct the little hæmostatic device pictured below, which is a modification of my nasal clamp described in the Medical Record for May, 1885. It is composed of two steel bars, pivoted at one extremity, and fitted with a screw nut for opening and closing the blades. The face-plate of one blade is capped with rubber, which acts as a cushion for the reception of the tissues pressed against it by the opposite or ring-



9723.

blade, also properly cushioned. Various portions of the septum can be brought within the opening of the steel ring and successively exposed to the operator's view. The blades come apart throughout the entire extent of the instrument to facilitate prompt and thorough antiseptic cleansing of its several parts. The peculiar immunity from hæmorrhage and pain (by the practice of Corning's method) exhibited in a case recently treated by me encourages the belief that this little device must prove a useful addition to the septum armamentarium.

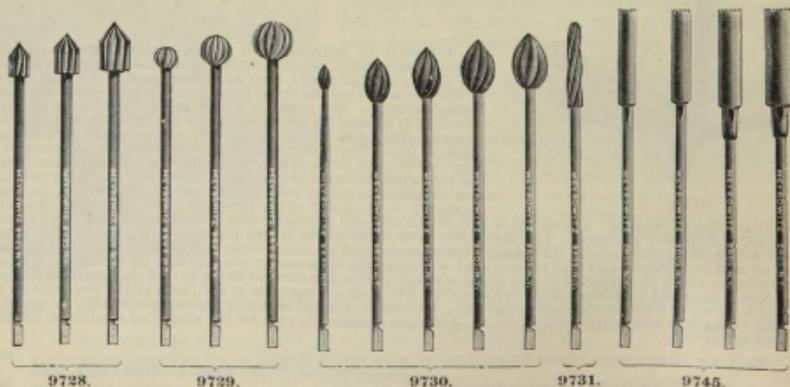


9732.

An aseptic Crown Drill shown in Fig. 9732 has proved, in my hands, a useful device for cutting away septal obstructions.

A steel knife blade located just below the serrated margin of the drill breaks up the osseous and cartilaginous core, and the resultant detritus is eventually discharged through a window cut in the side of the instrument. This device enables one to obtain the advantages of the anterior action of the trephine without the objectional features possessed by Dr. Curtis' instrument, due to the retention of the excised core within the nostril or the drill itself.

[Extract from New York Medical Journal, June 7, 1890.]



9728.

9729.

9730.

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9745.

ELECTRO-THERAPEUTIC.

ELECTRO-MEDICAL APPARATUS.

THE CHLORIDE OF SILVER DRY CELL BATTERIES.

THE ADVANTAGES THE MANUFACTURERS CLAIM FOR THEM ARE:

1. Compactness and portability; a 50 cell Galvanic Battery, that has an electro-motive force of more than fifty volts, with electrodes, cords, rheostat, tray and mahogany case, 6x7x10 inches, complete, weighs not more than 11 pounds; and the weight of a 50 cell Combination Battery, having a powerful Faradic Coil in same box, is but a trifle more. The inestimable benefit to physician and patient alike of so complete and powerful an electrical outfit, that can be freely and easily carried wherever necessary, needs no argument.

2. Cleanliness. This point necessarily follows from the absence of all fluid and the hermetic sealing of the cells. Caustic and corrosive liquids being out of the way, there is no reason but what the batteries must remain clean at all times.

3. Convenience and rapidity of action. No battery can be as conveniently and quickly operated as these. With them it is only necessary to open the box, connect the electrodes, when the current instantly develops upon final closure of circuit. Reverse the process: open the circuit, disconnect the electrodes, and current, together with waste of elements, at once ceases.

4. Constant and uniform current. Steady work does not weaken the strength of current or cause it to fall in the slightest. After two or more years of regular use, due trial and strict examination shows that the Chloride of Silver Dry Cell Constant Current Batteries produce the same even, steady flow of electricity as when just finished. No other practical form of medical battery ever has done or can do that; a few minutes to an hour is quite sufficient to exhaust the power of any of them, from the Bi-Chromate up.

5. Extreme durability. This follows as a matter of course from what has been said above; the simplicity of the apparatus and absence of parts liable to wear, loss or breakage, as well as of fluid to evaporate, corrode or destroy metal and connections; preservation of the elements and prevention of all waste whilst the battery is not in use; superiority in respect to lasting quality is beyond question. No repairs are ever necessary, and the life of a Constant Current Chloride of Silver Dry Cell Battery is only limited by the actual amount of work it does. This work, after two or more years, finally reduces the elements, when the inner cases, with their exhausted cells, can, at a nominal cost, be exchanged for new cases, containing entirely new cells, and the battery at once becomes precisely as good and powerful as ever.

GENERAL DESCRIPTION.

Each instrument consists of a number of Chloride of Silver Dry Cells, hermetically sealed, arranged in series and encased in a japanned metallic box to themselves, leaving nothing exposed but the connecting pins and nuts securing them to box-top.

When the elements are exhausted, this metal case and contents is the part which is renewed—a matter of mere exchange of one set of elements for another, so simple that no time is lost and labor greatly economized thereby. The cost of renewal is but 30 cents for each galvanic cell.

These inner-cell cases are now placed in hard-wood, handsomely finished and polished outer battery boxes, from which they can be readily removed at any time by lifting studs; and are finally covered by loose, hard-rubber plates, through which the connecting pins themselves alone project. Each of these top plates is regularly numbered from 0 up to total number of cells in the battery.

ELECTRO-THERAPEUTIC.

ELECTRO-MEDICAL APPARATUS.

THE CHLORIDE OF SILVER DRY CELL BATTERIES.

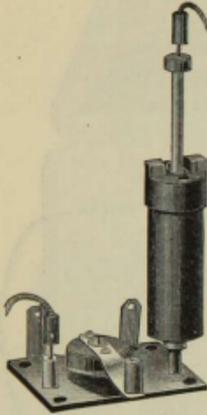


Fig. 1.



Fig. 2.

Galvanic Batteries of 24 or more cells have, in addition to the preceding parts, the following accessories:

1. A Current Reverser, shown in Figure 1. This is a hard-rubber plate, secured within the box-top; has two metal posts with conical sockets to take free ends of electrode conducting cords, a lever or switch for making and-breaking—closing and opening—the circuit, as well as for changing the poles; and two short fixed cords for uniting it with the cells.

2. A Water Rheostat, shown in Figure 2, and also in Figure 1, in position on the current reverser. This is of hard-rubber, has removable screw cap for putting in fluid, a socket below to take either of the metal posts of current reverser, and a small socket in top of its piston to receive electrode conducting cord.

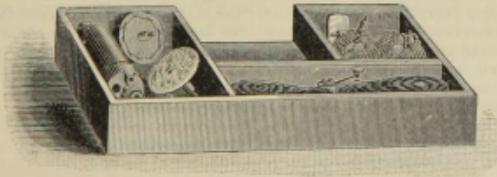
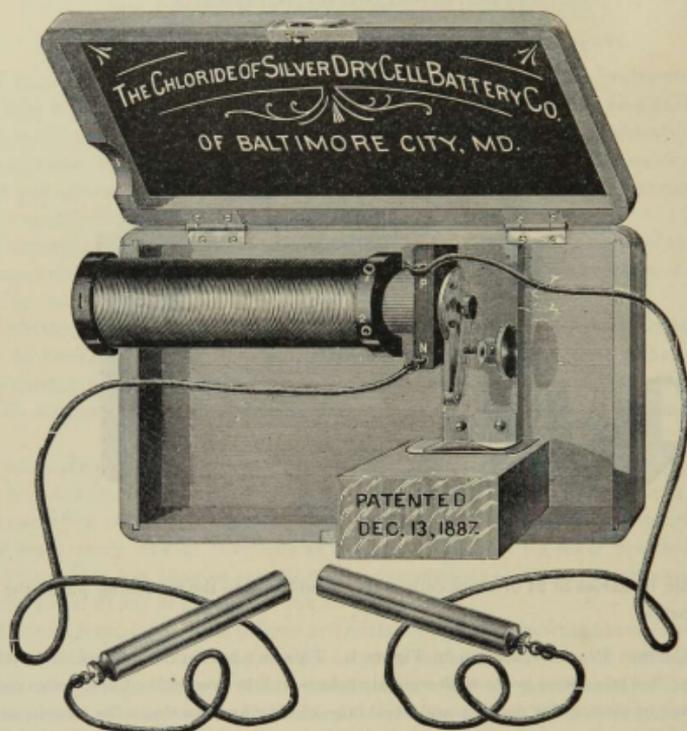


Fig. 3.

3. A strong and durable Tray, shown in Figure 3. This fits within the box-top, and as the cut explains itself, needs no particular reference here.

ELECTRO-THERAPEUTIC.
ELECTRO-MEDICAL APPARATUS.
THE CHLORIDE OF SILVER DRY CELL BATTERIES.



9748. "THE LORD BALTIMORE" FAMILY BATTERY, No. 7A.

Very frequently physicians prescribe faradic batteries for their patients, and the intelligent doctor being fully aware that those which we manufactured were the cheapest, provided quality was taken into consideration, did not hesitate to recommend the purchase of a Chloride of Silver Dry Cell Faradic Battery. When, however, such an order reached our agents, it was found that a \$10 battery was the cheapest that could be obtained, and many customers not having this amount to spend, were compelled to buy an antiquated troublesome acid or fluid battery. Thinking that a poor man has as much right to possess a good battery as a rich man, we have constructed an instrument at a price within the reach of all, as shown in cut above. It meets all the requirements of a cheap but first-class machine. The case is of hard-wood, highly polished, and measures only 4x5x2 inches. It is not only the best made and cheapest faradic battery on the market, but it is also the most economical to maintain. No destructive acid, no corrosive materials. It is a comfort at home, and invaluable while traveling. It is so simple that a child can use it.

To start the current it is only necessary to place the cell-block between the metal springs in such a way as to bring them and the metal strips on the sides of the block in good contact. See that the buzzer spring is properly adjusted, and the battery will work without further trouble or interference.

Owing to the care with which this battery is made, the currents are perfectly smooth. It will furnish a primary, a secondary or a combined current, as desired. All three of the currents can be modified to suit the most delicate child, and can be increased to suit the requirements of the most robust man. The apparatus is provided with a pair of conducting cords and a pair of handsome nickel-plated electrodes.

In this battery we have solved the problem of making a strictly first-class instrument at a very moderate cost, and we are convinced that, taking into consideration its many excellent qualities, its completeness and its fine finish, it is the cheapest battery on the market to-day.

Price of Battery, complete..... \$6 50
Price for renewing and restoring Cell-Block..... 75

Life of Battery Cell, 40 hours.

ELECTRO-THERAPEUTIC.

ELECTRO-MEDICAL APPARATUS.

THE CHLORIDE OF SILVER DRY CELL BATTERIES.



9749. PHYSICIANS' POCKET FARADIC BATTERY, No. 7.

This instrument is designed for the use of families as well as physicians, and is extremely handy, compact, durable, and simple in its mechanism. It is put up in a handsome hard-wood box, $8\frac{1}{2}$ inches long by $4\frac{1}{2}$ inches wide and 2 inches deep, and furnished with a pair of conducting cords, one pair carbon electrodes, one pair ebonite handles and one pair hollow metal electrodes. The induction coil, giving three currents—primary, secondary and combined—is of superior make and finish, and has no equal anywhere, in the uniformity and smoothness of its current.

The cell of this battery will work 100 hours continuously and costs $1\frac{1}{2}$ cents per hour to operate. Each cell is secured in position on floor of the box by a vertical pin passing through it and held there by the large set-screw shown in cut.

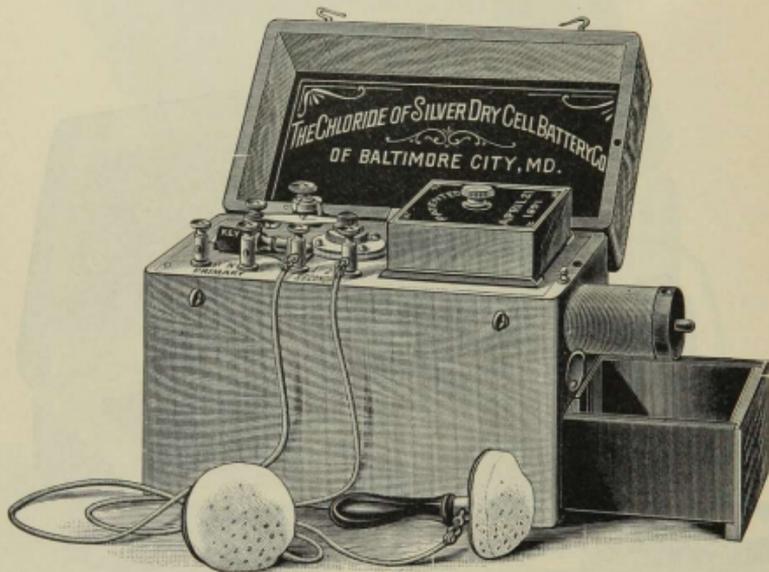
Price of Battery, complete.....	\$10 00
Charge for renewing and restoring Cell-Block.....	1 50

In this battery we have met the want which every physician recognizes—an instrument of the type commonly known as the Pocket Battery—of beautiful finish and low price, with every quality satisfactory to the user, and with all the trouble and nastiness of the wet cell entirely banished. This Battery is a genuine triumph in this direction, combining perfection in every detail, together with a permanently closed dry cell, which in the use of the battery does not have to be touched or treated in any way. We are sure these points will appeal to the experience of every one who has used or desires to use a pocket battery.

ELECTRO-THERAPEUTIC.

ELECTRO-MEDICAL APPARATUS.

THE CHLORIDE OF SILVER DRY CELL BATTERIES.



9750. "UPRIGHT" FARADIC BATTERY No. 6A.

This instrument, designed especially for physicians visiting use, is one of the latest productions of the manufacturers, and is a very complete and beautiful battery. It is put up in a handsomely finished mahogany case, $7\frac{1}{2} \times 7 \times 5$ inches, and all the metal parts are highly nickel-plated.

This battery has a very powerful induction coil, and a four cell-block, producing a steady and uniform current of three kinds—primary, secondary and combined. The coil is four inches in length, enabling the operator to make very fine divisions of the current strength, the force of which can be easily modified and made delicate enough for the most nervous, or sufficiently strong for the most robust patient.

A roomy compartment has been provided in the lower part of battery case, in which will be found one pair insulated handles, one pair sponge electrodes, one pair hollow metal handles and one pair of silk covered conducting cords.

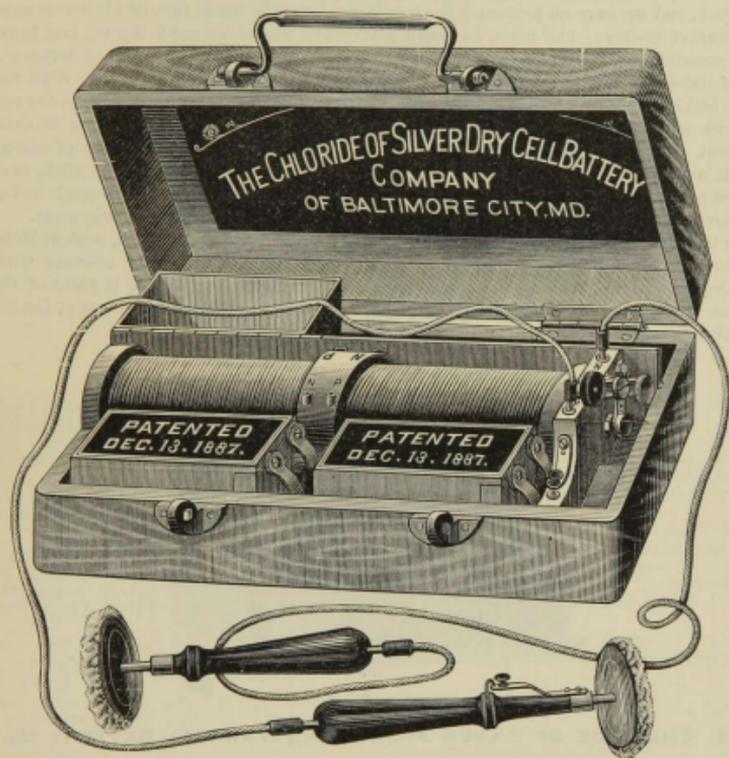
The cells of this battery will work 100 hours continuously, and cost but $1\frac{1}{2}$ cents for each hour of actual service.

Price of Battery complete.....	\$ 15 00
Charge for renewing and restoring Cell-Block.....	1 50

ELECTRO-THERAPEUTIC.

ELECTRO-MEDICAL APPARATUS.

THE CHLORIDE OF SILVER DRY CELL BATTERIES.



9751. CHLORIDE OF SILVER DOUBLE COIL FARADIC BATTERY No. 5.

An elegantly finished, compact instrument. Metal parts of the best material possible. Carefully adjusted and handsomely nickel-plated. It has two hermetically sealed cells, either one or both of which can be used as required. A DuBois-Reymond system induction coil, with interchangeable fine and coarse wire winding for secondary current on the outer bobbin; wire horse shoe, for bringing primary current into circuit; plain and interrupting handles with best quality sponge electrodes and conducting cords, etc.

Put up in handsome hard-wood box, with patent self-locking handle which securely fastens the box and lid as soon as it is shut and attempt made to lift it.

The cells of these batteries will work 100 hours continuously and cost $1\frac{1}{2}$ cents per hour to operate.

Price of Battery, complete.....	\$20 00
Charge for renewing and restoring Cell-Blocks.....	1 50

ELECTRO-THERAPEUTIC.

ELECTRO-MEDICAL APPARATUS.

THE CHLORIDE OF SILVER DRY CELL BATTERIES.

The accompanying cut is a good illustration of this new battery, which is now ready for the market, and we have no hesitancy in claiming it to be the finest faradic electrical apparatus on the market to-day. The price has been placed at a very reasonable figure, and those who wish to secure a most complete and valuable instrument, are now in position of doing so.

The battery is composed of three cell blocks, capable of furnishing a very wide range of current, and by means of the switch immediately to the front of the vibrator spring, the operator can throw either one, two or the whole three cell-blocks in circuit; this being an extremely convenient arrangement, as, in the majority of cases but a moderate degree of strength is required, and it is thus possible to use one or two of the blocks for ordinary work, reserving the third for special cases, requiring a very strong current. Careful management will permit the owner to economize the life of the cells, very much by means of this arrangement.

The instrument is provided with a primary and four distinct secondaries, with switches for controlling each, while provisions have also been made for combining the primary with each one of the secondaries, thus securing nine different currents. The switch in front of the first cell-block is the current reverser, and the ivory button immediately to the left of the binding post is the current breaker, for making and breaking the current.



9752. CHLORIDE OF SILVER PHYSICIANS' FARADIC BATTERY No. 8.

It will be noticed that there are no coils exposed to view; these are concealed under the battery plate, and the current strength is increased or diminished by means of a "Willms" dry current controller, which is placed in the circuit. Special attention is requested to this arrangement, for we are the first house in the world to place a portable faradic apparatus on the market, in which the current is controlled in this manner, and it is so infinitely superior to the old method of varying the current by moving one coil over the other, that there is really no comparison between the two. In using the current controller, the increase or decrease of strength is so gradual that it is much more pleasant for the patient, and this can be specially noticed in mucous membrane and other sensitive portions of the human body.

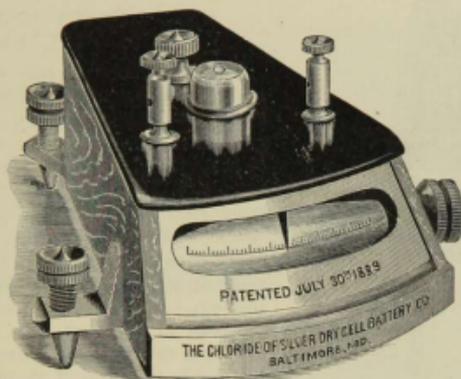
The battery and mechanical parts composing the instrument are enclosed in a finely-polished mahogany case, and the latter is provided with our patent self-locking handle, of same pattern as that which we use on the double coil battery No. 5. Size $15\frac{1}{4} \times 9\frac{1}{2} \times 6$ inches.

Life of each Cell-Block when used separately 100 hours, or an average life of about 150 hours for the three.

Price of Battery complete.....	\$30 00
Charge for renewing and restoring each Cell-Block.....	1 50

ELECTRO-THERAPEUTIC.
ELECTRO-MEDICAL APPARATUS.

THE CHLORIDE OF SILVER DRY CELL BATTERY CO.'S MIL-AM-METER.



9753.

Experience has demonstrated to us just what are the desirable features to be embodied in an instrument of this kind, as will be recognized from the following:

1st. An absolute electrical meter should be accurate. The best conditions for this accuracy are the use of short magnetic needles in connection with a long pointer. In our meter the magnetic needles are less than one inch long, while the pointer—made of aluminum for lightness—is four inches long, thus securing an extended indication on the scale for a very slight movement of the needles.

2d. Such a meter should be as free as possible from changes due to changes of time and surroundings. This double object we accomplish by employing a horizontal movement and an astatic system of magnetic needles, controlled by a fixed magnet, which is permanently under the influence of an armature or keeper, for preserving a uniform degree of magnetism. Such a system of needles is free from the influence of the earth's magnetism and is the most constant in its action.

3d. Friction must be entirely absent. This we accomplish by the use of a perfectly-pointed steel pivot, working in a concave jewel, as in the best absolute galvanometers known to electricity.

4th. The free parts of the instrument must be provided against accidental displacement. This is attained by a simple detail of mechanism, so that the magnetic needles cannot get off the pivot, even if shaken wrong-side up or otherwise roughly used. A simple locking device also provides for lifting the needles from the pivot and holding them fixed for transportation.

5th. A physician's milliamperemeter should be readable from either a sitting or standing position. In our meter we pitch the face at the front at an angle which satisfactorily meets these points.

6th. The perfect meter should have a wide range of measurement. This has been obtained in all other meters by a complicated and troublesome method of shunts, either by switches or plugs, involving the use of various multipliers in connection with a fixed scale.

In this meter, by an entirely new and wonderfully simple arrangement, we have provided for the widest possible compass, together with direct reading scales. Three independent reading scales are stamped at equal distances apart on the three faces of a celluloid roller. One of these scales is marked to 5 milliamperes, divided into halves. The second scale is divided into 25 milliamperes, and the third scale reads up to 250 milliamperes. This roller is placed in the face of the meter, under the end of the pointer, on a shaft which passes through the side of the case, and terminates in a button by which the roller may be turned.

In connection with this roller is a novel device inside the case, by which, when the roller is turned so as to bring any one of the three scales to view under the pointer, the connections within the case are automatically adjusted so as to cause the meter to read directly and accurately, according to the scale so exposed to view. By this means the physician is saved the trouble of using multipliers with his scale readings, and has at command three separate scales meeting every desirable case, and each scale reading his measurements directly.

9753. Chloride of Silver Dry Cell Battery Co.'s Mil-Am-Meter..... \$ 30 00

ELECTRO-THERAPEUTIC.

ELECTRO-MEDICAL APPARATUS.

THE CHLORIDE OF SILVER DRY CELL BATTERIES.

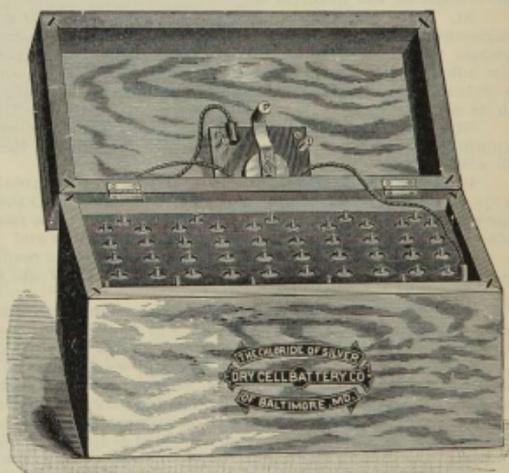


9756.

9754.	Chloride of Silver 6 Cell Family Galvanic Battery, size $4\frac{1}{2} \times 4\frac{1}{2} \times 5$	\$10 00
9755.	“ “ “ 12 “ “ “ “ “ “ $5\frac{1}{2} \times 5\frac{1}{2} \times 5$	15 00
9756.	“ “ “ 16 “ “ “ “ “ “ $5\frac{1}{2} \times 5\frac{1}{2} \times 5$	20 00

**CHLORIDE OF SILVER
PHYSICIANS' GALVANIC
BATTERY.**

This is a constant current battery, designed especially for physicians' use. It is put up in a very handsome, light hard-wood box, 6x7x10 inches. Metal parts are all finely finished and nickel-plated, and each battery is provided with a hard-rubber switch-board for making and breaking the current and changing the poles; a water rheostat, one plain and one interrupting handle, conducting the cords and best quality sponge electrodes.



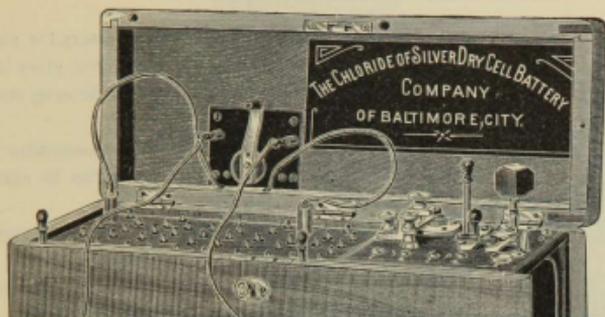
9759. Case open, ready for work.

9757.	Chloride of Silver 24 Cell Physicians' Galvanic Battery.....	\$38 00
9758.	“ “ “ 32 “ “ “ “ “ “	45 00
9759.	“ “ “ 50 “ “ “ “ “ “	65 00
9760.	“ “ “ 60 “ “ “ “ “ “	75 00
9761.	“ “ “ 84 “ “ “ “ “ “	95 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.
ELECTRO-MEDICAL APPARATUS.

THE CHLORIDE OF SILVER DRY CELL BATTERIES.



REDUCTIONS IN PRICE

OF THE GALVANIC BATTERIES MANUFACTURED BY
THE CHLORIDE OF SILVER DRY CELL BATTERY CO.

No. 9757.	Chloride of Silver 24 Cell Galvanic Battery	\$27 00
No. 9758.	“ “ 32 “ “ “	35 00
No. 9759.	“ “ 50 “ “ “	50 00
No. 9760.	“ “ 60 “ “ “	60 00
No. 9761.	“ “ 84 “ “ “	82 00
No. 9762.	Chloride of Silver 24 Cell Combination Battery	47 00
No. 9763.	“ “ 32 “ “ “	55 00
No. 9764.	“ “ 50 “ “ “	70 00

NOTE ADVANCE IN PRICE OF

No. 9752.	Chloride of Silver Physicians' Faradic Battery No. 8.....	35 00
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The Faradic part of this Battery contains three cell-blocks, which are arranged in the box in such a manner as to admit of either one, two or three being used at a time. For special work requiring a very heavy current, the whole three may be employed; but as ordinary work requires but a moderate degree of strength, it will not be necessary to use more than one or two of them in most cases. The advantages possessed by this arrangement will be apparent to all, as it permits a careful man to economize the life of his cells very much. This portion of the Battery is also provided with a current reverser, current breaker, and yields a steady and uniform current of three kinds, primary, secondary and combined, while the arrangements for increasing and modifying the current strength are perfect.

9762.	Chloride of Silver 24 Cell Combination Battery.....	\$ 58 00
9763.	“ “ 32 “ “ “	65 00
9764.	“ “ 50 “ “ “	85 00

Other sizes to order at short notice.

The Galvanic part of these Batteries have a capacity of about 720 hours of actual work, based on the average resistance offered by the human body, which is generally conceded to be about 3000 ohms.

The Faradic Cell-Blocks have a life of about 100 hours when all are used together, and this may be materially increased by following the directions for manipulating them, given above.

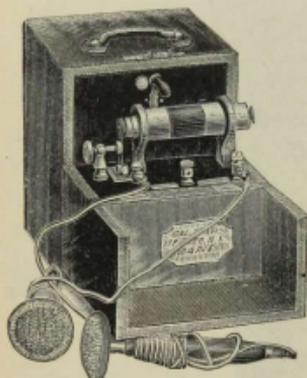
CHARGES FOR RENEWING AND RESTORING.

For each Galvanic Cell	\$ 0 30
For each Faradic Cell-Block to Combination Battery.....	75

ELECTRO-THERAPEUTIC.

GALVANO-FARADIC MFG. CO.'S ELECTRO-MEDICAL APPARATUS.

CLOSED CELL FARADIC BATTERIES.



9765.

This is a very convenient form of battery for physicians' or family use. It has the rapid vibrator, gives three variations of the faradic current, and is sufficiently strong for ordinary treatment.

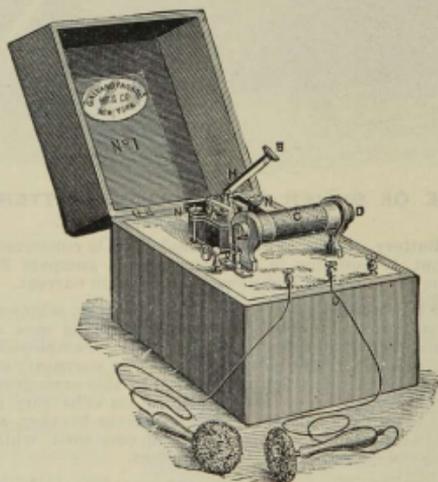
The cell contains a solution of sal-ammoniac and water, and is sealed so that the battery can be carried about without danger of leakage.

To start the battery into action, it is only necessary to change the switch from one button to another.

The battery will run for months without attention. The renewal of the solution and zinc is inexpensive.

Furnished in a polished oak or black walnut case, with handles, cords and sponge-covered metallic discs.

9765. G. F. Closed Cell Faradic Battery..... \$12 00 ||



9766.

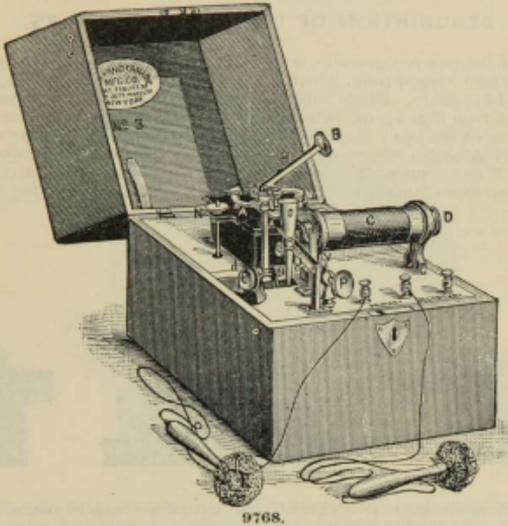
ELECTRO-MAGNETIC MACHINES.

The Nos. 1 and 2 Machines are especially adapted for family use, although frequently used by physicians as a visiting battery. They have the rapid vibrator, by which the current is modified so as to seem almost continuous, and can be administered without pain. They have both primary and secondary coils, and give three variations of the current. Furnished in polished oak or black walnut cases, with handles, cords and sponge electrodes.

9766. G. F. Electro-Magnetic Machine, No. 1.....\$10 00 ||
 9767. " " " " No. 2..... 15 00 ||

SEND FOR GALVANO-FARADIC MFG. CO.'S COMPLETE CATALOGUE.

ELECTRO-THERAPEUTIC.
 GALVANO-FARADIC MFG. CO.'S ELECTRO-MEDICAL APPARATUS.
 ELECTRO-MAGNETIC MACHINES.



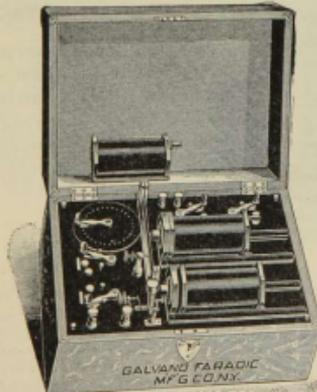
9768.

The No. 3 Machine is more desirable for a physician. It has a large coil, gives three variations of the current and has both rapid and slow vibrators, the latter being valuable in producing muscular contractions. This can be regulated so as to give slow and distinct shocks as well as quick vibrations, at the will of the operator. Furnished in polished oak or black walnut cases, with handles, cords and sponge electrodes.

9768. G. F. Electro-Magnetic Machine, No. 3..... \$20 00

THE GOELET FARADIC BATTERY.
 (PATENTED)

This is our latest improved form of Faradic apparatus, having three secondary coils of different sizes and lengths of wire. The rapid vibrator or "Singing Rheotome" is an important feature of the battery. This is a thin metal ribbon, fastened permanently at one end and at the other attached to a screw lever by means of which the tension of the ribbon may be increased so as to produce the most sedative effect. The motive power is supplied with four dry cells, connected in series with a rheostat which regulates the current. Provision is also made for operating the coils with other cells in the office, and reserve the dry cells for occasions when it is necessary to carry out the battery. This battery is not only particularly adapted for the Gynecologist, but for the general practitioner it has no equal.



9769.

9769. Goelet's Faradic Battery.....net, \$50 00
 9770. Hutchison's Faradic Battery, for Electrical Anæsthesia..... " 35 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.

GALVANO-FARADIC MFG. CO.'S ELECTRO-MEDICAL APPARATUS.

DESCRIPTION OF GALVANIC BATTERIES.

In the bottom of the box is a movable tray in which the cells are placed (see Fig. 1.) This tray is controlled by two hinged rods, which are fastened to it, and these by two lifting rings at the ends of the rubber table. These rings being screwed tightly down, hold the cells firmly against the hydrostat (see Fig. 2), or, being loosened, allow the hydrostat to be removed from the front of the center of the box; they also serve as handles to lift the tray of cells.

The zinc and carbon plates are arranged in couples and fastened to a base under the rubber table (see Fig. 3). Wires connect the elements with the button within the circles on the rubber table, each button corresponding to a cell. These wire connections being incased, the fumes

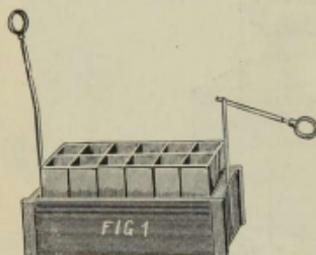


Fig. 1.

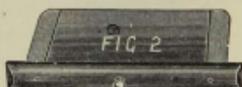


Fig. 2.



Fig. 3.

from the fluid cannot reach them; consequently no corrosion can take place, and the battery is always ready for use. To use the battery, draw out the hydrostat and raise the tray of cells, thus immersing the elements in the fluid. To bring any required number of cells into the circuit, turn the current selectors to the figures marked on the circles. Before the selector leaves one button it rests on the next, thus insuring a gradual increase of the current without the possibility of a shock. All of our galvanic batteries are provided with a commutator or polarity changer. The hydrostat is perfect, and these batteries can be carried about without danger of spilling the fluid.



9771.

GALVANIC BATTERIES WITH RHEOTOME ATTACHMENT.

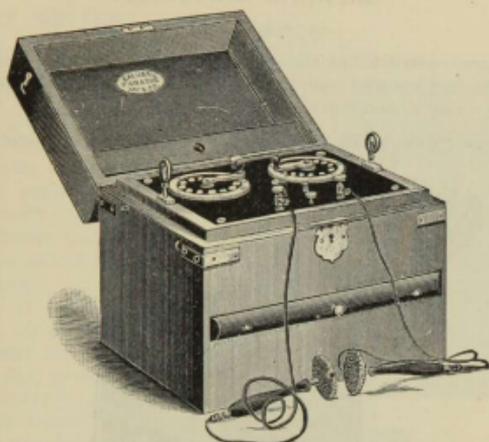
These batteries are provided with our new Automatic Rheotome. This accessory is for the purpose of interrupting the galvanic current, and may be used to advantage when it is desired to obtain a powerful muscular stimulation.

9771.	G. F. 12 Cell Galvanic Battery	.....	\$30 00
9772.	G. F. 16 " " " "	.....	35 00
9773.	G. F. 24 " " " "	.....	50 00
9774.	G. F. 32 " " " "	.....	60 00
9775.	G. F. 36 " " " "	.....	70 00
9776.	G. F. 24 " " " "	.....	70 00
9777.	G. F. 32 " " " "	.....	60 00
9778.	G. F. 36 " " " "	.....	70 00
		.....	80 00

SEND FOR GALVANO-FARADIC MFG. CO.'S COMPLETE CATALOGUE.

ELECTRO-THERAPEUTIC.

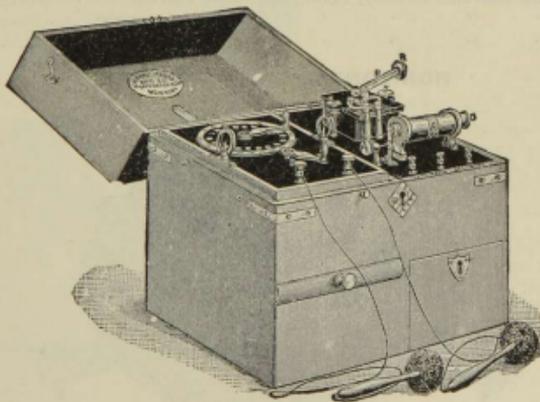
GALVANO-FARADIC MFG. CO.'S ELECTRO-MEDICAL APPARATUS.
GALVANIC BATTERIES.



9773.

Galvano-Faradic Mfg. Co.'s 24 Cell Galvanic Battery. This instrument is adapted for all purposes where a strong galvanic current is required. This battery, as well as all others listed on the opposite page, is furnished in highly polished oak or black walnut cases with handles, together with cords and sponge electrode handles.

COMBINED GALVANIC AND FARADIC BATTERIES.



9779.

Our instruments are made no larger by the combination. The combination of a galvanic battery with a faradic machine (or rather their being contained in the same case) enables the physician to use either form of current at will, and in this respect they are desirable especially for office practice or for the specialist.

9779.	G. F. 16 Cell Combined Galvanic and Faradic Battery.....	\$45 00 ||
9780.	G. F. 24 " " " " " "	60 00 ||

SEND FOR GALVANO-FARADIC MFG. CO.'S COMPLETE CATALOGUE.

ELECTRO-THERAPEUTIC.

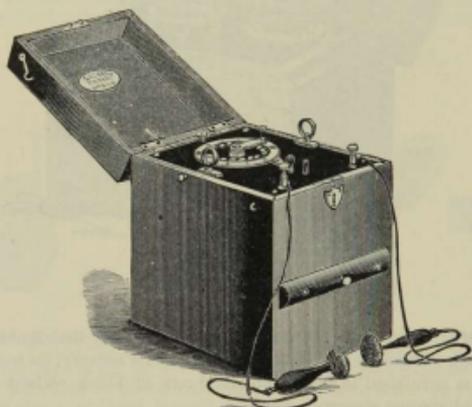
GALVANO-FARADIC MFG. CO.'S ELECTRO-MEDICAL APPARATUS.

GALVANIC BATTERIES.

IN PLAIN CASES.

These Batteries are constructed on the same principle as our other Batteries. While they are not equal in finish, they are well made, durable and reliable, and will meet the requirements of the physician who wants a good Battery at a low price.

Furnished in black walnut cases, with handles, cords and sponge-covered metallic discs.



9782.

9781.	G. F. 10 Cell Galvanic Battery, Plain Case (mild current).....	\$ 20 00
9782.	G. F. 20 " " " " " (medium current).....	30 00
9783.	G. F. 30 " " " " " (powerful current).....	40 00

HORIZONTAL MILLIAMMETER.



9784.

This is a desirable form of Meter, measuring from one to two hundred and fifty milliamperes. It is provided with leveling screws, and the case is made to revolve so that the needle may be easily and quickly adjusted to zero.

9784.	G. F. Horizontal Milliammeter	\$ 20 00
9785.	G. F. Vertical Milliammeter, measuring from 1 to 500	25 00

SEND FOR GALVANO-FARADIC MFG. CO.'S COMPLETE CATALOGUE.

ELECTRO-THERAPEUTIC.

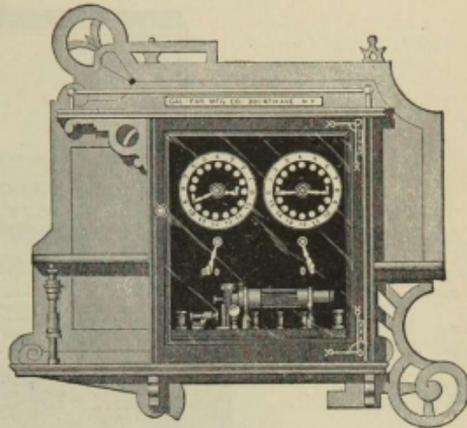
GALVANO-FARADIC MFG. CO.'S ELECTRO-MEDICAL APPARATUS.

WALL CABINET BATTERY.

Height, 23 inches; width, 28 inches; depth, 8 inches. This is a complete and compact office battery, and an ornamental piece of furniture. It may be arranged for any number of cells.

The Galvanic circles with double current selectors, by means of which any cell or series of cells may be used, Pole Changer and Faradic Switch are mounted on a vertical base of polished hard-rubber 12x14 inches.

The Faradic Coil is placed on a horizontal base; it has primary and secondary coils, rapid vibrator and slow interrupter, and gives three variations of the current. This is furnished in a polished cherry or oak case, with beveled plate glass door.



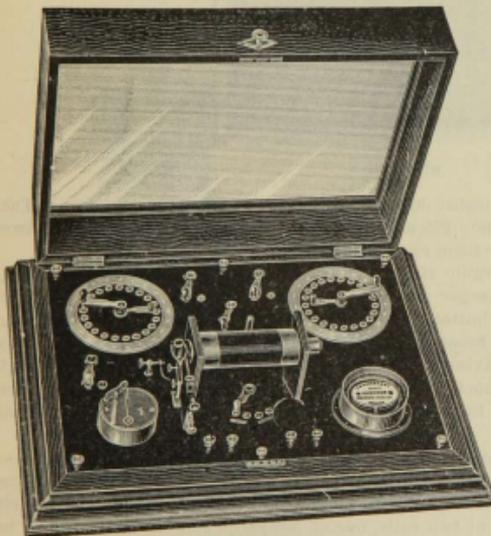
9786.

9786. G. F. Wall Cabinet, without Cells..... \$50 00 ||

OFFICE TABLE PLATE.
"STYLE A."

IN CASE.

This is a very complete and convenient form of battery for office use. The accessories consist of Double Current Selectors; Pole Changer, a DuBois-Reymond Faradic Coil, with two Interchangeable Secondary Coils, and having Rapid and Slow Vibrators, Faradic Switch, Milliammeter, measuring to two hundred and fifty milliamperes, and an Automatic Rheotome giving graduated interruptions. All parts are nickel-plated and mounted on a polished hard-rubber base 15x20 inches. The case is of polished oak, and has a beveled plate glass cover.



9787.

9787. G. F. Office Table Plate, Style A\$100 00 ||

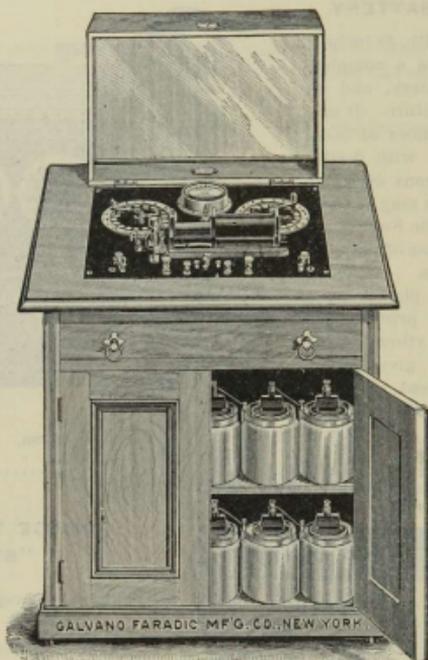
9788. " " " " " B. Has Criado Rheostat and is without Double Current Selectors, and is not put up in a case 75 00 ||

Specify the Fitch "Perfect" Battery when ordering Cells for an office outfit.

ELECTRO-THERAPEUTIC.

GALVANO-FARADIC MFG. CO.'S ELECTRO-MEDICAL APPARATUS.

THE PERFECTION OFFICE CABINET BATTERY.



9789.

This Battery is square in form, 37 inches high, 27 inches wide and 23 inches deep. The current is supplied from forty cells of the "Fitch Perfect Battery," which are arranged on two shelves, and doors are provided to make them easy of access.

The Switch Board contains the galvanic circles with double cell selectors, Milliammeter, DuBois-Reymond Faradic Coil, Pole Changer and other necessary switches. Heavy insulated copper wires connect the cells with the buttons within the circles; each button corresponding to a cell. The double cell selectors have broad flange bottoms and these slide from one button to another, always resting on one before leaving the other, so that a gradual increase of the current is insured without the possibility of a shock. This method of controlling the current obviates the use of a rheostat and also admits of the selection of any cell or series of cells and uniform use of the same.

The meter is direct reading and measures from one to two hundred and fifty milliamperes. The case is made to revolve, so that the index needle may be readily adjusted to zero. The Faradic coil has a sliding secondary coil wound with 1000 yards of No. 32 copper wire which is tapped at 500 yards, giving the effect of two coils, one of 500 yards and one of 1000 yards in length. It is fitted with a rheotome, giving rapid interruptions, and a slow vibrator by means of which the interruptions may be graduated.

The Cabinet is made of polished oak, has a large drawer and a glass cover; is mounted on wheels and furnished with a pair of sponge covered electrodes, handles and conducting cables.

9789. G. F. Perfection Office Cabinet Battery.....net, \$100 00

The Fitch Perfect Battery is the best Cell for Office Use.

ELECTRO-THERAPEUTIC.

GALVANO-FARADIC MFG. CO.'S ELECTRO-MEDICAL APPARATUS.

THE FITCH PERFECT BATTERY AND PERFECT BATTERY EXCITANT.

THE BEST OPEN CIRCUIT CELL IN EXISTANCE.



9790.

It is the summit of perfection, possessing every desirable quality to a degree not approached by any other, and without a single undesirable or troublesome feature.

Its unequalled cleanliness and handsome appearance make it suitable for, and ornamental in any finely finished office. A perfectly reliable, efficient, constant, uniform and ever-ready source of current, requiring no care whatever, except for renewals of excitant and zinc, which cost only a few cents per cell, at intervals of from two to four years.

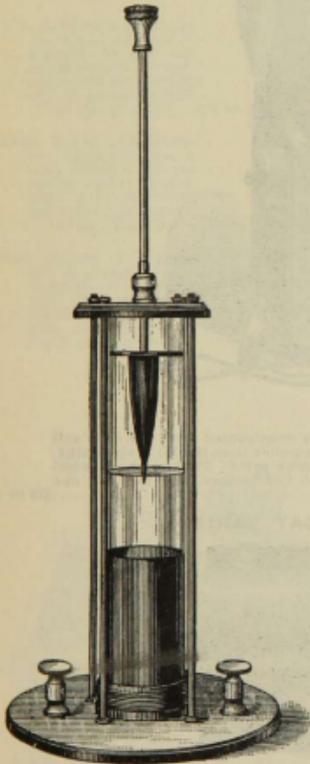
When ordering a Cabinet or Stationary Office Apparatus, of whatever manufacture, physicians should specify and insist that this battery be furnished.

THE CRIADO RHEOSTAT.

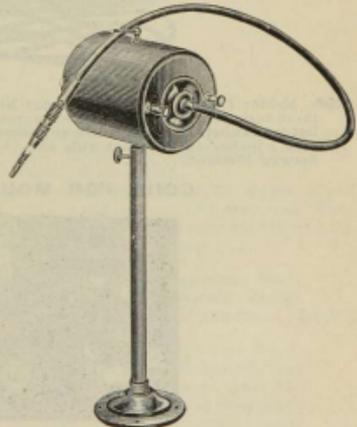
This instrument is the only perfect current controller yet devised. It will work equally well in circuit with the Edison incandescent current or with any number of cells connected in series. The construction of this instrument is very simple. A cup of pure carbon fastened in the bottom forms one of the terminals, the other terminal being a tapering carbon rod fastened to a metal rod, and which may be gradually raised and lowered by means of a coarse-threaded screw. There are no wires to get loose, and all danger of shock is avoided. The glass should be filled with water until it touches the small sponge on the end of the carbon rod when raised to the top.

THE "G. F." SURGICAL MOTOR (4 VOLTS.)

This is the most desirable form of motor for surgeons' and dentists' use. It has no dead point, and will start from any position. The parts are incased in a dust-proof cylinder, and oil holes are provided to admit of oiling without taking the motor apart. The motor is usually placed on a stand and is made to revolve with the least effort. It can, however, be suspended from an arm or bracket if desired. It can be operated by a G. F. 2 Cell Storage Battery, for description of which, send for complete catalogue of Galvano-Faradic Mfg. Co.



9791.



9792, 9793, 9794.

9790.	Fitch's Perfect Battery Cell.....	\$ 1 00
9791.	Criado Carbon Rheostat.....	10 00
9792.	G. F. Surgical Motor.....	25 00
9793.	G. F. Surgical Motor Stand.....	5 00
9794.	G. F. Flexible Shaft and Hand-piece.....	15 00
9795.	G. F. Connecting Cords and Floor Push.....	5 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.

KIDDER'S ELECTRO-MEDICAL APPARATUS.

THE UNIVERSALLY KNOWN AND CELEBRATED DR. JEROME KIDDER'S
SUPERIOR ELECTRICAL APPARATUS.

FARADIC TIP BATTERIES,

HIGH TENSION COMPOUND COILS,

PORTABLE GALVANIC BATTERIES,

PORTABLE TABLES, WITH MOUNTINGS,

GALVANO-CAUTERY BATTERIES,

SUPERIOR CABINET APPARATUS,

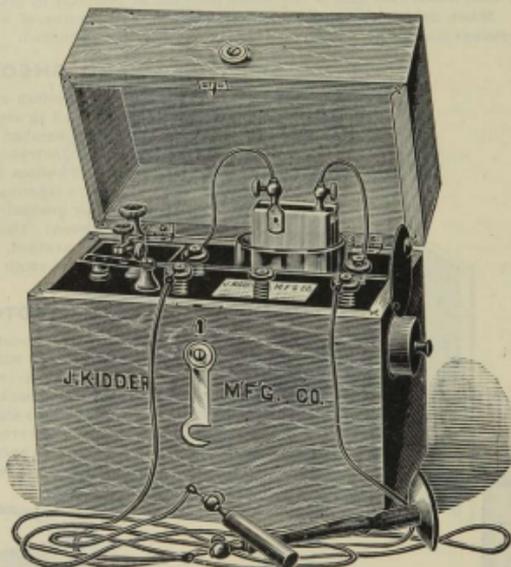
ELECTRIC BATH APPARATUS,

ELECTRICAL CHAIRS,

CURRENT CONTROLLERS,

MILLIAMMETERS, RHEOSTATS.

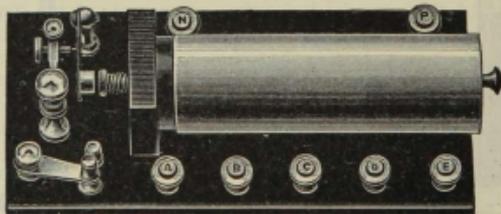
FARADIC BATTERIES.



9796.

9796. Kidder Family Faradic Apparatus No. 6. This apparatus is constructed with two coils and three variations in the qualities of current. This is somewhat smaller than the No. 4 apparatus, but is a far better machine than any other in the market at the same price. Polished hard wood case, 8 inches long, 5 inches wide and $7\frac{1}{4}$ deep. Complete, with Conductors, Handles and one Sponge Electrode.....\$15 00 †

COILS FOR MOUNTING, IN GREAT VARIETY.



9797.

9797. Kidder Faradic Coil No. 5A, having four different lengths and diameters of wire, arranged to be used in various combinations, producing ten different qualities of electricity. The length of wire is over 1900 feet. A switch is furnished for electing the second coil in the primary circuit when desired. Mounted upon handsomely polished rubber base, with coil incased in Polished Hard Rubber.....\$20 00 †

The coil in our Faradic apparatus is many times greater than those made in any country.

ELECTRO-THERAPEUTIC.

KIDDER'S ELECTRO-MEDICAL APPARATUS.

FARADIC BATTERIES.

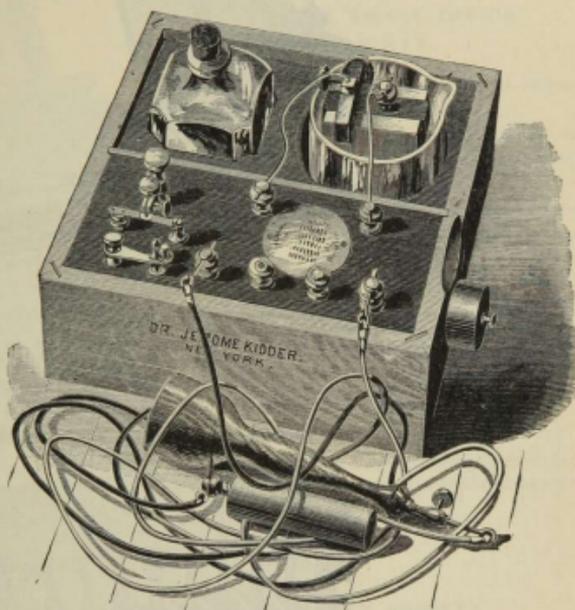
Faradic Apparatus, No. 4, having three coils and six variations of the qualities of the currents, and is operated by one open battery, which is for months constantly ready for use, without changing the fluid. A bottle accompanies, into which the fluid can be poured whenever desired.

Polished hard wood case, 8 $\frac{1}{4}$ inches long, 8 $\frac{1}{4}$ inches wide and 7 inches deep.

9798. Kidder Family Faradic Apparatus No. 4, without Switch Arrangement to use second coil in the primary circuit, complete with Cords and Handles...\$18 00 ;

9799. Kidder Office Faradic Apparatus No. 4, with switch to use the second coil in the primary circuit when desired, complete with Cords and Handles... 20 00 ;

9800. Kidder Tip Faradic Apparatus No. 4, complete with Hydrostat Tip Battery, otherwise same as 9799, complete with Cords and Handles... 24 00 ;



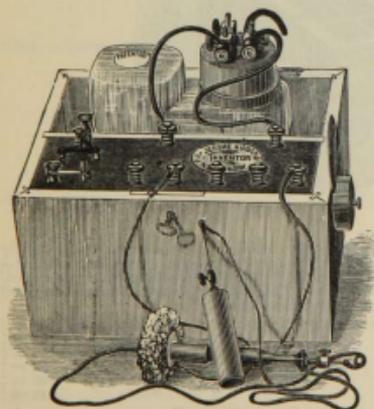
9799.

Faradic Apparatus No. 5 has four different conditioned coils, various combinations, producing ten different qualities of electricity.

The coil is composed of No. 16, No. 21, Nos. 32 and 36 wires. The length is over 1900 feet long. Constructed in polished hard wood case, 9 $\frac{1}{4}$ inches long, 8 $\frac{1}{4}$ inches wide and 7 $\frac{1}{4}$ inches deep.

9801. Kidder Office Faradic Apparatus No. 5, complete with Open Battery, similar to 9799, with Cords and Handles.....\$24 00 ;

9802. Kidder Tip Faradic Apparatus No. 5, complete with Hydrostat Tip Battery, which is always ready for use, and can be conveyed from place to place in a buggy without danger of spilling the fluid. Will remain in action for months without charging the fluid. The fluid is composed of one part Commercial Sulphuric Acid and eleven parts water; complete with Cords and Handles\$27 00 ;

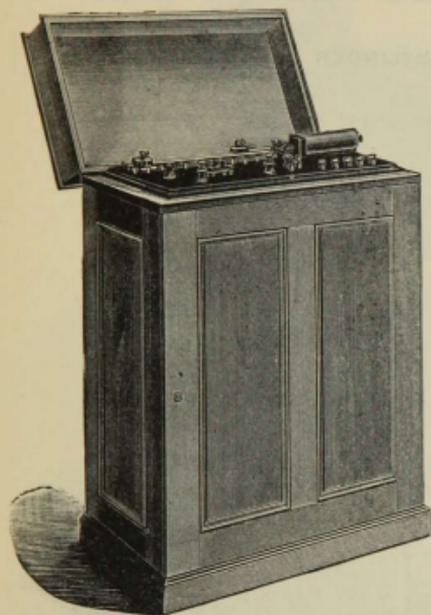


9802.

ELECTRO-THERAPEUTIC.

KIDDER'S ELECTRO-MEDICAL APPARATUS.

CABINET APPARATUS.



9810.

KIDDER SMALL OFFICE CABINET.

Outside measurements: Height, 37 inches; width, 25 inches; depth, 14 inches.

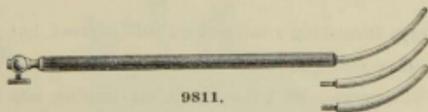
The Cabinet contains 22 cells, of muriate of ammonia form, which will last from two to three years and then only require new zincs.

Sliding devices for electing or cutting out cells in the circuit without shock. This is a great advantage over a current controller where an error in the series of cells would deprive you of the use of the entire number. The Cabinet is also provided with a ten-current coil similar to the No. 5 Faradic apparatus, a polarity changer for the galvanic and a cut-out for instantly cutting off the current.

9810. Kidder Small Office Cabinet Battery, complete.....\$90 00 †

We manufacture a great variety of Cabinet and Key-board work, adapted to the wishes of the practitioner.

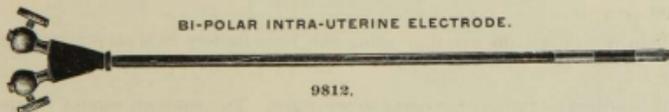
INSTRUMENTS FOR APPLICATION, IN GREAT VARIETY.



9811.

9811. Goelet's Uterine Electrode, with 3 Stems. For Negative Pole..... \$3 00 †

BI-POLAR INTRA-UTERINE ELECTRODE.



9812.

9812. Kidder Bi-Polar Intra-Uterine Electrode..... \$4 00 †

LARYNGOSCOPE.



9813.

9813. Kidder Electric Laryngoscope, in Velvet-lined Case, ready to attach to Battery..... \$9 00 †

These lamps are made adjustable, so that in case of accident the destroyed lamp can be removed and replaced with a new one.

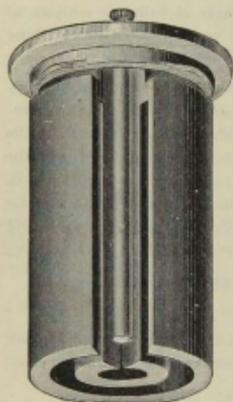
We guarantee every article we manufacture as perfect in every detail.

ELECTRO-THERAPEUTIC.

THE LAW BATTERY CO.'S ELECTRO-MEDICAL APPARATUS.

THE IMPROVED DOUBLE CYLINDER LAW BATTERY.

(Covered by Letters Patent, any infringement of which will be prosecuted.)



The Big Double Cylinder
Negative Element, having
147 Square Inches Surface,
and the Zinc attached to
the Cover.

9814.



The Complete Cell, $4\frac{1}{2} \times 4\frac{1}{2} \times 8$.

Efficiency, high; always furnishing a full and reliable current, but requiring no attention whatever in from two to three years, and then only for renewal of zincs and sal-ammoniac consumed in the generation of current. With this exception (costing less than 10 cents per cell) all parts of this battery are guaranteed to be everlasting, unless the glass be broken by carelessness.

More than 600 physicians are now using the Law Battery in their practice, aggregating 30,000 cells.

The cell is sealed by turning the cover to the right. The solution cannot escape, and the battery can be placed in a parlor or finely furnished office, and will prove an ornament.

CORRESPONDENCE SOLICITED.

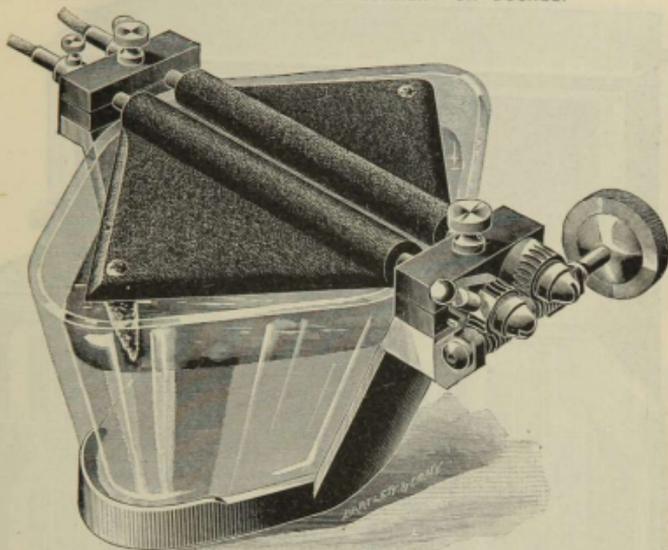
9814. Law Battery Cell..... \$1 25
Law Battery Cell, purchased in lots of 10 or more, \$1.25 less 20% discount.

A. S. ALOE COMPANY, Selling Agents,

415. N. BROADWAY,

ST. LOUIS.

ELECTRO-THERAPEUTIC.
THE LAW BATTERY CO.'S ELECTRO-MEDICAL APPARATUS.
THE NEW BAILEY CURRENT CONTROLLER.
 FOR REGULATING THE STRENGTH OF CURRENT OR DOSAGE.

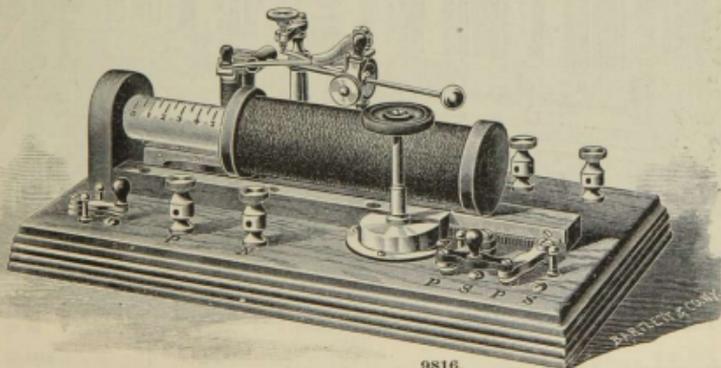


9815.

This new instrument perfectly supplants the Switch-board or Cell Selector as a means of modifying the current.

It is far better; also cheaper. It imposes equal work upon all the cells of the Battery, and by its use, current regulation is perfect, from full strength of the Battery down to a current so feeble as to be imperceptible to the most sensitive organ, and this without any possibility of breaks in the circuit or sudden shocks to the patient; a most important feature, as all physicians know who use electricity in their practice. With this Regulator there is a saving in the number of wires leading from the Battery, as only two are necessary.

9815. The New Bailey Current Controller..... \$ 15 00 †



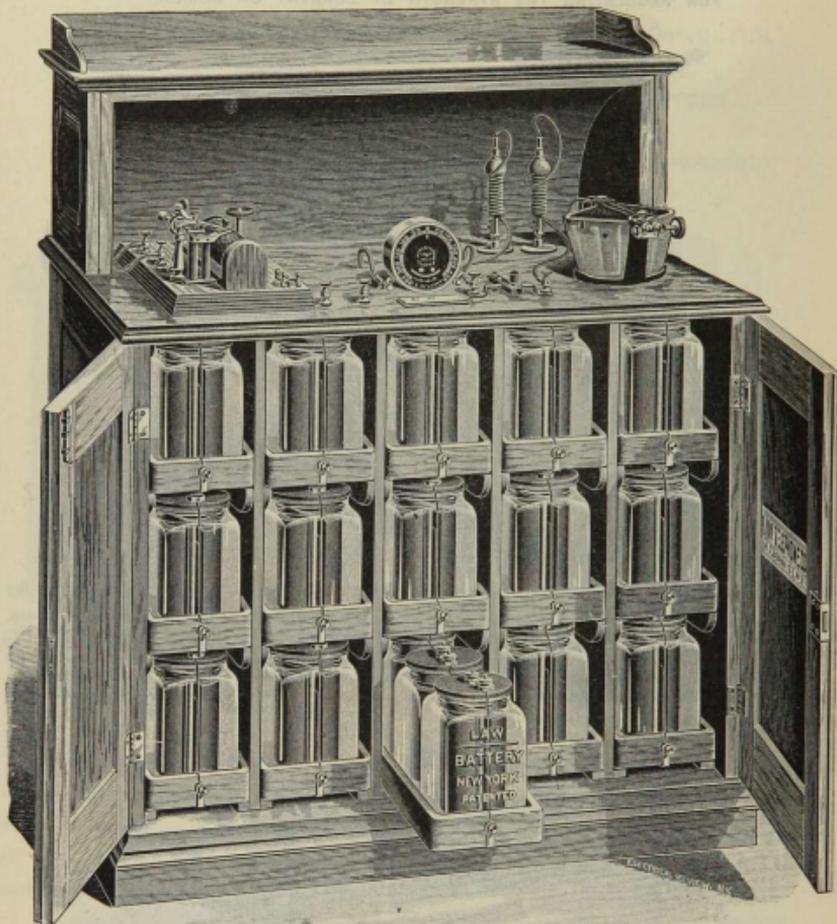
9816.

THE NEW LAW FARADIC COIL.

This Coil is of the DuBois-Reymond pattern. The outer or secondary Coil sliding from or over the inner primary Coil by means of a rack and wheel connection, allows a gradual increase or decrease of the current not possible in the ordinary Coil. Particular attention has been given to the slow and rapid interrupters, both being automatic and having wide range. When double switch is over buttons P, F, and the single switch is on button, and the outer Coil completely covers the inner, the lightest primary current is had. The increase is regulated by withdrawing the outer Coil by means of the rack and wheel. The secondary or induced current is had by reversing the switch and gradually covering the inner Coil by the outer. Two posts in the rear are for battery; the two front for electrode cords. The Coil and parts are mounted on hard wood base, size 13 inches by 7 $\frac{1}{4}$ inches.

9816. The Law Faradic Coil..... \$ 30 00 †

ELECTRO-THERAPEUTIC.
THE LAW BATTERY CO.'S ELECTRO-MEDICAL APPARATUS.
THE LAW CABINET ELECTRO-THERAPEUTICAL OUTFIT.



9817.

60 Large Double Cylinder Law Battery Cells.....	\$ 90 00	6
1 Gaiffe Mil-Am-Meter	40 00	6
1 New Bailey Current Controller.....	15 00	6
1 Pair Electrodes and Cords.....	7 50	6
1 New Law Faradic Coil.....	30 00	6
1 Solid Antique Oak Cabinet, Roll Top, Finished Back.....	60 00	6

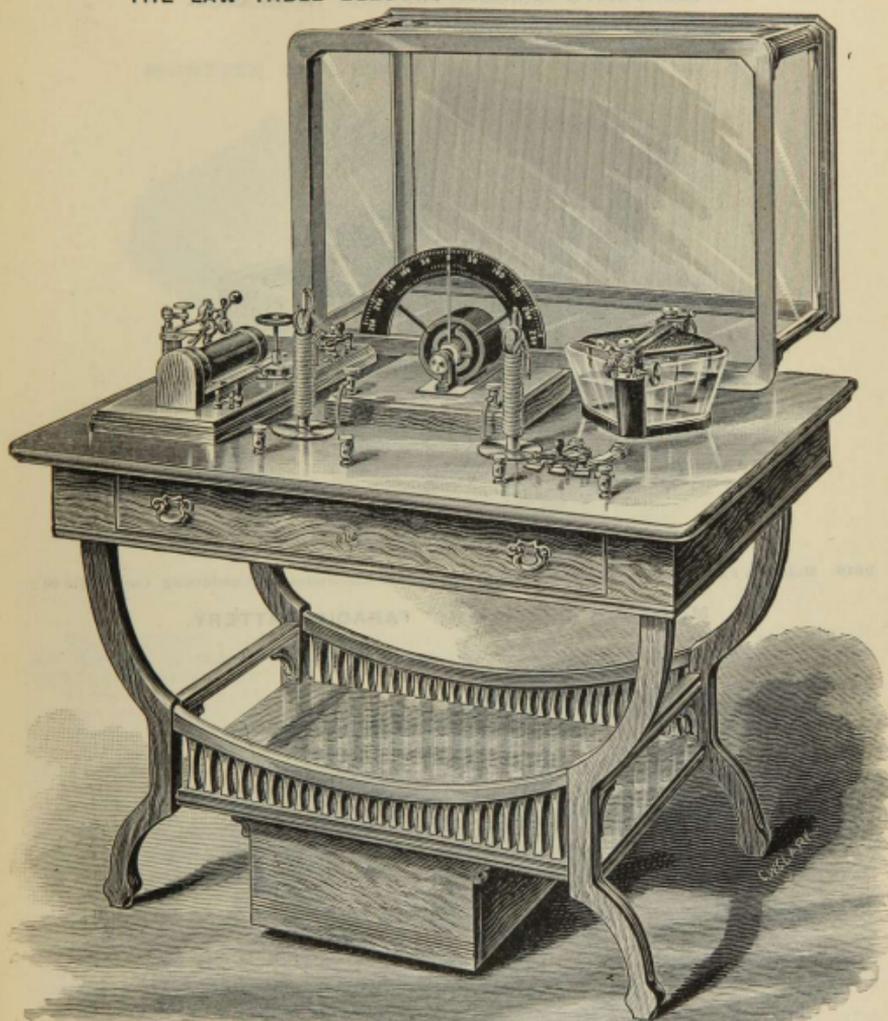
\$242 50

9817. The Law Cabinet Electro-Therapeutical Outfit, Complete net, \$175 00

The above comprises a complete office outfit of the most serviceable kind—all wired and ready for the placing of the Cells in the drawers—a simple matter, and the connecting in of Meter and Regulator as shown in cut. The polarity, or current reversing switch is of a new design.

The Cabinet is mounted on large concealed castors, and can be readily moved for cleaning or for light. The unsolved problem until this Cabinet was contrived was to confine the number of Cells needed for the same time create a piece of furniture that would be handsome and not unwieldy. The success we have met in the placing of the Cabinet proves that we have solved the problem. The Cabinet is finished oak, the same care being taken with the back as with the front. The roll-top adds to the general appearance. The top and doors have Yale locks. The dimensions are those of an ordinary office desk, 30 inches high to the table by 23 inches wide, with a rise of 14 inches to accommodate the roll top.

ELECTRO-THERAPEUTIC.
THE LAW BATTERY CO.'S ELECTRO-MEDICAL APPARATUS.
THE LAW TABLE ELECTRO-THERAPEUTICAL OUTFIT.



9818.

60 Large Double Cylinder Law Battery Cells.....	\$ 90 00	\$
1 D'Arsonval Mil-Am-Meter	40 00	300/0
1 New Bailey Current Controller	15 00	\$
1 Pair Electrodes and Cords	7 50	\$
1 New Law Faradic Coil.....	30 00	||
1 Solid Antique Oak Table	40 00	||
	\$222 50	net, \$155 00

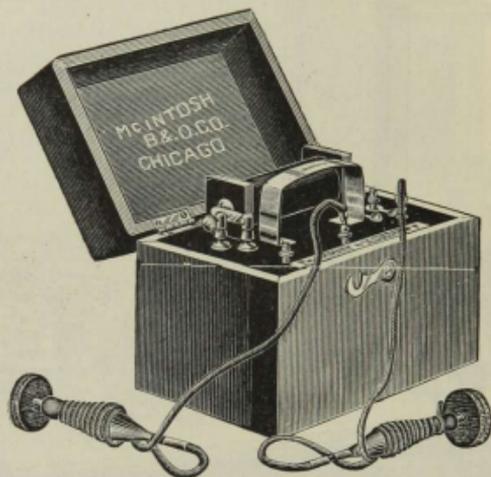
9818. The Law Table Electro-Therapeutical Outfit, Complete.....

The D'Arsonval Mil-Am-Meter has two readings—0 to 25 milliamperes and 0 to 250 milliamperes. It is dead-beat, that is, moves steadily with the current. The markings on scale are large enough to read at any distance. The lower drawer in the table is for the two cells used with Faradic coil. The top drawer for electrodes and other accessories.

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-MEDICAL APPARATUS.

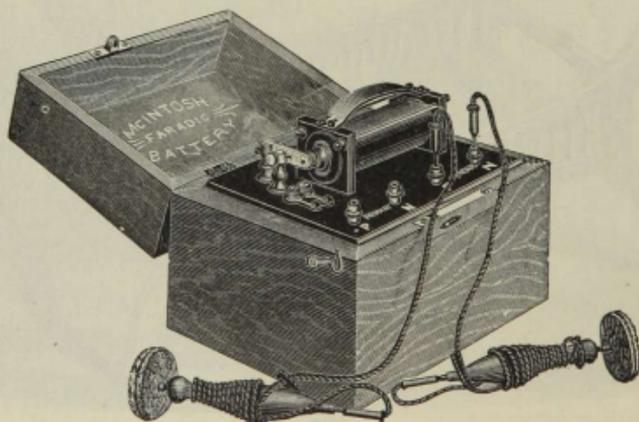
FARADIC BATTERIES.



9819.

9819. McIntosh Family Faradic Battery, complete with Sponge Electrodes and Conducting Cords, \$10 00 ||

MCINTOSH PHYSICIANS' FARADIC BATTERY.



9820.

This battery is put up in neat, polished black-walnut case, 6 inches in width, 9 inches in length and 7 inches in height, and weighs less than 6 pounds, charged. All the metal work is nickel-plated.

It has a hard-rubber cell and drip-cup, first-class induction coil, with polished hard-rubber ends and cover. The coil, binding posts and rheotome are placed on the upper surface of a polished hard-rubber plate, the under surface of which is covered with soft rubber, and also holds the zinc and carbons. When the elements are removed from the cells and placed in the drip-cup, this plate is securely clamped over them, and makes them water-tight. The connections of the coil with the zinc and carbons are permanent.

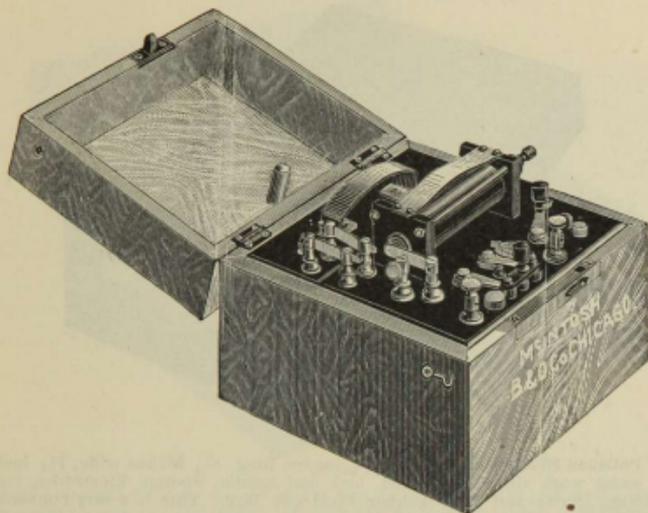
9820. McIntosh Physicians' Faradic Battery, with first-class Sponge Electrodes and Cable Conducting Cords\$18 00 ||

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-MEDICAL APPARATUS.

FARADIC BATTERIES.

McINTOSH PHYSICIANS' FARADIC BATTERY No. 3.



9821.

This instrument is intended for a physician's visiting battery. It is put up in a finely polished black walnut case, 8 inches long, 8 inches wide and $6\frac{1}{2}$ inches high; all the metal work is finely nickel-plated.

It has several new features which we believe make it the most complete and elegant faradic battery ever offered to the profession. It has a large rubber cell and drip cup, composed of one piece of hard vulcanized rubber. It has a fine induction coil with polished hard rubber spool and cover. The coil, rheotome, binding posts, pole changer indicator and switch to connect primary or secondary current with the binding posts, are attached to a polished hard rubber plate 5×7 inches. Under this plate is a space for electrodes. The pole changer is so arranged that when moved to the left it uncovers a button marked positive, on which is an index pointing to the positive post on the right (post on the left is now negative.) When turned to the right a button on the left is uncovered and the index points to the positive post on the left (post on the right is now negative.) It is not necessary to remove the conducting cords when connected with the binding posts to obtain the primary or secondary current, as this is accomplished by means of a switch. The elements are securely clamped to a hard rubber plate, the under side of which is covered with a thick sheet of pure, soft rubber. By simply closing the cover of the case this plate is firmly pressed over the cell and drip cup so that it is impossible for the fluid to be spilled. When the battery is to be used open the box, raise and reverse the plate holding the elements, which immerse in the cell and connect the coil by means of the two bars, which should be pressed into the slots in the two posts opposite them. This makes a very simple, perfect connection.

The handle on the plate holding the elements serves the purpose of a spring which gives firm and even pressure over the cell and drip cup when the case is closed.

Another new and very important improvement in this battery is the perfect connections of the elements. The ends of the zinc and carbon plates which are fastened to the rubber plate are covered with hard rubber, which is put on in a soft state, then vulcanized. This covers them so perfectly that no fluid can get between them and the rubber, or the screws which clamp them.

This is the only connection ever made with zinc and carbon elements where the metal work and screws are perfectly protected from the battery fluid.

This is the most convenient and elegantly finished battery ever offered for sale. It gives a very smooth, even current and of great strength. The force can be graduated from a current so mild as to be scarcely perceptible to one so strong as to be painful.

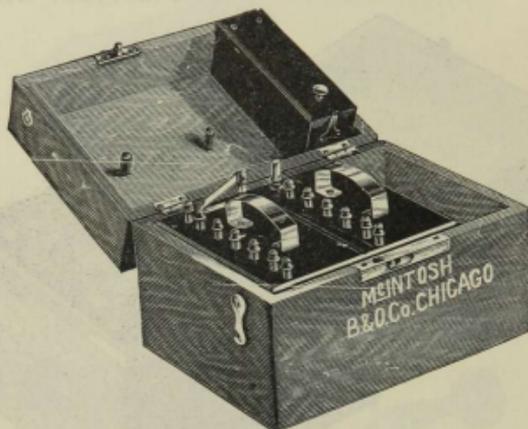
9821. McIntosh Physicians' Faradic Battery, No. 3, with Sponge Electrodes and Cable
Conducting Cords..... \$30 00 ||

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-MEDICAL APPARATUS.

GALVANIC AND COMBINED BATTERIES.

TWELVE-CELL GALVANIC BATTERY.



9822.

9822. In a Polished Black-walnut case, $10\frac{1}{2}$ inches long, $8\frac{1}{4}$ inches wide, $7\frac{1}{4}$ inches high, metal work all nickel-plated, lock and handle, Sponge Electrodes, Cable Conducting Cords, and Hard-rubber Electrode Box. This is a very convenient visiting Battery, as it weighs only 11 pounds, and gives a galvanic current of sufficient intensity to treat any case where it is indicated.....\$30 00 ||

TWELVE-CELL COMBINED GALVANIC AND FARADIC BATTERY.



9823.

9823. Same style of case and finish as the above, $13\frac{1}{2}$ inches long, $8\frac{1}{4}$ inches wide, $7\frac{1}{4}$ inches high, with first-class Faradic Coil, polished hard-rubber ends and cover, extra large cell to run the coil, Electrodes, Cable Conducting Cords and Hard-rubber Electrode Box. This Battery gives a galvanic current same as above described, and a faradic current of sufficient strength to treat any case.....\$40 00 ||

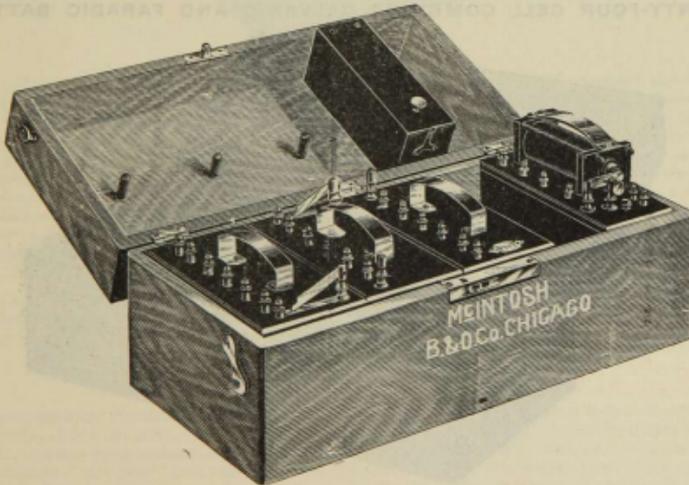
ELECTRO-THERAPEUTIC.
 MCINTOSH'S ELECTRO-MEDICAL APPARATUS.
 GALVANIC AND COMBINED BATTERIES.
EIGHTEEN-CELL GALVANIC BATTERY.



9824.

9824. In a Polished Black Walnut Case, 14 $\frac{1}{4}$ inches long, 8 $\frac{1}{4}$ inches wide, 7 $\frac{1}{4}$ inches high, with lock and handle, metal work all nickel-plated, first class Sponge Electrodes, Cable Conducting Cords, and Hard-Rubber Electrode Box. This is the most convenient size for a physician's use, as it gives a powerful current and weighs but little over 15 pounds.....\$40 00 ||

EIGHTEEN-CELL COMBINED GALVANIC AND FARADIC BATTERY



9825.

9825. Same style of case and finish as the above, 17 inches long, 8 $\frac{1}{4}$ inches wide, 7 $\frac{1}{4}$ inches high, with first-class Faradic Coil, polished hard-rubber ends and cover, extra large cell to run the coil, Sponge Electrodes, Cable Conducting Cords, and Hard-Rubber Electrode Box. This is the most convenient battery for a physician's use, as it gives a very intense galvanic current and a Faradic current of sufficient strength to treat any case, and is perfectly portable.....\$52 50 ||

ELECTRO-THERAPEUTIC.
MCINTOSH'S ELECTRO-MEDICAL APPARATUS.
 GALVANIC AND COMBINED BATTERIES.
TWENTY-FOUR CELL GALVANIC BATTERY.



9826.

9826. Same style of case, finish, electrodes and cords as the eighteen-cell battery. Case is 18 inches long, 8 $\frac{1}{4}$ inches wide, and 7 $\frac{1}{4}$ inches high, with lock and handle, and hard-rubber electrode case; weighs less than 20 pounds. This battery gives a Galvanic current of great intensity, sufficient to treat any case where it is indicated\$55 00 ||

TWENTY-FOUR CELL COMBINED GALVANIC AND FARADIC BATTERY.



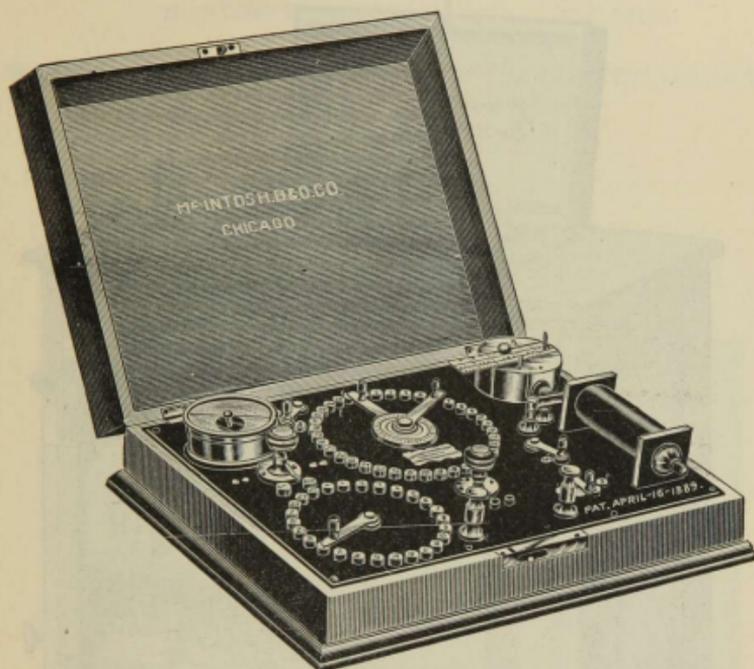
9827.

9827. Same style of case and finish as the above, 20 $\frac{3}{4}$ inches long, 8 $\frac{1}{4}$ inches wide, 7 $\frac{1}{4}$ inches high, with first-class Faradic Coil, polished hard-rubber ends and cover, extra large cell to run the coil, Sponge Electrodes, Cable Conducting Cords and Hard-Rubber Electrode Box. This battery gives same intensity of Galvanic current as the above, and a Faradic current of sufficient strength to treat any case. It weighs only 24 pounds and is perfectly portable.....\$67 50 ||

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-MEDICAL APPARATUS.

McINTOSH No. 1 OFFICE TABLE PLATE



9828.

This was designed by Dr. McIntosh to meet the want of physicians who desire a compact and complete office battery. This arrangement is a beautiful piece of work. The following accessories, finely nickel-plated, are tastefully arranged on a board of polished hard rubber, 12x16 inches: A Galvanic Double Switch for 32 or more cells; an Automatic Rheotome, giving fast or slow interruptions; Milliamper Meter; Pole Changer; Current Indicator; Binding Posts; large Faradic Coil, with polished hard-rubber ends and cover; a Coil Rheostat of 25 coils of 100 ohms resistance each, whereby from 100 to 2,500 ohms resistance can be brought into either the galvanic or faradic circuit, by simply moving the circular switch. This can be furnished in black walnut or polished oak case, on an office table or cabinet case. This is a very perfect and elegant piece of work, and receives the approval of physicians at sight. When this instrument is fastened to a table or other piece of furniture not having room for the cells underneath, they may be placed in a closet or cellar out of the way, and require very little attention.

9828. McIntosh No. 1 Office Table Plate, as above described, with Milliamper Meter, in Polished Walnut or Oak Case..... \$105 00 ||
 9829. McIntosh No. 1 Office Table Plate, without case..... 100 00 ||
 Any kind of Battery Cell Furnished at prices hereinafter named.

McINTOSH No. 1 CABINET BATTERY.

This apparatus has the same table plate as above. The case is in polished black walnut or antique oak, with drawers for electrodes and a sliding shelf. The cell drawers can be drawn out for examining their contents without disconnecting or disarranging the connections between cells and table plate; they will hold 48 "Gonda Leclanché," 42 "Law," or 42 Fitch's Perfect Battery cells. The connecting wires which convey the current from the cells to corresponding parts of the table plate are gathered in a bunch and pass down inside the case and behind the drawers. The size of the top is 22x40 inches; height, 3 feet. Any desired number of cells can be furnished.

9830. McIntosh No. 1 Cabinet Battery, without Cells..... \$150 00 ||
 Any kind of Battery Cell furnished at prices named. See Index for Battery Cells.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.
 MCINTOSH'S ELECTRO-MEDICAL APPARATUS.
 MCINTOSH No. 4. CABINET BATTERY.



9831.

This is an elegant piece of work, and will meet the wants of the profession where a less expensive battery is desired than the one listed on the preceding page. The following accessories are neatly arranged on a polished hard-rubber base 9x15½ inches:

A Galvanic patent double switch by which the operator is enabled to use cells from any part of the circle, thus obviating the necessity of using the first cells first. The buttons are arranged for 40 or more cells as the purchaser may desire; a Faradic Coil with polished hard-rubber ends and cover; Pole Changer; two Binding Posts, from which the Galvanic, primary or secondary Faradic currents may be taken by means of a switch; a McIntosh Milliamperemeter and Controlling Switch; and a switch to connect the coil with one or more galvanic cells.

In addition to the accessories of the plate as described above, we furnish the McIntosh New Carbon Rheostat, Sponge Electrodes and Cable Conducting Cord. The Cabinet is a handsome design in highly polished oak, with plate-glass cover.

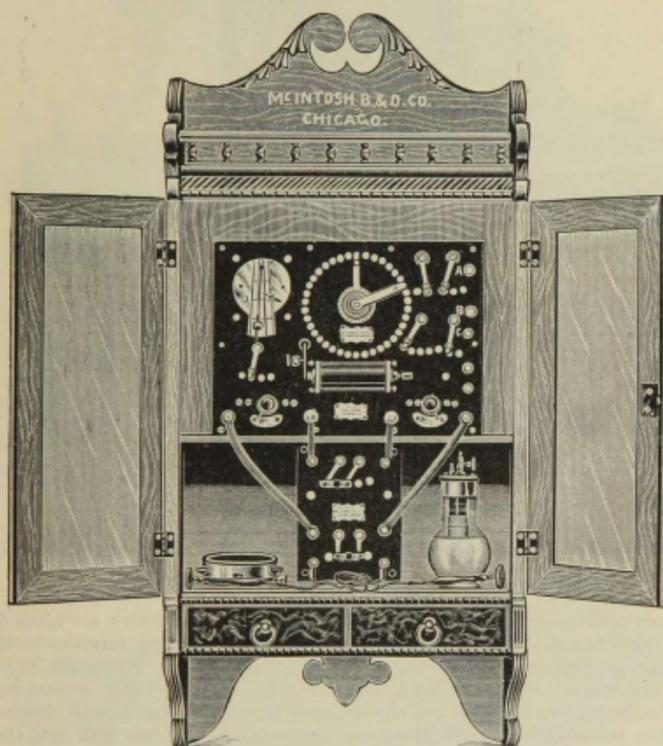
9831. McIntosh No. 4 Cabinet Battery, without Cells \$ 90 00 ||
 9832. " " " " " " without Cells or Rheostat..... 80 00 ||

For prices of Cells, see Index for Battery Cells.

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-MEDICAL APPARATUS.

MCINTOSH COMPLETE WALL PLATE, WITH DEWATTEVILLE CURRENT
COMBINER, IN WALL CASE.



9833.

In case of polished walnut or oak, with beveled plate-glass doors, Hydro-Platinum Rheostat and Milliampere Meter connected in circuit.

9833.	McIntosh Complete Wall Plate, in Case.....	\$140 00 ||
9834.	“ “ “ “ without Rheostat or Milliampere Meter.....	95 00 ||
9835.	“ “ “ “ as shown in cut, but with McIntosh New Carbon Rheostat instead of Hydro-platinum Rheostat.....	130 00 ||

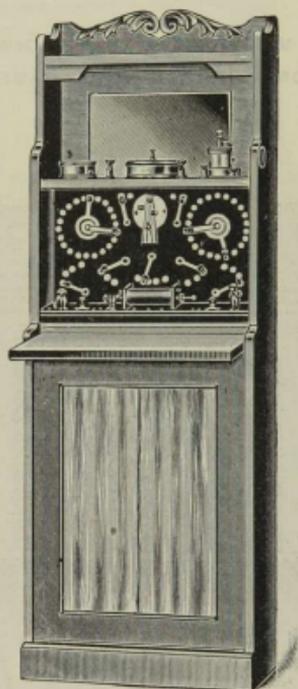
For prices of Cells, see Index for Battery Cells.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-MEDICAL APPARATUS.

THE LITTLE GEM CABINET.



9836.

As shown in the accompanying cut, is just what its name indicates, a "Little Gem." In this cabinet of polished oak, size 20 inches wide by 5 feet high, we furnish a most complete office battery, comprising Double Galvanic circle Switch-Board; giving the physician two distinct 20 cell batteries capable of being used separately, or (by simply moving the arm of a switch) bringing the two batteries into one circuit of forty cells; Faradic coil operated by three distinct cells; Graduated Automatic Rheotome, connected by switches with both the Galvanic and Faradic current, and adjusted so as to furnish from 6 to 660 interruptions per minute; Faradic pole changer; Galvanic pole changer; Milliampere Meter Switch; Rheostat Switch; selector switch and binding posts. On a shelf above the switch-board is placed the McIntosh Milliampere Meter; New Carbon Rheostat (or Hydro-platinum Rheostat if preferred), and Galvano-cautery rheostat and binding posts for cautery current. The space below the plate can be used for cells, or the cells can be placed in basement or closet as preferred. In connection with the Galvano-cautery Rheostat are two 35 ampere storage cells placed in space behind the battery plate.

9836. McIntosh Gem Cabinet, complete as shown in cut and including forty-three No. 1 Samson Cells..... \$210 00 ||
9837. McIntosh Gem Cabinet No. 2, same accessories as above described, in elegant Mahogany finished Case, with reflecting mirror and plate-glass door to protect Milliampere Meter and Rheostats..... 240 00 ||

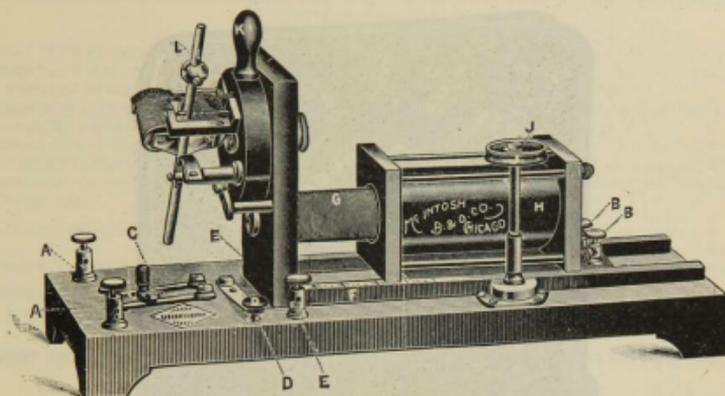
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-MEDICAL APPARATUS.

TRIPRIER INDUCTION APPARATUS.

USED BY DR. APOSTOLI, DR. RANVIER AND OTHER EMINENT SPECIALISTS.

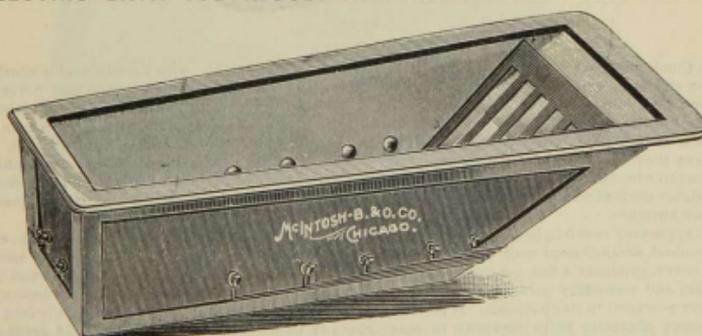


9838.

This apparatus is furnished with three coils of different thickness and length of wire, one of which (H) is shown in the cut. A, A, are the binding posts to which the coils or battery is attached. B, B, the posts to which the cords going to the patient are attached. C, the pole changer or commutator. D, contact button which, when pressed, stops the current. E, E, posts for taking the current from the primary coil. F, graduated scale. G, primary coil. J, rack and pinion for sliding the secondary coil backward and forward over the primary. The more the primary coil is covered by the secondary, the more intense will be the current. K, handle by which to increase or decrease the number of interruptions made by the bar L. By moving the handle K, from the operator the interruptions are slower and, vice versa, permitting a variation of from 50 to 3000 interruptions per minute, and is used principally for allaying pain (especially within the uterus) by producing anesthesia of the sensory nerves, for exciting the deeper seated fascia in paralysis, atrophy, etc.

9838.	Triprier Induction Apparatus, with three Coils, without Cells.....	net, \$	75 00
9839.	“ “ “ “ six Axo Battery Cells.....	“	80 00
9840.	“ “ “ “ Partz Motor Battery including Sulpho-chromic Salt....	“	80 00

ELECTRIC BATH TUB (WOOD) WITH STATIONARY ELECTRODES.



9841.

The tube is usually made 6 feet 4 inches long, 4 feet 6 inches on the bottom, 16 inches wide at the foot and 21 inches at the head, with a slight taper toward the bottom. The tube electrodes are highly finished and nickel-plated.

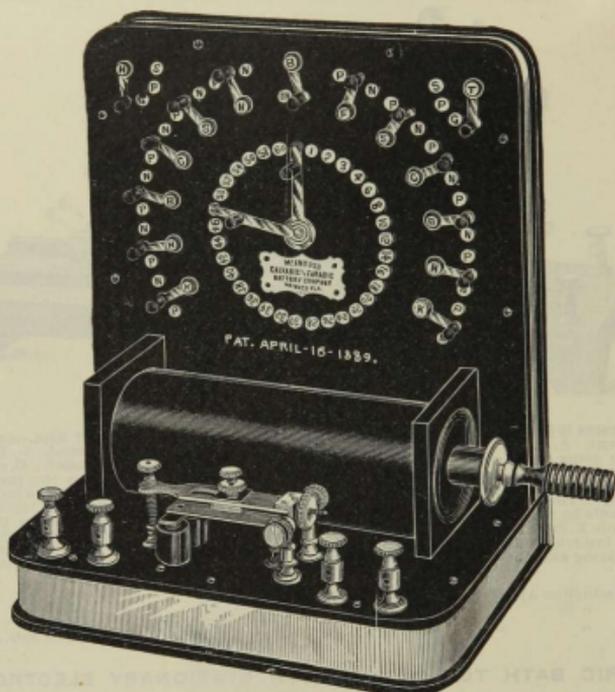
9841.	McIntosh Wooden Tub, complete with Electrodes and Connections, all ready to attach to any suitable Battery or Apparatus.....	net, \$	45 00
9842.	McIntosh Soapstone Tub, complete as above.....	“	70 00
9843.	“ Indurated Fiber Tub, complete as above.....	“	80 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-MEDICAL APPARATUS.

MCINTOSH COMBINED GALVANIC AND FARADIC BATH APPARATUS No. 1.



9845.

This Combined Bath Apparatus is very complete in its arrangement. The Faradic coil is nearly twelve inches long and three and one-half inches in diameter (with polished hard-rubber ends and cover), placed on the shelf of a polished hard rubber bracket. The vibrator, magnet and binding posts are placed on the shelf in front of the coil. Twelve switches are placed on the perpendicular plate of the bracket in circular form. Each switch has a positive and negative connection with its electrode in the bath-tub. By this arrangement they can be used as pole changers. Within this circle is a patented Galvanic double switch with buttons to connect with any number of galvanic cells. The switch in the upper left hand corner "H" connects either current with the binding posts, the one in the right hand corner "T" connects either current with the tub switches.

This apparatus can be placed on a table or the wall in convenient proximity to the bath-tub, and is the most convenient arrangement ever designed. It is very ornamental. The coil, with polished hard-rubber ends and cover, produces a fine contrast with the nickel-plated metal vibrator, binding posts and switches. The primary and secondary wires in the coil are proportioned in length and size, so as to produce a quantity current very powerful in its character. It penetrates the innermost tissues of the body, and is free from the sharp, stinging character to be met with in many kinds of bath apparatus, having coils of great intensity without regard to quantity. The position of the vibrator and binding posts in front of the coil and switches just above it, are very convenient to the hand of the operator. The shield is nickel-plated and graduated. The current increases in strength as it is withdrawn from the coil, and, by its intelligent use, any strength of current can be obtained, from one scarcely perceptible to one so powerful that the strongest person can with difficulty endure it.

The switches are arranged in circular form. The one at the top marked H, connects with the head electrode in the tub. The one marked F, with the foot electrode. Those on the right side, with the electrodes in the tub on the right side. Those on the left with the electrodes in the tube on the left side as follows: C, chest; S, stomach; B, bowels; H, hips, and K, knees.

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-MEDICAL APPARATUS.

**McINTOSH COMBINED GALVANIC AND FARADIC BATH APPARATUS
No. 1—CONTINUED.**

By means of these switches, the current can be directed through the patient in any direction, and its polarity changed at will in an instant. The dry current can be taken from the binding posts by means of conducting cords and handles, and applied the same as from an ordinary combined battery.

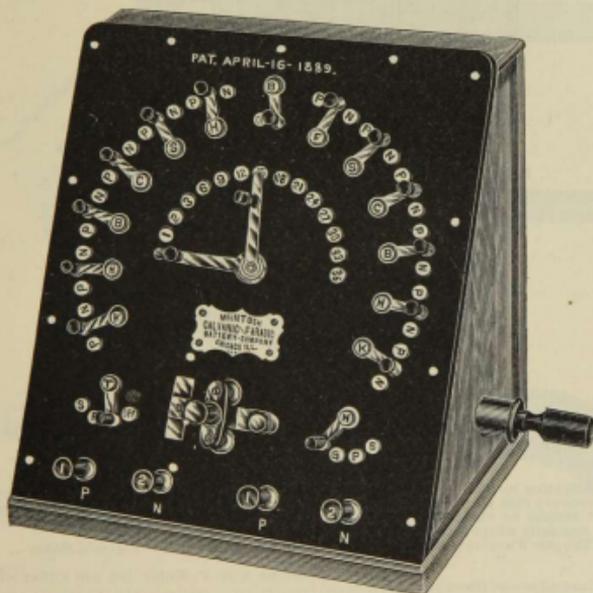
This apparatus is furnished with any desired number of galvanic cells, the current from which can be directed through the bath electrodes or binding posts.

We furnish with each complete bath apparatus, in addition to the bath-plate: 1 Partz Motor Cell to operate the Faradic Coil and 1 Wood Bath-Tub. We can furnish Bath-Tubs of Soapstone, or Indurated Fibre, if desired, at additional cost to purchaser. Galvanic Cells are not included in outfit, except by special order and at additional cost.

- 9844. McIntosh Combined Bath Apparatus No. 1, complete as above described, without Galvanic Cells \$200 00 ||
- 9845. McIntosh Combined Bath Apparatus No. 1, Plate only 160 00 ||

If Soapstone Tub is desired, add \$25.00, net, to prices named above.
If the Indurated Fibre Tub is desired, add \$15.00, net, to price named above.

McINTOSH COMBINED GALVANIC AND FARADIC BATH APPARATUS No. 2.



9847.

This apparatus is made on the same plan as our No. 1, but less expensive. The coil is inclosed in a triangular, polished black walnut case, the front of which is made of polished black rubber. The switches, binding posts, rheotome, etc., are all nickel-plated and neatly arranged on the sloping front. It is arranged to connect with any number of galvanic cells. The coil is run with a special cell, and has the same bath-tub and electrodes as No. 1.

- 9846. McIntosh Combined Bath Apparatus No. 2, without Galvanic Cells..... \$125 00 ||
- 9847. " " " " " 2, Plate only 85 00 ||

If Soapstone Tub is desired, add \$25.00, net, to above prices.
If Indurated Fibre Tub is desired, add \$15.00, net, to prices named above.

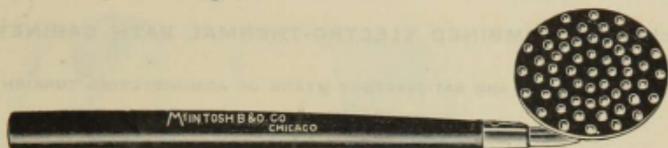
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.

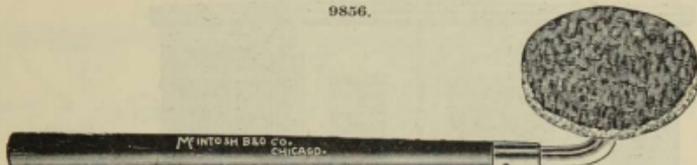
MCINTOSH'S ELECTRO-STATIC APPARATUS.

ELECTRODES AND ACCESSORIES FOR STATIC MACHINE.

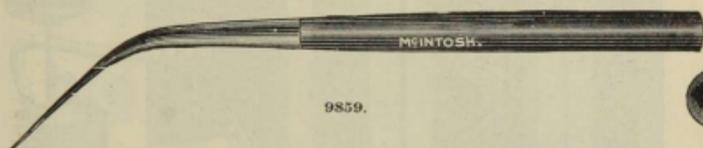
Since static electricity has great tension, special electrodes are required for its therapeutic application, which are represented by the following cuts:



9856.



9858.



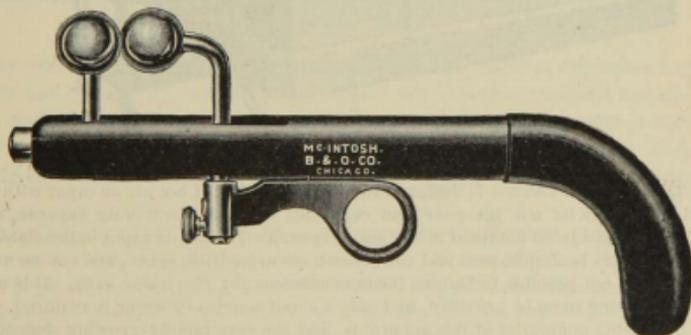
9859.



9860.



9857.



9861.



9855.

9855. Static Ball Electrode.....	\$ 2 50
9856. Static Disc Electrode, with Insulated Points.....	3 00
9857. Static Insulated Handle and Ring.....	2 00
9858. Static Massager Electrode, for Wet Application.....	2 50
9859. Static Point Electrode.....	2 50
9860. Static Roller Electrode.....	4 00
9861. The Morton Static Universal Interrupting Handle.....	10 00

STATIC ELECTRODE CASE.

This case contains one pair Static Cords and Handles, one Static Point Electrode, one Roller, one Ball Electrode and one Insulated Handle and Ring.

9862. McIntosh Static Electrode Case.....	18 50
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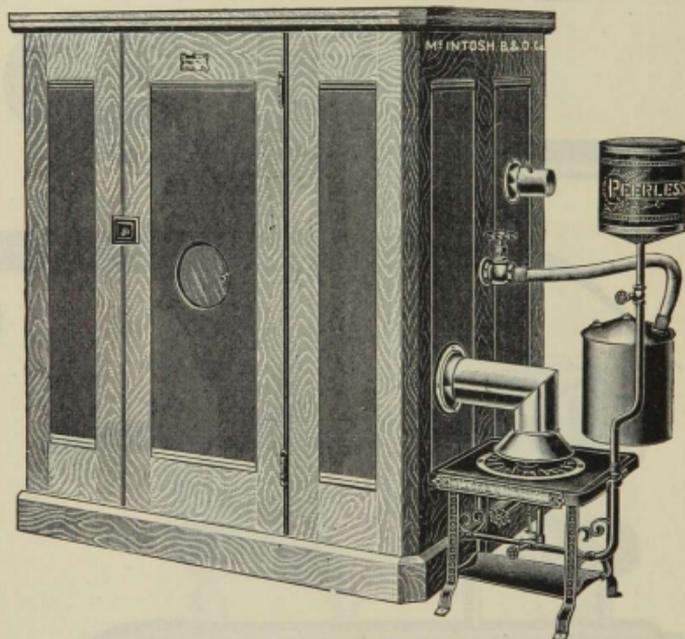
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-THERMAL APPARATUS.

McINTOSH COMBINED ELECTRO-THERMAL BATH CABINET.

THE MOST ECONOMICAL AND SATISFACTORY MEANS OF ADMINISTERING TURKISH BATH TREATMENT.



9863.

The Thermal Bath Cabinet is designed for the application of hot air or vapor with any form of electrization. By its use the physician can avail himself, at a trifling expense, of all the remedial advantages to be obtained in the most expensive Turkish or vapor bath establishments.

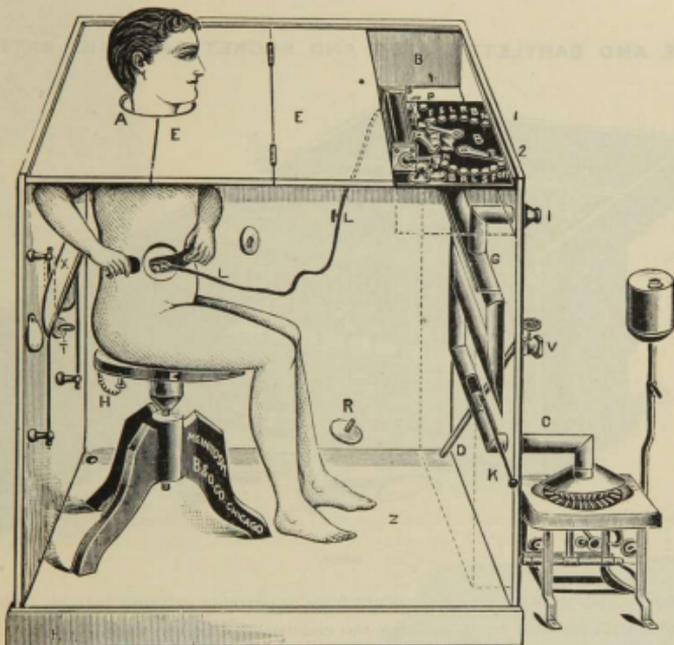
This apparatus is simple, neat and convenient, occupies little space, and can be used in an office where it is not possible to furnish the conveniences for the water bath. It is not necessary that a dressing room be provided, and only a small amount of water is required.

The increasing popularity of this apparatus, and the very rapidly-growing demand for the McIntosh Combined Electro-Thermal Bath Cabinet has led us to make many valuable, though costly, improvements and additions, among which we may mention: lining the cabinet throughout with zinc, thus overcoming all the annoyance in former cabinets of shrinkage of the wood, caused by sudden and frequent changes from high temperature with dry heat to vapor bath or shower bath. This improvement also adds to the ease with which the cabinet can be kept perfectly clean. We have placed a sliding electrode back of the seat, which serves the double purpose of a rest for the back of the patient upon the stool, and also permits of the treatment of any portion of the back or spine by means of the sliding electrode, which is so arranged that it can have a fresh covering of sponge or linen for each treatment.

ELECTRO-THERAPEUTIC.

MCINTOSH'S ELECTRO-THERMAL APPARATUS.

MCINTOSH COMBINED ELECTRO-THERMAL BATH CABINET—CONTINUED.



9863. Sectional View.

We furnish with each Cabinet four Ammonium Chloride Cells which in connection with an elegant Faradic Coil Switch Board, furnishes the cabinet with a complete Faradic Battery.

We feel a commendable degree of pride in asserting that the McIntosh Combined Electro-Thermal Bath Cabinet as we now offer it to the profession is the most elegant, as it is beyond comparison the most complete in its appointments, and the cheapest Thermal Bath Cabinet in the world.

Dry heat is supplied by passing hot air from a gasoline or gas stove through a 3 inch copper pipe connected with funnel tube (as shown in cut). In the vapor bath, both the heat and vapor are supplied from a small copper boiler which is placed over the gasoline or gas stove and connected by means of a flexible hose with the bath cabinet. By placing the heating apparatus outside the cabinet, all danger to the patient is avoided.

We always send gasoline stove unless special request is made for a gas stove.

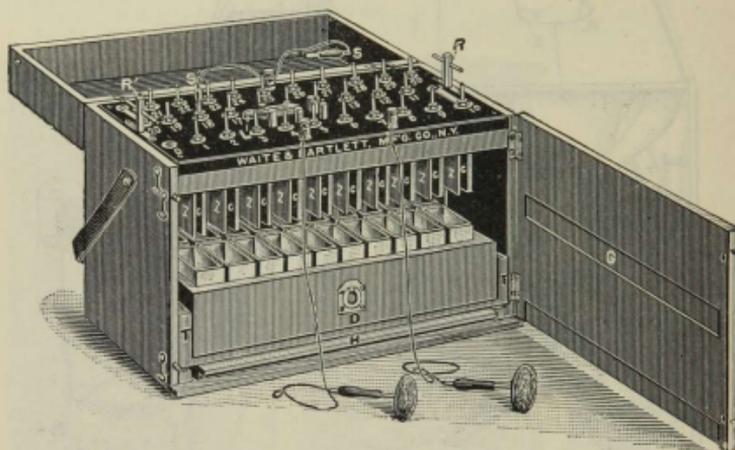
9863. McIntosh Electro-Thermal Bath Cabinet, elegantly finished in highly polished antique oak or black walnut, with electrodes and heating apparatus complete, including battery.....\$200 00 |

NOTE.—We furnish four Ammonium Chloride Cells to operate the Faradic Coil of this Cabinet, but if parties ordering the Cabinet prefer to have a more powerful cell, we will if requested, send a Partz Motor Cell instead of the Sal. Ammoniac Cells.

ELECTRO-THERAPEUTIC.

WAITE AND BARTLETT'S ELECTRO-MEDICAL APPARATUS.

WAITE AND BARTLETT'S PLUG AND SOCKET GALVANIC BATTERY.



9868.

The above illustration shows a convenient form of portable galvanic battery. The battery is represented with the door open, showing the construction of the various parts. The cells are in a drawer (D), which is supported by an outside tray or shelf (T), into which the cell drawer slides and can be readily withdrawn without attention to any mechanical device whatever. The lifting rods (R, R), screw into the ends of the outside tray, and by raising the same the cells are also raised until the elements are properly immersed in the fluid contained therein. The box contains a compartment at the bottom into which the hydrostat board (H) is placed, when not in use.

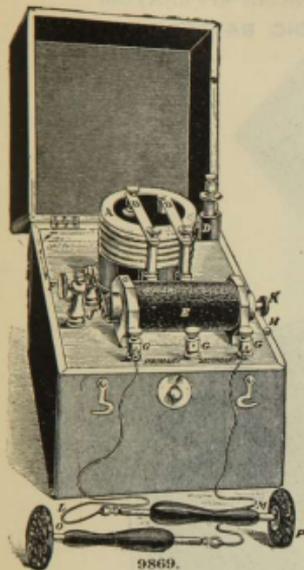
When the battery is to be carried about, this board (H) is placed on the top of the cells with its rubber-padded side down; the two rods (R, R), turned, raising the top of the cells tightly against the padded board, thus sealing them. The battery may then be carried without spilling the solution. A 30 cell battery, of the above type, will give sufficient current for Apostoli's method of treating fibroid tumors and other gynaecological work. The battery is furnished in handsome antique oak or mahogany case, finely polished, and in six different sizes. We guarantee these batteries to be first-class and to give satisfaction.

9864.	Waite and Bartlett 6 Cell Galvanic Battery	price, \$12 00	||
9865.	" " " 12 " " "	" 20 00	||
9866.	" " " 16 " " "	" 24 00	||
9867.	" " " 20 " " "	" 30 00	||
9868.	" " " 30 " " "	" 38 00	||

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.

WAITE AND BARTLETT'S ELECTRO-MEDICAL APPARATUS.



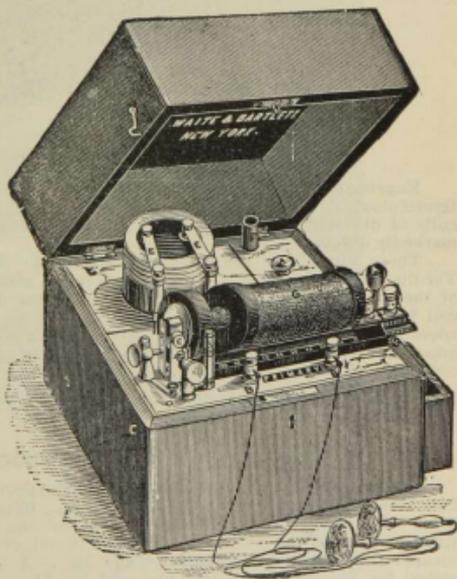
WAITE AND BARTLETT'S FAMILY BATTERY.

This Battery is made in Solid Oak or Mahogany Case, and the workmanship of this, as well as of all our Batteries, is of the highest order. For durability and cheapness it has no superior.

9869. Waite and Bartlett Family Battery, complete with Cords and Sponge Electrode Handles\$10 00 ||

WAITE AND BARTLETT'S
PHYSICIAN'S FARADIC BATTERY
No. 2.

This is one of the most complete Batteries for medical use made in portable form. It has two interrupters, fine and coarse, also single contact key for testing muscles or groups of muscles. The cell of the Battery is made perfectly water-tight, so that the solution can be carried therein without any danger whatever of spilling. The advantages it gives are found in no other instrument, and it needs only to be seen to be appreciated.

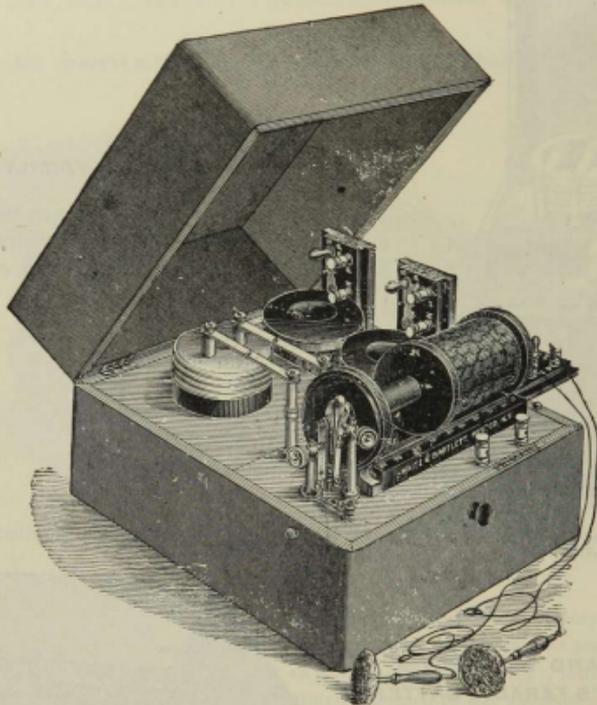


9870. Waite and Bartlett Physician's Faradic Battery, complete with Cords and Sponge Electrodes\$20 00 ||

ELECTRO-THERAPEUTIC.

WAITE AND BARTLETT'S ELECTRO-MEDICAL APPARATUS.

ENGELMANN'S (ST. LOUIS) FARADIC BATTERY.



9871.

Engelmann's Battery is constructed after the data given in "The Use of Electricity in Gynæcological Practice," by G. J. Engelmann, M. D., of St. Louis. It is provided with three coils of different sized wires and of different lengths. The effects of these three coils are markedly different.

These three coils are marked respectively: Coarse, fine and medium as C, F and M. The diameter and length of wire on each coil is also marked in millimetres and metres. Either of the three coils may be used according to the effect it is desired to produce. Use coarse coil for muscular contractions, as for contracting down a subinvolted uterus, with medium speed of interruptions. Use fine coil to relieve pain, as in cellulitis. Use medium coil when muscular contractions are to be produced, but the parts are too sensitive to allow use of coarse coil.

9871. Englemann's (St. Louis) Faradic Battery, Complete with 3 Coils and Cords and Sponge Electrode Handles.....\$ 40 00 ||

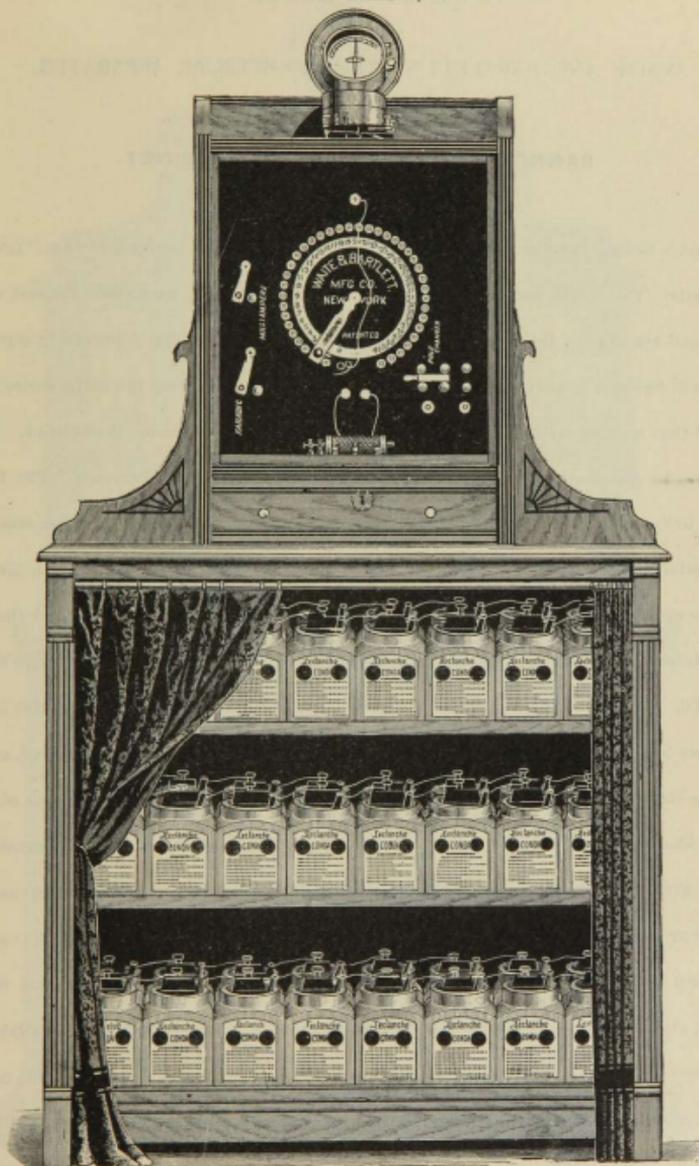
THE GOELET FLOOR CABINET.

Has 40 cells of genuine Leclanché Gonda Porous Cup Battery, Universal Switch-Board, Pole Changer and a first-class Faradic Coil. It is also furnished with a Waite and Bartlett No. 2 Milliampere Meter. It has a brass rod and rings, by means of which a curtain may be attached to cover the cells. This Cabinet is put on the market to meet the demand for one cheaper than the Ranney Cabinet (page 753). A DuBois-Reymond Faradic Coil will be furnished for \$10 extra; a Water Rheostat for \$5 extra, and a Galvanic Vibrator for \$10 extra. The Axo Cells will be furnished with above Cabinet for \$8 extra.

If you contemplate purchasing a cabinet, ascertain always what it contains, and you will be neither disappointed nor misled. All of our goods are warranted to be as represented.

ELECTRO-THERAPEUTIC.
 WAITE AND BARTLETT'S ELECTRO-MEDICAL APPARATUS.
 GOELET'S FLOOR CABINET.

PATENTED APRIL 15, 1890.



9872.

Total height, 59 inches; width, 37½ inches; depth, 13¼ inches.

9872. Goelet's Office Cabinet, complete with Cells..... \$134 00 ||

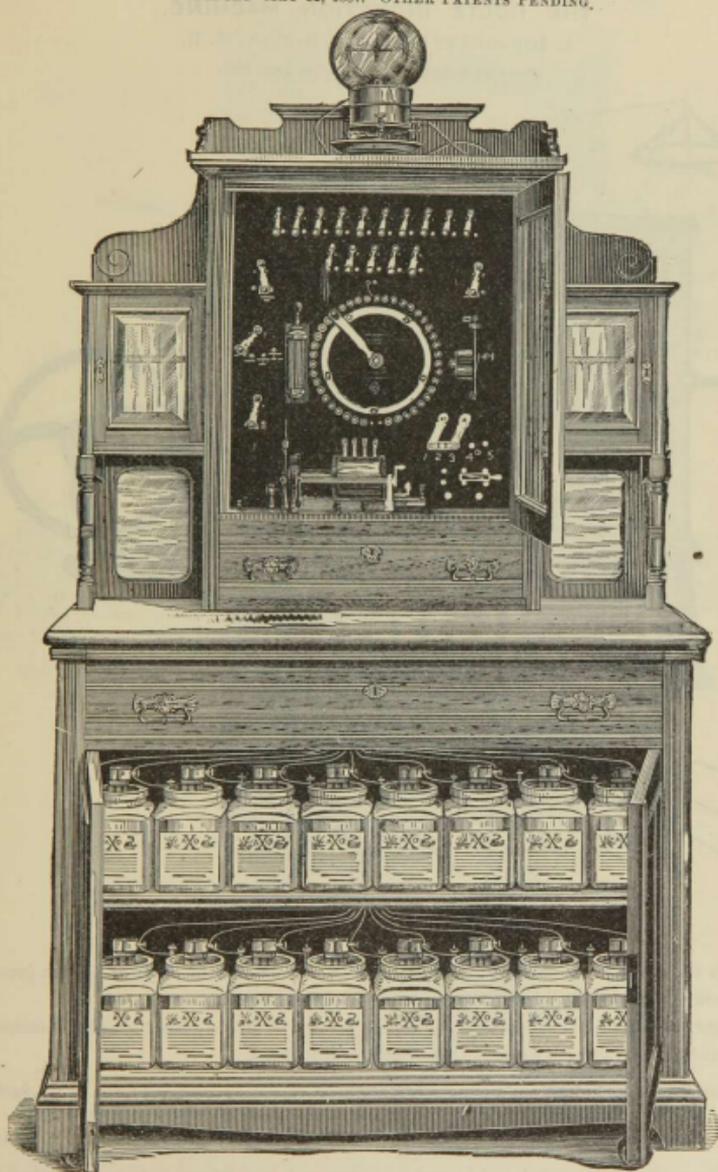
ELECTRO-THERAPEUTIC.

WAITE AND BARTLETT'S ELECTRO-MEDICAL APPARATUS.

RANNEY'S COMPLETE OFFICE CABINET.

Ranney's Complete Office Cabinets contain, for use of constant current, 40 "Axo" Leclanché battery cells. These cells are the most perfect of their kind, and have stood the test of time and use, and are always furnished, unless some other form is specially desired by purchaser. The Current Selector is universal, and any cell or number of cells from the entire series may be used, and thus a great saving of the battery, and uniform wear of same, is obtained. It contains, also, an Automatic Rheotome for giving interrupted Galvanic currents. The Polarity Changer, or Commutator, is of substantial make, has rubbing contacts and keeps in order. The German silver wire Rheostat has coils from 5 ohms to 5,000 ohms resistance each, the entire resistance of all the coils being 17,000 ohms, and by means of this rheostat and the Milliampere Meter the resistance of the patient's body may be measured or the condition of the cells tested. The Water Rheostat is used to modify the current gradually. The Cabinet also includes the DuBois-Reymond style of Faradic apparatus. The secondary coil can be removed, and coils of various sizes and lengths of wires may be used and the various qualities of current obtained. It is provided with a slow and rapid Rheotome, also with a contact key to be operated by the finger—a great help in diagnosis. This Cabinet has the De Watteville switch for using the combined or separate currents without removing the cords from the binding posts; it is also furnished with our Milliampere Meter for measuring the current strength. The case contains two small closets with bevel glass doors, two large drawers and a sliding shelf available as a desk. The castors are of large size, making it easy to roll, and the cabinet is capable of being moved on a polished floor without marring the same. The lower part has doors in the back as well as in the front, making the cells accessible and easy of inspection. We furnish with this apparatus an assortment of electrodes, and also a set of Englemann coils.

ELECTRO-THERAPEUTIC.
 WAITE AND BARTLETT'S ELECTRO-MEDICAL APPARATUS.
RANNEY'S COMPLETE OFFICE CABINET.
 PATENTED MAY 12, 1887. OTHER PATENTS PENDING.



9873.

Total height, 69 inches; length, 41 inches; depth, 22 inches. Furnished in antique oak or mahogany.
 9873. Ranney's Complete Office Cabinet, with Cells..... \$250 00 ||

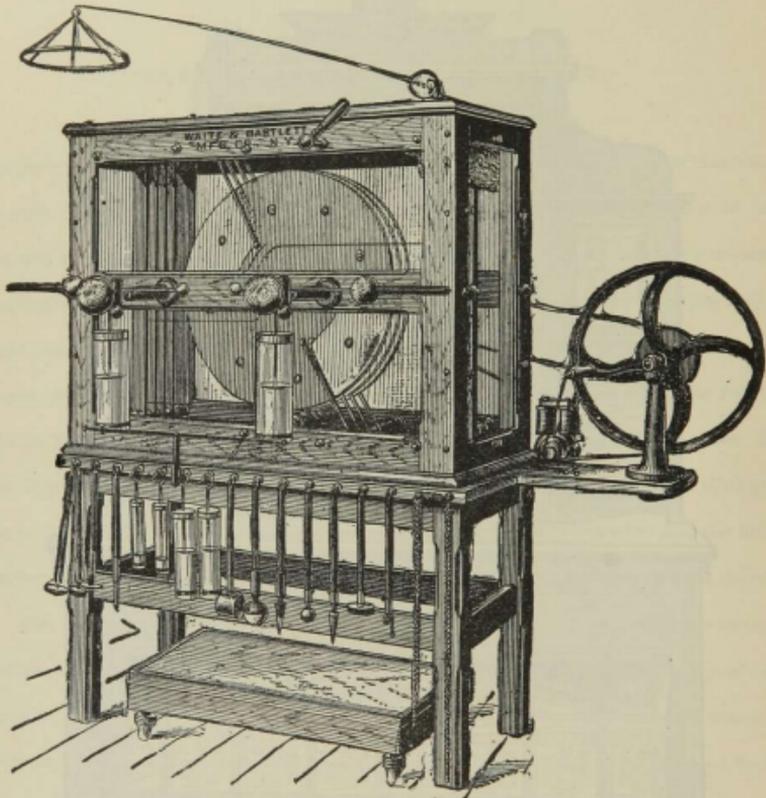
ELECTRO-THERAPEUTIC.

WAITE AND BARTLETT'S ELECTRO-MEDICAL APPARATUS.

THE HOLTZ INDUCTION MACHINE.

As Improved by PROF. A. L. RANNEY, M. D.

See "Medical Record," October 17th, 1885.



9875.

With six 26 inch revolving plates and set of electrodes, set of medical Leyden jars, with attachments for giving the induced current, and an insulated platform.

Height, 63 inches; width from back to pole pieces, 36 inches; total length, 72 inches.

Furnished in handsome Antique Oak or Mahogany Cases.

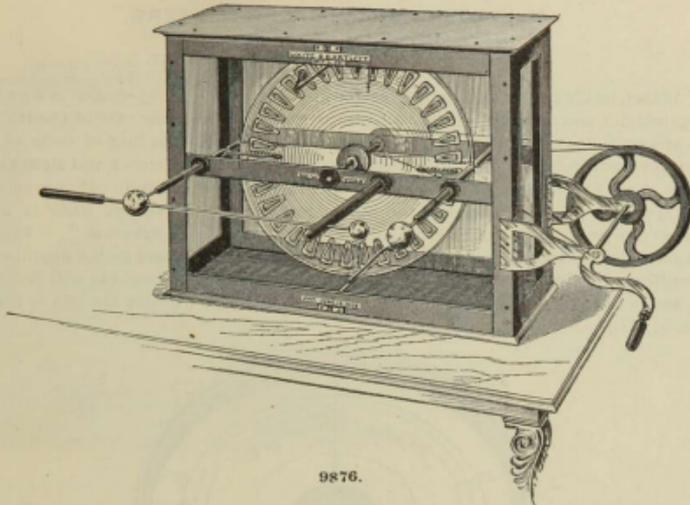
9874. Ranney-Holtz Induction Machine, complete.....\$400 00 ||
 9875. " " " " with $\frac{1}{6}$ H. P. Electric Motor for
 using the Edison Incandescent Current or a Storage Battery..... 440 00 ||

These Machines are shipped in crates, entire, and do not have to be put together by the purchaser.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.

WAITE AND BARTLETT'S ELECTRO-MEDICAL APPARATUS.
RANNEY'S IMPROVED CHARGING MACHINE.

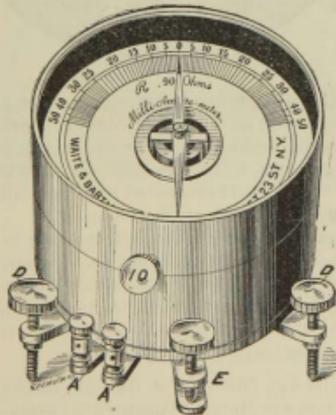


9876.

Ranney's Improved Machine for charging the large Holtz Machine is of great value during the sultry months of July and August when there is so much moisture in the atmosphere as to interfere with the workings of the machine. Instruments that have given trouble have never failed with this charger. W. A. Hammond, M. D., of Washington, I. C. Rosse, M. D., Washington, A. L. Ranney, M. D., 156 Madison Avenue, N. Y., Holbrook Curtis, M. D., 30 Madison Avenue, N. Y., S. N. Brayton, M. D., 202 Del. Avenue, Buffalo, N. Y., Dr. Martin, 145 Bryant Street, Buffalo, N. Y., J. W. Putnam, M. D., Buffalo, N. Y., and others, are using them with perfect satisfaction, and to whom we refer those interested.

9876. Ranney's Improved Charging Machine..... \$ 66 66 ||

WAITE AND BARTLETT IMPROVED MILLIAMPERE METER No. 1.



9877.

This Meter has been greatly improved by an arrangement whereby the needle swings in a recess in a copper block, by which means it is made more thoroughly, "dead beat." It is in a handsome all-metal case, of highly finished brass, and is of superior scientific mechanical construction. The first readings are from a fraction of a milliamperere up to 50 milliampereres, and with the shunt it reads to 500 milliampereres. All our instruments are calibrated individually, marked by hand, and for this reason they are uniformly correct.

9877. Waite and Bartlett Improved Milliamperere Meter No. 1..... \$ 32 00 ||

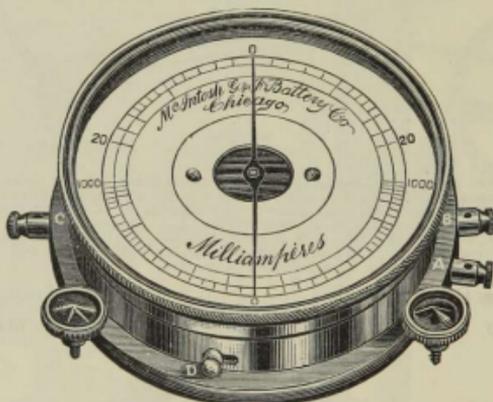
ELECTRO-THERAPEUTIC.

ELECTRO-MEDICAL APPARATUS.

McINTOSH MILLIAMPERE METERS.

THE VALUE OF ELECTRICAL MEASUREMENT.

Dr. Adams, in his recent monograph on electricity, says: "In no science is a knowledge of general principles and natural laws so essential at every step as in the case of electrical science. Its laws are multiple, varied and complex, and a thorough understanding of them is necessary for a correct interpretation of the numerous phenomena which are ever and anon manifesting themselves." "Electricity, however, is a definite quantity capable of producing, with uniformity, certain physical, chemical and nutrient changes whenever we come to understand the laws governing its action and learn to apply it with methods of precision." "The physician who imagines that he can deal with electricity as a remedial agent and secure anything approximating uniform results without the use of reliable measuring instruments will find himself as much at sea as the mariner without his compass, the carpenter without his rule or the pharmacist without his scales."



9878.

It is now conceded that the Milliamperometer is one of the most important factors in the treatment of diseases by electricity, as with it the exact amount or "dosage" of the current that passes through the patient is determined. Our instrument is absolutely correct, as it is graduated by standard measurements, and the greatest care is taken in the manufacture. There are two separate scales; the upper one is graduated from $\frac{1}{2}$ to 20, and the lower one from 1 to 1000 milliamperes, so any range of current can be obtained.

It can be used with any galvanic battery, the patient being in circuit, and is not liable to get out of order. Hitherto the instruments designed for this purpose have been too delicate to withstand the effects of daily usage without frequent adjustment that could only be made by the manufacturer, and the great expense of those worthy of trial has deterred the profession from adopting them. These difficulties we believe to be obviated in the instrument here presented. Full directions accompanying each instrument.

9878. McIntosh Milliamperometer, Diameter of Base $5\frac{1}{2}$ inches..... \$25 00 ||
 9879. McIntosh Pocket Milliamperometer, Diameter $3\frac{1}{2}$ inches..... 25 00 ||

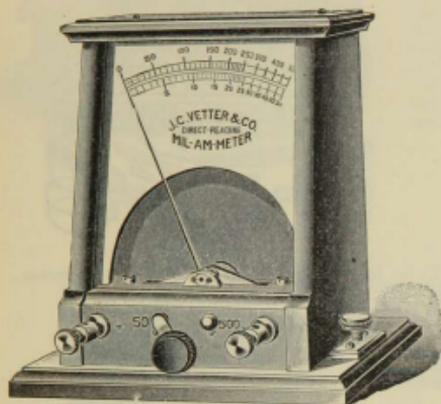
This instrument is handsomely finished and placed in a velvet lined morocco case, and is essentially the same in point of finish and accuracy as our standard Milliamperometer.

9880. McIntosh Milliamperometer, with Reflecting Mirror, same as Fig. 9878, with hinged mirror to admit of the scale being read while the operator is seated \$30 00 ||

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.
ELECTRO-MEDICAL APPARATUS.
VETTER MIL-AM-METERS.

SPECIALLY DESIGNED FOR PHYSICIANS' USE.



9881.

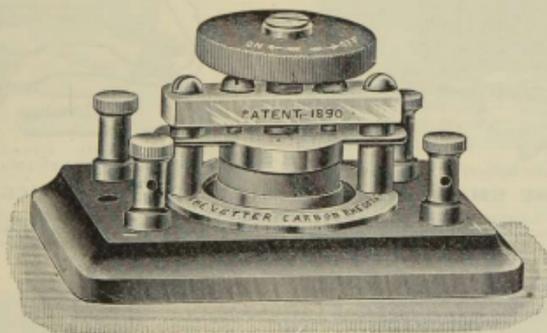
9881. Vetter's Direct-Reading Mil-Am-Meter..... \$35 00

The Vetter Standard Direct-Reading Mil-Am-Meter places within reach of the physician a means of obtaining quick, accurate and reliable electrical measurements, such as have hitherto been unattainable. No time is required for adjusting or waiting for the needle to come to rest, but readings can be taken immediately as soon as the circuit is closed. These advantages are obvious to all, and are possessed only by the Vetter Standard Instruments.

This instrument is accurately calibrated and standardized. The staff is of hardened steel, pivoted in ruby bearings with jeweled end pieces; it is provided with a switch, which, when placed on the 50 button, selects the lower or red scale on dial, reading from 0 to 50 milliamperes. When placed on 500, read black or top scale, 0 to 500.

It is mounted in a well-made mahogany or antique oak case.

THE VETTER CURRENT CONTROLLER.



9882.

This compact, durable and well-finished instrument is of an entirely new and ingenious design.

The principle adopted in the construction of this rheostat is the effect of variation in resistance, which takes place in carbon with a change in pressure. A quantity of specially prepared carbon in a finely divided state is placed in a small rubber pouch or cylinder, which is enclosed by two metal plates to which the two sides of the circuit are connected. The lower plate is fixed to the base of the instrument, and the other, traveling in upright guides, can be depressed by means of a screw with a fine thread, so as to compress the carbon in the rubber cylinder. In this way the current passing can be adjusted with the greatest nicety. The variation in the resistance of the rheostat follows the movements of the screw through very wide limits, thus controlling from off or no current, to the full capacity of the battery. This instrument is far in advance of any rheostat, switch-board or cell selector. It imposes equal work upon all the cells of a battery, maintaining the current throughout the series of uniform and equal strength. There is also a saving of a mass of complicated wires from the cells, as only the two terminal wires from the battery are necessary.

The absence of liquid in glass, and the many advantageous features it possesses, make it the most desirable instrument for the purpose. The above cut is three-fourths the actual size.

9882. Vetter's Carbon Rheostat.....\$15 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC. ELECTRO-MEDICAL APPARATUS.



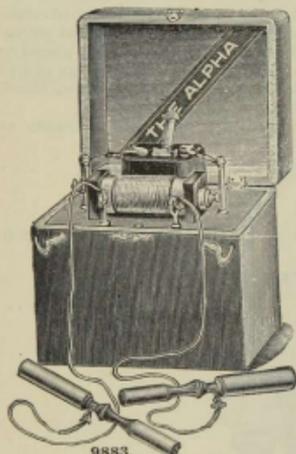
9895.

Battery No. 1, 1 Cell. Size—Length, 6 inches;
width, 3½ inches; height, 1½ inches.



9896.

Battery No. 2, 2 Cells. Size—Length, 7½ inches;
width, 3¾ inches; height, 1½ inches.



9883.

Alpha Faradic Battery.

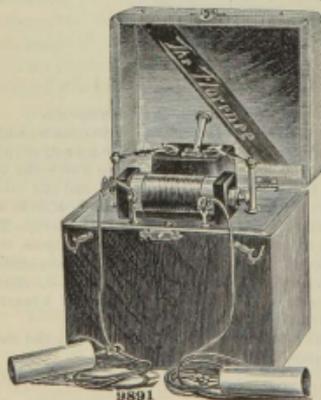


9897.

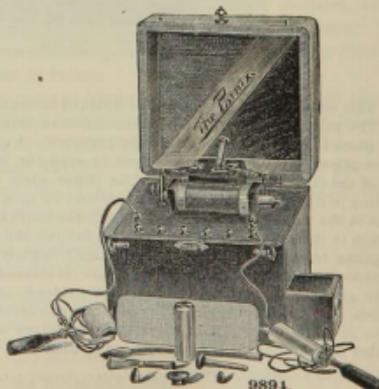
Battery No. 3, 3 Cells. Size—Length, 8½ inches;
width, 4 inches; height, 1½ inches.

THE SMITH & SHAW CLOSED CELL BATTERIES,

Combine improvements of so radical a nature as to make them "the Battery of the Age." They are the most simple and compact in construction, effective in action, durable, reliable, economical, and, above all, portable, in the true sense of the word, viz.: A Battery that can be carried in the pocket, charged and ready for use, and the cells so constructed as to be perfectly air and acid tight.



9891.

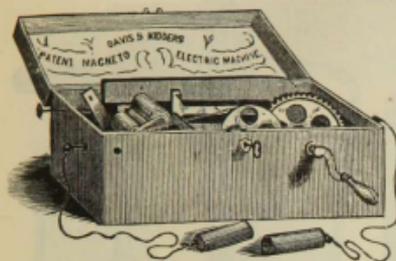


9894.

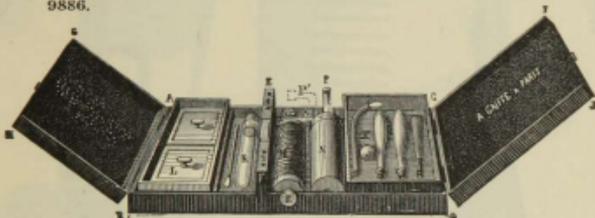
ELECTRO-THERAPEUTIC.
ELECTRO-MEDICAL APPARATUS.

GAIFFE'S BATTERY No. 201.

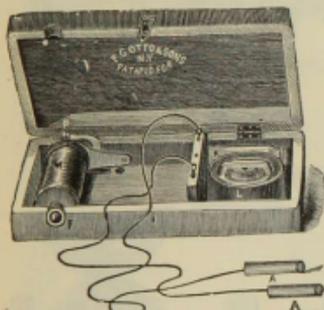
Our No. 201 Battery is the genuine Gaiffe Battery, our own importation. With each Battery is included a pair of conducting cords, two insulated handles, a pair of hollow metal handles, a chamois covered carbon electrode, an olive shaped electrode, a metallic brush electrode, and a bottle of Bi-Sulphate of Mercury with a small metal spoon for conveniently making the solution.



9886.



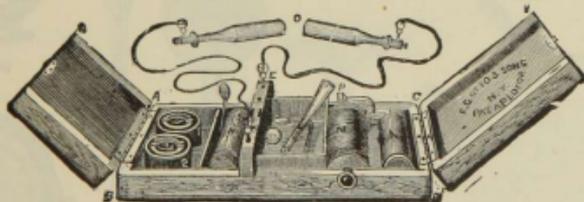
9892.



9887.



9888.



9889.

9883.	Alpha Faradic Battery.....	\$ 5 50
9884.	Climax Faradic Battery.....	4 50
9885.	Davis and Kidder's Electro-Magnetic Battery, large.....	15 00
9886.	" " " " " small.....	10 00
9887.	Drescher's Pocket Battery No. 1.....	5 00
9888.	" " " " " 2.....	7 50
9889.	" " " " " 3.....	9 00
9890.	Duplex Faradic Battery, Double Cell, with an assortment of Electrodes.....	28 00
9891.	Florence Faradic Battery.....	8 00
9892.	Gaiffe's Faradic Battery No. 201 (Genuine).....	10 00
9893.	" " " " " System " (American make).....	7 50
9894.	Phoenix Faradic Battery, with assortment of Electrodes.....	16 00
9895.	Smith and Shaw Pocket Battery No. 1.....	7 50
9896.	" " " " " 2.....	10 00
9897.	" " " " " Triplex " " 3.....	12 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

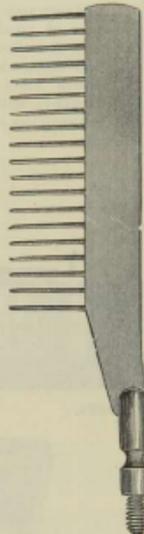
ELECTRO-THERAPEUTIC.
ELECTRODES.



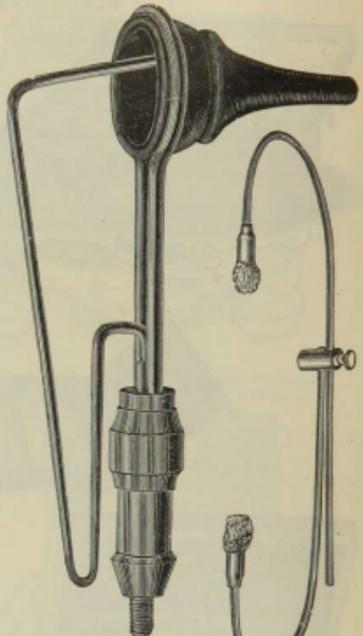
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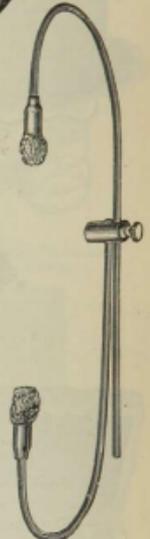
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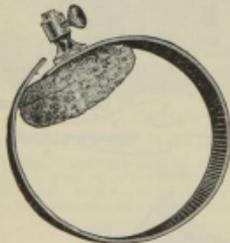
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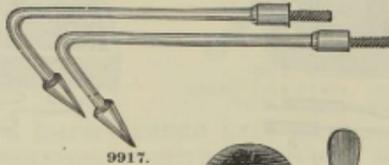
9920.



9919.



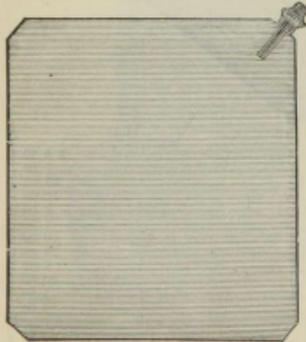
9904.



9917.



9922.



9928.



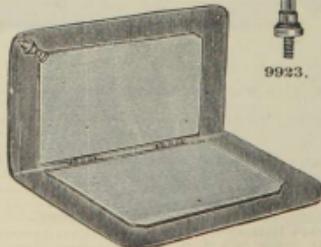
9915.



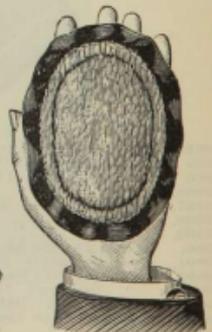
9906.



9923.

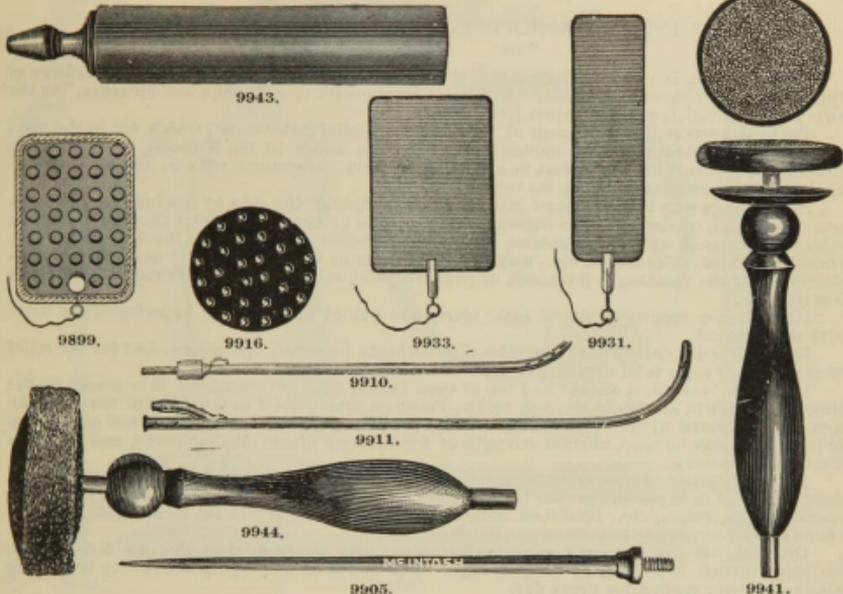


9927.



9940.

ELECTRO-THERAPEUTIC.
ELECTRODES.



9898.	Abdominal Electrode, Apostoli's, Clay.....	\$3 00
9899.	" " Engelmann's (St. Louis), Punk.....	4 00
9900.	" " Goelet's, Clay.....	3 00
9901.	" " Hayes' Spongio Piline, Block Tin Back. See page 768.....	2 50
9902.	" " " " Tinned Copper Back.....	2 00
9903.	" " " " Martin's Membrane. See page 768.....	4 00
9904.	Arm.....	2 00
9905.	Aural and Nasal Electrode.....	50
9906.	Ball.....	2 00
9907.	Brush.....	75
9908.	" " Hair.....	6 66
9909.	" " Metallic. See, also Nos. 9949 and 9951.....	2 50
9910.	" " Peterson's Improved. See next page.....	2 50
9911.	" " Female, Silver.....	5 00
9912.	" " Male.....	1 50
9913.	" " Newman's, Tunnelled.....	75
9914.	" " Nickel-plated.....	40
9915.	" " Small, Medium and Large..... each,	1 00
9916.	" " Hard Rubber, with Insulated Points.....	2 50
9917.	" " for Muscular Faradization, Gold-plated..... per pair,	5 00
9918.	" " Ear.....	2 00
9919.	" " Campbell's (St. Louis). See page 767.....	2 50
9920.	" " Double Sponge Tip, Insulated.....	3 00
9921.	" " McIntosh's.....	2 00
9922.	" " Eye.....	50
9923.	" " Cup.....	3 00
9924.	" " Nickel-plated.....	2 00
9925.	" " Double, Insulated Stem.....	2 00
9926.	" " Sponge.....	2 66
9927.	" " King's, Double Current.....	3 00
9928.	" " Foot Plate.....	40
9929.	" " Plain Zinc, 9x10 inches.....	5 00
9930.	" " Stockton's.....	32
9931.	" " Flexible, 2 x 3 inches.....	48
9932.	" " " " 1 1/2 x 8 ".....	48
9933.	" " " " 3 x 4 ".....	48
9934.	" " " " 3 x 5 ".....	50
9935.	" " " " 4 x 5 ".....	70
9936.	" " " " 5 x 7 ".....	80
9937.	" " " " 6 x 6 ".....	90
9938.	" " " " 6 x 8 ".....	1 00
9939.	" " " " 6 x 12 ".....	1 20
9940.	" " " " 8 x 12 ".....	1 50
9941.	Hand.....	3 00
9942.	Handles, Carbon, McIntosh's..... per pair,	2 00
9943.	" " Interrupting. Same as Fig. 10015 without wheel..... each,	1 25
9944.	" " Metallic..... per pair,	1 50
9945.	Extra Sponge-covered Discs for Universal Handles..... " " "	75

These Flexible Wire Gauze Electrodes wrapped with a wet towel or chamois, make an admirable electrode to use over the abdomen or along the spine.

ELECTRO-THERAPEUTIC.

ELECTRIC CATAPHORESIS AS A THERAPEUTIC MEASURE.

The following is condensed from the article by Dr. Frederick Peterson, of the College of Physicians and Surgeons, entitled, "Electric Cataphoresis as a Therapeutic Measure," in the New York Medical Journal, of April 27th, 1889.

There is a streaming movement of fluids or semi-solid substances, which are in the path of a galvanic current, and such movement is from the Anode to the Kathode, or in the same direction as the current. It seems in a manner to carry substances with it, just as a stream washes floating substances along its course.

Hence drugs may be introduced into the system through the skin by placing them in solution in the path of the galvanic current, which means of course, between the anode and the skin. Solutions of quinine, morphine, strychnine, chloride of potassium, tincture of aconite, aconitia, cocaine, chloroform, etc., may be placed upon or within a properly constructed cataphoric electrode, (making it the anode or positive pole) and transmitted through the skin in a few minutes.

Dr. Peterson reports in detail some thirty-one out of one hundred experiments he made with this method.

He employed it chiefly to produce local anæsthesia for small operations, and for the relief of neuralgia of superficial nerves, and reported some astonishing results.

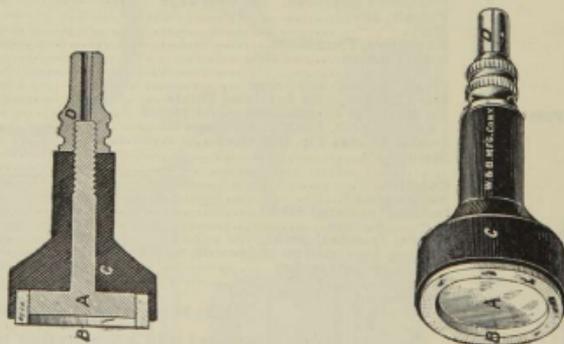
If cocaine be used, it should be a ten or even twenty per cent solution. It is placed on the simple cataphoric electrode devised by Dr. Peterson and applied to the painful nerve, or the spot to be operated upon. Having made it the positive pole the current is turned on. From 10 to 15 cells may be used, current strength of five or even fifteen Milliamperes, and for from five to ten minutes.

In fact it is not necessary to measure the current. A perceptible current is used for a short time, and an imperceptible one for a longer period. Cataphoresis is indicated for cutaneous operations, neuralgia, etc., (and then cocaine should be used), and in the local applications of iodine or its compounds to tumors or swellings.

Dr. Peterson has devised a more perfect cataphoric electrode than the one described in his paper in that it permits of exact dosage. This mode of employing electricity is gaining wide repute and application every day.

In the New York Medical Journal, November 15th, 1890, Dr. Peterson has a note on a new and perfectly simple method of exact dosage of drugs used with the Anode. For this purpose he had made by Waite & Bartlett a particular form of cataphoric electrode, which we call the "Exact Dosage Electrode." Boeddiker, the pharmacist at 964 Sixth Ave., manufactures medical cataphoric discs to be used with this electrode. These discs are charged with certain quantities of various alkaloids and other drugs.

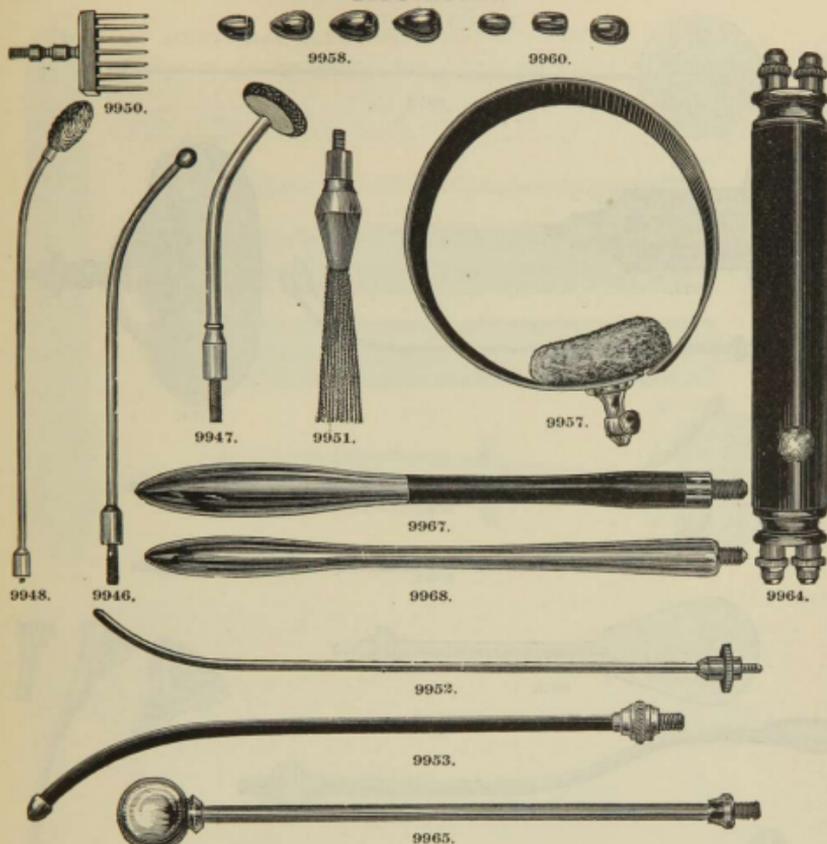
PETERSON'S IMPROVED CATAPHORIC ELECTRODE.



9909. Page 761.

This cut illustrates the new electrode. *A* is a disc, made of metal, that will not oxidize. The stem which passes through the hard rubber cover *C* is held in place by nut *D*. It also holds the tip for connecting with the battery. *B* is a soft rubber ring, which is held in place by *A*, and at the same time it insulates the skin from *A*, allowing the current to pass from *A* to the skin of the patient through the medicated paper contained in the cavity formed by *A* and *B*. This electrode is far superior to the old one.

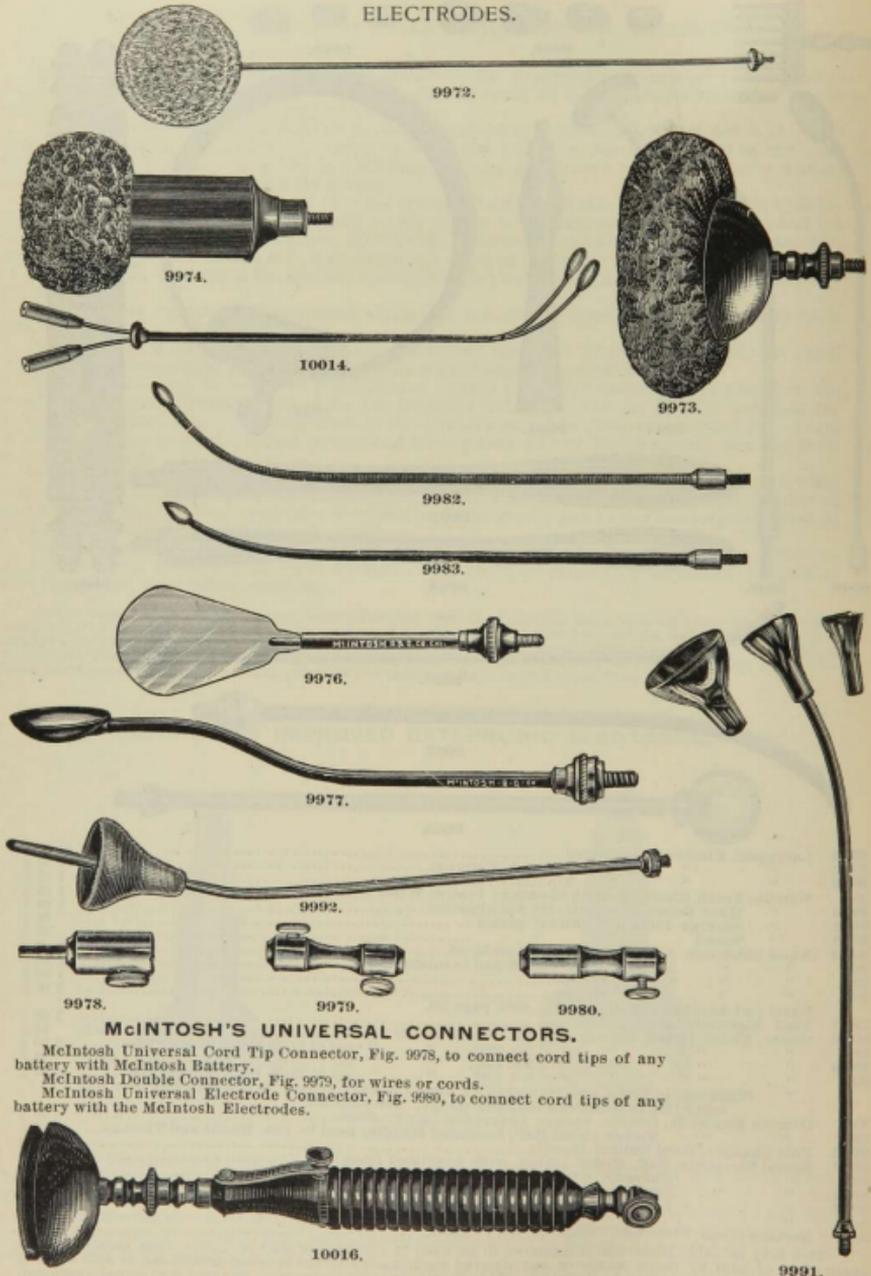
ELECTRO-THERAPEUTIC.
ELECTRODES.



9946.	Laryngeal Electrode, Insulated.....	\$1 00
9947.	“ “ Sponge Covered, External.....	1 25
9948.	“ “ Tip.....	1 25
9949.	Metallic Brush Electrode, with Sheath to Protect Wires.....	1 00
9950.	“ Many Points Electrode, for Faradization.....	1 00
9951.	“ Scourge Electrode, Nickel-plated.....	1 00
9952.	“ Sound “.....	50
9953.	Nasal Electrode, Nickel-plated and Insulated.....	75
9954.	“ “ King’s, Nickel-plated and Insulated.....	1 00
9955.	“ “ Sharp’s, Double.....	1 50
9956.	“ “ Single.....	2 50
	Nasal and Aural Electrode, see Fig. 9905, page 761.....	2 00
9957.	Neck Electrode.....	2 00
9958.	Olives, Nickel-plated, for use with No. 9982, Assorted Sizes..... each	20
9959.	“ “ “ “ No. 9982, “ “ set of 12 on Hard-Rubber Bar.....	2 50
9960.	“ “ “ “ No. 9983, “ “ set of 12 on Hard-Rubber Bar..... each	20
9961.	“ “ “ “ No. 9983, “ “ set of 12 on Hard-Rubber Bar.....	2 50
	Platinum, to order and furnished at lowest market prices. When ordering give size according to American Catheter Gauge. See page 395.	
9962.	Ovarian Electrode, Double, Sponge Covered.....	3 25
9963.	“ “ Nickel-plated Ball, Insulated Handle, used by Drs. Munde and Thomas....	2 00
9964.	Pole Changer, Hard Rubber Handle.....	5 00
9965.	Rectal Electrode, Ball, Nickel-plated, with Insulated Stem.....	1 25
9966.	“ “ Curved, “ shaped like Fig. 6343, page 348.....	2 50
9967.	“ “ Insulated.....	2 00
9968.	“ “ Nickel-plated, Large.....	1 00
9969.	“ “ Small.....	1 00
9970.	Rectal Syringe Electrode, Complete, with Capote.....	5 00

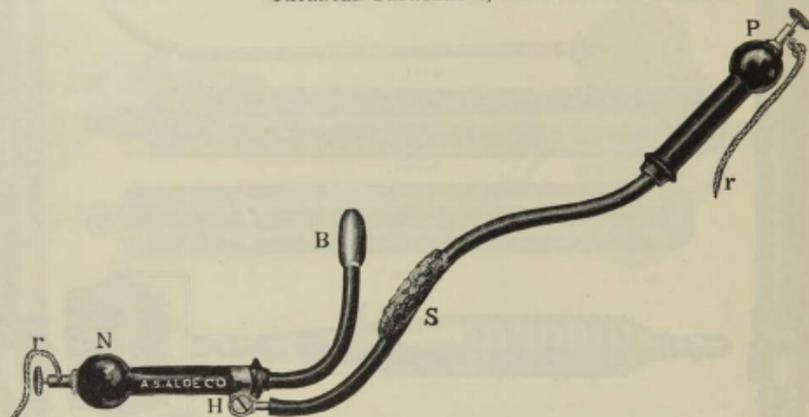
This very valuable Electrode is intended to be used in connection with a capote, thus permitting the application of heat by warm water or any desired medicament to the mucous membrane, as also of such distension of the organ as may be desirable. This Electrode is also admirably adapted for vaginal treatment.

ELECTRO-THERAPEUTIC. ELECTRODES.



ELECTRO-THERAPEUTIC.
ELECTRODES.
THE PROSTATIC ELECTROLYZER.
(BI-POLAR.)

PATENTED FEBRUARY 4, 1890.



10017. One-third Actual Size.

The instrument is for use in reduction of hypertrophy of the prostate by means of the galvanic current from the negative pole. The usual flexible reophores, *r, r*, are attached to the terminal binding-posts, the negative pole of the battery being associated with the handle *N* and the positive pole with the handle *P*. The reophores having been thus previously fastened, the rectal limb of the instrument (which has a movement in the vertical plane) is pressed down toward the sponge-covered moistened pole, *S*, the olive-shaped bulb-pole, *B*, having been previously slightly oiled. The instrument is then, with the handle *N* held in the rear, passed under the crotch. The current of the battery is supposed to have been previously set flowing. Grasping, then, the rear handle *N* with the right hand, and allowing the front handle *P* to fall away from the crotch, the patient now presses the olive-shaped bulb, *B*, gently into the rectum, any slight error of judgment as to direction being compensated for by the movement of that limb in the vertical plane. The patient then grasps the front handle, *P*, and raises the lever formed by the hinge, *H*, thus bringing the moistened sponge-covered positive pole, *S*, in contact with the perineum. By exercising more or less pressure with this pole against the perineum, the current is then regulated to the greatest nicety by the patient's sensations.

The resistance to the current varies from 2500 to 3000 ohms, the milliampere meter indicating from 2 to 3 milliamperes, the duration of administration being, according to Dr. Shoemaker and other authorities, from 3 to 5 minutes. (See Dr. Shoemaker's paper in *The Times-Register*, January 17, 1891.)

10017.	Prostatic Electrolyzer.....	\$ 10 00
10018.	“ “ with Battery and Reophores, complete.....	15 00

ELECTRO-THERAPEUTIC.

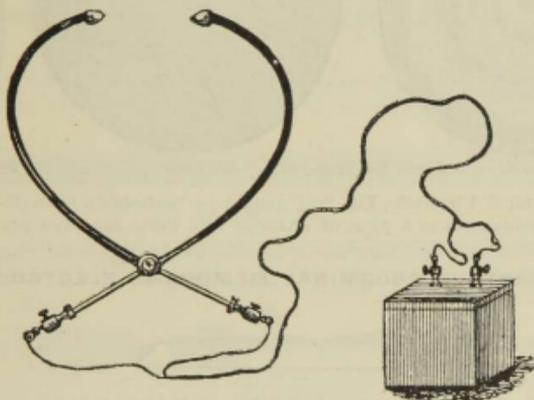
ELECTRODES.

A NEW EAR ELECTRODE.

FOR THE CURE AND AID OF DEAFNESS.

By DR. JAS. A. CAMPBELL, St. Louis.

PROF. OPHTHALMOLOGY AND OTOTOLOGY, HOMŒOPATHIC MEDICAL COLLEGE MISSOURI; OCULIST AND AURIST TO THE ST. LOUIS CHILDREN'S HOSPITAL.



9918. See Page 761.

The difficulties which stand in the way of a convenient method of applying electricity in ear diseases, depending largely upon the lack of a suitable electrode, properly adapted for the purpose, has been the principal reason that it has fallen into disuse for this purpose, in the medical profession at large, and even pronounced against and ignored by many aurists.

The instrument here offered perfectly fills the required demand. It is simple in form, convenient in arrangement, and last, but not least, is inexpensive.

Directions for its use seem superfluous, as it needs but to be seen to explain itself.

It consists of two curved moveable arms, passing through a small hard-rubber block, by this means separated, and thus readily adjustable to any head, by means of the two binding screws. The upper ends of these insulated rods terminate in sockets with binding screws, to which the conducting cords of any battery may be attached, thus permitting the use of the two currents, the positive on one side and the negative on the other, which may be readily reversed.

The lower ends of the electrodes terminate in small olive-shaped metal bulbs, which may be of different sizes.

The whole electrode thus described weighs but $1\frac{3}{4}$ ounces. When it is properly adjusted it is retained in position, with gentle force, by its own elasticity.

It is universally conceded that only the very weakest currents of electricity should be used on the eyes or ears, and therefore it is urgently recommended, in using this electrode, that no greater strength should be employed than may be obtained from one or two cells of a McIntosh or similar battery, the galvanic current being most suitable in the greater majority of cases. It is also wise not to prolong the sitting much more than five minutes at any one time.

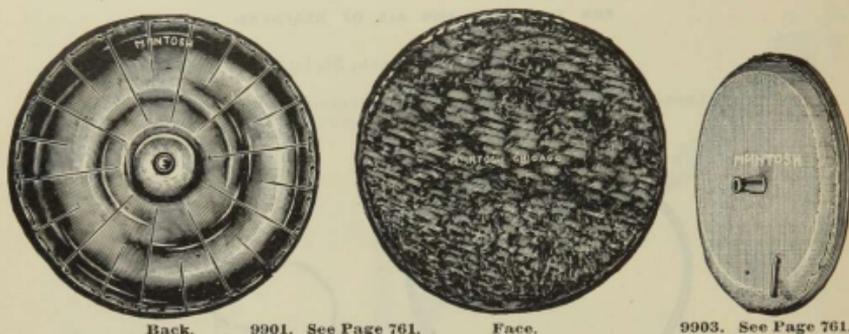
The local effect of the metal electrodes may be modified by covering it with thin chamois skin, or even a small piece of ordinary cotton flannel, slightly moistened.

ELECTRO-THERAPEUTIC.

ELECTRODES.

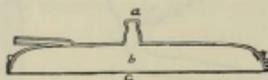
ELECTRODES SPECIALLY RECOMMENDED FOR USE IN GYNÆCOLOGICAL PRACTICE,
BY THE APOSTOLI METHOD.

HAYES' ABDOMINAL ELECTRODE—SPONGIO PILINE.



Hayes' Abdominal Electrode, Fig. 9901, should be thoroughly saturated with water and placed over the abdomen upon a piece of chamois skin which has been previously soaked in warm water.

MARTIN'S ABDOMINAL MEMBRANE ELECTRODE.

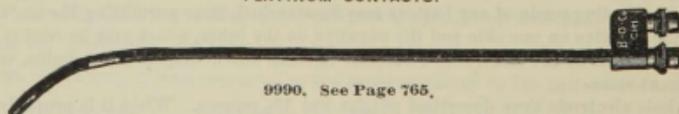
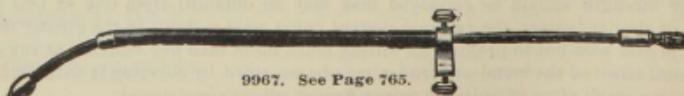


This Electrode, Fig. 9903, is a nickel-plated concave plate, 8 inches in diameter, covered with a membrane (c), and holds about one pint of fluid. It is filled at the nozzle on top, as shown at (a) in cut. Warm water or medicinal solutions can be used, and the membrane permits contact with the abdominal walls, distributing the current evenly over the surface.

NOTE.—At the close of a treatment this electrode should be placed on a folded towel, the water remaining in it, a few grains of bi-chloride of mercury being used as an antiseptic; removing the water and allowing the membrane to become dry, very quickly destroys it. If the damaged electrode is returned to us we will renew the membrane at a cost of 75c. net. The cost of repairs must invariably accompany the order.

APOSTOLI'S BI-POLAR INTRA-UTERINE ELECTRODE.

PLATINUM CONTACTS.

IMPROVED BI-POLAR INTRA-UTERINE ELECTRODE,
WITH PLATINUM OLIVE AND PLATINUM TIPPED FLEXIBLE MUFF.

ELECTRO-THERAPEUTIC.

ELECTRODES.

ELECTRODES SPECIALLY RECOMMENDED FOR USE IN GYNÆCOLOGICAL PRACTICE,
BY THE APOSTOLI METHOD.

MARTIN'S FIBROID NEEDLE.

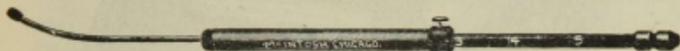
PLATINUM POINT.



9998. See Page 765.

MARTIN'S INTRA-UTERINE ELECTRODE.

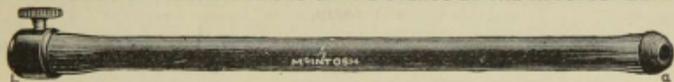
PLATINUM STEM.



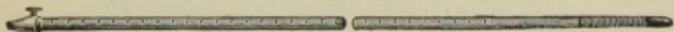
9999. See Page 765.

MARTIN'S FLEXIBLE INTRA-UTERINE CONCENTRATION ELECTRODES.

FOR TREATMENT OF FIBROID TUMORS OF THE UTERUS BY THE APOSTOLI METHOD.



Flexible Shield or Muff.



Flexible Bougie, or Stylet.



Showing How the Depth of Introduction can be Regulated by Means of the Flexible Muff.

10000. See Page 765.

MARTIN'S INTRA-UTERINE CONCENTRATION ELECTRODE CASE.



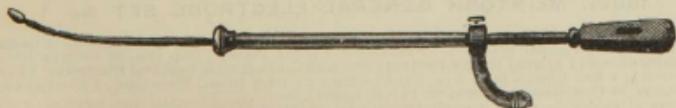
10001. See Page 765.

Martin's Intra-Uterine Concentration Electrode Case contains: 1 Flexible Intra-Uterine Electrode, 3 centimetres, for 50 milliamperes; 1 Flexible Intra-Uterine Electrode, 3 centimetres, for 100 milliamperes; 1 Flexible Intra-Uterine Electrode, 5 centimetres, for 50 milliamperes; 1 Flexible Intra-Uterine, 5 centimetres for 100 milliamperes; 1 Flexible Bougie, 3 centimetres; 1 Flexible Bougie, 5 centimetres; 1 Flexible Shield or Rubber Muff.

NOTE.—When the Martin's Intra-Uterine Concentration Electrode requires renewal, if the old electrode with its platinum wrapping is returned to us we will send a new one of same size at \$1.25 net.

If a new shield or muff is necessary, the price is 75 cents net. These repair charges must invariably accompany the order.

ROCKEY'S DOUBLE UTERINE ELECTRODE.



10002. See Page 765.

ELECTRO-THERAPEUTIC. ELECTRODE SETS.

10019. "G. F." ELECTRODE SET No. 1.

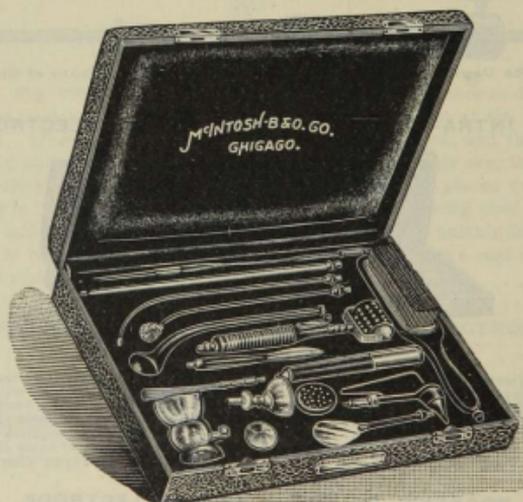


10019.

Containing 1 Interrupting Handle; 1 Eye-cup Electrode; 1 Vaginal Electrode; 1 Ear Electrode; 1 Rectal Electrode; 1 Tongue-plate Electrode; 1 Uterine Electrode; 1 Wire Brush; 1 Ball; 2 Olives... \$ 15 00 ||

10020. "G. F." ELECTRODE SET No. 2.

Containing 1 Interrupting Handle; 1 Universal Handle; 1 Sponge-covered Foot Plate; 1 No. 1 Carbon Point; 1 No. 2 Carbon Point; 1 Vaginal Electrode; 1 Rectal Electrode; 1 Eye-cup Electrode; 1 Sympathetic Nerve Electrode; 3 Olives; 1 Ear Electrode; 1 Tongue-plate Electrode; 1 Single Nerve Electrode; 1 Cup for Os Uteri; 1 Phrenic Nerve Electrode; 1 Intra-Uterine Electrode; 1 Scourge Electrode; 1 Bladder Electrode; 2 Metallic Discs; 2 Gilded Steel Needles 30 00 ||



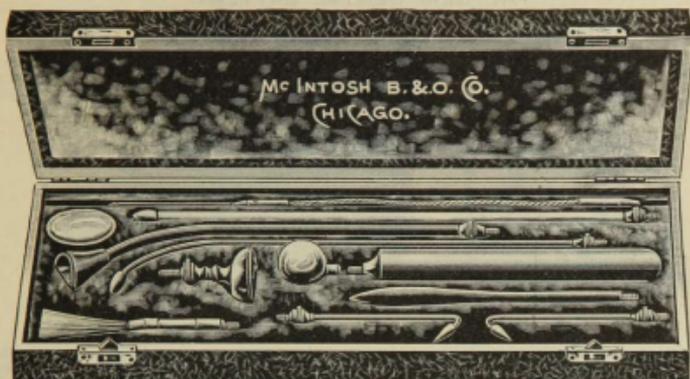
10021. MCINTOSH GENERAL ELECTRODE SET No. 1.

Containing 1 Wheel and Interrupting Handle; 1 Universal Sponge Holder; 1 Insulated Rectal Electrode; 1 Insulated Vaginal Electrode; 1 Insulated Tongue Plate; 1 Cup-shaped Uterine Electrode; 1 Metallic Brush; 1 Spiral Flexible Urethral Electrode; 1 Indeflexible Urethral Electrode; 1 Laryngeal Electrode; 1 Ear Electrode; 1 Eye-cup Electrode; 1 Hair Brush Electrode; 2 Needles and 2 strand Holders, in Fine Morocco-Covered, Velvet-Lined Case \$ 25 00 ||

Our general electrode cases contain an assortment of electrodes, including those most frequently needed by the practitioner. Any special assortment can be furnished in case to order.

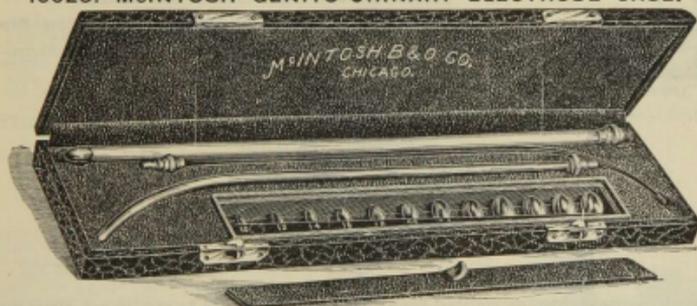
ELECTRO-THERAPEUTIC. ELECTRODE SETS.

10022. McINTOSH GENERAL ELECTRODE SET No. 2.



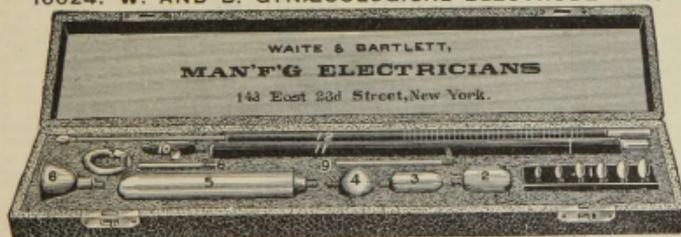
Containing 1 Universal Sponge Holder; 1 Small Rectal Electrode; 1 Vaginal Electrode; 1 Urethral Electrode, insulated; 1 Cup-shaped Uterine Electrode; 1 Metallic Brush; 1 Spiral Flexible Urethral Electrode; 1 pair Duchenne's Points; 1 Ball Electrode; 1 Disc Electrode; 1 Needle and Holder, in a Morocco-covered, Velvet-Lined Case. \$ 12 50 ||

10023. McINTOSH GENITO-URINARY ELECTRODE CASE.



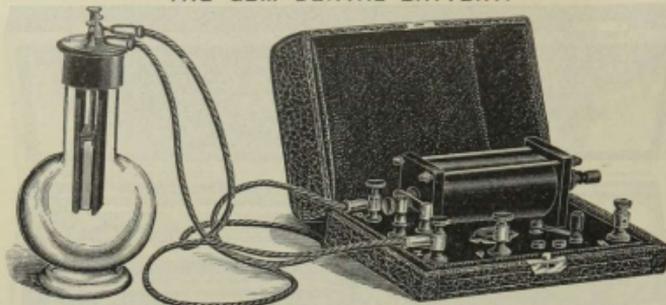
This case contains Metallic Sound, Flexible and Inflexible Urethral Electrodes and 1 dozen Olives, numbered from 10 to 32, French Scale, in a Velvet-Lined Morocco Case, 12 inches long, 3 3/4 inches wide. \$ 7 00 ||

10024. W. AND B. GYNÆCOLOGICAL ELECTRODE SET.



The above set comprises instruments devised and used by Drs. P. F. Mundé, T. G. Thomas and A. D. Rockwell, of New York City, and Dr. Henry Fry, of Washington, D. C. The Electrodes are useful in the treatment of stenosis, endometritis, ovaritis, chronic pelvic cellulitis, procerdentia, displacements and relaxed conditions of the vaginal walls. The advantages of this set are that all the attachments fit universal handles. The Fry Stenosis set has interchangeable tips (1) from No. 11 to No. 28, French Scale. The stenosis sound (12) is flexible a distance of 4 inches, to allow for the various curves of the uterine canal, the remainder of the handle being rigid. It thus gives the operator a superior control of the electrode. The vaginal electrode (5), cervix (7), ovarian (2, 3), ball (4), stems (8, 9), uterine cup (6) and needle holder (10), are all interchangeable on a rigid handle (11) of extra length, thus making it a very effective and convenient uterine set. \$13 33 ||

**ELECTRO-THERAPEUTIC.
ELECTRO-MEDICAL APPARATUS.
THE GEM DENTAL BATTERY.**



10025. Size of Case, 5x7x2½ Inches.

The constant call from physicians for a Faradic battery for dental use has induced us to place the above in our list. The coil is made in the same style and finish as the coil on the McIntosh No. 3 Physician's Battery. It is on a hard-rubber base; the metal work is finely nickel-plated. It is put up in a neat Morocco case, lined with crimson or purple velvet. The contrast of the polished black rubber and nickel-plated work with the velvet-lined case gives a very fine and attractive appearance. This battery is also very neat and convenient for general use in a physician's office.

10025. Gem Dental Battery, with Grenet Cell, Conducting Cords, Electrodes and Forceps Connector. . \$18 00



10026.

McINTOSH DENTAL CONNECTOR.

For connecting Conducting Cord of Battery to the Dental Forceps.

10026. McIntosh Dental Connector \$ 0 35

GALVANOMETER.

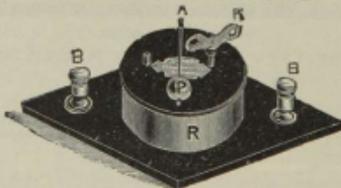


10028.

McIntosh's Galvanometer, on polished hard rubber base, large size 6½x3½ inches, metal work finely nickel-plated. These Galvanometers can be connected to any make of Galvanic battery, to test the current.

10027. McIntosh's Large Galvanometer..... \$ 7 00
 10028. " Medium " 5 00
 10029. " Small " 4 00

AUTOMATIC RHEOTOME.



10030.

For therapeutic effects it is sometimes desirable to interrupt the Galvanic current, which may be done with the Automatic Rheotome shown in the cut. This is constructed on the principle of a clock, and is operated by a system of wheels and a strong spring. A turn of the key starts and stops the Rheotome, and by moving the ball along the bar the interruptions may be regulated.

This Rheotome can be connected with any Galvanic battery, to give slow or rapid interruptions of the current. It is put up with a polished hard rubber top and base and nickel-plated sides; all the metal work is nickel-plated. It occupies but little space, and is as durable as a clock. Size of base, 7½x4½ inches.

10030. McIntosh's Automatic Rheotome..... \$ 12 00
 10031. " Graduated Automatic Rheotome..... 15 00

This instrument may be adjusted so as to furnish from 6 to 660 interruptions per minute. It may be introduced into either the Faradic or Galvanic circuit, and can be used with any style of battery.

ELECTRO-THERAPEUTIC.
BATTERY CELLS.

NOTICE.—IN ORDERING ALWAYS DESIGNATE THE BATTERIES OR PARTS DESIRED BY THE NAMES BELOW.

THE PERFECTION IN POROUS CUP BATTERIES.

In the AXO Battery the defects which have been so long recognized, and have come to be regarded as inherent, in Porous Cup Batteries, are met and overcome. The improvement in form of construction alone is so great as to recommend it at once to all who are familiar with batteries.



"AXO" Battery Complete, 10032. "AXO" Porous Cup.

"AXO" BATTERY.

10032. Axo Battery Cell, Complete.....	\$ 1 00
Porous Cup alone	75
Glass Jar.....	25
Zinc.....	08
Sal-Ammoniac.....	06
	per package,

FITCH'S PERFECT BATTERY AND PERFECT BATTERY EXCITANT.

FOR OPEN CIRCUIT SERVICE.

PATENTED APRIL 12, 1887; AUGUST 14, 1888.

USE IN THE SAME WAY AS SAL-AMMONIAC.

Clean the jar and empty one package of Excitant into it. Fill partly full of warm water, and stir until the Excitant is dissolved.

Do not spatter the solution. If the battery is set up cleanly it will remain so.

Insert the carbon; add enough water to make the solution the proper height, as shown in the illustration, and put in the zinc.

Each package of Excitant is just sufficient to consume one zinc rod. When exhausted, throw out the old solution, clean and dry the parts, and refill as at first, with new Excitant and zinc.

Never put new Excitant into old solution. Empty and renew the whole, when exhausted.

In case of evaporation add water to make the solution the proper height.

Connecting wires should be insulated up to the place where connected to zinc and carbon. Uncovered wires are likely to touch and "short circuit" the battery. See that connections are clean and firm.

Every package of Excitant bears the inventor's trade mark and signature.

In case of "short circuiting," crystals may form on the carbon and zinc; if enough to impair the working of the battery they should be scraped off in the usual way. If one ounce of muriatic acid is then added to the solution in the jar it will dissolve the crystals from the pores of the carbon, and quickly restore its strength. If it does not do this the solution is exhausted and should be renewed.

Dimensions: 4 inches square by 7 inches high. E. M. F. 1.45 volts. Internal resistance 0.20 ohm.

10033. Fitch's Perfect Battery, Complete.....	\$ 0 75
Cylinder and Connector only.....	50
Porcelain Insulator for Zinc.....	08
Glass Jar.....	20
Zinc with Rubber Ring.....	10
Zinc, only.....	08
1 Package Perfect Battery Excitant.....	12



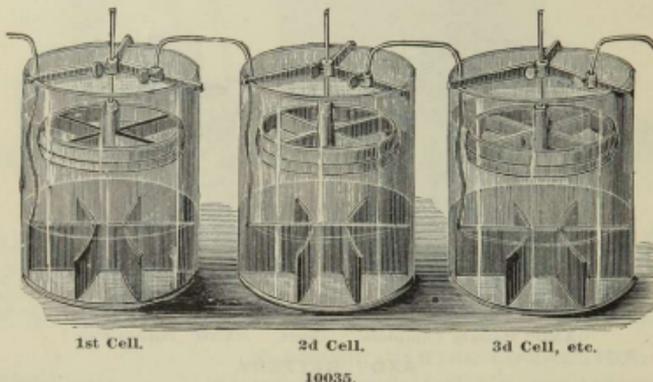
10033,

ELECTRO-THERAPEUTIC.

BATTERY CELLS.

NOTICE.—IN ORDERING ALWAYS DESIGNATE THE BATTERIES OR PARTS DESIRED BY THE NAMES BELOW.

GRAVITY BATTERY.



This form of Battery is well adapted for a stationary office battery (though neither so cleanly nor so economical as the Chloride of Ammonium Cells).

When once charged and connected, it will run for months, without the necessity of removing and cleaning the elements. The only attention it requires is to supply water, as it evaporates, and occasionally a little sulphate of copper. It can be connected with any of our switchboards, which can be attached to a table, electric chair, electric bath, vapor bath or any apparatus that would be practicable to connect with a galvanic battery.

This battery is so simple that any one, with the aid of the full directions we furnish, can charge and connect the cells, etc., without any trouble.

The Gravity (or Primary) Battery is an essential accompaniment of the Storage (or Secondary) Battery, in localities where the electric light current is not available.

A battery of eight 6x8 gravity cells is sufficient to charge the Small Storage Battery. Twelve 6x8 cells are sufficient to charge the Medium Storage Battery. Twenty 6x8 cells should be used to charge the Large Storage Battery.

10034.	Cell Complete, No. 1, 5x7 inch	\$ 0 65
	Zinc	25
	Copper.....	15
	Tripod Hanger	15
	Jar, Glass	25
10035.	Cell Complete, No. 2, 6x8 inch	90
	Zinc	40
	Copper.....	15
	Tripod Hanger	15
	Jar, Glass.....	35
10036.	Cell Complete, No. 3, 7x8 inch	1 10
	Zinc	45
	Copper.....	15
	Tripod Hanger	15
	Jar, Glass.....	40

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ELECTRO-THERAPEUTIC.
BATTERY EXTRAS.

McINTOSH'S CABLE CONDUCTING CORD AND NEW ADJUSTABLE TIP.



The cable-cord is made with spiral copper wires, each surrounding a strong thread; and these are twisted in an insulated bundle. The Adjustable Tip will save the physician much trouble, as he can easily remove it from a broken cord and replace it in a few moments. The above cut will help to explain it. To repair a cord, unscrew the tube B from the tip C, draw the cord through, cut away the broken end, slip back the covering, knot the wires and screw the tube into the tip. This clamps the wires in the tip as seen in A, and makes a perfect connection. This feature alone recommends our Battery to the profession.
10044. McIntosh's Conducting Cord Tipseach, \$0 10

A NEW BATTERY COMPOUND.



Put up dry in Tin Cans. One can contains one charge, and will give four hours of continuous use, or its equivalent.

With Aloe's Compound, Battery Fluid is easily prepared, by emptying the contents of one can into a porcelain vessel, and dissolving with water. Warm water and stirring with a glass rod will hasten the operation.

Particular care should be taken not to expose the compound to the air any length of time before using, as it absorbs moisture rapidly and would soon become softened and unpleasant to handle.

Do not spill the compound or fluid over the clothing or carpet; it is destructive.

Its advantages are:

1. It is stronger than any Battery Fluid.
2. It is easily carried.
3. It is the cheapest.
4. It does not polarize.
5. It is free from the smell of Acids.
6. It does not exhaust itself unless actually used.

10045. Aloe's Battery Compound. Per can, 50 cents; per dozen cans, \$4 80

For the convenience of those who prefer to make the Battery Fluid we publish the following two formulae, either one of which will answer well for batteries of the Zinc-Carbon type, though preference is given by most physicians to number 1:

FORMULA NO. 1.

R Sulphuric Acid (com'l).....	.....fl. 3 xviii.
Bi-chromate of Potassa, pow'd.....	.....3 xiv.
Water.....	.....Ovij.
Bi-sulphate of Mercury .....	.....5 xiv.

Dissolve the Bi-sulphate of Mercury in the water, then add the Bi-chromate of Potash. When dissolved, pour in the Sulphuric Acid and allow the liquid to cool before using. The Bi-sulphate of Mercury in this solution keeps the zincs well amalgamated.

FORMULA NO. 2.

R Bi-chromate of Soda.....	.....3 jv.
Sulphuric Acid (com'l) .....	.....fl. 3 jv.
Bi-sulphate of Mercury .....	.....5 jv.
Water.....	.....One Quart.

Heat the water in an earthenware or Granite Iron vessel and dissolve in it the Bi-chromate of Soda. When cool add to it the Sulphuric Acid and the Bi-sulphate of Mercury and mix well. The addition of the Bi-sulphate of Mercury, while it may be dispensed with, tends toward improving the condition of the zinc plates.

AMALGAMATING SOLUTION.

Suitable for the Zincs of all Galvanic, Faradic and Cautery Batteries.

Mix in an earthenware vessel one pound of Nitric Acid with two pounds of Muriatic Acid, to which add eight ounces of Metallic Mercury. Let this solution stand for six or eight hours and then add three pounds more of Muriatic Acid. This solution should be kept in a covered vessel.

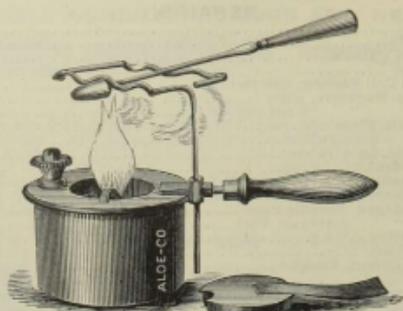
Chemicals for Battery Fluid Furnished at Market Rates.

REPAIRS.

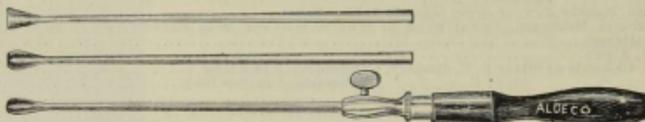
For the convenience of customers who wish to purchase repairs for their batteries and to save them the trouble and expense of sending the instruments to us, which is often done unnecessarily, we quote the following prices, adding a few other articles which are required occasionally.

10046. Carbons, Alpha.....	.....each,	\$ 0 25
10047. " Climax.....	....." "	" 20
10048. " Duplex.....	....." "	" 25
10049. " Florence.....	....." "	" 25
10050. " "G. F." Cautery.....	.....each, 20 cents; per dozen,	2 00
10051. " " Electro-Magnetic.....	.....each,	20
10052. " Galvanic.....	.....each,	1 50
10053. " McIntosh, Combined, Faradic Part.....	.....each, 15 cents; per dozen,	20
10054. " " Galvanic Part.....	.....each,	1 20
10055. " " Florence.....	.....each,	16
10056. " " Family.....	.....each,	1 20
10057. " " Galvanic.....	.....each, 12 cents; per dozen,	20
10058. " " Physician's Faradic.....	.....each,	28
10059. " " Physician's No. 3 Faradic.....	.....each,	25
10060. " Phoenix.....	....." "	" 75
10061. " Pittard's Cautery.....	....." "	" 30
10062. " W. and B., Faradic.....	....." "	" 25
10063. " Galvanic.....	.....each, 20 cents; per dozen,	2 25
10064. " Cells, Alpha.....	.....each,	50
10065. " Climax.....	.....each,	50
10066. " Drescher's, Nos. 1, 2 and 3.....	....." "	10
		25

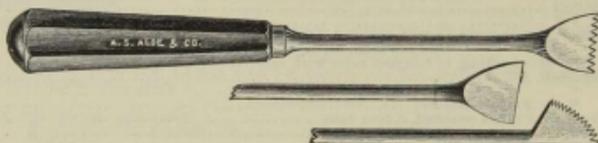
CAUTERIUM.
ACTUAL CAUTERY—THERMO-CAUTERY.



10157.

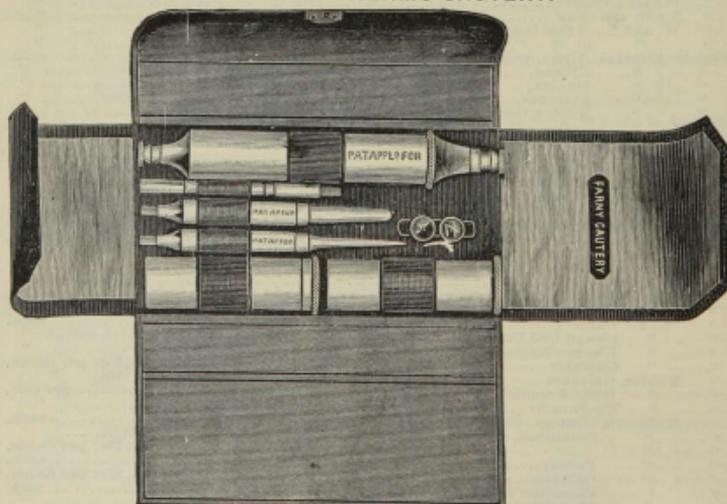


10154.



10156.

THE FARNY THERMO-CAUTERY.



10159.

While the Galvano-Cautery Batteries, and the electric current by means of a suitable rheostat or converter, have almost entirely superseded the thermo-cautery, the portability of the latter insures its continued use by a great many surgeons. The Farny Cautery is particularly desirable on this account, the complete apparatus being contained in a soft leather case 7x4x1½. A number of other improvements are incorporated in this new instrument, and we shall be pleased to send descriptive circular upon request.

CAUTERIUM.

ACTUAL CAUTERY—THERMO-CAUTERY.

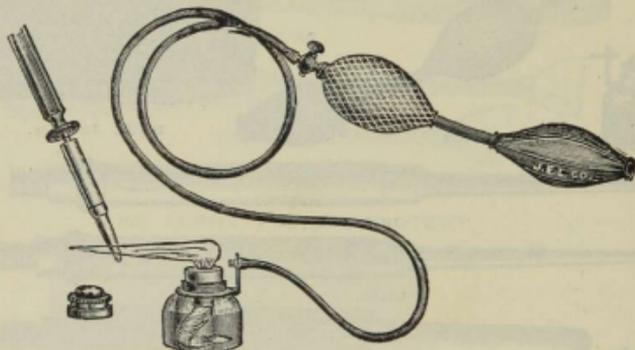
DR. PAQUELIN'S THERMO-CAUTERY.

DIRECTIONS HOW TO OPERATE THE CAUTERY.

The surgeon should light the cautery himself and avoid heating it to white heat. This high temperature, if kept up during some time, may melt the inside tube of the combustion chamber. The cautery under no circumstances should be plunged into water to extinguish it; it should be left to cool off in the open air.

After each operation clean the cautery inside and outside. To clean the inside, heat the cautery to a vivid red before allowing it to be extinguished, and while it is in an incandescent state, separate the handle suddenly from the rubber tubing which connects it with the reservoir. To clean the outside, wait until the cautery has become cold, and then rub it gently with a damp piece of linen.

I. TO LIGHT THE POINT.—Hold the platinum part in the yellow alcohol flame until it shows a slight cherry red heat, then press the bulb very gently and slowly, blowing very little gas into the point; if the heat then increases, the burner is lighted and the bulb should be gradually pressed more frequently until the desired heat is obtained. If the heat should not increase, but die out when the bulb is pressed, it is a sign that the platinum is not hot enough



10162a.

to light the gas; all pressure on the bulb should then in this case cease, until the point begins to glow again with a slight red heat. Then the bulb should be pressed very cautiously and gently, until the burner is a full cherry red, when it can be taken out of the alcohol flame, and by pressure on the bulb, will retain its heat as long as required. If the heat should get too low on the burner, hold it in the flame again, pressing the bulb all the while until it shows the heat required.

Should it happen that the cautery cannot be heated, resort should be taken to the blow-pipe of the lamp by holding the point of the cautery into the horizontal flame a little while (Fig. 10162a), and unless the central tube of the combustion chamber should have melted or stopped up with soot, it will light up again in half a minute.

N. B.—The cauterics with a small combustion chamber (such as are pointed or knife-shaped) require a more rapid pressure of the blow-apparatus to heat them, while but a slight pressure is sufficient to heat the larger and more commonly employed cauterics, unless, of course, a very high temperature is required.

II. TO CLEAN THE POINT.—If the gas is pumped into the burner before it is hot enough to light, the meshes of the gauze platinum wire inside will become stopped up with soot, and the burner will not light again until it is heated on the outside to a yellow or nearly white heat with a jeweler's blow-pipe. Then the bulb must be pressed slowly at first, and if it should not maintain the heat, repeat the operation with the blow-pipe two or three times, or until it burns, as it is necessary to burn all the soot out completely before it will light again; this is best done

CAUTERIUM.

ACTUAL CAUTERY—THERMO-CAUTERY.

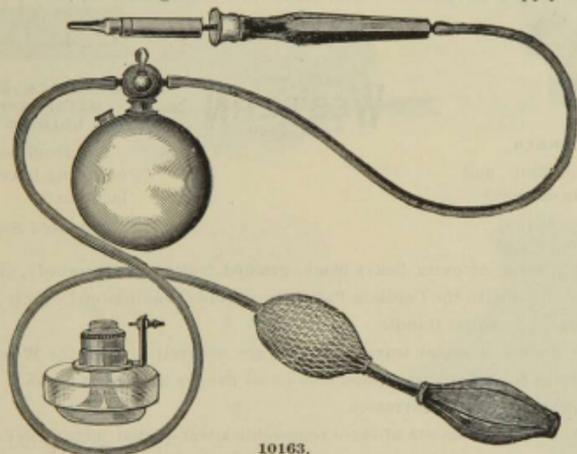
DR. PAQUELIN'S THERMO-CAUTERY.

DIRECTIONS HOW TO OPERATE THE CAUTERY—CONTINUED.

by disconnecting the tubing quickly from the handle while the burner is very hot. If this is repeated several times, a dirty burner can be made as good as a new one. Great care should be exercised not to continue to press the bulb if the point will not light, as that will only make matters worse; recourse must first be had to the blow-pipe. After using a burner it should always be disconnected while red hot, so as to keep it clean. Always allow the burner to cool off slowly after disconnecting. If a white heat is required, the operator should avoid retaining it longer than absolutely necessary, as considerable risk is run of melting the gauze wire mechanism in the combustion chamber; should this become melted or disarranged it will be necessary to return the burner to the factory for repairs.

III. THE BENZINE.—The Benzine used must be fresh and between 65° and 70° Beaumé—not above or below these figures.

IV. THE SUPPLY OF BENZINE.—In a glass reservoir, should never be quite half full, nor never have less than three-eighths of an inch in it. When a new supply of benzine is re-



10163.

quired, throw out the old that may be left in the reservoir and put in a fresh supply. Never add more to the old in the reservoir. Only one-eighth ($\frac{1}{8}$) of the benzine freshly put in for the reservoir is available for this use; after that much has been used all the good is gone, for the balance will form a heavy oily gas, which will soon leave the soot of the oil in the fine meshes of the combustion chamber, filling them up and causing the point to cease to burn. This is true, also, of benzine exposed to the air for some time; all the volatile gasses will pass off and leave only benzine unfit for use. It is then of the utmost importance to use only fresh benzine, and never use more than one-eighth of the supply in reservoir; throw the remainder out and put in fresh benzine for each operation.

In a metal reservoir, pour enough to saturate the sponge, and any surplus which the sponge does not hold, pour out again. This must be observed carefully, or the benzine will be pumped into the combustion chamber instead of the gas, and fill it with soot. If the benzine is not employed in the condition indicated, and the care taken to observe the points herein pointed out, the instrument will fail to give proper results, involving at the same time the risk of damaging it, while, if the above directions are carefully complied with, every instrument will work satisfactorily for an indefinite period.

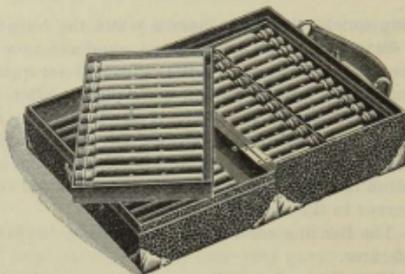
In Fig. 10163 the (new style) reservoir for the Benzine (fuel) is made of nickel-plated metal, according to the improvements of the inventor, and lined with a sponge.

MEDICINE CASES.

PHYSICIANS' BUGGY CASES.

10172. "COLUMBIA" ASEPTIC MEDICINE CASE.

(PATENT APPLIED FOR.)



CAPITAIN CORNER,

(Corner, solid foot and socket for same in one piece.)

Patented Aug. 16, 1892.

COMSTOCK SILVER-PLATED
METAL SPRINGS, FOR
HOLDING BOTTLES.

Cut from continuous strip of spring brass, silvered and lacquered.

Patented Sept. 2, 1890.

The outside is made of extra heavy black, grained leather (waterproof), stitched around the edges, and is fitted with the Captain Patent Improved Combination Corners, Nickel Spring Lock and Key, and substantial Handle.

The inside consists of metal trays, to which are securely riveted the Western Comstock Patent Metal Springs for holding the vials, also metal flanges at head of corks. All are silver-plated and lacquered to prevent corrosion.

The inside of the case consists of three removable silver-plated metal trays containing the vials, and an empty tray for sundries (which can also be used in making instruments aseptic), permitting the most absolute cleanliness, a feature invaluable to every physician. Being made as described above, they can be cleansed with soap and water, should a vial perhaps break and occasion require it.

The trays, fitted with our springs, entirely do away with the old-style leather loops and lining, cheap pasteboard insides, tearing of loops, soiling and destruction of inside of cases.

Medicine cases containing these trays, fitted with the Western Comstock Patent Springs, firmly clasping extra heavy annealed bottles (reducing the liability of breakage to a minimum), Captain's Patent Improved Combination Corners (allowing cases to lie perfectly flat when open, preventing the usual rocking of cases of all other makes and taking entire strain off the hinges), solid feet at bottom of cases instead of the thin, hollow ones which wear out in no time, and with metal flanges at head of corks, preventing the spilling of remedies, are the most cleanly and durable cases manufactured.

Dimensions— $10\frac{3}{4}$ inches long, $6\frac{1}{2}$ inches high, $4\frac{1}{2}$ inches wide. Contains 24-1 oz.

and 24-3 dr. vials, also space for sundries $10 \times 5\frac{1}{2} \times \frac{3}{8}$ inches..... \$10 00

MEDICINE CASES.

PHYSICIANS' BUGGY CASES.

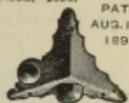
ALL MEDICINE CASES LISTED ON THIS PAGE FITTED WITH WESTERN PATENT SPRINGS.

THE IMPROVED LEADER MEDICINE CASE.

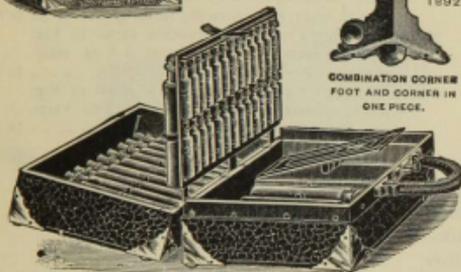


METAL SPRINGS.
Pat. Sept. 2d. 1890.

PAT.
AUG. 10,
1892.



COMBINATION CORNER
FOOT AND CORNER IN
ONE PIECE.



10173.

Is fitted with patent springs for holding bottles; silver-plated, to prevent corrosion; "Captain" Improved Combination Corners Metal covered Flanges at head of corks, preventing same from coming out and spilling of remedies; Nickel Binder around center partition, adding finish and durability to case; Nickel Spring Lock, with key, and Nickel Name-plate.

Is thoroughly dust proof. Is made of extra heavy black grained water-proof leather (cowhide), stitched around the edges and lined with thoroughly durable material.

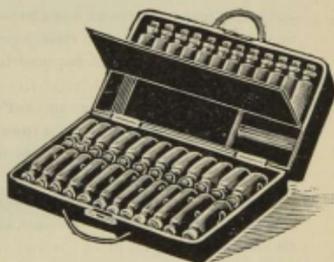
The Leader contains 5-2½ oz. bottles, 26-1 oz. vials, 26-3 dr. vials and space for powder papers, loops for instruments, etc. Dimensions, 12 inches long, 6½ inches high, 5 inches wide.

No. 10173 Leader Buggy Case.....\$ 7 50

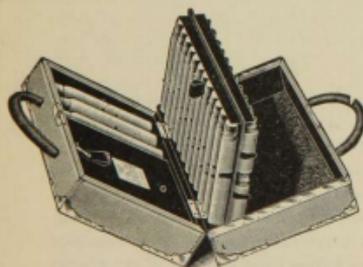
No. 10174 Leather Leader Buggy Case.

Construction same as the Leader,
but leather lined..... 10 00

- No. 10175 Buggy Case. Size, 10¼ in. long, 6¼ in. high, 2¾ in. thick; contains 36-3 dr. vials, held by our plated metal springs; has double handles; mounted with nickel corners and nickel catch; covered with best black seal grain leather and leather lined. The inside has supply box for Hypodermic Syringe, etc., ¼ in. deep by 2½ wide by 10 long; for city practice this is one of the most compact and neatest cases on the market, \$ 7 25
- No. 10176 Buggy Case. Same construction as Fig. 10175; contains 12-1 oz. and 12-3 dr. vials with supply box same size as in No. 10175..... 7 25
- No. 10177 Buggy Case. Same construction as Fig. 10175; contains 24-3 dr. and 7-1 oz. vials, with supply box ¼ in. deep, 3½ in. wide and 5½ in. long..... 7 25
- No. 10178 Buggy Case. Same construction as Fig. 10175; contains 48-3 dr. vials but no supply box..... 7 25



10175.



10179.

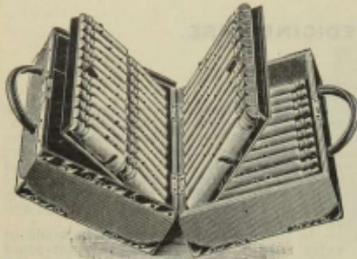
- No. 10179 Buggy Case. Dimensions, 10¼ in. long, 6¼ in. high, 4 in. wide, the outside of case is covered with russet box leather stitched, leather lined throughout; mounted with German silver corners, nickel catch and nickel band around the case, making a most substantial and rich looking case; has two handles; contains 1 row of 12-1 oz. bottles, 2 rows each of 12-3 dr. bottles, 3 only 2¼ oz. bottles and space for sundries 5¼x5¼x1 in. deep; the vials are held in the case by our plated metal springs, which have proven such a boon to the physician..... \$10 00
- No. 10180 Buggy Case. Construction same as Fig. 10179, but has linen lining..... 7 00

- No. 10181 Buggy Case. Construction same as Fig. 10179; contains 2 rows each of 12-1 oz. bottles, 3-2½ oz., and space for sundries 5¼x5¼x1 in. deep..... 10 00
- No. 10182 Buggy Case. Construction same as Fig. 10179; contains 4 rows each of 12-3 dr. bottles, 3-2½ oz. and space for sundries, 5¼x5¼x1 in. deep..... 10 00

MEDICINE CASES.

PHYSICIANS' BUGGY CASES.

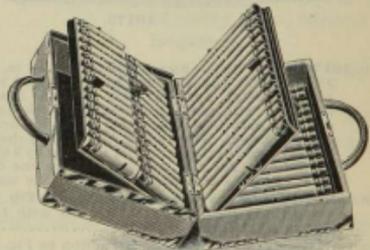
ALL MEDICINE CASES LISTED ON THIS PAGE FITTED WITH WESTERN PATENT SPRINGS.



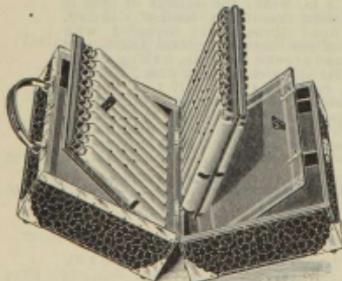
10183.

- No. 10183 Buggy Case. Dimensions 10½ in. long, 6½ in. high, 4½ in. wide; made of genuine black morocco leather and leather lined; mounted with German silver corners, nickel lock catch and metal band around case, 2 handles; style and workmanship first class in every respect; contains 2 rows each of 12-6 dr. vials, 2 rows each of 12-3 dr. vials, and space for sundries 10½x5½x½ deep..... \$10 75
- No. 10184 Buggy Case. Construction same as Fig. 10183; contains 1 row of 12-6 dr. 4 rows each of 12-3 dr. vials, and space for sundries..... 10 75
- No. 10185 Buggy Case. Construction same as Fig. 10183; contains 3 rows each of 12-6 dr. vials, and space for sundries..... 10 75
- No. 10186 Buggy Case. Construction same as Fig. 10183; contains 6 rows each of 12-3 dr. vials, and space for sundries..... 10 75

- No. 10187 Buggy Case. Dimensions 10½ in. long, 6½ in. high, 3½ in. wide; covered with genuine black morocco leather, lined with leather throughout; mounted with German silver corners, nickel lock catch and nickel band around case; has 2 handles; one of the neatest and most compact cases we manufacture; contains 2 rows each of 15-4 dr. vials, 2 rows each of 15-2 dr. vials, and space for sundries 10x5½x½ in.....\$10 75
- No. 10188 Buggy Case. Construction same as Fig. 10187; contains 1 row of 15-4 dr. vials, 4 rows each of 15-2 dr. vials, and space for sundries 10x5½x½ in. 10 75
- No. 10189 Buggy Case. Construction same as Fig. 10187; contains 3 rows each of 15-4 dr. vials, and space for sundries 10x5½x½ in..... 10 75
- No. 10190 Buggy Case. Construction same as Fig. 10187; contains 6 rows each of 15-2 dr. vials, and space for sundries 10x5½x½ in..... 10 75



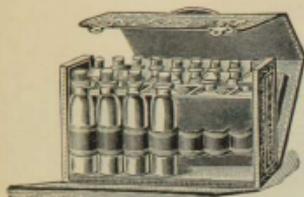
10187.



10191.

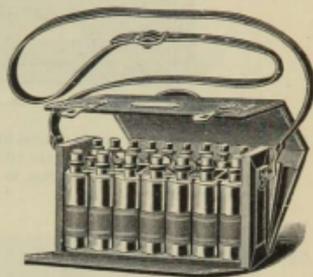
- No. 10191 Buggy Case. Dimensions 10½ in. long, 6½ in. high, 4½ in. wide; contains 20 1 ounce vials, 13-5 dr. vials, and two spaces for sundries each 5½x4½x1½ in., with lid; the outside is made of best seal grain leather, full leather lined inside; mounted with full nickel trimmings, including the Captain Patent Improved Corners, Spring Lock, etc.; one of the neatest and most practical cases made\$10 00
- No. 10192 Buggy Case. Same construction as Fig. 10191; case made of cheaper materials 7 25

MEDICINE CASES.
PHYSICIANS' HAND CASES.

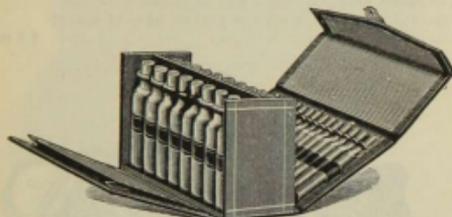


10193.

No. 10194 Hand Case, same as No. 10193, with Shoulder Strap and Rings..... \$5 00



10194.

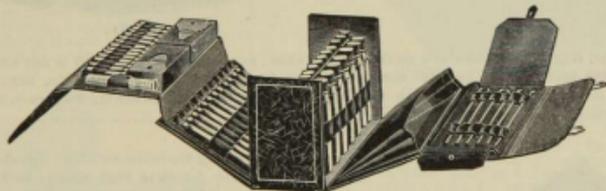


10195.

No. 10195 Hand Case. A substantial and well-made hand case, carrying a sufficient number of remedies for ordinary practice. This style of case is solid and well made, covered with

black grained leather. Dimensions, 10 inches long, 4½ inches high and 3 inches wide. Contains 8-6 drachm bottles, 10-4 drachm and 12-2 drachm bottles, and has pocket on side..... \$4 25

This case is made to meet the demand for an inexpensive case, and one giving full value for the price, which has been brought to the minimum. No imitation or artificial leather used in its construction, and we feel safe in saying no similar case can be purchased for the same price.

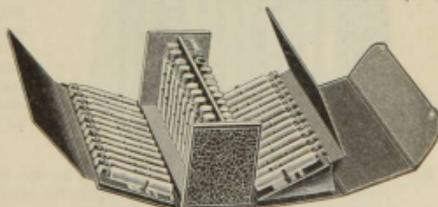


10196.

No. 10196 Hand Case. Is made of black seal grained leather. It is a first-class and durable case; Morocco loops for vials, pocket for powder papers, etc.; small case for hypodermic syringe; another, same size, for sundries; also has graduated minim measure. Contains 8-1 ounce, 24-4 drachm, 13-1½ drachm vials. Case has loops inside cover of case, covered by flap, for instruments. Dimensions, 9¼ inches long, 5½ inches high, 3¼ inches wide..... \$9 00

No. 10197 Hand Case, same as No. 10196, except made of solid leather, stitched and riveted, and rings for shoulder strap and shoulder strap..... \$10 75

No. 10198 Hand Case, covered with black seal grained leather, substantially lined, and fitted with Comstock Patent Springs. Dimensions, 9¼ inches long, 3½ inches wide, 4½ inches high. Contains 18-4 drachm, 26-2½ drachm vials, and box for hypodermic syringe, also a graduated minim measure, pocket for powder papers, etc..... \$5 50



10198.

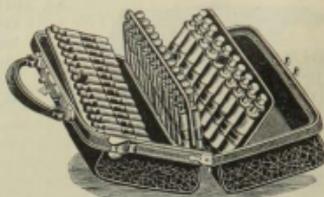
No. 10199 Hand Case, same size and style as No. 10198. Contains 22-4 drachm and 26-2½ drachm vials, but no space for hypodermic syringe or minim graduate..... \$5 50

MEDICINE CASES.

PHYSICIANS' SATCHEL CASES.



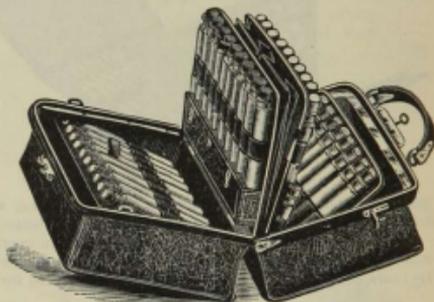
10200. Satchel Case—Closed.



10200. Satchel Case—Open.

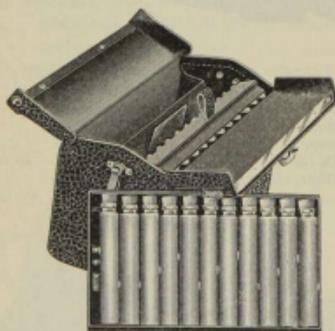
No. 10200 Satchel Case; made of best black seal grained leather, leather covered frame, nickel spring lock with key, name plate, etc.; dimensions, 10 inches long, 5 inches high, $3\frac{1}{2}$ inches wide; contains 10-4 drachm, 12-3 drachm, 28-2 drachm vials; has loops for instruments on back of one of the side partitions \$ 9 00

No. 10201 Satchel Case; made of best black seal grained leather, leather covered frame, nickel spring lock with key, name plate, etc.; dimensions, 10 inches long, 7 inches high, 4 inches wide; contains 20-1 ounce, 11-4 drachm and 20-3 drachm vials; has two center partitions, protected around the corners of each by nickel edge trimmings; pockets for papers, etc., on one side of flap, loops for instruments on the other side; also box on one partition for sundries, hypodermic syringe, etc. \$ 10 75



10201.

No. 10202 Satchel Buggy Case; this is a small compact case; as a hand satchel case it is not excelled by any on the market; for general construction and appearance, see cut of No. 10201; dimensions, 8 inches long, 6 inches high, 4 inches wide; contains 14-6 drachm, 9-4 drachm and 8-3 drachm vials; also box for hypodermic syringe \$ 9 00



10203.

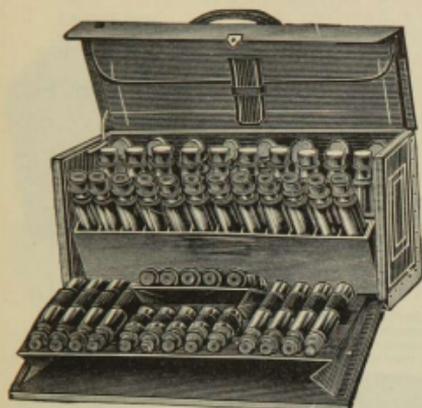
No. 10203 Cabin Bag Medicine Satchel; dimensions, $5\frac{1}{2}$ inches wide, 6 inches high and 11 inches long; made of best black seal grain bagstock, leather covered steel frame with nickel trimmings; contains 22-1 ounce and 22-3 drachm vials, pocket for powder papers and space $2 \times 6 \times 11$ inches for sundries; the advantages of this bag are, that the partitions holding the vials are entirely removable, thus allowing the bag to be used for traveling, or for carrying instruments, when so desired; it is also the most genteel looking physician's case, being devoid of all nickel trimmings, such as corners, etc., ordinarily found on medicine cases; above all, it is substantially made, and with ordinary care will last a good many years, answering, as before stated, for several purposes—a feature highly to be appreciated by the physician..... \$ 10 75

No. 10204 Cabin Bag Medicine Satchel; same as No. 10203, but 10 inches long, and containing 26-4 drachm and 26-2 drachm vials, and space for sundries $2 \times 6 \times 10$ inches..... \$ 10 75

The vials in both cases, 10203 and 10204, are held in place by the Western Comstock Patent Silver Plated Springs.

MEDICINE CASES.

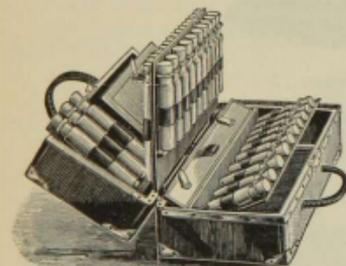
PHYSICIANS' BUGGY CASES.

10205. Size, 11 $\frac{1}{4}$ x6x5 $\frac{1}{2}$ inches.

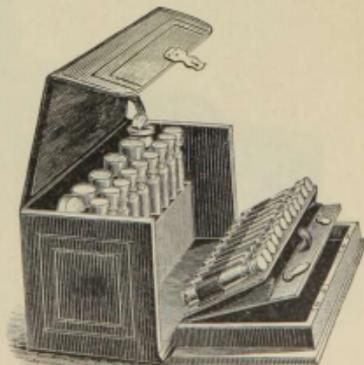
- No. 10206 Buggy Case; dark morocco; contains 8-1 oz., 12-4 drachm, 15-1 $\frac{1}{2}$ drachm and 15-1 drachm corked vials, and elastic loops for surgical instruments; pocket..... \$ 7 00
- No. 10207 Buggy Case; same as 10206 case, with 15-2 $\frac{3}{4}$ drachm vials in place of the 1 $\frac{1}{2}$ drachm and 1 drachm..... 7 00
- No. 10208 Buggy Case; dark morocco; contains 8-1 oz., 12-4 drachm and 24-2 drachm corked vials, and space for sundries, 4 $\frac{1}{2}$ x1x4 $\frac{1}{2}$ inches..... 6 75
- No. 10209 Buggy Case; same as 10208 case, with 12-4 drachm vials in place of the 24-2 drachm..... 6 75

10208. Size, 10x5 $\frac{1}{2}$ x4 $\frac{1}{2}$ inches.

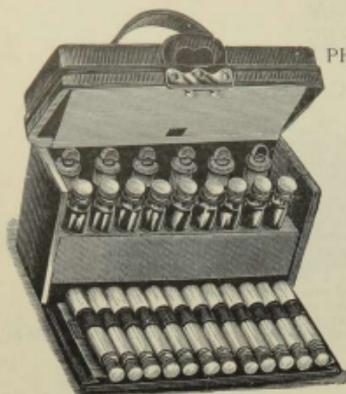
- No. 10210 Buggy Case; contains 3-3 oz., 20-1 oz., and 15 long 4 drachm corked vials; two covered spaces for instruments and sundries; case made of black morocco, thoroughly protected from wear by nickel trimmings; case opens in centre, closes with a spring catch and has a lock and key; size of case, 11 inches long, 7 $\frac{1}{2}$ inches high, 5 inches wide..... \$12 50

10210. Size, 11x7 $\frac{1}{2}$ x5 inches.

- No. 10211 Buggy Case; contains 4-1 $\frac{1}{2}$ oz., 9-6 drachm and 12-2 $\frac{3}{4}$ drachm corked vials; also 2-1 $\frac{1}{2}$ oz. glass stoppered bottles; contains a box and loop for instruments and sundries; case made of black morocco; size of case, 8 $\frac{1}{2}$ inches long, 5 inches wide and 5 $\frac{1}{4}$ inches high..... \$ 7 50

10211. Size, 8 $\frac{1}{2}$ x5 $\frac{1}{4}$ x5 inches.

MEDICINE CASES. PHYSICIANS' BUGGY CASES.



Open.

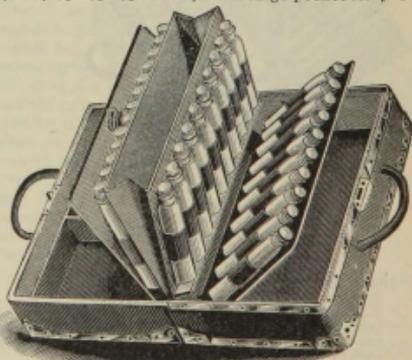
10212. Size, 10x7x4 $\frac{3}{4}$ inches.

Closed.

No. 10212 Buggy Case. Containing 6-1 $\frac{1}{2}$ oz., glass stoppered, 9-1 oz., and 12-4 drachm corked vials; in the top is a box with lid, size, 9x3 $\frac{1}{2}$ x1, with instrument loops, space large enough for a small sized stethoscope; the case closes with a spring catch, and has a lock and key; it is most substantially made, and will bear much rough usage over country roads \$ 10 50

10213. Size, 12 $\frac{1}{2}$ x5 $\frac{1}{2}$ x6 inches.

No. 10213 Buggy Case. Red or black morocco; contains 8-2 oz., glass stoppered, 10-1 oz., 8-4 drachm and 14-2 drachm corked vials; a box for sundries, size, 5 $\frac{1}{2}$ x4 $\frac{1}{2}$ x2 $\frac{3}{4}$ inches, and a large pocket ... \$ 9 00

Closed. 10214. Size, 10 in. long, 6 $\frac{1}{2}$ in. high, 4 $\frac{1}{4}$ in. wide. Open.

MEDICINE CASES.

PHYSICIANS' BUGGY CASES.

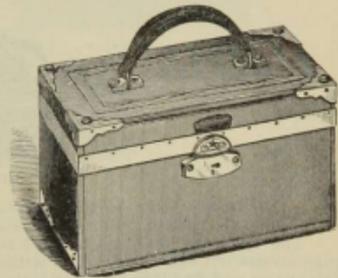
- No. 10214 Buggy Case, black morocco, contains 20-1 ounce and 13-6 drachm corked vials. Its corners and edges are protected with nickel trimmings, and, as its leather is the best, it will, with proper care, last for many years. It contains two covered boxes, each $4\frac{1}{2} \times 5\frac{1}{2}$ inches and $1\frac{1}{4}$ inches deep, in which may be carried pocket instrument case or sundry other articles; spring lock, with key.. \$11 00
- No. 10215 Buggy Case; same as Case 10214, 7-6 drachm and 12-2 drachm vials, in place of the 13-6 drachm..... 11 00



Open.

10216.

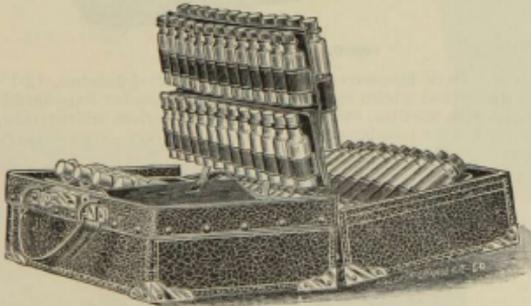
Size, $10\frac{3}{4} \times 5\frac{3}{4} \times 7$ inches.



Closed.

- No. 10216 Buggy Case, containing 6-2 ounce, glass-stoppered, 10-1 ounce, 12-6 drachm and 14-4 drachm corked vials. In the top is a box with lid, size $8\frac{1}{2} \times 4\frac{1}{2} \times 1$ inches, with instrument loops. The case closes with a spring catch, and has a lock and key. It is made of the heaviest and best leather, and is well protected with metal trimmings..... \$13 50

By means of a joint hinge the row of glass-stoppered bottles rises as the case opens, and the vial labels are all exposed.



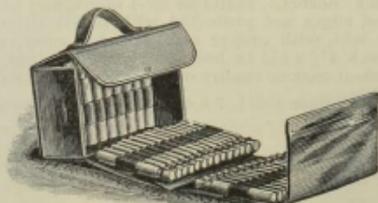
10217.

Size, $12 \times 7\frac{1}{2} \times 5\frac{1}{2}$ inches.

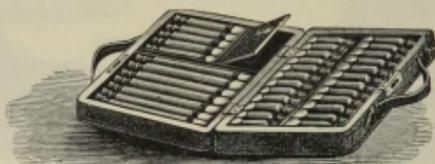
- No. 10217 Buggy Case, contains 26-3 drachm, 26-1 ounce and 4-2 ounce vials, cork-stoppered, space for the powder papers, instruments, etc. Case made of morocco leather, mounted with nickel corners, nickel spring-lock with key, and nickel name-plate on side, making the most substantial, complete and richest looking physician's case ever placed on the market. Length, 12 inches; width, $5\frac{1}{2}$ inches; height, $7\frac{1}{2}$ inches..... \$10 00

MEDICINE CASES.

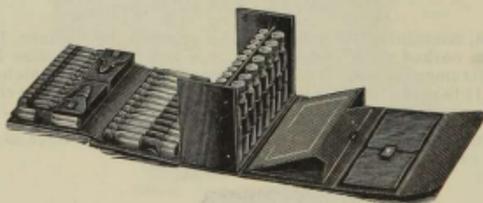
PHYSICIANS' HAND CASES.

10218. Size, $8\frac{1}{2} \times 2\frac{1}{4}$ inches.

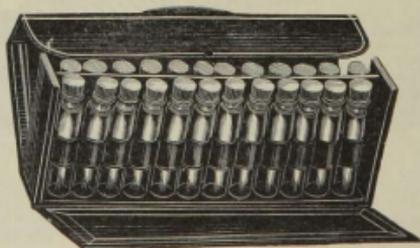
No. 10218 Hand Case. Contains 10-4 drachm and 28- $2\frac{1}{2}$ drachm corked vials; best red or black morocco..... \$ 4 00

10219. Size, $9\frac{3}{4} \times 6\frac{1}{4} \times 2$ inches.

No. 10219 Hand Case. Contains 24- $2\frac{1}{2}$ drachm, 7-6 drachm, and 5-3 drachm wide-mouthed corked vials; also a box for hypodermic syringe; best black seal leather, \$ 8 50
The vials are held in by nickel tongues projecting over the base of the vials, which are thus secure but can be taken out without the slightest trouble. Physicians using tablets, pills or pavules will find this case particularly handy, as the bottles have mouths of good width.

10220. Size, $9\frac{1}{4} \times 6 \times 4$ inches.

No. 10220 Hand Case. Dark morocco; contains 8-1 oz., 24-4 drachm, 13- $1\frac{1}{2}$ drachm corked vials, a graduated minim measure, small, neat case for hypodermic syringe, and one for wire, silk, needles, etc.; also loops for surgical instruments, protected by flaps and a pocket for powder papers, etc..... \$10 00

10221. Size, $10 \times 4\frac{1}{2} \times 2$ inches.

No. 10221 Hand Case. Contains 24-4 drachm corked vials and pocket, best black morocco, with handle and pocket for powder papers..... \$ 4 00

MEDICINE CASES.
PHYSICIANS' HAND CASES.



Closed. 10222. Size, $9\frac{1}{2} \times 4\frac{1}{2} \times 3\frac{1}{2}$ inches. Open.



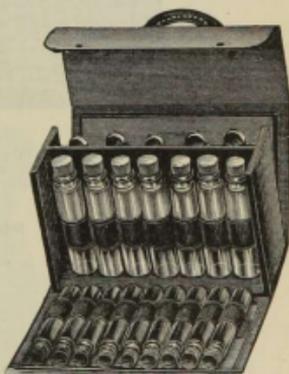
No. 10222 Hand Case; contains 24 4 drachm and 32 $2\frac{1}{2}$ drachm corked vials, a pocket for sundries and a graduated minim measure; the addition of a minim measure to this case will, we think, be a convenience to the physician, who can thus secure perfect accuracy of dose..... \$ 5 75



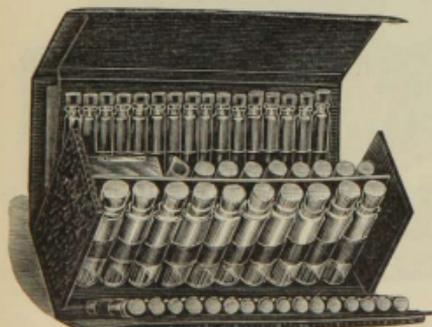
No. 10223 Hand Case; contains 8-1 ounce, 10-6 drachm and 12-4 drachm corked vials; this case will hold as much medicine as many physicians wish to carry about, and to such of the profession serves instead of a larger and more expensive buggy case..... \$ 4 75

10223. Size, $9\frac{1}{2} \times 4 \times 3\frac{1}{2}$ inches.

No. 10224 Hand Case; contains 9-4 drachm, 7-1 ounce, corked, and 5- $1\frac{1}{2}$ ounce glass stoppered bottles; pocket for sundries; made of best black or russet sole leather..... \$ 5 00



10224. Size, $7\frac{1}{2} \times 5\frac{1}{2} \times 3\frac{1}{2}$ inches.



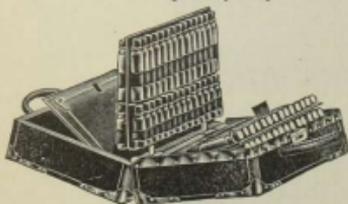
No. 10225 Hand Case; contains 10-6 drachm, 8-4 drachm and 32- $2\frac{1}{2}$ drachm corked vials, a graduated minim measure and a neat box for a hypodermic syringe..... \$ 5 75

10225. Size, $9\frac{1}{2} \times 4\frac{1}{2} \times 3\frac{1}{2}$ inches.

MEDICINE CASES.

HOMŒOPATHIC PHYSICIANS' BUGGY CASES.

These new cases are neat and compact and are made strong and durable to permit their use as a Buggy Case, and also to preserve the size and weight of a genteel Hand Case. As will be noted, the large number of vials makes them specially adapted to Homœopathic Practice.



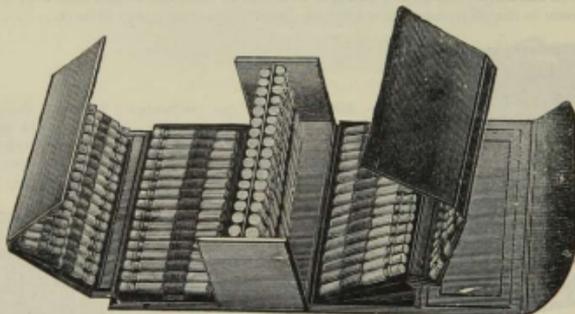
10226. Size, $9\frac{1}{2} \times 6\frac{1}{2} \times 4$ inches.

No. 10226 98 Vial Buggy Case; has double row of vials each side of center partition, and also double row on one side of side partition; the other side of side partition has single row of four drachm vials; space for sundries, $\frac{1}{2}$ in. deep, protecting articles contained in same from contact with vials, by a cover which is held in place by catches; case complete contains 14-4 drachm, 42-2 drachm and 42-1 drachm vials.....

\$10 00

Dimensions, $9\frac{1}{2}$ inches long, $6\frac{1}{2}$ inches high, 4 inches wide; made of fine grained leather, leather lined throughout, mounted with German Silver corners, nickel catch with polished nickel band around the case, making a substantial and rich looking case. This style of case possesses the advantage of giving the entire space in the case, excepting the rows of vials on center partition, for sundries, should occasion require it, by removing the side partition, which is not fastened to case. It should be noted that this partition is reversible, bringing either row of vials front, as may be desired. We believe that these improvements will make this style of case a desirable and salable one.

HOMŒOPATHIC PHYSICIANS' HAND CASES.



10227. Size, $9\frac{1}{2} \times 5 \times 4\frac{1}{4}$ inches.

No. 10227 112 Vial Hand Case; contains 80-2 drachm and 32-1 drachm corked vials..... \$ 9 00
 No. 10228 128 " " " same as 10227, but contains 64-2 drachm and 64-1 drachm corked vials... 9 50
 No. 10229 45 " " " contains 45-2 drachm corked vials..... 8 85
 No. 10230 60 " " " 30-2 drachm and 30-1 drachm corked vials..... 4 20

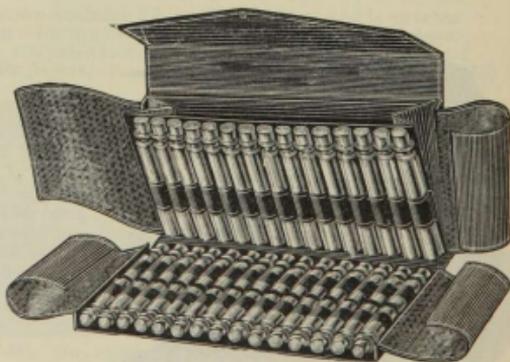
HOMŒOPATHIC PHYSICIANS' POCKET MEDICINE CASES.

No. 10231 45 Vial Pocket Medicine Case; contains 15-2 drachm and 30-1 drachm corked vials, flexible black morocco..... \$ 3 00
 No. 10232 30 Vial Pocket Medicine Case; contains 30-1 drachm corked vials, flexible black morocco, flat catch..... \$ 2 25

HOMŒOPATHIC PHYSICIANS' SATCHEL CASES.

No. 10233 66 Vial Satchel Case; this is a 10 inch satchel for Homœopathic Physicians, same size and style as the No. 10234, but holding 11-6 drachm, 11-4 drachm, and 44-3 drachm corked vials, \$12 75

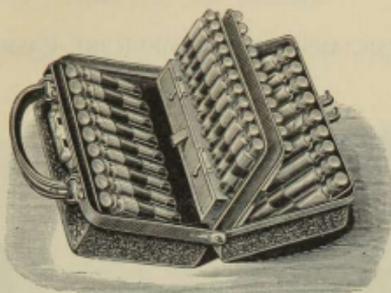
We also make satchels to hold from 77 to 131 vials; prices vary according to the number of vials.



10231. Size, $7\frac{1}{2} \times 4 \times 1\frac{1}{4}$ inches.

NOTE. The attention of Homœopathic Physicians is also called to Nos. 10187, 10188, 10189, 10190, 10200, 10218 and 10222.

MEDICINE CASES.
PHYSICIANS' SATCHEL CASES.



10234. Size, 10x7x6 inches.

- No. 10234 10 inch Satchel Case, 10 inch frame; contains 18-1 oz., 11-6 drachm and 11-4 drachm corked vials, ample loops for instruments, box for sundries, and a neat plush-lined case for hypodermic syringe; this case is made of the best grain leather, of superior workmanship and finish, and will give the best of satisfaction, \$ 10 00
- We think this is the most convenient satchel case in the market. Any one or all of the pieces holding the bottles are removable, giving the physician space to carry additional instruments and making it also available as a traveling satchel.
- No. 10235 10 inch Satchel Case, same as 10234, having 24-2 drachm vials in place of 11-6 drachm \$ 10 00
- No. 10236 8 inch Satchel Case, of the same general style as 10234, but without box for hypodermic, and having an 8 inch frame; contains 14-1 oz., and 18-4 drachm corked vials. 7 50
- No. 10237 8 inch Satchel Case, same as 10236, containing 16-1 oz., 9-4 drachm and 18-2 drachm corked vials. 7 50
- No. 10238 8 inch Alligator Satchel Case, same as 10237, but of genuine alligator 10 00
- No. 10239 9 inch Satchel Case, of exactly the same style and quality as 10234, but 9 inch frame, holding 18-1 oz., 11 long 4 drachm and 12-2½ drachm corked vials, with loops for instruments, boxes for syringe, thermometer, etc. 11 00

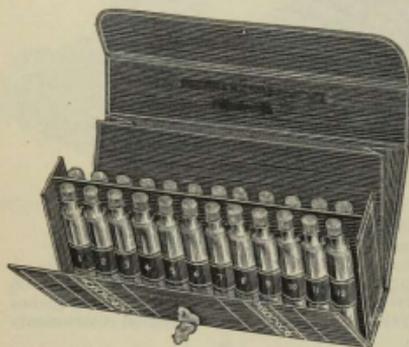


10240. Size, 10½x6x7 inches.

- No. 10240 Cabin Bag Satchel Case; contains 36-4 drachm bottles and pocket; vials on removable cards; in the middle of the bag is space for pocket instrument case and other sundry articles; this new style has the advantage that not a particle of space need be wasted; it may also serve as a traveling satchel, by simply taking out the cards holding the bottles. \$ 10 50
- No. 10241 Cabin Bag Satchel Case, the same as 10240, but contains 24-4 drachm and 24-2 drachm bottles. 11 25
- No. 10242 Cabin Bag Satchel Case, also the same as 10240, but contains 10-1 oz. and 24-4 drachm bottles. 10 50
- No. 10243 Cabin Bag Satchel Case, also the same as 10240, but contains 48-4 drachm bottles. 11 50

MEDICINE CASES.

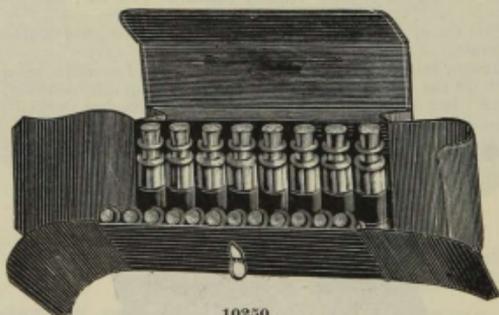
PHYSICIANS' POCKET MEDICINE CASES.



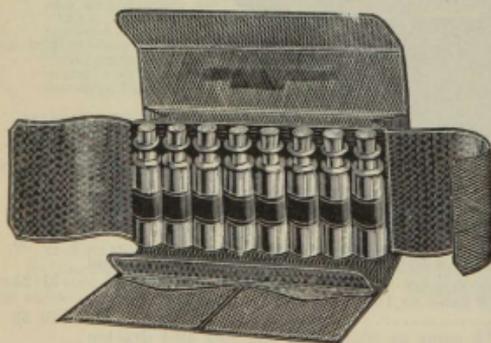
10247.



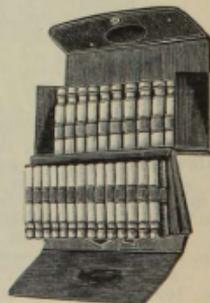
10248.



10250.



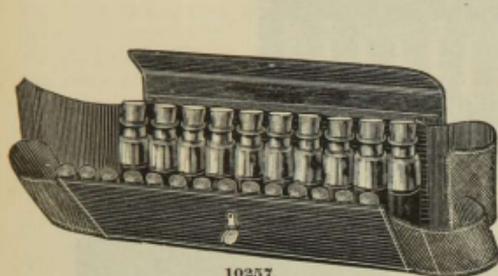
10251.



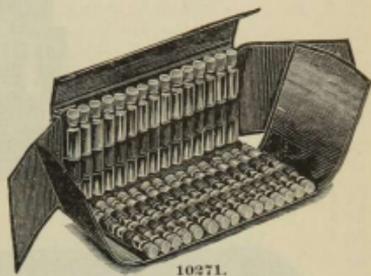
10264.

MEDICINE CASES.

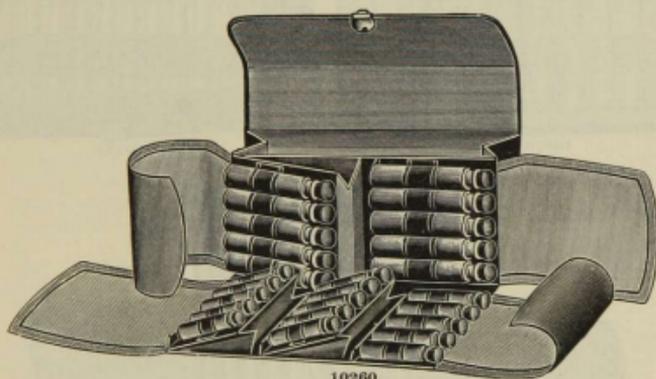
PHYSICIANS' POCKET MEDICINE CASES.



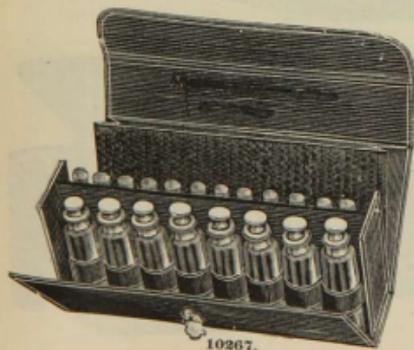
10257.



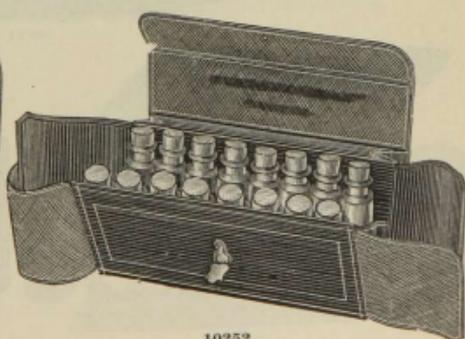
10271.



10260.



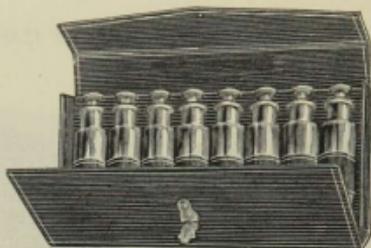
10267.



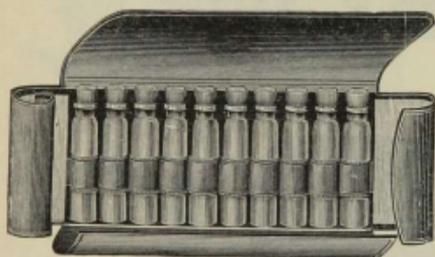
10252.

MEDICINE CASES.

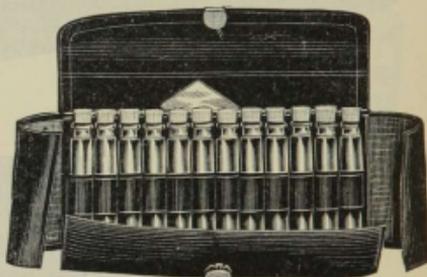
PHYSICIANS' POCKET MEDICINE CASES.



10272.



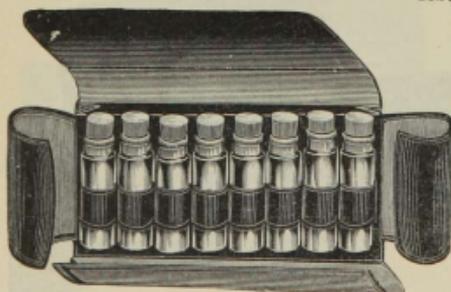
10273.



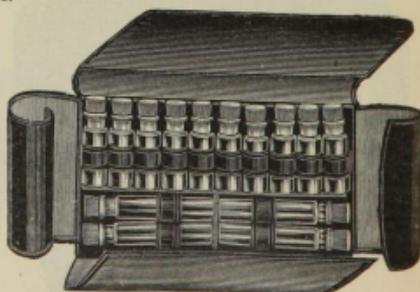
10275.



10274.



10278.



10280.

MEDICINE CASES.

PHYSICIANS' POCKET MEDICINE CASES.

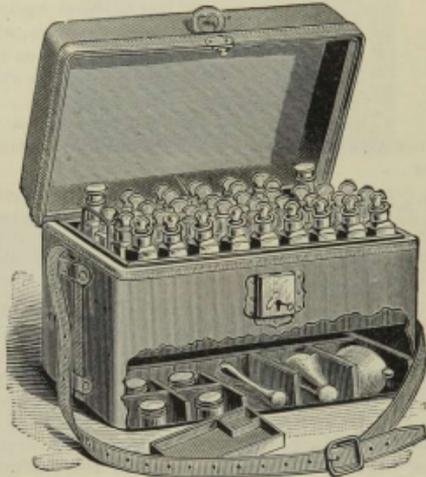
No. 10244	20	Vial Case, contains 20-2 drachm vials, Black Morocco, with Strap	.....	\$ 1 30
No. 10245	4	" " " 4-2½ " " for the Vest Pocket	.....	50
No. 10246	20	" " " 20-4 " " Black Morocco, with Strap	.....	2 00
No. 10247	24	" " " 24-2 " " Gilt Numbers on Loops	.....	2 00
No. 10248	20	" " " 12-2½ " " and 8-6 drachm vials, Morocco	.....	2 75
No. 10249	20	" " " 20-2 " " Wrapper Case	.....	1 50
No. 10250	20	" " " 12-2 " " and 8-4 drachm vials, Morocco,	.....	1 75
No. 10251	8	Vial Case, contains 8-3 drachm vials, 2 Pockets for Powders, Papers, Fine Russia Leather	.....	2 50
No. 10252	16	Vial Case, contains 16-3 drachm vials, of Fine Russia Leather	.....	2 75
No. 10253	6	" " " 6-3 " " Wrapper Case, Black Morocco	.....	1 00
No. 10254	20	" " " 20-2 " " Sewed " " " "	.....	1 35
No. 10255	10	" " " 10-3 " " Wrapper " " " "	.....	1 35
No. 10256	12	" " " 12-3 " " " " " " "	.....	1 35
No. 10257	24	" " " 10-3 " " and 14-1½ drachm vials, Black Morocco	.....	2 00
No. 10258	18	Vial Case, contains 18-3 drachm vials, Black Morocco	.....	1 90
No. 10259	40	Vial Case, contains 24-3 drachm vials and 16-1½ drachm vials, 2 Pockets, Black Morocco	.....	2 50
No. 10260	28	Vial Case, contains 10-4 drachm vials and 18-1½ drachm vials, the vials all upright when carried in pocket, Black Morocco	.....	2 25
No. 10261	38	Vial Cases, contains 10-4 drachm vials and 28-2 drachm vials, 3 folds, Black Morocco	.....	3 25
No. 10262	52	Vial Case, contains 10-4 drachm vials, 14-2 drachm and 28-1 drachm vials, 3 folds, Black Morocco	.....	3 50
No. 10263	8	Vial Case, contains 8-2 drachm vials, Black Morocco	.....	90
No. 10264	24	" " " 10-4 " " and 14-2 drachm vials, Black Morocco	.....	2 35
No. 10265	10	Vial Case, contains 10-2 drachm vials, Black Morocco	.....	1 15
No. 10266	6	" " " 6-1 " " for the Vest Pocket	.....	50
No. 10267	20	" " " 8-4 " " glass stoppered and 12-2 drachm corked vials, Stiff Ends	.....	2 50
No. 10268	24	Vial Case, contains 24-2 drachm vials, Flexible Black Morocco	.....	2 25
No. 10269	24	Vial Case, contains 10-3 drachm vials and 14-1½ drachm vials, Flexible Black Morocco	.....	2 50
No. 10270	30	Vial Case, contains 30-2 drachm vials, long, Flexible Black Morocco	.....	2 75
No. 10271	45	Vial Case, contains 15-2 drachm vials and 30-1 drachm, Flexible Black Morocco	.....	3 00
No. 10272	8	Vial Case, contains 8-4 drachm glass stoppered vials, on one side and Pocket on other, Black Morocco	.....	2 00
No. 10273	10	Vial Case, contains 10-2 drachm vials, Flexible Black Morocco, no Catch,	.....	1 75
No. 10274	24	" " " 24-2 " " " " " Flat Catch,	.....	2 75
No. 10275	12	" " " 12-2 " " " " " " " "	.....	2 00
No. 10276	15	" " " 15-2 " " " " " with Tuck,	.....	2 00
No. 10277	20	" " " 20-2 " " " " " Flat Catch,	.....	2 25
No. 10278	8	" " " 8-4 " " " " " no Catch,	.....	1 50
No. 10279	12	" " " 12-3 " " " " " " "	.....	1 75
No. 10280	14	" " " 10-2 " " and 4-3 drachm vials, Flexible Black Morocco, no Catch	.....	1 75
No. 10281	12	Vial Case, contains 12-4 drachm vials, Flexible Black Morocco, Flat Catch,	.....	2 00
No. 10282	24	" " " 24-3 " " " " " " "	.....	3 00

MEDICINE CASES.

PHYSICIANS' MEDICINE CHESTS.

HOFF'S PATENT SEAMLESS EDGE LEATHER MEDICINE CHESTS.

The neatest, most durable and cheapest leather medicine chests in the market. They have all rounded edges, without any seam or stitching on the edges, and are finished in the neatest manner. They have nickel-plated locks and trimmings, and contain glass stoppered bottles.



The following contain glass-stoppered bottles in mahogany trays; also a mortar, a graduated measure, four jars, tray for scales, and space for instruments under bottles:

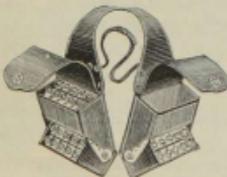
No. 10283 Hoff's 50 Bottle Medicine Chest, No. 101, contains 4-4 ounce, 18-2 ounce, 20-1 ounce and 8- $\frac{3}{4}$ ounce bottles, 15 $\frac{1}{2}$ inches long, 9 $\frac{1}{4}$ inches wide, 9 $\frac{1}{4}$ inches high.....	\$19 50
No. 10284 Hoff's 44 Bottle Medicine Chest, No. 102, contains 4-4 ounce, 16-2 ounce, 18-1 ounce and 6- $\frac{1}{2}$ ounce bottles, 14 $\frac{1}{2}$ inches long, 9 $\frac{1}{2}$ inches wide, 9 $\frac{1}{4}$ inches high.....	18 00
No. 10285 Hoff's 34 Bottle Medicine Chest, No. 103, contains 16-2 ounce and 18- $\frac{1}{2}$ ounce bottles, 11 $\frac{1}{2}$ inches long, 8 inches wide, 8 $\frac{1}{4}$ inches high.....	14 50
No. 10286 Hoff's 37 Bottle Medicine Chest, No. 104, contains 2-4 ounce, 16-2 ounce and 19-1 ounce bottles, 12 $\frac{3}{4}$ inches long, 8 $\frac{1}{4}$ inches wide, 9 $\frac{1}{4}$ inches high.....	16 00
No. 10287 Hoff's 32 Bottle Medicine Chest, No. 105, contains 2-4 ounce, 14-2 ounce and 16-1 ounce bottles, 11 inches long, 8 $\frac{1}{4}$ inches wide, 9 $\frac{1}{4}$ inches high.....	14 50
No. 10288 Hoff's 27 Bottle Medicine Chest, No. 106, contains 2-4 ounce, 12-2 ounce and 18-1 ounce bottles, 9 $\frac{1}{4}$ inches long, 8 $\frac{1}{4}$ inches wide, 9 $\frac{1}{4}$ inches high.....	13 50
No. 10289 Hoff's 28 Bottle Medicine Chest, No. 107, contains 28-1 ounce bottles, 11 inches long, 7 $\frac{1}{4}$ inches wide, 8 $\frac{1}{4}$ inches high.....	12 00

The following are without mortars, measures or jars:

No. 10290 Hoff's 20 Bottle Medicine Chest, No. 108, contains 4-4 ounce, 10-2 ounce and 6-1 ounce bottles, 9 $\frac{1}{2}$ inches long, 7 $\frac{1}{2}$ inches wide, 8 $\frac{1}{4}$ inches high.....	10 50
No. 10291 Hoff's 15 Bottle Medicine Chest, No. 109, contains 15-1 $\frac{1}{2}$ ounce bottles, 8 $\frac{1}{4}$ inches long, 5 $\frac{1}{4}$ inches wide, 7 $\frac{1}{4}$ inches high.....	8 50

The following with a tray in front of the bottles:

No. 10292 Hoff's 31 Bottle Medicine Chest, No. 110, contains 4-4 ounce, 9-2 ounce, 12-1 ounce and 6- $\frac{1}{2}$ ounce bottles, 13 inches long, 9 inches wide, 5 $\frac{1}{4}$ inches high.....	13 00
No. 10293 Hoff's 18 Bottle Medicine Chest, No. 111, contains 3-4 ounce, 7-2 ounce and 6-1 ounce bottles, 11 inches long, 7 $\frac{1}{2}$ inches wide, 5 $\frac{1}{4}$ inches high.....	10 00
No. 10294 Hoff's 14 Bottle Medicine Chest, No. 112, contains 10-2 ounce and 4-1 ounce bottles, 9 inches long, 6 $\frac{1}{4}$ inches wide, 5 $\frac{1}{4}$ inches high.....	8 50



HOFF'S PATENT SADDLE BAGS.

[Patented January 8, 1878.]

No. 10295 Hoff's Patent Saddle Bag, A, contains 8- $\frac{3}{4}$ ounce and 16 1 $\frac{1}{2}$ ounce vials, Black or Russet Leather.....	\$7 50
No. 10296 Hoff's Patent Saddle Bag, B, contains 10- $\frac{1}{2}$ ounce and 20-1 $\frac{1}{2}$ ounce vials, Black or Russet Leather.....	8 50

A LARGE SPACE FOR INSTRUMENTS IN EACH BAG.

Either of the above Chests or Saddle Bags will be sent by express, prepaid, if cash accompanies the order.

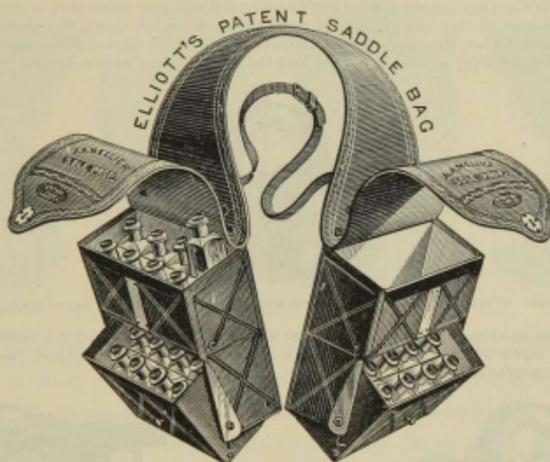
MEDICINE CASES.

PHYSICIANS' SADDLE BAGS.

ELLIOTT'S PATENT SADDLE BAG.

RECEIVED THE HIGHEST AWARD, THE GOLD MEDAL, AT THE WORLD'S EXPOSITION, NEW ORLEANS.

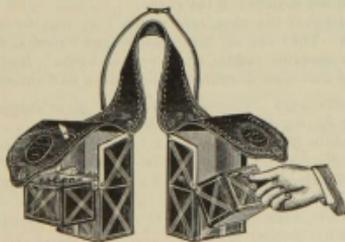
Are made of one piece of best Black or Russet Leather. Leather partitions which, with vials, can be removed as desired. Lightest bag offered to physicians. Adopted by the U. S. Government over all competitors. Nickel-plated finishings. No seams or stitches. Bottles have acid proof India rubber corks, which will not break or shake loose, but are not to be used for chloroform. More of the Elliott patent are sold than of all others combined.



10298.

No. 10297 Elliott's Patent Saddle Bag, small; contains 8- $\frac{1}{4}$ oz. and 16- $\frac{1}{4}$ oz. vials, with space for instruments 3x5 inches	\$ 9 00
No. 10298 Elliott's Patent Saddle Bag, large; contains 10- $\frac{1}{4}$ oz. and 20- $\frac{1}{4}$ oz. vials, with space for instruments 3x6 $\frac{1}{4}$ inches.....	10 00
No. 10299 Elliott's Patent Saddle Bag, extra large; contains 12- $\frac{1}{4}$ oz. and 16-4 oz. vials, with space for instruments 4x8 $\frac{1}{4}$ inches.....	12 00

STEPHENS' PATENT SADDLE BAGS.



10300.

No. 10300 Stephens' Patent Saddle Bags; No. 1 contains 8- $\frac{1}{4}$ oz. and 16- $\frac{1}{4}$ oz. vials, russet or black..	\$10 00
No. 10301 " " " " " 2 " 10- $\frac{1}{4}$ oz. and 20- $\frac{1}{4}$ oz. " " " ..	11 00
No. 10302 " " " " " 3 " 12- $\frac{1}{4}$ oz. and 24- $\frac{1}{4}$ oz. " " " ..	13 00
No. 10303 " " " " " 4 " 12- $\frac{1}{4}$ oz., 12- $\frac{1}{4}$ oz. and 6-2 $\frac{1}{2}$ oz. vials, russet or black.....	13 00

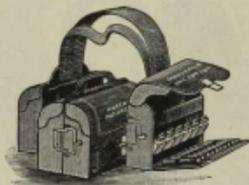
Either of the above Saddle Bags will be sent by express, prepaid, if price of same accompanies the order.

MEDICINE CASES.

PHYSICIANS' SADDLE BAGS.

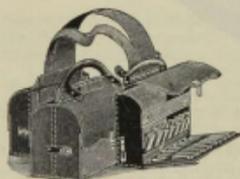
MARSHALL'S PATENT CONVERTIBLE SADDLE BAGS AND HAND CASE COMBINED.

This Case is convertible from Saddle Bags to Buggy or Hand Case and the change from one form to the other can be accomplished very easily and promptly, making an unusually convenient Medicine Case for the general practitioner. There are two spaces for sundries in each case and when the case is opened the contents are brought clearly into view and can be easily taken out and replaced. They are proof against the entrance of water, dust and horsehair. Have no extra cumbersome parts—no tin to rattle or rust—but have economy of space, carrying more than any other case or bags of their size, and the roof over the bottles and vials is so constructed as to fit snugly against top of corks and stoppers when case is closed, thus preventing any motion, breakage of bottles and spilling of contents. Among the latest improvements are the tilting bottle stalls, with drop leaves, Marshall's New Automatic Clasp, which fastens the cover lids and makes them the most convenient and easily adjusted possible, and the tension hinge device on ends, holding the two bags firmly into one case.



10305. 57 Bottles. Size, 6x8x8, with two spaces for sundries, each $7\frac{1}{2} \times 2\frac{1}{4} \times 2\frac{1}{4}$.

Fig. 10305. The most elegant shaped case in the world. Adjusts by sliding the saddle piece up or down as wanted. When down and the hinge is closed, a perfectly solid case is formed, the two half handles forming into one grip handle.



10307. 37 Bottles. Size, 6x8x8, with two spaces for sundries, each $7\frac{1}{2} \times 2\frac{1}{4} \times 2\frac{1}{4}$.



10310. 32 Bottles. Size, $5\frac{1}{2} \times 6 \times 7\frac{1}{2}$, with two spaces for sundries, $6\frac{1}{2} \times 2\frac{1}{4} \times 2\frac{1}{4}$.

Figures 10307 and 10310 operate alike. These raise or drop the saddle piece, as wanted, and clasp or unclasp one side of the round grip handle, adjusting the end hinge. Fig. 10307 shows bags in process of adjustment, with saddle piece folded in between the cases.

Fig. 10310 shows bags arched over the case, into which they may be instantly changed at will of user—One article in two perfect forms. They are all first-class buggy cases and possess the novel advantage of being instantly convertible into superior saddle bags, or vice versa. Made of best leather and materials, silver-mounted, nicely lined, fine and most durable finish, both in and outside.

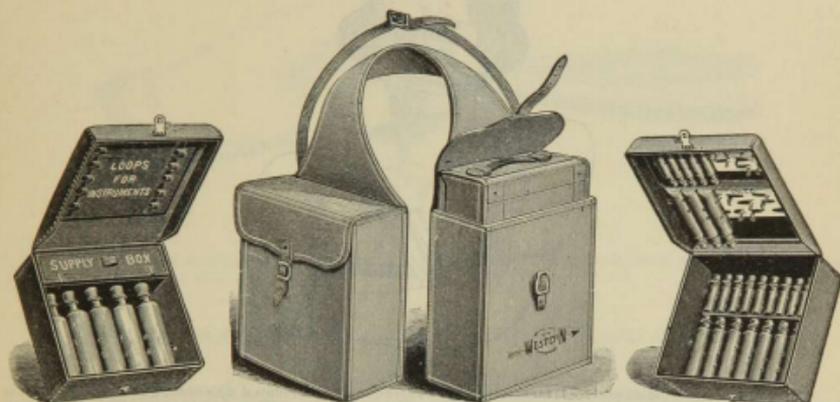
No. 10304 Marshall's Patent Saddle Bags; containing 2-1 $\frac{1}{2}$ oz. glass stoppered, 9-6 dr. rubber stoppered, 18-5 dr., 6-4 dr., 14-3 dr., 8-2 dr. cork stoppered vials, black.....	\$15 50
No. 10305 Marshall's Patent Saddle Bags; containing 2-1 $\frac{1}{2}$ oz. glass stoppered, 9-6 dr. rubber stoppered, 18-5 dr., 6-4 dr., 14-3 dr., 8-2 dr. cork stoppered vials, russet.....	16 00
No. 10306 Marshall's Patent Saddle Bags; containing 12-1 $\frac{1}{2}$ oz. glass stoppered, 16-6 dr., 10-2 dr. cork stoppered vials, black.....	15 50
No. 10307 Marshall's Patent Saddle Bags; containing 12-1 $\frac{1}{2}$ oz. glass stoppered, 16-6 dr., 8-2 dr. cork stoppered vials, russet, patent leather cover lid.....	12 50
No. 10308 Marshall's Patent Saddle Bags; containing 12-1 $\frac{1}{2}$ oz. glass stoppered, 16-6 dr., 8-2 dr. cork stoppered vials, black.....	15 50
No. 10309 Marshall's Patent Saddle Bags; containing 12-1 $\frac{1}{2}$ oz. glass stoppered, 16-6 dr., 8-2 dr. cork stoppered vials, russet.....	16 00
No. 10310 Marshall's Patent Saddle Bags; containing 14-1 oz. rubber stoppered, 16-6 dr. cork stoppered vials, black.....	10 00

Any style of Marshall's Saddle Bag will be sent by express, prepaid, if cash accompanies the order.

MEDICINE CASES.

PHYSICIANS' SADDLE BAGS.

WESTERN PATENT SPRINGS SADDLE BAGS.



10311.

The bottles are contained in two inner cases, one holding 14-1 ounce bottles and 18-3 drachm vials; the other, 5-3 ounce bottles and supply box for sundries, $7\frac{1}{4}$ inches long, $1\frac{3}{4}$ deep, $1\frac{3}{4}$ wide. These cases can be taken out and used separately when desired, or can be easily strapped together into a single hand case. They are protected from the horse and bad weather by the outer cases, and thus kept free from the odious horse smell that cannot be avoided with the "Convertible" Cases used for both hand cases and saddle bags.

The patent metal springs which are becoming so popular with all buggy and hand cases, and are largely superseding leather loops, add greatly to the durability of the bags. The distinctive features of these springs are that they are cut from a continuous plate of fine quality of spring brass, the base of the spring being a part of the plate, and arranged diagonally, to bring the bottles next to each other. They are silver-plated and then lacquered to prevent corrosion. This continuous piece of metal being securely riveted to the foundation, makes it impossible for the springs to become loose, and greatly strengthens the partitions. The springs are formed like the letter U, making a uniform curvature around the bottle, and admitting of an adjustment of several millimetres when bottles vary in diameter. Springs otherwise formed admit of no adjustment. The metal-covered flanges to keep corks in, are also a distinctive and invaluable feature of our cases. The corks of the bottles press firmly against the top of the case and cannot come out until the bottles are removed. The bottles are protected by heavy velvet pads, and prevented from shaking by the springs clasping firmly around them, and are held laterally by top and bottom of case.

Made either of fine black harness leather or russet box leather. Dimensions of each inner case, $8\frac{1}{2}$ inches high, 8 inches wide and 2 inches thick.

10311. Western Patent Springs Saddle Bags..... \$12 00

DISLOCATION APPARATUS.

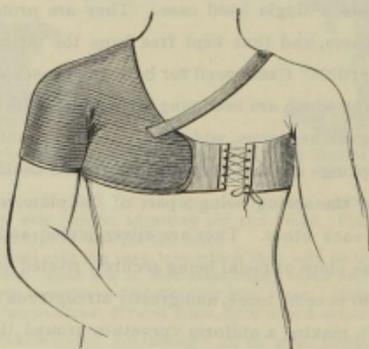
10312. MAYOR'S APPARATUS FOR DISLOCATED CLAVICLE. PRICE, \$5.00. ||



10312.

The outer or acromial end of the clavicle is not unfrequently dislocated upwards, and more rarely it is driven fairly over the acromion process, constituting a dislocation upwards and outwards. This dislocation is easily reduced, but the clavicle is with difficulty retained in place. The treatment consists in the application of a force over the top and outer end of the clavicle, with a counter-force applied below the elbow, so as to elevate the humerus and scapula, while the arm and forearm are confined by a sling and bandage against the side and front of the body. These indications will be fulfilled by Mayor's apparatus.

10313. LEATHER SHOULDER CAP FOR DISLOCATION OF SHOULDER-JOINT. PRICE, \$9.00. ||



10313.

This apparatus is to be worn after reduction of a dislocated humerus, to guard against a recurrence, and also for the purpose of relieving permanent dislocation arising from a laxity of the ligaments, or from paralysis of the deltoid and scapular muscles. It is made of satin-jean, with a leather shoulder-cap.

DIRECTIONS FOR MEASUREMENT.

1st. Patient's name. 2d. Patient's weight (estimated). 3d. Right or left shoulder. 4th. Circumference of the arm. 5th. Circumference axilla to acromion. 6th. Circumference of chest under axilla.

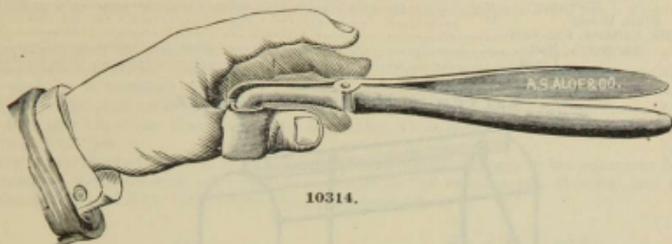
DISLOCATION AT THE SHOULDER-JOINT.

Dislocation at the shoulder may be very conveniently reduced by causing the patient to mount to a convenient height on some "steps," placing his arms across the top step, upon which is placed a pillow. The top step acts as fulcrum, and the patient's body answers to a great extent as counter-extension.—Dr. G. Hamilton.

SPECIAL NOTICE.—In the manufacture of this apparatus we can substitute, if so desired, a silk elastic cap in place of the leather shoulder cap (see Figure on page 898).

DISLOCATION APPARATUS.

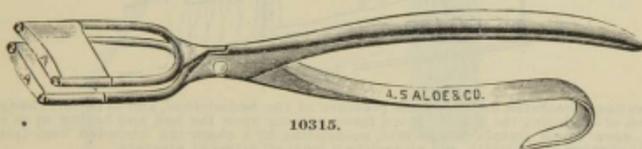
COLLIN'S LUXATION FORCEPS.



10314.

Collin's luxation forceps have rubber lined jaws, that a firm hold upon the dislocated member may be secured without danger of bruising it.

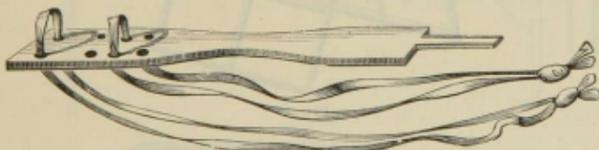
LÜER'S FORCEPS FOR LUXATION OF FINGERS OR TOES.



10315.

This instrument is made in the shape of a pair of forceps, the strong jaws of which, in place of being concaved, are bifurcated, and carry between their rods, straps of strong webbing, doubled and drawn over them; the spaces A, being filled up by pieces of cork or India rubber. This construction and the length of the arms or the lever, exercise sufficient power to seize and hold the luxated member without contusing the soft parts.

LEVIS' SPLINT FOR REDUCING DISLOCATION OF PHALANGES.



10318.

To apply this instrument, the finger is passed through the loops, and, by drawing on the tapes and then winding them around the projecting stem in opposite directions, and finally tying them together, a firm grip is obtained. This enables the operator to apply both extension and flexion, or leverage in any direction. The proximal end of the phalanx may be lifted, or even rotated, so as to allow one side of the bone to approach the socket before the other. It is a simple and cheap instrument, but one that every surgeon should possess.

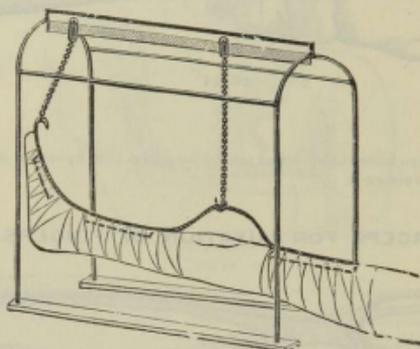
10314.	Forceps, Luxation, Collin's.....	\$3 00
10315.	" " Luer's	6 00
10316.	" " Mathieu's.....	9 00
10317.	Pulleys and Cord, for Dislocation.....	per pair, 3 00
10318.	Splint, Levis' Phalangeal.....	75

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

FRACTURE APPARATUS.

10319.	Bed, Crosby's, Fracture	} Descriptive matter on application.	} \$25 00 to \$40 00
10120.	" McCurdy's, "			} 30 00 to 45 00
10321.	" Sargent's, "		125 00
10322.	Box, Fry's, Adjustable Fracture.....		4 50
10323.	" Petit's, Plain		3 50
10324.	" " Elevated		12 00
10325.	" " Plain Wood		2 00
10326.	Cradle, Salter's, Fracture.....		15 00
10327.	" " Sargent's, Body.....		3 00
10328.	" " " Limb.....		2 50

SALTER'S FRACTURE CRADLE.



For protecting a fractured limb from the pressure of the bed-clothes, and to permit change of position without the risk of displacing the bones. It is a frame resting upon the bed and having on its central bar a small railway, upon which travels two pulleys, suspending by a chain the wounded limb (placed in such splinting as the surgeon may select), and protecting it from all external pressure.

SARGENT'S ADJUSTABLE FOLDING CRADLE.

For keeping the bed-clothes from touching the inflamed or injured parts of the body or limbs.

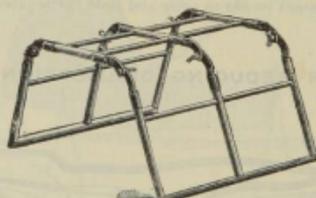


Fig. 1.

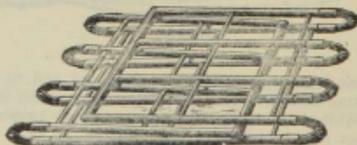


Fig. 2.

The advantage of this cradle over any other in use, either for private or hospital practice, cannot fail to impress any physician or nurse. The frame-work is made of $\frac{3}{8}$ inch and $\frac{5}{16}$ inch rock maple dowels, the latter running through the former and riveted at right angles, which is at once the lightest and strongest way they can be constructed. The corner joints are of light malleable iron, with thumb nuts, which lock the sides at right angles with the top, or at an inclination, as in Fig. 1; or folded, as in Fig. 2. The great advantage of folding is so obvious that not a word need be said. A set of these cradles should form a part of the requisites of every physician, and every hospital should possess a sufficient number to meet all demands.

Two or three of the large size form the most perfect arrangement possible for the giving of steam baths in bed. Standard size for body, 24 inches long, 22 inches wide, 16 inches high. Standard size for limbs, 24 inches long, 12 inches wide, 12 inches high.

FRACTURE APPARATUS.

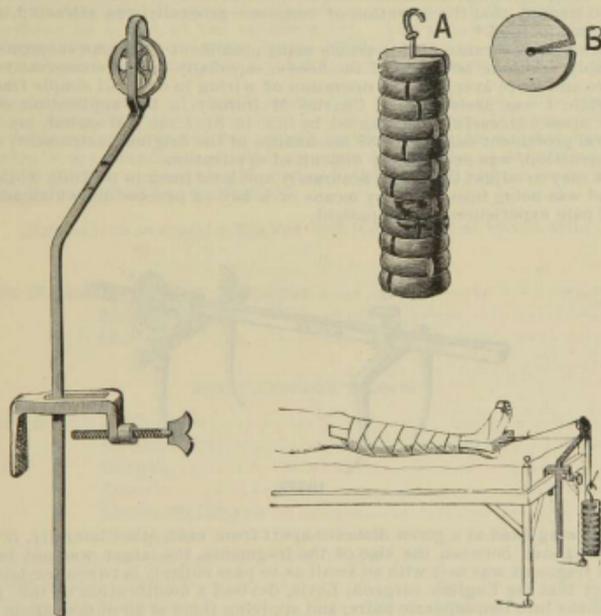
LEVIS' EXTENSION APPARATUS.

Designed by R. J. LEVIS, M. D.

SURGEON TO THE PENNSYLVANIA HOSPITAL AND TO THE JEFFERSON COLLEGE HOSPITAL.

The application of the principle of weight-extension to the treatment of fractures, and in diseases and deformities of joints, is of such importance as to require more effectual and convenient apparatus than is ordinarily used. It is desirable that the mechanical appliances for this object should be convenient and inexpensive, portable, not cumbersome and readily and securely applicable to various forms of bedsteads or couches. It is also important that the amount of tension by weight can be estimated and varied to the requirements of the case.

All these requisites are secured in an accurate and mechanical manner by the apparatus devised by Dr. R. J. Levis, which has been used for a number of years in the Pennsylvania Hospital, and also to some extent in the hospitals of New York, London and other large cities.



10329.

The rod (A) fits the hole in the centre of weight (B) nicely, excepting about an inch from the top, which is flattened in order to admit the weights being put on and taken off at that point only.

The wood cuts render a full description of the apparatus unnecessary. An adjustable clamp holds in position the upright rod which supports the pulley. The rod and pulley can be adjusted at any required elevation. The clamp will grasp either a wide or narrow bar at the foot of the bedstead, or it can be attached to the back of a chair, to the end of a table, or to any object of sufficient security and steadiness. It can be reversed so as to grasp an under edge when such hold is more convenient.

The amount of weight-extension is simply effected by a series of one-pound weights suspended upon a rod, bent into the form of a hook at the top, for catching in a loop in the extending cord. The upper portion of this rod (an inch and a half or two inches) is flattened or narrowed, the remainder of the rod maintaining a uniform diameter. In the centre of the weights a hole is drilled, into which the rounded or lower portion of the rod fits very tightly, and from which centre hole a slot is cut (B) that, while it permits the passage of the rod in the upper constricted and flattened portion, is too narrow to allow of the weights slipping off the rod, no matter in what direction or with what force a blow may be struck or the apparatus displaced.

10329. Levis' Extension Apparatus, put up complete, with Foot Block and Cord attached, ready for use, in a neat and substantial case..... \$ 4 50

FRACTURE APPARATUS.

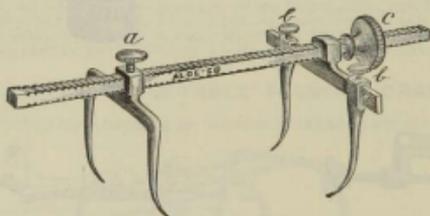
A NEW FORM OF HOOKS FOR THE TREATMENT OF SIMPLE FRACTURE OF THE PATELLA.

By WILLIAM K. OTIS, M. D., New York.

From a mechanical standpoint, the hooks of Malgaigne have long been recognized as the most perfect of all the various devices for approximating and retaining in position the fragments in simple fracture of the patella, and have held a prominent place among the recognized methods of treating this accident. A serious objection to their use, however, has been the fact that the points of the hooks, imbedded in the tissues about the patella, always excited a certain amount of inflammatory action, sometimes followed by the more serious forms of septic infection, so that, notwithstanding their manifest advantages, they were for the time practically abandoned. Though the advances made in antiseptic surgery entirely obviated this objection, it was not until 1886, when Mr. Frederick Treves published an account of a series of six cases successfully so treated, that the attention of surgeons generally was attracted to the renewed advantages of this method.*

Even before the appearance of this article many prominent American surgeons were inclined to look favorably upon the adoption of the hooks, especially as the conservative element was becoming more and more averse to the operation of wiring in cases of simple fracture. About a year ago, while I was assisting Dr. Charles McBurney in the application of Malgaigne's hooks in two cases successfully so treated by him in St. Luke's Hospital, my attention was called to several prominent defects in the mechanism of the original instrument, which, though simple in construction, was exceedingly difficult of application.

It was not easy to adjust the hooks accurately and hold them in position while a long screw connecting-rod was being introduced by means of a key—a proceeding which added greatly to the amount of pain experienced by the patient.



10332.

The hooks being fixed at a given distance apart from each other laterally, if any considerable difference existed between the size of the fragments, the larger was not held firmly, and occasionally a fragment was met with so small as to pass entirely between the hooks. So great was this defect that the English surgeon, Levis, devised a modification on this account alone, dividing the hooks into two separate pairs, and applying them at an obtuse angle to each other. This, while it accomplished the object, added greatly to the difficulties of application. The curve of the hooks made them difficult to adjust, and tended to tilt the fragments, or slip over their surface. The connecting bar was placed too near the integument, often causing an erosion of its surface. The weight of the hooks was considerable, and a small amount of corrosion in the thread of the screw made removal difficult, so that on one occasion I was obliged to cut through the hooks with a file in order to accomplish it. To remedy these defects as far as possible, I have had constructed an instrument radically different from that formerly used, at the same time I think without losing any of its advantages.

This instrument consists of two light cross-bars, which carry the hooks, and slide easily upon the main or connecting bar, at right angles to it, by means of square slots raised somewhat from the top of each cross-bar. The main bar is a narrow, square rod, smooth on the sides, but having a screw-thread cut on the corners. One of the cross-bars may be clamped firmly at any point on the main bar by means of a small set-screw (*a*). The other cross-bar is without a set-screw. Behind it is placed a thumb-screw (*c*), running on the screw-thread cut in the corners of the main bar which serves to push the cross-bar powerfully forward along the main bar. In regard to the hooks themselves—to which a very different curve from those

* See British Medical Journal, July 24, 1886, "The Treatment of Fractures of the Patella," by Frederick Treves, F. R. S.

FRACTURE APPARATUS.

A NEW FORM OF HOOKS FOR THE TREATMENT OF SIMPLE FRACTURE OF THE PATELLA—CONTINUED.

originally used has been given—one pair is solidly fixed to its cross-bar, the other pair being arranged to slide upon the cross-bar and clamp by means of small set-screws (*b, b*), so that the hooks may be brought near to or away from each other, and thus adjusted to fit any fragment.

APPLICATION.—An ordinary straight posterior knee-splint having been applied, and the knee and instrument rendered thoroughly aseptic, the movable pair of hooks are adjusted to fit one fragment and firmly clamped to the cross-bar. Four punctures are made with a tenotome, or small bistoury, through the integument down to the bone, at points corresponding to the insertion of the hooks. The hooks having the set-screw (*a*) are removed from the bar and adjusted, the points being passed through the punctures and pressed into the bone. The second pair are applied to the other fragment in a similar manner, it being unnecessary to remove the main bar. The fragments are now brought together as near as possible by manual force; the main bar is slipped through the slot on the cross-bar of the first pair of hooks, and clamped in position by a turn of the set-screw (*a*). Any separation which may still exist between the fragments may be overcome by the thumb-screw (*c*), making the approximation exact. The operation is not excessively painful, and in ordinary cases the use of ether is unnecessary.

The instrument is complete in itself, needing no wrench or key. The connecting bar is raised a sufficient distance to prevent its touching the integument. It is exceedingly light, and loses in a great measure the forbidding aspect pertaining to the original instrument. The practical working of the mechanism of this instrument has been demonstrated by its application by Professor R. F. Weir in a case in which, owing to the inequality of the fragments, the instrument of Malgaigne was found impracticable.

[Extract from an article in The New York Medical Journal, Dec. 31, 1887.]

10330.	Patella Hooks, Levis' Mod. Malgaigne	\$ 4 50
10331.	“ “ Malgaigne's.....	4 00
10332.	“ “ Otis'.....	4 00

MISCELLANEOUS SPLINTS.

10333.	Clavicle Splint, Fox's.....	\$ 3 75
10334.	“ “ Richardson's.....	4 50
10335.	Femur “ Burge's.....	37 50
10336.	“ “ Lente's.....	13 50
10337.	“ “ Liston-McIntyre's	12 00
10338.	“ “ Munger's.....	4 50
10339.	Fibula and Tibia Splint, Raphael's mod. Pott's	3 75
10340.	Forearm Splint, Coover's.....	1 25
10341.	Maxilla Splint, Hamilton's	\$3 75 to 9 00
10342.	Olecranon Splint, Clark's.....	3 75 to 6 00
10343.	Patella Splint, Bacon's.....	13 50
10344.	“ “ Boisnot's.....	9 00
10345.	“ “ Dennison's Windlass.....	1 25
10346.	“ “ Hamilton's	\$6 00 to 7 50
10347.	“ “ O'Reilly's (St. Louis).....	4 00
10348.	Thigh and Leg Splint, Byrd's Wire Gauze and Smith's.....	3 75

SPLINT MATERIAL.

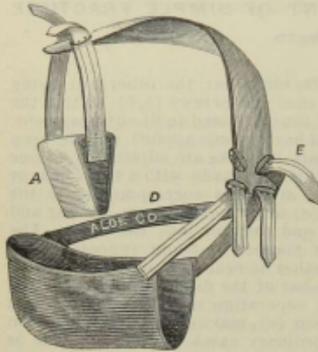
10349.	Binders Board	per sheet,	\$ 0 10
10350.	Felt, American	per square yard,	5 00
10351.	“ Russian.....	“ “	6 00
10352.	Gutta Percha, in sheets $\frac{1}{8}$ inch thick.....	per pound,	2 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

FRACTURE APPARATUS.

SPLINTS.

10353. LEVIS' APPARATUS FOR TREATMENT OF FRACTURE OF THE CLAVICLE.

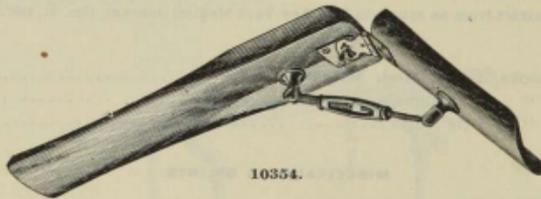


10353.

(A) is a wedge-shaped pad for the axilla, which is put in place thick side up. Two straps fastened to this pad pass directly upwards, and buckle to the broad supporting-band on the acromion of the afflicted arm. This band is then passed across the back and over the shoulder of the sound side, and terminates in front of the chest (E). A sling to support the arm, elbow flexed, is buckled to the broad band. A strap (D) is attached to the back of the sling a short distance above the elbow, and passed obliquely across the back and buckled to the supporting-band in front. The extra buckle comes in play when the apparatus is to be reversed, in using it for the other side. The shoulder is kept out by the wedge, up by the sling, and back by the strap (D).

These apparatus are made in two sizes—one size for adults, one size for children.
 Price, for either size.....each, \$3 75

10354. PEPPER'S IMPROVED ANTERIOR ANGULAR SPLINT.



10354.

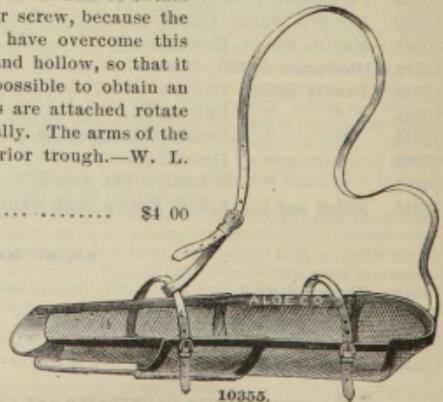
During the course of lectures delivered during the session of 1891-92, by Prof. Brinton, he suggested that the Anterior Angular Splint be so modified that it would permit of setting it so as to conform to the angle made by the arm and forearm, in order to preserve the carrying function. To accomplish this object, I have devised this hinge, which allows the arms of the splint to move backward and forward, also laterally. When adjusted to the arm it can be fixed in its lateral position by the set screw. We are unable to obtain less than an angle of 90° with the Strohmeyer screw, because the two screws strike together in the centre. I have overcome this difficulty by making one of the screws large and hollow, so that it will telescope over the other, rendering it possible to obtain an acute angle. The posts to which the screws are attached rotate as the lower arm of the splint is moved laterally. The arms of the splint are made of hard-wood, with posterior trough.—W. L. PEPPER, D. D. S.

Price..... \$4 00

10355. FOREARM SPLINT AND IMPROVED WIRE ARM SLING.

With sliding extension splint for the hand, to facilitate passive motion of the wrist without removing the support.

Price..... \$3 75



10355.

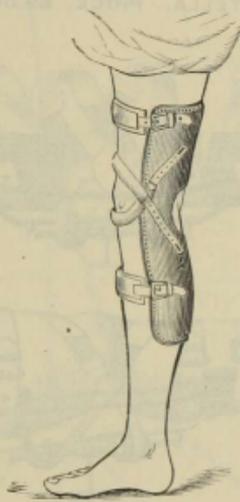
FRACTURE APPARATUS.

SPLINTS.

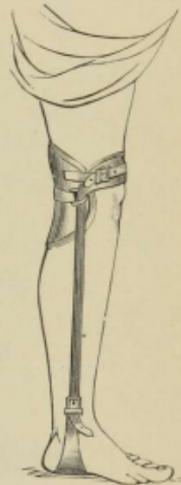
10356. ALOE'S KNEE-CAP FOR AFTER TREATMENT OF FRACTURED PATELLA. PRICE, \$4.50.



10356.



10357.



10358.

Authorities on surgery say that great care must be taken not to rupture the ligaments of the newly-formed union, which so often happens after recovery of the patient from fractured patella. For the purpose of guarding against such a recurrence, we make the apparatus shown, Fig. 10356. It consists of a knee-cap made of buckskin or satin jean, which is adjustable to the knee by buckles or laces. It is provided with a pair of coaptation pads, to retain the newly-united patella in place. These pads are arranged to approximate by drawing on laces, as shown in the upper border of the cap, represented in Fig. 10356. It affords the patient exercise of the knee-joint, the best guard against the danger of ankylosis, at the same time preventing any undue strain on the newly-united upper fragment of the patella.

DIRECTIONS FOR MEASUREMENT.

1. Circumference above knee.....Inches.
2. " of knee....."
3. " below the knee....."

10357. HARTSHORN'S APPARATUS FOR TREATMENT OF FRACTURE OF THE PATELLA. PRICE, \$5.25.

This apparatus consists of a light tin splint, fitting the posterior half of the limb. It is covered with leather, and is made to lace or to buckle in front. The coacting appliances are a pair of strong webbings or straps, well padded in the middle, which are drawn across the fragments obliquely, tightened by means of buckles or hooks. The application is very similar to that of Turner's splint.

DIRECTIONS FOR MEASUREMENT.

1. Right or left leg?
2. Length from above ankle to lower third of thigh.....Inches.
3. Circumference of thigh....."
4. " calf....."

10358. LEVIS' APPARATUS FOR TREATMENT OF FRACTURE OF THE PATELLA. PRICE, \$4.50.

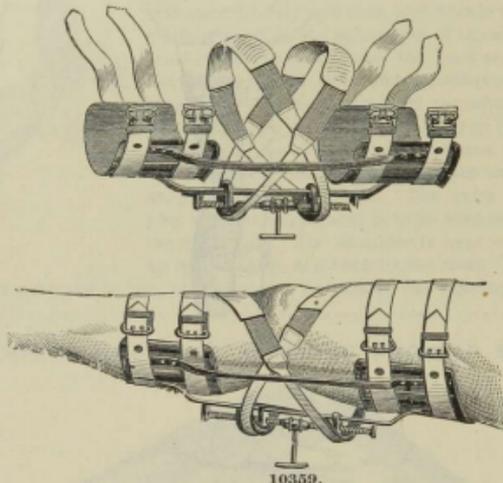
This apparatus consists of a broad pad, resting on the popliteus, to keep the knee extended, and a narrow pad, fitting the upper border of the patella. A strap connected with the latter one is first passed through a ring attached to the popliteal pad, then continued down the leg on each side, being finally buckled to a lined foot pad. This makes the foot a fixed point for extension, and the ring through which the strap passes gives it also a direction backwards, maintaining a firm hold of the upper fragment of the patella, while the lower fragment is readily kept in place by a strip of adhesive plaster.

DIRECTIONS FOR MEASUREMENT.

1. Circumference above knee.....Inches.
2. Length from sole of foot to knee....."

FRACTURE APPARATUS.

SPLINTS.

10359. TURNER'S APPARATUS FOR TREATMENT OF FRACTURE OF THE
PATELLA. PRICE, \$9.00.

10359.

"The apparatus consists of thigh and leg pieces of sheet iron with two buckled straps attached to each, united by two lateral bars and one posterior bar of steel. To the posterior bar are two troughs (part of a circle) on a double reversed screw; and by turning the key in opposite directions, the troughs separate or approach each other. The apparatus, being japanned, is always ready for new cases when cleaned. The apparatus should be applied in simple fractures as soon as possible; but if, in the opinion of the surgeon, it would aggravate existing inflammation, thereby jeopardizing the joint, it could be applied as a posterior splint without using the coacting appliance until anti-phlogistic measures make it safe. The apparatus, to be applied properly, should be well padded with flannel or other material, for protecting thigh and leg from the splint and straps; quadriceps femoris should be relaxed, the limb held by the thigh portion and buckled; also buckle the leg portion. Use an anæsthetic if necessary. First fix the lower fragment, by drawing it up, smoothing the integuments down; this being held by an assistant, the surgeon applies a strip of adhesive plaster, of sufficient width to hold the fragment, and overlaps it sufficiently to prevent any tilting up, passes the free end of the adhesive plaster around the upper trough, crosses them and applies them to the skin. The upper fragment being coated, the integuments smoothed up, a similar piece of plaster is applied around the lower trough as around the lower fragment. Interpose something where the plasters cross each other, to prevent their sticking together. For firmness use double strips of plaster. Snip the upper edge of the upper plaster; thus a rounded edge instead of a cutting edge will be presented to the integuments, avoiding in a degree excoriation. The apparatus should remain applied thirty or forty days. When new dressings are applied, the patella being held, cautious passive motion may be made. After the apparatus is permanently removed, the patient, to favor consolidation, should wear something to prevent too much use of the patella, say for four or six months, viz., an elastic knee-cap with a ring arrangement over the patella, or posteriorly a piece of gutta percha or leather strapped above or below the joint, either of which, being softened by warm water, can be applied, and allow of a certain flexion. Passive motion can be occasionally made, but not extreme, under six months."

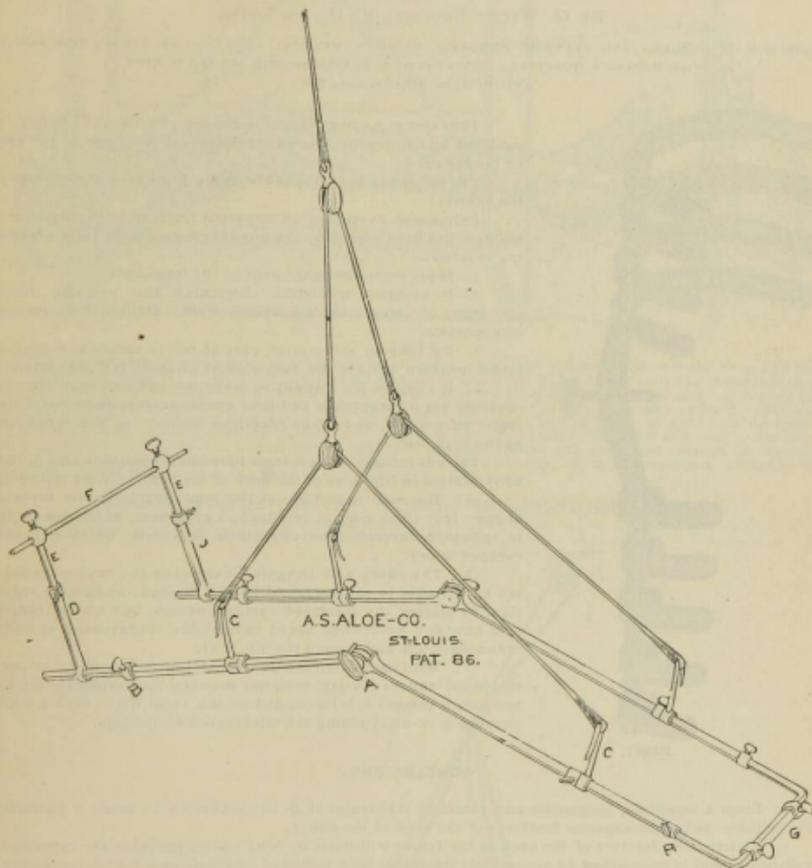
DIRECTIONS FOR MEASUREMENT.

1. Right or left leg?
2. Length from above the ankle to upper third of thigh..... Inches.
3. Circumference of thigh..... "
4. " calf..... "

FRACTURE APPARATUS.

SPLINTS.

10360. ALOE'S MOD. HODGEN SUSPENSION SPLINT. PRICE \$15.00



10360.

This splint consists of a series of telescoping bars which are capable of adjustment to various sized limbs. The material is steel, nickel-plated, of tested strength, capable of sustaining any weight of limb to which it might be applied. The most important element of improvement is the adaptation of the cog joint at A, which converts the splint into a double inclined plane, at any angle desired.

Another important advantage is in the adaptation of a supporting arch, which is found in the letters D, E and F. D and E are composed of telescoping bars, which are adapted to the bar F. By moving the inner rod E, any reasonable height and width may be obtained, so that the bed-clothes can be adapted about splint to give perfect ventilation. It is made of such material and strength that it keeps the fractured limb on the plane desired for easy and perfect handling of the injured parts.

We have also made an improvement in the suspension hooks, as seen at C, which we claim possesses the virtue of remaining where they are placed. This was not always the case in the older forms of splints. If counter-extension were applied carelessly, it would move the cotton strips placed on the telescoping bars.

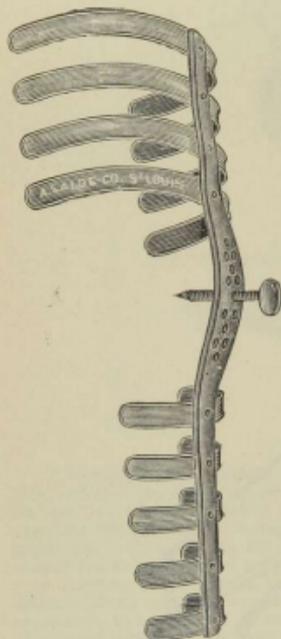
FRACTURE APPARATUS.

SPLINTS.

10361. BROOME'S MODIFIED SENN'S AUTO-EXTENSION SPLINT.
PRICE, \$6.50.

By G. WILEY BROOME, M. D., St. Louis,

PROFESSOR OF SURGERY AND CLINICAL SURGERY, WOMAN'S MEDICAL COLLEGE, ST. LOUIS; SURGEON TO THE WOMAN'S HOSPITAL; CONSULTING SURGEON TO THE ST. LOUIS CITY AND FEMALE HOSPITALS, ETC.



10361.

The accompanying figure illustrates Dr. Senn's Splint, as modified by Dr. Broome, for the treatment of fractures of the neck of the femur.

The following paragraphs are taken from recent addresses on the subject:

Permanent fixation of an impacted fracture in the position in which it has been placed by the accident is necessary for the following reasons:

1. It prevents disengagement of the fragments.
2. It obviates secondary shortening and eversion during the stage of interstitial absorption which attends inflammatory osteoporosis.
3. By keeping the injured part at rest, it serves as a prophylactic measure against the accession of arthritis and para arthritis.
4. It enables the patient to leave the bed any time after the dressing has been applied, and thus guards against decubitus, hypostatic pneumonia, and other affections incident to prolonged confinement in bed.

The advantages arising from immediate reduction and permanent fixation in fractures of the neck of the femur are the following:

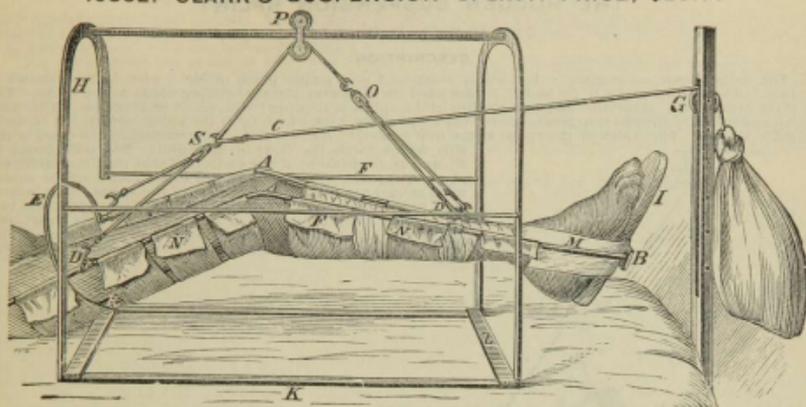
- (a) The untorn portions of the joint structures are replaced at once into their normal relations; a procedure which can not fail to influence favorably the circulation in vessels which may have escaped injury.
- (b) The sharp and irregular margins of the broken surfaces act as irritants to the surrounding soft tissues; immediate reduction, by placing the fractured surfaces at once into mutual coaptation, acts as a preventive agent against the superintention of undue inflammation in and around the hip-joint.
- (c) With coaptation the process of repair is initiated at once, the blood and exudation material between the fragments act as a temporary cement substance, and at the same time serve a useful purpose in re-establishing the interrupted circulation.

CONCLUSIONS.

1. From a scientific, prognostic and practical standpoint it is not necessary to make a distinction between intra- and extra-capsular fractures of the neck of the femur.
2. An impacted fracture of the neck of the femur will unite by bony union, provided the impaction is not disturbed and is maintained by appropriate treatment for a sufficient length of time for the fragments to become united by callus.
3. Impacted fractures of the neck of the femur should be treated by a fixation dressing consisting of a plaster-of-Paris case, including the fractured limb, the pelvis and the opposite limb as far as the knee, in which a splint should be incorporated by which lateral pressure can be secured in the direction of the axis of the broken femoral neck.
4. Unimpacted fractures of the neck of the femur, both intra- and extra-capsular, should be treated by immediate reduction and permanent fixation, so as to place the fragments in the same favorable condition during the process of repair as in impacted fractures.
5. Reduction is effected most readily by auto-extension and traction upon the fractured limb with the patient in the erect position, resting his weight upon the sound limb.
6. The fixation dressing should not be removed and the lateral pressure should not be discontinued for from ten to twelve weeks, the shortest space of time required for bony union to take place.
7. Patients who have sustained a fracture of the neck of the femur should not be allowed to use the fractured limb earlier than four to six months after the accident, for fear of establishing a pseudo-arthritis at the seat of fracture.
8. The functional result is greatly improved by passive motion, massage, and the use of the faradic current.

FRACTURE APPARATUS. SPLINTS.

10362. CLARK'S SUSPENSION SPLINT. PRICE, \$25.00

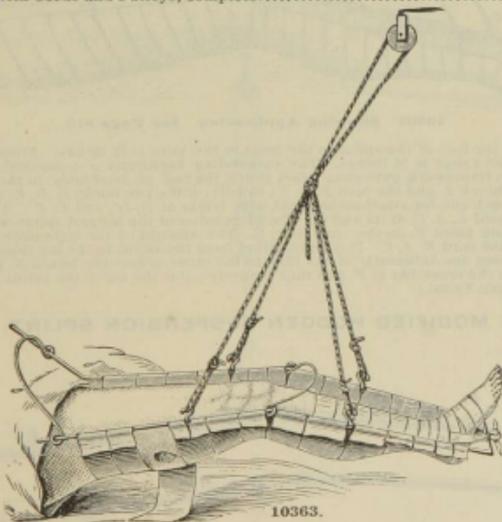


10362.

The attachment for extension is by means of adhesive strips (*M*) extending to near the knee and passing around a foot-piece (*I*) to which is attached a small bracket (*B*) which hooks over the lower end of the main splint. Then the limb is suspended by four hooks (*DD*) which are attached to thimbles that slide back and forth upon the bar, and are fixed at the desired point by means of thumb-screws in their outer sides. Extension is made by means of the cord (*C*), attached to the hook in the pulley at (*S*), passing forward between the cords playing over the pulleys at (*O*), to drop over the pulley (*G*), fixed in a post at the foot of the bed, and then attached to a sand bag of sufficient weight to make the necessary amount of extension. The weight ordinarily required for an adult is from ten to fifteen pounds. A uniform traction is exerted upon the limb, in whatever position the body of the patient may be placed.

10363. HODGEN'S (ST. LOUIS) SUSPENSION SPLINT.

Price, Japanned, with Cords and Pulleys, complete	\$ 3 00
Price, Nickel-plated, with Cords and Pulleys, complete	5 00



10363.

This apparatus is exceedingly simple in construction, and completely accomplishes the purpose for which it was designed. It consists of two lateral bars passing down the sides of the leg, and a transverse bar crossing below the foot, the bow of the upper or free ends of the lateral bars to hold them apart, the whole suspended by cords attached to a pulley which fastens to the ceiling. The leg is held in place by means of adhesive strips and bandages passing from the foot to the transverse bar, and also by means of the strips of muslin passing under the leg and pinned at each end to the lateral bars. To obtain extension, the pulley should be fastened to the ceiling nearly over the foot, as in the engraving. If the patient is inclined to slide down in the bed, it should be counteracted by elevating it at the foot, three or four inches. See next page for more complete description.

FRACTURE APPARATUS.

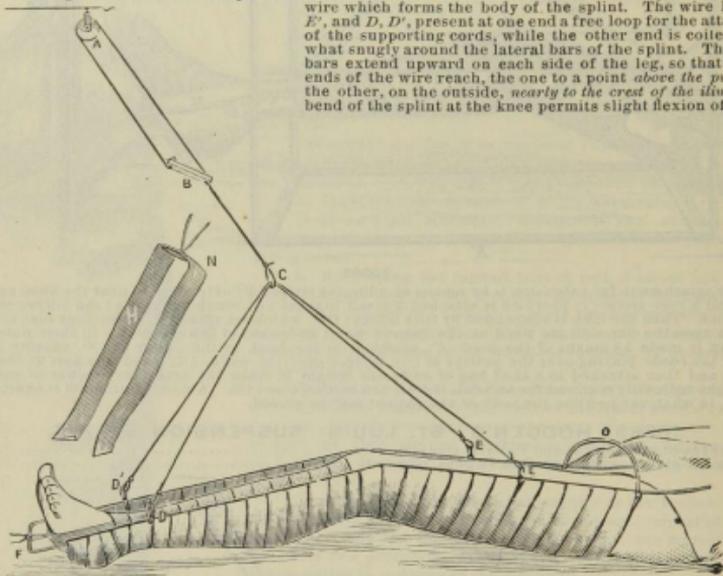
SPLINTS.

THE HODGEN SUSPENSION SPLINT.

By H. H. MUDD, M. D., St. Louis.

DESCRIPTION.

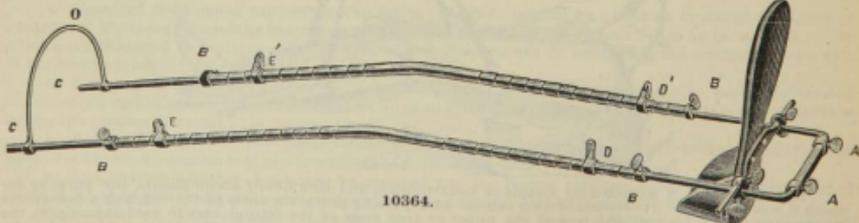
The splint itself, as originally devised, is composed of a single piece of No. 2 wire, bent as shown in Fig. 10363. The sliding hooks *D, D',* and *E, E',* are used for attaching the suspending cords to the splint. The use of the arch *O*, is to maintain the proper width of the splint at its upper end, viz., 8 or 10 inches. This arch is loose and is easily slipped into position over the ends of the wire which form the splint before the latter is applied to the leg. The width of the splint at the foot is about 5 inches, and is determined by the bend in the wire which forms the body of the splint. The wire hooks *E, E',* and *D, D',* present at one end a free loop for the attachment of the supporting cords, while the other end is coiled somewhat snugly around the lateral bars of the splint. The lateral bars extend upward on each side of the leg, so that the two ends of the wire reach, the one to a point above the pubes, and the other, on the outside, nearly to the crest of the ilium. The bend of the splint at the knee permits slight flexion of the leg.



10363. Showing Application. See Page 813.

The distance from the foot of the splint to the bend in the knee is 22 inches. From the bend at the knee to the upper end of the splint is 20 inches. The suspending apparatus is composed of, first, the pulley *A*, which is fixed in a high framework extending 8 feet above the bed, or preferably, in the ceiling; secondly, of the perforated sliding block *B*, and the cord *B, A, C*; thirdly, of the two cords *D, C, E*, and *D', C, E'*, of equal length with a loop at each end for attachment to the wire hooks at *D, D',* and *E, E'*. These cords are passed through a loop in the cord *B, A, C*, at its end *C*. The suspension of the leg and splint is readily accomplished by sliding downward the block *B*, on the cord *B, A, C*. The amount of the extension is determined by the degree of obliquity of the cord *B, A, C*. It is transmitted from the splint to the leg through the adhesive strip *H*, which, extending from one tuberosity of the tibia to the other across the board *N*, at the sole of the foot, is fastened by a cord to the cross-bar at *F*, and thus securely holds the leg in the splint. (See Fig. 10363, page 813, for prices on Hodgen Splint.)

10364. MUDD'S MODIFIED HODGEN SUSPENSION SPLINT. PRICE, \$10.00



10364.

In Fig. 10364 an adjustable splint, easily fitted to any leg, long or short, is shown. It is composed of hollow tubes and sliding bars, as described below. The lateral arms *B*, are square tubes, furnished with thumb-screws at their extremities. These tubes are of sufficient size to admit the terminal ends of the lateral bars *C*, and by pushing in or pulling out the extremities of the lateral bars the length of the splint may be varied. Its width can also be changed by sliding the lateral bars into the hollow tube *A, A*, which is

FRACTURE APPARATUS. SPLINTS.

THE HODGEN SUSPENSION SPLINT—CONTINUED.

also furnished with thumb-screws. The hooks *D*, *D'* and *E*, *E'*, for suspending the splint, slide on the lateral arms, but should be kept near the end of the hollow tubes, as shown in the illustration. The splint is used in the same manner as the one before described.

Fig. 10363 shows the splint in use. The leg is resting on muslin strips, which pass under it. These are secured by pins at each end, after overlapping the arms of the splint. Each strip supports its proportion of the weight of the leg. These strips extend from the heel to the gluteal fold. The adhesive strip *H* softened by warmth or by turpentine, is applied to the leg, and secured in position by a roller, which extends as high as the knee. This strip secures the leg in the splint, since it is fastened by the cord and block *N*, to the foot of the splint at *F*. The block *N*, at the sole of the foot, should be as wide as the adhesive strip, and about three and one-half inches long. It then protects the malleoli from the lateral pressure of the adhesive strip, through which the extending force is applied.

THE SUSPENSION OF THE LEG AND THE ADJUSTMENT OF THE FRACTURE.

The application of the Hodgen suspension splint is simple, and in skillful hands painless. Suppose the leg, with its fractured femur, to be resting upon the bed. The adhesive strip, *H*, with its foot-piece and cord, is placed in position, an assistant grasps the foot with one hand, and, with the other hand under the knee, lifts the leg from the bed, while at the same time he makes steady extension of the femur. The surgeon then applies the roller as high as the knee-joint, binding the adhesive plaster to the leg. The leg is again allowed to rest upon the bed, but the assistant maintains moderate traction on the foot, so as not to relax the extending force applied to the fractured bone. The splint is then put into position. A lateral arm is placed upon either side of the leg, and the cross-bar is brought close to the sole of the foot. The cord and block *N*, with the adhesive strip, is now fastened to the foot of the splint. Strips of muslin are passed under the leg—one at the ankle, one at the knee, and perhaps two under the thigh. These are secured by pins to the lateral arms of the splint, while it is held so that the inner arm extends above the pubes, and its outer arm, reaching nearly to the crest of the ilium, has its upper extremity not far from the anterior-superior spine of the ilium. The lower end of the splint is on a level with the malleoli. The inner wire arm need to be shortened or bent upward, so as to give the patient opportunity to sit upright, but it should always extend well above the pubic bone. The leg can now be suspended by attaching the cords *D*, *C*, *E* and *D'*, *C*, *E'*, and adjusting the slide *B*, so as to lift the splint and leg from the bed. The cradle of cloth strips upon which the leg is to rest is now made complete by adding strips of muslin, and adjusting them to the outline of the leg, as indicated in the cut. No special or violent attempt at the adjustment of the fractured bone is made, except where there is marked lateral displacement, as in some transverse fractures. The free swing of the leg, and the efficiency of the extending force, secure a perfect adjustment in a few hours. The fracture "sets" itself.

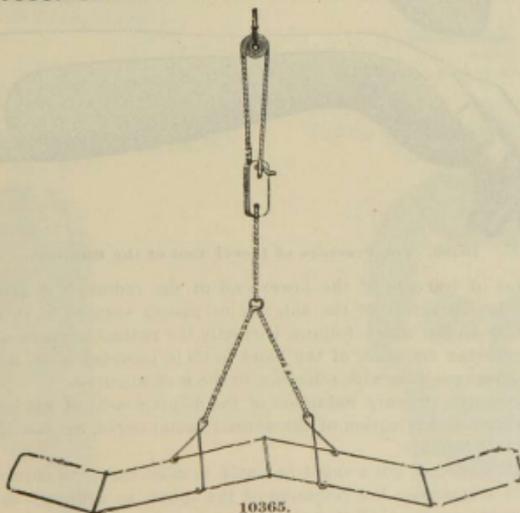
This splint, and this manner of applying extension, afford a most perfect means of neutralizing the tonic contraction of the muscles which so often determines shortening. The oblique suspension gives continuous and equable extension of an amount sufficient to accomplish a perfect result, without the waste of any force, and it insures to the patient the most perfect liberty attainable by any known means compatible with comfort and safety.

The point of support, the pulley *A*, should never be brought nearer the plane of the bed than eight feet. This gives the patient the full liberty of the bed without changing materially the extending force.

The foot-piece shown in Fig. 10364 is one which I have used with some satisfaction in fractures of the neck of the femur. It is also useful where the splint is used in the treatment of compound fractures of the leg. It will prevent rotation, it obviates drooping or extension of the foot, and is easily adjusted.

[Extract from an article in Medical News, May, 1890.]

10365. SMITH'S SUSPENSION SPLINT. \$2.50.



10365.

This splint is simply a frame composed of stout wire, which, being suspended, allows the limb, fastened to it by rollers, to be suspended in turn; the rollers passing around both limb and splint, from the foot to the groin. The splint should extend from above the anterior superior spinous process of the ilium to a point beyond the toes. The lateral bars of the splint are separated about three inches. One of the spring double hooks fastened to the short cord for suspension ought to be nearly over the seat of fracture, the other a little above the middle of the leg.

FRACTURE APPARATUS.

LEVIS' METALLIC SPLINTS.

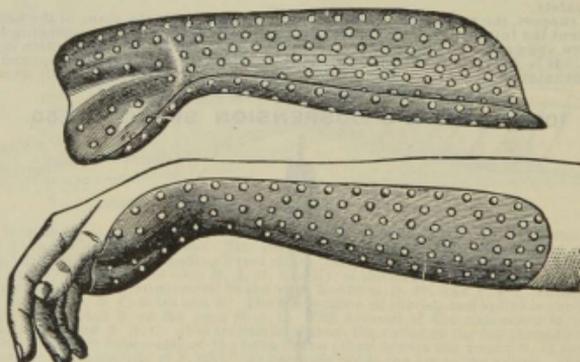
Flexible, copper, perforated and nickel-plated. Conformable to every size and condition of limbs. Very light, indestructible and inexpensive. Designed by R. J. Levis, M. D., Surgeon to the Pennsylvania Hospital, and to the Jefferson College Hospital.

The copper used in the manufacture of these splints being less than one-eightieth of an inch in thickness, makes them very light and readily conformable by bending, so as to suit the peculiarities of any limb, and yet the Splints when applied are as firm as the heaviest wooden appliances. They fit so accurately that but little padding is required; a piece of woven lint, or of cotton or woolen flannel, is all that is necessary for their lining. A slight roughness is left on the outside of the Splints, by perforations, to prevent the bandage from slipping. They are nickel-plated to prevent oxidation.

They are invaluable when the parts are lacerated. As the perforations allow ventilation, and secretions are not confined and liable to be absorbed, as in every other kind of Splints, but readily pass off through the numerous orifices, they do not become offensive, like those made of porous materials.

These Splints are cooler, lighter in weight, thinner in material, more correct in shape and more perfect in fit than any other Splints offered to the profession. The original set of Levis' Splints are made in two sizes—one size for adults, and one for children—and all, except the radius, fit the same on either the right or left limb. Nos. 1 to 9 comprise a complete set of Levis' Splints, and are ample to apply to any fracture that may occur. Lee, the patentee and manufacturer of Levis' Splints, has added to the list, and Nos. 10 to 24 are known as Lee's.

10366. LEVIS' RADIUS SPLINTS, No. 1.



10366. For Fracture of Lower End of the Radius.

In the treatment of fracture of the lower end of the radius, it is essential that proper allowance be made for curvature of the anterior or palmar surface of this part of the bone. This is insured in this splint, which follows correctly the radical curvature; and the fixing of the thenar and hypothenar eminence of the hand in their moulded beds, maintains the Splint immovably in its correct position with reference to the radical curve.

To neglect of complete primary reduction of the displacement of the lower fragment, and to inefficient restoration and retention of the normal radial curve, are due the frequent unfortunate sequence of this fracture.

No dorsal splint is needed, but a small pad will, in most cases, be required over the dorsal surface of the lower fragment. For retention of the splint, an ordinary bandage, two inches and a half to three inches wide, is all that is necessary.

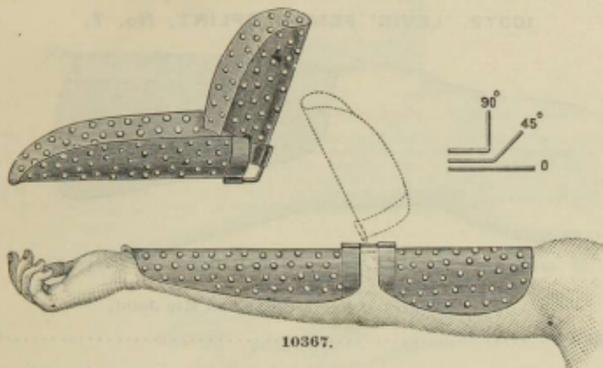
This splint has the merit of being applicable to all cases of fracture of the lower end of the radius, and also to many other injuries involving the forearm and wrist.

Rights and Lefts, Child's and Adult'seach, \$ 1 00

FRACTURE APPARATUS.

LEVIS' METALLIC SPLINTS.

10367. LEVIS' ADJUSTABLE ANGULAR SPLINTS, No. 2.



10367.

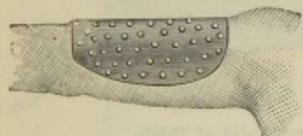
For all Fractures of the Elbow-Joint, and of the Arm and Forearm, excepting those of the Lower End of the Radius.

This Splint can be applied either exteriorly or posteriorly, and is comfortable and adjustable to any angle. The pieces are detachable, and can be used separately.

This Splint is also applicable to diseases and to resections of the elbow-joint.

Child's and Adult'seach, \$ 1 50

10368. LEVIS' HUMERUS SPLINT, No. 3.

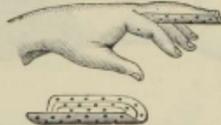


10368.

For Fractures of the Humerus,

Child's and Adult's.....each, \$0 50

10369. LEVIS' PHALANGES SPLINT, No. 4.



10369.

For Fractures of Fingers or Toes.

Three sizes.....each, \$0 15

10370. LEVIS' CLAVICLE SPLINT, No. 5.

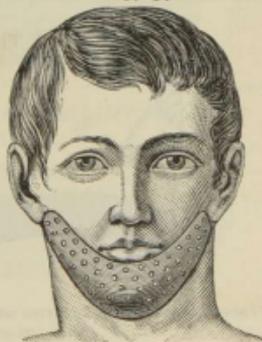


10370.

This Splint forms a cap for the shoulder, and can be applied to fractures of the clavicle and humerus.

Child's and Adult's.....each, \$0 75

10371. LEVIS' MAXILLA SPLINT, No. 6.



10371.

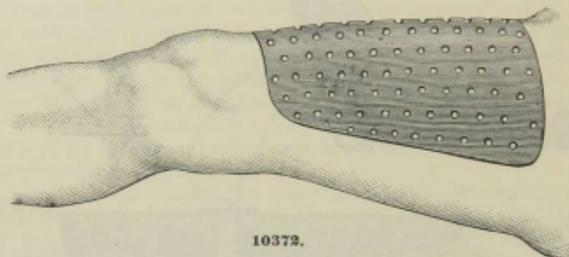
This Splint forms a complete cap or covering for the entire chin and lower maxillary bones, and keeps the fractured parts rigidly in the correct position.

Child's and Adult'seach, \$0 75

FRACTURE APPARATUS.

LEVIS' METALLIC SPLINTS.

10372. LEVIS' FEMUR SPLINT, No. 7.

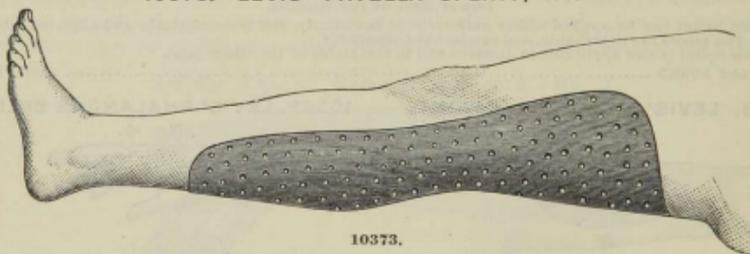


10372.

For Fractures of Femur, Ribs and Hip Joint.

Child's and Adult'seach, \$0 50

10373. LEVIS' PATELLA SPLINT, No. 8.



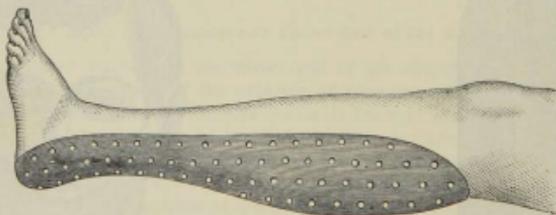
10373.

For Fractures of the Patella and Lower Third of Thigh.

This splint can be applied to all fractures from middle of femur to middle of tibia and fibula, and is particularly well adapted for fractures of the patella, and all other fractures occurring near the knee-joint, either above or below it.

Child's and Adult'seach, \$1 00

10374. LEVIS' TIBIA AND FIBULA SPLINT, No. 9.



10374.

For all Fractures and Other Injuries of the Leg below the Knee, and especially adapted for those at or about the Ankle-Joint.

Child's and Adult'seach, \$1 00

The Complete LEVIS' SET consists of the 21 pieces just described, and are put up in a neat, compact case.

For prices of complete sets of splints, see page 823.

FRACTURE APPARATUS.

LEE'S METALLIC SPLINTS.

10375. LEE'S CLUB-FOOT SPLINT, No. 10.



10375.

A New Splint for Treatment of Club-Foot and Weak Ankles.

Made of perforated and nickel-plated copper, in two sizes, for infants from three months to three years of age. They are made so as to fit the same on either limb, and are especially adapted to have shoes made over them, or to be fastened to the inside of ordinary shoes. The leg part can be trimmed off at the top of the shoe, unless needed for support. They are much lighter in weight and better in fit than iron braces can possibly be made. They support, strengthen and straighten the limbs by a very gradual and uniform pressure throughout. This is owing to the large surface of the limb which they incase.

Two Sizes, Large and Small.....each, \$ 0 75

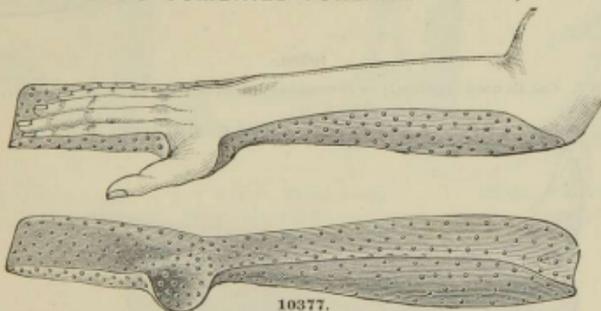
10376. WILSON'S METACARPAL SPLINT, No. 11.



10376.

Rights and Lefts, Child's and Adult's.....each, \$ 1 00

10377. LEE'S COMBINED FOREARM SPLINT, No. 12.

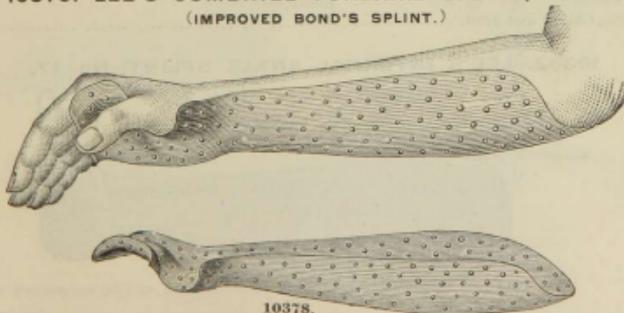


10377.

Rights and Lefts, Child's and Adult's.....each, \$ 1 00

10378. LEE'S COMBINED FOREARM SPLINT, No. 13.

(IMPROVED BOND'S SPLINT.)



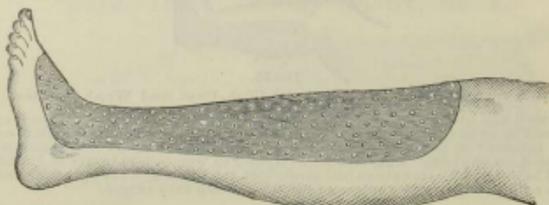
10378.

Rights and Lefts, Child's and Adult's.....each, \$ 1 00

FRACTURE APPARATUS.

LEE'S METALLIC SPLINTS.

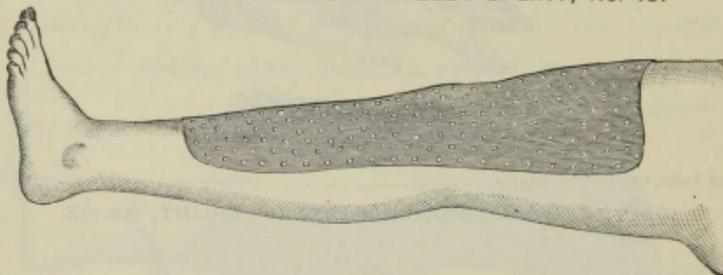
10379. LEE'S ANTERIOR TIBIA SPLINTS, No. 14.



10379.

Child's and Adult's. Can be used separately or in combination with No. 9 Levis' Splint.....each, \$ 1 00

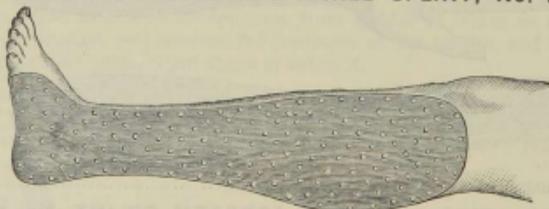
10380. LEE'S ANTERIOR PATELLA SPLINT, No. 15.



10380.

Child's and Adult's. Can be used separately or in combination with No. 8 Levis' Splint.....each, \$ 1 00

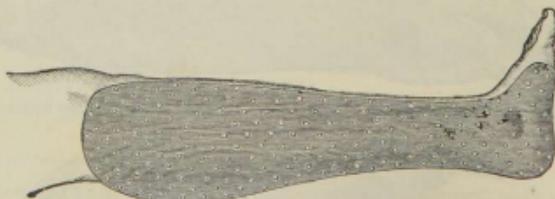
10381. LEE'S EXTERNAL ANKLE SPLINT, No. 16.



10381.

Rights and Lefts, Child's and Adult's.....each, \$ 1 00

10382. LEE'S INTERNAL ANKLE SPLINT, No. 17.



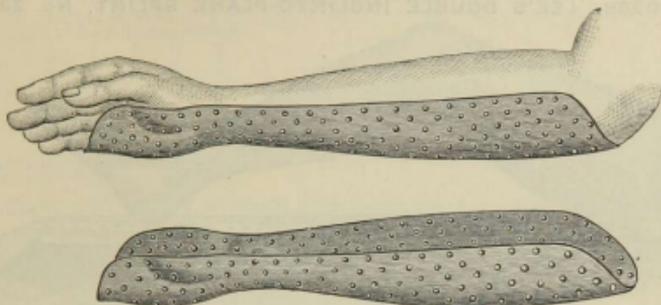
10382.

Rights and Lefts, Child's and Adult's.....each, \$ 1 00

FRACTURE APPARATUS.

LEE'S METALLIC SPLINTS.

10383. LEE'S ULNA OR FOREARM SPLINT, No. 18.



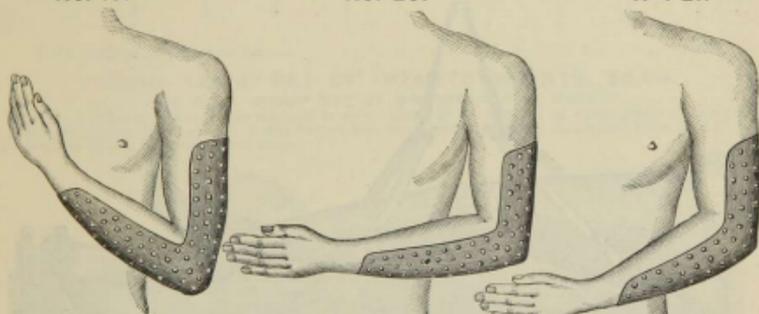
10383.

Rights and Lefts, Child's and Adult's.....each, \$1 00

10384. LEE'S POSTERIOR ELBOW SPLINT, No. 19.

10385. LEE'S POSTERIOR ELBOW SPLINT, No. 20.

10386. LEE'S POSTERIOR ELBOW SPLINT, No. 21.



10384. Acute Angle.

10385. Right Angle.

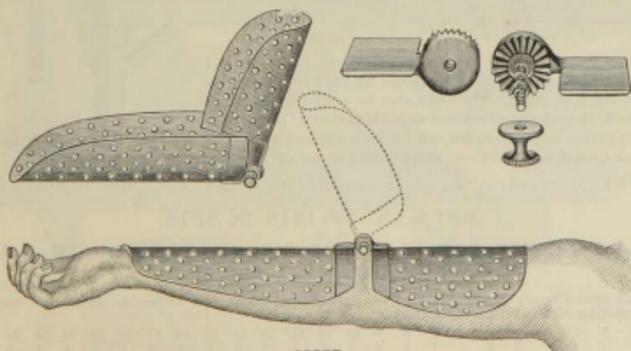
10386. Obtuse Angle.

Child's and Adult's, each, \$1 00

Child's and Adult's, each, \$1 00

Child's and Adult's, each, \$1 00

10387. LEE'S ADJUSTABLE ANGULAR SPLINT, No. 22.



10387.

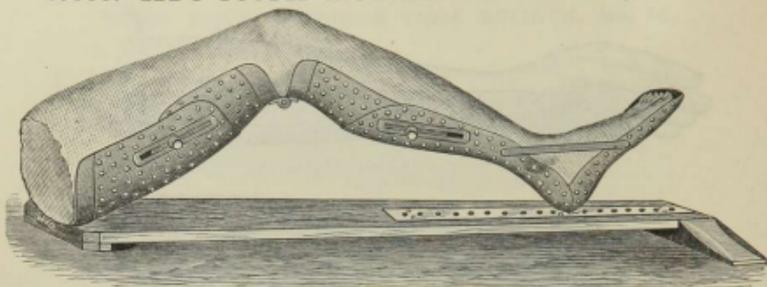
For Fractures of the Elbow Joint, and of the Arm and Forearm near the Joint.

Child's and Adult's.....each, \$1 50

FRACTURE APPARATUS.

LEE'S METALLIC SPLINTS.

10388. LEE'S DOUBLE INCLINED-PLANE SPLINT, No. 23.

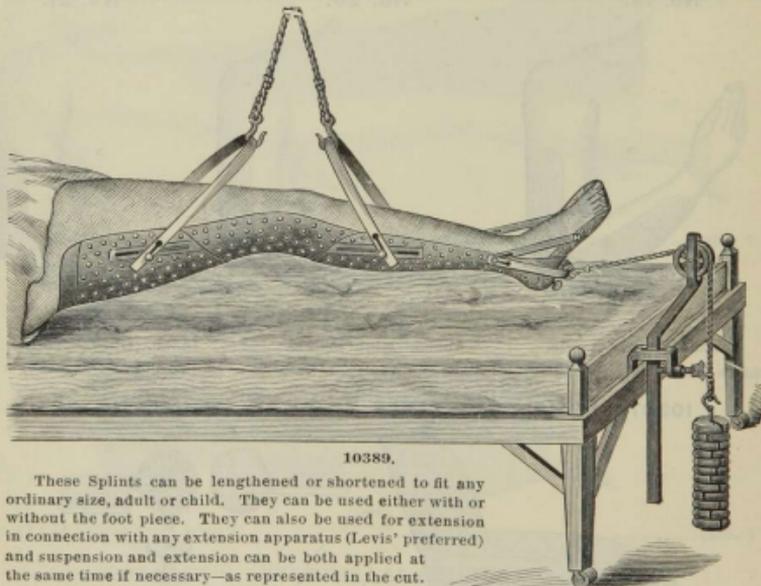


10388.

These Splints can be lengthened or shortened to fit any ordinary size adult or child very quickly and easily, and any desired angle can be obtained at the knee-joint.

Child's and Adult's.....each, \$5 00

10389. LEE'S COMBINED EXTENSION AND SUSPENSION SPLINT, No. 24.



10389.

These Splints can be lengthened or shortened to fit any ordinary size, adult or child. They can be used either with or without the foot piece. They can also be used for extension in connection with any extension apparatus (Levis' preferred) and suspension and extension can be both applied at the same time if necessary—as represented in the cut.

Child's and Adult's.....each, \$5 00

METALLIC SPLINTS IN SETS.

10390. LEE'S COMPLETE SET OF 75 PIECES FOR ADULTS, CHILDREN AND INFANTS. \$60.00.

Put up in a neat Cherry Case, 38 inches long, 13 inches wide, and 13 inches deep, and weighs, packed, 42 pounds, consisting of the following Splints:

No.....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Adults.....	2	1	1	2	1	1	1	1	1	0	2	2	2	1	1	2	2	2	1	1	1	1	1	1	31
Children.....	2	1	1	2	1	1	1	1	1	0	2	2	2	1	1	2	2	2	1	1	1	1	1	1	31
Infants.....	2	1	1	2	1	1	1	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18

Total number of pieces in set..... 75

FRACTURE APPARATUS.
LEE'S METALLIC SPLINTS.

10391. LEE'S SET OF 40 PIECES FOR ADULTS, CHILDREN AND INFANTS. \$25.00.

Put up in neat Cherry Case, 18 inches long, 9 inches wide, and 9 inches deep, and weighs, packed, 14 pounds, consisting of the following Splints:

No.....	1	2	3	4	5	6	7	8	9	13	14	15	18	20	22	Total
Adults.....	0	0	1	2	0	1	1	1	1	2	1	1	2	1	1	15
Children.....	0	0	1	2	0	0	1	1	1	2	1	1	2	1	1	14
Infants.....	2	1	1	2	1	1	1	1	1	0	0	0	0	0	0	11

Total number of pieces in set..... 40

10392. LEE'S SET OF 29 SPLINTS. \$20.00.

This set is the same as Lee's set of 40 splints, without the Infant set; this will leave 29 pieces (15 for adults and 14 for children).

10393. LEVIS' SET OF 32 PIECES FOR ADULTS, CHILDREN AND INFANTS. \$18.00.

This Set consists of the following two combined, and put up in Cherry Case, 17 inches long, 6 inches wide, and 6 inches deep, weighs packed, 10 pounds; consisting of the following pieces:

No.....	1	2	3	4	5	6	7	8	9	Total
Adults.....	2	1	1	2	1	1	1	1	1	11
Children.....	2	1	1	1	1	1	1	1	1	10
Infants.....	2	1	1	2	1	1	1	1	1	11

Total number of pieces in set..... 32

10394. LEVIS' SET OF 21 PIECES FOR ADULTS AND CHILDREN. \$15.00.

Put up in handsome Cherry Case, 17 inches long, 6 inches wide and 6 inches high. Total weight packed, 9 pounds; consisting of the following Splints:

No.....	1	2	3	4	5	6	7	8	9	Total
Adults.....	2	1	1	2	1	1	1	1	1	11
Children.....	2	1	1	1	1	1	1	1	1	10

Total number of pieces in set..... 21

10395. LEVIS' SET OF INFANTS SPLINTS. \$5.00.

THE ONLY INFANT SET OF SPLINTS IN THE MARKET.

This Set consists of eleven pieces, and is only intended for infants of three years of age and under. They are made in the same shapes as the larger Set, No. 1 being made in rights and lefts, and all the other shapes made to fit the same on either limb.

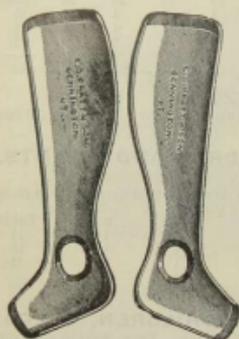
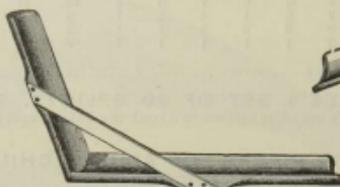


10395.

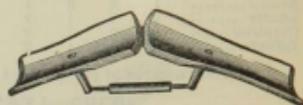
10396.	Levis' Infant Radius Splint, No. 1, Right and Left.....	each,	\$ 0 75
10397.	“ “ Adj. Angular Splint, No. 2.....	“	1 00
10398.	“ “ Humerus Splint, No. 3.....	“	25
10399.	“ “ Phalanges Splint, No. 4, two sizes.....	“	10
10400.	“ “ Clavicle Splint, No. 5.....	“	50
10401.	“ “ Maxilla Splint, No. 6.....	“	50
10402.	“ “ Femur Splint, No. 7.....	“	25
10403.	“ “ Patella Splint, No. 8.....	“	75
10404.	“ “ Tibia and Fibula Splint, No. 9.....	“	75

FRACTURE APPARATUS.

DAY'S SURGICAL SPLINTS.

Day's Ankle Splints,
Right and Left.

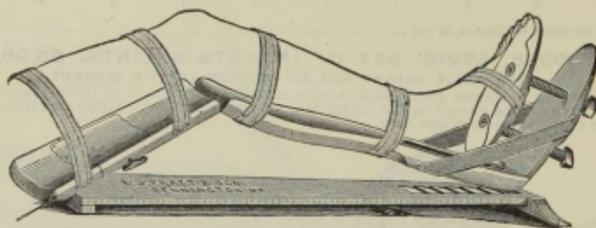
Day's Condyle and Humerus Splint.



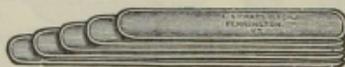
Day's Jointed Arm Splint.



Day's Jointed Patella Splint.



Day's Double Incline Plane Splint.



Day's Set of Dressing Splints.



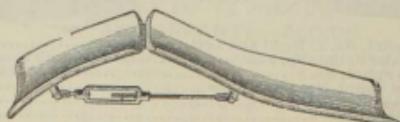
Day's Forearm Splint.



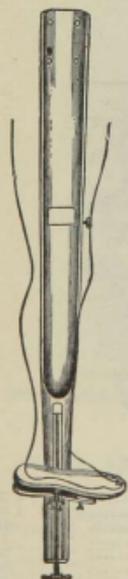
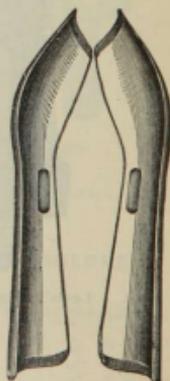
Day's Interosseous Splint.



Day's Patella Splint.



Day's Jointed Patella Splint.

Day's Extension
Bar Splint.Day's Radius Splints,
Right and Left.

|| ORTHOPÆDIC APPARATUS.

Having had many years' extensive experience, under the patronage of the most eminent surgeons, in the manufacture and adjustment of appliances for the correction of distortions and deformities of the human frame, we are enabled and thoroughly prepared to make and fit, in the most skillful manner, all apparatus that may be necessary in any case of disease, deformity or deficiency requiring mechanical treatment or artificial support. All apparatus made by us are of the finest material, and of the very best workmanship that mechanical skill and ingenuity can produce. The illustrations given in the following pages are those of the more prominent and approved forms of apparatus only; but, though not covering the entire field of orthopædic surgery, will still be found sufficiently numerous and varied to facilitate the ordering of mechanical appliances for each and every part of the body. By careful reference to them, physicians at a distance can have apparatus made for their patients with every certainty of perfect comfort and complete satisfaction. Very accurate adjustment is always requisite in fitting of braces for wry neck and diseases of the spine, and this is more readily and surely accomplished by having the patient immediately before us and in convenient proximity to our factory. If, however, proper outlines are sent us, from distant places, we can give the braces the requisite shape to a nicety, thus insuring a good fit.

While we prefer, in each case, to work under the direction of the attending physician, executing his wishes with all possible accuracy, yet should advice or consultation be needed, we will always stand ready in any way within our power to assist, that the physician and patient may be alike benefited.

SPECIAL INSTRUCTIONS.

We would call attention to the necessity of accuracy in measurements and explicit instructions for the making of each apparatus. We guarantee every appliance sent out by us to correspond exactly with directions and measurements furnished us, and any omissions or errors on our part will be corrected without extra cost to patient. As this class of apparatus is only manufactured to order, physicians will see the necessity of requiring their patients to pay a portion of the amount when the order is taken, and the balance on the delivery of the brace.

Experience has shown us that appliances of this character are more or less uncomfortable when first worn, and that patients are at that time easily discouraged or dissatisfied with trivial matters; and while we make any changes necessary without charge (where the fault is ours), we must ask physicians to protect themselves and us to the fullest extent.

TERMS.

Many physicians of long experience in handling this class of cases collect at least one-third in advance, remit the same to us and direct us to forward the apparatus, as soon as finished direct to the patient, collecting the balance C.O.D., thus relieving them of all financial responsibility. In cases of this kind we collect the full price of the brace, remitting to the physician the commission due him, by check or post-office order. We have followed this plan for some time, because of the numerous requests made by physicians for an extended credit on appliances of this kind, they claiming that they could not afford to pay us cash for them and then wait the will and pleasure of their patrons.

Where shoes are to be worn with braces, we urgently request customers to furnish them (sending them to us by registered mail, carefully addressed), for we find it almost impossible to secure well-fitting shoes from measurements furnished us, and quite frequently we are compelled to pay a price far in advance of what patients can obtain them for at home.

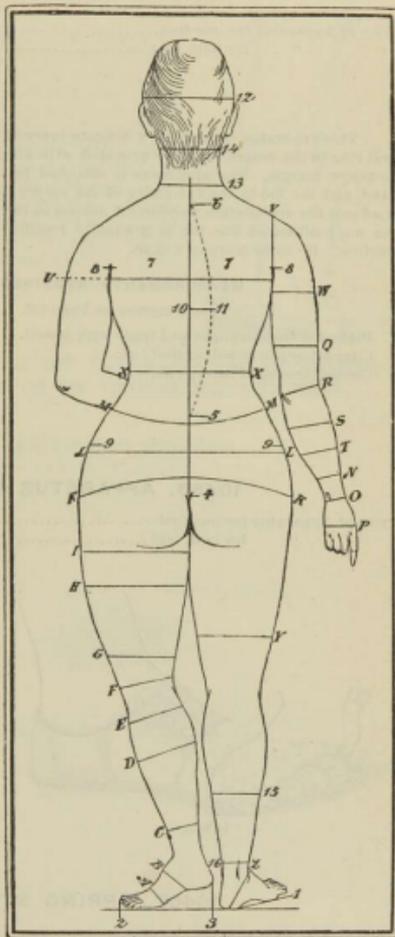
MEASURE BLANKS FURNISHED ON APPLICATION.

|| ORTHOPÆDIC APPARATUS.

DIAGRAM FOR ORTHOPÆDIC MEASUREMENTS.

EXPLANATION OF LETTERS AND FIGURES.

- A. Ball of Foot.
 B. Instep.
 C. Above Ankle.
 D. Calf.
 E. Garter (below knee).
 F. Knee.
 G. Above Knee.
 H. Upper Third of Thigh.
 I. Thigh at Perinaeum.
 K. Trochanter Major.
 L. Circumference of Pelvis.
 M. Circumference at Umbilicus.
 N. Forearm above Wrist.
 O. Wrist.
 P. Circumference of Hand.
 Q. Arm above Elbow.
 R. Arm at Elbow.
 S. Upper Forearm.
 T. Middle Forearm.
 U. Circumference of Chest.
 V. Circumference under Axilla and over Shoulder.
 W. Upper Arm.
 X. Circumference of Waist.
 Y. Lower Third of Thigh.
 Z. Circumference of Heel and Instep.
1. Sole of Foot.
 2 to 3. Length of Foot.
 4. Sacro Lumbar Articulation.
 5. First Vertebra involved (in sketch).
 6. Last Vertebra involved (in sketch).
 7-7. Centers of Scapulae.
 8-8. Axillae.
 9. Crest of Ilium.
 10 to 11. Extent of Curvature. (In sketch.)
 12. Circumference of Head.
 13. Vertebra Prominens.
 14. Base of Skull.
 15. Leg Below Calf.
 16. Ankle.



MEASUREMENTS FOR SHOES.

If we are to furnish shoes for deformity apparatus (see bottom of preceding page) send the following information and measurements:

- Trace outline of Foot on Paper.
- Length of Foot (2 to 3).
- Circumference above Ankle (C).
- Circumference at Ankle (16).
- Circumference of Heel and Instep (Z).
- Circumference of Instep (B).
- Circumference of Ball of Foot (A).
- Circumference at Base of Little Toe.
- State if for Right, Left or both Feet. If a pair of shoes are wanted, measure each foot.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE FEET.

10465. BIGGS' APPARATUS FOR BUNIONS.

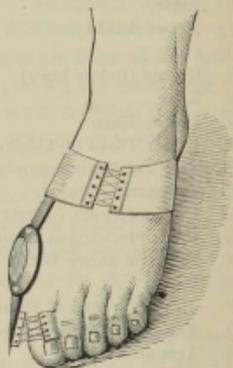
Price of Apparatus for one foot.....	\$ 8 00 to \$12 00 ||
“ “ for both feet.....	16 00 to 24 00 ||

This apparatus consists of a delicate lever of spring steel, with an oval ring in the centre, which is provided with hinges at its anterior and posterior margin. The apparatus is attached to the instep by a laced band, and the toe to the extremity of the spring by a piece of webbing. It affords the articulation freedom of motion in the natural plane, whilst the malposition of the toe is gradually rectified by constant lateral traction. It can be worn in a shoe.

MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Place the foot on paper and trace with pencil.
2. Circumference of ball of foot (A).
3. Circumference of instep (B).



10465.

10466. APPARATUS FOR OVER-RIDING TOES.

Price of Apparatus for one foot.....	\$ 7 00 to \$15 00 ||
“ “ for both feet.....	14 00 to 30 00 ||

The apparatus for over-riding, or "hammer toes" consists of a steel sole arranged with slits corresponding to the spaces between the toes. A strap of webbing is passed through the slits and over the contracted toe (or over each and all, as the case may require), and buckled or tied under the sole, tense enough to straighten the toe. This apparatus is kept in place by a thin silk, linen or cotton covering, laced to the instep, and may be worn in an ordinary shoe.

MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Place the foot on paper and trace with pencil.
2. Circumference of ball of foot (A).
3. Circumference of instep (B).
4. Circumference of heel and instep (Z).

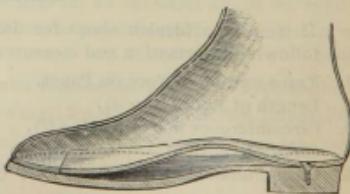


10466.

10467. SPRING STEEL FLAT FOOT SOLE.

Price of Flat Foot Sole for one foot.....	\$ 3 00 ||
“ “ “ “ for both feet.....	5 00 ||

For flat feet we make a plain steel sole, well tempered and shaped to approach an ideal arch of a foot (see Fig. 10467). These soles are covered with buckskin and fastened inside of a common shoe with a single screw, leaving the anterior portion free to move as the weight of the body is thrown upon it. They afford a person afflicted with flat foot immediate relief. They should be thin to yield a little, but strong enough to keep the bones arched. In ordering the steel sole for flat feet, it is only necessary to send us the patient's shoe, or if both feet are affected the pair of them.



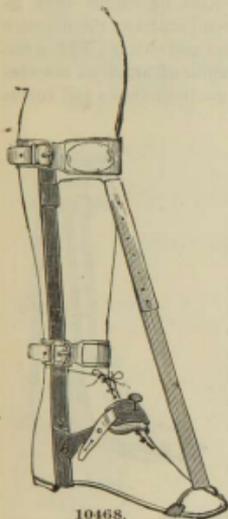
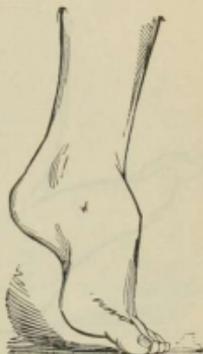
10467.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE FEET.

TALIPES EQUINUS.

Talipes equinus receives its name from the position of the foot, simulating the hoof of a horse. The deformity consists in the raising of the heel and dropping of the anterior portion of the foot, so that the weight of the body is borne upon the metatarso-phalangeal articulation alone, instead of upon the three points above spoken of. The convexity of the arch of the foot is generally very much increased, and the concavity of the arch becomes more and more angular in proportion to the degree of the deformity. The toes are extended upon the foot, and the foot is extended upon the leg. Sometimes the foot is so much extended as to make almost a straight line upon the tibia. The peculiarity in the deformity is usually associated with a paralyzed condition of the extensor muscles of the toes.



10468.

10468. BAUER'S (ST. LOUIS) TALIPES EQUINUS APPARATUS, WITH TOURNIQUET SCREW.

Price..... \$20 00 ||

MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Length of sole of foot (2 to 3).
2. " from sole of foot to ankle-joint (I to I6).
3. " " " " knee " (I to F).
4. Diameter of ankle-joint (I6).
5. Circumference of calf (D).

TOURNIQUET SCREW FOR APPARATUS 10468.



10469. APPARATUS FOR TALIPES EQUINUS AND WEAK ANKLE.

Price of Brace for one leg only..... \$ 8 00 to \$12 00 ||
 Price of a pair of Braces..... 15 00 to 24 00 ||

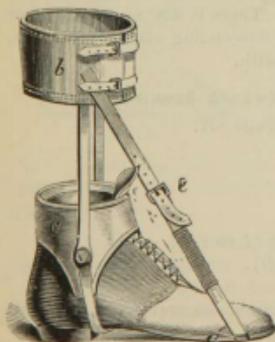
SHOES ARE CHARGED EXTRA, ACCORDING TO QUALITY.

Should there be contraction of the tendo achillis, and consequent dropping of the toes, it is conveniently corrected by means of an artificial elastic muscle, one end of which is fastened to the sole of the shoe (a, Fig. 10469), the other to the calf-band (b). It may be regulated to any degree of tension by means of a buckle (c).

In ordering the apparatus, send the following information and measurements (see diagram, page 827):

1. Patient's name (or sex).
2. Patient's age.
3. Weak ankle, resembling varus or valgus?
4. Right, left, or both feet?
5. Tendo achillis contracted?
6. Length from sole of foot to ankle joint (I to I6).
7. Length from sole of foot to calf (I to D).
8. Circumference of calf (D).

If you wish us to furnish shoes, send the additional measurements required (see page 827).



10469.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE FEET.



TALIPES CALCANEUS.

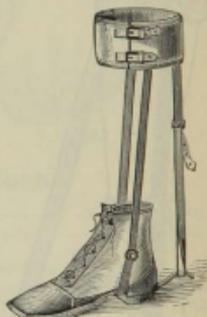
"Talipes calcaneus is that variety of deformity where the anterior portion of the foot is elevated and the heel is depressed. It is frequently seen as a congenital deformity, and all cases which have fallen under my observation have been of a paralytic nature. This deformity is much more liable to occur complicated with varus or valgus than to present itself uncomplicated. When paralytic, the muscles chiefly affected are the gastrocnemius and soleus; and in the treatment to be adopted the application of artificial muscles to take the place of the paralyzed gastrocnemius and soleus forms an essential element.

10470. APPARATUS FOR TALIPES CALCANEUS.

Price of a Brace for one leg only.....\$10 00 to \$ 12 00 ||
 Price of a Pair of Braces..... 20 00 to 24 00 ||

This instrument consists of a pair of steel stems, fastened to a shoe, provided with joints at the ankle, and secured to the leg with a calf-band. A strong elastic cord or webbing is fastened posteriorly to the calf-band above and to a spur-like piece of steel at the heel of the shoe below. By drawing this cord tight, the uplifted sole is faced downward, and the strain on the tendo achillis is diminished; at same time the contracted muscles in front of the leg are extended.

Measurements required are the same as for Brace No. 10471.



10470.

10471. APPARATUS FOR TALIPES CALCANEUS.

Price of a Brace for one leg only\$10 00 to \$ 20 00 ||
 Price of a Pair of Braces..... 20 00 to 12 00 ||

Fig. 10471 shows the same apparatus, with this difference: Instead of the cord or elastic webbing contracting posteriorly in Fig. 10470, we have a Steel Spiral Spring placed on a pivot and playing between brackets of the leg and ankle-stem, to depress the front part of the foot by extension. There is not so much danger of falling with this apparatus, when descending stairs, the spurs, shown in Fig. 10470, being dispensed with.



10471.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Patient's name.
2. Patient's weight (estimated).
3. Patient's age.
4. Right or left foot.
5. Length from sole to ankle-joint (*I* to *Iθ*).
6. Length from sole to calf (*I* to *D*).
7. Circumference of calf (*D*).

If we are to furnish shoes, the measurements required in addition, are those at the foot of page 827.

Shoes are charged extra, according to quality.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE FEET.

TALIPES VARUS.

"Talipes varus is that variety in which the foot is inverted and more or less rotated in such a manner as to bring its inner surface upward and the outer edge to a greater or less degree upon the ground. The muscles chiefly affected in the paralytic variety are the peroneals."



Talipes Valgus.



Talipes Varus.

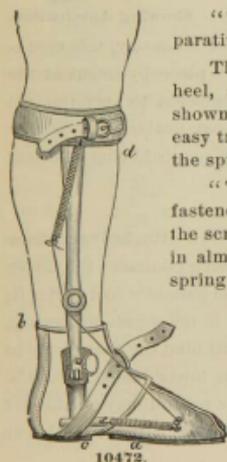
TALIPES VALGUS.

"Talipes valgus presents the converse of talipes varus, the inner border of the foot being downward. This deformity is much more likely to arise from traumatic causes than any other deformity of the foot. It frequently results

from inflammation of the ankle-joint. It may result from a pull or wrench of the foot, causing inflammation of the peronei muscles and subsequent spastic contraction. Talipes valgus may be combined with equinus or calcaneus, making valgo-equinus or valgo-calcaneus.

10472. IMPROVED CLUB-FOOT APPARATUS FOR TALIPES VARUS OR TALIPES VALGUS.

Price of a single Shoe, complete.....\$10 00 to \$ 14 00 ||
Price of a pair of Shoes, complete, according to size 20 00 to 28 00 ||



"The following is a description of a very neat, effective and comparatively cheap apparatus for talipes:

The sole of this strong leather shoe is of metal, with a joint near the heel, allowing lateral motion. A strong and durable spiral spring, as shown in the cut (a), draws the foot outward by a constant, elastic and easy traction. This pressure is increased or decreased at will, by fastening the spring in a series of sockets (c).

"The single outside upright steel bar, with joints at the ankle, is fastened around the limb below the knee-joint, and so constructed that the screw at the ankle-joint forces the foot flat upon the floor, which foot in almost all cases is turned under as indicated by the sketch. The spiral spring (d), attached to a catgut cord and fastened near the toes, upon the outside of the foot, elevates the toes and stretches the tendo achillis, thus drawing the foot to its natural position.

"The shoe is well padded, and as there is no metal in the heel-cap, no excoriation is occasioned. The contraction of the leather above the heel prevents the shoes from slipping off (always so difficult to retain in fleshy infants). The straps around the instep depress any undue prominence of the arch of the foot, and within the shoe a broad and well-padded tongue keeps

the toes flat upon the soles of the shoe. This apparatus resembles much the regular shoe, and shows no deformed appearance. For talipes valgus, the same principle, but with reversed action, is applied.

In ordering the above shoe, please send the following information and measurements, as per diagram on page 827:

1. Length of sole of foot (2 to 3).
2. Circumference of calf (D).
3. Circumference of instep (B).
4. Circumference of ball of foot (A).
5. Circumference above ankle (C).
6. Length from sole to upper part of calf (I to E).
7. Right or left foot.
8. Talipes—varus or valgus.

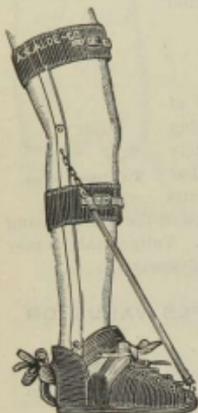
|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE FEET.

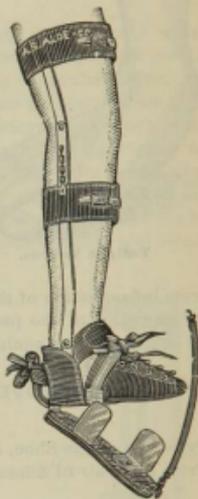
10473. HODGEN'S (ST. LOUIS) CLUB-FOOT SHOE.

Price of Apparatus for one foot	\$ 18 00 ||
Price of Apparatus for both feet	36 00 ||

This apparatus, like all the inventions of the late Dr. Hodgen, is marked for its simplicity and effectiveness. It consists of a double-soled sandal, with heel-piece, as shown in engraving, having also steel braces extending up each side of the leg, with padded bands to keep them in place. In the case of children under twelve or fourteen years, the lateral braces are extended above the knee, with joint at knee. An elastic cord is also attached, extending from the toe to the upper part of one of the lateral bars, to counteract contraction of the tendo achillis. The bands around the instep and foot are applied to hold it firmly in place. These, though very simple, constitute a feature of this apparatus, and are its point of superiority over any other appliance for treating club-foot. The theory of the apparatus is that



10473.



Showing Application.

if the foot can be drawn into its normal position by the hand, without tenotomy, this operation becomes unnecessary, as the foot may then be kept securely in its place by means of the foot and instep bands. These bands are superior to any shoe arrangement to keep the foot in a normal position. Being wrapped around the foot several times, they enable the operator to draw the foot firmly into its place and keep it there; the force to be applied being sufficient and perfectly under his control.

DIRECTIONS FOR APPLICATION.

Remove the screw at the top of the sandal (to which the elastic cord is attached) and draw the lower sandal away from the shoe, then pass the ends of the band which embraces the instep and heel through the opening in the back of the heel-piece, and pass the patient's foot under it, drawing the heel into the heel-piece and tying it firmly there, as shown in the engraving, seeing, also, that the sole of the patient's foot lies flat upon the sandal. Next bind the foot firmly to the sandal, tying each band tightly about the foot, and then replace the lower sandal. Put the elastic cord in place, and the apparatus is then ready for use, and the patient may be allowed to walk with it. In case of infants not able to walk, the apparatus is made without the lower sandal, to save weight.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

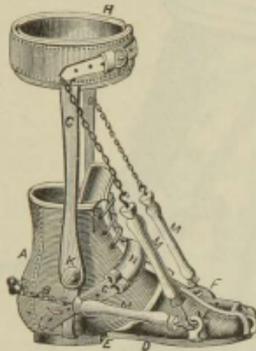
1. Circumference of calf at upper part (*E*).
2. Circumference of calf at lower part (*I5*).
3. Circumference of lower third of thigh (*Y*).
4. Distance from sole of foot to ankle (*I* to *I6*).
5. Distance from sole of foot to knee (*I* to *F*).
6. Distance sole of foot to lower third of thigh (*I* to *Y*).
7. Take outline of sole of foot on paper.
8. State which foot is affected, if apparatus is wanted for one foot only.
9. Give age and size of patient.
10. State whether patient can walk or not.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE FEET.

10474. SAYRE'S IMPROVED BALL AND SOCKET CLUB-FOOT SHOE.

Price of a single Shoe, complete.....\$10 00 to \$14 00 ||
 Price of a pair of Shoes, complete..... 20 00 to 28 00 ||



10474.

The accompanying drawing and explanations give a very correct idea of its construction and mode of action. A cushioned iron cap (*A*) to receive the heel, the leather covering of which is carried over the instep and ankle, and fastened by lacing. Elastic tubing (*N*) to go in front of the ankle-joint, to further secure the heel in position, and fastening at (*C*) an iron hook on outside of heel-cap. Sole of shoe (*D*), cushioned, and laced securely in front of the medio-tarsal articulation. Ball and socket joint (*E*), connecting sole with heel. Elevated plate of iron (*F*), properly cushioned, to make pressure against base of first metatarsal bone. Steel bars (*G*), connecting the shoe with strap (*H*) to go around the calf. Joint (*K*) opposite the ankle. Stationary hooks (*L*), opposite the toes, for attaching the India-rubber muscles (*MMM*). These india-rubber tubes have chains attached, and are for the purpose of making flexion and eversion.

This shoe has been made more comfortable and convenient by a slight heel, and by making the upper leather nearly like that of an ordinary shoe, and not so clumsy as the primitive club-foot shoe. The upper leather adapts itself more perfectly by lacing than if arranged with straps and buckles. This shoe, as pictured above, is arranged for valgus or varus. There is really no essential difference, only observe the principle to apply the artificial muscles in such position as shall best supply the place of those paralyzed.

INFORMATION AND MEASUREMENTS REQUIRED

1. Length of sole of foot (*2* to *3*).
2. Circumference of calf (*D*).
3. Circumference of instep (*B*).
4. Circumference of ball of foot (*A*).
5. Circumference above ankle (*C*).
6. Length from sole to ankle (*1* to *1G*).
7. Length from sole to calf (*1* to *D*).
8. Length from ankle to knee (*1G* to *F*).
9. Right or left foot?
10. Talipes—varus or valgus?

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE FEET.

10475. BARWELL'S MOD. SAYRE CLUB-FOOT SHOE.

Price of one Shoe.....	\$ 15 00 ||
Price of a pair of Shoes.....	30 00 ||



10475.

A shoe divided in the middle of the sole (medio-tarsal joint), the front half connected with the posterior part by a ball and socket-joint. The upper leather of back and front of the foot is similarly separate; thus an India-rubber spring attached to the upper bar enables the surgeon to work on the front of the foot upwards, inwards or outwards, according to the deformity.

SAYRE SHOE AS MODIFIED.—On both sides of the ankle are hinged iron rods supporting calf-band, and chain with India-rubber spring either for inside or outside of foot; on the outer side also another spring, running along the outer border of the sole, may be used to overcome adduction.

I found that the ball of the joint in the original Sayre shoe, being somewhat bulky, was apt to wear out on the lower part, and the entire separation of the heel from the front of the foot permits water to enter and keep the stocking wet. To obviate the former inconvenience, I proposed to resolve the compound movement of ball and socket-joint into its three elements, and have carried out that idea in the manner represented in Fig. 10475a.

The shoe thus modified—and I must beg my friend Dr. Sayre to pardon my making any change in his admirable invention—answers every purpose extremely well, especially while a tolerably marked deformity, though not a severe one, still exists. It is especially adapted to the middle phase of club-foot, and is by far the best instrument yet invented for the treatment of this disease. For cases less severe, or further recovered, I have invented the following apparatus, which, unlike most others, is worn inside an ordinary-looking boot, and attracts no attention to the limb. My patients thus walk in the street, and the lameness being overcome, nothing unusual is observed.

The sole is made of steel, of spring-temper, rather thicker than a calling card, jointed in the medio-tarsus for abduction and adduction only, and that merely for those cases where necessary. Eversion or inversion, flexion and extension, are produced by the bend and twist of the steel sole. The lappets for lacing are of a strong cotton material. From the heel on the outer side runs upward a metal rod to a level with the ankle-joint, at which point is hinged, in the sense of the flexion and extension, a steel spring connected above to a calf-piece. This spring is to be bent outward or inward, according as the case is valgus or varus.

|| ORTHOPÆDIC.

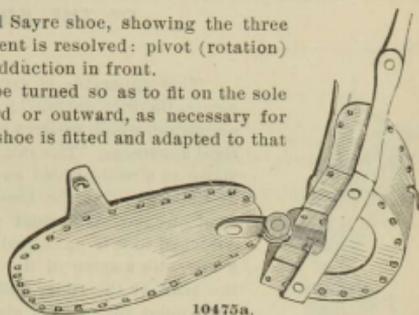
APPARATUS FOR DISEASES AND DEFORMITIES OF THE FEET.

Fig. 10475a illustrates the sole of modified Sayre shoe, showing the three movements into which ball and socket movement is resolved: pivot (rotation) behind, flexion in middle, and abduction and adduction in front.

To put on this shoe, its whole sole is to be turned so as to fit on the sole of the foot, and the front part twisted inward or outward, as necessary for either deformity, so that while the sole of the shoe is fitted and adapted to that of the foot, the front lappet is laced; and then, while still keeping, by manual pressure, the shoe-sole fitted, the back lappet is also laced. This being completed, the steel spring is brought to the leg, and the calf-piece adapted, while the shoe-sole and front of the apparatus is released. By this means every part of the foot is subject to spring pressure—the front to the bend and twist of the spring sole, the back to the action of the vertical spring. Besides this, however, and to supplement any deficient force, India-rubber springs are stretched from the calf-piece to the sole; and, if necessary, an abduction spring is carried along the outer side.

This form of mechanical shoe I have found very valuable in cases of lameness, I have described as *jactus internus* and *externus*; also in cases of paralytic club-foot in the stage of recovery. Of course, with all and every one of the contrivances above described, patient and persistent galvanism, as also injection of strychnia, must be employed.

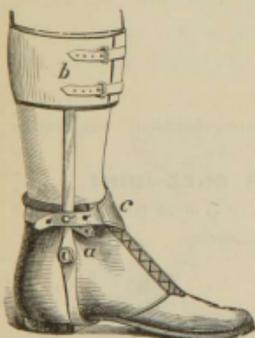
[Dr. Richard Barwell on Infantile Paralysis and its Resulting Deformities. Extracted from the London Lancet, February, 1874.]



10476. APPARATUS FOR THE SUPPORT OF WEAK ANKLES.

Price of a Brace for one leg only.....\$ 8 00 to \$10 00 ||
Price of a pair of Braces 16 00 to 20 00 ||

Shoes are charged extra, according to quality.



This apparatus is used to maintain the position of the foot, after the relief of valgus or varus by the regular club-foot shoe, and also for correcting simple lateral inversion or eversion of the ankle-joint, resembling varus or valgus, commonly called weak ankle.

We attach, by means of three rivets, to the sole of a common laced shoe, a lateral stem, jointed at the ankle (*a*), passing as high as the centre of the calf and there fixed to a band (*b*).

The ankle is supported and kept in its corrected posture by a triangular V-shaped leather strap (*c*) acting against and buttoned to the steel stem on the opposite side.

The best direction for selecting the side on which the instrument should be applied, is, that if the outer ankle has a tendency to eversion, the apparatus should invariably be placed to the inner side, and vice versa.

In obstinate cases it is made with double stems, in order to give greater security, and to keep the sole in a strictly horizontal plane; the ankle may be further protected by a small round soft pad, to prevent chafing against the steel.

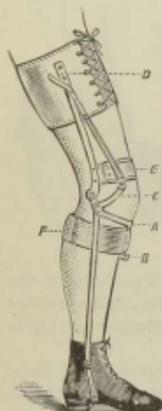
In ordering the apparatus, send the description and measurements as directed for Fig. 10469, page 829.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10477. ROBERTS' ELASTIC EXTENSION APPARATUS FOR ANCHYLOSIS OF THE KNEE-JOINT.

Price \$35 00 ||



10477.

This apparatus is exceedingly light. Owing to its elastic attachments, there is during locomotion, a slight yielding of the instrument permitted, which renders it less irksome to the wearer than an absolutely rigid apparatus. The side-bars are simple light strips of steel, fastened above to a well-padded encasement for the thigh, and below to the sole of the shoe. At the knee and ankle are simple hinge-joints. *A* is a semi-circular steel band made fast to the side-bars below the knee. Attached to it is an adjustable metallic arm *B*, extending downward in a line with a spine of the tibia. A broad elastic band *F*, passes behind the head of the tibia, and over the metallic arm *B*, which serves as a fixed point for making elastic traction upon the posterior part of the head of the tibia. *E* is an elastic band passing from one side-bar to the other, in front of the thigh, thus keeping the instrument in the same relative position to that part of the limb. *C* is short lever projecting forward and curved upward. To this is attached a strong strip of elastic webbing, *C, D*, which supplements the action of the quadriceps extensor muscle, and by means of which any desired amount of elastic tension can be effected.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Patient's name or sex.
2. Patient's weight.
3. Right or left leg?
4. Patient's age.
5. Length from sole of foot to ankle-joint (*I* to *I 6*).
6. Length from sole of foot to knee-joint (*I* to *F*).
7. Length from sole of foot to upper third of thigh (*I* to *H*).
8. Circumference above ankle (*C*).
9. Circumference of calf (*D*).
10. Circumference of knee (*F*).
11. Circumference above knee (*G*).
12. Circumference of thigh (*H*).

If you wish us to furnish a shoe, send the additional measurements required. See bottom of page 827.

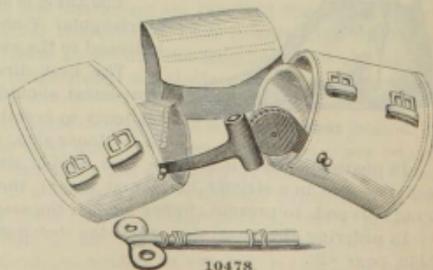
10478. SHORT ANCHYLOSIS APPARATUS FOR KNEE-JOINT.

Price \$ 25 00 to \$ 30 00 ||

MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Right or left leg?
2. Circumference of calf (*D*).
3. Circumference of knee (*F*).
4. Circumference above knee (*G*).
5. Circumference of thigh (*H*).
6. Length from calf to knee (*D* to *F*).
7. Length from knee to thigh (*F* to *H*).



10478.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10479. STROHMEYER'S APPARATUS FOR FALSE ANCHYLOSIS OF THE ELBOW-JOINT.

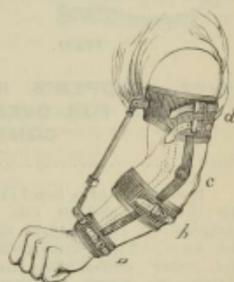
Price \$ 18 00 ||

The apparatus here represented is for the gradual extension of contracted muscles. By persistent and daily passive and active exercise, a flexible and useful joint may be restored. It may also be used for forcibly breaking up false ankylosis, if the surgeon prefers this method to gradual extension. It forms also a safeguard against mal-position, for should it be deemed impossible to effect a cure, the arm may be fixed in such a position to ankylose as shall give it the greatest usefulness.

DESCRIPTION AND MEASUREMENT.

See Diagram on Page 827.

1. Right or left arm?
2. Length from wrist to elbow-joint (*O* to *R*).
3. Length from wrist to axilla (*O* to *S*).
4. Circumference of wrist (*O*).
5. Circumference of forearm (*T*).
6. Circumference of elbow-joint (*R*).
7. Circumference of upper arm (*W*).



10479.

10480. STROHMEYER'S APPARATUS FOR ANCHYLOSIS OF KNEE-JOINT.

Price..... \$20 00 to \$25 00 ||

Strohmeyer's Knee Splint is a simpler and lower-priced apparatus than those represented in Figs. 10477 and 10478, and is not so finely finished nor so comfortable to wear. It is made much upon the same style as the elbow-brace shown above, and will be found to answer the same purpose when indicated for application to the knee-joint.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

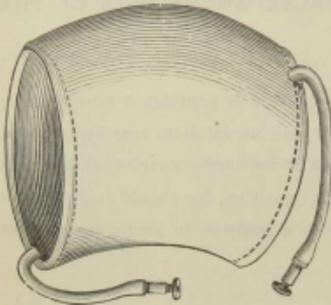
1. Patient's name or sex.
2. Patient's weight.
3. Right or left leg?
4. Patient's age.
5. Length from above ankle to knee-joint (*C* to *F*).
6. From knee-joint to upper third of thigh (*F* to *H*).
7. Circumference above ankle (*C*).
8. Circumference of the calf (*D*).
9. Circumference of the knee (*F*).
10. Circumference above the knee (*G*).
11. Circumference of the thigh (*H*).



10480.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.



10481.

10481. SAYRE'S RUBBER COMPRESSOR FOR KNEE-JOINT.

Price..... \$6 00 ||

A double sac of suitable form for the knee-joint. By means of tubes at either end, hot or cold water may be made to either pass through or it may be retained. In this manner even pressure, with the advantage of a hot poultice can be made, which, although being exceedingly powerful, can be easily borne on account of its soft elasticity.

DIRECTIONS FOR MEASUREMENT.

See Diagram on Page 827.

1. Circumference above knee (*G*).
2. Circumference at knee (*F*).
3. Circumference below knee (*E*).

10482. HOOPER'S KNEE-EXTENSION APPARATUS FOR OVERCOMING MUSCULAR CONTRACTIONS.

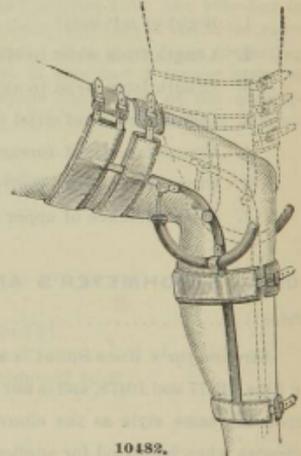
Price..... \$35 00 ||

It consists of a band encircling the thigh, of another for the calf, and of one above the ankle. These are fastened to two lateral shafts provided with joints at the knee. Two semi-circular brass tubes, fastened to the lower calf-shafts, contain each a spiral spring, acting on bows fastened to the thigh-shaft, thus exerting constant elastic extension, which is sure to overcome muscular contraction soon.

MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Circumference above knee (*G*).
2. Circumference at knee (*F*).
3. Circumference below knee (*E*).
4. Circumference above ankle (*C*).
5. Length from above ankle to knee (*C* to *F*).
6. Length from knee to above knee (*F* to *G*).



10482.

10483. TAYLOR'S APPARATUS FOR SYNOVITIS OF THE KNEE-JOINT.

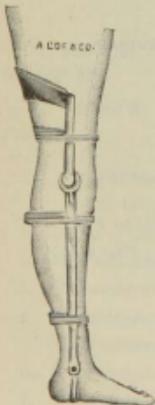
Price..... \$35 00 ||

Consists of two uprights with knee and ankle-joints. The uprights are united by firm steel bands concaved to make them unyielding. At the knee-joint a contrivance is secured to make the joint stationary; By means of this contrivance the apparatus may be flexed at the will of the patient.

MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Right or left leg?
2. Circumference at ankle (*I G*).
3. Circumference above ankle (*C*).
4. Circumference below knee (*E*).
5. Circumference at knee (*F*).
6. Circumference above knee (*G*).
7. Circumference at lower third of thigh (*Y*).
8. Length from sole to ankle (*I* to *I G*).
9. Length from sole to knee (*I* to *F*).
10. Length from sole to lower third of thigh (*I* to *Y*).



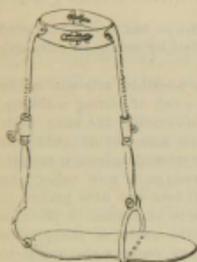
10483.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10484. SAYRE'S ANKLE-JOINT APPARATUS.

Price \$22 00 ||



10484.

This instrument consists of a firm steel plate, made to fit the sole of the foot; at the heel is a hinge-joint, and attached to it a rod, slightly curved at the bottom, and extending up the back of the leg to near the knee. Over the instep is an arch, like the top of a stirrup, with a hinge-joint at its summit, from which springs another rod, which runs in front of the leg, of equal length with the one behind. These rods are made with a male and female screw, or ratchet and cog for extension, and connected at the top by a firm band or collar of sheet steel, admitting of adjustment by a slide, and may be locked by turning the nut with the key. The instrument is applied with firm adhesive plaster, cut in strips about one inch wide, and long enough to reach from the ankle to near the tubercle of the tibia, and placed all around the limb. The plaster is secured in its position, to within

an inch of its upper extremity, by a well-adjusted roller.

The instrument is fixed, the foot firmly secured by a number of strips of adhesive plaster, and a roller carefully applied over this plaster to prevent its slipping, the ends of the plaster at the top of the instrument are turned over the collar (which has been previously locked, just tight enough to be comfortable), and secured by a turn or two of the bandage.

DIRECTIONS FOR MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Length of sole of foot (*2* to *3*).
2. Height from sole of foot to two inches below knee (*I* to *E*).
3. Circumference of calf (*D*).
4. Circumference of instep (*B*).

10485. SAYRE'S RUBBER COMPRESSOR FOR ANKLE-JOINT.

Price \$6 00 ||

This compressor made for the ankle joint is the same general style as Fig. 10481.

MEASUREMENTS REQUIRED.

1. Circumference of instep (*B*).
2. Circumference of ankle (*I 6*).
3. Circumference above ankle (*C*).

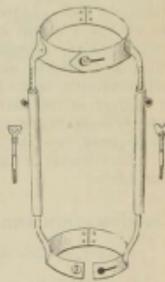
10486. SAYRE'S KNEE-JOINT APPARATUS.

Price \$20 00 ||

It consists of two bands or collars of sheet steel, about an inch wide, embracing the limb—the one above the ankle, the other at the upper third of the thigh, admitting of adjustment by means of a hinge and slide, and may be locked, at any given point, by turning the nut with the key fitted for this purpose. They are connected on either side by an extension-rod, of the rack and pinion (or screw) construction.

To apply this instrument, adhesive plaster is required, spread on twilled goods, and cut in strips one inch wide and long enough to reach from just below the knee to near the ankle, and from the knee upwards several inches.

These plasters are secured to within an inch of their extremities, by a snugly adjusted roller bandage. The instrument is then placed on the limb, the collars fastened sufficiently to be comfortable, and the loose ends of the adhesive plasters turned over and secured by another bandage.



10486.

MEASUREMENTS REQUIRED.

See Diagram on Page 827.

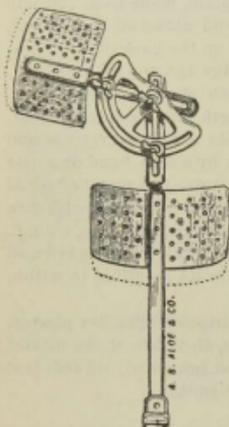
1. Circumference of upper third of thigh (*H*).
2. Circumference above ankle (*C*).
3. Circumference of knee (*F*).
4. Length from above ankle to upper third of thigh (*C* to *H*).

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10487. STILLMAN'S SECTOR JOINT BRACKETS FOR THE KNEE.

Price, with Buckle..... each, \$ 12 00 ||



10487.

This differs from the following only in the lower bar being extended and terminating in a roller and buckle. It is applied by means of adhesive plaster and plaster-of-Paris bandages.

Two pieces of moleskin plaster, as fresh as possible, are cut in the shape of a fan, and have sewed to each of them a tab of strong webbing, and are then placed one upon each side of the limb below the knee, their extremities being interlaced. Strips of plaster are now cut of sufficient length to more than encircle the thigh. These are wound around it snugly.

Over the leg and thigh a plaster-of-Paris bandage is now rolled, the webbing tab being allowed to protrude. The brackets are now placed in position, one on either side of the limb, taking care to have them in the axis of the thigh and leg, and to have pivotal center of the splint in the pivotal axis of the knee. A few turns of the plaster bandage secures the splint in place, and the plaster surface is now to be neatly covered with a bleached muslin roller bandage. The webbing tab should next be passed over the roller and buckled to the end of the splint, of course waiting until the plaster has become firm. Extension may now be exerted against the muscular bulk of the thigh, and secured by the upper clamp of the sector. If fixation be desired, the other clamp should now also be secured, and we have the surface over the joint exposed and the joint held free from the least possible motion, and yet extended, or the two lower clamps may remain loosened and motion may be allowed in the joint without interfering with the extension.

A rubber bandage can now be placed around the knee, or it may be strapped or bandaged with an ordinary roller bandage in the usual manner, to increase the circumferential pressure.

10488. STILLMAN'S DOUBLE SECTOR JOINT BRACKETS FOR KNEE.

Price..... \$20 00 ||

If much subluxation of the knee has taken place, a double sector of the form shown in Fig. 10488 may be employed. It is applied like the bracket already shown, and admits of considerable force being employed in the direction to diminish the deformity and yet subdue the inflammatory condition of the joints.

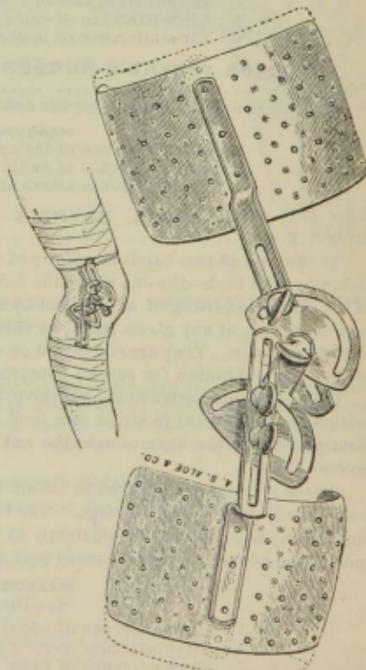
For prolonged wear, or, if it can be afforded by the patient, the copper plates of these brackets may be removed and padded girths substituted, which will permit the removal of the splint from the limb, and insure greater cleanliness. But, for this purpose, the roller and buckle must be attached, both superiorly and inferiorly, and the fan-shaped moleskin dressing be applied to the limb, both above and below the joint, and securely fastened there by a roller bandage, the tabs to pass over the rollers and buckled to the splint.

This makes a light, firm and exceedingly efficient knee-brace.

INFORMATION AND MEASUREMENTS REQUIRED.

For either style Sector Joint Knee-Brackets.

1. Age of patient.
2. Distance between trochanter major and the center of the knee-joint (*K* to *F*).
3. Distance between the center of the knee-joint and the ankle-joint (*F* to *E*).
4. Circumference of thigh (*H*).
5. Circumference of leg at calf (*D*).



10488.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10489. SAYRE'S HIP-JOINT SPLINT.

Price of Sayre's Hip-Joint Splint, Small Size.....	\$ 25 00 to \$ 30 00 ||
Price of Sayre's Hip-Joint Splint, Large Size.....	35 00 to 40 00 ||

This splint extends from the sole of the foot to the crest of the ilium, at which point it is connected to a pelvic band by means of a joint, allowing flexion and extension, abduction and adduction, which latter motion is regulated by means of a thumb-screw. Extension is made by means of a rack and pinion rod, sliding within a steel tube, moved by a key, and kept in position by a spring catching the teeth of the rack. Counter-extension is made by means of two perineal pads fastened to the pelvic band with straps and buckles. At the knee-joint is a movable cross-piece for attaching a leather cap to steady and support the knee. At the bottom of the instrument is a foot-piece with a leather sole attached, to prevent jar in walking. A leather strap, passing under the foot, through apertures in the foot-piece, turns up an end on each side of the ankle and fastens to buckles in adhesive strips, which prepare as follows:

Cut two pieces of plaster, to reach from the waist to the foot, from 3 to 5 inches wide at the top, and from 1 to $1\frac{1}{2}$ inches at the lower end, and divide tops into five tails; cut a piece about 5 inches long from each center tail, and add it to the lower ends of the plaster to strengthen them, then add two or more similar pieces at the same place and attach a buckle. Apply the plasters against the lateral aspects of the leg, beginning about two inches above the internal and external malleoli with the ends having the buckles attached; the center tails reaching the entire length of the leg and thigh to the perineum and trochanter respectively; then wind the lower ends spirally around the leg up to the pelvis and afterward the other two tails, which first cut down to just above the knee.

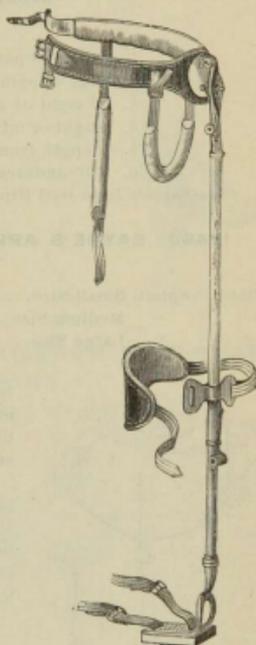
This involves the limb in a complete net work of adhesive strips, the leg having about one-fourth, the thigh three-fourths thereof, which is found to be the proportion to protect the leg and knee equally from compression or strain.

A few turns of roller bandage are then made around the ankle, just under the lower ends of the straps, to protect the flesh under the buckles, and then continued over the strips on the whole limb.

The patient should be laid on his back, and great care ought to be taken that the pelvis is not inclined forward by contractions of the flexor muscles. Should this be the case, elevate the leg until the lumbar vertebræ come near the couch and the spinal column assumes its normal shape. The instrument is then applied. The pelvic band ought to be loose enough to allow the pelvis to move freely in it. The anterior superior spine of the ilium ought to be above the pelvic band.

In applying the ankle straps, leave a little space between the foot and the foot-piece so that in standing or walking the weight of the patient does not rest on the leg, but on the instrument.

The perineal straps must be so adjusted that the patient sits firmly and comfortably upon them.



10489.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

The foot is dressed with the shoe in the ordinary manner. When all is adjusted, the patient still lying on his back, extension is made by turning the key. As this arrangement, for supporting the patient on the instrument, increases the length of the affected limb, the sound leg should have the same amount, or a little more, added to its length by increasing the thickness of the sole of the shoe.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Name of patient.
2. Age of patient.
3. Weight of patient.
4. Right or left leg?
5. Length from sole to crest of ilium (*I* to *D*).
6. Circumference of pelvis at iliac crests (*L*).

See Sayre's Improved Hip-splint, illustrated and described on page 844.

10490. SAYRE'S APPARATUS FOR THE TREATMENT OF HIP-JOINT DISEASES.

Price of Splint, Small Size.....	\$ 15 00 ||
“ “ “ Medium Size	16 00 ||
“ “ “ Large Size.....	18 00 ||

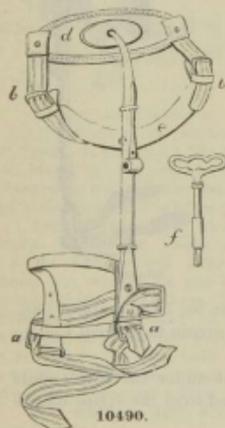
This apparatus consists of two portions, the upper, made of corrugated steel, attached by means of a universal joint to a pad of proper size (*d*) fitting on the dorsum below the crest of the ilium, and holding in place a perineal band (*e*) adjustable by strong webbing and buckles (*bb*).

The lower portion (*c*) is simply a ratchet bar sliding within the first. Its inferior extremity is easily adjusted by means of a single screw to either side of two semi-circular bands (*aa*), embracing the thigh just above the knee, making the apparatus answer for both limbs. The cut representing the same arranged for the left leg. Extension is made by working the splint with key (*f*).

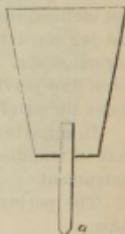
MEASUREMENTS REQUIRED.

1. Length from trochanter major to knee-joint (*K* to *F*).
2. Circumference of thigh above knee (*G*).

The application of the splint is as simple as its construction. Take strong adhesive plaster, spread on twilled muslin; cut two fan-shaped pieces, as shown below, one large enough to reach from the perinæum to within two or three inches of the condyle of the femur, on the inner side of the thigh, the other from the trochanter major to a point directly opposite the end of the inner



plaster. Sew on the narrow end of each, one of the webbings represented in Fig. 10490, *aa* (not on the sticky side). Apply to their respective places, and after pressing them with the warm hand, to obtain a firm adhesion, secure them further by a well adjusted roller. The instrument contracted, is now laid over the thigh, the webbing firmly fastened over the rollers to the buckles (Fig. 10490) *aa*, and the remaining one around the thigh. The perineal band is now adjusted, rather firm, and the instrument extended with the key, just enough to make the patient comfortable, and then locked by pulling the slide down over the spring. In order to prevent the limb from swelling below the bandage, Dr. Sayre recommends the use of an elastic stocking or knee-cap.



|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10491. SAYRE'S NIGHT EXTENSION APPARATUS.

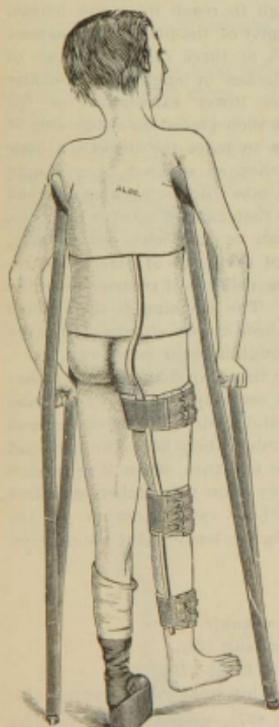
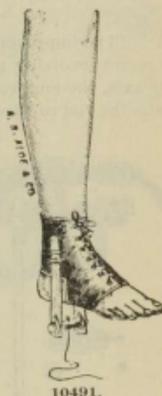
Price..... \$4 00 ||

In connection with the hip-splints Dr. Sayre frequently employs for night extension a firmly made satin jean anklet, as per annexed figure; this laces over the instep and a heavy buckskin tongue. Secured to this anklet on each side are buckles, into which are fastened the tabs, holding in button-holes the wooden cross-pieces.

MEASUREMENTS REQUIRED.

See Diagram on Page 827.

- Circumference of ball of foot (*A*).
- Circumference of heel and instep (*Z*).
- Circumference of instep (*B*).
- Circumference of ankle (*I G*).
- Circumference above ankle (*C*).
- Length from sole of foot to above ankle (*I* to *C*).



10492. AGNEW'S MODIFICATION OF THOMAS' HIP-SPLINT.

Price, complete, with cork sole shoe and pair of crutches.....\$25 00 to \$35 00 ||

The cut, Fig. 10492, represents the posterior splint or apparatus for the treatment of all stages of hip diseases or coxalgia. The upper or pelvic portion is made of leather, formed in the same manner as the spinal leather jacket from a plaster cast. To this is attached the posterior bar of steel covered with leather and extending down over the buttock, fitting closely against the leg to just above the ankle; the pelvic part laces on with hooks, and there is a band around the thigh, one around directly over the knee, and one at the bottom above the ankle. When this apparatus is firmly attached to the body and leg, there is no possibility of motion at the hip-joint in any position the patient may place himself. A cork sole shoe is fitted to the well foot, two and a half inches high, and a pair of crutches are furnished.

DIRECTIONS FOR ORDERING.

See Diagram on Page 827.

In ordering an apparatus of this kind, a plaster jacket should be made the same as for the spine, excepting that it should not extend to the axilla; from the crest of the ilium to half-way up will be sufficient. Before the jacket is cut off the outline of the posterior part of the leg and buttock should be taken by a thin bar of lead, say about half-inch wide, this rod extending to the top of the jacket; give the circumference of the upper third of the thigh (*H*), the knee (*F*), and below the calf (*I S*). Mark on the lead rod exactly where the center of the knee-joint touches it; give the dimensions of the well foot for the cork-sole shoe, and the extreme length from the axilla to the floor for the crutches. A large number of these apparatus have been; and are now, in use with the very best results desired. Mention which leg is affected.

See foot of Page 827 for measurements for shoes.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

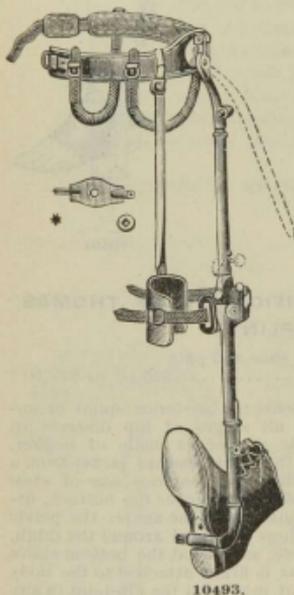
10493. SAYRE'S IMPROVED LONG SPLINT WITH SOCKET FOR ATTACHMENT OF SHOE.

Price to patients, according to size and finish..... \$30 00 to \$50 00 ||
 Shoes are charged extra, according to quality.

"The improvements over Sayre's original long splint consists in attaching the long rod to a round revolving plate, which is fastened to the pelvic band; when this plate is moved upon its axis, the long rod moves forward and backward. At the top of this plate another joint permits the rod to move from and towards the other leg. A screw turns in and out of the revolving plate, so that when the key is applied and the screw turned abduction is made. The long rod is divided into two parts; the lower holds an endless screw transversely, which is worked by a key, and rotation thus produced.

"As a matter of comfort to patients, these long splints are also used with joints at the knee, in slight cases of disease, or when convalescence has definitely set in. These joints are sometimes made with coiled springs at the knee, by which, when the leg is bent backward and the power relaxed, it will spring forward involuntarily.

"The limb is prepared for the long splint in the following manner: Cut two strips of strong moleskin adhesive plaster from two to four inches wide, according to the size of the limb, and long enough to reach its entire length, and divide the upper extremity of the plaster into narrow strips for a distance of two or three inches. Pieces of strong webbing, one or two inches in length, with buckles attached, are sewed to the lower extremities of the plasters. These plasters are then placed on either side of the leg in such a manner as to leave the buckles a little above the ankle-joint, and then so secured by a snugly adjusted roller as to leave the tabs with the buckles attached hanging loose. The roller is then carried up over the knee, and as far up the thigh as can be done with convenience, when the upper split ends of the strips of plaster are reversed and braided in with the roller as it returns down the thigh, securing it smoothly. The stocking is then pulled up on the foot, holes having been cut on either side for the



buckles to pass through, and the shoe applied with holes cut through it in the same way.

"The limb now being prepared, the instrument is placed on its outer side, and the cross-bar at the bottom brought in front of the heel of the shoe, and securely buckled to the tabs above described. The pelvic belt is next brought around the hips and secured by the buckle upon the opposite side, and the perineal bands are next attached as firmly as may be. The knee-pad band is then slipped up or down until it is made to rest opposite the knee, when it is passed around the leg and buckled. Extension is now made with the key upon the ratchet until free compression is borne without pain and the patient can walk without cane or crutch. If the limb is adducted the abducting screw can be used, daily increasing the tension, for the purpose of abducting the limb."

MEASUREMENTS REQUIRED.

See Diagram on Page 827.

- | | |
|---|--|
| 1. Sole of shoe to ankle-joint (<i>I</i> to <i>I</i> 6). | 5. Circumference at ankle (<i>I</i> 6). |
| 2. Sole of foot to knee-joint (<i>I</i> to <i>F</i>). | 6. Circumference at calf (<i>D</i>). |
| 3. Sole of foot to hip-joint (<i>I</i> to <i>K</i>). | 7. Circumference at thigh (<i>H</i>). |
| 4. Sole of foot to iliac crest (<i>I</i> to <i>S</i>). | 8. Circumference at hip-joint over iliac crest (<i>L</i>). |

Send shoe or measurements for same (see bottom of page 827), giving full particulars of case, that we may be assisted in making a correct fitting, as well as acting brace.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10494. WASHBURN'S HIP-JOINT SPLINT.

Price \$7 00 ||

This is a simple, straight bar of steel, jointed to a pelvic band. It is intended for poor patients, and has neither racks, pinions nor screws. Extension is made, after fastening the lower end with adhesive strips, simply by the degree of tensility to which the perineal straps are adjusted. A knee-cap assists in keeping the splint in place.

DIRECTIONS FOR MEASUREMENTS.

See Diagram on Page 827.

1. Length from ankle to crest of ilium (*I* to *9*).
2. Circumference of pelvis (*L*).

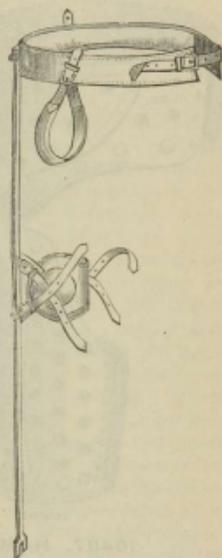
10495. HUTCHISON'S HIP-JOINT APPARATUS.

Price of Apparatus, Small Size \$ 25 00 to \$30 00 ||

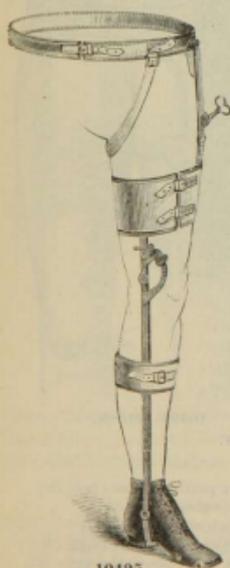
Price of Apparatus, Large Size 30 00 to 50 00 ||

Shoes are charged extra, according to quality.

This apparatus is portable, and, being fastened to a shoe, needs no adhesive strips. Two rods of steel extend from the foot to the upper third of the thigh, and are secured to the leg with calf and thigh bands. The outside rod is longer than the other one, is ratched, and slides in a steel tube which is hinged by a ball and socket joint to a pelvic band. To this pelvic band is attached a perineal strap for counter extension. Extension is made by working the splint with a key. The splint is provided with joints for the ankle and knee; the latter one is adjusted to any degree of flexion and extension, and may be fixed at any point or its motion limited, by an arrangement of a screw and two nuts.



10494.



10495.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

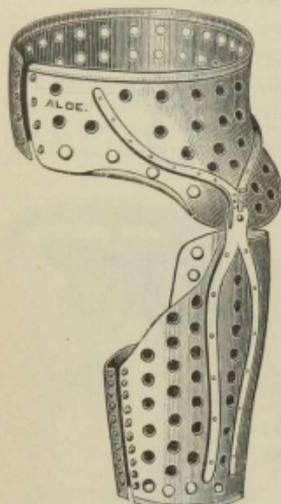
1. Name of patient.
2. Age of patient.
3. Weight of patient.
4. Right or left leg?
5. Length from sole of foot to ankle-joint (*I* to *I*6).
6. Length from sole of foot to knee-joint (*I* to *F*).
7. Length from sole of foot to trochanter major (*I* to *K*).
8. Length from sole of foot to crest of ilium (*I* to *9*).
9. Circumference of calf (*D*).
10. Circumference of thigh (*H*).
11. Circumference of pelvis (*L*).

If you wish us to furnish shoe, additional measurements are necessary. See bottom of page 827.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10496. WILLARD'S SOLE LEATHER APPARATUS FOR THE HIP-JOINT.



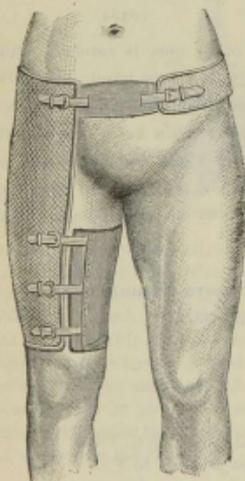
10496.

Price \$30 00 to \$50 00 ||

"The splint devised by Dr. Willard, of Philadelphia, has a single joint opposite the articulation, so that the patient can sit down with comfort. It is made of leather, moulded wet over a cast. After it has set and thoroughly dried, the pelvic and thigh portions are separated, and connected again by a joint attached to two spreading steel arms, as seen in Fig. 10496. A mortise or slot is made in the thigh section, and into this slot fits a bolt with a knob or head, by means of which it can be worked through one's clothing. It is only a fixed apparatus when the patient is standing and when the bolt fits into the slot. Dr. Willard says it is applicable to a limited number of cases, i. e., those in which the inflammatory symptoms are not acute. It is always used in connection with crutches and a high shoe."—"Diseases of the Hip." Gibney.

As it is necessary that this apparatus be very accurately fitted, we must have the patient in St. Louis to personally adjust it.

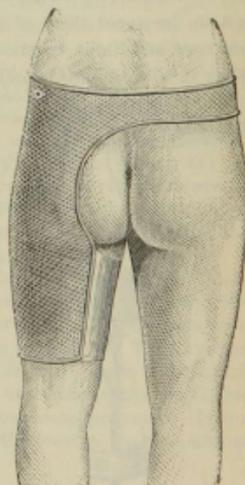
10497. HAMILTON'S WIRE GAUZE SPLINT FOR HIP-JOINT.



10497. Front.

Price..... \$15 00 ||

The above splint consists of an iron wire frame, moulded to the outside or back of the pelvis and thigh, covered with wire gauze. It is kept in place by a pelvic and broad thigh-band, and secured with buckles. Dr. Hamilton advises its use whenever it is desirable to secure immobility of the joint, together with exercise in the open air.



10497. Back.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Name of patient.
2. Age of patient.
3. Weight of patient (estimated).
4. Right or left side?
5. Crest of ilium to the condyles of the femur (9 to K).
6. Circumference of the pelvis at iliac crest (9).
7. Circumference at the nates.
8. Circumference of thigh at perinaeum (I).
9. Circumference of the upper third of thigh (H).
10. Circumference of the thigh above the knee (G).

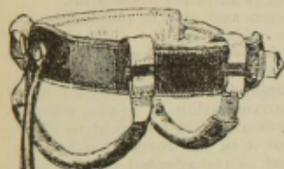
|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10498. SHAFFER'S IMPROVED HIP SPLINT.

Price..... \$30 00 to \$35 00 |

Before explaining the action of this instrument it may be stated that the use of the customary long hip-splint (Taylor's or Sayre's) is open to the objection which I have noted and commented on for years, but which Dr. Hutchinson, of Brooklyn, first publicly called attention to, viz.: that so soon as the weight of the body is thrown upon the perineal pads, extension, as such, ceases, and the so-called extension splint becomes in reality nothing but a perineal support. This is shown by the "bagging" of the leather straps which pass from the foot-piece



10498.

of attachment for the straps which pass to the adhesive plaster. When the extension rod is pushed out by the ratchet and key movement direct extension of the limb occurs. But, when in walking, the foot-piece presents to the ground, the instrument, being practically one continuous steel rod, cannot shorten. The entire weight of the body, bearing downward upon the perineal pads, overcomes any extension force, which does not exceed in pounds the weight of the patient. With a Taylor-Sayre splint it is easy to produce and maintain extension when the patient sits or lies down; but the moment he commences to walk, the foot approximates the foot-piece, the lower extension straps become loose, and the patient is able to swing the limb backward and forward to a very considerable extent. But when the weight is again thrown upon the sound limb, extension again occurs.

In the instrument pictured above, the usual cylinder and pelvic-band are employed. But instead of continuing the extension rod to and below the foot, as in the Taylor-Sayre instrument, it is made to terminate at a point about one and a half inches above the malleoli, and a band is attached which passes half way around the limb, posteriorly. To this band are riveted two straps, which are attached to the adhesive plaster buckles. The foot-piece has an independent rod, which passes upward to the piston arrangement and above the point of exit of the extension rod. When this instrument is applied, and the weight of the body is thrown upon the perineal pads, the instrument shortens by a compression of the spiral spring. In other words, the entire part moves upward, and the weight of the body is expended in shortening the spring—the straps remaining taut all the while. The same degree of extension is exerted upon the diseased hip-joint whether the patient lies down or walks. Traction is constantly maintained, and the joint surfaces are not alternately protected and then exposed at every step, as in the instrument

previously described. The spring, of course, acts automatically, and as soon as the foot-piece is removed from the ground the instrument lengthens, and is again ready to receive the weight of the patient.

MEASUREMENTS REQUIRED.

1. Length from just below the anterior superior spine of ilium to a point $1\frac{1}{2}$ inches above the external malleolus.
2. Length from the same point to $1\frac{1}{2}$ inches below sole of foot.
3. Circumference of body between crest of ilium and trochanter major.
4. Right or left leg?

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10499. STILLMAN'S SECTOR JOINT BRACKET FOR THE THIGH.

Price..... \$10 00 |

When properly applied, is capable of the following combination without removal from the limb:

1. Extension at any angle with motion.
2. Extension at any angle with fixation.
3. Fixation at any angle.
4. Motion, complete or limited, constant or occasional.
5. Exposure of surface about the joint, admitting compression, elastic or otherwise, hot and cold applications, blisters, dressings and easy inspection.

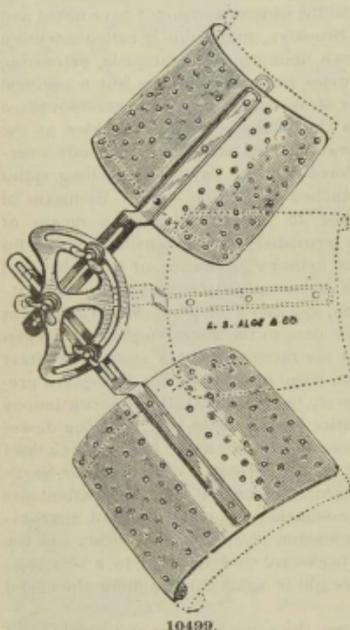
6. Motion, extension and elastic tension by the addition of appropriate rubber cords.

This splint may be inserted into any form of brace attachment known. But when it is desired that the splint should remain upon the limb for any length of time, or, as in acute inflammation of joints, where it is used to reduce the contractile antagonism of the muscles, I prefer to use it in the form of a bracket, which is to be attached to the affected part by some immovable dressing, will be sufficiently inflexible to prevent unequal pressure upon the soft parts.

The sector bracket consists of two terminal plates of thin copper, perforated upon the upper side, connected with each other by a sector bridge raised to any desired distance from the surface. This bridge consists of two overriding slotted steel strips, connected by three clamps, which may be either thumb-screws or key-clamps.

FOR THE HIP-JOINT.

"The aim of the apparatus is extension, with or without motion, and at any desired angle. It furthermore, seeks to overcome the compensatory lordosis." A sector splint (Fig. 10499) is placed on the outer side of the thigh over the hip, and is employed either as a "bracket" or a "brace"—the difference being that the bracket is to be secured by plaster-of-Paris, or some



inflexible bandage, which does not admit of removal, while the brace can be removed at pleasure.

The sector splint, it will be seen from the figure, is composed of two plates of perforated tin that partially encircle body and thigh, of two slotted arms connected at one end by means of a clamp, and each attached at the other end to one of the perforated plates, near which a sharp curve is seen to prevent undue pressure over prominent parts, and of a slotted sector attached to the slotted arms by three clamps.

To apply this bracket: 1st. Several strips of moleskin adhesive plaster are wound tightly around the thigh just below the hip, and around the pelvis, above the hip. 2d. Thigh, pelvis and waist are encircled by plaster-of-Paris bandages, which is allowed to partially set. 3d. The bracket is applied over this plaster, the angle being fixed as desired, the clamps having been previously loosened, and the slotted strips shortened as much as possible. 4th. The bracket is now fastened by a few turns of the plaster bandage, and this is covered by a dry muslin roller to insure cleanliness. When the plaster is set the whole constitutes the splint. Enough precautions have been taken to secure the desired amount of firmness, and the apparatus extends from axilla to knee—the underlying adhesive plaster preventing any slipping or sliding on thigh or trunk. To make the extension, the slotted strips are pushed away from the center, thus increasing the distance between body and thigh attachments. The degree of extension gained is secured by the clamps on the slot.

(A perineal band should be improvised with a handkerchief, in the center of which a small roll of cotton or wool is placed, and the whole rolled into cylindrical form, and, after being placed in position, is tied firmly around the upper angle of the bracket.)

[Extracts from "The Hip and Its Diseases," by V. P. Gibney, A. M., M. D.]

INFORMATION AND MEASUREMENTS REQUIRED.

1. Age of patient.
2. Distance between the last vertebræ rib and the great trochanter.
3. Distance between the great trochanter and the center of the knee-joint.
4. Mention if for the right or left hip.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE JOINTS.

10500. BAUER'S (ST. LOUIS) HIP-JOINT APPARATUS.

Price. \$25 00 ||

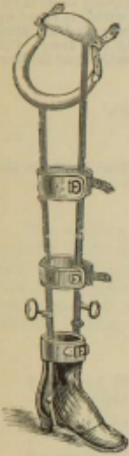
Shoes are charged extra, according to quality.

This apparatus affords extension in a vertical line, and complete immobility of the joint. By being fastened to the shoe it utilizes the foot for extension, the tuber ischii for counter-extension, and the key rack and pinion as a motive power. No adhesive strips are used with this apparatus.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Patient's name and sex.
2. Patient's age.
3. Patient's weight (estimated).
4. Right or left leg?
5. Length from the sole to the tuber ischii (sound leg).
6. Length from the sole to the tuber ischii (diseased leg).
7. Circumference of calf (*D*).
8. Circumference of thigh (*H*).

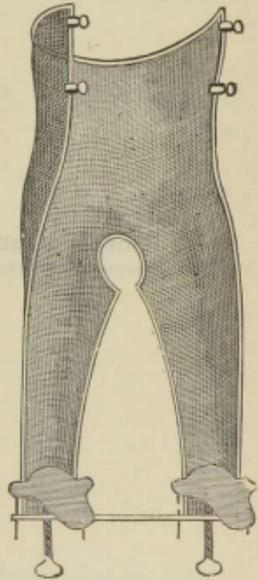


10500.

10501. BAUER'S (ST. LOUIS) WIRE BREECHES.

Price of Wire Breeches, small size..... \$15 00 ||
 " " " medium size..... 18 00 ||
 " " " large size..... 25 00 ||

Bauer's Wire Breeches are used after excision of the head and neck of the femur in necrosis, after the removal of shattered bone, or balls in gunshot fracture, and in the treatment of chronic inflammation of the hip-joint when perfect rest and position of the affected parts are desired. It consists of a heavy wire frame covered with wire gauze to fit the posterior half of the body from the auxiliary cavity to the sole of the foot. Proper sized openings may be cut through the gauze to admit of dressing any wounds, without being obliged to remove the splints. There is also an opening for the anus, so that the patient can pass his feces by having the lower end of the apparatus raised and a bed-pan placed under it. The apparatus may be lined with cotton batting and the patient securely fastened with adhesive plaster strips and roller bandages. After the feet are secured to the foot-board, extension can be made by turning the thumb-screws, counter-extension being from the healthy extremity.



10501.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Patient's name or sex.
2. Patient's age.
3. Patient's weight (estimated).
4. Length from sole of foot to axilla (*I* to *S*).
5. Length from sole of foot to perinæum (*I* to *I*).
6. Circumference of calf (*D*).
7. Circumference of knee (*F*).
8. Circumference of thigh (*H*).
9. Circumference at the nates.
10. Circumference of pelvis at iliac crests (*G*).
11. Circumference of waist (*X*).
12. Circumference of chest under axillæ (*S*).

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.

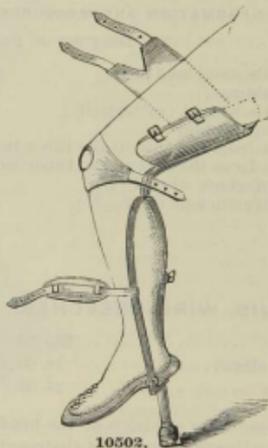
10502. BIGGS' INSTRUMENT FOR SHORT-LEG,

Price..... \$35 00 ||

This instrument is very useful where shortening of the limb is the result of anchylosis of the knee-joint. It is a modification of Biggs', and consists of a thigh-trough, well padded and attached to a strong steel stem, bifurcating below the knee and running down each side of the leg, terminating in a socket which is fitted up with a rubber bottom to rest on the ground. The thigh is secured into the apparatus by straps and buckles, and the weight of the body transmitted to the ground by the side stems, without straining the knee. For further comfort the knee may be kept in place by a knee cap. A strap is passed over the middle of the leg, while the foot rests on a swivelled plate placed between the bifurcated stem.

INFORMATION AND MEASUREMENTS REQUIRED.

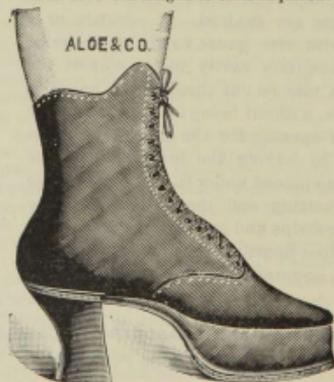
- | | |
|---|--|
| 1. Patient's name. | 6. Circumference above the knee (<i>G</i>). |
| 2. Right or left leg? | 7. Circumference at knee (<i>F</i>). |
| 3. Length from sole of foot to knee-joint (<i>J</i> to <i>F</i>). | 8. Circumference of the calf (<i>D</i>). |
| 4. Length from knee-joint to upper third of thigh (<i>F</i> to <i>H</i>). | 9. Degrees of the angle of flexion. |
| 5. Circumference of upper third of thigh (<i>H</i>). | 10. Distance from the heel of the patient's shoe to the ground, when standing erect. |



10502.

10503. ALOE'S CORK ELEVATIONS FOR SHORT-LEG.

Price for Elevation, according to size of Shoe and height of Cork required..... \$ 10 00 to \$ 15 00 ||



10503.

MEASUREMENTS REQUIRED.

For the shoe containing elevation of cork, as per Fig. 10503, the measurements usually taken by a shoe-maker for a shoe are required. See bottom of page 827.

Determine the difference between the length of the patient's legs by having him stand upright in his stockings on a smooth surface and placing different articles, such as books, boards, etc., under the short leg, until the patient without inconvenience can rest firmly on both legs. Then measure the height of these articles and forward this measurement to us, together with those called for above, and also advise us if for right foot or left foot.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.

10504. PATTEN EXTENSION FOR SHORT-LEG.

Price of Brace..... \$9 00 ||



10504.

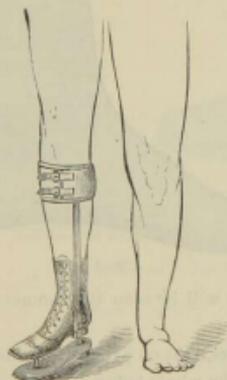
For a short leg, the result of infantile paralysis, when the bones have not kept pace in growth with those of the corresponding extremity, we make an extension to correct the patient's limp, and to guard against the danger of spinal curvature. The apparatus consists of a steel frame of proper height, securely fastened under a plain shoe. The steel has a leather sole attached, to avoid noise when walking on pavements, stone or wooden floors, and to prevent falling on slippery ground. These extensions are light and comfortable.

DIRECTIONS FOR MEASUREMENT.

1. Have the patient (both feet bare) stand up; place books or blocks of wood under the short-leg until the shoulders and pelvis are in a horizontal plane, then measure these books or blocks, which will be the height required for extension.
2. Send us a well-fitting lace shoe.
3. Right or left leg?

10505. SHORT-LEG EXTENSION AND WEAK-ANKLE BRACE COMBINED.

Price of Brace..... \$18 00 ||



10505.

If shortness of a leg is accompanied with inability to bear the weight of the body, the muscles being too weak to keep the ankle straight, the simple contrivance described (Fig. 10504) is not sufficient, and the apparatus, as shown by Fig. 10505, will be required to support the joint. This is in reality the apparatus Fig. 10504 and Fig. 10476 combined.

DIRECTIONS FOR MEASUREMENT.

See Diagram on Page 827.

1. Height of the extension as directed for Fig. 10504.
2. Right or left leg?
3. Distance from sole to ankle-joint (*I* to *I G*).
4. Distance from sole to calf (*I* to *D*).
5. Circumference of calf (*D*).
6. Send us a well-fitting lace shoe.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.

10506. O'CONNOR'S IMPROVED APPARATUS FOR EXTENSION OF SHORTENED LIMBS.

Price of Extension..... \$20 00 to \$25 00 ||

See special instructions at bottom of page 826.

We take pleasure in calling the attention of the medical profession and others to this appliance for the extension of shortened limbs.

Its principal advantage is in that it enables the wearer to stand firmly on his feet, as the weight of the body is equally distributed to both limbs. It also removes all appearance of deformity, both legs being of the same length and both feet the same size, and in cases where there is no ankylosis at the hip-joint, there is very little "limp." This apparatus is preferable to the ordinary form of iron stirrup and cork-soled shoe.

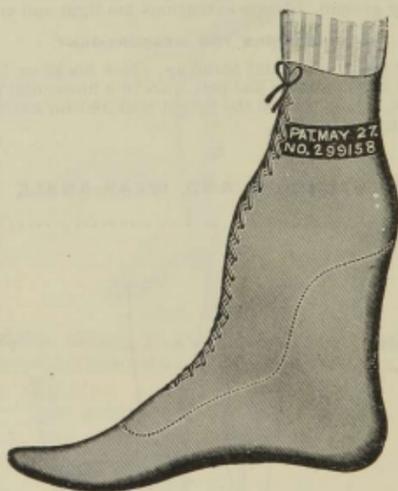


Fig. 1.

By reference to the illustration will be seen the manner in which the extension is attached to the foot.

The ball of the foot and the heel, rest on pads, while the toe is held in place by means of a heavy leather upper fitted over it, the whole being shaped accurately to the bottom of the foot. A spiral spring in the toe of the extension admits of normal action in walking. The material used in its construction is a light and tough wood, covered with rawhide, in order to further strengthen it.

The illustration shows the foot laced to the extension. The leather used is of the best quality, very strong and pliable, the dotted line showing the outline of the foot; over this the stocking is drawn, obviating the appearance of deformity when the trousers are drawn up, which frequently occurs in the sitting posture.

In cases of this character the tendo achillis is frequently contracted. In such instances the foot naturally takes the position shown in the first illustration; where, however, there is but little shortening of the tendon, the foot quickly becomes accustomed to the position.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.

O'CONNOR'S IMPROVED APPARATUS FOR EXTENSION OF SHORTENED LIMBS—CONTINUED.

Fig. II shows the extension encased in a walking shoe, and, as can readily be seen, the shoe does not differ in construction from the one worn on the normal foot, it not even being necessary that they be made to order, as the extension is formed to accurately correspond in in size and shape to the normal foot. The projection backward given by the heel is covered by the trousers, as shown by Fig. III, so that no deformity is noticeable.

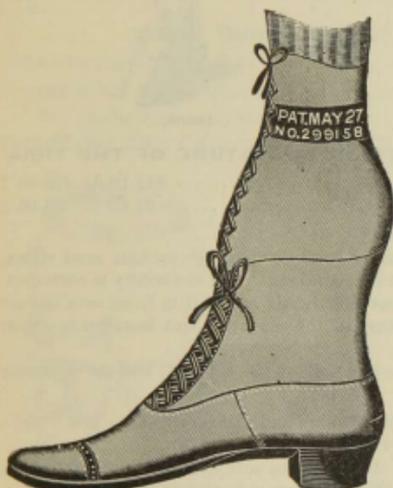


Fig. II.

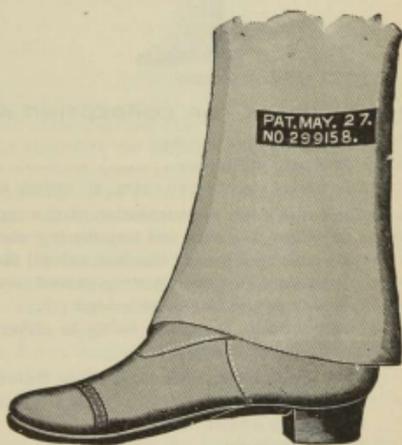


Fig. III.

MEASUREMENTS REQUIRED.

See Diagram on Page 827.

NORMAL FOOT.

Length of foot (2 to 3).	Circumference of instep (B).
Circumference of ball of foot (A).	Circumference of heel (Z).

SHORTENED FOOT.

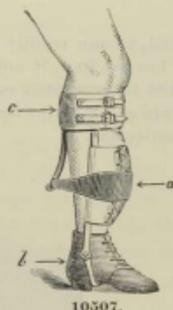
Amount of shortening, measuring from bottom of heel to floor, standing erect in stocking feet. Same as Fig. 10503.

Circumference of ball of foot (A).	Circumference at ankle (I6).
Circumference of instep (B).	Circumference above ankle (C).
Circumference of heel (Z).	Measure over medium weight stocking.

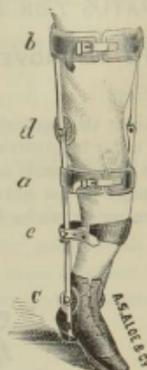
Where the measurements are taken by us, we guarantee a perfect fit; when sent in to us, we only contract to accurately carry out the measurements given. So physicians and patients must be particular in taking them.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.



10507.



10508.

10507. BRACE FOR CORRECTING ANTERIOR CURVATURE OF THE TIBIA.

Price of a Brace for one leg	\$12 00 to \$18 00 ||
Price of a pair of Braces	24 00 to 36 00 ||

Shoes are charged extra, according to quality.

The cut is a fair representation of the apparatus. It consists of two upright steel stems, fastened below to a shoe and terminating above in the calf-band. The deformity is corrected, either by passing a leather bandage around the stems and tightly lacing it in front over the arc of the curvature (*a*), or by a strap passed over the arc of the curvature and fastened to a spur suspended from the calf-band behind (*c*).

The points of resistance being in either case the heel of the shoe (*b*) and the posterior trough of the calf-band (*c*).

In ordering the apparatus, send the following particulars and measurements:

See Diagram on Page 827.

- | | |
|-------------------------------------|--|
| 1. Patient's name, or sex. | 5. Length from sole to ankle-joint (<i>I</i> to <i>I 6</i>). |
| 2. Patient's age. | 6. Length from sole to calf (<i>I</i> to <i>D</i>). |
| 3. Anterior curvature of the tibia? | 7. Circumference of calf (<i>D</i>). |
| 4. Right or left foot? | |

If you wish us to furnish shoes, send the additional measurements as required (see page 827).

10508. BOW-LEG BRACES.

Price of a pair of Braces	\$25 00 to \$30 00 ||
---------------------------------	--------------------

Shoes are charged extra, according to quality.

The mechanical treatment of bow-legs is very simple. 1. The bones in a softened condition, yielding under the weight of the body, must be assisted by extraneous help. 2. The arched bones must be restored to their natural condition. The instrument illustrated by the cut answers the purpose admirably.

The support is given by double stems of steel (secured to a shoe) carried up as high as the thigh—jointed at the ankle and knee to allow the patient perfect freedom of motion. They are kept in place by calf (*a*), and thigh-bands (*b*).

The bow is corrected by pads (*c*) and (*d*) being placed respectively against the ankle and knee on the concave side of the limb, while a strap (*e*) passed around on the highest point of the arc, inside of the outer stem, tightly buttoned to the steel bar on the concave side, gradually compels the leg to become parallel with it.

In slight cases, or when the bow is greatest below the calf, an apparatus carried up to (*d*) is sufficient.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.

DIRECTIONS FOR MEASUREMENT.

See Diagram on Page 827.

1. Patient's name or sex.
2. Patient's age.
3. Length from sole of foot to ankle-joint (*I* to *I G*).
4. Length from sole of foot to knee-joint, inner side (*I* to *F*).
5. Length from sole of foot to knee-joint, convex or outer side (*I* to *F*).
6. Length from sole of foot to upper third of thigh, inner side of leg (*H*).
7. Length from sole of foot to highest point of the arc.
8. Circumference of calf (*D*).
9. Circumference of thigh (*G*).

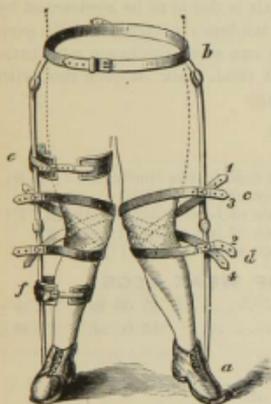
Patients will furnish their own laced shoes, or send the measurements required if they wish us to furnish them. See bottom of page 827.

10509. GENU-VALGUM, OR KNOCK-KNEE BRACE.

Price of a pair of Braces..... \$30 00 to \$40 00 ||

Shoes are charged extra, according to quality.

The mechanical treatment of knock-knees requires a proper instrument of sufficient strength, and yet not too heavy, to suit the condition of the patient. The one represented is the simplest and most effectual one of which we know. It consists (if the deformity be double) of two lateral stems with joints at the ankles, knees and hips, extending from the heels of strong shoes (*a*) to a well-padded pelvic band (*b*). The pelvic band is made in two halves in order to admit of adjustment—the tightening of the posterior buckle everting the toes, that of the front buckle inverting them.



10509.

A pair of padded straps, secured to each other cross-wise, act in the following manner: End (*1*) is buttoned to the thigh stem (*c*), carried from behind, below the inner condyle, to the front, terminating in the end (*2*), which is buttoned to the leg stem (*d*). The end (*3*) buttons to (*c*), is carried from the front to the back of the knee, passing over the inner condyle, and secured to the button (*d*). In this manner they support both the head of the tibia and femur, whilst their combined direction of force being outwards, gradually corrects the deformity.†

Some surgeons prefer to have the apparatus without a joint at the knee, but is there not a risk of inducing ankylosis by too long retention of the limb in one position?

Besides, the patient is liable to fall with stiff splints, and is thus in constant danger of fracturing the bones of the thigh or leg.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Patient's name.
2. Patient's age.
3. Length from sole of foot to ankle-joint (*I* to *I G*).
4. Length from sole of foot to knee-joint (*I* to *F*).
5. Length from sole of foot to hip-joint (*I* to *K*).
6. Length from sole of foot to iliac crests (*I* to *9*).
7. Circumference of pelvis one inch below iliac crests (*L*).
8. Circumference of thigh at (*G*), { A stick to be placed on the out-
side of the limb, and these two }
9. Circumference of leg at (*E*), { measures taken around both }
10. State if for right or left leg or if for both legs.

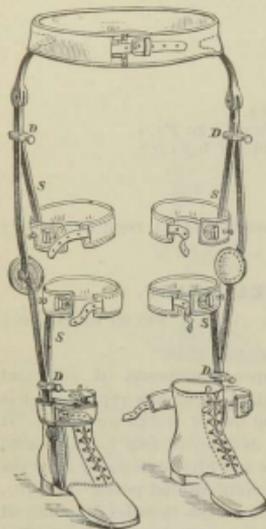
† This instrument exerts very much more power and answers better when provided with padded metal bands at thigh (*c*) and calf (*f*), as shown in Fig. 10509.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.

10510. TRUEHART'S GENU-VALGUM-BRACE.

Price..... \$35 00 to \$40 00 ||



10510.

The accompanying cut well illustrates a modification of brace for the treatment of knock-knees and similar deformities of the legs, which presents, I think, a new and valuable improvement and possesses decided advantages over the forms of brace now generally in use. The springs, *S S S S*, the bearings of which can be delicately adjusted by shifting the slides, *D D D D*, up or down, are the characteristic feature of this apparatus. The brace being attached at the side of deformity on either side, by means of the springs, which fit closely and firmly to the limbs, perfect coincidence and harmony of movement between leg and brace is secured, which is sadly wanting where the attachment is effected by means of the long straps of the ordinary brace. The corrective force exerted is continuous, and in all positions the wearer may assume, is decided and equable, while, at the same time, the articulations of the limbs have such a normal freedom of excursion, laterally as well as antero-posteriorly, that no disfiguring habit of gait is liable to be contracted by the patient, and there is no tendency to trip or fall; even the child of only a few years can wear the brace with little or no annoyance, and, on first trial, walk, or even run, with surpassing ease and precision.

DIRECTIONS FOR MEASUREMENT.

See Diagram on Page 827.

- | | |
|--|--|
| 1. Patient's name. | 6. Length from sole to the iliac crest (<i>I</i> to <i>g</i>). |
| 2. Patient's age. | 7. Circumference of pelvis (<i>L</i>). |
| 3. Length from sole to ankle-joint (<i>I</i> to <i>I B</i>). | 8. Circumference of lower third of thigh (<i>Y</i>). |
| 4. Length from sole to knee-joint (<i>I</i> to <i>F</i>). | 9. Circumference of leg at upper calf (<i>E</i>). |
| 5. Length from sole to hip-joint (<i>I</i> to <i>K</i>). | 10. Circumference above ankles (<i>C</i>). |

10511. APPARATUS FOR THE SUPPORT OF WEAK LEGS.

Price of Apparatus for adults..... \$ 35 00 to \$ 70 00 ||

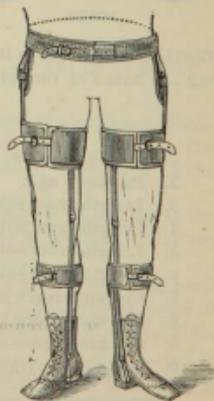
Price of Apparatus for children..... 25 00 to 35 00 ||

Shoes charged extra, according to quality.

This apparatus is for the support of weak legs, when by reason of relaxed joints, softening of the osseous structure, or partial paralysis, they can not quite bear the weight of the body; but where the muscles still retain some power to perform their respective functions. Very light steel springs are secured to shoes, and carried up the sides of the legs and to the pelvis. They are provided with joints corresponding to the natural ones and secured to calf, thigh and pelvis by well-padded bands and buckles. The following measures are required:

1. Patient's name or sex.
2. Patient's age.
3. Length from sole of foot to ankle-joint (*I* to *I B*).
4. Length from sole of foot to knee-joint (*I* to *F*).
5. Length from sole of foot to hip-joint (*I* to *K*).
6. Length from sole of foot to iliac crests (*I* to *g*).
7. Circumference of pelvis one inch below iliac crests (*L*).
8. Circumference of thigh (*H*).
9. Circumference of calf (*D*).

Send well-fitting laced shoes, or if you wish us to furnish them, the measurements as given at bottom of page 827 are necessary.



10511.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.

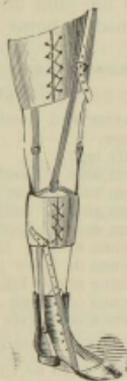
10512. APPARATUS FOR PARTIAL PARALYSIS OF THE LEG OR THIGH.

Price of the Apparatus for one leg..... \$ 25 00 to \$ 30 00 ||

Price of the Apparatus for both legs 30 00 to 60 00 ||

If both legs are of equal length the above apparatus is sufficient; but if the affected limb is shorter than its fellow, the extension apparatus must be combined with it; this will add \$8.00 to the price above stated for single apparatus, and \$16.00 for apparatus for both legs.

Shoes charged extra, according to quality.



10512.

In cases of wasting palsy, or when certain groups of muscles become atrophied, losing the power to perform their functions, an apparatus suited to the case should be worn. By means of the apparatus shown in Fig. 10512 the muscles are excited into action, and aided by artificial substitutes, made of elastic rubber or steel, placed on the instrument so as to gently exercise the affected parts. This will often recall them to a sense of their duty.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Patient's name or sex.
2. Patient's age.
3. Right or left leg?
4. Length from sole of foot to ankle-joint (*I* to *I6*).
5. Length from sole of foot to knee-joint (*I* to *F*).
6. Length from sole of foot to upper third of thigh (*I* to *H*).
7. Circumference of calf (*D*).
8. Circumference of knee (*F*).
9. Circumference above knee (*G*).
10. Circumference of thigh (*H*).

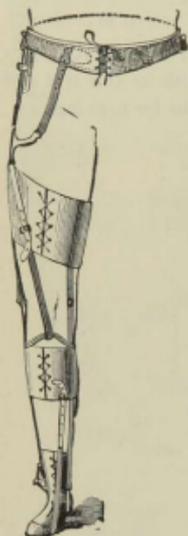
Send laced shoes, or, if you wish us to furnish shoes, additional measurements are required. See bottom of page 827.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.

10513. APPARATUS FOR HEMIPLEGIA.

Price of apparatus for one leg..... \$30 00 to \$40 00 ||



10513.

Shoes are charged extra, according to quality.

The apparatus represented by Fig. 10513 is for hemiplegia, affecting the limb to the hip-joint. We have often had occasion to make it, and found it to answer a good purpose, both as a support and in aiding the restoration of the mobility of the muscles. It answers to the same description as Fig. 10512, but is carried up to the pelvis. On to a broad steel pelvic band we fasten the artificial muscles for flexion or extension, as the case may require. It may also be worn with good results after treatment of hip-joint disease, when, by adding a perineal band, the weight of the body is borne by the apparatus.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Patient's name and description of the case.
2. Patient's age.
3. Right or left leg?
4. Length from sole of foot to ankle-joint (*I* to *I 6*).
5. Length from sole of foot to knee-joint (*I* to *F*).
6. Length from sole of foot to trochanter major (*I* to *K*).
7. Length from sole of foot to crest of ilium (*I* to *9*).
8. Circumference of calf (*D*).
9. Circumference of knee (*F*).
10. Circumference above knee (*G*).
11. Circumference of thigh (*H*).
12. Circumference of pelvis one inch below iliac crests (*L*).

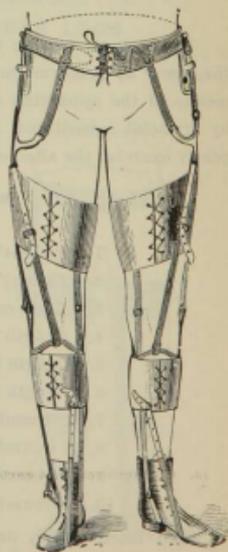
Patients will furnish their own laced shoes, or send the necessary measurements if they wish us to furnish them (see bottom of page 827).

10514. APPARATUS FOR PARAPLEGIA.

Price of apparatus for both legs.....\$35 00 to \$70 00 ||

Shoes are charged extra, according to quality.

The apparatus for paraplegia answers to the same description as the one for hemiplegia, except that it is double. It is used when both the lower extremities are affected. A general description of the case is necessary to guide us in placing the artificial muscles in the right spot. The directions for measurements are the same as for the apparatus for hemiplegia, Fig. 10513. Separate measurements being furnished for each limb for numbers 4, 5, 6, 7, 8, 9, 10 and 11.

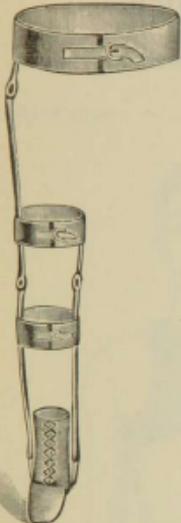


10514.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.

10515. APPARATUS FOR PARTIAL PARALYSIS OF ONE LOWER EXTREMITY.



10515.

Price..... \$30 00 ||

This apparatus consists of two uprights which extend up to a little above the knee, from there one passes up on the outside of the leg to the pelvic band, to which it is attached. Joints are situated at the hip, the knee and the ankle, it has a well padded pelvic band, a band above and one below the knee.

Send a well fitting lace shoe.

Measurements required are the same as for Fig. 10513.

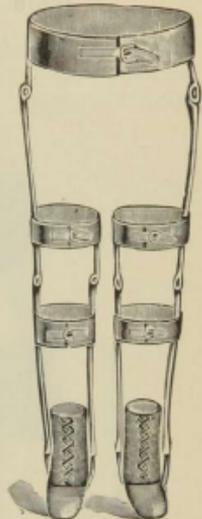
10516. APPARATUS FOR PARTIAL PARALYSIS OF BOTH LOWER EXTREMITIES.

Price \$50 00 ||

Is the same as the one before described, for both limbs.

Send a pair of well fitting lace shoes.

Measurements required are the same as for Fig. 10514.



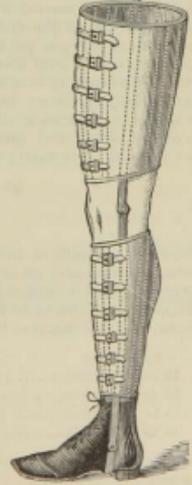
10516.

10517. SMITH'S APPARATUS FOR FALSE JOINTS IN THE LEG OR THIGH RESULTING FROM RESECTION OR FRACTURE OF THE BONES (UNUNITED).

Price of Apparatus, for children..... \$25 00 to \$35 00 ||
 Price of Apparatus for adults..... 40 00 to 75 00 ||

Shoes are charged extra, according to quality.

This apparatus consists of two lateral steel stems, the inner one of these is carried to the upper third of the thigh, the outer one terminates in a pelvic band situated an inch below the iliac crests. Calf and thigh-bands, made either of sole-leather nicely moulded to the limb, or sail-cloth, stayed by a number of steel springs, corset-like, and well padded, connect the steel stems, which latter are provided with joints for the ankle, knee and hip. The strength of these stems must be in proportion to the patient's weight. The leather or sail-cloth casing is required only at the place of the false joint, the other band may be softer and smaller, as convenient. If desired, the knee-joint may be made to remain stiff when walking, and flexible when sitting down, by merely touching a spring with the hand outside the clothing.



10517.

DIRECTIONS FOR MEASUREMENTS.

See Diagram on Page 827.

1. Patient's name.
2. Patient's weight.
3. Right or left leg?
4. Position of false joint.
5. Length from sole to ankle (*I* to *I*θ).
6. Length from sole to knee (*I* to *K*).
7. Length from sole to crutch, perineum (*I* to *I*).
8. Length from sole to trochanter major (*I* to *K*).
9. Length from sole to iliac crest (*I* to *g*).
10. Circumference above ankle (*C*).
11. Circumference below calf (*I*δ).
12. Circumference at calf (*D*).
13. Circumference at garter (*E*).
14. Circumference at knee (*F*).
15. Circumference above knee (*G*).
16. Circumference at upper third of thigh (*Y*).
17. Circumference at thigh (*H*).
18. Circumference of thigh at perinaum (*I*).
19. Circumference of pelvis one inch below iliac crests (*L*).

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE LEGS.

10518. DARRACH'S IMPROVED WHEEL CRUTCH.



10518.

This is an admirable contrivance for patients who have lost control of their lower extremities, and for enabling them, as much as possible, to move freely about. The iron bars below the hand-pieces are hollow to receive the upper bars, to which the breast and axilla pad is attached; the latter can be adjusted higher and lower, within a range of from 8 to 12 inches, according to size, and made firm by screws. The apparatus is constructed in such a peculiar manner to enable the patient to move at the least exertion, and to change the direction of movement at the slightest attempt. The wheels are bound with sole leather to prevent sound or jarring on the floor. For very helpless patients a body support is attached, which can be adjusted to relieve the arms, and allows the patient to rest while using the crutch. This crutch is especially adapted for cases of hip-joint disease, diseases of the spine, paralysis and deformities of the legs and feet.

For those who wish to exercise in the open air we furnish a sunshade or parasol similar to those commonly used on baby carriages—the circular shaped top admitting of their being placed in almost any position. For the use and amusement of small children we have also constructed trays that may be attached to the front of the crutch and used either for food or playthings; altogether this apparatus offers many advantages and will prove useful in many cases of paralysis.

MEASUREMENTS REQUIRED.

As per Diagram on Page 827.

1. Width of the body in direct line from arm-pit to arm-pit (*S* to *S*).
2. Distance from arm-pit to floor (*S* to *T*).
3. When support is needed give circumference of waist over underclothing (*X*).
4. To measure width of body correctly, place a ruler under each arm close to the body, projecting in front, *parallel*, and take distance between, not following curve of breast.

Sizes from	Price.	Diameter of Wheel.
16 to 25 inches.....	\$50 00 || .....	4 inches.
25 to 35 inches.....	60 00 || .....	6 inches.
35 to 45 inches.....	70 00 || .....	8 inches.
45 to 65 inches.....	85 00 || .....	10 inches.

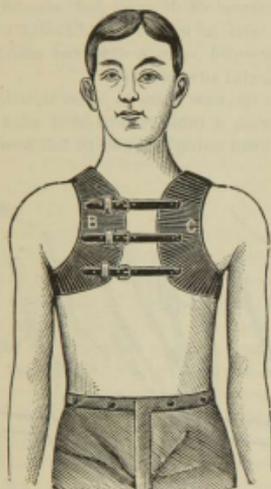
Price of Supporters, to patients, range from..... \$5 00 to \$15 00 ||
 Sunshades and Fixtures, from .. 6 00 to 12 00 ||
 Toy Trays 2 50 ||

|| ORTHOPÆDIC.

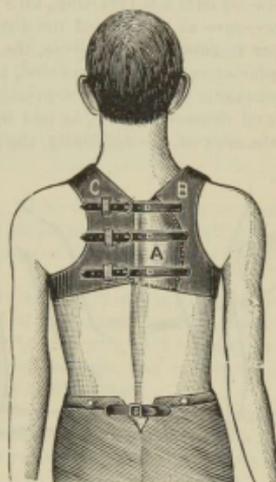
APPARATUS FOR LUXATED SCAPULA.

10519. HODGEN'S (ST. LOUIS) SCAPULA BRACE.

Price of Brace..... \$20 00 to \$25 00 ||



10519. Front View.



10519. Rear View.

This Brace is used to hold the scapula forward and outward. The splint *A* is made of gutta-percha or hard rubber. To get the form for this splint it is necessary to make a plaster-of-Paris cast. Place the patient upon some firm flat surface, face down, and with the arm in such position as will bring the posterior margin of the scapula into prominence, surround it with a piece of stencil board three inches wide, placed on edge, and pressed firmly upon the skin. Vaseline applied to the skin will keep the plaster from sticking. Fresh plaster-of-Paris, mixed with water to about the consistency of cream, is now poured on the surface till the piece of board is full; allow this to harden, and from this model the Brace is molded. *C* and *B* are the arm pieces to hold the Brace in position. *D D D* are the straps by which the Brace is made to take hold of the posterior margin of scapula. The three straps in front are for the adjustment of the shoulder pieces. This Brace is useful in holding the scapula in place of muscles that are weak or paralyzed, and will hold the scapula firmly in the proper position.

MEASUREMENTS REQUIRED.

Circumference under right axilla and over right shoulder (*V*).Circumference under left axilla and over left shoulder (*V*).Circumference under axillæ (*S*).Circumference of chest (*U*).

|| ORTHOPÆDIC.

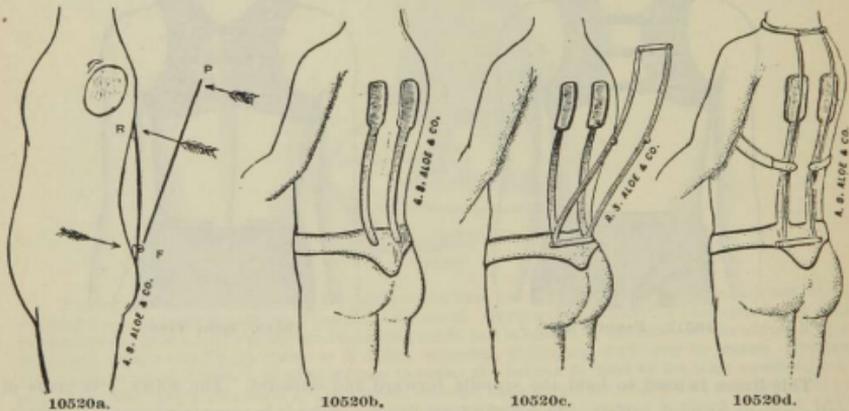
APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10520. STILLMAN'S DORSAL LEVER BRACES FOR POTT'S DISEASE.

Price \$20 00 to \$35 00 ||

Their object, like the brace of Dr. Taylor, is first, to produce extension of the bodies of the vertebrae by backward traction, thus aiming at the arrest of disease, and, second, to exert forward pressure at the seat of the disease, and thus tend to lessen or obliterate deformity; but in order to effect these objects, the brace is constructed upon a different plan, a totally distinct order of lever being employed, possessed of special advantages.

To thoroughly understand the principle upon which the new brace is constructed, a patient having a well defined knuckle, is laid upon his back upon a table, the padded edge of which comes to the apex of the deformity, the shoulders and head being allowed to fall downward.



You will observe, as the patient's head and shoulders descend, that a physiological and true extension of the spine is effected, the traction force being all that portion of the patient above the seat of the disease. This, augmented by gravity, produces a backward curve of the spine, most marked at the seat of the disease. There is also a tendency to obliterate the knuckle, and this partially disappears, unless it be so firm as to render futile any force so applied.

We have thus produced by this position the two effects we consider to be necessary to successful treatment, and have placed the spine in curves—the reverse of those it held before this posture was assumed. If this position could be maintained indefinitely, there would be rapid improvement in the disease, but as this is obviously impossible, we attempt to embody in a brace the forces involved, it being for this purpose constructed in two parts, one to represent the table and the other the backward traction force. The “table” portion of the brace (and by this we mean that portion of the brace which is to produce upon the patient an effect identical with the table), consists of a firm pelvic band, from which strong padded strips pass upward on either side of the median line to the seat of disease. See Fig. 10520b.

The “backward traction” portion of the brace consists of a back frame (see Fig. 10520c) secured on the pelvic girth by a ratchet, which allows it to be adjusted to any angle with the body, and thus regulates the degree of traction force employed. This may be varied from a simple upright support to a powerful lever at the will of the surgeon, depending entirely upon the angle at which it is thrown out from the body.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

STILLMAN'S DORSAL LEVER BRACES FOR POTT'S DISEASE—CONTINUED.

The upper part of this traction frame is secured to the body by padded straps connected to a chest T-plate in front, thus avoiding constriction, and when bound down to the body, as in Fig. 10520d, presents the appearance there shown.

We thus observe that by means of the two parts of this brace, we can obtain the effects desired to be incorporated in a dorsal brace, the mechanical action being shown in Fig. 10520a, *R* representing the resistance, *P* the power, and *F* the fulcrum. It will be observed, after the line *FP* of the "traction" frame is securely fastened by *F* to the "table" frame *FR*, and the whole firmly fastened to the body, that the forward tendency of the upper part of the body would be prevented by the pads at *R*, and this forward tendency would, at the same time, be acting to force in the knuckle by pressure over the transverse processes of the diseased vertebræ, so that a curative automatic effect would be produced by the brace to keep the body erect, and at the same time improve the deformity.

Also that the spring effect produced by the setting off of the traction frame, and drawing the body back against it and retaining it there by appropriate straps, would cause the brace to be held more tightly against the back, and produce there a higher degree of fixation of the spine than any form of apparatus in use.

In the beginning of the treatment it is well to have the traction frame set off at such an angle as to cause considerable pressure upon the sides of the knuckle, and produce thorough extension of the diseased portion; but this angle may be lessened week by week as the case improves, until finally the traction frame lies directly upon the pads, and becomes a mere fixation brace or support, without any leverage whatever, as in Fig. 10520d.

This is what we wish to accomplish with this brace—to grasp firmly the lower part of the spine as high as the seat of disease—corresponding to the part lying upon the table, and then by force above, bend the spine backward sufficiently to relieve the bodies of the vertebræ from pressure, and also affect as much obliteration of the deformity as is practicable. The object of the brace is to fix the spine in the position of riding by a frame provided with a suitable clamp for regulating the backward traction; and thus, by the use of a very light frame, we can produce sufficient lever power to retain the spine in any desired position, and as this backward power is distributed along the entire dorsal and lumbar spine, and as the forward pressure is exerted along the spine below the seat of disease, decreasing from the knuckle to the sacrum, it will be found that no injurious pressure is exerted at any one point. The brace thus shown is specially adapted for the dorsal region, but when the disease is situated below this, it will be found not less efficacious.

[Extracts from Dr. C. F. Stillman's article entitled "Resumé of Methods in General Use for the Mechanical Treatment of Pott's Disease," in *The American Journal of Obstetrics and Diseases of Women and Children*, of October, 1883.]

INFORMATION AND MEASUREMENTS REQUIRED.

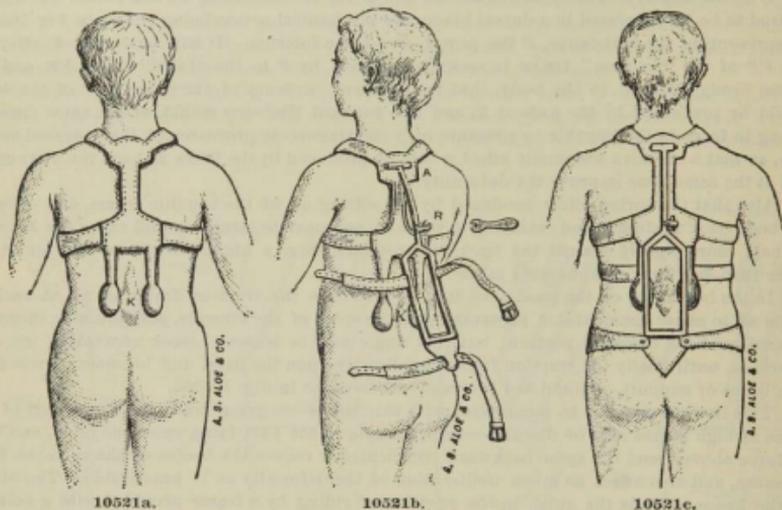
1. Sex of patient.
2. General appearance of patient.
3. Lay a soft piece of lead wire along the back, moulding it exactly to the spine, from the seventh cervical vertebræ to the middle of the sacrum. With this pattern trace carefully the shape of the spine on a sheet of paper, marking the points opposite the upper and lower borders of the scapula and the crest of the ilium.
4. Circumference of body between crest of ilium and trochanter major (*L*).
5. Circumference of body at waist (*X*).
6. Circumference of body under axillæ (*U*).
7. Distance between the upper borders of the scapulæ.
8. Distance between the lower borders of the scapulæ.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10521. STILLMAN'S LEVER BRACE FOR POTT'S DISEASE OF THE LUMBAR REGION.

Price \$ 25 00 to \$ 40 00 ||



To adopt this principle of backward traction to the lumbar region, the patient is laid on the back upon the table, and all that portion below the seat of disease is allowed to hang over, the reversal of the position just detailed for disease of the dorsal region. In this manner we produce the extension of the spine, by means of the backward traction of the lower extremity, and produce the pressure upon the knuckle by the edge of the table. It is to sustain these effects that we use the lever brace, and to adapt it to this portion of the spine we reverse the construction already detailed. If the knuckle be at *K*, Fig. 10521a, the table portion of the brace is constructed as there shown, the pads being placed opposite the knuckle, and the whole being firmly bound down to the body without constriction by a T-plate over the sternum. To produce the backward traction, a frame, Fig. 10521b, is attached to the table frame by a ratchet at *A*, so that it may be thrown out at any desired angle from the body, depending upon the degree of back traction desired; and this frame extends to the coccyx inferiorly, and is provided with appropriate straps for its attachment to the body, a rotary ratchet at *R* assisting to control any lateral curvature which may be present. When this brace is secured to the body, as in Fig. 10521c, it forms a lever which produces extension of the bodies of the vertebrae, and improves the deformity while holding the spine firmly fixed, these being, as we have seen, the desiderata for successful treatment.

Measurements required, same as No. 10520.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10522. STILLMAN'S APPARATUS FOR THE TREATMENT OF ROUND SHOULDERS OR ANTERO-POSTERIOR CURVATURE OF THE SPINE.

The prices of the below described apparatus for gentlemen's use vary, according to size, from \$20.00 to \$35.00. ||

The same for ladies' use, when incorporated into a corset furnished us, from \$8.00 to \$15.00. ||

A second and much more satisfactory method of utilizing the backward traction in the formation of a brace, is one constructed on my adjustable lever plan—the fulcrum, *F*, to be over the sacrum—the resistance, *R*, to be greatest just below the central region of the dorsal curve, and distributed all along the spine below this region, and the power, *P*, to be the forward tendencies of the upper extremities and head (see Fig. 10520a), so that while the body is maintained erectly no force is exerted upon the spine at any point; but the least tendency to rounding the shoulders brings a power to bear exactly opposed to the power of the deformity, which increases automatically in proportion to the extent of the deformative force.

To construct a brace so as to bring the force to bear, under these conditions, we place a girth, provided with a sacral projection about the hips (see Fig. 10520b). From the upper edge of this hip-girth springs a pair of padded strips, one on each side of the median line, so as to avoid the spinous processes, and these strips extend upward to the middle dorsal region (see Fig. 10520b). So far, the brace is a substitute for the table, but to give it efficacy we must supply a frame for backward traction as a substitute for the backward force exerted by the weight of the upper extremities when the body is in the traction position. To effect this, a light steel frame moulded to the shape of the back and extending from the sacrum to the cervical vertebrae is attached at its lower extremity to the hip-girth (see Fig. 10520c), and there provided with a ratchet which admits of its being secured at any angle. The upper extremity of this frame is secured to the body by means of chest and shoulder-bands, see Fig. 10520d, which buckle in front, to a firm leather chest-plate, the use of which permits us to avoid the constriction and discomfort attending the use of bands passing around the chest without such intervention.

The action of the brace (see Fig. 10520d), is, as you see, that of a lever, exerting its force in such manner as to distribute its pressure along the spine, and not at any one point; the dorsal center being the point of greatest pressure, and the sacrum the least, the intermediate pressure being so graduated as to decrease from the dorsal center to the sacrum. We thus see that direct pressure is provided to the greatest degree where it is needed most, *i. e.*, at the dorsal center, and in the least degree where it is needed the least, over the sacrum; and there is, thus, no portion of the spine below the dorsal center without direct support. This support and forward pressure is just in proportion to the backward angle of the brace-frame and the forward tendencies of the deformity. In the beginning of the treatment this brace-frame may be secured at a considerable angle (see Fig. 10520c), but as improvement ensues, this may be lessened, until it lies flat upon the padded strips (see Fig. 10520d), and becomes in its action a mere spinal support instead of a lever.

This brace makes an extremely effective and comfortable instrument, and can be made to exercise any desired degree of power on the deformity. But there are many cases which do not require so pronounced an instrument as this—cases in which the youth and immaturity of the patient have not as yet allowed the parts to become perpetuated in the abnormal curves to such an extent as to demand its use.

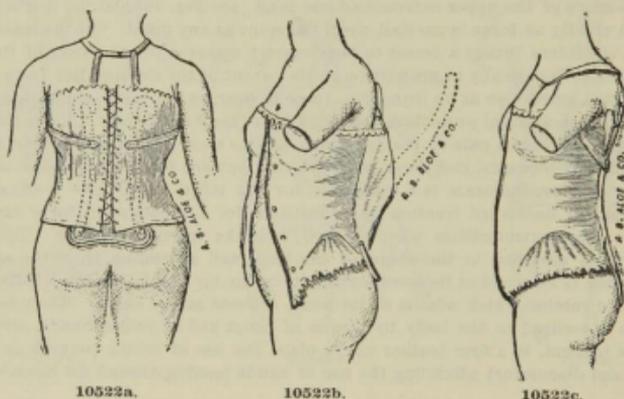
Such cases require merely a light, strong, compound spring, or pair of springs, which will act supplementary to the impaired muscles of the back, and if we can adapt this spring power to the form so that it will not be apparent to an observer that the patient is wearing an aid of this kind, so much more successful will we be in our practice. We must remember that this class of deformities is unattended by pain, and it is, therefore, desire for symmetry which

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

STILLMAN'S APPARATUS FOR THE TREATMENT OF ROUND SHOULDERS OR ANTERO-POSTERIOR CURVATURE OF THE SPINE—CONTINUED.

brings them to you; so that if an unwieldy spring makes a protrusion along the course of the spine, it would be an objection to treatment in the eyes of the patient. But it is possible, by incorporating into an ordinary well-fitting corset, a pair of compound springs, one on either side of the median line, to provide against the objection which attends the use of a single spring. The under springs are somewhat longer than the corset, and are provided with pads at their extremities so as to allow sufficient grasp of surface to prevent the edges of the pads from digging into the flesh when the body is laced down to the spring (see Fig. 10522a). The upper springs extend to the neck and are connected to the chest-plate in front, as in the Lever



Brace. The only springs which we have used heretofore in the profession to combat round-shoulders, have been fashioned in an exaggeration of the normal curves of the spine, a shape which would tend to increase and intensify the abnormal curves, which are symptomatic of the deformity.

To make round-shoulder springs effective, however, the curves of the under spring should be the reverse of the curves of the deformity—opposing apex to apex. Thus the curve of the deformity and the curve of the combating spring should be so placed in contact with each other that when the centers are together and the curves drawn tightly toward each other, there will be reduction in exaggerated curves of the spine as well as the curves of the spring.

The curve of the back springs are opposed to the curves of the back (see Fig. 10522b), before the stays are brought together, but when the corset is tightened and secured to the figure (see Fig. 10522c), its action is to flatten the dorsal curve in direct proportion to the strength of the springs.

For males, corsets are not so applicable, for obvious reasons, and we, therefore, provide the springs with girths in such a manner as to be as effective for the purpose intended. So much for the mechanical treatment.

[Extracts from Dr. C. F. Stillman's article on this subject, in *The Medical Record*, of Aug. 25th, 1883.]

MEASUREMENTS REQUIRED.

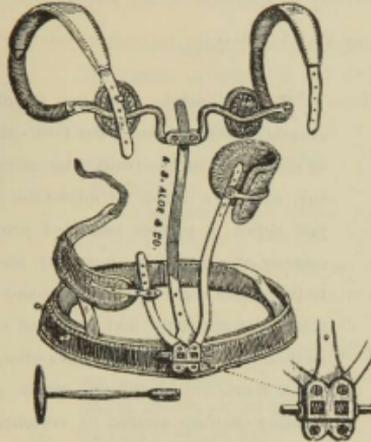
The same as for Stillman's Dorsal Lever Braces No. 10520. When the apparatus is to be worn by a lady, send us, in addition to the measurements, a substantial, well-fitting corset.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10523. IMPROVED APPARATUS FOR LATERAL CURVATURE OF THE SPINE.

Price \$ 40 00 to \$ 60 00 ||



10523.

This apparatus consists of a well-padded steel pelvic band, to the posterior center of which is attached an upright steel bar, its curves conforming to those of the spine, and holding at its upper extremity upon an adjustable cross-piece, two oval pads, resting upon the shoulder-blades when the brace is applied.

Attached to the ends of the adjustable cross-piece, by means of horizontal joints, are padded crescent-shaped crutches, terminating in padded shoulder-straps which fasten on buttons, placed upon the oval shoulder-blade pads. These support the upper portion of the trunk and stay its forward tendency.

To the posterior center of the pelvic band is attached also, a metal box, containing two Archimedian screws which move with the aid of the key (so as to exert and maintain any amount of pressure against the protuberances) the two upright bars armed at their upper extremities with well-padded metal adjustable pads. As the uprights are constructed of spring tempered steel, all pressure exerted by them in combating the deformities are elastic while constant.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Sex of patient.
2. General appearance of patient.
3. Place a thin and flexible strip of lead along the spine, moulding it exactly to the spine and all its sinuositities from the seventh cervical vertebra to the middle of the sacrum. With this pattern, trace carefully the shape of the spine on a sheet of paper, marking the points opposite the upper and lower borders of the scapulae and the crest of ilium, also the affected parts of the spine. Send us this tracing.
4. Length from crest of ilium to axilla—right side (9 to 8).
5. Length from crest of ilium to axilla—left side (9 to 8).
6. Distance from the center of one scapula to the center of the other (7 to 7).
7. Circumference of body under the axillae (U).
8. Circumference of body between the crest of ilium and trochanter major (L).
9. Mention whether the convexity of the curve is to the right or to the left side.
10. Diameter of the back from axilla to axilla (8 to 8).

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10524. TIEMANN'S BRACE FOR LATERAL CURVATURE.

Price..... \$35 00 ||



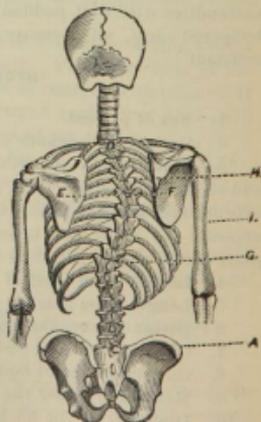
10524.

To the pelvic belt are attached laterally two elastic crutches, as in the brace for Pott's disease; to relieve the spine of the weight of the trunk posteriorly, a single, strong, upright bar, holding a couple of adjustable pads for the scapulae, and just below, a leather band, of proper width (attached by a number of small brass buttons), terminating in strong, elastic India-rubber webbings. This band is passed around the protuberance obliquely, and buttoned to the pelvic belt in front, an inch or two beyond the linea alba, and will be found to exercise a gentle but continuous elastic pressure, at the same time rotating each rib around its vertebral axis, and thus unfolding the helical curve.

Surgeons residing at a distance, whose patients cannot visit us for adjustment, will have their orders promptly attended to by sending us the following particulars:

Is the convexity of the curve to the right or left side? (In the figure of the accompanying skeleton it is to the right.)

1. Patient's name or sex.
2. Patient's age.
3. Patient's weight (estimated).
4. Distance from sacro lumbar articulation to vertebra prominens (*C* to *D*).
5. Distance from sacro lumbar articulation to first vertebra involved.
6. Distance from sacro lumbar articulation to last vertebra involved.
7. Distance from crest of ilium to axilla, right side (*A* to *H*).
Distance from crest of ilium to axilla, left side (*A* to *H*).
8. Distance from the center of one scapula to the center of the other (*E* to *F*).
9. Horizontal (transverse) diameter of the protuberance.
10. Circumference of chest under axillæ (*H*).
11. Circumference of pelvis one inch below the iliac crests.

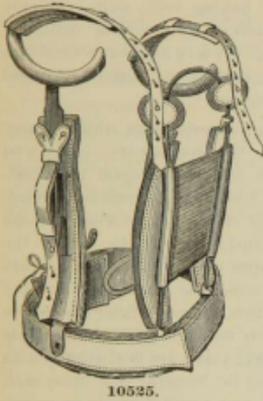


|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10525. TIEMANN'S NEW BRACE FOR POTT'S CURVATURE OF THE SPINE.

Price..... \$35 00 ||



"It is intended to afford an entirely elastic, continuous and gentle pressure to the parts to which it is applied, giving to the patient, along with adequate support, an easy and comfortable feeling. It is made of light, tempered springs, and softly padded wherever it comes in contact with the body.

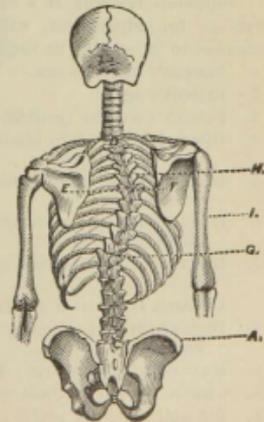
"The belt below passes around the pelvis, and the principal weight is thrown upon the gluteal region. The front portion is broad, so as to compress the protruding abdomen. Two upright, parallel bars pass on each side of the posterior elevation, having a portion of silk elastic rubber between them, which gives a constant pressure upon the protuberance. If the latter is inflamed, a portion cut out of the elastic material prevents direct pressure upon the extremity of the bone. Upon these side bars are attached

two elliptic and padded springs, yielding to every pressure, and adapting themselves to the sides of the spinal column and keeping the body in an erect position. These are removed or applied by a very simple process. The two padded crutches are elastic, and elevate the body by pressing mostly under the margins of the scapulæ, thus obviating any tendency to pressure upon the axillary veins. They are constructed in such a manner that the equilibrium of the body can be restored in case one shoulder is depressed."

We pay special attention to the correct and careful fitting of these braces.

Surgeons residing at a distance, whose patients cannot visit us for adjustment, will have their orders promptly attended to, by sending the following particulars:

1. Patient's name or sex.
2. Patient's age.
3. Patient's weight (estimated).
4. Distance from sacro lumbar articulation to vertebra prominens (*C* to *D*).
5. Distance from sacro lumbar articulation to first vertebra involved.
6. Distance from sacro lumbar articulation to last vertebra involved.
7. Distance from crest of ilium to axilla, right side (*A* to *H*).
- Distance from crest of ilium to axilla, left side (*A* to *H*).
8. Distance from the center of one scapula to the center of the other (*E* to *F*).
9. Horizontal (transverse) diameter of the protuberance.
10. Circumference of chest under axillæ (*H*).
11. Circumference of pelvis one inch below the iliac crests.

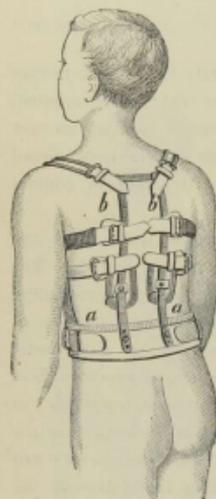


|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10526. WASHBURN'S SPINE BRACE.

Price..... \$15 00 to \$20 00 ||



10526.

"Some two years ago it became necessary for me to have constructed a brace for the treatment of angular curvature of the spine, a considerable number of such cases having been quite suddenly thrown upon my hands by the resignation of a consulting orthopaedist to St. Luke's Hospital, New York. It was my desire to obtain an apparatus which, while fulfilling the indications perfectly, should be simple in construction and not expensive."

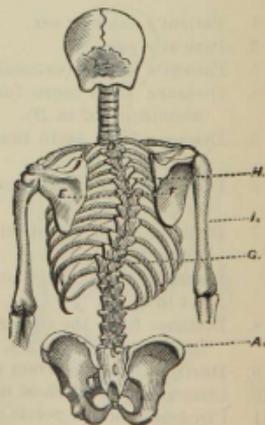
"In the accompanying figure, *aa*, is a steel band which passes half way round the pelvis, just above the trochanters; *bb* are two flat bars of steel, parallel to each other, and curved upon their flattened sides to the form of the spine to which the apparatus is fitted. These bars are curved a little less than the spine, so that when secured in position their elasticity will constantly operate to rectify the spinal curve. The cross bar at the upper ends of the parallel ones is firmly riveted to them, and is to cross the back just above the spines of the scapulae. At the ends of this bar are affixed buckles to receive the shoulder straps; *cc* are two movable pads which slide upon the bars to which they are attached; these are best stuffed with chopped cork. These compresses are to be brought one upon each side of the projecting knuckle of spine and secured firmly by means of the screws provided for that purpose. Buckles are attached to various parts of the Brace, by means of which it is secured to the front part of the apparatus which consists, as shown, of a piece of

twilled muslin, or other strong material, which covers the chest and abdomen and is provided with straps. Such parts as are in contact with the body are carefully padded."

"Success with this apparatus depends entirely upon the faithfulness with which it is kept adjusted to the spine of the patient. It is only necessary that a gentle pressure should be maintained, if it is constant. As the spine approaches its normal shape, the curve of the Brace will require to be altered from time to time. The steel has a soft temper, so that it will take the form into which it is bent when considerable power is applied, but will be sufficiently elastic for the purpose of this apparatus. With children's Braces the necessary bending is readily accomplished by hand."

Surgeons residing at a distance, whose patients cannot visit us for adjustment, will have their orders promptly attended to by sending us the following particulars:

1. Patient's name or sex.
2. Patient's age.
3. Patient's weight (estimated).
4. Distance from sacro lumbar articulation to vertebra prominens (*C* to *D*).
5. Distance from sacro lumbar articulation to first vertebra involved.
6. Distance from sacro lumbar articulation to last vertebra involved.
7. Distance from crest of ilium to axilla, right side (*A* to *H*).
8. Distance from crest of ilium to axilla, left side (*A* to *H*).
9. Distance from the center of one scapula to the center of the other (*E* to *F*).
9. Horizontal (transverse) diameter of the protuberance.
10. Circumference of chest under axillae (*H*).
11. Circumference of pelvis one inch below the iliac crests.



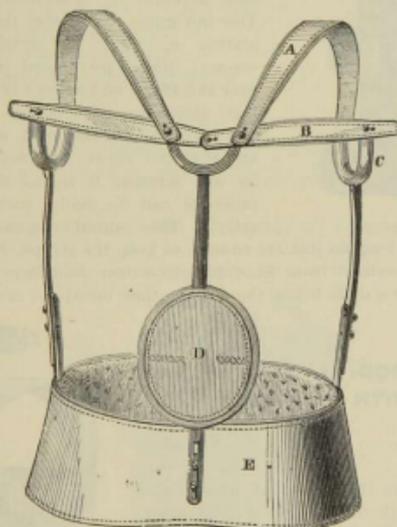
|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10527. BAUER'S (ST. LOUIS) SPRING BRACE FOR POSTERIOR CURVATURE.

Price..... \$35 00 ||

The efficiency of spiral supporters rests chiefly upon the construction of the belt, which should be wide, and so accurately surround the pelvis that it will not slip, and, serve as a reliable foundation for crutches and the spinal brace. Most apparatus are faulty in that particular, and are therefore utterly useless; the crutches are designed to lift the shoulders and carry their weight to the belt, without compromising the spine; the spinal brace is calculated to constrain the spine from undue motion by means of a well-fitted and padded dorsal plate; the dorsal plate *D* is perforated so as to not impede perspiration; the crutches *C* are made of two pieces in order to shorten or lengthen them.



10527.

DIRECTIONS FOR MEASUREMENT.

See Diagram on Page 827.

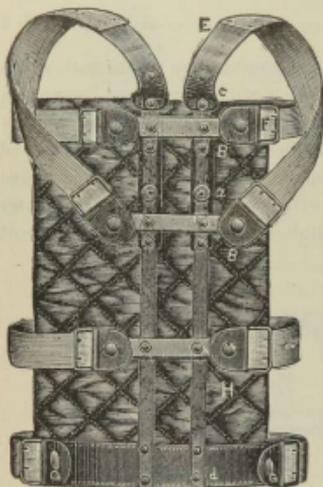
1. Patient's name or sex.
2. Patient's age.
3. Distance from sacro lumbar articulation to vertebra prominens (*4* to *13*).
4. Distance from sacro lumbar articulation to first vertebra involved.
5. Distance from sacro lumbar articulation to last vertebra involved.
6. Distance from crest of ilium to axilla, right side (*9* to *8*).
7. Distance from crest of ilium to axilla, left side (*9* to *8*).
8. Distance from the center of one scapula to the center of the other (*7* to *7*).
9. Horizontal (transverse) diameter of protuberance.
10. Circumference of chest under axillæ (*U*).
11. Circumference of pelvis one inch below the iliac crests (*L*).

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10528. HODGEN'S (ST. LOUIS) MODIFICATION OF TAYLOR'S SPINAL ASSISTANT.

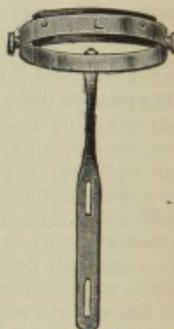
Price..... \$35 00 ||



10528.

E c, extend from spine of scapula just far enough to keep the straps, *E F*, from pressing down. The straps, *E F*, should extend from shoulder-piece over shoulders and obliquely down the sides and back to about or a little below the middle, then buckle to cross-pieces.

Fig. 10528 shows the Assistant as used for caries involving the vertebrae below the fifth or sixth dorsal. The apron, *H*, is used to hold the apparatus in place, after having been adjusted. The parts are a steel pelvic band, *G G*, which extends from one antero-superior spine of the ilium to the other, and fits the same parts as a truss. The uprights are placed on each side of the spinous processes, extending from pelvic band to spine of scapula. These are screwed to pelvic band *d*, and held together by cross-pieces. The uprights carry the pad-plates, *a*, held by thumb-screws; these are placed just over the angle, and extend from just above to just below it. They are made of soft lead, and are adjusted above and below by the screws, *B B*, so that pressure can be made accurately. The shoulder-pieces,



10529a.

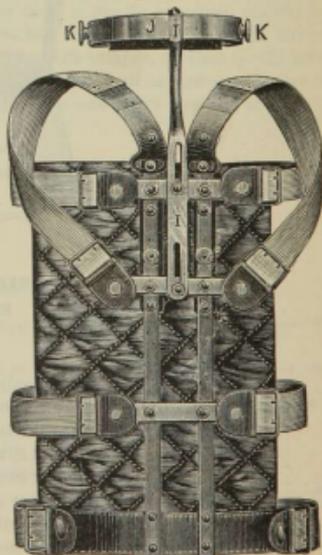
10529. HODGEN'S MOD. TAYLOR'S SPINAL ASSISTANT, WITH CHIN REST.

Price..... \$40 00 ||

Fig. 10529 represents the Assistant when used for trouble above the sixth dorsal. This is the same apparatus as Fig. 10528, with the addition of the single upright, *I I*, which extends from the sixth dorsal to just below the external occipital protuberance, and carries the chin-rest, *J*. This is made in two pieces, held together by the set-screws, *K K*, and should be measured loosely around the head from below the occipital protuberance, on a level with the chin.

Fig. 10529a, front view of same, showing gutter percha cup, *L*, for the chin to rest on.

The advantages of this Assistant are, it is light, cool, lasting, and can be altered in shape at any time to suit the needs of the case. The weight of the body above is taken from the anterior segments of the vertebrae, where the disease usually is, and placed upon the articular points and posterior segments.



10529.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

HODGEN'S (ST. LOUIS) MODIFICATION OF TAYLOR'S SPINAL ASSISTANT.

DIRECTIONS FOR MEASUREMENT.

1. From just in front of one antero-superior spinous process of ilium over sacrum to same point on other side, for steel pelvic band.
2. From level of spine of scapula to upper margin of sacrum, for uprights.
3. From level of spine of scapula to center of angle, for center of pads.
4. From just below to just above the angle, for length of pads; from level of spine of scapula to top of shoulder, for steel shoulder pieces.
5. From top of shoulder, around and under arm, to spine, about lower dorsal vertebræ, for shoulder straps.

MEASUREMENTS FOR APRON.

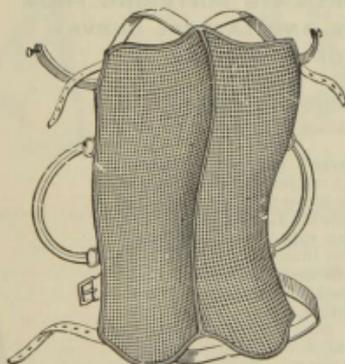
6. From axilla to just below crest of ilium, near the spine.
7. Circumference around upper chest.
8. Circumference around lower chest.
9. Circumference around lower abdomen.

MEASUREMENTS FOR CHIN REST.

10. From external occipital protuberance to mid-dorsal segment, for upright.
11. Loosely around head on level with chin, for chin piece.

10530. BAUER'S (ST. LOUIS) CUIRASS.

Price \$25 00 ||



10530.

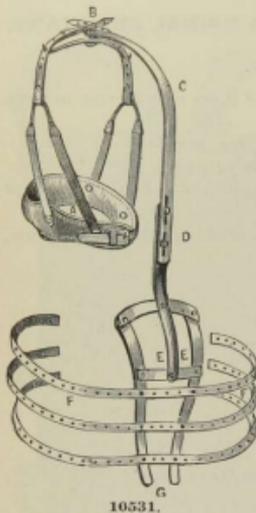
The Cuirass consists of a frame made of soft iron, with a piece along the spine; the intermediate space is filled with galvanized wire webbing soldered to the frame; if well adjusted the apparatus should fit to the cast like a shell, or like the gum plate of artificial teeth. The frame is then well padded and covered and fixed to the body by a belt and two shoulder straps. At the side of the instrument there are two leather handles affixed, by means of which you can lift and carry the patient in a horizontal position. The making of the Cuirass requires a well taken cast of the body in plaster Paris; the cast serves as a last upon which the apparatus is framed.

|| ORTHOPÆDIC.

APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10531. SAYRE'S JURY MAST.

Price \$12 00 ||



10531.

Consists of two pieces of malleable iron, bent to fit the curve of the back. To the lower portion are attached three or more roughened tin strips, long enough to go nearly around the body. From two cross-pieces of the upper extremity springs a central shaft, carried in a curve over the head and capable of being elongated at will. To this is attached, at its upper extremity, a swivel cross-bar with hooks, from which depend straps, supporting a head and chin collar.

APPLICATION.—The patient having been encased, in the usual manner, in a few thicknesses of plaster roller, the Jury Mast apparatus is put over this, care being taken that the iron strips are bent so as to conform to the surface of the plaster and that the shaft over the head be kept in the same line with the spinous processes. The perforated tin strips are now carried round the body, their ends, however, not being allowed to meet. The apparatus having been carefully adjusted, fresh layers of plaster bandage are now applied, in order to hold the instrument firmly in its place.

DIRECTIONS FOR MEASUREMENT.

See Diagram on Page 827.

1. Bend a flexible strip of lead to the contour of the back, commencing at the top of the head; carry along the spine to the sacrum; carefully remove and trace on paper; mark the position of the scapulae, iliac crests and disease.
2. Circumference top of head around chin (14).
3. Circumference around cranium (12).
4. Circumference of pelvis, below iliac crests (L).

10532. SAYRE'S APPARATUS FOR THE GYMNASI- C EXERCISING OF PATIENTS SUFFERING FROM POTT'S DISEASE AND LATERAL CURVA- TURE OF THE SPINE.

Price, complete with Plain Tripod..... \$18 00 ||

Price, complete with Disjuncting Tripod.... 22 00 ||

A further use of Dr. Sayre's mode of extension, is shown in an accompanying cut for the above named purposes, the patient pulling himself up by means of a rope and compound pulleys, the former having egg-shaped blocks, secured by the rope being tied into a knot under each and at regular intervals; these blocks enable the patient to draw himself up with ease. A padded chin-piece only, looped into an iron rod completes the apparatus. No other person should pull the ropes in this exercise and the patient should always hold both hands elevated, one nearly opposite the forehead and the other above. This contrivance can be hung up in any part of the house.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Sex of patient.
2. Weight of patient.
3. Height of patient.
4. Circumference of head around chin and occiput (14).



10532.

|| ORTHOPÆDIC.

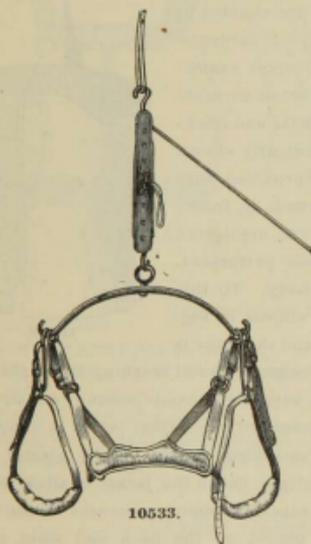
APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10533. SAYRE'S APPARATUS FOR SUSPENDING PATIENTS WHILE APPLYING HIS PLASTER OF PARIS JACKETS.

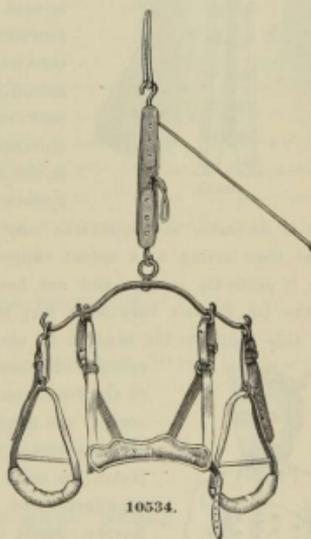
Price, \$6.00 || Extra Chin Neck Bands, different sizes, each, \$2.00 ||

See Page 901 for Prices of Seamless Shirts.

It consists of a curved iron rod, having an eye in its center and hooks at each end; from the end hooks, loops pass down under each axilla and also to the chin and occiput to support the head; the length of these loops can be graduated to suit every patient by separate straps and buckles that connect the loops with the iron rod; those parts of the loops that pass under the axilla and chin are well padded; the whole apparatus is attached by the eye in the center of the iron rod, to one of a set of compound pulleys, and the opposite pulley being secured to the ceiling or some other safe attachment of sufficient height, the patient is easily elevated by the bands under the axillæ, chin and occiput, until the heels cannot touch the floor.



10533.



10534.

10534. SAYRE'S IMPROVED SUSPENSION APPARATUS.

Price, \$8.00 || Extra Chin Neck Bands, different sizes, each, \$2.00 ||

This is an improved form of the same apparatus; the improvements consist: First, in two extra hooks placed on the iron rod between the end hooks and the eye in center; these serve for the attachment of the loops for the padded chin-piece, and, being in direct lines with the sides of the patient's head, support the latter in a more direct and therefore more comfortable position. Second, into the loops that pass under the axillæ, small steel bars are sprung that keep the loops apart when the patient is suspended; they prevent the loops from chafing the anterior and posterior parts of the shoulders, pressure on the auxiliary plexus of nerves producing numbness of the fingers in some cases of adults or even very heavy children, thus aiding in placing the patient in a comfortable position during suspension.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Age and sex of patient.
2. General appearance of patient.
3. Circumference of head around chin and occiput (14).

|| ORTHOPÆDIC.

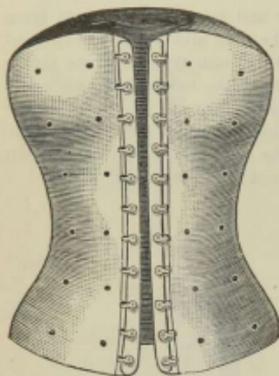
APPARATUS FOR DISEASES AND DEFORMITIES OF THE SPINE.

10535. SAYRE'S HARDENED SOLE-LEATHER JACKET.

Price \$25 00 ||

10536. SAYRE'S SOLE-LEATHER JACKET, WITH JURY MAST.

Price, with Jury Mast attached \$35 00 ||

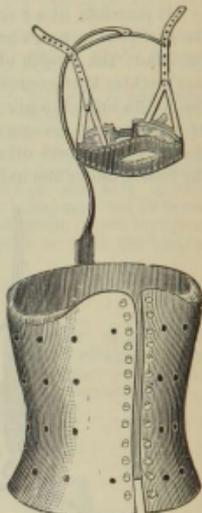


10535.

so that if desirable the apparatus may be removed at night, the mattress then acting as a spinal support. It is also perforated, making it perfectly porous and not heating to the body. To this apparatus Dr. Sayre's Jury Mast may be added, as shown in Fig. 10536; this supports the head in an erect position, and the spine is

Leather Jacket and
Jury Mast Applied.

An accurate mould of the body is taken by means of the plaster paris jacket, the patient of course being suspended. Before becoming entirely set, the jacket is cut open in front, in the middle line; the mould thus obtained should be sent to us. We are enabled to reproduce it exactly of hardened sole-leather, which, upon examination, is found to be so accurate that even the intercostal and intermuscular spaces are clearly shown in the leather. It is provided with eyelets and lacing cords in front,



10536.

relieved of super-incumbent weight by a rod reaching above the back of the head, and from which supporting bands extend beneath both occiput and lower jaw; the weight of the leather jacket is almost *nil* comparatively, being about one-third of that of the plaster paris jacket; in some cases a fenestra is cut in the jacket to allow for the prominences of the anterior superior spinous processes of the ilium. Narrow bands of steel are placed on the back and sides of the jacket. The apparatus will stand a great amount of rough usage and not be broken or bent out of shape.

When ordering a Jury Mast with the above jacket, send us also, in addition to the mould, the following measurements:

1. Lay a thin and flexible strip of lead along the back, moulding it exactly to the spine and all its sinuosities, from the top of the head to the middle of sacrum; with this pattern trace carefully the shape of the spine and head on a sheet of paper, marking the points opposite the upper and lower borders of the scalpulae and the crest of the ilium, also the affected parts of the spine. Send this tracing to us.

2. Circumference of head under the chin and over the head.

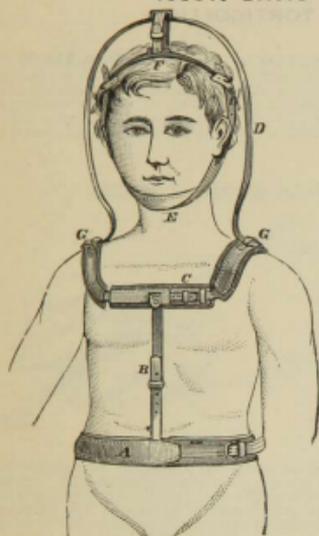
3. Circumference of head around the chin and back of the neck. In taking this measure care should be exercised that the tape encircles these parts in an even horizontal line (14).

4. Circumference of body at crest of the ilium (9).

|| ORTHOPÆDIC.

APPARATUS FOR TORTICOLLIS.

10537. DAVIS' APPARATUS FOR TORTICOLLIS.



10537.

Price, according to size..... \$25 00 to \$35 00 ||

This apparatus consists of a steel bar (*d*) surrounding the head at a distance of about 2 inches, which is held in position at (*g*) by a collar brace (*c*), connected by (*b*) and a similar bar on the back of the pelvic band (*a*); at the top of the bar (*d*) the head is held by a strong, elastic band connected to a curved piece of steel (*f*) to which a band (*e*), passing under the chin, is fastened; by these means a constant elastic tension is effected upon the contracted muscles and the deformity thus counteracted. This apparatus also carries the whole weight of the head, thus causing relief to the spine, which in many cases of Torticollis is also affected. When ordering this apparatus the shape of the steel bar (*d*) should be ascertained by giving its desired shape to a piece of pliable wire and making a tracing of the latter on a piece of paper.

INFORMATION AND MEASUREMENTS REQUIRED.

1. Sex of patient.
2. General appearance of patient.
3. Circumference of the head, passing under the chin and behind the ears to the top of the head.
4. Distance between axillæ.
5. Distance around the shoulders, avoiding the armpits.
6. Circumference of body between the crest of ilium and trochanter major.
7. Distance from the navel to the top cavity of the sternum.

10538. TIEMANN'S WRY-NECK BRACE.

Price..... \$5 00 ||

This is a simple collar, made of pliable iron wire and covered with silk or buckskin. It is placed on one shoulder and held in position by axillary straps. The iron admits of adjustment. It is a good instrument for slight cases of wry-neck when the head leans to one side by reason of contractions, lesions of muscles or burns, but when accompanied by tortuosity of the vertebræ it is not as efficient as Markoe's Brace.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Patient's name or sex.
2. Patient's age.
3. Head leans to right or left side?
4. Circumference of the neck (*I3*).
5. Length of the neck at side, from clavicle to mastoid process.
6. Circumference of chest under axillæ (*U*).



10538.

|| ORTHOPÆDIC.

APPARATUS FOR TORTICOLLIS.

10539. MARKOE'S BRACE FOR TORTICOLLIS.

Price, according to size and finish \$35 00 to \$45 00 ||



10539.

This apparatus is constructed in the following manner: An upright steel bar is fastened to a pelvic band, and carried along the spine to a little below the level of the shoulders, secured in position by straps passing over the shoulders under the axillæ, and fastened to buttons or pads situated over the scapulæ. A steel lever, for extension of the neck, is provided inferiorly with a slot, to admit of adjustment, and connected with the upright bar by means of two screws; the top of this lever is made to form a powerful clamp, for the purpose of holding the head-band, and of securing the head in position. The head-band is formed of a steel spring carried half around the back of the head, softly padded, and the covering extended to the front and buckled there. A strap may also be passed across the top of the head from ear to ear. A bandage, the size and shape of the patient's chin, is buttoned to this head-band, laterally, with four straps. Fastened to the steel spring of the head-band is a steel stem about one inch or less in length, terminating in a ball; this is held within the grasp of the clamp, thus forming a universal joint, moving freely in all directions. By turning a thumb-screw with which the clamp is provided, the head of the patient may be fixed in any position by the arrest in the movement of the joint.

INFORMATION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Patient's name or sex.
2. Patient's age.
3. Patient's weight (estimated).
4. Distance from sacro lumbar articulation to vertebra prominens (*A* to *I3*).
5. Distance from sacro lumbar articulation to base of skull (*A* to *I4*).
6. Circumference of pelvis one inch below iliac crest (*L*).
7. Circumference of chest under axillæ (*U*).
8. Circumference of the head (*I2*).

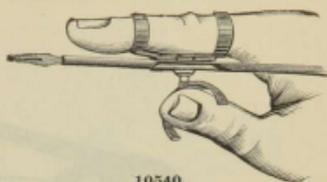
|| ORTHOPÆDIC.

APPARATUS FOR WRITERS' CRAMP AND PARALYSIS OF THE HANDS.

10540. MATHIEU'S WRITERS' CRAMP APPARATUS.

Price..... \$6 00 ||

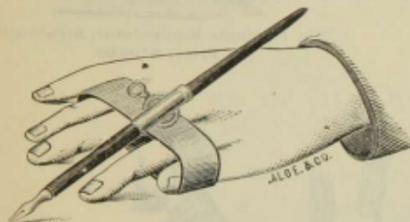
This instrument consists of two rings for the index finger and a half ring, properly distanced from the others, to rest the thumb. These are fixed to a spring slide, into which a common penholder can be easily adjusted. This is a somewhat simpler apparatus than the majority shown for this purpose, and answers very well in slight cases.



10540.

10541. NUSSBAUM'S BRACELET FOR WRITERS' CRAMP.

Price \$6 00 ||



10541.

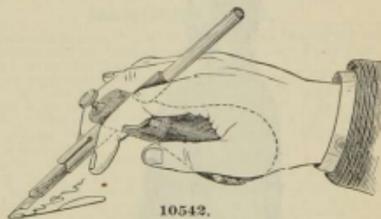
Prof. V. Nussbaum, of Munich, deems writers' cramp to be caused by the pathologically changed antagonism of the muscles in which there is always present spastic contraction of the flexors and adductors along with debility of the extensors and abductors. He constructed a penholder which is to be conducted by means of the extensors and abductors instead of the flexors and adductors. In this manner cramp is not only avoided, but the very act of writing becomes the remedy for the removal of the evil. The Bracelet consists of an obliquely oval ring, to which a penholder is fastened in such a position that the pen will easily touch the writing paper when the hand is rested upon the desk. The thumb and first three fingers are put into the ring, the thumb but little, the third finger to near the metacarpal bone; the fourth finger is left out. By

extending and spreading the fingers inside of the ring it is held fast, but drops off as soon as the fingers are flexed. By means of these bracelets the proper gymnastic exercises are performed to overcome the debility and to restore the antagonism of the muscles. The apparatus not only enables the patient to do his usual writing, but, according to Nussbaum, the more he writes the sooner will a cure of his case be brought about. The rings are made of hard-rubber and are of four different sizes.

10542. VELPEAU'S WRITERS' CRAMP APPARATUS.

Price..... \$10 00 ||

There are many devices for this purpose, of which the above is one of the simplest and most effective. It consists of an oblong ball made of wood or hard-rubber, to be grasped by the hand, keeping it in a proper position. To this are attached a couple of half rings, serving as rests for the index and middle fingers. A penholder passes through the neck of the ball at a convenient place near the extremity, which can be adjusted and made firm by a thumb-screw. Thus a person affected with writers' cramp may be effectually treated without being necessitated to leave off writing.

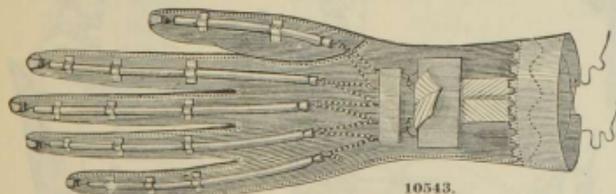


10542.

10543. GLOVE FOR PARALYSIS OF THE HAND AND FINGERS.

Price \$20 00 to \$30 00 ||

This apparatus, made of strong yet pliable material, reaches about two inches above the wrist, and is arranged to lace snugly to prevent displacement. Five India-rubber cords, acting as artificial extensors, are distributed along the back of the fingers and thumb. The ends of these cords are provided with hooks which



10543.

take hold of loops at the extremities of the fingers and thumb, and of chains connected to straps at the wrist. These artificial muscles act independently one of the other, and their strength can be regulated by hooking them to the chains so as to make them more or less tense. They are passed through loops to prevent their slipping out of place.

DESCRIPTION AND MEASUREMENTS REQUIRED.

See Diagram on Page 827.

1. Right or left hand?
2. Lay the hand on a sheet of paper and trace the outlines with pencil, as far as the glove is to reach.
3. Circumference of the wrist (*O*).
4. Circumference of the hand anterior to the thumb (*P*).
5. Circumference of the forearm above wrist (*N*).

MECHANICO-THERAPEUTIC.

MECHANICAL MASSAGE.

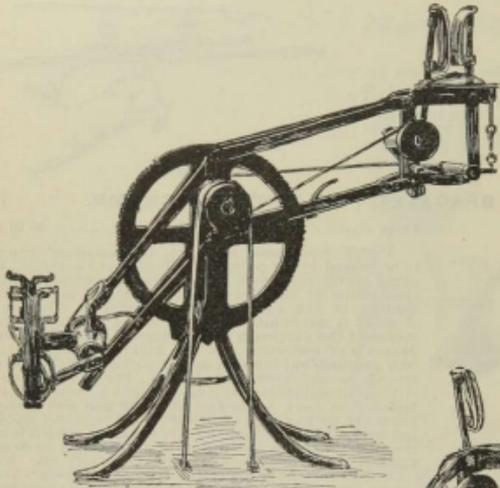
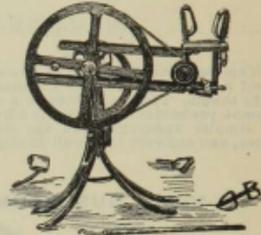
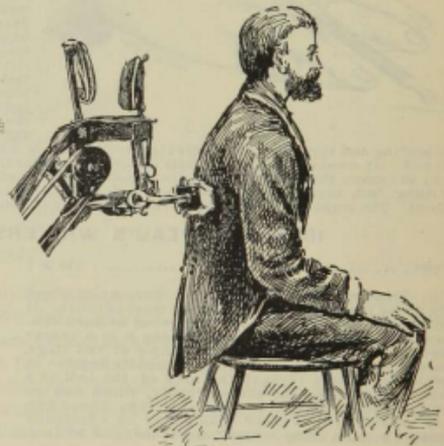
DR. GEO. H. TAYLOR'S APPARATUS FOR MECHANICAL MASSAGE AND
OTHER REMEDIAL PURPOSES.Fig. VI. Double Manipulator, Style
"D." Price, \$165.00.Fig. I. Single Manipulator, Style "A."
Price, \$100.00.

Fig. II. Back Rubbing.



Fig. III. Leg Rubbing.



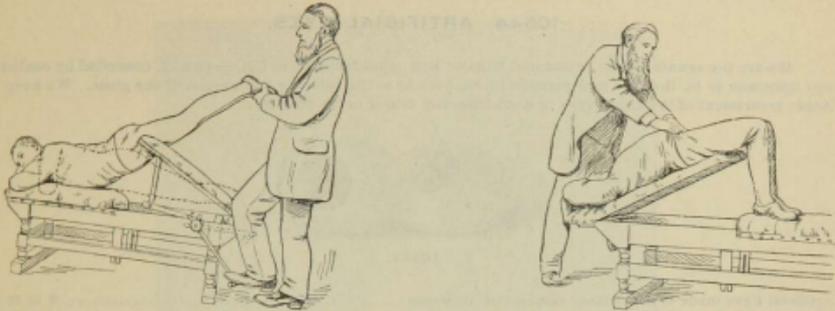
Fig. IV. Foot Shaker.



Fig. V. Hand Shaker.

MECHANICO-THERAPEUTIC.
MECHANICAL MASSAGE.

DR. GEO. H. TAYLOR'S APPARATUS FOR MECHANICAL MASSAGE AND OTHER REMEDIAL PURPOSES.



Figs. VIII. and IX. Postural Couch. Price, \$85.00.

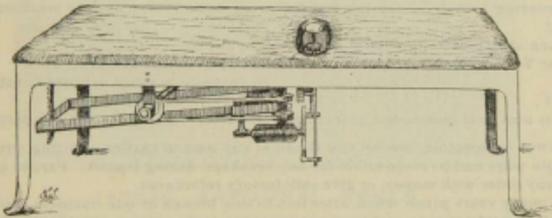


Fig. VII. Direct Kneader. Price, \$85.00.

MANIPULATORS.

These are machines for giving rapid mechanical massage, at the rate of 1,500 changes of motion per minute, to any part of the body at will.

Fig. I. represents a single Manipulator, Style A, showing a side view of the machine as a whole and, also its different attachments. It can be operated by hand or by any light mechanical power. Figs. II., III., IV. and V. show various forms of its application for different purposes and effects.

Fig. VI. shows one form of a double Manipulator, Style D, intended for use in hospitals, sanitariums and institutions. Each end has a working part, and two or more patients can be treated by it at the same time. It has all of the attachments belonging to Style A. It requires some form of mechanical power to operate it.

APPARATUS FOR SLOW MECHANICAL MASSAGE OR KNEADING.

Fig. VII. shows one of several forms of mechanical kneading. Two wooden heads, suitable for contact with the abdomen, are made to act with a slow, alternating, vertical motion through an opening in the top of a well upholstered couch upon which the patient lies face downward. The force with which the impinging heads act upon any portion of the overlying abdomen is under the direct control of the patient. The process is not at all fatiguing, and may be continued *ad libitum*.

THE POSTURAL COUCH, OR "LIFTER."

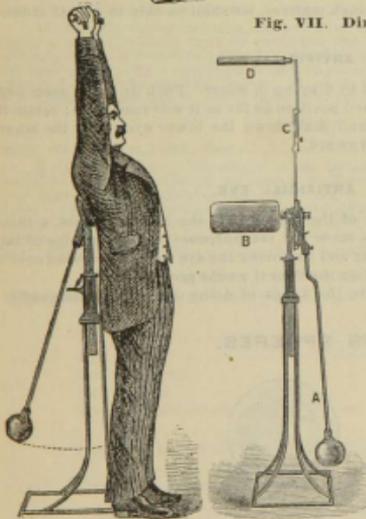
By this apparatus the effects of the "knee-chest" position can be so greatly intensified that no form of uterine displacement can fail to be rectified by it. It has two separate and distinct modes of action, which are illustrated by Figs. VIII and IX.

THE CHEST DEVELOPER OR "BENDER."

This apparatus transfers the motion of a swinging pendulum to the arms, causing expansion of the chest and the development of its muscles, as a whole or those of any contracted or defective part. The abdominal muscles may be subjected to similar action and its effects extend even to the contents of the pelvis. See Figs. X. and XI.

For a detailed description of the machines here shown and of all of his other apparatus, see complete illustrated catalogue and price list (furnished by us) of the proprietors and manufacturers, The Improved Movement Cure Institute, 71 East 59th Street, New York.

A. S. ALOE COMPANY, St. Louis, Selling Agents.



Figs. X. and XI. Chest Developer. Price, \$60.00.

PROSTHESIS.

PROTHETIC APPARATUS.

10544. ARTIFICIAL EYES.

We are the agents for the celebrated Mueller Eye, manufactured in Uri, Germany, conceded by oculists and opticians to be the best now manufactured, both as to the coloring and temper of the glass. We keep a larger assortment of the above eyes in stock than any dealer in the country.



10544.

Artificial Eyes made to order from samples or drawings \$ 15 00 §
 " " taken from stock..... 6 00 §

Physicians ordering eyes, by observing the following directions, will save much unnecessary trouble:

Right or Left Eye ?	Color ?
Is Eye-ball Shrunken or Removed ?	Size ?
Is Sclerotic Clear or Yellowish ?	Has an Artificial Eye been worn ?
Diameter of Iris ?	Distance from inner to outer Canthus ?
Diameter of Pupil ?	

If an old eye is sent in to match, tell us if it was satisfactory, and if not, what difference is required.

We will send out on selection, one or two dozen at any time to parties ordering, provided they will pay express charges both ways and be responsible for any breakage during transit. Parties ordering for the first time must accompany order with money, or give satisfactory references.

We have for many years given much attention to this branch of our business, and feel confident that with our large stock of artificial eyes, and long experience in such matters, we shall be able to fill all orders satisfactorily.

METHOD OF INSERTING THE ARTIFICIAL EYE.

Hold the eye between the forefinger and thumb; wet it by dipping in water. Push its broad outer end under the upper eyelid, and slide it upward toward its destined position as far as it will readily go; retain it there with the forefinger, and with the finger of the other hand draw down the lower eyelid till the lower edge slips in. The insertion will be facilitated by looking downward.

METHOD OF REMOVING THE ARTIFICIAL EYE.

Depress the lower eyelid with the finger; pass the edge of the thumb-nail, the head of a pin, a little hook or any small, blunt instrument (a neat little spatula is made for the purpose), under the edge of the eye, lift it forward and let it slip out. It is well when inserting and removing the eye to hold the head over a bed or soft cushion, because if it should accidentally slip or fall on the floor it would probably break.

All persons, children especially, will very readily acquire the knack of doing this quickly and readily.

10545. MULES' VITREOUS SPHERES.



10545.

These Glass Spheres, when used in Mules' operation, give a proper support to the artificial eye, adding greatly to the movement of the same, so that the disfigurement is reduced to a minimum.

As a recommendation for the use of these Spheres, it may be stated that though hollow and made of thin glass, and consequently very light, their strength is such as to resist a violent concussion on a hard-wood floor, so that no fear may be entertained of an accidental breakage while being worn.

10545. Mules' Vitreous Spheres, price for set of three \$ 0 45 §

(See article by Dr. John Morgan in "Archives of Ophthalmology," Vol. XX., No. 1.)

PROSTHESIS.
PROTHETIC APPARATUS.
ARTIFICIAL EARS AND NOSES.



10546. ARTIFICIAL NOSES.

Prices, according to finish, from..... \$75 00 to \$150 00 §

After much experimenting, an artificial nose, made of thin silver, shaped to conform to the rules of beauty and, at the same time, to resemble the lost member as nearly as possible, has been found the most satisfactory. It is accurately fitted to the skin, covering the remaining part of the nose as well as the opening. It is held in place by a spectacle frame superiorly, while a pair of springs, attached to its base, enter the fossa and secure its position below. It can be worn with ease, is very light and, if nicely fitted, will hardly show points of attachment, being painted to correspond to the tint of the face.

10547. ARTIFICIAL EARS.

Prices, according to finish, from..... \$50 00 to \$125 00 §

An article, having the shape of the natural external ear, of gutta-percha or soft-rubber, colored to resemble nature, is attached by clasps or otherwise to the remnants of the ear lost by disease or accident. It is made in the following manner: first, a plaster-of-Paris cast of the sound ear is taken, then the model is reversed and a metal mold formed, into which plastic India rubber is cast and, finally, baked by the regular vulcanizing process; it is then colored by an artist to match the complexion of the wearer. The process is a slow one, requires from two to four weeks time and the presence of the patient for part of the time. Full particulars will be given on application.

DIRECTIONS FOR ORDERING ARTIFICIAL NOSES, EARS, ETC.

Send photograph of face, front and side view. Also, if possible, one taken before the deformity existed.

Name

Residence

Age Color of Eyes

Color of Hair

Complexion

Style of Nose before being deformed

Length of time deformity existed and cause

Have a cast made of the face in plaster-of-Paris

CAREFULLY FOLLOW THESE DIRECTIONS FOR MAKING MOULD OF FACE.

Use very fine plaster, same as used by dentists; anoint the face with vaseline, using plenty where there is hair and also over the eyes, having them closed. Mix the plaster by stirring it in the water, adding enough to make it the consistency of cream. Paint it over the face carefully, covering the eyes last. A large camel's hair brush should be used. When the plaster begins to set, finish the application with a knife. Put a little cotton in the nostrils but not enough to change the shape by pressing the soft parts. The mouth should be kept open. Make the mould not less than one half inch thick. The patient should lay on the back or side. It is not necessary to cast below the mouth, but all the face above should be taken. A little common salt or sulphate of potash dissolved in the water will make the plaster set quickly. If the mould is fractured mark pieces. Do not make a cast but send the mould. There should not be any fractures where the deformity is. The patient can assist in removing the mould by working the muscles and drawing the soft parts away.

Correspondence solicited.

PROSTHESIS.

PROTHETIC APPARATUS.

ARTIFICIAL LIMBS.

There is no department in the manufacture of surgical appliances requiring so much skill and science as that of making artificial limbs; and while it is impossible to manufacture those that are equal to natural ones, yet so far has science advanced in this direction that we can now offer to the maimed, artificial legs that not only possess a natural motion combined with ease and comfort in walking but a degree of strength, elasticity and lightness never before attained. We can give to the wearer not only a reasonably graceful step, but a perfect form, and a leg that for reliance, stability, firmness and durability has no superior.

Our leg is constructed upon new and improved designs that commend themselves to all who have examined it, and though we believe it to be the best one in the market, and consequently prefer to make it to any other, yet we are prepared to manufacture almost any other style of leg that our patrons may select, realizing, as we do, that it is the purchaser who is to wear it, and that to please him must be our chief aim.

It should always be borne in mind that artificial limbs are not like ordinary garments to be worn only for a season, and altered as the fashions change, but are designed for permanent use during the remainder of the patient's life. In choosing artificial limbs, therefore, only such as have stood the test of time, are of the best construction, most easy of adaptation, most durable and most conducive to the comfort of the wearer should be selected, for such only will prove to be the cheapest in the end.

In the following description of artificial limbs, we have confined ourselves to the relation of merely such matters as must necessarily concern all who desire to avail themselves of the very best and most approved inventions.

The greatest difficulty experienced in the invention of artificial legs has been in the ankle-joint and foot, which in nature is very complicated but proportionately stronger than other parts of the body, and has the most laborious work of any part of the whole body, and unless we give careful attention to this important particular point, we are apt to overlook the great strength and powerful movements required in an artificial ankle-joint.

In addition to strength and durability there has been another great desire of all manufacturers—that of producing a life-like ankle movement. This has been sought for very extensively and experimented on by nearly all inventors, but if there is an exceptional one, who has not discovered its necessity, it is merely because he has not advanced to that stage of the business.

A limb which requires frequent repairing is not a very desirable article, even for those who can meet the expense without feeling the drain on their purse; to them it is a loss of time, a tax on their anxieties.

Too often those using artificial limbs are themselves to blame for the annoyance and discomfort they experience. From motives of false economy they are too easily swayed in favor of a cheap limb, simply because it costs a little less money at first, when they should consider they are purchasing an article which of all others should be made in the most thorough manner and of the best material. In view of these facts, the object of a few dollars, as between the works of a good, responsible maker and that of an irresponsible one, should not for one moment be entertained, for it is a well-known fact that unless an artificial limb is well made and properly adjusted it cannot be worn with any degree of comfort. In ordering a limb, remember that the best is always the cheapest.

It has long been known and proven by practical experience as well as by scientific investigation, that for comfort under the most trying circumstances, for general usefulness and durability, no substitute for the natural leg is so perfect or desirable as the Celebrated Foster Leg.

My efforts to improve, to meet the requirements of even the most skeptical or exacting in an artificial leg, have been indefatigable, and as a result of my labor, I offer you the McCullough Improved Foster Leg very much improved and more desirable than ever. This is the only leg manufactured that embraces all latest known improvements. The ankle-joint is a unique invention and accomplishes the great object which leg-makers have hitherto sought for in vain, viz.: it admits of motion like the natural ankle-joint, and thereby allows the artificial foot to accommodate itself to the varied irregularities of the surface the same as the natural foot; this enables those who wear it to walk with so much ease and comfort that in many cases it

PROSTHESIS.

PROTHETIC APPARATUS.

ARTIFICIAL LIMBS.

cannot be detected. Furthermore, this joint is free from noise or rattle, is highly elastic and natural in movement, easily regulated and kept in order, and is free from any quick flapping movement of the foot at every step, common to so many kinds of legs.

The knee-joint, like the ankle-joint, can be easily adjusted or tightened in case of wear, which is a great advantage over others; the springs, which are rubber, work by compression, and give a more elastic and life-like movement than is found in any other leg; all the cords I use can be easily adjusted to suit the walking gait, height of heel, to tighten or loosen cords or make springs stronger or more elastic, in fact, to control fully, the most perfect leg ever invented.

C. W. MCCULLOUGH,

Inventor and Maker for A. S. Aloe Company.

SPECIAL INSTRUCTIONS AND NOTICES.

If the following instructions are properly observed, it will save asking many questions, and much time in writing answers.

HOW TO PREPARE THE STUMP FOR AN ARTIFICIAL LIMB.

This is a subject that patients, and as a general rule surgeons, do not fully understand. Most of them think that when a limb is amputated and the stump healed, that is all that is to be done until an artificial limb is obtained. But such is not the case, however, for the fleshy part of the stump should be reduced in size as much as possible, for soon after the patient begins to wear an artificial leg the stump will commence to shrink, and keep shrinking until several socks have to be worn to fill up the socket. A large, soft, flabby and fleshy stump will shrink more than a small one, and a free and perfect action of the stump as far as possible should be obtained. A joint should never be allowed to become flexed or semi-flexed if it can be avoided. As soon as the stump is healed a non-elastic sock, made to fit tightly, should be worn, or it should be bandaged in order to solidify and bring it to its proper form. It should also be exercised as much as possible, to keep the joints working freely until a limb is applied. In cases where a stump is conical, it is sometimes difficult to keep a sock or bandage on it. In such cases an apparatus made to lace up, like a corset, can be made effectual. A stump should not be compressed hard enough to stop a free circulation, or to cause any uncomfortable sensation, as a continual gradual compression will reduce it fast enough.

HOW TO ORDER A LIMB.

Whenever a patient wishes a limb he should write, stating the case minutely, when and where amputated, whether the joints are flexible or not, in fact every particular. A blank with illustrations and directions will be sent for measurement, which is to be filled up and returned to us, when it shall receive our prompt attention.

The blank measure and instructions are so plain that any one who can read figures on a rule can fill it up correctly; all the tools necessary are a rule, a tape-line and a pair of callipers. Most every one has a rule, or something that has inches marked on it, and if inconvenient to get a tape-line, a narrow strip of paper about the width of a tape-line can be used, and get the number of inches on a rule. If there are no callipers to be had, the diameters may be dispensed with, unless it is to be fitted by measure, when special instructions will be sent, but it is desirable to have the measures as complete as possible, especially the height from floor to top of knee when sitting, and the distance from the end of the stump to floor when standing, and the

PROSTHESIS.

PROTHETIC APPARATUS.

ARTIFICIAL LIMBS.

lateral diameter of the knee in a sitting position, in cases of thigh amputations, which is quite essential to have in all cases. This can be taken with a rule by using a little precaution, but callipers are preferable, then if there were a mistake we can generally detect it before commencing, but if not discovered until the limb is ready to fit, we make the necessary alterations free of charge, so that no one need fear to send the measure for fear the limb will be made wrong at their expense. The limb will be commenced in its turn, and at the proper time the patient will be notified to come and have it fitted, which, to be properly done, will require the patient's presence from one to three days, according to the condition of the stump. When a leg is to be fitted, bear in mind to bring a shoe or boot such as you wish to wear (the lighter the better), that the foot may be made to correspond with the natural one.

If the patient is a stranger in the city, and the physician does not accompany him, it is always advisable that he so advise us, and if desired we will meet him at the station and see that he is furnished with a proper conveyance to a good hotel.

**ARTIFICIAL LIMBS MADE AND FITTED FROM MEASUREMENTS
WITHOUT THE PRESENCE OF THE PATIENT.**

It could hardly be expected that persons living in foreign countries, or in our own distant States and Territories, would willingly subject themselves to the fatigue of a wearisome journey in order to get an artificial limb. Such journeys not only incur expense but great sacrifice of time, accompanied with more or less inconvenience. When these facts are taken into consideration the cripple is disposed to forego the purchase of a good leg and buy some make-shift, obtainable near at hand, or else resign himself to crutches the remainder of his life.

We are disposed to encourage fitting from measures, and in order to relieve the ordering party of any responsibility we assume all risks of fit and adaptability, the understanding being, that should a misfit result we will reconstruct the limb or make a new one after new and more accurate measurements; this we do at our own expense, looking to the ordering party to pay express charges only.

Should cases arise in which two or more attempts at fitting from measurements prove unsuccessful, due to peculiarities or irregularities in the stump, incapable of intelligent communication either by measurements, profiles or plaster casts, then we reserve the privilege of asking the presence of the patient, and will reconstruct the limb to his entire satisfaction. We desire it to be understood, however, that for our own convenience it is preferable to have the patient with us for fitting, and if the patient chooses to come, we will promise to give him our earliest and undivided attention immediately upon his arrival. Persons ordering limbs to be fitted without their presence, are required to take great care in measuring.

Suitable blanks, with full instructions, are always sent for that purpose. When errors occur, they are usually discovered by a thorough examination before the limb is made, and new blanks returned for new and more correct measures and drafts. The system is such that one can not well make mistakes if he will adhere to the directions that are plainly given upon the blank.

There are some cases where amputations are performed at the joints, where plaster casts are needed to insure accuracy, but all usual amputations are treated successfully from measurements only.

Artificial arms for any ordinary amputation can be properly fitted by measure, if correctly taken, inasmuch as they do not assist in carrying the body; but in all cases where the patient does not visit us it is best that the physician in charge furnish us a plaster-of-Paris cast of stump.

PROSTHESIS.

PROTHETIC APPARATUS.

ARTIFICIAL LIMBS.

TERMS.

At least one-half the price of a limb must be paid in advance when the order is placed, and the balance when the limb is completed. As we guarantee to deliver a perfectly fitting limb, and to warrant it against poor material or inferior workmanship for five years, customers take no risks in paying in advance, while they protect us against loss.

PRICES.

10548.	Artificial Leg, McCullough's, Improved	\$100 00
10549.	" " " "	100 00
10550.	" " " "	85 00
10551.	" " " "	83 00
10552.	" " " "	65 00
10553.	Artificial Peg Leg.....	15 00
10554.	Artificial Arm, McCullough's, Best, Movable Fingers	125 00
10555.	" " " " " " " " for Shoulder Amputation.....	150 00
10556.	" " " " with Adjustable Clamp	85 00
10557.	" " " " Movable Fingers	65 00
10558.	" " " " with Clamp, Hook and Ring	50 00
10559.	" " " " with Elbow-Joint and Movable Fingers	100 00
10560.	" " " " with Fixed Elbow	30 00
10563.	" " " " with Plain Hook.....	50 00
10568.	Artificial Hand, McCullough's, Movable Fingers and Thumb.....	65 00
10569.	" " " " Immovable Fingers.....	45 00
10570.	" " " " with Wrist-Joint, Movable Fingers and Thumb	45 00

Appliances charged extra.

GUARANTEE.

Our legs are made from the very best of stock, and are fully warranted for five years, and should they break or wear out inside of that time on account of poor material or inferior workmanship, we will repair them free of charge.

STUMP SOCKS.

With each leg purchased from us we furnish a well fitting stump sock that protects the limb and keeps it from chafing. These stump socks are knit from the best of fine woolen yarn, and are made to cover the entire stump from its lower end up to the thigh. We keep a supply of these on hand, and can always furnish them on short notice (for prices, see page 901). These stump socks are also well adapted to wear on the stump as soon as it is healed, in order to keep it warm, and to assist in compressing and strengthening it. Great care should be exercised in the treatment of the stump after it has healed and before a leg is applied. The stump and joints should be moved vigorously and often, in order to preserve a natural and easy motion and to prevent muscular contraction. Nothing but exercise makes and keeps our joints and muscles strong and flexible, and these are essential in using a leg to advantage. This applies equally as well to children as to adults, for no child of five years of age and upwards should be allowed to go a single year without an artificial limb. Our limbs are so constructed that they can be lengthened at a slight expense and the even and regular development of both limbs more than repays the expense.

PROSTHESIS.
PROTHETIC APPARATUS.
ARTIFICIAL LIMBS.

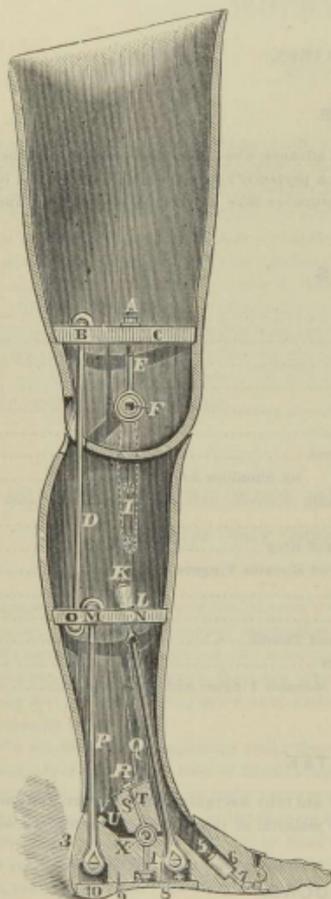


Fig. I. Showing an Artificial Limb for an Amputation above the Knee.

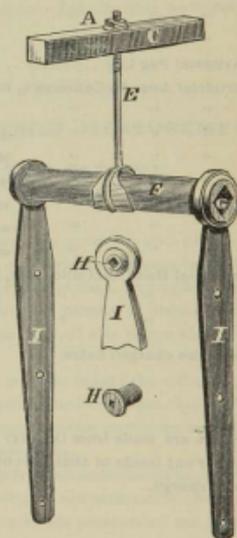


Fig. II.

EXPLANATION OF INTERIOR MECHANISM.

Fig. I. shows an interior view of our "McCullough Artificial Leg" when made for an amputation at the thigh. As will be seen by the cut, the leg is graceful in form and the joints fit closely together, so that the clothing is not in danger of being drawn into it and cut, when bending the knee, as is often the case with poorly constructed ones. The upper portion of the thigh socket is shaped and fitted to the stump so accurately that we obtain a bearing upon all sides alike, thus distributing the weight of the body over so large a surface that it produces no pain or discomfort to the wearer.

In cases where the end of the stump is very tender, we enlarge the inner diameter of the leg so that it does not even touch the tender portion, or if it is firm enough to carry a portion of the weight, we divide it proportionately between the end and sides of the stump, in every case adopting that plan which is best adapted to the ease and comfort of the wearer.

PROSTHESIS.
PROTHETIC APPARATUS.
ARTIFICIAL LIMBS.

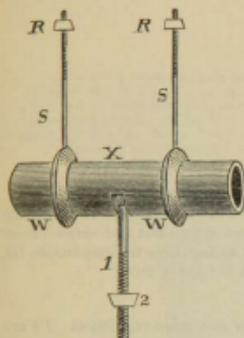


Fig. III.

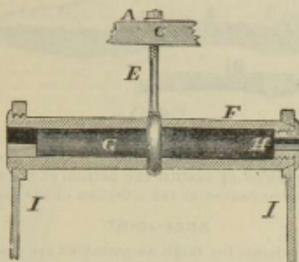


Fig. V.

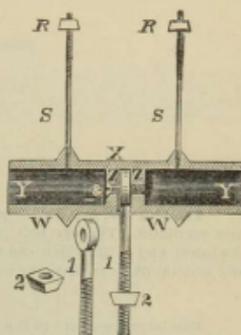


Fig. VI.

The upper rim of our thigh socket is made quite thin, so that we avoid producing the unsightly looking ridge at this point that is so commonly seen on those wearing the ordinary legs, and in order to prevent this thin rim from splitting, we bind it firmly with an extra thickness of heavy raw-hide.

Our legs are all made from thoroughly seasoned English willow, as this has been found to possess great strength, combined with lightness and durability. In order to give our legs additional strength, and to prevent their splitting or being damaged by water, we cover them with calfskin raw-hide, so tightly and neatly drawn on as to resemble the natural limb. This raw-hide is then covered with a flesh colored water-proof cement, which forms a hard, glossy surface, so they can be wiped off with a damp cloth without injury to the leg.

Our artificial limbs are noted for their great strength when compared with their weight, for our best limbs will easily sustain a weight of from 400 to 500 pounds, and yet when finished they weigh only from four to five and one-half pounds each.

Fig. I is a vertical sectional view of our artificial leg, showing very clearly every part of the interior arrangement forming the operating parts of a leg for a thigh amputation.

Fig. II shows the construction of the knee-joint, and also the arrangement to compensate for any amount of wear that may ever occur, whereby all tendency to rattle or clatter is entirely done away with by simply turning one nut (A).

Fig. III is a view of the apparatus for connecting the foot to the leg and forming the ankle-joint.

Fig. IV. (page 890) shows the foot detached, to more fully and clearly show the simplicity, durability and superiority of the ankle-joint.

Figs. V. and VI. are longitudinal sections of the devices forming the knee and ankle joint, illustrated in this way for the purpose of having the explanations more distinctly understood.

TOE-JOINT.

The toe-joint (see Figs. I. and IV.) is articulated in the usual manner as other artificial limbs, the motion of which is operated by the spring (6) resting in an opening in the foot, and the action of these are regulated to suit the wearer by simply turning the nut (5) over the spring (6) on the end of the tendon (7) which passes down through the spring (6) and is attached permanently to the toe piece.

ANKLE-JOINT.

The Foster ankle-joint is constructed very different from any other in any artificial leg, and since it was patented and brought into general use has been widely imitated.

X (see Figs. III. and VI.) is a cylindrical journal made of steel, turned and polished perfectly smooth, of suitable length and size, with two flanges (W W), the object of which is to keep the foot and leg in their relative positions laterally. It is bored out hollow (Y Y, Fig. VI.), like a cylinder, which makes it very light, yet just as strong and durable as though it were solid and heavier. S S are two bolts screwed and soldered into the two flanges (W W) around the journal (X), provided with screws and nuts (R R) on the upper ends to hold the journal permanently in its proper place. By this method the journal (X) is held closely to the ankle or lower part of the leg, and the articulation is provided for in the foot portion. The interior of the journal (X) is provided with two bearings (Z Z) perfectly fitted and brazed in, near the center joint, far enough apart to admit of an eye-bolt (J) which the journal (X) receives through a slot cut in the bottom side, wide enough to allow it to vibrate backward and forward to give the foot its proper motion. ϕ , Fig. VI. shows a small bolt (with a screw on the end) which passes through the upper end of the eye-bolt (J), and is screwed firmly into the bearings (Z Z) in the journal (X), which are all to be seen in Fig. VI.

PROSTHESIS.
PROTHETIC APPARATUS.
ARTIFICIAL LIMBS.

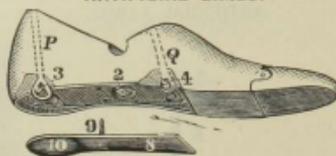


Fig. IV.

The foot (see Fig. IV.) is provided with a suitable bearing which receives the journal (*X*) on which the foot oscillates. The eye-bolt (*I*) passes down through the foot and is provided with a nut and screw (*2*) on the lower end of it, which can be screwed up against the bottom of the foot at any time to compensate for any amount of wear that may ever occur caused by the vibration of the foot in the ankle-joint.

KNEE-JOINT.

The improvements in the knee-joints for thigh amputations are greater and more important. *II* are two light steel straps or plates (see Figs. II. and V.) riveted firmly to the upper end of the interior of leg (see *J* and dotted lines in Fig. I.) The upper ends are enlarged and provided with suitable apertures to receive the knee axle, which is a hollow or tubular bolt (see *G*, Figs. II. and V.) provided with a flanged head, and a suitable thread immediately adjoining said head, which fits and screws into the female screw which is provided in one of the plates (*J*). In this end of the bolt the aperture is made square (see *G*, Fig. II) to insert a key to screw the head of the bolt (*F*) up firmly to the strap (*J*). The opposite end of the bolt (*F*) is made slightly conical upon the outside periphery, and is fitted into a conical opening made in the head of the other strap (*J*) suitable to receive it (see Fig. V.) The interior of this end of the bolt (*F*) is tapped out and fitted with a short, hollow, flanged head screw bolt, provided with a square aperture (see *H*, Figs. II. and V.) into which a key may be inserted for the purpose of tightening up said bolt (*H*), and thereby forcing, when required, the head of the plate or strap (*J*) more closely upon the conical portion of the end of the bolt (*F*), thereby keeping it always firm and in its proper place. This bolt (*F*), after being secured to the straps *II* (see Fig. II.) as described, which are riveted firmly to the leg below the knee, passes through the lower part of the thigh portion where the point of junction forms the knee-joint and connects the two parts together, as seen in Figure I. *E* is an eye-bolt or tightening lever, the eye of which is broad and provided with proper bushing to prevent wear as much as possible, and after receiving the knee bolt (see Figs. I., II. and V.), passes upward through a cross-piece or bearing (*C*, as seen in Fig. I.), and is provided with a proper screw and nut (*A*), by means of which the tension upon the hollow knee-bolt (*F*) may be adjusted, to compensate for any wear in the bearing that may ever occur, by simply turning the nut (*A*), thereby entirely doing away with any tendency to rattle, caused by a worn or loose joint (which is a characteristic of all other artificial limbs now in use), and at the same time secure perfect flexibility.

D (see Fig. I.) is a tendon, slightly elastic, which, made of silk or the best kind of linen thread covered with buck or chamois skin, arrests the motion of the knee gently in walking, like the ligaments of the natural knee-joint, thus preventing all disagreeable sounds and jarring sensations caused by the solid parts coming in contact to limit the motion, as in many legs now in use, and giving it the requisite elasticity.

P (see Fig. I.) is the Tendon Achilles, or heel tendon (made like the knee tendon *D*), which perfectly imitates the natural one, and its operation and action pertains to and relates only to the ankle and foot as in the natural limb, giving great elasticity to the step, and an easy and natural motion.

Q (see Fig. I.) is a tendon with a screw and nut (*K*) on the upper end, which passes down through the spring (*L*) and cross-bearing (*N*) which the spring sets on, and is attached to the foot in front of the turning point in the ankle-joint, which imparts the requisite motion and raises the foot sufficiently high to pass all obstructions in taking the step. By this method the tension of the cord on the spring to regulate the motion of the foot can be adjusted to suit the wearer by simply turning the nut (*K*) over the spring (*L*). For an amputation below the knee, the socket is perfectly fitted to the stump up to or near the knee-joint, which is composed of material best adapted to each particular case. A pair of steel joints (Fig. 10551, page 893), far superior to those which have been so highly extolled by some manufacturers, connect the part of the artificial leg below the knee with a perfect fitting leather socket, which is placed around the thigh just above the knee, and takes the greater portion of the weight of the patient on the thigh, thus gently relieving the pressure on the stump below the knee. Patients with short or tender stumps will readily see the usefulness of this arrangement; and we wish here to call particular attention to the manner of lacing used on the upper socket of our artificial limbs. Instead of the old-fashioned way of putting the strings through eyelet holes, we use hooks; they are attached to the upper socket, as seen in Fig. 10551, so that when it is laced the string and hooks are smoother and more even with the leather, so that anything lays over them more evenly and smoothly than with the old-fashioned way of lacing with eyelets. It will be seen that when a string is once laced up and tied to suit the wearer, it need not be untied, but simply unhooked and re-hooked as occasion requires. With this kind of fastening a leg can be put on or taken off in the dark as well and as quick as a sock or a boot on the natural foot. This will be highly appreciated (especially in dark and cold weather) by those who have worn artificial legs with the old-fashioned way of fastening.

DIRECTIONS FOR ORDERING ON PAGE 885.

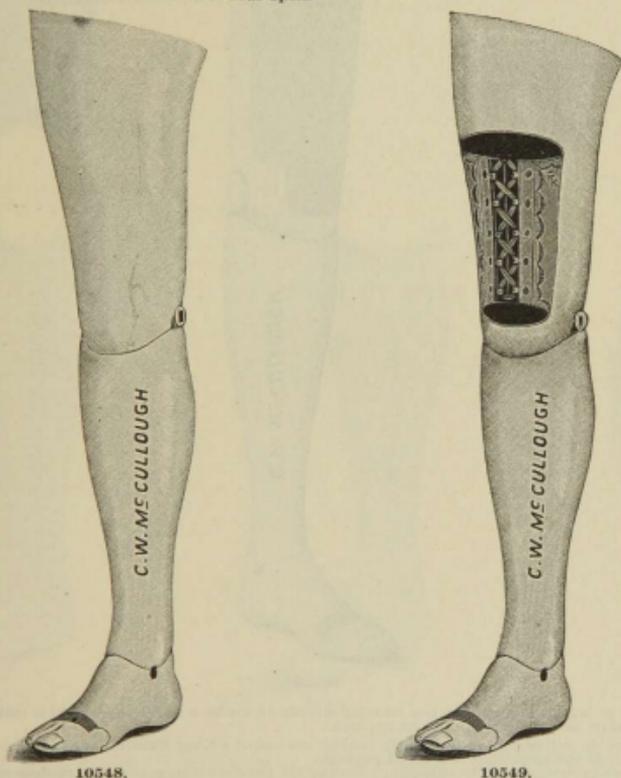
PROSTHESIS.
PROTHETIC APPARATUS.
ARTIFICIAL LIMBS.

LEGS FOR THIGH AMPUTATIONS.

This cut represents a leg designed for an amputation that has been made at any point above the condyles of the femur, or, as usually denominated, for amputation above the knee. The body of the leg is constructed of willow wood, both upper and lower sections. The thigh section is hollowed out to accommodate the stump comfortably; it is then dressed down on the outside until it assumes a comely and natural appearance, or as near the dimensions of the natural leg as possible.

The calf is but a shell of such character as to combine strength and comeliness.

The end of the stump in cases where the femur has in part been amputated is not allowed to come in contact with either the bottom or walls of the socket, except in exceptional cases in which the periosteal covering of the extremity of the femur has been preserved, the tissues ample and non-adherent to the bone, forming a comfortable and safe cushion to bear upon.



LEGS FOR KNEE-JOINT AMPUTATION.

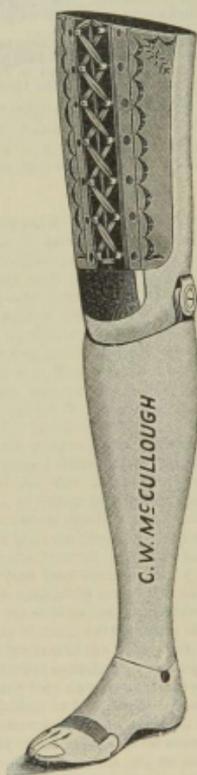
Knee-Joint disarticulations are various; some have the condyles trimmed, others have not, some have non-adherent tissues and others adherent, and as a result some can bear pressure on the end of the stump and others cannot; on account of these various conditions it is necessary to consider carefully each case and treat it accordingly.

Fig. 10549 represents a leg for knee disarticulation, one in which the articular surfaces of the condyles have been trimmed, but the tubercles or side projections untouched, it is seldom possible to bear on the end of such an amputation. The bulbous sides give the stump a greater lateral diameter than just above them. In order to hold the stump firm in the socket and prevent irritation it is necessary to make the fitting so that the socket will compress the stump just above the condyles and at the same time give the condyles absolute freedom from contact.

The Stump is inserted from the top and prevented from entering too far by the upper annular wooden socket coming in contact with the ischium and pelvis; after the stump is inserted and in place the socket is laced tightly and the stump held firmly; heavy shoulder suspension is unnecessary.

DIRECTIONS FOR ORDERING ON PAGE 885.

PROSTHESIS.
 PROTHETIC APPARATUS.
 ARTIFICIAL LIMBS.
KNEE-BEARING ARTIFICIAL LEGS.



10550.

The class of legs denominated Knee-Bearing include all kinds in which the weight is taken on the knee of the stump while the stump is in a flexed position.

Any one of the following conditions will require the use of a Knee-Bearing Leg:

Anchylousis of the knee-joint in a flexed position.

Remediless contraction of the extensors, limiting the knee movement to not more than one-half.

Length of tibia insufficient to be of service in controlling the knee movement of an artificial leg. If there is a possibility of utilizing the stump from the knee down for controlling the knee movements of the artificial leg, advantage should be taken of it.

With inexperienced persons it is sometimes a difficult matter to determine which style of leg should be used, and that certain conditions of the stump make the choice problematic; the conditions above mentioned will, as a general thing, guide one safely.

If the length of the stump is a question of doubt in the selection of the style of leg the following test may be used: Flex the stump and see if the projection from the back of the thigh or the distance from the popliteal space to the end of the tibia is sufficient to afford an opposing surface; one and a half inches are usually sufficient. If the projection is less than that a Knee-Bearing Leg should be selected.

This cut represents a Knee-Bearing Leg. The thigh piece is hollowed to accommodate the stump; the natural knee rests on a cushion; the weight of the wearer bears on the knee; the stump, if very long, protrudes from the back of the socket; the thigh is held firmly in place by a strong lacing.

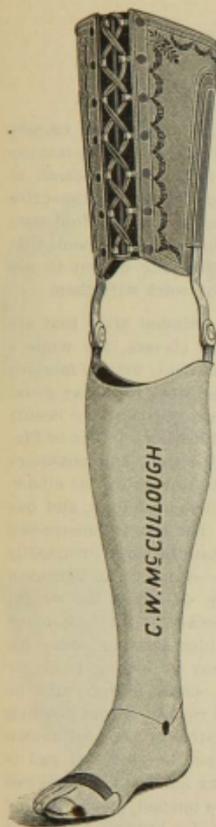
Knee-Bearing Artificial Legs are very comfortable to wear, and with persons who take pride in operating their artificials their movements become quite natural and the results are very flattering; however, it cannot be expected that the knee movement is as sure and natural as when the stump, from the knee down, is utilized in controlling the artificial knee movement.

PROSTHESIS.

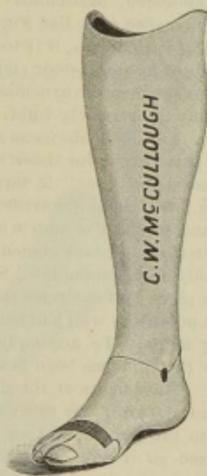
PROTHETIC APPARATUS.

ARTIFICIAL LIMBS.

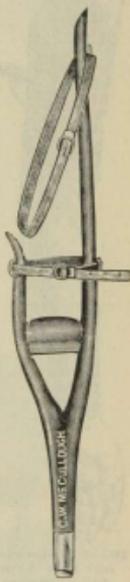
LEGS FOR AMPUTATIONS BELOW THE KNEE.



10551.



10552.



10553.

Any leg designed for an amputation that has been made between the knee and ankle, and in which the stump from the knee down is used in controlling the knee movements of the artificial leg, is included in this class. Any stump with half or more movement of the knee, and with a projection, when bent at right angles, of one and a half inches or more, measured from the popliteal space to the end, can be properly fitted with a leg of this class.

Fig. 10551 represents a leg for amputation below the knee as above described. The leg is made of willow wood hollowed to receive the stump properly and comfortably; it is then dressed down on the outside to as near the shape and size of the natural leg as possible; the leg is then covered with raw-hide to give it strength. The thigh section is made of strong oak-tan russet leather. The knee-joints are made of steel of sufficient strength to stand the wear of years. The interior of the leg, both above and below the knee, has the contour of the stump. The stump is inserted and laced about the thigh sufficiently tight to hold it firmly in place. Weight is carried in part on the thigh and on the anterior, interior and posterior surfaces of the stump just below the knee. In cases of extreme sensitiveness about the stump the weight is carried entirely on the thigh.

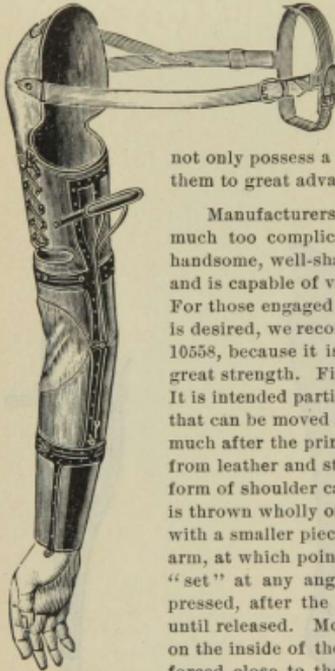
Fig. 10552 represents an artificial leg for amputation below the knee without thigh support. Such can only be worn with long and well-cushioned stumps. If the irregularities of the stump will not hold the leg sufficiently secure, straps are attached, to either pass around the thigh or pass over the shoulder, or both, as may be desired.

Fig. 10553 represents a Peg Leg, the cheapest form of artificial limb. The illustration shows this form of leg so clearly that further explanation or description is unnecessary.

PROSTHESIS.

PROTHETIC APPARATUS.

ARTIFICIAL LIMBS.



10554. Showing our best Arm for amputation above elbow.

In the manufacture of artificial arms we employ the same amount of skill and accuracy as in making artificial legs, and although it is far more difficult to construct an arm that will answer in its respective place as well as a leg, owing to the manifold uses required of it, yet we are making arms and hands that not only possess a life-like appearance, but that enable the wearer to use them to great advantage and perform a vast amount of work with them.

Manufacturers generally are inclined to furnish artificial arms that are much too complicated, particularly for the laboring classes, for while a handsome, well-shaped arm, like Fig. 10554, possesses many natural motions and is capable of varied uses, it is too complicated and weak for heavy work. For those engaged in out-of-door employment, where service and not beauty is desired, we recommend an arm made from steel and leather, similar to Fig. 10558, because it is extremely light, simple in construction, and possesses great strength. Fig. 10554 shows an arm for an amputation above the elbow. It is intended particularly for those who desire a well-shaped limb, and one that can be moved and "set" in various positions. The arm is constructed much after the principle of our artificial legs, and is manufactured principally from leather and steel. The limb is held firmly on the stump by an improved form of shoulder cap, so constructed that in carrying an object the weight is thrown wholly on the shoulder. Strong bands pass across to and connect with a smaller piece that encircles the opposite shoulder, passing under the arm, at which point it is well padded. The elbow may be swung freely or "set" at any angle. To accomplish the latter a small button may be pressed, after the limb has been flexed, when it will remain in that position until released. Movements of the fingers are regulated by the pad shown on the inside of the arm. By pressing the arm against the side this pad is forced close to the arm, operating the fingers of the hand. The hand can be manufactured so it will close by springs and be opened by the pad or vice versa. For business men who wish an appliance for holding papers or documents, we can construct an apparatus similar to that shown in Fig.

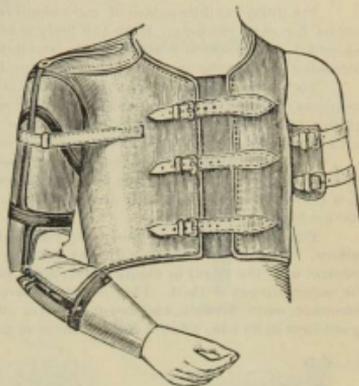
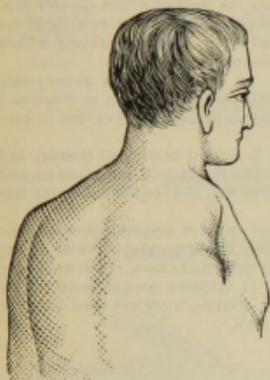
10556, to be operated by the same mechanism as shown in Fig. 10554, or a system of attachments as shown in Fig. 10558 may be used.

We can fit this arm to those who have three inches or more of stump, and provided it contains a healthy degree of force and rigidity, it will enable the wearer to raise his hand to his mouth or forehead and to take his hat from off his head. We can give him perfect control of the elbow joint, so he can throw it backwards or forwards or hold it in any position. We can also make an arm having a fixed position at the elbow, similar to our Fig. 10560. These arms we make very stout so they can be made to do service in carrying heavy loads such as valises, baskets, clothing or any other article that may be hung or suspended from it. The hands can be made to suit the purchaser so that he can carry a valise, cane or umbrella, hold the lines in driving and, in short, use it as a valuable assistant to the sound one.

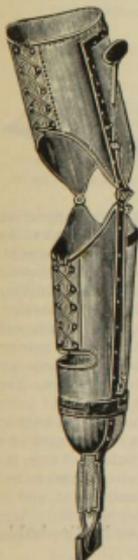
PROTHESIS.

PROTHETIC APPARATUS.

ARTIFICIAL LIMBS.



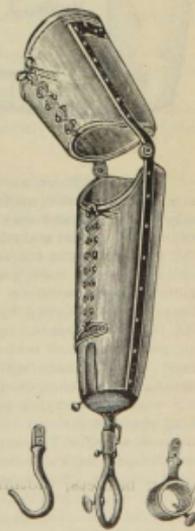
10555. Showing the application of an Arm for Shoulder Amputation.



10556.



10557.



10558.

PROSTHESIS.

PROTHETIC APPARATUS.

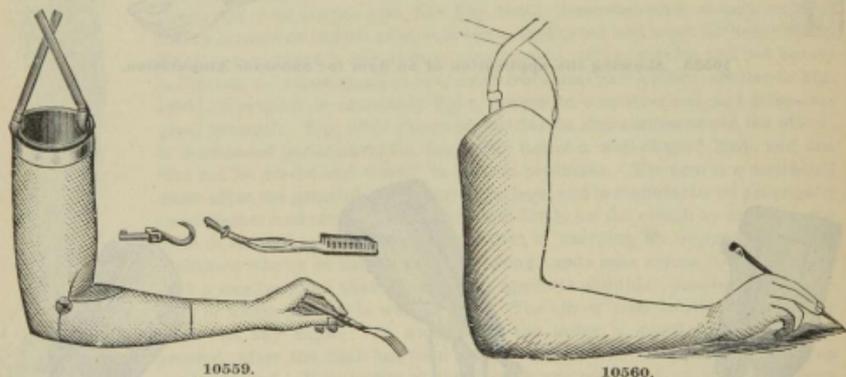
ARTIFICIAL LIMBS.

Fig. 10555 exhibits a case of right shoulder amputation, and illustrates the form of a limb that we construct for such patients. Here the body is encircled with a well-fitting leather jacket, strengthened at the shoulder, and to which is attached the artificial limb, by means of a socket-joint. This illustration is only intended to show the method of applying any form of limb that may be selected.

Fig. 10556 shows a limb for an amputation below the elbow-joint. In these cases, the patient only requires mechanism for controlling the fingers, and this we can supply either as shown here or as illustrated in Fig. 10554. The motive machinery of these is the same, the only difference being in the expense of construction—that shown in Fig. 10556 being the cheaper.

Fig. 10557 illustrates another form of movement for controlling the fingers, it being still cheaper and simpler than Fig. 10556. In this appliance, however, the hand opens when the arm is fully straightened, and it is therefore objectionable to some classes of patients. An apparatus like Fig. 10556 can be used with this device to good advantage.

Fig. 10558 shows one of the many forms of plain arms manufactured for cases of amputations below the elbow. It can be furnished with any pattern of hand, or other contrivances desired. The operator has no control over the finger or clasp movements, but having a natural shoulder joint and elbow, much work may be accomplished with it. This is the pattern we especially recommend to laboring people, because it is stronger, more durable, and lower in price. With a reasonable amount of practice, a patient soon becomes proficient in its use, when it forms a most valuable assistant to the sound limb.



In Fig. 10559 we show an arm for amputation above the elbow. For a person wishing a well appearing arm combined with usefulness, this one will be found very satisfactory. This arm has a catch joint at the elbow, and the hand may be dropped to the side by simply pressing the button at the inner side of the joint. Between the wrist and elbow the arm has a pivot joint so as to give a rotary motion of the hand, thus allowing the wearer to place the hand in any position at will, and will be found valuable in many ways while holding any article, as a book, paper or at any light work. The fingers are made so as to have all joints movable, allowing the closing or opening of the hand, as found necessary. The thumb has movable joints and base, and is governed by a strong spring, so that with the fore-finger flexed, any light article can be held by the thumb against it. In the palm of the hand is arranged a socket into which the extra appliances are slipped, turned half round and firmly held for use. The cut shows the fork in position for use at table. The hook, which is made with a joint, can be utilized in many ways, the value of which is appreciated by those who have worn compensatory apparatus. The hook being concealed in the palm of the hand, can be used by the wearer in carrying packages, a valise, or other articles. The use of the brush, which is mounted on a long shank to prevent the wetting of the hand, is principally that of washing the other hand and arm, the value of which will be apparent to those who have lost an arm. This arm is made of wood or aluminium, and is extremely light and strong. It is recommended for its simplicity of construction and management, and its manifold uses. There are no complicated pulleys and cords to get out of order, and which are usually more theoretical than practical in their uses. The same principles can also be embodied in an arm for amputation below the elbow, except the catch joint at the elbow which would be unnecessary.

Fig. 10560 shows an arm made flexed, with a stiff elbow-joint; it is useful in carrying baskets, pails and other articles.

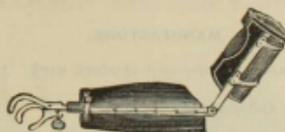
PROSTHESIS.
PROTHETIC APPARATUS.
ARTIFICIAL LIMBS.



10561.



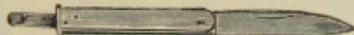
10562.



10563.



10570.



10564.



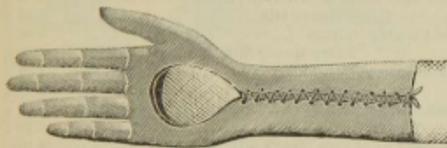
10565.



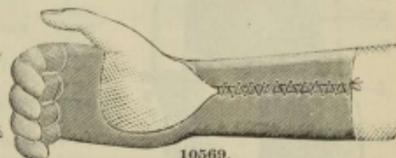
10566.



10567.



10568.



10569.

Fig. 10561 shows a portion of the mechanism for operating the fingers of a hand, while Fig. 10562 shows an external view of the same. In addition to these, we also manufacture hands that are natural in form, but that have no motion.

Fig. 10563 shows an arm with the hand detached, and a device for holding tools and other appliances in their place.

Fig. 10564 shows a knife that can be quickly attached to the wrist in place of the hand. This knife can be folded up and carried in the pocket.

Fig. 10565 shows a fork that can be attached the same as the knife, and which can also be folded up.

Fig. 10566 shows a hair brush which can be attached in the same manner as the knife and fork. We can supply quite a number of articles arranged in this manner for use with artificial arms.

Fig. 10567 shows a style of tool we often make for those who wish some device to assist in general work, where much strength is required. It consists of a kind of clevis, made on a swivel, so it can be turned in any direction.

ARTIFICIAL HANDS.

There are no forms of amputations that present so many difficulties to the instrument maker as those in or about the hand, and none that, as a class, are as unsatisfactory to the patient. These amputations, being unclassified, present all conceivable forms of shape and contour, so that each one requires an apparatus especially designed for its case. In selecting a form of appliance for these patients, we consider three qualities, each with reference to the needs of the patient: First, durability; second, usefulness; and third, symmetry of form. Simplicity is a necessary requisite of durability, while durability is essential in a useful appliance. The three forms of hands here shown are intended only for cases where the amputation has been made below the wrist, and where the latter still retains its mobility. If however, there exists ankylosis of the joint, the fingers may be controlled by a cord and band, passing over the shoulder, or by flexing or extending the elbow.

Fig. 10568 shows an artificial hand with movable joints in both fingers and thumb, and while it may be made useful as a valuable assistant to a sound hand and arm, it cannot be utilized in the performance of heavy work. Its principal mission is one of beauty, as it possesses a natural size and appearance.

Fig. 10569 shows an appliance for use where the fingers only have been removed. In this apparatus we construct the fingers of wood, with metal centers so combined as to afford great strength. The fingers being curved, they can be utilized in carrying, lifting and holding, while with the natural thumb they afford a firm grip. These hands are made of the best willow, covered with rawhide, so that they form appliances of great strength, combined with extreme lightness.

Fig. 10570 shows an artificial hand for cases where both the thumb and fingers have been amputated. This can be constructed to open and close like any one of our arms, or the fingers operated by simple springs, so they will hold any article placed in their grasp.

DIRECTIONS FOR ORDERING ON PAGE 585.

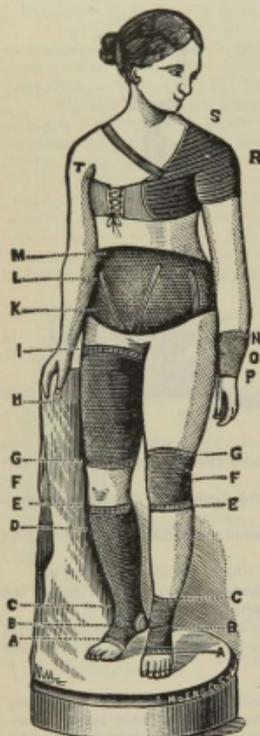
|| VARICOSE.

COTTON AND SILK ELASTIC GOODS.

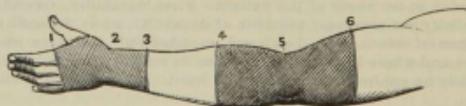
OUR OWN MANUFACTURE.

All goods manufactured to order, and none but the best of stock used. An additional charge always made for extra large sizes.

We make but one grade of silk hosiery, and that the very best.



10571.	Anklet, Cotton.....	\$ 1 75 ||
10572.	“ Extra Heavy Silk.....	2 50 ||
10573.	Arm Piece, Cotton.....	2 00 ||
10574.	“ Extra Heavy Silk.....	2 75 ||
10575.	Garter Legging, Cotton.....	1 75 ||
10576.	“ Extra Heavy Silk.....	2 50 ||
10577.	Garter Stocking, Cotton.....	2 00 ||
10578.	“ Extra Heavy Silk.....	4 00 ||
10579.	Half Thigh Legging, Cotton.....	4 50 ||
10580.	“ Extra Heavy Silk.....	6 50 ||
10581.	Half Thigh Stocking, Cotton.....	5 00 ||
10582.	“ Extra Heavy Silk.....	8 00 ||
10583.	Knee Cap, Cotton.....	1 75 ||
10584.	“ Extra Heavy Silk.....	2 50 ||
10585.	Knee Legging, Cotton.....	3 50 ||
10586.	“ Extra Heavy Silk.....	5 00 ||
10587.	Knee Stocking, Cotton.....	3 75 ||
10588.	“ Extra Heavy Silk.....	5 75 ||
10589.	Mitten, Cotton.....	2 00 ||
10590.	“ Extra Heavy Silk.....	2 50 ||
10591.	Shoulder Cap, Extra Heavy Silk.....	8 00 ||
10592.	Supporter, Abdominal, Cotton.....	\$ 8 00 to 10 00 ||
10593.	“ Extra Heavy Silk.....	10 00 to 15 00 ||
10594.	“ Umbilical, Cotton.....	5 00 ||
10595.	“ Extra Heavy Silk.....	7 00 ||
10596.	“ with Pad, Cotton.....	\$ 9 00 to 12 00 ||
10597.	“ Heavy Silk, 11 00 to.....	18 00 ||
10598.	Thigh Knee Cap, Cotton.....	3 50 ||
10599.	“ Extra Heavy Silk.....	5 00 ||
10600.	Thigh Legging, Cotton.....	5 25 ||
10601.	“ Extra Heavy Silk.....	7 50 ||
10602.	Thigh Piece, Cotton.....	1 75 ||
10603.	“ Extra Heavy Silk.....	2 50 ||
10604.	Thigh Stocking, Cotton.....	5 75 ||
10605.	“ Extra Heavy Silk.....	9 00 ||
10606.	Wristlet, Cotton.....	1 00 ||
10607.	“ Heavy Silk.....	1 75 ||

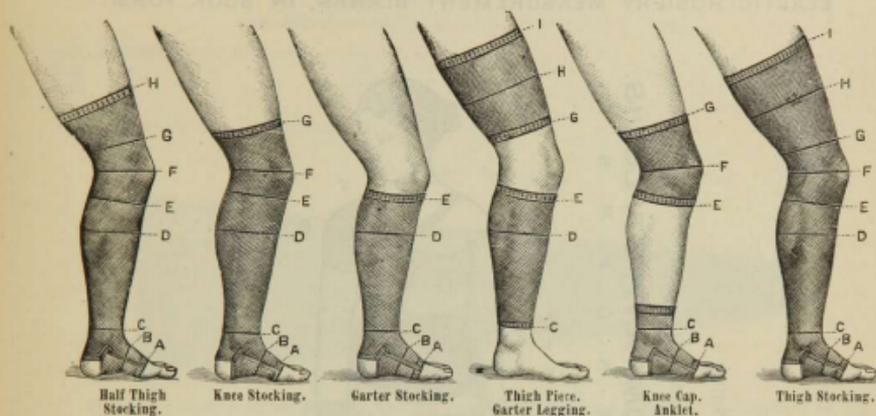


DIRECTIONS FOR APPLYING ELASTIC STOCKINGS.

Turn the stocking inside out, down to the part which covers the foot. Take hold with the thumbs inside the folded part, stretching and drawing it on to the foot. Take hold with the thumb of one hand (inside the fold), and with the other thumb (inside the fold) at the heel, then stretch and roll it over the heel. Take hold at the top of stocking and turn it over the foot as far up the limb as it can be drawn without forcing it. Turn down the top of the ankle and insert the thumbs on either side between the limb and the fold in the stocking; stretch and gradually roll it (repeating the process as often as is necessary) until it reaches the proper position without a wrinkle. It should always be worn over a thin stocking.

|| VARICOSE.

COTTON AND SILK ELASTIC GOODS.



DIRECTIONS FOR MEASUREMENT.

Measurements should be taken in the morning before rising. The measurement for length is essential and should be taken on the inner side of the limb. Give the exact measurements. We make allowances to secure proper compression.

These goods are of the best possible quality and, being manufactured on our own looms expressly for each customer the day the order is received, we can guarantee a perfect fit and goods that are actually fresh. Parties who have had trouble in obtaining either serviceable stockings or good fitting ones are requested to give us a trial.

FOR AN ABDOMINAL BELT—Circumference at K, L, M, and width (from K to M) in front.

FOR AN ARM PIECE—Circumference at 4, 5, 6. Length from 4 to 6.

FOR AN ANKLET—Circumference at A, B, C. Length from sole of foot to C.

FOR A GARTER LEGGING—Circumference at C, D, E. Length from C to E.

FOR A GARTER STOCKING—Circumference at A, B, C, D, E. Length from sole of foot to E.

FOR A HALF THIGH LEGGING—Circumference at C, D, E, F, G, H. Length from C to F and from F to H.

FOR A HALF THIGH STOCKING—Circumference at A, B, C, D, E, F, G, H. Length from sole of foot to F and from F to H.

FOR A KNEE CAP—Circumference at E, F, G. Length from E to G.

FOR A KNEE LEGGING—Circumference at C, D, E, F, G. Length from C to F and from F to G.

FOR A KNEE STOCKING—Circumference at A, B, C, D, E, F, G. Length from sole of foot to F and from F to G.

FOR A MITTEN—Circumference at 1, 2, 3. Length from 1 to 3.

FOR A SHOULDER CAP—Circumference of chest at T; circumference under axilla and over shoulder at S and from axilla over shoulder at R; circumference of arm 3 inches below axilla.

FOR A THIGH KNEE CAP—Circumference at E, F, G, H, I. Length from F to I.

FOR A THIGH LEGGING—Circumference at C, D, E, F, G, H, I. Length from C to F and from F to I.

FOR A THIGH STOCKING—Circumference at A, B, C, D, E, F, G, H, I. Length from sole of foot to F and from F to I.

FOR A THIGH PIECE—Circumference at G, H, I. Length from G to I.

FOR AN UMBILICAL BELT—Circumference at L.

FOR A WRISTLET—Circumference at N, O, P. Length from N to P.

Attention is called to the above explicit directions for measuring Elastic Stockings, etc., embracing every style of these appliances in use. By carefully observing them an accurate fit can be secured, and, as in all cases (except when otherwise directed), they are woven newly for each particular measure, a fresh and reliable article can be depended upon, an advantage to be sought for in goods so easily deteriorated by age or exposure to the atmosphere.

Goods made to order at the risk of the purchaser. We can only correct at our expense where the error is ours.

|| VARICOSE.

COTTON AND SILK ELASTIC GOODS.

ELASTIC HOSIERY MEASUREMENT BLANKS, IN BOOK FORM.

Article..... Date..... 189..... Name.....
 Quality..... Length inside of Limb.....
 Ordered from **A. S. ALOE COMPANY, ST. LOUIS.**
 A.....B.....C.....D.....E.....F.....G.....H.....I.....K.....L.....M.....N.....O.....P.....R.....S.....T.....

Name..... Address.....

Quality.....
 Length inside of Limb.....
 Article.....

[SAMPLE PAGE.]

For the benefit of those of our customers who prefer to retain a copy of their orders for Elastic Hosiery we have had printed, neat books, containing eight pages as per the sample page above shown. The measurements sent us are to be written (preferably in ink) opposite the letters on the figure. This part is then detached at the perforation and, after the proper entries are made on the remaining stub, is sent to us.

We shall be pleased to keep our customers supplied with these Elastic Hosiery Measurement Books.

|| VARICOSE.

COTTON AND SILK ELASTIC GOODS.

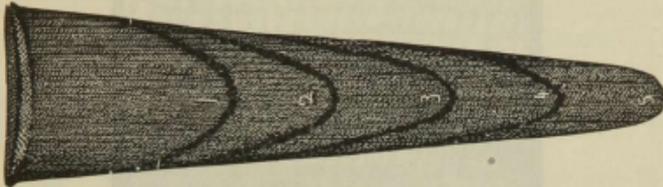
SEAMLESS SHIRTS.

FOR USE WITH SAYRE'S PLASTER-OF-PARIS JACKETS.

10608.	Seamless Shirts, bust measure, 12 to 20 inches	\$2 66 ||
10609.	" " " " 20 to 27 "	3 00 ||
10610.	" " " " 27 to 33 "	3 33 ||
10611.	" " " " 33 to 40 "	4 00 ||

Long Shirts for Open Corsets, 25 cents extra.

STUMP SOCKS.



We have a special department for knitting these Socks, and keep a large stock constantly on hand; they are arranged in different sizes, calculated to fit any ordinary stump; should, however, a size or shape be desired different to the sizes in stock, we will knit them to order at no advance in price.

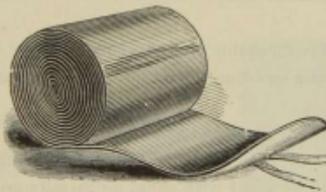
10612.	Stump socks, 10 inches long or less	each, 40 cents; per dozen,	\$4 00 ||
10613.	" " 12, 14 and 16 inches long	" 50 " "	5 00 ||
10614.	" " 18, 20 " 22 " "	" 60 " "	6 00 ||
10615.	" " 24, 26 " 28 " "	" 70 " "	7 00 ||

Orders for one-half dozen filled at same rate as per dozen.

Silk Stump Socks knitted to order, \$1 75 to \$2 50 ||

MARTIN'S RUBBER BANDAGES.

FOR THE TREATMENT OF VARICOSE VEINS AND DISEASES OF THE SKIN. MADE OF PURE GUM, WITH TAPES.



10616.	Bandages, Martin's, Rubber, 2 inches wide by 6 feet long.....	\$0 60 ||
10617.	" " " 2 " " 9 "	80 ||
10618.	" " " 2 " " 10½ "	1 00 ||
10619.	" " " 2 " " 12 "	1 15 ||
10620.	" " " 2 " " 15 "	1 35 ||
10621.	" " " 2½ " " 9 "	1 00 ||
10622.	" " " 2½ " " 10½ "	1 20 ||
10623.	" " " 2½ " " 12 "	1 35 ||
10624.	" " " 2½ " " 15 "	1 60 ||
10625.	" " " 3 " " 9 "	1 20 ||
10626.	" " " 3 " " 10½ "	1 35 ||
10627.	" " " 3 " " 12 "	1 60 ||
10628.	" " " 3 " " 15 "	2 00 ||
10629.	" " " 3 " " 18 "	2 40 ||

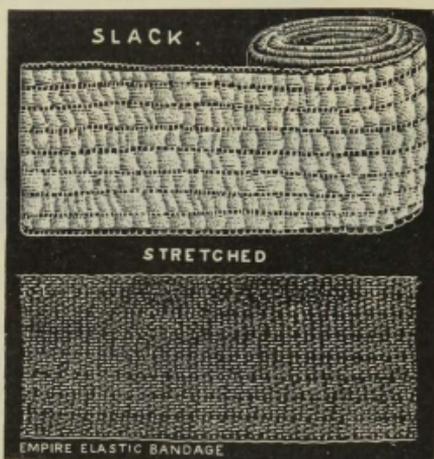
We are also prepared to furnish Rubber Bandages to order from 80 to 60 feet long, or very light or extra heavy ones for special purposes.

|| VARICOSE.

EMPIRE ELASTIC GOODS.

THE EMPIRE ELASTIC BANDAGE.

MANUFACTURED BY THE EMPIRE MANUFACTURING CO., SPECIALLY ADAPTED FOR VARICOSE VEINS.



We invite the attention of the medical and surgical profession to the various merits combined in these bandages:

1st. Its porosity, the greatest in the "Empire." It never causes itching, rash or ulceration under the bandage.

2d. Its elasticity, which will enable the surgeon or nurse to put it on at any required tension, and which will follow a swelling up or down, as the case may be, a feature unknown to any other bandage.

3d. Its absorbent properties, greatest in the "Empire."

4th. Its easy application to any part of the body, not being necessary to fold it over, as with other bandages, as it follows itself with equal uniformity around any part of the anatomy.

5th. Its self holding qualities. No bother with pins, needles and thread or strings, so tiresome to surgeons, as simply tucking the end under the last fold insures its permanent stay, until its removal for purpose of cleanliness.

6th. The only bandage that is superior to the elastic stocking for varicose veins.

10630.	Empire Elastic Bandage, 2	inches wide by 3 yards long (when stretched)	\$ 0 50
10631.	" " " 2½ "	" " " 3 " " " " "	60
10632.	" " " 3 "	" " " 3 " " " " "	75
10633.	" " " 2 "	" " " 5 " " " " "	65
10634.	" " " 2½ "	" " " 5 " " " " "	75
10635.	" " " 3 "	" " " 5 " " " " "	1 00

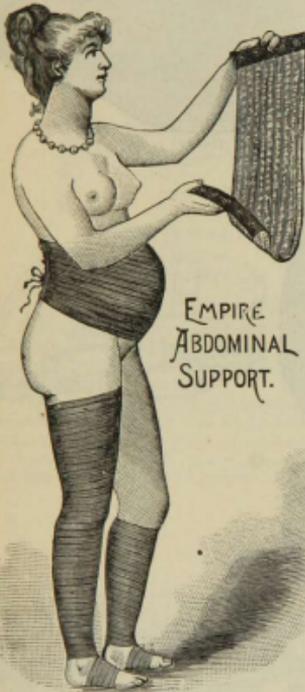
ANY WIDTH OR LENGTH MADE TO ORDER.

|| ABDOMINAL SUPPORTERS.

EMPIRE ELASTIC GOODS.

THE EMPIRE ABDOMINAL SUPPORTER,

MANUFACTURED BY THE EMPIRE MANUFACTURING CO., IS SUPERIOR TO ALL OTHERS.
FOR THE FOLLOWING REASONS:



1st. It adapts itself to every movement of the body, giving strong and even support.

2d. It produces warmth without irritation or sweating, as it is perfectly ventilated.

3d. In pregnancy, corpulency, tumors or other cases of enlargement of abdomen, it supports weight of body from the back bone, relieving the sinews of their overwork.

4th. Its easy application (lace and draw on over head or feet).

5th. It is cheap and durable. It can be washed when soiled, proper care being taken to cleanse in lukewarm water, and dry in the shade.

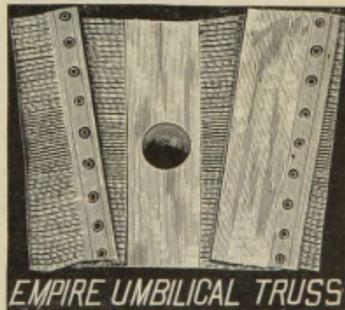
In ordering give the measure of the abdomen.

The Supporter should be about ten inches longer, according to the degree of support required.

THE EMPIRE UMBILICAL TRUSS

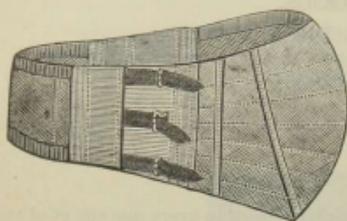
IS AN ABDOMINAL SUPPORTER WITH BUTTON INSERTED AT THE NAVEL.

Is made of the same material and possesses the same merits as the Empire Elastic Bandage and Empire Abdominal Supporters, and is pronounced by all who have seen it, the best in the world.



10636.	Empire Abdominal Supporter, 8 inches wide.....	\$ 2 50 ||
10637.	“ “ “ 11 “ “	3 00 ||
10638.	“ Silk Abdominal Supporter, 8 inches wide ...	10 00 ||
10639.	“ Umbilical Truss, Child's.....	1 25
10640.	“ “ “ Youth's.....	2 50
10641.	“ “ “ Adult's	4 00

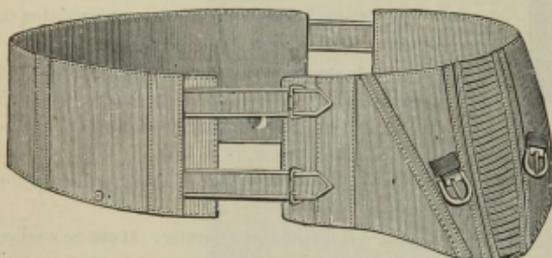
|| ABDOMINAL SUPPORTERS.



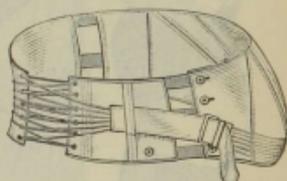
10657.



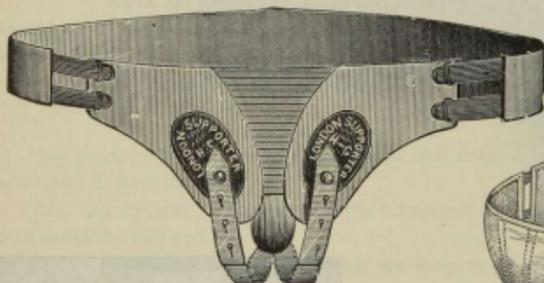
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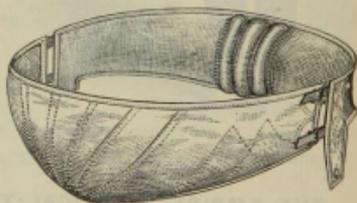
10658.



10653.



10656.



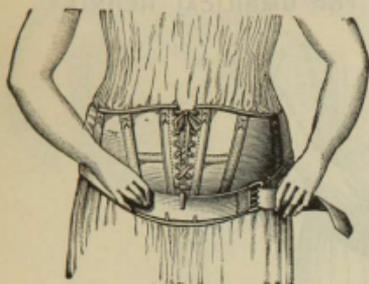
10650.

10642.	Abdominal Supporter, Dewee's, Natural Body Brace	\$ 6 00
10643.	" " " " " " " " Combined with Shoulder Brace	8 00 ||
10644.	" " Elastic, Cotton	\$ 8 00 to 10 00 ||
10645.	" " " Silk	10 00 to 15 00 ||
10646.	" " Empire, Cotton, 8 in. wide	2 50 ||
10647.	" " " " 11 " "	3 00 ||
10648.	" " " " 8 " "	10 00 ||
10649.	" " Fitch's	3 00 ||
10650.	Gray & Foster's	2 00 ||
10651.	" " Mrs. Harding's (St. Louis)	10 00 ||
10652.	" " Hard-Rubber	8 00 ||
10653.	Lingquist's	4 00 ||
10654.	" " " with Hose Supporters	5 00 ||
10655.	" " London	2 00 ||
10656.	" Improved, Superior Quality	4 00 ||
10657.	Philadelphia, All Silk	8 00 ||
10658.	" " Satin Jean	3 00 ||
10659.	" " Silk Center	6 00 ||

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

|| ABDOMINAL SUPPORTERS.

TEUFEL'S ABDOMINAL BELTS AND SUPPORTERS.



10660. System I.

TEUFEL'S SYSTEM I. ABDOMINAL SUPPORTER.

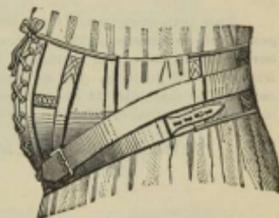
Renders most effective service in pregnancy, by greatly diminishing the pain and burden usually entailed; greatly reduces the dangers of confinement; it is the best preventive of premature delivery, affords instant relief in derangements of the womb, especially in prolapsus, falling of the womb, in anterversion and anteflexion.

TEUFEL'S SYSTEM II. ABDOMINAL SUPPORTER.

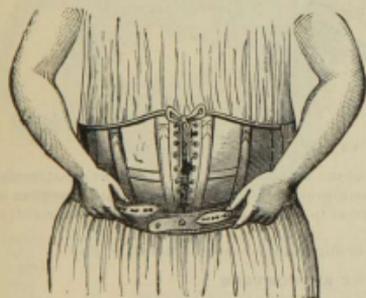
Pre-eminently useful before and after confinement, affording the most effectual support to the abdominal viscera, preventing pressure upon body of the fundus, and serving as a preventive of conditions produced by such pressure.

Furthermore, this form of Supporter will fit the form perfectly, prevent pendulous abdomen after confinement, improve the form whilst giving to the abdomen an agreeable even support.

To corpulent gentlemen and those suffering from weakness in the abdominal regions, this Supporter will prove of inestimable service.



10662. System II.



10664. System III.

TEUFEL'S SYSTEM III. HYPOGASTRIC SUPPORTER.

Should be employed when pregnancy causes exceptional enlargement, or for ladies suffering from corpulency, and is unsurpassed in point of efficiency and comfort. Its action is also most beneficial in cases of pressure of the womb on the bladder, and of the consequences resulting therefrom as well as in the pains which so frequently are felt in the hips, loins and sides.

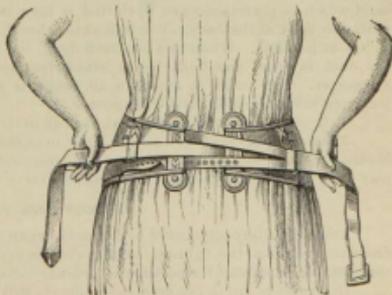
A peculiarly constructed flexible steel spring, with well cushioned pad attached, maintains an even and gentle pressure directly above the pubes.

TEUFEL'S SYSTEM IV. ABDOMINAL SUPPORTER, COMBINED WITH SPINAL STAYS.

This Supporter, by its peculiar construction, is particularly well adapted for relieving pains in the back, as also other disorders often caused by weakness of the spinal column.

Attached to the terminal ends of this Supporter are two well-covered flexible steel springs, and to the ends of each of the latter are secured well-cushioned pads which act as agreeable and powerful stays to the spine.

In obese persons with pendulous abdomens, above described springs with pads, prevent the Supporter from cutting into the back and also relieves the spine from excessive pressure.

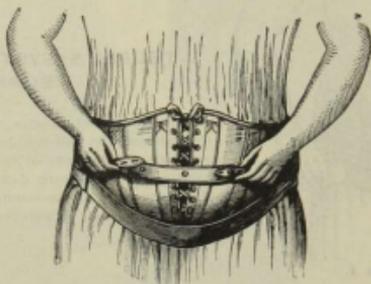


10665. System IV.

II ABDOMINAL SUPPORTERS.

TEUFEL'S ABDOMINAL BELTS AND SUPPORTERS.

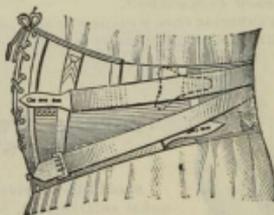
TEUFEL'S SYSTEM V. SUPPORTER FOR UMBILICAL HERNIA.



10667. System V.

This system of Supporter is the best possible appliance for Umbilical Hernia. In obese persons, with pendulous abdomens, suffering from Umbilical Hernia, and especially women past the middle age who have borne large families the abdomen, from its relaxed condition, has a tendency to push the spring umbilical trusses out of position. For all such cases the excellent shape and construction of the above Supporter causes it to maintain its position, and by its exceedingly comfortable support to the abdomen, and to the internal abdominal organs, it most effectually fulfills its purpose.

TEUFEL'S SYSTEM VI. SUPPORTER FOR FLOATING KIDNEY



10669. System VI.

Is the only successful remedy in cases of displacement of the kidneys, which its excellent construction retains in their natural position, without injury or troublesome pressure, and with immediate cessation of pain. In ordering this Supporter information should be given as to whether displacement is on the right, or the left or both sides.

Apply in a prone or horizontal position, secure the pad to Supporter by means of safety pin.

CORRECT APPLICATION OF THE SUPPORTERS.

When the Supporter is applied, as shown in the illustration, the bands are drawn equally until the Supporter fits well to the body. The portion of the band which is perforated and eyeletted is then fastened to the corresponding button or hook at the back. The Supporter should then be drawn down in front as low as possible. When this has been done, the bands are then passed under the hook in front and buckled or otherwise fastened, according to style of Supporter. The lacing in front, in all cases, is tightened last and should be loosened before putting on the Supporter.

N. B.—The ends of Supporter at back should remain apart about four inches.

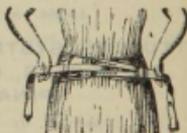
The Supporter may be worn under or over the chemise or over the drawers; in the two latter cases the chemise must be loose between the Supporter and the shoulders; if otherwise, the movements of the body may draw it up and thus dislodge the supporter.

DIRECTIONS FOR MEASUREMENTS.

The circumference should be taken between the crests of the ilia and the trochanters major, over the chemise and over the fullness of the abdomen. This is sufficient to ensure the receipt of a well-fitting, comfortable Supporter for persons of ordinary size.

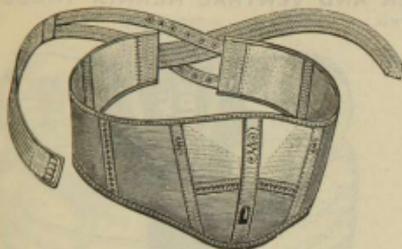
Diagrams to aid in taking measurements will be mailed free upon receipt of application.

These instructions are of importance and should be carefully followed.

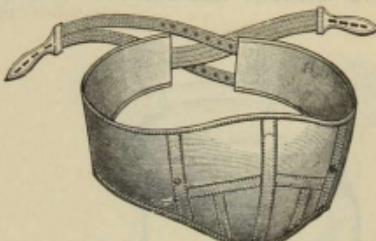


|| ABDOMINAL SUPPORTERS.

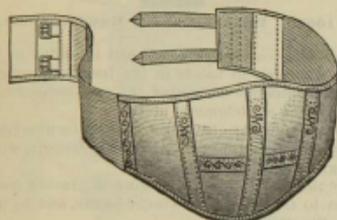
TEUFEL'S ABDOMINAL BELTS AND SUPPORTERS.



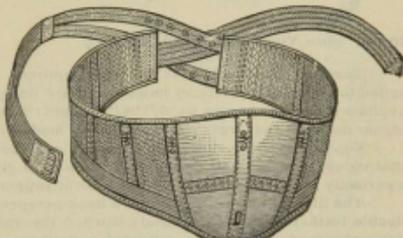
10671.



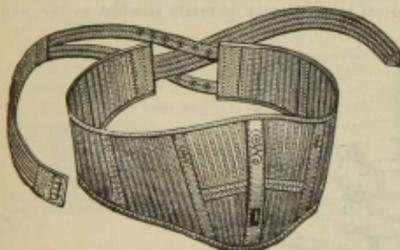
10672.



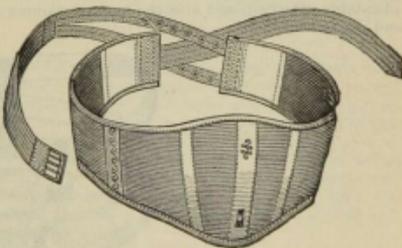
10673.



10674.



10676.



10677.

10660.	Teufel's Abdominal Supporter, System I, Quality A	\$ 7 00
10661.	" " " " " I, " E	10 00
10662.	" " " " " II, " A	7 00
10663.	" " " " " II, " E	10 00
10664.	" Hypogastric Supporter, System III, Quality A	8 80
10665.	" Spinal Stay Supporter, System IV, Quality A	10 00
10666.	" Umbilical Supporter, System V, Quality A, Covered Pad	8 80
10667.	" " " " " V, " A, Hard-Rubber Pad	11 25
10668.	" " " " " V, " A, " Adjustable	12 25
10669.	" Floating Kidney Supporter, System VI, Quality A, with one Pad	8 00
10670.	" " " " " VI, " A, with two Pads	9 00

Above prices are for Supporters from 28 to 40 inches diameter.
 For a 42 inch Supporter add 30c; 44 inch, 60c; 46 inch, \$1.00; 48 inch, \$1.50; 50 inch, \$2.00 ||
 For Laparotomy Pad to attach to either system, I or II, add \$1.25 ||

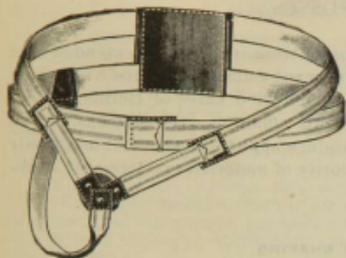
10671.	Teufel's Abdominal Belt, No. 21, Gray Lasting, White Lining, Elastic Bands with Buttons and Eyelet Holes at Back—Buckling in Front	3 00
10672.	Teufel's Abdominal Belt, No. 23, same as No. 21, but buttons on sides	3 00
10673.	" " " " " 45, Natural Color Lasting, White Lining, Elastic Insertion at Sides—Buckling in the Back	8 00
10674.	Teufel's Abdominal Belt, No. 50, Natural Color, Strong Tricot (a very soft and pliable material, most agreeable for sensitive hips) with Elastic Binding, Lasting Insertions at Front and Back. Elastic Bands with Buttons and Eyelet Holes at Back; Buckles in Front,	4 50
10675.	Teufel's Abdominal Belt, No. 52, same as No. 50, but of White Tricot, with White Silk Elastic Binding and White Satin Trimmings	5 50
10676.	Teufel's Abdominal Belt, No. 56, White Horsehair Netting, with Gray Trimmings, Elastic Bands with Buttons and Eyelet Holes at Back—Buckling in Front	3 75
10677.	Teufel's Abdominal Belt, No. 51, Woven Cotton Elastic, gray, with Elastic Binding. Elastic Bands with Buttons and Eyelet Holes at Back, to Buckle in Front. Well adapted to Corpulent Gentlemen	5 00

Prices on Teufel's Belts Nos. 21 to 61 are for sizes 26 to 44 inch.

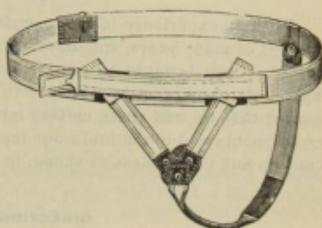
ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

|| TRUSSES.

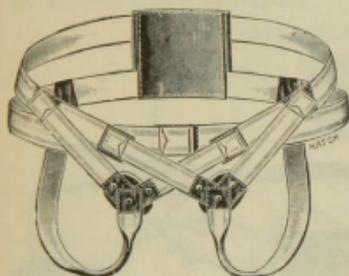
THE MARVIN TRUSSES.



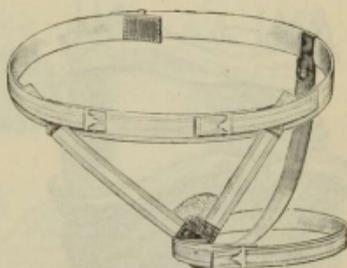
10682.



10689.

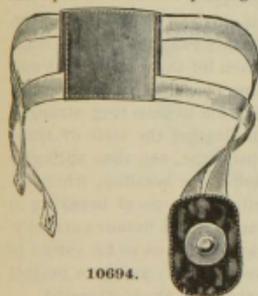


10685.



10691.

The advantages claimed for these Trusses, and sustained by both reason and experience, are that they are constructed with a view of giving the best opportunity possible for the natural contraction and cure of the rupture. The belt passing directly around the lower abdomen will, in a large majority of cases, so force up and sustain the bowels as to greatly relieve the pressure on the inguinal ring and save it from the strain usually thrown against it in coughing or sneezing or violent exercise of any kind. The pad being made flat and thickest at the lower edge better brings the edges of the rupture together and give the same a chance to contract and heal. In the Femoral Truss the pad rests upon the leg and is drawn up into the groin. It is easy and never fails.



10694.

In the Umbilical Truss the separation of the two body belts, as shown in cut, better holds the pad in position, and the flat bearing surface on the projection on pad pushes the ring back into place instead of puncturing it as in other Umbilical Trusses.

Special and inflated pads are furnished when required.

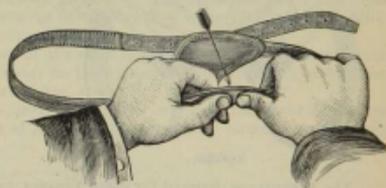
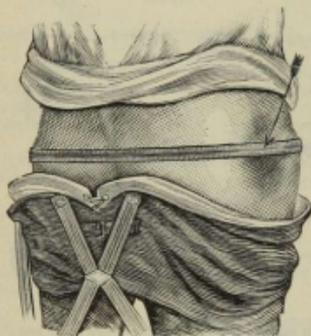
10682.	Marvin's Excelsior Inguinal Truss, Single,	Adult's	.....	\$5 00
10683.	" " " " " "	Youth's	.....	4 50
10684.	" " " " " "	Child's	.....	3 00
10685.	" " " " " "	Double, Adult's	.....	6 50
10686.	" " " " " "	Youth's	.....	5 50
10687.	" " " " " "	Child's	.....	4 00
10688.	" " Victor	Single, Adult's	.....	3 00
10689.	" " " " " "	Youth's	.....	3 00
10690.	" " " " " "	Child's	.....	2 00
10691.	" " Femoral Truss, Single,	Adult's	.....	5 00
10692.	" " " " " "	Youth's	.....	4 50
10693.	" " " " " "	Child's	.....	3 00
10694.	" " Umbilical	Adult's	.....	5 00
10695.	" " " " " "	Youth's	.....	4 50
10696.	" " " " " "	Child's	.....	2 50

|| TRUSSES.

LEATHER COVERED TRUSSES.

With an experience in the manufacture and application of trusses which has extended over a period of many years, and aided by the practical advice of many eminent surgeons with whom we have been brought in contact in the treatment of complicated cases of Hernia, we are enabled to adapt apparatus successfully, to every form of this affliction. Our patrons may be assured that we will spare neither labor nor expense to produce appliances that will meet their requirements and to maintain our reputation in the superiority of material, excellence of workmanship and correctness of shape, in this line of goods.

DIRECTIONS FOR FITTING AND SHAPING.



Place the patient in a reclining position, and reduce the Hernia; this will show you the exact size and location of hernial ring, but if in doubt as to size, carefully plug the hernial ring, using the tips of one or more fingers, as may be found necessary, then let the patient rise and test the accuracy of your judgment by coughing, or otherwise putting pressure on the bowels; the amount of pressure used and size of plug found necessary, will guide in selecting strength of spring and size of pad required; the location of the Hernia, indicating the style of truss necessary; make sure of these points, then, if form is irregular in shape, see that spring is adjusted properly, as shown above, using all fingers, the thumbs doing the bending, while the fingers hold and brace the spring and spread the strain, thus lessening chances of breaking in shaping. Never give the spring a sharp bend, or force shape too rapidly, but humor carefully.

Our springs are made of such shapes, as a long experience has shown us to be suited to most cases, but the human form varies so in shape, that to fit a truss properly and give perfect satisfaction, it will be found necessary in many cases to slightly re-shape as above directed.

SPECIAL NOTICE.

To those of our customers who wish to carry a small assortment of Trusses in stock, we will make a special dozen price, which will enable them to make good margins on their sales, in addition to their usual charges, for services rendered.

To those who have a credit already established, or who will send a deposit on account, we will send a number from which to make a selection, provided the customer agrees to return all those not wanted within ten days, free of expense to us.

If an accurate description of the case is sent us we can usually make a single selection which will meet the wants of the patient, thus avoiding considerable expense, and, in case it does not fit, it may be returned and exchanged, provided it is not soiled.

|| TRUSSES.

LEATHER COVERED TRUSSES.

DIRECTIONS FOR ORDERING—READ CAREFULLY.

In ordering special trusses, etc., observe the following directions:
State if celluloid or leather trusses are wanted.

State if for Inguinal, Scrotal, Femoral or Umbilical Hernia, whether right or left, or double, and give the circumference of the body, one to two inches below the tips of the hips, avoiding the fullness of the abdomen; state pressure required, shape of form, size of Hernia and general appearance.

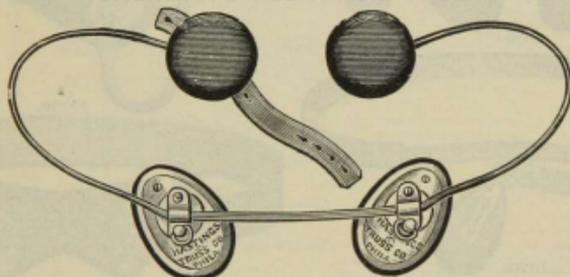
For an Umbilical Hernia, the circumference of the body at line of rupture, size of rupture and the pressure required.

When possible, give sex, age, weight, occupation and length of time ruptured.

Give also an accurate description of the size, general appearance and peculiarities of Hernia, style of truss the patient has been wearing, if any, whether or not it retained the Hernia, and the style of truss you think best adapted to the case, and whether it should have a strong or weak spring.

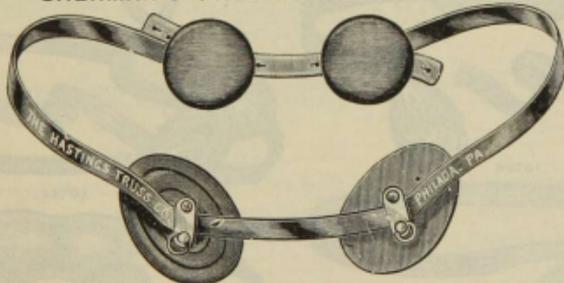
Regular sizes of Adults' Trusses run from 29 to 44 inches. Youths' from 21 to 28 inches, and a child's from 12 to 20 inches.

SHERMAN'S ALUMINIUM TRUSS.



10756.

SHERMAN'S PHOSPHOR BRONZE TRUSS.



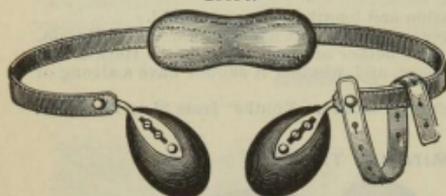
10759.

During our long experience in fitting trusses, we have never met a case of Hernia which could not be relieved by the perfect Hood Pattern Truss. While we necessarily fit a great many different styles of trusses we find, as a general rule, that when we have a difficult case to fit we must invariably resort to a Hood Pattern or Sherman Truss, and they have always confirmed our confidence in them, giving the wearer perfect satisfaction. The practical knowledge gained in fitting trusses daily, enables us to manufacture these trusses of the correct pattern; this, together with the correct shapes and bearings of our pads and springs, completes a truss that is readily adjusted and will always give relief and comfort. No motion, position or effort will dislodge them when once properly fitted to the body. We carry these Hood's Pattern Trusses in two different styles. Leather-covered, with enameled wood pads and in celluloid with celluloid pad. Sherman's Truss, which is an improvement upon Hoods (permitting as it does a lateral adjustment of the pads), is furnished in Aluminium or Phosphor Bronze, either of which make a light, clean truss and one that will not rust. Pads are made of Hard-Rubber. When used as a single truss a sympathetic pad is applied to the unaffected side.

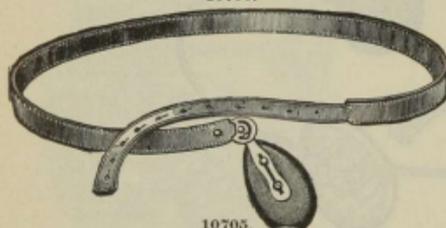
|| TRUSSES.
LEATHER COVERED TRUSSES.



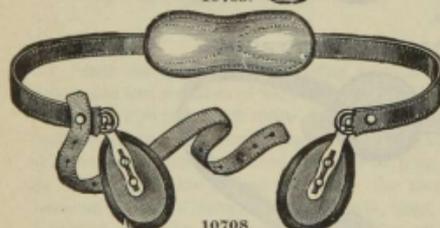
10697.



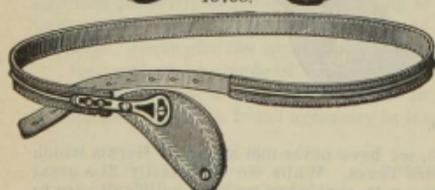
10700.



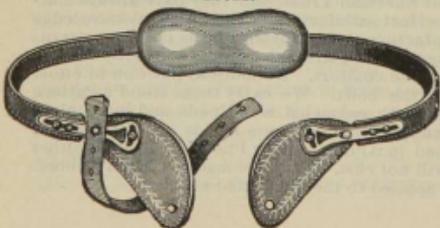
10705.



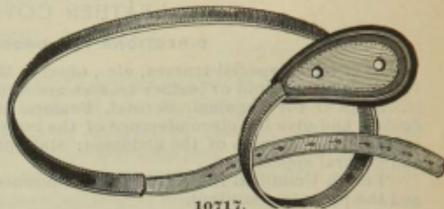
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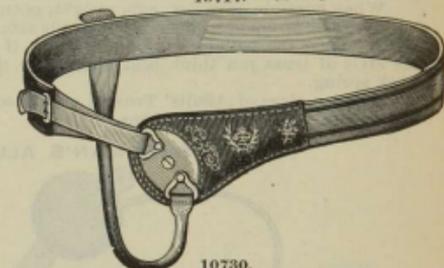
10711.



10714.



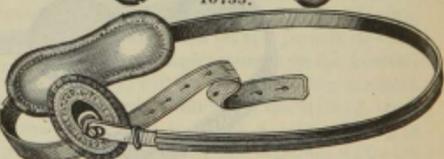
10717.



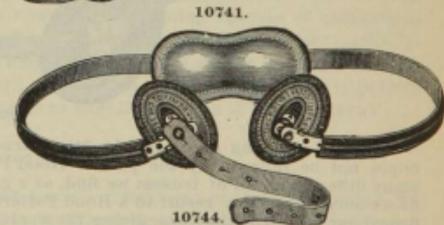
10730.



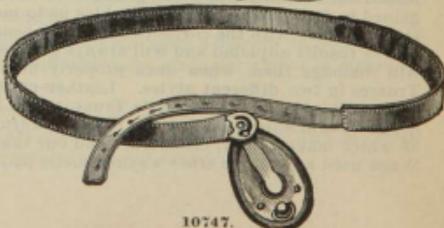
10733.



10741.



10744.



10747.

|| TRUSSES.
LEATHER COVERED TRUSSES.



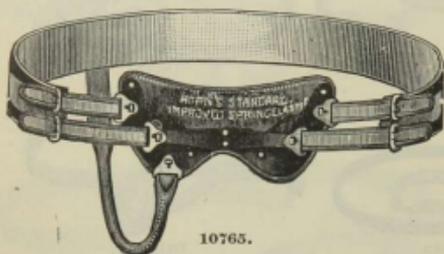
10697.	Truss, Chase's, Gennine,	Single,	Adult's, Right or Left	\$ 2 50
10698.	" " " "	"	Youth's, " "	2 00
10699.	" " " "	"	Child's, " "	1 75
10700.	" " " "	Double,	Adult's	3 00
10701.	" " " "	"	Youth's	2 50
10702.	" " " "	"	Child's	3 00
10703.	" " " "	Femoral, Single,	Adult's, Right or Left	3 00
10704.	" " " "	"	Double, Adult's	4 50
10705.	" " " "	Improved, Single,	Adult's, Either Side	3 00
10706.	" " " "	"	Youth's	2 25
10707.	" " " "	"	Child's	2 00
10708.	" " " "	Double,	Adult's	4 00
10709.	" " " "	"	Youth's	3 00
10710.	" " " "	"	Child's	2 50
10711.	" " " "	Extension Pad, Single,	Adult's, Right or Left	4 00
10712.	" " " "	"	Youth's	3 00
10713.	" " " "	"	Child's	2 50
10714.	" " " "	Double,	Adult's	5 00
10715.	" " " "	"	Youth's	4 50
10716.	" " " "	"	Child's	3 00
10717.	" " " "	Fine French, Single,	Adult's, Right or Left	2 50
10718.	" " " "	"	Youth's	2 00
10719.	" " " "	"	Child's	1 75
10720.	" " " "	Double,	Adult's	4 00
10721.	" " " "	"	Youth's	3 00
10722.	" " " "	"	Child's	2 50
10723.	" " " "	Hood's, Single,	Adult's. { Hood's Truss, when fitted for single hernia, has a flat hard-rubber } { sympathetic pad applied on the unaffected side. When ordering } { truss for single hernia, state if right or left, as the pads have the } { genuine shape and are not reversible. } 4 00	
10724.	" " " "	"	Youth's. } 3 00	
10725.	" " " "	"	Child's. } 4 00	
10726.	" " " "	Double,	Adult's	7 50
10727.	" " " "	"	Youth's	5 00
10728.	" " " "	"	Child's	4 00
10729.	" " " "	Laparotomy, Carson's (St. Louis).	See illustration and description next page	5 00
10730.	" " " "	New York Elastic, Single,	Adult's, Either Side	4 00
10731.	" " " "	"	Youth's	2 50
10732.	" " " "	"	Child's	2 00
10733.	" " " "	Double,	Adult's	5 00
10734.	" " " "	"	Youth's	4 00
10735.	" " " "	"	Child's	3 50
10736.	" " " "	Scrotal, Elastic, Single, Adult's.	Same as Fig. 10730, but with Large Scrotal Pad	3 50
10737.	" " " "	"	Double	5 00
10738.	" " " "	Spring, Single, Adult's, with Large Scrotal Pad and Understrap		4 00
10739.	" " " "	"	Double	4 50
10740.	" " " "	Scrotal, Rhenish, Single, Fine Calf Cover, Large Kid Pad with Folded Kid Understrap		3 00
10741.	" " " "	Self-Adjusting, Single, Adult's		3 75
10742.	" " " "	"	Youth's	3 00
10743.	" " " "	"	Child's	2 50
10744.	" " " "	Double,	Adult's	5 00
10745.	" " " "	"	Youth's	4 00
10746.	" " " "	"	Child's	3 50
10747.	" " " "	Set-Screw, Single, Adult's.	{ Is the Set-Screw Truss, which is applicable to either side, } { Youth's. { the pad is adjustable, and can be retained by the Set-Screw in } { any position desired. } 3 50	
10748.	" " " "	"	Child's. } 2 50	
10750.	" " " "	Double, Adults		5 00
10751.	" " " "	"	Youth's	3 50
10752.	" " " "	"	Child's	2 50
10753.	" " " "	Sherman's Aluminium, Single, Adult's.	{ The remarks made in regard to Hood's Single } { Youth's. { Truss are applicable to this Truss also. Please } { Child's. { specify if right or left is wanted. } 6 00	
10754.	" " " "	"	Child's. } 5 00	
10755.	" " " "	"	Child's	5 00
10756.	" " " "	Double, Adult's		10 00
10757.	" " " "	"	Youth's	7 50
10758.	" " " "	"	Child's	6 00
10759.	" " " "	Phosphor Bronze, Single, Adult's.	{ See remarks made in regard to Hood's } { Youth's. { Trusses, and when ordering advise if for } { Child's. { right or left side. } 6 00	
10760.	" " " "	"	Child's	6 00
10761.	" " " "	Double, Adult's		10 00
10762.	" " " "	"	Youth's	7 50
10763.	" " " "	"	Child's	6 00
10764.	" " " "	"	Child's	6 00

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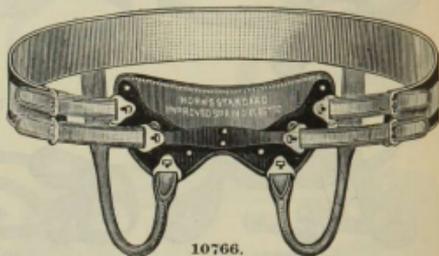
II TRUSSES.

LEATHER COVERED TRUSSES.

HORN'S SPRING PLATE ELASTIC TRUSS.



10765.

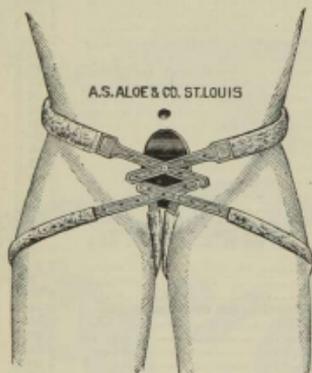


10766.

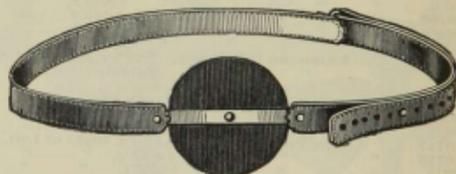
The Improved Spring Plate Elastic Truss is a combination of an abdominal pad, braced with an irregular shaped, hard-rubber covered, spring plate, to which is fastened the hard-rubber hernial pads and a hard-rubber covered, bow pressure spring.

By regulating the lower end straps of belt that draw on the bow spring, the pressure (both inward and upward) on the hernial pads, can be increased or decreased at will; the abdominal pad assists in supporting the bowels; it is reversible and fitted with Horn's Improved Nickeled Fixtures.

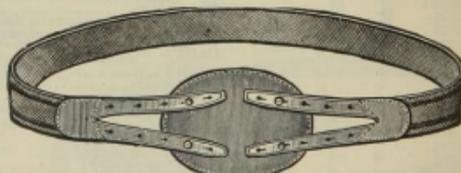
A NEW LAPAROTOMY TRUSS.



10729.

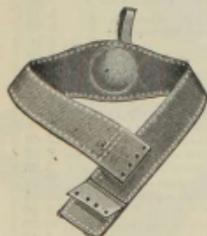


10767.

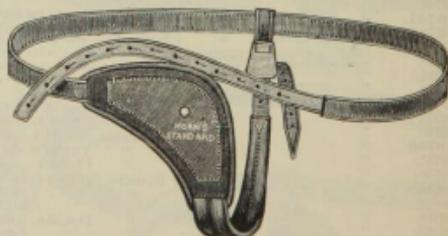


10773.

The Truss shown in Fig. 10729 is intended to be worn after the operation of laparotomy, for the purpose of sustaining and strengthening the abdominal cicatrix and preventing the resulting ventral hernia which is apt to follow that operation. It consists of an oval hard-rubber disc, five inches and a half by two and seven-eighths, held in place by an elastic band passing around the body, and bands which encircle each thigh. These bands are fastened to brass pivots which are attached to the front surface of the pad, and admit of any motion of the body without displacement of the pad; the band passing around the body being made of elastic material. The pad is concave on its inner surface and closely approximates the contour of the abdomen. The beneficial effects obtained from the use of this pad after several cases of laparotomy, seem to warrant its presentation to the profession.



10782.

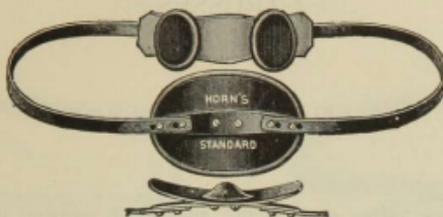


10783.

|| TRUSSES.

LEATHER COVERED TRUSSES.

DOUBLE SPRING HARD-RUBBER UMBILICAL TRUSS.



10779.

This improved Truss is made with double springs to fasten in front, on a small bow spring with centers only, bearing directly on center of umbilical pad; this, while giving an addition to the pressure of body springs, allows the pad to accommodate itself better to the abdomen, around the navel. Made in three sizes of abdominal plates and three sizes of center pads.

COMBINATION UMBILICAL BELT-TRUSS.

In very obese persons, suffering from umbilical hernia with pendulous abdomen, and especially women past the middle age, who have borne large families, the abdomen, from its relaxed condition, has a tendency to move the Truss out of position; in such cases, in addition to the Truss, the entire abdomen should be supported by a properly fitted elastic abdominal Belt; the umbilical pad should be properly located and secured to the inner side of the Belt by the studs passing through the Belt into the umbilical plate, and upon



10780.

which the springs are adjusted on the outside of the Belt, as shown above. In such cases neither the Truss nor the Belt alone can be relied upon, yet when combined they will securely retain the hernia and afford a firm support to the abdomen, invariably diminishing its size. "No Truss that does not combine these qualities can be considered, under such circumstances, as of much value for, although a radical cure can seldom be effected in any case, there is hardly a tumor, however large, inconvenient or painful, that may not be materially relieved by these means."—"Gross' Surgery," Vol. II., page 560.

10765.	Truss, Spring Plate, Elastic, Single, Adult's.....	\$ 4 00
10766.	" " " Double, "	6 00
10767.	" Umbilical, Bow Spring, Adult's.....	4 00
10768.	" " " Youth's.....	3 00
10769.	" " " Child's.....	2 00
10770.	" Chase's, Adult's.....	3 50
10771.	" " Youth's.....	2 50
10772.	" " Child's.....	1 75
10773.	" Elastic, Adult's.....	4 00
10774.	" " Youth's.....	3 00
10775.	" " Child's.....	2 00
10776.	" " Empire, Adult's.....	4 00
10777.	" " Youth's.....	2 50
10778.	" " Child's.....	1 25
10779.	" Hard-Rubber, Adult's.....	8 00
10780.	" " " Combined with Abdominal Supporter.....	20 00
10781.	" Soft " Youth's.....	1 25
10782.	" " Child's.....	1 00
10783.	" Virchow's Scrotal, Single, Adult's.....	4 00
10784.	" " Double,	6 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

|| TRUSSES.

CELLULOID TRUSSES.

The Celluloid Truss having received the unqualified approval of the most eminent physicians, surgeons and specialists of both Continents, we desire to indicate a few of its manifold advantages.

Using in its fabrication the finest quality Spring Steel, highly tempered and made only for The E. C. Penfield Co., and a covering of beautifully tinted and highly finished Celluloid, prepared under our immediate supervision, the Truss, as now presented by us, is the most pliable, cleanly, readily adjusted and elegant instrument before the public.

Strong and perfectly made, it is at once durable and absolutely impervious to moisture. Possessing none of the irritating properties which characterize the Hard-Rubber Trusses, it occasions no discomfort to the most sensitive skin. No heat being necessary for its accurate adjustment, it is more easily manipulated, and when properly fitted, less liable to displacement than any other Truss ever before manufactured. We only show cuts of a few of the styles made by us, but can furnish most any style desired. Double Trusses made in every style of single.

THE E. C. PENFIELD CO.,

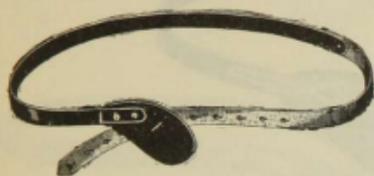
Sole Manufacturers,

112 South Eighth Street, Philadelphia.

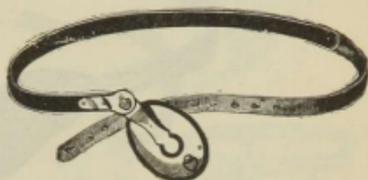
A. S. ALOE COMPANY, Selling Agents.

|| TRUSSES.

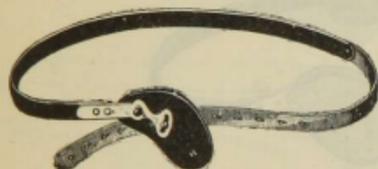
CELLULOID TRUSSES.



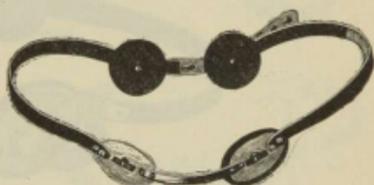
10785.



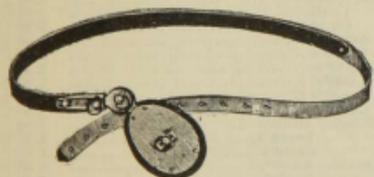
10791.



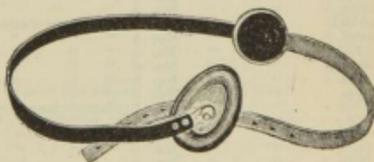
10803.



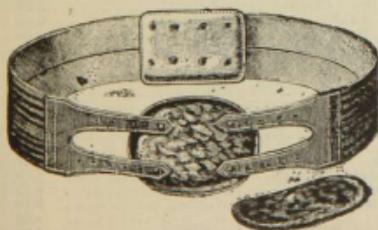
10812.



10818.



10820.



10822.



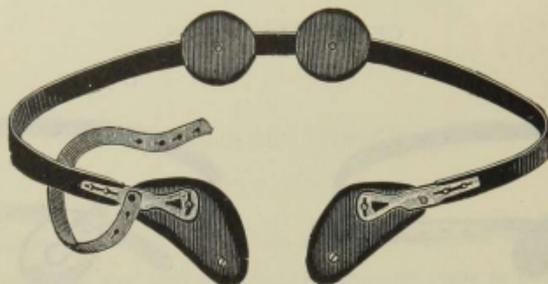
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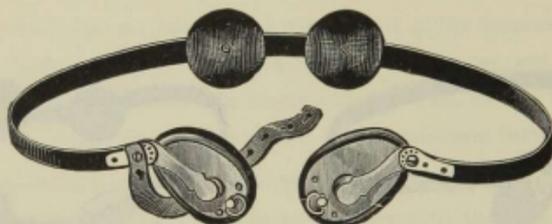
10799.

|| TRUSSES.

CELLULOID TRUSSES.



10806.

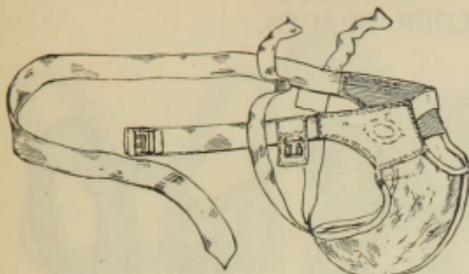


10794.

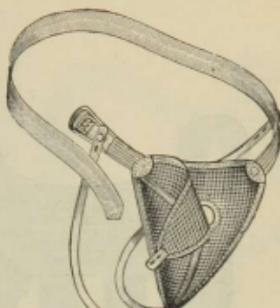
10785.	Celluloid Truss,	No. 3 (Fine French Pattern),	Single,	Adult's.....	\$ 5 00
10786.	"	No. 3	"	Youth's.....	3 50
10787.	"	No. 3	"	Child's.....	2 50
10788.	"	No. 3	"	Double, Adult's.....	8 00
10789.	"	No. 3	"	Youth's.....	5 00
10790.	"	No. 3	"	Child's.....	3 50
10791.	"	No. 5 (Set-Screw Pattern),	Single,	Adult's.....	5 00
10792.	"	No. 5	"	Youth's.....	3 50
10793.	"	No. 5	"	Child's.....	2 50
10794.	"	No. 5	"	Double, Adult's.....	8 00
10795.	"	No. 5	"	Youth's.....	5 00
10796.	"	No. 5	"	Child's.....	3 50
10797.	"	No. 6 (Chase's Improved Pattern),	Single,	Adult's.....	5 00
10798.	"	No. 6	"	Youth's.....	3 50
10799.	"	No. 6	"	Child's.....	2 50
10800.	"	No. 6	"	Double, Adult's.....	8 00
10801.	"	No. 6	"	Youth's.....	5 00
10802.	"	No. 6	"	Child's.....	3 50
10803.	"	No. 10 (Extension Pad Pattern),	Single,	Adult's.....	5 00
10804.	"	No. 10	"	Youth's.....	3 50
10805.	"	No. 10	"	Child's.....	2 50
10806.	"	No. 10	"	Double, Adult's.....	8 00
10807.	"	No. 10	"	Youth's.....	5 00
10808.	"	No. 10	"	Child's.....	3 50
10809.	"	No. 11 (Chase's Umbilical Pattern),	Adult's.....	5 00	
10810.	"	No. 11	"	Youth's.....	3 50
10811.	"	No. 11	"	Child's.....	2 50
10812.	"	No. 18 (Hood's Pattern),	Single,	Adult's.....	8 00
10813.	"	No. 18	"	Youth's.....	5 00
10814.	"	No. 18	"	Child's.....	3 50
10815.	"	No. 18	"	Double, Adult's.....	10 00
10816.	"	No. 18	"	Youth's.....	7 50
10817.	"	No. 18	"	Child's.....	6 00
10818.	"	No. 19 (Champion Pattern),	Single,	Adult's.....	5 00
10819.	"	No. 19	"	Double, ".....	8 00
10820.	"	No. 26 (Self-Adjusting Pattern),	Single,	Adult's.....	5 00
10821.	"	No. 26	"	Double, ".....	8 00
10822.	"	Umbilical, Elastic Belt with Celluloid Pad,	Adult's.....	5 00	
10823.	"	"	"	Youth's.....	3 50
10824.	"	"	"	Child's.....	2 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

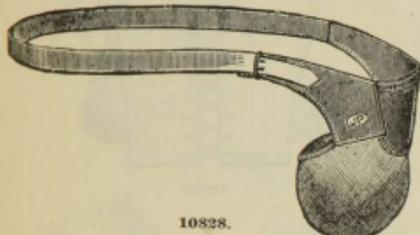
|| SUSPENSORIES.



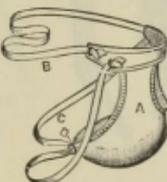
10826.



10847.



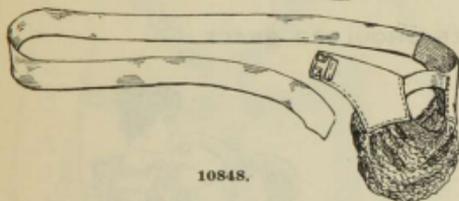
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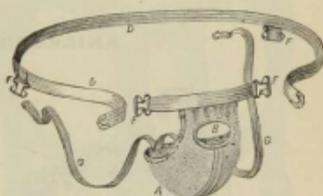
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10849.



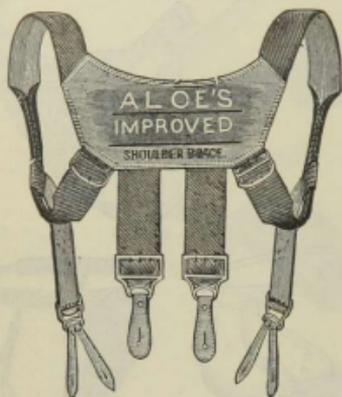
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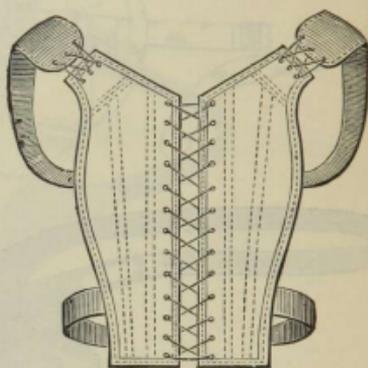
10836.

10825.	Suspensory, Bicycle, Linen Pouch	\$1 00
10826.	" " Silk Pouch	1 50
10827.	" " J. P. No. 1, Extra Stout Silk Pouch	1 25
10828.	" " " 2, Fine Silk Pouch	1 00
10829.	" " " 3, Silk Netting Pouch	75
10830.	" " " 4, Linen Thread Pouch	50
10831.	" " Miliano's, Compression	2 50
10832.	" " Rawson's, Army and Navy, No. 1, Frilled Elastic Waistband and Buttock Straps, made whole, without Buckles	1 50
10833.	" " Rawson's, Army and Navy, No. 1½, Frilled Elastic Waistband and Buttock Straps, with 2 Adjusting Buckles at Abdomen	1 75
10834.	" " Rawson's, Army and Navy, No. 2, Fine Plain Elastic Waistband and Buttock Straps, made whole, without Buckles	2 00
10835.	" " Rawson's, Army and Navy, No. 3, Superfine Plain Elastic Waistband and Buttock Straps, with 2 Adjusting Buckles at Abdomen	2 50
10836.	" " Rawson's, Army and Navy, No. 4, Superfine Plain Elastic Waistband and Buttock Straps, with 2 Adjusting Buckles at Abdomen, and 2 Buttock Strap Adjusting Buckles; Bags of finest French material, very soft and durable; extra quality Silk Trimmings, and beautifully finished	3 00
10837.	" " Rawson's, Army and Navy, No. 5, Silk Bag, Superfine Elastic Waistband and Buttock Straps, with 2 Adjusting Buckles at Abdomen, and 2 Buttock Strap Adjusting Buckles; Bags of fine English Silk Netting, in white or flesh color; superfine quality Silk Trimmings, and beautifully finished	3 50
10838.	" " Rawson's, Army and Navy, No. 6, all Silk, Superfine Silk Elastic Waistband and Buttock Straps, with 2 Adjusting Buckles at Abdomen, and 2 Buttock Strap Adjusting Buckles; Bags of fine English or French Silk Netting, in white or flesh colors; superior quality of Silk Trimmings and artistically finished	5 00
10839.	" " Syracuse, No. 10	40
10840.	" " " 16	50
10841.	" " " 21	75
10842.	" " " 26	1 00
10843.	" " " 31	1 25
10844.	" " " 34	2 00
10845.	" " " 35	3 00
10846.	" " Teufel's, Sport, Cotton Pouch	75
10847.	" " " Silk Pouch	1 25
10848.	" " University, Silk Pouch	75
10849.	Protection Suspensory, Horn's, Eclipse	2 00

|| SHOULDER BRACES.



10850.



10859.

KNICKERBOCKER SHOULDER BRACE.



10858.

The Importance of a Shoulder Brace in holding the body erect, expanding the chest, preventing round shoulders and hollow chest, is generally well understood.

Many attempts have been made to present a suitable article for this purpose, all of which, however, were objectionable in some respects, which prevented their coming into general use. In the Knickerbocker Brace all objections have been overcome.

When properly adjusted, it is entirely free from chafing or pressure against the muscles under the arms. The brace and restraint is on the point of the shoulders in front, reminding and prompting the wearer to stand erect, and at the same time enabling him to assume any position without discomfort.

It is a combined Shoulder Brace and Suspender. It provides new and improved suspenders for men's pants, and supporters for ladies' underskirts, which do the double duty of holding up and bracing up.

It is a great boon to the stronger sex, and is correcting for the weaker, some of the abuses for which the Ladies' Hygienic Dress Association is laboring.

Withal, the price is so reasonable as to bring it within the reach of all classes of men, women and children.

|| SHOULDER BRACES.

TEUFEL'S "AUFRECHT" SHOULDER BRACE AND BACK SUPPORTER,

FOR BOYS, GIRLS AND ADULTS.



10869.

"Round Shoulders" is one of the most prevalent deformities, and yet very little attention is paid by surgeons to its treatment, although it is amenable to curative measures with as little discomfort as any other prominent deformity, and the best means yet devised for its relief and permanent cure, is the "Aufrecht Universal Shoulder Brace and Back Supporter." Dr. August Schreiber, in his work on general orthopedics, writes as follows: "The so-called round shoulders are met with in young people with relaxed ligaments and muscles, and the condition results from the habitual assumption of faulty position. In certain instances the entire spinal column, above the sacrum, presents a flattened arc with convexity backward; the shoulder blades sink in forward, and their apices stand out from the thorax like wings.

In other instances the position is not assumed by the individual, but the vertebrae are abnormally movable, and the normal curve of the spinal column for this reason readily becomes distorted.

Round Shoulders are also found among adults, whose occupation requires constant bending forward, and among those also who carry weights on their backs.

A further variety of Round Shoulders is found in children from two to three years old, who present evidences of rachitis. It is not fixed but disappears on the assumption of the horizontal position. It is due to great relaxation of the muscles and ligaments, and to the softness of the bones.

The habitual carrying of the child forward is a predisposing cause.

The "Aufrecht" is the appliance best adapted to these conditions; it is constructed of an anatomically shaped back piece, containing two steel watch springs, extending up and down the back, and two springs, extending from the middle to the shoulders, with straps which draw the shoulders backwards, and thus increase the size of the thoracic cavity.

The "Aufrecht" especially adapts itself to all forms of weakness of the back, and to-day stands alone as the only perfect remedy for round shoulders, and the only appliance suited to the maintenance of a correct and elegant carriage.

The "Aufrecht" is made in five sizes, each of which may be easily lengthened or widened to fit the patient perfectly.

Owing to its perfect anatomical construction it offers the following advantages:

1. The "Aufrecht" Universal Shoulder Brace conforms perfectly with the shape of the body, and is not visible through the dress or clothing.
2. The "Aufrecht" Universal Shoulder Brace is so made that it may be lengthened or widened to fit any figure.
3. The "Aufrecht" Universal Shoulder Brace exerts in consequence of its exceptionally perfect construction, a direct pressure upon the back, below the shoulder blades, at the same time draws the shoulders back, supporting and straightening the spine and enlarging the thoracic cavity.
4. The "Aufrecht" removes immediately all tendency to listless carriage.
5. The "Aufrecht" checks all tendency to mal-position and continually improves the form of the wearer.
6. The "Aufrecht" can be worn continually and in any occupation, even while taking athletic exercise, without the least inconvenience to the wearer.
7. It is endorsed by all leading physicians and the price is low enough to be within the reach of all.

|| SHOULDER BRACES.

TEUFEL'S "CORRECTOR" SHOULDER BRACE.



10874.

Teufel's Corrector Shoulder Brace is an admirable brace for round shoulders in cases where no spinal support is necessary.

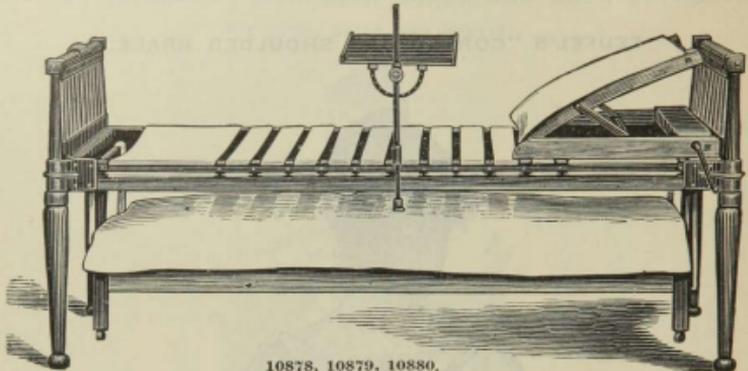
Its use is especially indicated for summer wear, as it is made of open mesh, horse hair material. It has the two steel springs with the padded shoulder straps as in the Aufrecht.

It is made in three sizes—large, medium and small—for adults, youths and children respectively.

10867.	Teufel's "Aufrecht" Shoulder Brace	No. 0, Child's, Small.....	\$3 00 ||
10868.	"	" " " " No. 1, " Large.....	3 50 ||
10869.	"	" " " " No. 2, Youth's, Small.....	4 00 ||
10870.	"	" " " " No. 3, " Large.....	4 50 ||
10871.	"	" " " " No. 4, Adult's, Small.....	5 00 ||
10872.	"	" " " " No. 5, " Large.....	5 50 ||
10873.	"	" " " " "Corrector" Shoulder Brace, Large.....	2 50 ||
10874.	"	" " " " " " Medium.....	2 25 ||
10875.	"	" " " " " " Small.....	2 00 ||

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

† INVALID FURNITURE.
INVALID BEDSTEAD—BACK RESTS—BED TRAYS.
THE CROSBY INVALID BEDSTEAD.



10878, 10879, 10880.

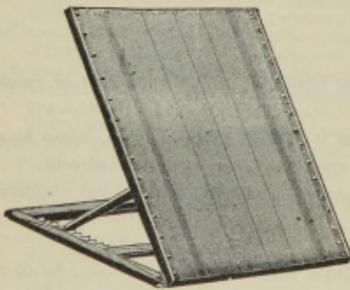
It affords easy access to the body, permitting the bed-clothes to be changed and the bed made up, securing perfect cleanliness without fatigue or annoyance and allowing defecation to be performed without moving the patient. One person can perform all the necessary duties to a sick person—make up the bed, wash and ventilate the body, dress bed-sores and use the bed-pan without assistance or disturbing the patient.

Surgeons in the smaller towns where there are no hospital facilities, will find it to their interest to possess one of these Beds to rent to their patients. In surgical cases, and more especially in the treatment of fractures, when the welfare of the patient depends upon absolute quiescence and undisturbed repose for days and weeks, it is offered as an aid which no surgeon should neglect to avail himself of, in the interest not only of the sufferer, but of his own reputation as a successful practitioner.

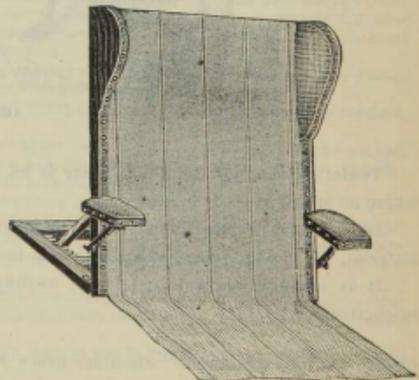
Its moderate cost puts it within the reach of, and its extreme simplicity commends it, to every one. Correspondence solicited.

10876.	Crosby Invalid Bedstead.....	\$25 00 †
10877.	“ “ “ with Excelsior Mattress.....	27 50 †
10878.	“ “ “ “ Cotton Top “	30 00 †
10879.	Crosby Adjustable Table.....	5 00 †
10880.	Crosby Adjustable Back Rest.....	5 00 †

SOLID COMFORT BACK RESTS.



10881



10882.

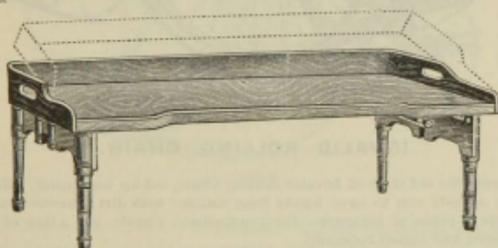
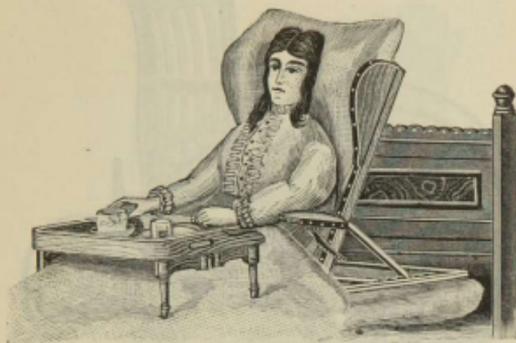
To the attendants in the sick room it does away with much arduous, as well as unnecessary labor. It can be used with or without pillow or can be placed under the mattress if preferred. In the construction of the Solid Comfort Back Rest everything conducive to the comfort of the sick has been considered. It is made of a stout ash frame, with ratchets underneath the back, which support the patient at any inclination, and the back, unlike others heretofore constructed, has no cross rail at the bottom, but being tastefully covered with a stout linen duck, is cool and elastic to the back. It will be seen by these accompanying illustrations that we make them in a variety of styles. Fig. 10881 represents simply a plain Back Rest; Fig. 10882, with arms, head rests and an apron. The arms are so arranged that they can always be level, regardless of the inclination of the back, and they fold down flat if not wanted. The advantage of the apron is, that when sitting on the weight of the user holds the Back Rest in place. The advantage of the apron is, that when sitting on an excellent thing for the beach or lawn and is very popular as such. The head rests are designed for the use of such as are not able to support themselves in a sitting position, and will be found useful when it is desired to sleep, with the back in an upright or partly reclined position.

10881.	Solid Comfort Back Rest, without Arms and Head Rests	\$4 00 †
10882.	“ “ “ “ with “ “ “	6 00 †

† INVALID FURNITURE.

INVALID BEDSTEAD—BACK RESTS—BED TRAYS.

FOLDING BED TRAYS.



10883.

Our Folding Bed Tray is an article of incalculable value to every household, hospital or hotel. To appreciate it one need not be a confirmed invalid, for even in a case of temporary indisposition, or where one has to occasionally take a meal in bed, the comfort derived from its use far exceeds the trifling consideration of its cost. But to those subjected to a prolonged sickness or to the invalid, the Folding Bed Tray is a boon of priceless value. It should form a part of the furniture of every household as much as a dining table. No family can be so exempt from the ills of life as not to find it a convenience. They are constructed with a rim around the sides and back, and a narrow strip in front to keep the dishes from slipping. The legs are made to fold when not in use. The folding legs are much stronger than the old fashioned permanent ones, as well as being handsomer and lighter, and also having the decided advantages of greater portability. They are made of solid ash, $13\frac{1}{2} \times 25$ inches, and are eight inches high.

† A special feature of the Bed Tray is in its construction, it can be changed into a Book Rest by simply raising the top which can be held at various angles by a steel wire brace (see cut above).

10883. Folding Bed Tray No. 1..... \$4 00 †

† INVALID FURNITURE.

INVALID ROLLING CHAIRS.



10885.

INVALID ROLLING CHAIR.

The above represents the old style of Invalid Rolling Chair, set up on strong, substantial wheels, propelled by means of an outside rim to save hands from contact with dirt; the occupant can thereby propel himself easily from place to place at pleasure. Steel suspension wheels, the axles of steel, connections of malleable iron, well braced and bolted together.

10884. Child's Rolling Chair No. 1, designed for children up to 14 years of age; has 24 inch Steel Suspension Wheels, with Hand Rims, and 12 inch Hind Wheel. Seat Frame measures 16x15, height of Back 20 inches, substantially made of Oak, with Perforated Veneer Seat, and is supplied with comfortable Arm Rests. Will pass through a 26 inch doorway..... \$16 00 †
10885. Adult's Invalid Rolling Chair No. 2, constructed in the manner as represented in above cut. Seat Frame 18x18, height of Back 22 inches. Has 28 inch Front Steel Suspension Wheels, with Hand Rims, and 14 inch Hind Wheel, made of the very best material. Will pass through a 28 inch doorway..... 20 00 †

SELF-PROPELLING INVALID CHAIR.

(PATENTED.)

10896. Child's Self-Propelling Invalid Chair No. 3 has 24 inch Front and 12 inch Hind Wheels; the Seat Frame measures 16x15; substantially made of Oak, with Perforated Veneer Seat. The Back is 20 inches high, with comfortable Arm Rests. Will pass through a 26 inch doorway..... \$21 00 †
10887. Adult's Self-Propelling Invalid Chair No. 4. Height of Back 22 inches, Seat Frame 18x18. The Front Wheels are 28 inches in diameter, Hind Wheel 14 inches, and are made of the very best material. Will pass through a 28 inch doorway..... \$25 00 †

Persons with weak or paralyzed limbs will find this machine the most convenient and practical one of any yet introduced. It is perfectly safe and easily propelled by means of cranks and endless chains running over sprocket wheels, as shown in cut of the No. 6 Chair shown on page 927. Each wheel moves independently of the other, thereby enabling the operator to turn on the spot, as well as move in any direction. This Chair will prove the most valuable companion to invalids, not only on the street but far more so in the house. The foot rest can be swung up so as to facilitate easy access to the seat. The motion of the cranks being transmitted by sprocket wheels 3 inches in diameter to those on the front wheels of 6 inches in diameter, the working power is doubled so that weak persons can propel it with ease. The machine will work comparatively well on rough or sandy road, or ascending a moderate inclination; its speed is that of an ordinary walk.

† INVALID FURNITURE.

INVALID ROLLING CHAIRS.

CANE SEAT SELF-PROPELLER.



10889.

Is the same in construction as No. 4 Propeller, with the exception of seat, which is of cane, with roomy rattan back and comfortable arm rest, thus making it a very cool, and at the same time a strong and substantial chair. We make this chair in two sizes.

10888. Child's Cane Seat Self-Propelling Chair No. 5. General appearance same as above cut. Front Wheels 24 inches, Hind Wheel 12 inches, width of Seat 15x15, height of Back 20 inches. The connections are of malleable iron. Will pass through a doorway not less than 26 inches wide. \$30 00 †
10889. Adult's Cane Seat Self-Propelling Chair No. 6, as represented in above cut. Front Wheels 28 inches, Hind Wheel 14 inches, width of seat 18x20, height of Back 29 inches. The connections are of malleable iron, the Axles of Steel. Will pass through a doorway not less than 28 inches wide. 35 00 †

CANE SEAT ROLLING CHAIR.

These Chairs are the same in construction as Fig. 10889, with the exception of having hand rims on wheels instead of crank chain propelling attachment. We make this chair in two sizes.

10890. Child's Cane Seat Rolling Chair No. 30, has Steel Suspension Wheels with outside rims. Front Wheels 24 inches, Hind Wheel 12 inches, width of Seat 14 inches, height of Back 20 inches, height of Seat from foot board 12 inches. Will pass through a doorway not less than 26 inches wide. \$26 00 †
10891. Adult's Cane Seat Rolling Chair No. 31, has Steel Suspension Wheels with outside rims. Front Wheels 28 inches, Hind Wheel 14 inches, width of seat 18 inches, height of Back 29 inches, height of Seat from foot-board 17 inches. Will pass through a doorway not less than 28 inches wide. This Chair is a very desirable one for use out of doors as well as in the house. 30 00 †

† INVALID FURNITURE.

INVALID ROLLING CHAIRS.
RECLINING INVALID PROPELLER.

10893.

The above cut represents a Self-Propelling Reclining Invalid Chair. The frame is made of oak timber, with perforated seat and back, finished in natural wood. The chair is so balanced that the occupant may easily assume any position and hold the same by a ratchet. The propelling power is the same as our No. 4 Propeller.

10892. Child's Reclining Invalid Propeller No. 8, designed for children under 15 years of age. Seat 16x15, Back 19 inches high, with 25 inch Front Wheels and 12 inch Hind Wheel. Will pass through a 26 inch doorway..... \$20 00 †
10893. Adult's Reclining Invalid Propeller No. 9, Seat 18x20, Back 29 inches high with 28 inch Front Wheels and 14 inch Hind Wheel. Will pass through a 29 inch doorway..... 25 00 †
10894. Adult's Reclining Invalid Propeller No. 10, same as No. 9, with a cushion on back and front, made of Raw Silk or Remie Cloth. Will pass through a 29 inch doorway 30 00 †
10895. Adult's Reclining Invalid Propeller No. 11, same as No. 9, with a cushion on back, seat and front, made of morocco leather, tufted and filled with curled hair..... 35 00 †

RECLINING INVALID ROLLING CHAIR.

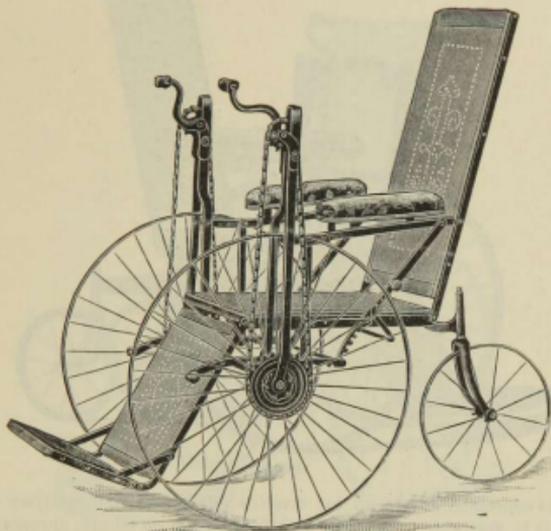
These are a new style of Reclining Invalid Chair. The occupant can propel himself easily from place to place by means of outside rims, and the chair is so balanced that the occupant can assume any desired position by raising or lowering a ratchet. Frame of chair is same in construction and material as our No. 9 Propeller. It has steel suspension wheels.

10896. Child's Reclining Invalid Rolling Chair No. 35, Seat 16x15, Back 19 inches high, Front Wheels 24 inches, Hind Wheel 12 inches. Will pass through a 26 inch doorway..... \$17 00 †
10897. Adult's Reclining Invalid Rolling Chair No. 36, Seat 18x17 inches, Back 29 inches high, Front Wheels 28 inches, Hind Wheel 14 inches. Will pass through a 29 inch doorway 20 00 †

† INVALID FURNITURE.

ROLLING CHAIRS.

IMPROVED SELF-PROPELLING INVALID CHAIR.



10898.

Above cut shows a new style Self-Propelling Chair for invalids, which is adjustable at pleasure to a reclining or sitting position. This chair is intended for use both on the street and in the house, and is so balanced that the occupant may adjust it to any position and retain the same by means of a ratchet. The Back and Foot-Rest work either independently or together. The latter is so made as to be adjustable to the length of the occupant, thus adding to the comfort. The propelling power is the same as that applied on chair No. 10887, page 926.

10898. Adult's Improved Self-Propelling Invalid Chair No. 20, frame is made of wrought iron, with perforated Seat, Back and Leg-Rest, finished in the natural color of the wood, height of Back 32 inches, width of Seat 17x18, Steel Suspension Wheels, 28 inch Front and 14 inch Hind Wheel.....	\$35 00 †
10899. Adult's Improved Self-Propelling Invalid Chair No. 21. Same as above, Cane Seat, Back and Leg-Rest fitted into the frames, Upholstered Arms.....	40 00 †
10900. Adult's Improved Self-Propelling Invalid Chair No. 22, Back, Seat and Leg-Rest Upholstered in Raw Silk or Remie Cloth, Springs in Back, Seat and Leg-Rest, and stuffed with Curled Hair.....	45 00 †
10901. Adult's Improved Self-Propelling Invalid Chair No. 23, Back, Seat and Leg-Rest Upholstered in genuine Morocco Leather, Springs in Back, Seat and Leg-Rest, tufted and filled with Curled Hair.....	55 00 †

IMPROVED ROLLING INVALID CHAIR.

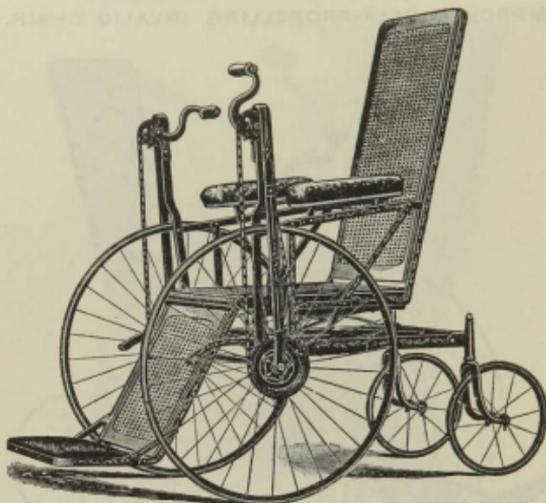
The following are furnished with Steel Suspension Wheels with Outside Hand Rims to save hands from contact with dirt. Frame of chair is same in construction and material as our Improved Self-Propelling Invalid Chair No. 20.

10902. Adult's Improved Rolling Invalid Chair No. 24, as above style, Frame is made of wrought iron, with perforated Seat, Back and Leg-Rest, finished in the natural color of the wood, height of Back 32 inches, width of Seat 17 x 18, Steel Suspension Wheels, 28 inch Front and 14 inch Hind Wheels; will pass through a 28 inch doorway.....	\$35 00 †
10903. Adult's Improved Rolling Invalid Chair No. 25, same as above, Cane Seat, Back and Leg-Rest fitted into the Frames, Upholstered Arms.....	40 00 †
10904. Adult's Improved Rolling Invalid Chair No. 26, Back, Seat and Leg-Rest Upholstered in Raw Silk or Remie Cloth, and stuffed with Curled Hair.....	45 00 †
10905. Adult's Improved Rolling Invalid Chair No. 27, Back, Seat and Leg-Rest Upholstered in Morocco Leather, filled with Curled Hair.....	55 00 †

† INVALID FURNITURE.

ROLLING CHAIRS.

FOUR-WHEEL ADJUSTABLE PROPELLING CHAIR.



10906.

Above Chair is especially gotten up for invalids suffering from paralysis or spinal affections, for whom it is desirable. The seat and frame rests on elliptic springs; otherwise it is the same in construction as our No. 20 Propeller. Chair frame is made of wrought iron, has 28 inch front and 14 inch hind, steel suspension wheels.

10906. Adult's Four-Wheel Adjustable Propelling Chair, No. 44, with Perforated Seat, Back and Leg-Rest. Height of Back, 33 inches; width of Seat, 17x18 inches; Upholstered Arm-Rest, Back and Leg-Rest.....	\$50 00 †
10907. Adult's Four-Wheel Adjustable Propelling Chair, No. 45, with Caned Seat, Back and Leg-Rest.....	55 00 †
10908. Adult's Four-Wheel Adjustable Propelling Chair, No. 46, Upholstered in Remie Cloth throughout	60 00 †
10909. Adult's Four-Wheel Adjustable Propelling Chair, No. 47, Upholstered throughout in genuine Morocco Leather.....	70 00 †

FOUR-WHEEL ADJUSTABLE ROLLING CHAIR.

Above Chair is same in construction as No. 44, with exception of being rolled by outside rims instead of being propelled by crank.

10910. Adult's Four-Wheel Rolling Chair, No. 40, with Perforated Seat, Back and Leg-Rest. Height of Back, 32 inches; width of Seat, 17x18 inches; Upholstered Arm-Rest, Back and Leg-Rest	\$45 00 †
10911. Adult's Four-Wheel Rolling Chair, No. 41, with Caned Seat, Back and Leg Rest	50 00 †
10912. Adult's Four-Wheel Rolling Chair, No. 42, Upholstered in Remie Cloth throughout.....	55 00 †
10913. Adult's Four-Wheel Rolling Chair, No. 43, Upholstered throughout in genuine Morocco Leather.....	65 00 †

† INVALID FURNITURE.

ROLLING CHAIRS.

PATENT ROLLING CHAIR.



10914.

The above cut represents a Rolling Chair that is designed for an attendant to push, for which purpose a handle is attached to the back. The frame is made of oak with perforated seat and back, finished in natural color of the wood. It is placed on Steel Elliptic Springs, thus making it easy riding, and very desirable for use out of doors. The frame is made in the most comfortable shape for securing the comfort of the patient, and is so balanced that the front wheels are easily lifted from the ground in order to pass over obstructions. The axle is steel. The front wheels are iron, and work on a pivot, allowing the chair to be easily turned. The hind wheels are made of the very best material.

10914. Adult's Rolling Chair No. 14, same as above description, Seat 18 inches wide, Back 26 inches high, Front Wheels 6 inches and Hind Wheels 28 inches. Will pass through a 28 inch doorway ..\$25 00 †
10915. Adult's Rolling Chair No. 15, same as above, with Cushion made of Raw Silk on Back, Seat and Front..... 30 00 †
10916. Adult's Rolling Chair No. 16, same as No. 14, with Cushion on Back, Seat and Front made of Morocco Leather, tufted and filled with Curled Hair..... 35 00 †
10917. Child's Rolling Chair No. 17, same in construction as adult size, Front Wheels 4 inches, Hind Wheels 24 inches, width of Seat 16x15, Back 19 inches high, all connections of Malleable Iron..... 20 00 †

COLUMBIA ROLLING CHAIR.

STYLE USED AT THE CENTENNIAL.

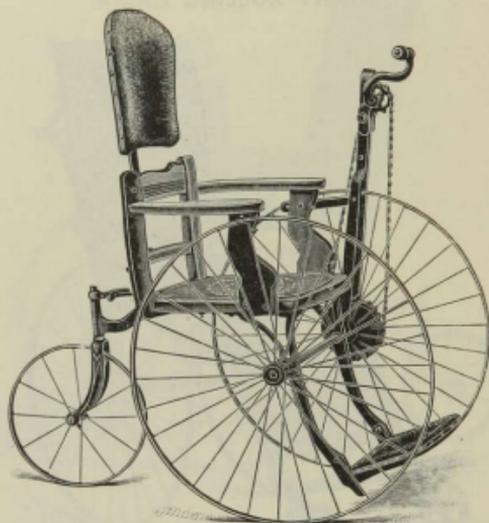
10918. Adult's Columbia Rolling Chair, No. 33, Phaeton body, made of Rattan, Back 28 inches high, width of Seat 17½ inches, depth of Seat 19 inches, Arm Rests 11 inches high, Seat covered with Loose Cloth Cushion stuffed with Curled Hair, Carpeted Leg and Foot-Rest, 4 inch Front Wheels, with flat, soft rubber tires and bracketed on Foot-Rest Frame, swiveling independent of each other, Steel Suspension Hind Wheels 28 inches high, ½ Oval Iron Tire, Steel Elliptic Springs—altogether a handsome and comfortable Chair. Will carry any weight. Will pass through a 28 inch doorway.....\$40 00 †
10919. Child's Columbia Rolling Chair, No. 34, same general style and construction as No. 33, Back 24 inches high, Seat 14x15, Arm-Rests 9 inches high, 4 inch Front Wheels, 24 inch Hind Wheels, ½ inch Oval Iron Tires. Will pass through a 26 inch doorway..... 35 00 †

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

† INVALID FURNITURE.

ROLLING CHAIRS.

ONE-ARMED SELF-PROPELLING CHAIR.



10921.

The above cut represents a Self-propelling Chair for an invalid who has but the use of one arm. The chair is guided in any direction with the back of the occupant, by bringing a little pressure to bear against the back of the chair, which is connected to the hind wheel by a cog. Should the occupant want to steer to the right he simply presses his back to the right side of the back of the chair, and vice versa. The crank and endless chain can be attached to either front wheel as desired. It can be made to go at a reasonable speed.

10920. Child's One-Armed Self-Propeller No. 50, has 24 inch Front and 12 inch Hind Steel Suspension Wheels. Width of Seat 16 inches. Back of Chair is Upholstered in Leather, and can be adjusted to any height. The Frame is substantially made of Oak with Perforated Veneer Seat, and has comfortable Arm-Rest. The connections are of Malleable Iron, the Axles of Steel. Will pass through a 26 inch doorway \$25 00 †

10921. Adult's One-Arm Self-Propeller No. 51, is same in construction as No. 50. Width of Seat 18 inches. Height of Front Wheels 28 inches. Height of Hind Wheel 14 inches. Will pass through a 28 inch doorway 30 00 †

When ordering One-Arm Propellers advise us on which one of the front wheels to place the crank and chain.

10922. Adult's Back-Steering Self-Propeller No. 52, same in construction as No. 50 Chair, but has two Crank Handles. These are arranged so that each wheel can be moved independent of the other. Seat 18x18 inches. Height of Back 22 inches. Made of Oak with perforated Veneer Seat. Will pass through a 28 inch doorway 35 00 †

10923. Child's Back-Steering Self-Propeller No. 53, same as No. 52. Seat 16x15 inches. Back 20 inches high. 24 inch Front Steel Suspension Wheels and 12 inch Rear Wheel. Malleable Iron connections. Axles of Steel. Will pass through a 26 inch doorway 30 00 †

NOTE.—For all of the foregoing Chairs we supply three styles of Wheels: Wooden Wheels, Steel Suspension Wheels, and Rubber Tire Suspension Wheels. Unless specially mentioned by the purchaser that Wooden Wheels are preferred, will send Steel Suspension Wheels, the price being the same.

Rubber Tire Suspension Wheels to fit all styles of Chairs, adds to price \$15.00 †

† INVALID FURNITURE.

INVALID CARRYING CHAIR.

ROLLING CHAIR ATTACHMENTS.

10924. COMMODE.

This will be found a great convenience in many cases. The seat is wood. The pan can be attached to any of our chairs at an additional cost of \$4.00 †



10924. Closed.

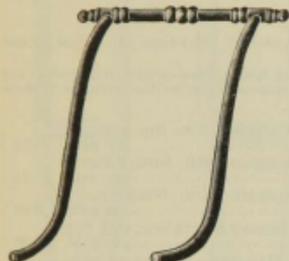


10924. Open.

10925. PUSH HANDLE FOR INVALID'S CHAIR.

Can be attached to any style of chair. It is of hickory elm and can be made any length desired.

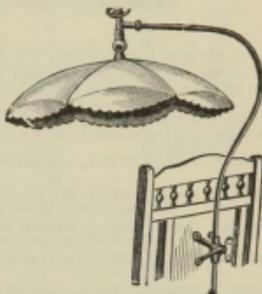
Price for Handle, including extra attachment, fitted to chair, \$1.50 †



10925.

10926. PARASOL TOP.

The Parasol Top shown in the illustration is light and simple, and can be easily adjusted to any angle. The rod supporting the parasol is attached to the back of the chair by a clamp.



10926.

We make them in four different styles, as follows :

Silesia Parasol Top, unlined, 20 inch.....	\$2 50 †
" " " lined, 20 inch.....	2 75 †
Satin Parasol Top, lined, 20 inch.....	2 25 †
" " " covered with lace, 20 inch.....	4 00 †

Attached to any chair or sent by express on receipt of price.

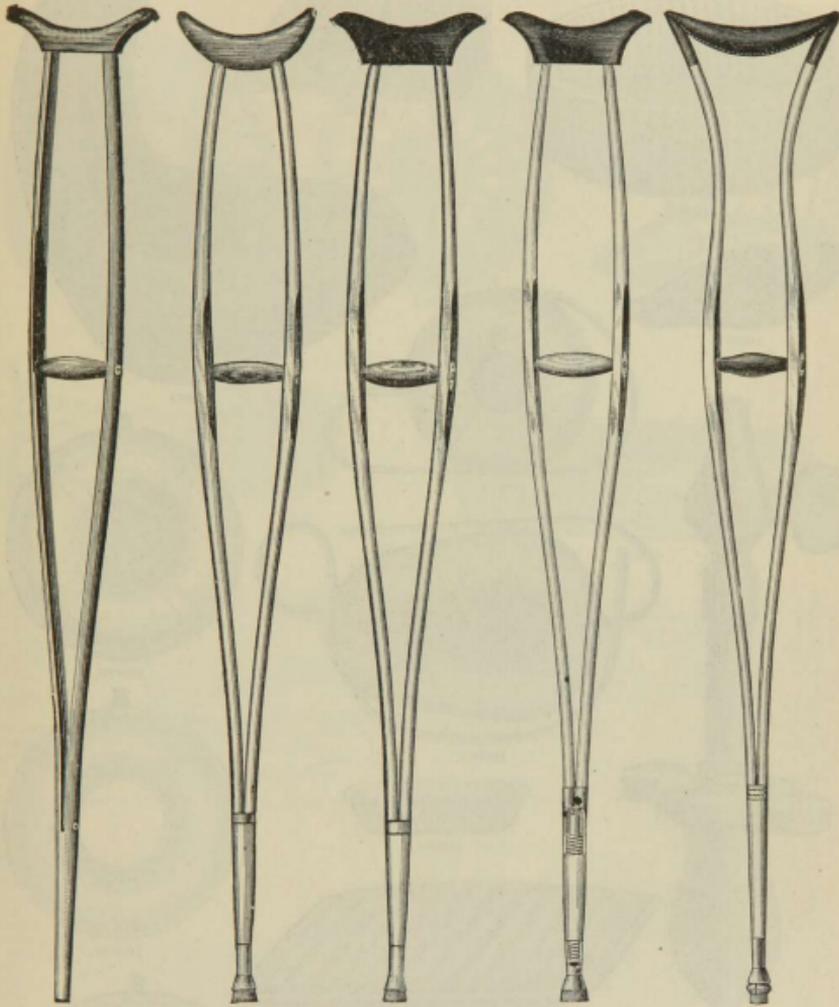
10927. IMPROVED CARRYING CHAIR.

The above cut represents a Carrying Chair for carrying an invalid up and down stairs or on a level; it also makes a comfortable arm chair; handles on front and back of chair, which can be extended out or lowered at leisure; oak frame, well riveted; figured Brussels carpet on seat and back. Back 31 inches high, width of seat 20 inches, depth of seat 18 inches; strong enough for the heaviest person..... \$12 00 †



10927.

† CRUTCHES.



10952.

10953.

10954.

10955.

10956.

- 10952.** Crutches, Hickory Elm, with Slip Rubbers per pair, \$ 2 50 †
10953. " " with Nickel Plated Socket and Screw Rubbers " 3 50 †
10954. " Rock Maple, with Nickel Plated Socket and Screw Rubbers and Padded Tops, per pair, 4 50 †
10955. Crutches, Rock Maple, with Nickel-Plated Socket and Screw Rubbers and Padded Tops and Extension per pair, 6 00 †
 This Crutch is particularly adapted for children. It has a patent extension bottom, which can be replaced by longer plugs to suit the increasing height.
10956. Crutches, Rock Maple, with Whittemore Patent Socket and Rubbers and Spring-Arm Pieces, per pair, 8 00 †
10957. Crutches, Lancewood, with Whittemore Patent Socket and Rubbers and Spring Arm Pieces, per pair, 9 00 †
10958. Crutches, Rosewood, with Whittemore Patent Socket and Rubbers and Spring Arm Pieces, per pair, 10 00 †

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

† INVALID SUPPLIES.



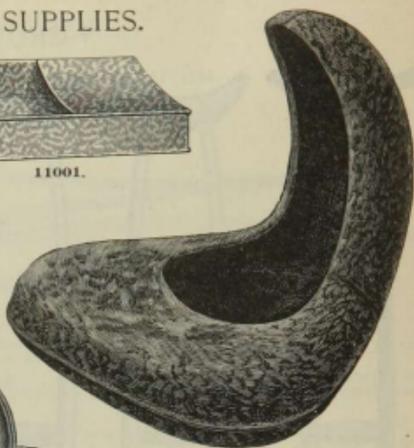
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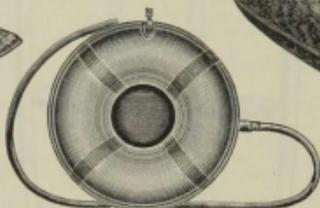
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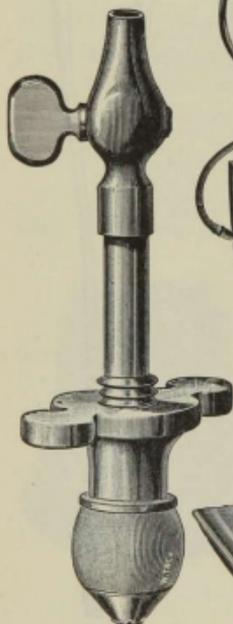
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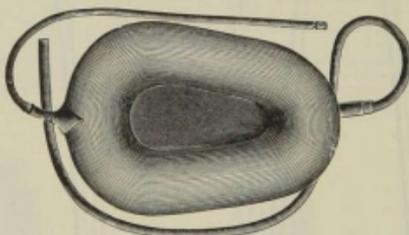
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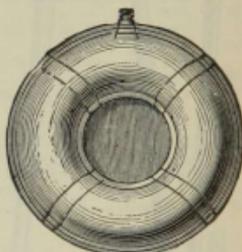
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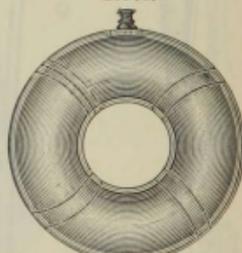
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10970.



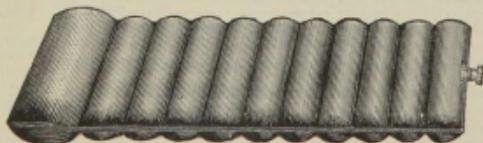
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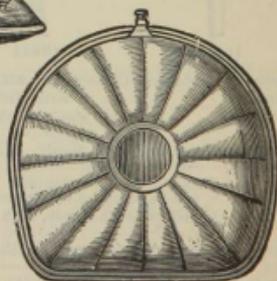
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10983.

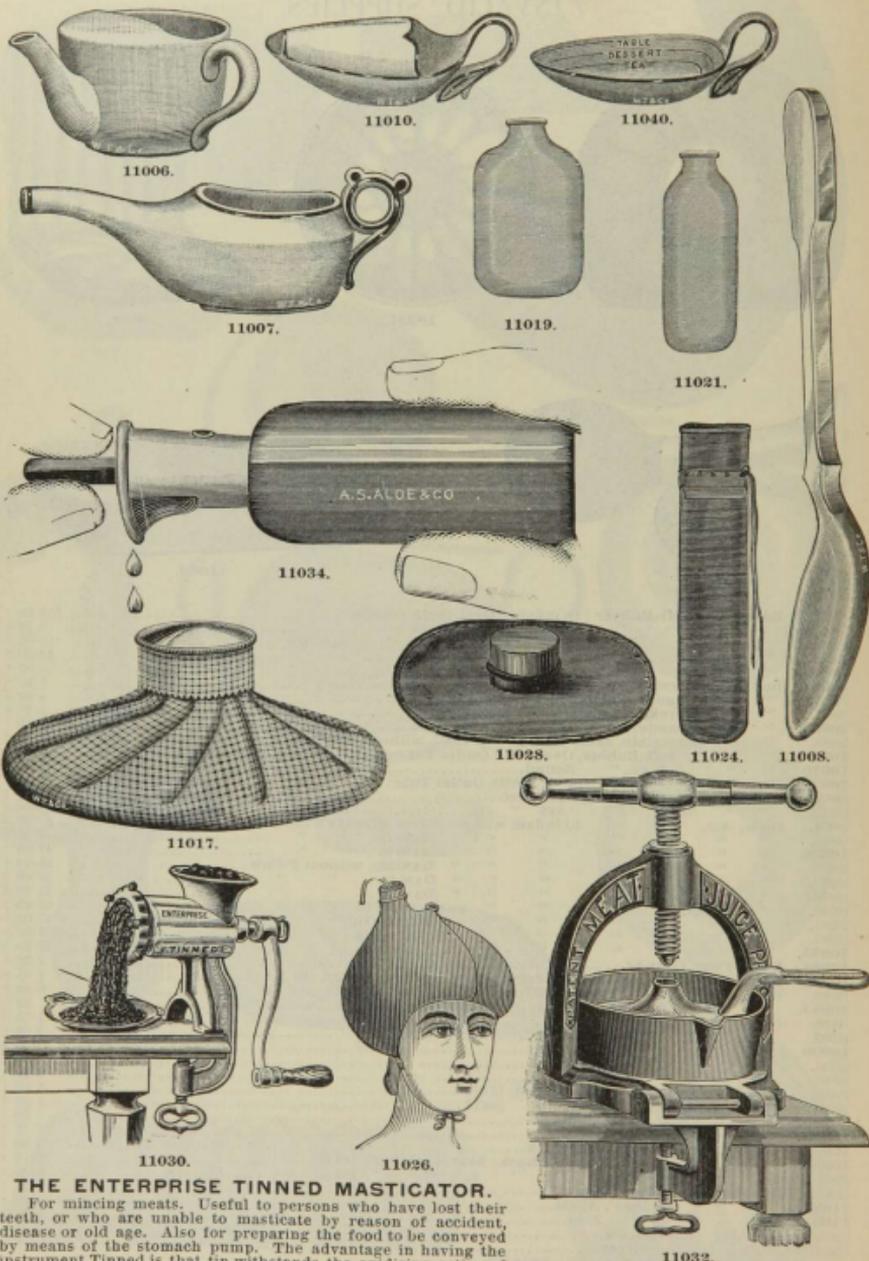


10976.



10995.

† INVALID SUPPLIES.

**THE ENTERPRISE TINNED MASTICATOR.**

For mincing meats. Useful to persons who have lost their teeth, or who are unable to masticate by reason of accident, disease or old age. Also for preparing the food to be conveyed by means of the stomach pump. The advantage in having the instrument Tinned is that tin withstands the oxidizing action of air, whether dry or moist, at ordinary temperatures, and will not rust. It is unaffected by acids, is cleaned quickly, makes a hard durable finish and is very desirable in every way.

† INVALID SUPPLIES.

W. T. & CO.'S No. 10 NIGHT LAMP.

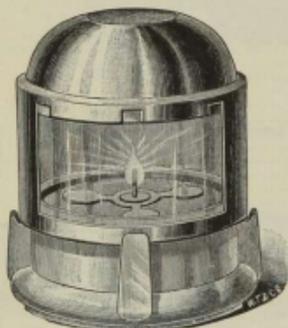
This Lamp is designed to furnish a dim light to burn all night in a nursery or sick-room.

The Light is supplied by a small taper, floating in oil. The base of the lamp or oil cup is of glass, and the upper part of nickel-plated metal, with a sheet of mica set in one side. The other side being opaque, the light may be shaded by turning the top around.

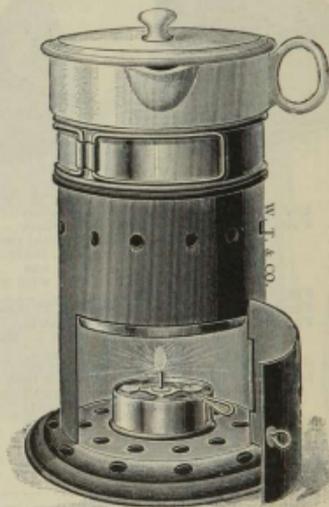
Cotton seed, lard, sperm, olive or U. S. oil may be used. The tapers can be obtained from any druggist. One cup of oil and one taper will burn all night, if only a small flame is used. The flame may be reduced, if too large, by cutting off a part of the wick.

These lamps will be found especially useful in the country, where gaslight is not available, and the extremely small expense for fuel, renders them a desirable substitute for gas, even for city use.

For price see page 939.



11047. Height, 3¼ in.



11012.

W. T. & CO.'S NO. 1 NIGHT STOVE AND FOOD WARMER.

For use in the nursery or sick-room.

Made of Russia sheet iron and furnished complete with oil cup, tapers, alcohol lamp, tin water vessel and china food cup of ½ pint capacity, with cover.

This stove is specially designed for keeping warm, without heating to too high a temperature, milk or other food for infants, or beef tea, gruel, etc., for invalids.

The heat is supplied by a small taper, which floats in a cup of oil. Cotton seed, lard, sperm, olive or U. S. oil may be used. One cup of oil and one taper will burn all night.

This stove possesses the following advantages, aside from its low price:

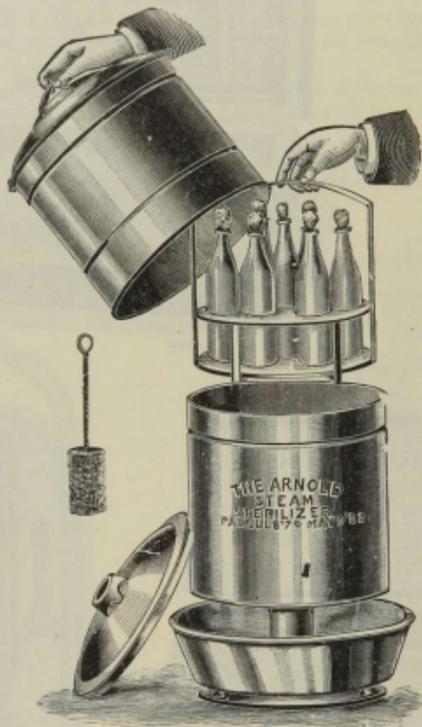
It does not require a special lamp. The oil to be used is always at hand or easily obtainable, and the expense for fuel is almost nothing. The tapers can be obtained from any druggist. One box of these will last for three months, with nightly use.

Sufficient heat for the purpose can be maintained without heating the air of the room. A strong, quick heat can be produced, if desired, by means of the spirit lamp.

The light is hidden when not required, but is available for use at any moment. There is no objectionable odor.

For price see page 939.

† INVALID SUPPLIES.
THE ARNOLD STEAM STERILIZER.
 FAMILY SIZE FOR STERILIZING MILK.



11059.

HOW TO OPERATE IT.

Fill the nursing bottles with milk, through a funnel, nearly to the neck and stopper with loose cotton. Set them in the rack and place in the Sterilizer and cover up with the lid and hood. Fill the reservoir or pan with water and set on the fire. It can be used on any kind of stove or heating lamp—coal, gas, alcohol or kerosene—and will generate steam from cold water in three or four minutes. Without further attention the milk will be perfectly sterilized within an hour. It is not necessary to place the bottles on ice after removing them from the Sterilizer. Milk properly prepared will keep for weeks.

Experiments in the principal laboratories of the country have proved that an unvarying temperature of 212° F. is maintained in this simple apparatus; and that milk treated therein for one hour is absolutely free from all germs of disease.

An improvement has lately been made, and Arnold Steam Sterilizers are now adapted for sterilizing at either high or low temperature. The inner covers are perforated, so that by simply leaving off the hood sufficient steam escapes to reduce the temperature to 160° F. to 170° F. Put on the hood and the temperature immediately rises to 212° F. In warm weather, and for most babies, sterilizing (212° F.) is recommended. In cold weather, or when a pure quality of very fresh milk can be obtained, pasteurizing (160° F. to 170° F.) is preferred by some physicians.

ARNOLD'S STEAM STERILIZER AS A CROUP KETTLE OR INHALER.

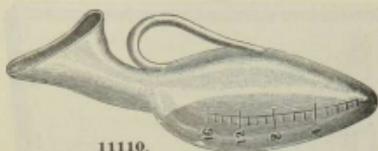
In croup, diphtheria and bronchial diseases physicians frequently recommend steam, with the best results. Arnold's Steam Sterilizer is the best device ever invented for generating steam for such purposes.

- 1st. It produces more steam in less time.
- 2d. It requires less heat.
- 3d. It does not heat the room.

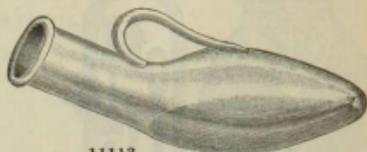
OTHER USES.

The Steam Chamber has many additional uses in the nursery and sick-room. For making and re-heating poultices; in warming cloths for local applications; for disinfecting garments, etc., etc.

† INVALID SUPPLIES.



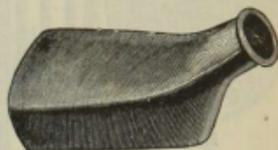
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11113.



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11117.



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11122.



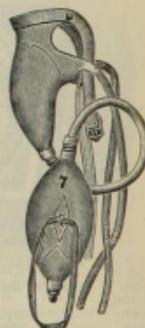
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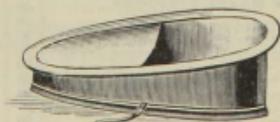
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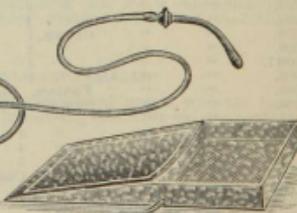
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11126.



11129.



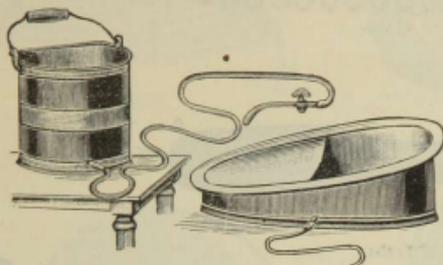
11127.

† INVALID SUPPLIES.

HOT WATER VAGINAL INJECTIONS.

EXTRACT FROM PRINCIPLES AND PRACTICE OF GYNECOLOGY.

THOMAS ADDIS EMMET, M. D. LL. D.



11130.

"We have three agents for exciting reflex nerve action, viz., electricity, cold, and heat."

"Electricity exerts a decided effect during the time of the passage of the current, but the impression is transitory, and the agent is to be relied on only as a valuable adjunct to other measures."

"Cold is a prompt exciter of reflex action by which the vessels are made to contract, but on reaction the vessels will become more congested than before, both arteries and veins being distended."

"Heat, unless at a temperature which would destroy the parts, does not act so promptly in causing this contraction as either electricity or cold. In fact, its immediate effect is to cause relaxation, and to increase the congestion of the parts; but if its application is prolonged, reaction ensues and contraction takes place; in other words, reaction from heat is contraction. Under the increased nerve stimulus the capillaries are excited to contract, this effect extending also to the coats of the larger vessels, and as their calibre becomes smaller the congestion is diminished. The popular belief is, that heat relaxes and increases the congestion of parts, and such, indeed, is the case at first. But a hot poultice is never applied with the object of increasing the congestion, but, as every 'old wife' would express it, to draw the 'fire' or inflammation out; in other words, it lessens congestion by stimulating the blood vessels to contract. That such is the effect from prolonged use of a poultice is familiar to every one, and is well shown by the blanched and shriveled appearance of the tissues after removal. The hands and arms of a washerwoman, when in hot water, become swollen at first from the increased flow of blood to them, but it is a well known fact that they afterwards become markedly shriveled."

"With these practical facts before us, we resort to the prolonged use of hot water, by vaginal injection, to gradually bring about the required contraction and tone, in the pelvic vessels."

11109.	Tapers for Night Lamp, Fig. 11047; or Night Stove, Fig. 11012, Page 940.....	per dozen	\$ 1 00 †
11110.	Urinals, Glass, Female, Graduated.....		65 †
11111.	" " " Plain.....		50 †
11112.	" " " Male, Graduated.....		65 †
11113.	" " " Plain.....		50 †
11114.	" Granite, Female.....		2 50 †
11115.	" " Male.....		2 50 †
11116.	" Hard-Rubber, Female.....		3 00 †
11117.	" " Male.....		3 00 †
11118.	" Porcelain, Female.....		75 †
11119.	" " Male.....		75 †
11120.	" Soft-Rubber, No. 1, Male, for day use, large size.....		2 00 †
11121.	" " " No. 2, " " " small ".....		1 75 †
11122.	" " " No. 3, Female, for day use.....		3 00 †
11123.	" " " No. 4, Male, " " and night use.....		2 25 †
11124.	" " " No. 5, Female, " " " ".....		2 25 †
11125.	" " " No. 6, French Pattern, Male, for day use.....		3 00 †
11126.	" " " No. 7, " " " " and night use.....		4 00 †
11127.	Vaginal Douche, Aloe's, Granite Bucket and Granite Douche Pan, complete.....		8 00 †
11128.	" " " " " " " " Japanned Tin Douche Pan, complete.....		5 00 †
11129.	" " " " " " " " Japanned, Tin Fountain Syringe and Douche Pan.....		4 00 †
11130.	" " " Emmet's.....		6 00 †
11131.	" " " Lombe-Athill's.....		5 00 †
11132.	" " " Merriam's.....		6 00 †

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

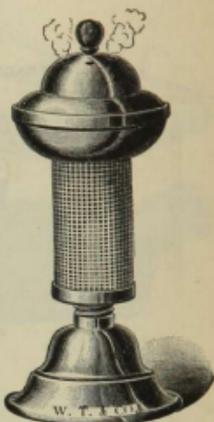
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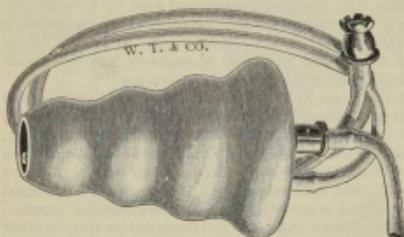
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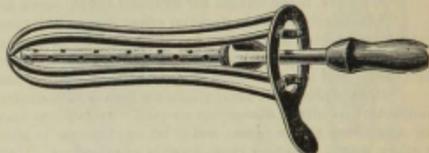
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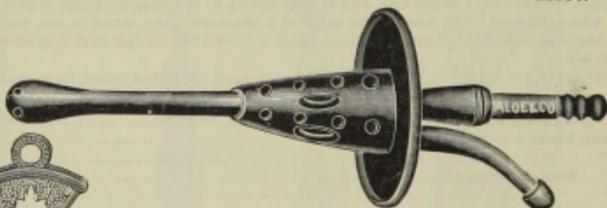
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11135.



11137.



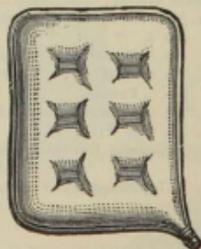
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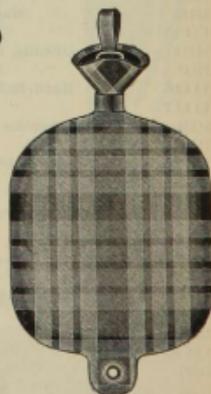
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11152.



11144.

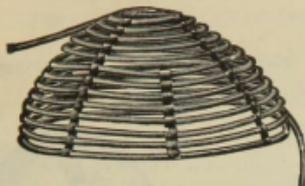


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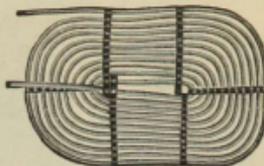
† INVALID SUPPLIES.



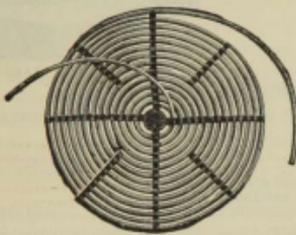
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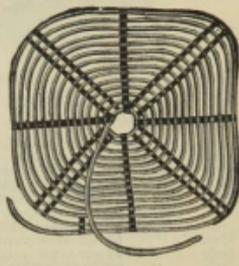
11168.



11171.



11174.



11177.

11133.	Vaginal Irrigator, Atlas.	{ Complete with Summit Bulb Vaginal Syringe No. 5 } \$ 2 50 †
11134.	" " Bodenhamer's. { See Fig. 11067, Page 941. } 2 50 †	
11135.	" " Healey's Large.	3 00 †
11136.	" " Hildebrand's, complete with Syringe and Off-flow Tube.....	3 50 †
11137.	" " Improved French, with Summit Syringe No. 5.....	2 50 †
11138.	" " Knap's, No. 2, complete with Bulb Syringe and Off-flow tube.....	2 75 †
11139.	" " Norcross's, with Fountain Syringe.....	2 50 †
11140.	" " Scharif's, without Syringe.....	2 50 †
11141.	Vaporizer, Champion, similar to Fig. 6398, Page 356.....	5 00 †
11142.	" " W. T. & Co.'s. Can be used either with Gas or Alcohol Lamp.....	1 50 †
11143.	Water Bag, 13x15.....	3 25 †
11144.	" " 14x18.....	3 75 †
11145.	" " 17x19.....	4 25 †
11146.	" " Face, Robert's.....	1 50 †
11147.	" " Foot, Marion.....	2 50 †
11148.	" " Head.....	2 00 †
11149.	" " Spine, Chapman's.....	2 50 †
11150.	" " Throat, Robert's.....	1 50 †
11151.	" " Bottles, All Rubber, 1 Quart.....	1 35 †
11152.	" " " " 2 ".....	1 40 †
11153.	" " " " 3 ".....	1 40 †
11154.	" " " " 4 ".....	1 50 †
11155.	" " " " 5 ".....	1 75 †
11156.	" " " " Crown, 2 "..... Finest Maroon Rubber with Hard-Rubber Stopper..	2 00 †
11157.	" " " " 3 ".....	2 25 †
11158.	" " " " 4 ".....	2 50 †
11159.	" " " " Cloth Covered, 1 ".....	1 50 †
11160.	" " " " 2 ".....	3 00 †
11161.	" " " " 3 ".....	1 75 †
11162.	" " " " 4 ".....	2 00 †
11163.	" " " " 5 ".....	2 25 †
11164.	" " " " Spinal, 15 inch.....	1 75 †
11165.	" " " " 20 ".....	2 00 †
11166.	" " " " 26 ".....	2 50 †
11167.	" " " " Coils, Head, Large.....	3 00 †
11168.	" " " " Small.....	2 75 †
11169.	" " " " Oblong, 3x 5 inches.....	2 50 †
11170.	" " " " 5x 9 ".....	1 40 †
11171.	" " " " 7x11 ".....	2 35 †
11172.	" " " " Round, 5 inches diameter.....	3 25 †
11173.	" " " " 9 ".....	1 40 †
11174.	" " " " 13 ".....	2 35 †
11175.	" " " " 18 ".....	2 25 †
11176.	" " " " Square, 6 ".....	2 20 †
11177.	" " " " 10 ".....	3 50 †
11178.	" " " " 14 ".....	5 25 †
11179.	" " " " Throat, 3x 9 inches.....	1 40 †
11180.	" " " " 3x12 ".....	2 35 †

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

ANATOMICAL PREPARATIONS.

DR. AUZOUX'S ANATOMICAL MODELS.

A. S. ALOE COMPANY, AGENTS FOR THE SALE OF CLASTIC ANATOMICAL MODELS OF DR. AUZOUX.

These models are superior to all others which have heretofore been invented; the composition of which they are composed is very strong and durable; the number of models which may be formed is very large; and the facility with which one part may be detached from another, as would be done in the dissecting-room, shows the most minute details of the structure of each subject; the parts can also be replaced with equal facility. By this method it is possible to produce, in greatly enlarged proportions, the parts which are invisible to the naked eye.

Especially in the physiological department are they almost invaluable to the teacher, as the demonstration of the structure of the human body, which can be given with these models, in a few lessons, is worth months of oral instruction, or illustration by means of charts.

The models are made with a special preparation, which, after being mixed, is run into moulds. It will take the most delicate impression, and on drying acquires a wonderful degree of elasticity and lightness, although as strong as wood.

We would call the attention of our friends and customers to the fact that we make a specialty of these celebrated models, and have exceptional facilities for furnishing them promptly.

The popularity of these models, combined with the delicacy and care necessary in their construction, renders the demand for them more than equal to the supply, and there is often a considerable delay in getting an order filled, so that the special arrangements which we have with the maker are of great advantage to those ordering through us. Under ordinary circumstances, the time necessary to fill an order for manikins is from four months to a year, which delay is vexatious. But even with our facilities, we would request that orders be sent or inquiries made some time before it is desired to use the manikin.

We also have in stock a number of the models of different parts of the human body. These can be furnished without delay at special prices which will be furnished upon application.

We can import these models and manikins for colleges, schools, and other institutions, having the privilege of duty-free importations, without duty. To those who are not at liberty to import duty free, we will give terms for special importations; these will be sent on application. We shall require a deposit on orders for importation from parties with whose standing we are unacquainted.

SPECIAL NOTICE.

According to the regulation of the Treasury Department, only the United States and State Governments, universities, colleges, schools, religious, scientific, literary and philosophical societies and institutions, and societies for encouragement of the fine arts, are entitled to import free of duty, and these must furnish a certificate to the Custom House authorities that the instruments so imported are for their sole use and property. The duty-free prices given in this catalogue are for the use of such organizations only. Further information will be given, if desired.

VETERINARY MODELS.

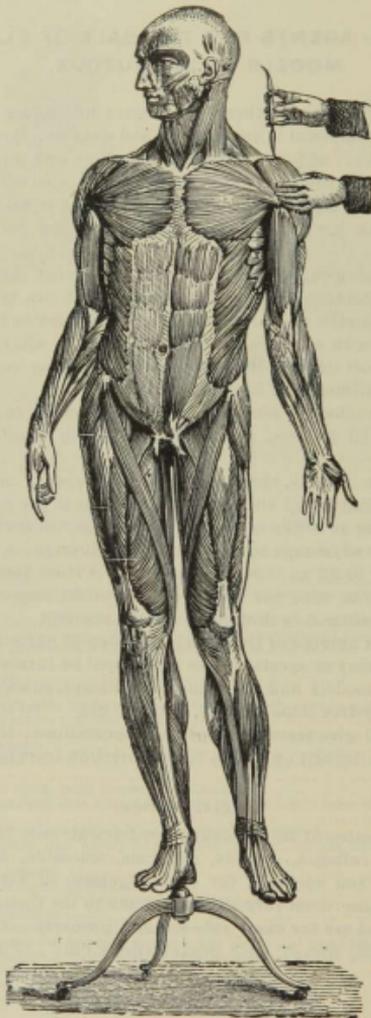
A very complete line of Veterinary Models, suitable for agricultural schools and veterinary colleges, are also manufactured by Auzoux. To those interested we shall be pleased to furnish list of same with prices and any further information desired.

On the following pages will be found a list of the Auzoux Anatomical Models with prices affixed for regular importation, duty paid, and also the cost of same to schools or colleges, duty free, on special importation.

ANATOMICAL PREPARATIONS.

DR. AUZOUX'S ANATOMICAL MODELS.

AUZOUX'S COMPLETE MODEL OF MALE HUMAN BODY.



11230.

EXPLANATION.

Numbers with the sign \curvearrowright indicate where the parts, to which the former are attached, can be detached; smaller numbers and alphabetic letters indicate the details, for reference to a little pamphlet sent with every model. Usually each piece is kept in place by a curved and straight point, on opposite ends.

The numbers are always affixed to the extremity to which the curved point corresponds; they indicate the order in which the parts are to be separated.

To separate one part from another, the spatula is inserted under the number with the sign \curvearrowright , moved to and fro with one hand, while the other hand should draw the organ to be detached carefully to one's self.

To readjust the parts, they must first be placed in their numerical order, beginning with the highest numbers.

The curved points are designated with the same number as the hole into which they are to be introduced.

ANATOMICAL PREPARATIONS.

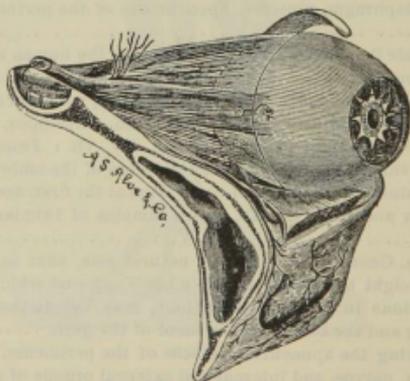
DR. AUZOUX'S ANATOMICAL MODELS.

	Duty free for schools and col- leges on special im- portation.		On regular importation, duty paid.	
	PRICE.		PRICE.	
11230. Complete Model of a Male Human Body, five feet ten inches high; composed of ninety-two parts, which may be detached; and exhibiting over two thousand details of the viscera, muscles, nerves, blood-vessels, etc.; in fact, all that may be embraced in a complete treatise of anatomy	\$750 00		\$1,200 00	
Stand, spatula, synopsis, and case for same.....	9 00		14 40	
11231. Model of a Man, three and a half feet high, consisting of the same pieces, and exhibiting the same details as the large model above.....	375 00		600 00	
Stand, spatula, descriptive pamphlet, and case for same.....	7 00		11 50	
11232. Large Model of a Man, five feet ten inches high, for teaching physiology in colleges and other educational establishments, representing on one side the muscles and vessels of the superficial layer, and on the other those of the deep layers, besides the organs contained in the splanchnic cavities	300 00		480 00	
Stand, spatula, descriptive pamphlet, and case for same.....	9 00		14 40	
11233. Model of a Man, three and a half feet high, like No. 11232.....	187 50		300 00	
Stand, spatula, descriptive pamphlet, and case for same.....	7 00		11 50	
11234. Model of a Female Human Body, with the superficial muscles and blood-vessels, and the internal and external organs of generation. The removal of the anterior wall of the trunk discloses the thoracic, abdominal and pelvic viscera, with the internal muscles, nerves and blood-vessels. These may all be removed separately	250 00		400 00	
Stand, spatula, descriptive pamphlet, and case for same	7 00		11 50	
11235. Female Pelvis, with internal and external organs of generation, lumbar vertebrae, diaphragm, muscles, aponeuroses of the perinaeum, vessels, and nerves....	75 00		120 00	
11236. Portion of a Female Pelvis and Two Uteri, showing the human ovum at one and three months.....	37 50		67 50	
11237. Ovology: A collection of more than twenty pieces, very much enlarged, exhibiting the modifications of the ovum, envelopes, and vitelline vesicle from the first to the thirtieth day, viz.: from the appearance of the ovum in the ovary to the formation of the embryo..	75 00		120 00	
11238. Eight Uteri, containing the product of conception at the first, second, third, fourth, eighth and ninth month, with examples of tubular and ovarian pregnancy.....	75 00		120 00	
11239. Epyornis Egg (Is. Geoffroy St. Hilaire), natural size, that is, one hundred and forty-eight times larger than a hen's egg—on which, by means of four sections in different directions, may be studied the structure of the egg and the entire development of the germ	37 50		67 50	
11240. Male Pelvis, showing the aponeurotic fasciae of the perinaeum, with the muscles, vessels, nerves, and internal and external organs of generation.....	75 00		120 00	
11241. Brain, cerebellum, annular protuberance, and spinal bulb of Man, and the higher vertebrates. This preparation exhibits the details of the cerebral hemispheres, cerebellum, pons varolii, and medulla oblongata, and traces, throughout their course, the nerve-fibres ascending from the medulla, by means of horizontal sections; made according to the method of Vicq-d'Azyr.....	37 50		67 50	

ANATOMICAL PREPARATIONS.

DR. AUZOUX'S ANATOMICAL MODELS.

	Duty free for schools and col- leges on special im- portation.	On regular importation, duty paid.
	PRICE.	PRICE.
11242. Cerebellum and Spinal Cord, with the anterior and posterior roots of all the spinal nerves	15 00	27 00
11243. Synthetic Preparation of the Brain, exhibiting its texture upon an immensely magnified scale. Designed in conformity to the new anatomical indications furnished by Dr. Luys. This model resumes all the researches of ancient and modern anatomists. The student is enabled to follow the course of the nerve-fibres throughout the encephalic mass, and thus to comprehend the mechanism by which external impressions arrive at any given locality of the brain, and by which the will transmits its influence to the various parts of the body. This novel method of studying the brain opens an immense field to the researches of physicians and scientific men	75 00	120 00
11244. Synthetic Brain, natural size, exhibiting on one hemisphere the textural anatomy, according to the same plan as the preceding; on the other, the sections of Vicq-d'Azyr, demonstrating the details ordinarily described by anatomists	56 25	90 00
11245. Dura Mater, with a portion of the base of the cranium, half again as large as life, exhibiting its folds, venous sinuses, Pacchionian glands, etc	20 00	36 00
11246. Adult Heart, separable into two parts, showing the right and left cavities, muscular fibres, vessels, nerves, orifices and valves	12 50	22 50
11247. Heart of Fœtus, large size, separable into two parts, showing the right and left cavities, the foramen ovalis, the Eustachian valve, the arterial canal, etc	12 50	22 50



11248.

11248. Eye, complete, greatly enlarged. Improved model, on which is exhibited not only the muscles, vessels, nerves, membranes, vitreous body, and crystalline lens, in separable parts, but also the different microscopic strata of the retina, choroid, and iris, as they are described by modern anatomists	19 00	30 00
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ANATOMICAL PREPARATIONS.

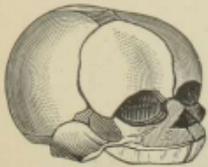
DR. AUZOUX'S ANATOMICAL MODELS.

Duty free
for schools
and col-
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special im-
portation.
On regular
importation,
duty paid.

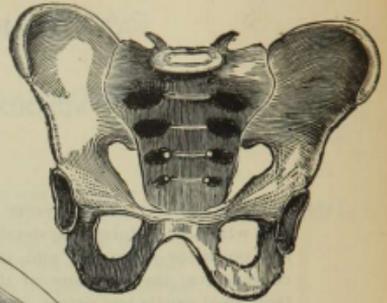
PRICE. PRICE.

11249. The same, divided by a vertical section, and representing its inner half with all the foregoing details, and the disposition of the anterior and posterior chambers, and, in addition, a portion of the orbit, the conjunctiva, the structure of the eyelids, the Meibomian glands, the lachrymal canals and points, the muscles of Horner, etc.....	20 00	30 00
11250. Ear (Temporal Bone, two feet long), showing the internal, middle, and external ear in their most minute details; the expansion of the auditory nerve, the fenestra ovalis, fenestra rotunda, membranous canals, endolymph, perilymph, double spiral of the cochlea, infundibulum, etc. All parts of this model are separable, and by its means the mechanism of audition may be clearly explained and understood..	50 00	80 00
11251. Ear (Temporal Bone, half the size of the preceding), showing the ear in the same manner.....	25 00	45 00
11252. Half of a Human Head, greatly enlarged, showing the smallest details of the base of the brain and cranium, the divisions and anastomoses of the fifth and seventh pairs of nerves, the nervous ganglia, the eye, ear, nasal fosse, mouth, tongue, pharynx, larynx, with the muscles and blood-vessels.....	75 00	120 00
11253. Larynx, greatly enlarged (half larger than life), with cartilages, muscles, vessels, and nerves	6 50	11 25
11254. The same, showing the same details, and, in addition, the tracheal artery and the bronchia up to their most minute ramifications	12 50	22 50
11255. Cartilages of the Larynx and Vocal Chords only, of the same size as the two above, serving admirably to demonstrate the action of the epiglottis, vocal chords, and the marvelous mechanism for production of the human voice.	6 50	11 25
11256. Gigantic Larynx (twelve inches long). On this preparation each muscle and cartilage may be separately removed, and its action demonstrated; also the action of the vocal chords, and the mechanism of the voice	37 50	67 50
11257. Tongue, in the same proportion, capable of being adjusted to the larynx, and exhibiting the smallest details of muscles, glands, nerves and vessels.....	37 50	67 50
11258. Hand (half-again as large as life), with vessels, nerves, Pacchionian corpuscles, portion of the skin with its different layers, and with the muscles, tendons, and fibrous sheaths so disposed as to demonstrate Dr. Duchenne's theory of the action of the interosseous and lumbric muscles.....	50 00	80 00

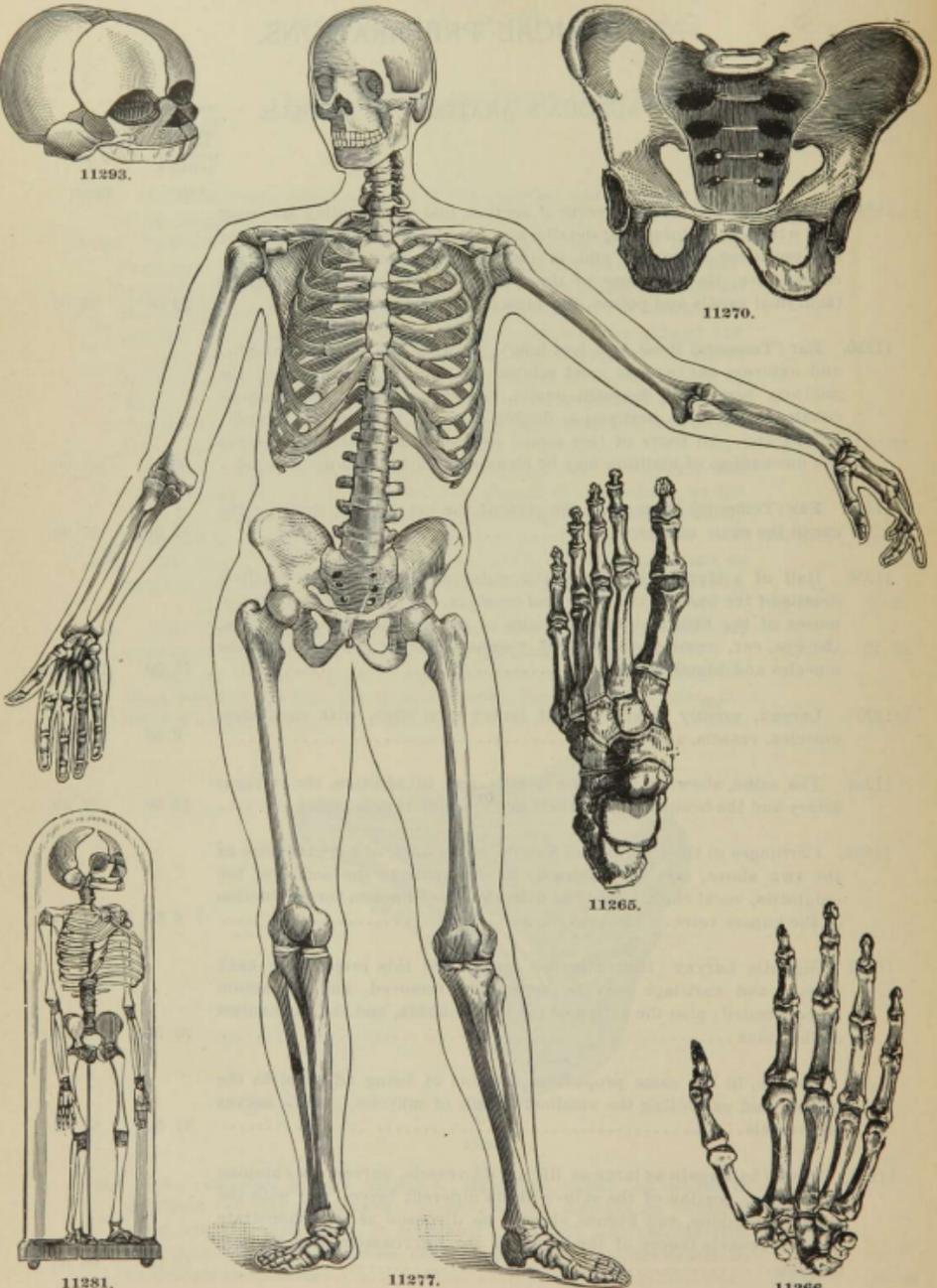
OSTEOLOGICAL PREPARATIONS.



11293.



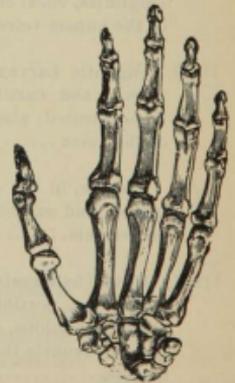
11270.



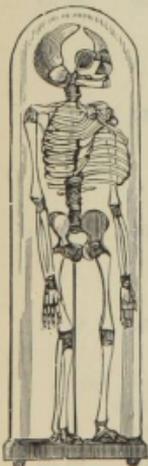
11277.



11265.



11266.



11281.

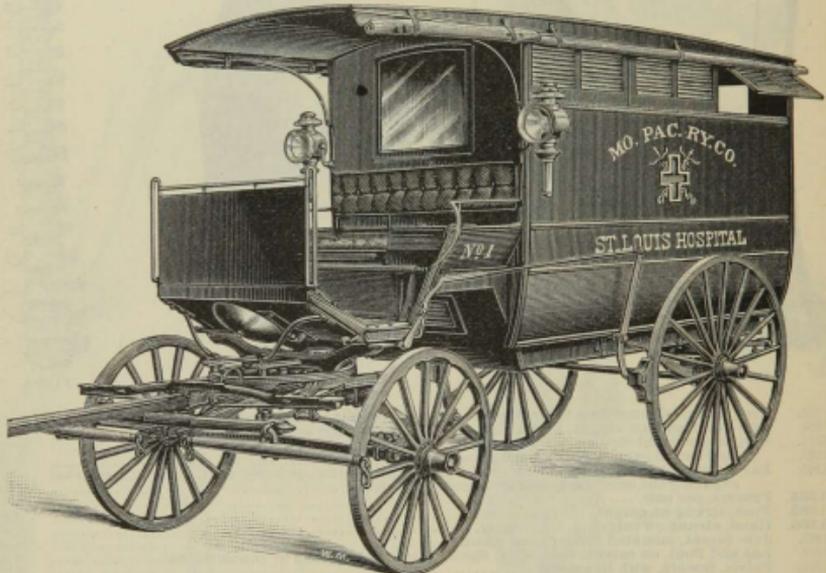
HOSPITAL FURNISHINGS.

AMBULANCES.

THE SAUERBRUNN HOSPITAL AMBULANCE.

(PATENTED SEPT. 8, 1891.)

THE LATEST IMPROVEMENT IN AMBULANCES.



11295.

A satisfactory Hospital Ambulance has long been in demand. The indications were for a wagon that would carry the injured with the least possible jar, and one, that, in an emergency could carry three or four persons as conveniently and safely as a single patient. It was also desirable that the silk and plush tapestry and the cloth lining usually furnished in these vehicles should be dispensed with, and that the interior be so fitted and arranged that it could be readily cleansed from any blood or vomited matter with which it is more or less liable to become soiled. The Sauerbrunn Ambulance will be found to answer these requirements and offers exceptional advantages possessed by no other ambulance made. These improvements are covered by United States letters patent, and all infringements will be fully prosecuted.

The fact that 11 of these ambulances have been built and put in use during the past two years, is, we think, a sufficient indication of its success.

These have been ordered as follows:

5 by the City of St. Louis, for the Board of Health.

3 by the Missouri Pacific Railroad, 2 for the St. Louis Hospital and 1 for the Kansas City Hospital.

1 by the Texas Pacific Railroad for the Galveston Hospital.

1 for the Milwaukee Hospital.

1 for the Sioux City Hospital.

A. S. ALOE COMPANY, Selling Agents for United States.

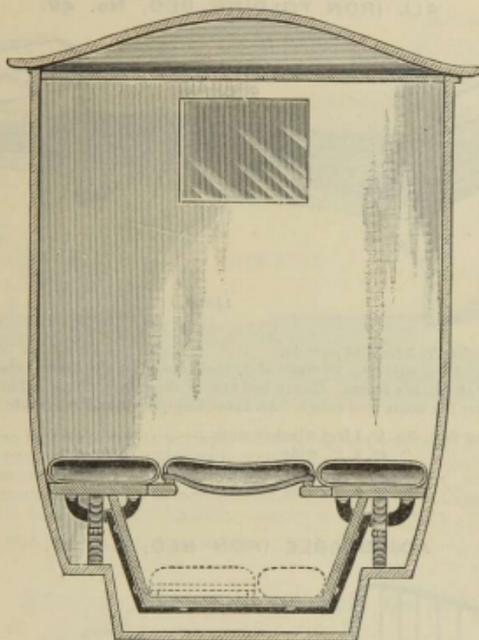
CORRESPONDENCE SOLICITED.

HOSPITAL FURNISHINGS.

AMBULANCES.

THE SAUERBRUNN HOSPITAL AMBULANCE.

(PATENTED SEPT. 8, 1891.)



11295. Sectional View.

The chief advantage possessed by this ambulance lies in the fact that, as it is furnished with a double set of springs, the jolting of the injured occupant is almost entirely eliminated.

By reference to the cross-section illustration, it will be seen that the ambulance consists of a frame work on wagon bed of ordinary construction. Located in this frame work is an additional frame or bed, yieldingly supported by four elliptical steel springs. It must also be observed in this connection, that the wagon bed proper is also supported by springs. These are of the usual construction, and they, in turn, are supported by the running gear. This construction reduces the jolting and jarring of the supported inner bed to a minimum. The illustration shows the stretcher, which is rolled into the ambulance and rests upon the seats. The seats are furnished with cushions, which are stuffed with moss, covered with rubber-enamel cloth, and may be cleansed with sponge and water should occasion require it. The stretcher is made of rattan, stuffed with moss, and it, also, is covered with rubber-enamel cloth. The floor of the inner wagon bed is of such dimensions, that in an emergency, accommodations may be furnished for two additional patients. Hospitals or towns that require but one ambulance, the capacity of which, however, is at times liable to be over-taxed, may provide themselves with another stretcher and an additional cushion. These may be placed upon the floor of the ambulance, as shown in the dotted lines in cut, and in this manner five persons can be conveniently carried.

The entire interior of the wagon is finished plain and then painted, and it is therefore possible to keep it thoroughly clean. Furthermore, by doing away with the expensive linings and cushions the expense of the wagon is reduced several hundred dollars, an item of no little importance. Each ambulance is furnished complete as shown, with side lights, large brass gong, padded rattan stretcher and two seat cushions. A padded seat and back is furnished for the driver, and if so desired we can furnish on the seat, to the left of the driver, a good size box for rubber pillows, hot water bottles, etc., etc. If it is the intention of the purchasing institution to have a physician accompany the ambulance on its calls, it will be found an admirable place for the medicine chest. Each ambulance ordered is arranged to suit the ideas of the purchaser. We can substitute plate-glass windows for the shutters shown, and can furnish it with a cab front if so desired. Write for full particulars.

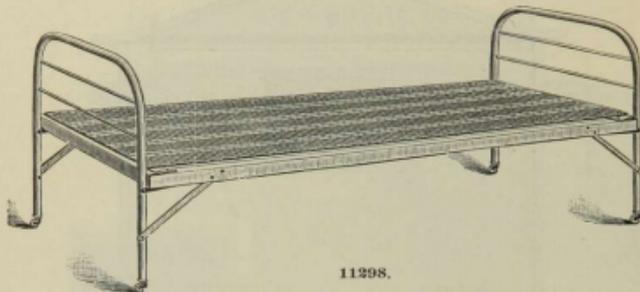
11295. Sauerbrunn's Hospital Ambulance, complete as described \$500 00

HOSPITAL FURNISHINGS.

BEDS.

IRON BEDSTEADS.

ALL IRON FOLDING BED, No. 49.



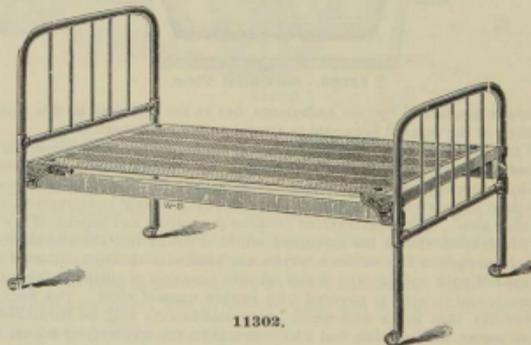
11298.

Weight (6 feet 3 inches by 3 feet) 68 pounds.

Head and foot has fixed casters. Is made of $\frac{1}{2}$ inch gas pipe with iron cross rods. Bed bottom is woven wire mattress on angle iron frame. Entire bed except the fabric is finished in bronze. The head and foot fold inside and under the angle iron frame. An exceedingly neat and moderate price iron bed.

11296.	All Iron Folding Bed, No. 49, 2 feet 6 inches wide.....	\$ 5 50
11297.	“ “ “ “ “ 49, 3 “ wide	6 00
11298.	“ “ “ “ “ 49, 3 “ 6 inches wide.....	6 75
11299.	“ “ “ “ “ 49, 4 “ wide	7 50

ADJUSTABLE IRON BED, No. 24.



11302.

With Adjustable Woven Wire Mattress. Weight (6 feet 3 inches by 3 feet) 85 pounds.

Head and foot made of $\frac{1}{2}$ inch gas pipe; railing wrought iron, enameled black. Bed bottom adjustable, with heavy fabric on hard-wood frame, well varnished. All castings of best malleable iron. Head and foot have fixed casters.

11300.	Adjustable Iron Bed, No. 24, 2 feet 9 inches wide.....	\$ 6 50
11301.	“ “ “ “ “ 24, 3 “ wide.....	7 00
11302.	“ “ “ “ “ 24, 3 “ 6 inches wide.....	7 50
11303.	“ “ “ “ “ 24, 4 “ wide.....	8 25

We make this Bed with an angle iron frame when desired.

For price of No. 24, made with angle iron frame, add \$4.00 to the above prices.

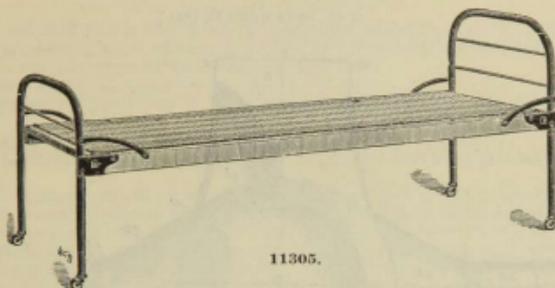
The regular finish of our Iron Beds is black enamel. We can, however, paint them any color desired. White and very light colors will cost from \$1.00 to \$2.00 a bed extra.

HOSPITAL FURNISHINGS.

BEDS.

IRON BEDSTEADS.

HOSPITAL IRON BED, No. 43.



11305.

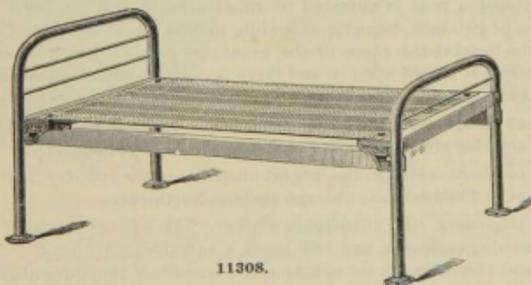
Sizes, 6 feet 3 inches by 2 feet 6 inches or 3 feet. Weight (36 inches wide), 50 pounds.

Head and foot has fixed casters and is made of $\frac{1}{2}$ inch gas pipe, iron rods in head and foot, enameled black. Bed bottom, woven wire mattress on hard-wood frame, well varnished. All castings made of best malleable iron. Head and foot fold upon woven wire mattress, or when the bedding is used, on top of it.

This Bed is made of light stock is and specially recommended for children.

11304.	Hospital Iron Bed, No. 43, 2 feet 6 inches wide.....	\$ 4 50
11305.	" " " No. 43, 3 " wide.....	5 00

ASYLUM AND HOSPITAL BED, No. 16.



11308.

With Adjustable Woven Wire Mattress. Weight, (6 feet 3 inches by 3 feet), 75 pounds.

Head and foot made of $\frac{1}{4}$ inch gas pipe, with cross rods of $\frac{3}{8}$ inch round iron, enameled black. Bed bottom adjustable, with heavy fabric on hard-wood frame, well varnished. All castings of best malleable iron. We make this bed with casters, or, as illustrated, with iron flanges to fasten to the floor.

Head and foot easily fastened to bed bottom, so that no patient, however violent, can detach them.

11306.	Asylum and Hospital Bed, No. 16, 2 feet 9 inches wide.....	\$ 5 50
11307.	" " " " No. 16, 3 " wide.....	6 00
11308.	" " " " No. 16, 3 feet 6 inches wide.....	6 50
11309.	" " " " No. 16, 4 feet wide.....	7 00

We make this bed with an angle iron frame when desired.

For price of No. 16, made with angle iron frame, add \$4.00 to the above prices.

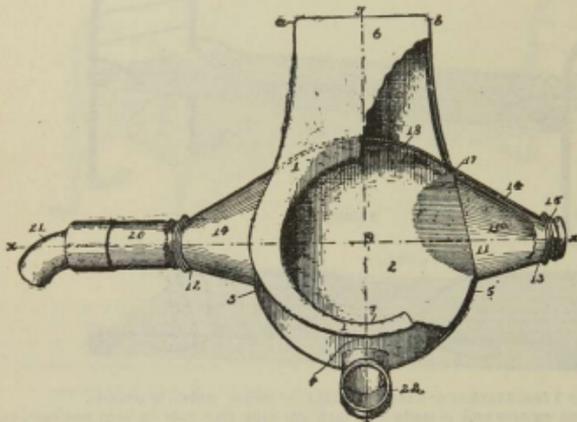
The regular finish of our iron beds is black enamel. We can, however, paint them any color desired. White and very light colors will cost from \$1.00 to \$2.00 a bed extra.

HOSPITAL FURNISHINGS.

BED PANS.

DUGOT'S COMBINED BED PAN.

(PAT. DECEMBER 30, 1890.)



10965. Page 937.

This invention relates to a combined douche and bed pan on gravitation principles, with concave-convex bottom, with an inclined wall (18) placed in the forward part of the pan, closing the pan at this part and forcing the water toward the side extension and through the two inch rubber tube, into the receptacle below the bed.

The round extension tube is adjusted to either side, to suit the position of the patient, with a rubber tube of two inch diameter extending to foot tub at the side of the bed. Without the adjustable tube it takes the place of the usual bed pan. When used as such enemas are given after the patient is placed upon it, and there is no occasion to move the patient until the evacuation has taken place and the pan is to be removed.

The instrument bridges over the cavity in the bed. There is no settling down of the body, consequently the muscles are in the best possible shape for treatment.

This bed pan has been tested in the largest hospitals in the country, and its merits attested by leading surgeons in Philadelphia, Chicago and the Northwest.

Dr. E. E. Montgomery of Philadelphia states: "It will meet many indications in the treatment of gynecological cases, and will prove a valuable instrument." As compared with pans doing only one kind of work its convenience, simplicity and durability must recommend it to the profession.

The French Academy of Science has awarded the first-class medal and diploma, believing it indicates much for the treatment of typhoid and flux disorders, as medicated treatment by irrigation is made practical and comfortable.

"We have used it and find it will do all that is claimed for it, and believe it a better arrangement than the ones heretofore used." F. CANTRELL, Supt. of Nurses and Training School, Byford Hospital, Chicago.

ST. LUKE'S HOSPITAL, 5TH AVE. AND 54TH ST., NEW YORK CITY.

"We have used the Combination Douche and Bed Pan in this hospital and it has proved satisfactory in every respect."

W. M. TOMKINS, Head Nursery Dept.

For price of single pan see No. 10965, page 937; (\$4.25) for price in quantities, write, stating number desired.

HOSPITAL FURNISHINGS.

BED PANS.

BACON'S "HORN" BED PAN.

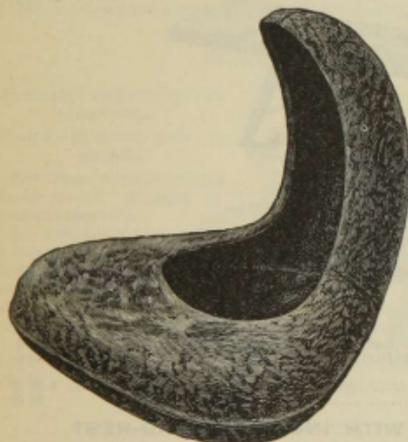
A COMMON SENSE BED PAN.

The form of this bed pan is the result of study and experience on the part of a practical, trained nurse, who, having used various bed pans in hospital and private practice, has learned and has sought to obviate some of their disadvantages.

There are three essential qualities in a good bed pan:

1. It must be so designed that it may be thoroughly cleaned and disinfected with the utmost ease.
2. It must be convenient for the patient, i. e., comfortable to use.
3. It must be convenient for the nurse, i. e., light, portable and easily handled and adjusted.

The "Horn" shape meets the first of these requirements in every respect, and that, too, without (as some recently introduced bed pans do) sacrificing all other excellences to this one. It is made of sheet iron and coated with the well-known Agate enamel, the construction being such that its continuous curves render it so strong that it can be made of thin material; consequently, very light and convenient to handle. The surface, being hard and smooth, is as easily cleaned as china and is thoroughly antiseptic. It has no corners, and every point in it is accessible to the hand, or to a mop or brush. It may be emptied like a pitcher and can be readily flushed out.



10964. See page 937.

No bed pan made is so convenient or so comfortable for the patient, and in this connection may be pointed out several particulars in its design.

The Horn, which is the essential feature of this instrument, coming up between the patient's thighs and covering completely the perineum (being thus equally serviceable for male or female patients), it receives, without chance of failure, even with a delirious patient, every particle of both urine and feces.

That part of the bed pan upon which the patient's buttocks rest, instead of sloping to an edge, as in the old style of bed pan, slopes the other way, i. e., is thicker at the end of the bed pan than at the edge of the opening. This is in conformity with the anatomy of the parts, is therefore much easier for the patient, and has, furthermore, this advantage: that if in manipulation anything should be spilled upon this part of the bed pan, instead of running out onto the bed it will run back into the pan; thus, not only is the bed linen protected, but it also prevents the soiling of the person of the patient. The additional space thus gained renders the thorough cleaning of this bed pan very easy.

It is an every day experience to find even docile patients who can not use a bed pan while lying down. With the "Horn" bed pan it is made easy for the nurse to adjust the patient in his bed, propped up into the completely sitting posture, if necessary, and still have him use the bed pan with perfect comfort and without danger of having it slip from under the patient or its contents spill into the bed. The way this is effected is by simply tilting the bed pan forward like a rocking horse, provision having been made in the design to have the capacity of what would then be the lowest part of the instrument ample for this requirement.

As an instrument convenient for the nurse the "Horn" shape bed pan is superior to any other on the market. The fact that this one instrument receives, without possibility of failure, every particle of feces and at the same time every drop of urine, without the necessity of any re-adjustment or aid from the attendant, thus doing away with the necessity of using a urine bottle or "duck" at the same time with the bed pan, commends it to nurses for either their male or their female patients above all others. The avoidance of soiling the bed linen implies a saving of time and labor in changing sheets, which the busy hospital nurse in a "heavy" ward will especially appreciate, and so likewise will the patient, while the saving to hospitals in laundry bills alone will soon repay the price of the bed pans.

The "Horn" bed pan can be carried, even when full, with one hand without spilling, and may be held in almost any position without overflowing.

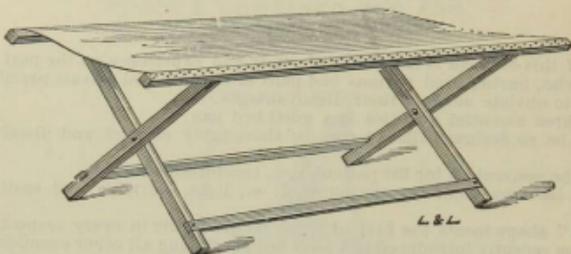
For price of single pan see No. 10964, page 937 (\$4.65); for price in quantities, write, stating number desired.

HOSPITAL FURNISHINGS.

COTS.

CANVAS COTS.

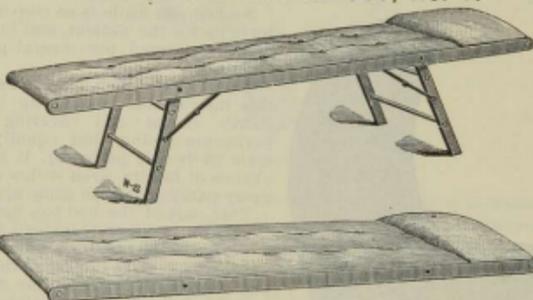
CROSS LEG CANVAS COT No. 19.



11311.

Size, 6 feet 3 inches by 2 feet 5 inches. Weight, 19 pounds. Made with 8 or 10 ounce white duck.
 11310. Cross Leg Canvas Cot, No. 19, 8 ounce duck..... per dozen, \$ 11 00
 11311. " " " " No. 19, 10 " " " " 12 00

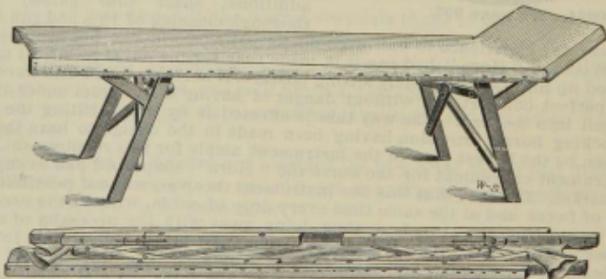
UPHOLSTERED CANVAS COT, No. 9.



11312.

Size, 6 feet 3 inches by 27 or 29 inches wide. Weight (29 inches wide), 18 pounds.
 The mattress and pillow upholstered on this cot are made of very fine excelsior, screened and picked, and the best closely woven brown check goods, all well tufted. It is an elegant cot in appearance and extremely comfortable.
 11312. Upholstered Canvas Cot, No. 9, 27 inches wide..... per dozen, \$ 18 00
 11313. " " " " No. 9, 29 " " " " 21 00

COMPACT FOLDING COT, No. 47, WITH INCLINED HEAD-REST.



11315.

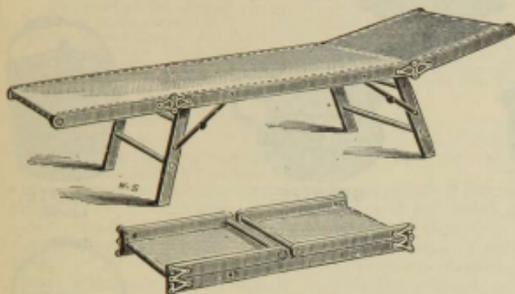
Size, 6 feet by 2 feet 3 inches. Weight, 15 pounds.
 This cot embraces the best features of all the close folding cots. The legs can be folded under the canvas, and the entire frame can be folded into a small space.
 We make this cot with either 8 ounce or 10 ounce white duck.
 11314. Compact Folding Cot, No. 47, 8 ounce duck..... per dozen, \$ 14 00
 11315. " " " " No. 47, 10 " " " " 15 00

HOSPITAL FURNISHINGS.

COTS.

CANVAS AND WOVEN WIRE COTS.

UPHOLSTERED CANVAS COT No. 10, WITH HEAD-REST.



11316.

Size, 6 feet 3 inches by 2 feet 5 inches.

Weight, 20 pounds.

The mattress and pillow upholstered on this Cot are made of the same material as is used on the No. 9 upholstered Cot. The folding of this Cot is perfect, the mattress and pillow yield without either strain or wear. This is the perfection of a canvas upholstered folding cot.

11316. Upholstered Canvas Cot No. 10, with Head-Rest, 15 oz. duck.....per dozen, \$25 00

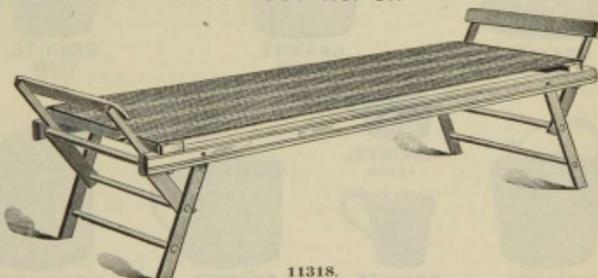
WOVEN WIRE FOLDING COT No. 51.

Made only 2 feet 6 inches and 3 feet wide.

Weight (30 inches wide) 34 pounds.

The frame is made of best hard wood, finished in natural color only.

The fabric is double weave woven wire with ribs. The head and foot fold inside and under the woven wire frame, and when open are held firmly by the lock braces.

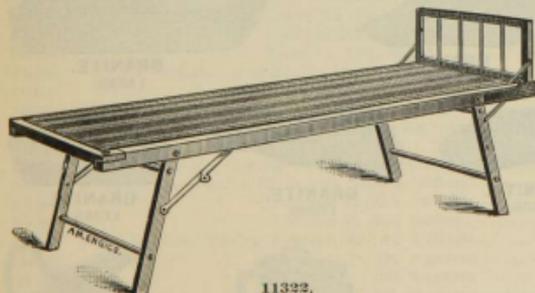


11318.

11317. Woven Wire Folding Cot, No. 51, 2 feet 6 inches wide.....each, \$ 1 40

11318. " " " " No. 51, 3 feet wide..... " 1 60

WOVEN WIRE FOLDING COT, No. 14.



11322.

Regular Sizes, 6 feet 3 inches long by 2 feet 6 inches or 3 feet wide.

Weight (30 inches wide) 38 pounds.

This cot is made of best hard-wood, varnished or painted red, and heavy double weave fabric, with extra ribs. The head-board is opened or closed by opening or closing the legs of the cot. The legs at the foot of the cot have buggy brace joints. This cot will be shipped painted red unless specially ordered varnished. An extra well made cot in every particular.

11319. Woven Wire Folding Cot, No. 14, 2 feet 6 inches wide, varnished.....each, \$ 1 85

11320. " " " " No. 14, 3 feet wide, varnished..... " 2 00

11321. " " " " No. 14, 2 feet 6 inches wide, painted red..... " 2 10

11322. " " " " No. 14, 3 feet wide, painted red..... " 2 25

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

HOSPITAL FURNISHINGS.

GRANITE IRONWARE.

(PATENTED.)



GRANITE.
11323.



GRANITE.
11327.



GRANITE.
11325.



GRANITE.
11326.



GRANITE.
11328.



GRANITE.
11329.



GRANITE.
11330.



GRANITE.
11331.



GRANITE.
11342.



GRANITE.
11370.



GRANITE.
11332.



GRANITE.
11335.



GRANITE.
11336.



GRANITE.
11337.



GRANITE.
11341.



GRANITE.
11344.



GRANITE.
11348.



GRANITE.
11349.



GRANITE.
11350.



GRANITE.
11358.



GRANITE.
11360.



GRANITE.
11355.



GRANITE.
11365.



GRANITE.
11367.



GRANITE.
11375.



GRANITE.
11377.

HOSPITAL FURNISHINGS.

GRANITE IRONWARE.

(PATENTED.)

Special attention is directed to the illustrations given of the large assortment of Patent Granite Ironware for surgical purposes and for use in hospitals, asylums, prisons and sick rooms.

These goods possess all the advantages of glass, combined with the toughness of wrought iron.

The hard glazed surface is impervious to acids, and unaffected by heat or cold.

None of the virtues of Glass, Hard-Rubber or Papier Maché are wanting, nor are any of their disadvantages to be found in this superior ware.

We would call the attention of hospital managers and others interested, to the fact that we have special facilities for supplying the "Culinary Department" with a full line of Granite Cooking Utensils, etc., and shall be pleased to furnish, upon application, a complete catalogue of same. The durability of these goods recommends their use in preference to any other.

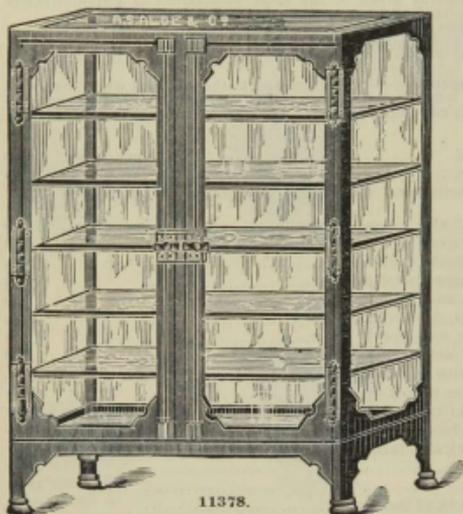
11323.	Air Moisteners, Granite, No. 0, size $3\frac{1}{2} \times 6\frac{1}{2}$ inches.....	per dozen,	\$ 9 75
11324.	" " " " No. 1, size $4 \times 7\frac{1}{2}$ inches.....	"	11 25
To increase humidity in hospital wards, etc. To be filled with water and suspended before grate fire or over stove.			
11325.	Chambers, Asylum, Granite, No. 20, size $9\frac{1}{2} \times 5\frac{1}{2}$ inches, no handle.....	per dozen,	18 00
11326.	" Hospital, " " " 2, size $9\frac{1}{2} \times 5\frac{1}{2}$ inches, with handle.....	"	18 00
11327.	Chamber Covers, " " " 2, size $9\frac{1}{2} \times 5\frac{1}{2}$ inches.....	"	6 75
11328.	Chamber Pail, Seamless, Granite, No. 3, capacity $3\frac{1}{2}$ gallons.....	"	39 00
11329.	" " Commode Attachment for same, Granite, No. 10.....	"	15 00
11330.	Commode, Asylum, Granite, No. 2, Adult's, size 10×7	"	15 00
11331.	" " " " " 1, Child's, size $4\frac{1}{2} \times 4\frac{1}{2}$	"	7 50
11332.	Cups, Drinking, Granite, No. 9, size $2\frac{1}{2} \times 4$ inches.....	"	3 00
11333.	" Food, Granite, No. 01 $\frac{1}{2}$, $1\frac{1}{2}$ pints, with re-tinned covers.....	"	6 75
11334.	" " " " " 02, 2 pints, with re-tinned covers.....	"	8 50
11335.	" Measuring, Granite, No. 104, one pint capacity, graduated in fourths.....	"	4 50
11336.	" Spit, Granite, No. 10, size $4\frac{1}{2} \times 3\frac{1}{2}$ inches.....	"	6 25
11337.	" " Covered, Granite, No. 15, size $4\frac{1}{2} \times 3\frac{1}{2}$ inches.....	"	8 50
11338.	" " White Enamel.....	"	10 80
11339.	" " Covered, White Enamel.....	"	13 50
11340.	Caspadores, Hospital, Granite, No. 4, size $6\frac{1}{2} \times 5$ inches.....	"	12 00
11341.	" " " " " 5, size 8×6 inches.....	"	13 50
11342.	Donche Bucket, Aloe's, Granite, $1\frac{1}{2}$ gallon.....	"	30 00
11343.	Foot Tubs, Oval, Granite, No. 1, $18\frac{1}{2} \times 15\frac{1}{2} \times 8\frac{1}{2}$ inches.....	"	26 25
11344.	" " " " " 2, 20 $\times 16\frac{1}{2} \times 9$ inches.....	"	30 00
11345.	" " " " " 3, $21\frac{1}{2} \times 17\frac{1}{2} \times 9\frac{1}{2}$ inches.....	"	37 50
11346.	Jars, Asylum, Slop, Granite, No. 40, with Bail.....	"	60 00
11347.	" Hospital, Slop, Granite, No. 403, with Bail.....	"	37 50
11348.	Pans, Bed, Granite, No. 1, with cover.....	"	48 00
11349.	" " Hanks', Granite.....	"	48 00
11350.	" Bidet, Granite, No. 10, size $11\frac{1}{2} \times 18\frac{1}{2} \times 4$ inches.....	"	39 00
11351.	" Instrument, Granite, No. 100, size $9 \times 7\frac{1}{2}$ inches.....	"	9 00
11352.	" " " " " 200, size $10 \times 8\frac{1}{2}$ inches.....	"	9 75
11353.	" " " " " 300, size $12\frac{1}{2} \times 8\frac{1}{2}$ inches.....	"	10 50
11354.	" " " " " 400, size 15×11 inches.....	"	13 50
11355.	" " " " " 450, size 16×11 inches.....	"	15 00
11356.	" " " " " 500, size $17\frac{1}{2} \times 12\frac{1}{2}$ inches.....	"	18 75
11357.	" Pus, Granite, No. 1, size $9\frac{1}{2} \times 3\frac{1}{2}$ inches.....	"	12 00
11358.	" " " " " 2, size $10\frac{1}{2} \times 4\frac{1}{2}$ inches.....	"	13 80
11359.	" " " " " 3, size $11 \times 4\frac{1}{2}$ inches.....	"	15 60
11360.	" " Smith's, Granite, No. 30.....	"	15 00
11361.	" " " " White Enamel.....	"	24 00
11362.	" " " " " No. 1, size $3\frac{1}{2} \times 9\frac{1}{2}$ inches.....	"	19 20
11363.	" " " " " No. 2, size $4\frac{1}{2} \times 10\frac{1}{2}$ inches.....	"	21 60
11364.	" " " " " No. 3, size $4\frac{1}{2} \times 11$ inches.....	"	24 00
11365.	Wall Soap Dishes, Granite, No. 60, size $6\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{1}{2}$ inches.....	"	4 50
11366.	Wash Bowls, Granite, No. 24, size $9\frac{1}{2} \times 2\frac{1}{2}$ inches.....	"	5 25
11367.	" " " " " 30, size $12\frac{1}{2} \times 3\frac{1}{2}$ inches.....	"	8 25
11368.	" " " " " 36, size $15 \times 3\frac{1}{2}$ inches.....	"	12 75
11369.	Water Buckets, Flaring, Granite, No. 40, 4 quarts.....	"	12 75
11370.	" " " " " 60, 6 quarts.....	"	13 50
11371.	" " " " " 80, 8 quarts.....	"	15 75
11372.	" " " " " 100, 10 quarts.....	"	18 00
11373.	" " " " " 120, 12 quarts.....	"	20 25
11374.	" " " " " 160, 16 quarts.....	"	24 00
11375.	Water Heater, for Grates, Granite, No. 25, size $6\frac{1}{2} \times 6\frac{1}{2}$ inches.....	"	21 00
11376.	Water Pitcher, Granite, No. 200, 2 quart.....	"	15 00
11377.	" " " " " 400, 4 ".....	"	21 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

HOSPITAL FURNISHINGS.

INSTRUMENT CABINETS—INSTRUMENT STANDS.

ALOE'S ASEPTIC GLASS INSTRUMENT CABINETS.



11378.

These Glass Aseptic Instrument Cabinets have been constructed to supply the demand for an instrument cabinet that will prevent instruments, when not in use, from becoming contaminated. Being constructed of glass and iron, the instruments are all in view, thus facilitating the selection of instruments desired for any operation. The illustration clearly shows the construction. They are made of angle iron, with double thick glass, front, sides and back, and with plate-glass shelves. The doors are rendered air tight, or nearly so, by rubber packing, while the joints are all closely forged and accurately fitted. They are very handsome in appearance, being painted white, and lacquered inside and out, and are provided with lock and key.

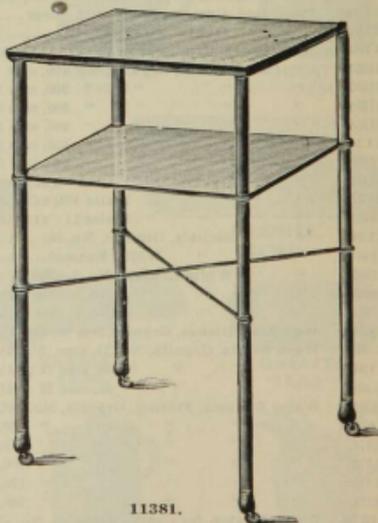
The height given is exclusive of the feet, which can be had 6, 8 or 12 inches high. The small cabinet is furnished with casters.

We are prepared to make any size or style of instrument cabinet desired, and will cheerfully furnish plans and estimates.

- | | | |
|--------|--|----------|
| 11378. | Aloe's Aseptic Glass Instrument Cabinet, double door, large, 6 feet high, 4 feet wide, 2 feet deep (from front to back), 10 plate-glass shelves..... | \$175 00 |
| 11379. | Aloe's Aseptic Glass Instrument Cabinet, double door, medium, 4 feet high, 4 feet wide, 2 feet deep, 8 plate-glass shelves..... | 150 00 |
| 11380. | Aloe's Aseptic Glass Instrument Cabinet, single door, small, 4 feet high, 2 feet wide, 2 feet deep, 5 plate-glass shelves..... | 100 00 |

ROOSEVELDT HOSPITAL INSTRUMENT STAND.

The Stand represented in Fig. 11381 is made entirely of wrought iron and glass. The joints and connecting parts are closely joined, making the stand as near aseptic as it is possible for a piece of furniture of this kind to be made. They are finished in white enamel and present a neat and clean appearance. The Stand, as shown, has two glass plates, each 15x19 inches and stands 34 inches high. If so desired, another glass plate may be substituted for the cross pieces. These stands are furnished with or without casters, as ordered.



11381.

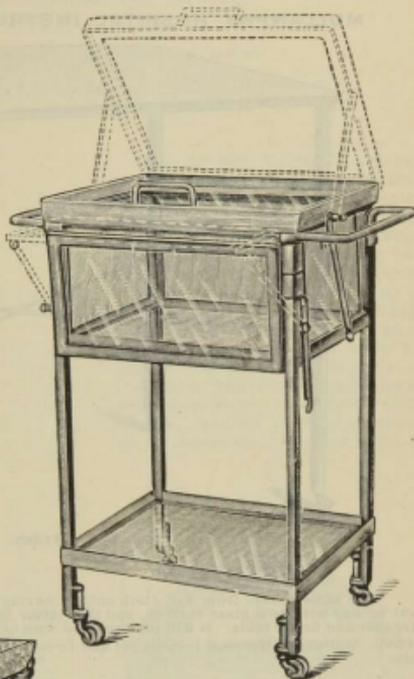
- | | | |
|--------|---|----------|
| 11381. | Rooseveldt Hospital Instrument Stand, 2 glass plates, 15x19x34 inches high..... | \$ 18 00 |
| 11382. | " " " " 3 " " 15x19x34 " " | 21 00 |

HOSPITAL FURNISHINGS.

INSTRUMENT CABINETS—INSTRUMENT STANDS.

MO. PAC. R. R. HOSPITAL INSTRUMENT AND DRESSING STAND.

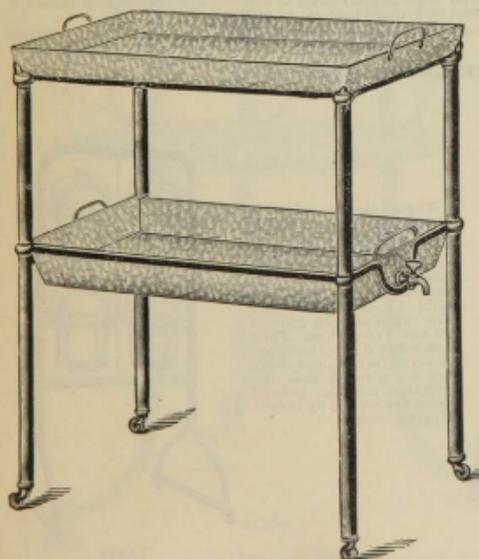
In Fig. 11383 we illustrate a very desirable stand for an operating room, where the space is limited, as it can be utilized both as a dressing and instrument table, and also as a retainer for dressing materials until they are wanted for application. During the operation the top of the stand may be raised and fastened as indicated in cut. The front of the case has a hinged glass shelf, which will be found a convenience in dispensing the dressings. Near the bottom of the stand is a glass shelf 20x24 inches, which may be used for any purpose for which it may prove to be most convenient.



11383.

MULLANPHY HOSPITAL INSTRUMENT STAND.

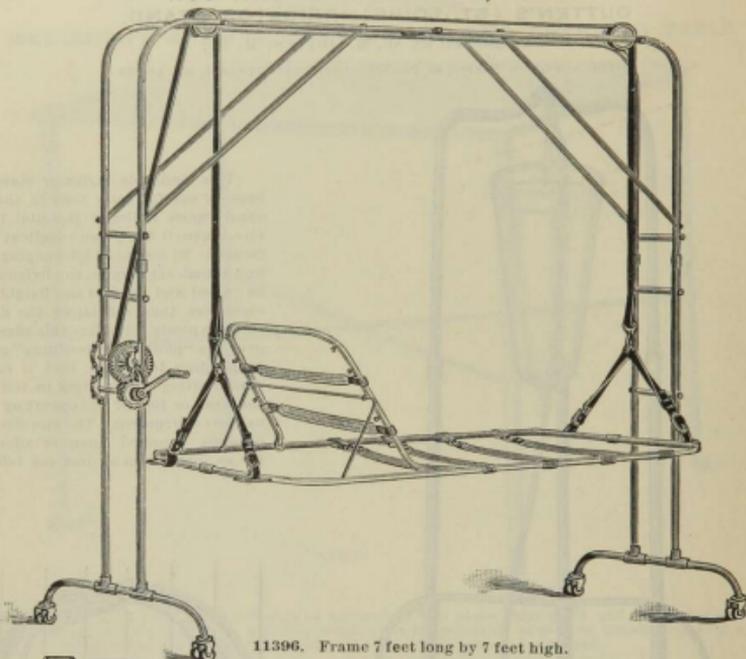
The Mullanphy Hospital Instrument Stand, shown in Fig. 11384, represents a convenient combination of instrument tray and stand. The stand is made of wrought iron, after the style of Fig. 11381, and in place of the glass shelves is supplied with two Granite instrument trays $12\frac{1}{2} \times 17\frac{1}{2}$. The lower one of these trays is fitted with a small faucet, by means of which the soiled solution may be drawn off. The instruments then may be re-covered with new solution and this procedure repeated as often as required.



11384.

11383. Mo. Pac. R. R. Hospital Instrument and Dressing Stand, 20x24x34 inches high, \$ 60 00
 11384. Mullanphy Hospital Instrument Stand, 13x18x34 inches high 25 00

HOSPITAL FURNISHINGS.
INVALID LIFTER.
HOSPITAL INVALID LIFTER, No. 42.



11396. Frame 7 feet long by 7 feet high.

This Lifter can be used over any bedstead. It is made of gas pipe and is very light and strong. Fixed double wheel casters are used to conveniently locate it in position for use.

The back-rest used can be attached to any of our iron bedsteads at a small cost. The Lifter is taken apart for shipping, but is easily set up with right and left hand sockets.

DIRECTIONS FOR USING LIFTER.

Remove straps from one side of frame, with back-rest let down. Place swinging frame over patient, then slip straps under him and buckle to the side bar. Place the machine over the bed and hook onto it the swinging frame, then raise patient by turning handle of windlass.

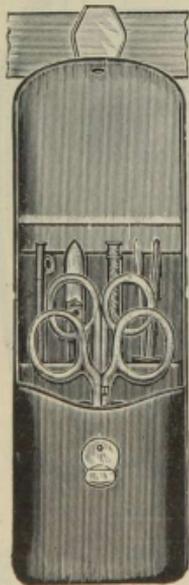
11396. Hospital Invalid Lifter, No. 42..... \$45 00

NURSES' INSTRUMENT CASES.

These Nurses' Chatelaine Cases are neatly made of Morocco Leather, leather lined, and contain the following instruments:

- 1 Péan's Hæmostatic and Dressing Forceps.
- 1 Pair Straight Scissors.
- 1 Pair Probes, one with eye and one with spear point.
- 1 Female Catheter, German Silver.
- 1 Artery and Dressing Forceps.
- 1 American Indestructible Index Thermometer, with magnifying (lens) front.

The cases are provided with buckle to slip on leather belt, or strap to go about the waist.



11399.

11397. Nurses' Aprons, Gossamer Rubber..... \$ 1 50
11398. " Caps, Pure Gum 1 25
11399. " Chatelaine Instrument Cases, complete..... 6 00
11400. " Sleeves, Gossamer Rubber..... per pair, 75

HOSPITAL FURNISHINGS.

OPERATING APRONS.



11401.



11402.



11403.

BAXTER'S SURGICAL APRON.

For a long time we have had calls from Surgeons for an Operating Apron and have never before this one, as suggested by Dr. Baxter, seen one that gave satisfaction.

As seen in the cut, the apron is made of one piece of sheeting, coated on one side only, with the finest maroon Para rubber, and fastened with tapes, behind the waist.

It is durable, light, and can be rolled up into a very small compass, so as to be carried in any satchel.

The pockets in the front are handy places to put artery forceps, scissors, or anything that the operator wishes to have within quick reach.

TRIPPE'S SURGICAL APRON.

At the request of Dr. R. J. Trippe of Chattanooga, Tenn., we have recently made an apron of same material as above, but with front fitting close up around collar and long enough to fall to the shoe top on a medium tall person.

11401.	Baxter's Surgical Apron, 39 inches long	.....	\$4 00
11402.	“ “ “ 47 “ “	.....	4 25
11403.	Trippe's Surgical Apron, 58 “ “	.....	6 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

HOSPITAL FURNISHINGS.

OPERATING GOWNS.

BERGMANN'S ANTISEPTIC OPERATING GOWNS.

AFTER THE PATTERN OF PROF. ERNST VON BERGMANN, OF BERLIN.



Front.



Back.

11405.

We have had frequent demands from surgeons and from hospitals for operating gowns, and are now prepared to offer gowns of linen or cotton drilling made after the pattern of Von Bergmann, of Berlin. They are durably made, the linen of pure unbleached linen and the cotton of heavy drilling, and will be found much more satisfactory than the light, flimsy cotton gowns which generally will not stand more than two or three trips through the laundry. As will be seen by reference to the illustration, these gowns are furnished with short sleeves with tapes attached, to tie below the operator's shirt sleeves, and thus overcomes the tendency of the sleeves to slip down in the operator's way. These gowns envelope the body completely, fit snugly around the collar, and have broad tapes to go around the body and tie in front.

11404.	Bergmann's Operating Gowns, cotton.....	\$ 2 50
11405.	“ “ “ linen.....	3 50

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

HOSPITAL FURNISHINGS.

OPERATING TABLES.

AN OPERATING TABLE FOR GENERAL AND GYNÆCOLOGICAL SURGERY,
ADAPTED TO GIVE THE TRENDELENBURG POSTURE.

BY CLEMENT CLEVELAND, M. D.,

ATTENDING SURGEON WOMAN'S HOSPITAL AND GYNÆCOLOGIST TO NEW YORK CANCER HOSPITAL,
NEW YORK CITY.

It is constructed almost entirely of galvanized iron. The supports or legs and the framework of the top are made of angle iron, this form of the metal being as strong as the solid, and very much lighter.

To form the legs the iron (one and one-half inches angle iron) is bent in the form shown in the diagram (Fig. 1A), with the angle turned inward. They are held together and prevented from spreading by bands of one and one-quarter inches strap iron, shown in diagram.

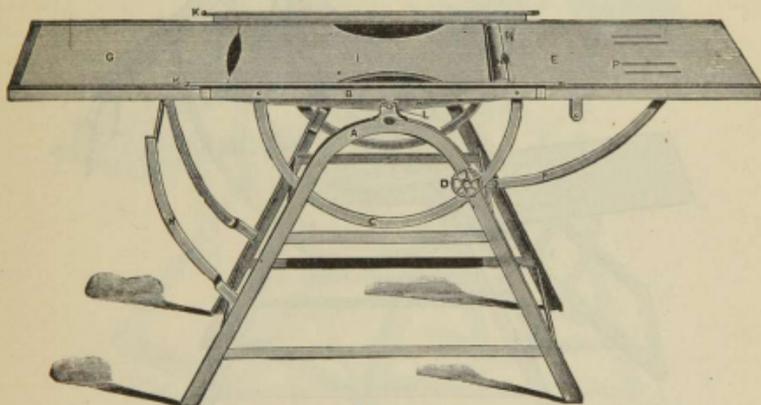


Fig. 1.

The frame of the top made of the same size angle iron, with angles turned inward and downward, is six feet long and nineteen and one-half inches wide. It is open at the lower end when tipped in the Trendelenburg posture. The table is thirty-four inches high, and its top is made to swivel at its center on two blocks of metal placed at the top or apices of the support, allowing an up and down or see-saw motion.

Attached to the frame on its under side, for two and a half feet of its length, with a depression at its center of four inches, is the drain-pan, having an outlet at its lower or center point. This cannot well be shown in the diagram. The table is made to drain only in the horizontal position, as it is necessary to have the patient in that posture, when the abdominal cavity is irrigated, that all fluid may gravitate to the pelvic cavity, where it can be readily sponged out.

Jutting outward and upward from the center of the upper edge of the frame on both sides, are guards, two inches wide and two and a half feet long, designed to guide fluids into the drain-pan and to prevent them from flowing over on to the floor or on to the clothing of the operator and his assistant.

The top, which is movable, is made of galvanized plate iron in three sections. The head and center plates are hinged together by a simple device which admits of them being taken apart. The head and shoulder-plate is twenty-eight inches long, the center, sixteen and the foot-plate twenty-five. The construction and arrangement can be seen in the diagram (Fig. 1 G, I, E.).

HOSPITAL FURNISHINGS.

OPERATING TABLES.

THE CLEVELAND OPERATING TABLE.—CONTINUED.

It will also be observed that the sides of the center-plate are cut out in curved sections. This is to facilitate drainage.

The foot-plate is terminated at its inner end by a cylinder of nickel-plated metal and at the other by a piece of one and one-half inch angle iron, the latter to carry out the symmetry of the table. The purpose of the cylinder is to prevent injury to the structures in the popliteal spaces, when the patient is being tipped into the Trendelenburg posture.

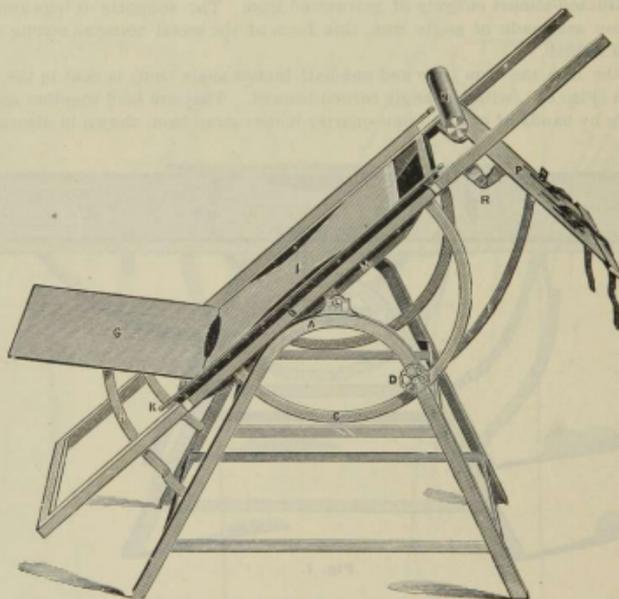


Fig. 2.

Ten inches from its upper end this plate is made to swivel on brackets four inches below the frame. This mechanism can be better understood from diagram (Fig. 2 R) than from a description. It is for the purpose of drawing the patient four inches higher from the floor, when thrown into the Trendelenburg posture than she would be were the plate to swivel from the frame directly. Through this foot-plate, at about the center, are cut four narrow fenestræ. Through these straps are pushed to hold the legs in position. The openings are made rather long, to allow the straps to slip up and down as the position of the patient is changed.

Attached to each side of the frame in the position seen in diagram (Fig. 1 C) is a semicircle of one-inch strap iron, which is for the double purpose of adding strength to the top and providing the means of holding the patient at any pitch desired, this latter being attained by the aid of wheels (Fig. 1 D), which are for the purpose of fixing the semicircles by means of clamps at any desired point of the supports.

From the legs at the head of the table, curving outwards and upwards are two strong bars, held together by a cross-bar (Fig. 1 H). Upon these the head-plate rests, and by them is held in the horizontal position, when the frame is tipped to give the Trendelenburg posture. This is seen in Fig. 2.

HOSPITAL FURNISHINGS.

OPERATING TABLES.

THE CLEVELAND OPERATING TABLE.—CONTINUED.

On the under surface of the foot-plate, near its lower end, is hinged a curved bar, which is also hinged at its other end to one of the cross-bars of the legs (Fig. 2 F). It will be readily seen that when the table is tipped, this draws the foot-plate into the position shown in Figs. 2 and 3, thus flexing both thighs and legs.



Fig. 3.

When the table is in the horizontal position the foot-plate is held firmly in place by a lock on its under surface and at its lower end, which can be managed with the greatest ease. This it is hardly worth while to describe.

In the construction of the table the aim has been to secure ease of cleaning and handling. It can be readily taken apart either to cleanse or transport. Being all of galvanized iron it can be scrubbed and deluged with water.

To make the table complete, and to save time and trouble, I advise the purchase of the thick rubber pad which is made to fit the head and center-plates. Rubber is expensive, but any one seeing the pad and its use would not order the table without it.

11406.	Cleveland's Operating Table, Style A.....	\$ 75 00
11407.	“ “ “ “ B, made so that plate G, Fig. 2, can be let down so as to be on a line with center-plate I.....	85 00
11408.	Rubber Pad for Cleveland's Table	16 50
	Packing, \$2.50; cartage, if forwarded by freight, \$1.00.	

HOSPITAL FURNISHINGS.

OPERATING TABLES.

EDEBOHLS' OPERATING TABLE.

By GEO. M. EDEBOHLS, M. D.,

GYNÆCOLOGIST TO ST. FRANCIS' HOSPITAL, NEW YORK.

The frame *A* of the table-top is cast in one piece of metal, with all corners and angles well rounded for purposes of ready cleansing. After uniting frame and legs all joints are filled, the metal surfaces smoothed and the table finally galvanized as a whole. This secures the filling of any crevices and makes a practically unbroken surface, continuous over the entire framework of the table.

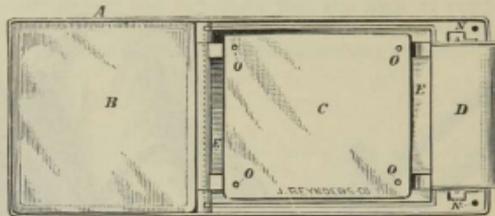


Fig. 1--Top of Table. *A*, metal frame; *B*, polished glass plate for head and shoulders; *C*, polished glass plate for body; *D*, metal surface; *E*, trough; *N*, holes for foot supports.

The table top, (Fig. 1) measures 20x49 inches over all, and consists of two plates of polished French glass, *B*, *C*, one-half inch thick, with rounded edges and polished corners, and of a smooth metal surface, *D*. The glass plate, *B*, 19½ inches square, supports the head and shoulders of the patient. It is removable from the frame for purposes of cleansing. The greater part of the trunk and part of the thighs of

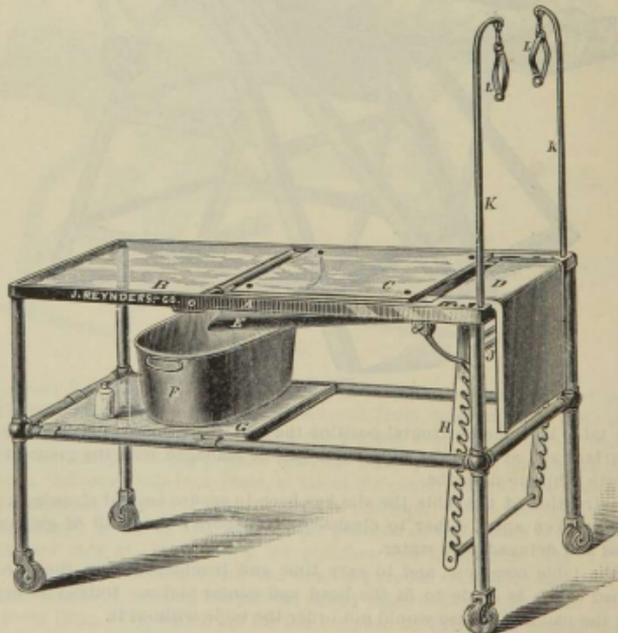


Fig. 2--Side view of Table.

the patient rest on plate *C*, which is 19x16½ inches in size, and also removable. The metal surface *D* is 15 inches wide, 7 inches long in its horizontal, and 12 inches long in its vertical portion. The horizontal part supports the lower portion of the thighs, while the legs are flexed so as to bring the calves against the vertical prolongation. Two metal bars, cast in one piece with *D*, pass under *C*, supporting the latter, and are hinged upon a pinion passing across the table between the two glass plates. This pinion can be withdrawn, allowing of removal of all the parts for easy cleansing. Two projecting pins pass from each of the

HOSPITAL FURNISHINGS.

OPERATING TABLES.

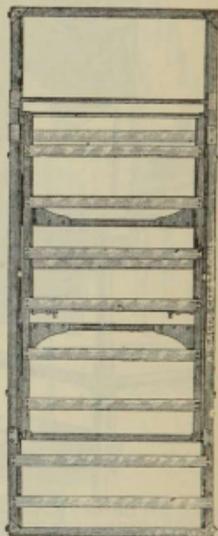
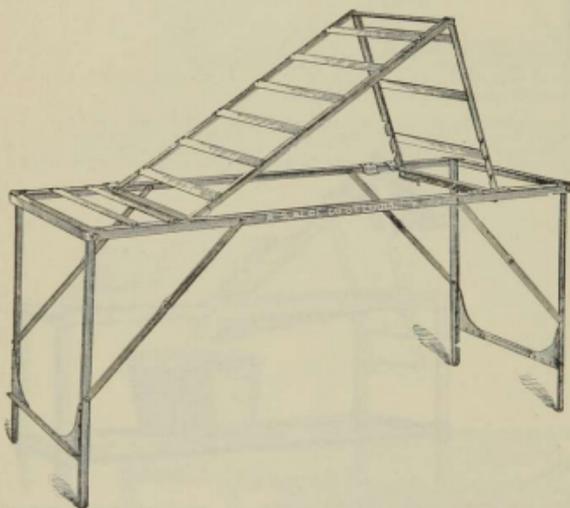
A GYNÆCOLOGICAL OPERATING TABLE.

FACILITATING THE EMPLOYMENT OF TRENDELENBURG'S POSTURE.

By FRANCIS FOERSTER, M. D.,

INSTRUCTOR IN GYNÆCOLOGY AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

To make clear the motives which guided me in designing this apparatus, I must point out the great difficulties with which we meet in finding a suitable table when we are forced by circumstances to perform a major gynæcological operation at the patient's own home. It frequently happens among the poor classes that for certain reasons they can not enjoy the hospital and the facilities it offers, and it is in these cases that our choice among the several articles of furniture available is the most limited one. The bed must be excluded for obvious reasons; the dining table is usually too broad and clumsy; the kitchen table may answer, provided that it is built solidly and has not seen too many days of use. Compelled to com-



11411.

promise with anything, we call this piece of furniture into service, and, after assuring ourselves that the sanitary conditions of the house do not forbid the operation, we proceed. Everything may go well, but it may be our misfortune that the table, at the moment when we least expect it, gives way and the operation must be continued under the most embarrassing circumstances. Such an accident is so much the more likely to happen when we try to get our patient into Trendelenburg's posture by putting boxes under one end of the table to elevate the same, thus weakening the whole structure. To prevent such an occurrence, or rather recurrence—as it has happened to me—and to enjoy at the same time other facilities, I had this portable table constructed.

The table is constructed of angle iron and nickel-plated steel bands. Folded up, it forms a grate-like frame, the legs being fastened by hinges, and fitting when closed, exactly into the frame. The top is formed of a series of steel bands, each, one and a quarter of an inch wide, at a distance of four to five inches from each other. The greater part of the top is taken up by the arrangement for Trendelenburg's posture.

When irrigation of the abdominal cavity is indicated, the patient may be lowered readily by disengaging the support. We now enjoy the great advantage that the irrigating fluid flows off directly through the grate-like table, a flooding of the patient's clothing and of the operating table being thus avoided. A piece of rubber cloth fastened to the four legs of the table, will catch the liquid and conduct the same to a vessel standing under the table, saving the carpet and floor from being soiled.

11411. Foerster's Operating Table..... \$ 35 00

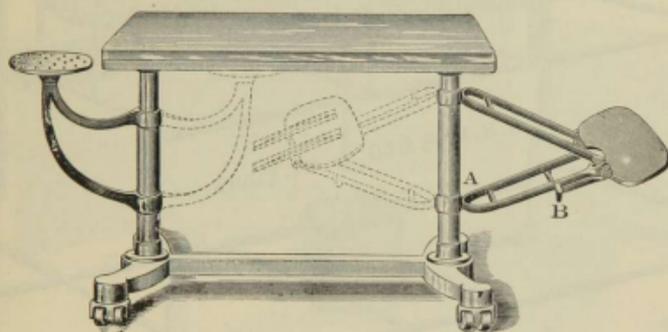
HOSPITAL FURNISHINGS.

OPERATING TABLES.

KELLY'S ANTISEPTIC OPERATING TABLE.

FOR LAPAROTOMY AND GYNÆCOLOGICAL WORK.

DEvised BY DR. HOWARD A. KELLY OF JOHNS HOPKINS HOSPITAL, BALTIMORE, MD.



11412.

The Antiseptic Operating Table, as shown in the above cut, is made entirely of brass and bronze, highly polished, with an inch thick plate-glass top.

The table is 32 inches high, 21 inches wide and 44 inches long; the extreme length when the seat and foot rest are extended is 6 feet 6 inches. The base of the table is cast in one piece, supported by four Yale Casters; the two uprights are of heavy tubing. Attached to the lower collar of the support of the foot-rest at *A*, there is a spring-catch which holds the same in a fixed position when extended. At *B*, there are two fingers, one on each side of the support, to change the angle of the foot-rest. The plate glass top rests on a cast frame, firmly held in position by lugs on the sides and ends. The lug at the lower end can be turned down by loosening the thumb-screw, the glass plate can then be slid forward and removed with ease.

The whole table is massively built and has an elegant appearance.

When not in use the seat and foot-rest can be turned under the table as shown by the dotted lines in the cut above.

The first one of these tables has been made according to the instructions of and for Dr. Howard A. Kelly, of Johns Hopkins Hospital, Baltimore, Md. Another is in daily use at the private hospital of Dr. Joseph Tabor Johnson, Washington, D. C.

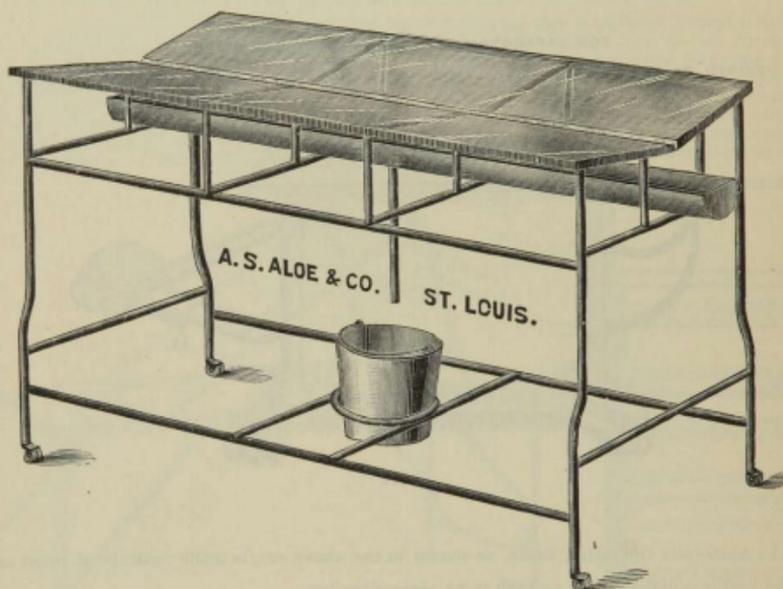
11412. Kelly's Gynæcological Operating Table..... \$175 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

HOSPITAL FURNISHINGS.

OPERATING TABLES.

TUHOLSKE'S (ST. LOUIS) ASEPTIC OPERATING TABLE.



11413.

This table is destined especially for Hospital work. It is strongly and substantially built, and the following points render it of special advantage: It can be cleansed in all its parts with the greatest facility, (the two glass plates being entirely removable). In the employment of an irrigator it offers the great advantage that the irrigating fluid flows off, directly through the gutter or slot in the center of the table to the copper trough below, thence to the waste pail, a flooding of the operating table and floor being thus avoided.

The table as above illustrated, is made with two glass plates, set one inch apart at an incline of 10° , thus affording perfect drainage. These can be removed from the frame and thoroughly cleansed. The frame is made of smoothly joined wrought iron, braced so as to secure firmness, a feature that is lacking in many new tables. The trough is made of copper, placed in the center of the table between the two plates, and can readily be removed should occasion require it. Each table is furnished with two heavy rubber pads placed over each glass plate. These make excellent cushions and are impervious to blood and other fluid which they are liable to come in contact with. The table is handsomely japanned and mounted on double casters and can easily be moved about. Length 66 inches; width 28 inches; height 36 inches.

11413. Tuholske's Aseptic Operating Table, with Rubber Pads..... \$ 75 00

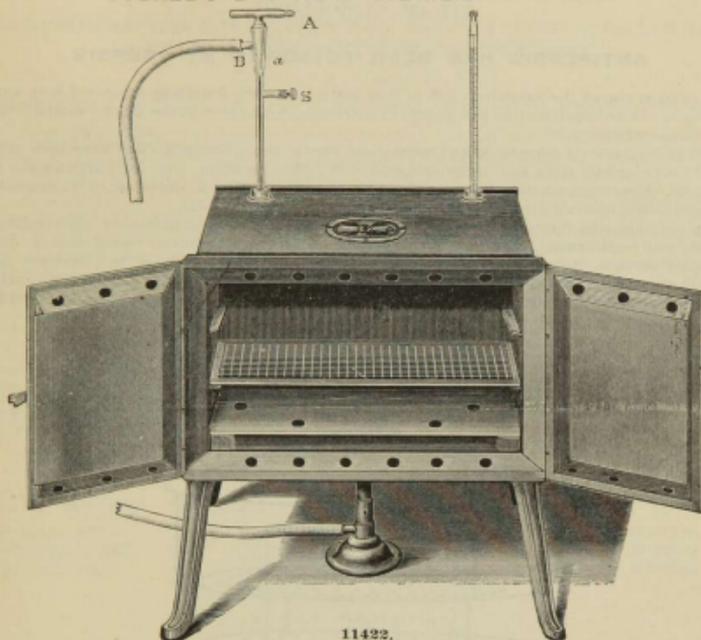
MISCELLANEOUS OPERATING TABLES.

Illustrations and descriptions of these tables will be furnished upon application.

11414.	Boldt's Portable Laparotomy Table	\$ 50 00
11415.	Hagedorn's Operating Table	105 00
11416.	Hirschberg's Ophthalmological Operating Table	160 00
11417.	Koerte's General Operating Table	115 00
11418.	Sonnenburg's Operating Table	75 00

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

HOSPITAL FURNISHINGS.
 DRY HEAT STERILIZERS.
 BOEKEL'S DRY HEAT STERILIZING OVENS.



11422.

It has been the aim of the makers to construct an oven to produce uniform heat all over the inside of the oven. They are made of the best Russia iron, with double walls, through which the heat circulates, and having a register on the top. In order to secure a perfectly even circulation of the heat all around, there are connecting openings between the double walls. The heat, furnished by a powerful Bunsen Burner, placed below the funnel-shaped opening in the center of the bottom of oven, circulates through the double walls, and escapes through the register in the center of the top. In order to secure the proper heat necessary for sterilization and to prevent the overheating of the instruments, etc., which would spoil them, there is inserted into the opening on the left side in the top of the oven and held by a cork, as shown in the cut.

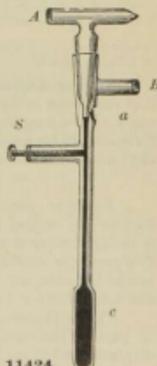
REICHERT'S IMPROVED GAS REGULATOR,

Working by the expansion or contraction of a column of mercury, which closes or opens the orifice through which the gas is supplied to the burner.

The cut represents the apparatus in one-fifth actual size; *c* is the mercury bulb, communicating by a thin tube with the widened cylinder into which the part *A* is ground air-tight. Part *A* has a large opening at *a*, a smaller one at the end nearest to the mercury, and a fine perforation opposite the tube *B*. The gas enters at *A*, passes through the apparatus and flows through the rubber tube at *B* to the burner.

S is an iron screw, which turns readily in a small glass tube. To adjust the apparatus, the part *A* is introduced so that the small perforation is just opposite *B* (see cut), the gas is supplied by the proper connections (rubber tubing), the burner is lit and the temperature observed by the thermometer. When the desired degree of heat has been reached, the mercury column is regulated in this way: The screw is screwed in, thereby forcing more mercury into the column and out at the point where the tube widens, until it finally stops up the inlet at *a* and the flame gets smaller. In this position the burner is supplied through the small hole opposite *B* only, and, if desired, this constant flame can be further diminished by turning the small perforation away from *B*. This instrument secures constant temperature at any desired degree from 1° C. to near the boiling point of mercury within one-fifth of a degree Centigrade; the accuracy is increased by surrounding the heated space with non-conducting material.

A black powder is sometimes deposited by the gas on the surface of the mercury; this is to be removed by a camel's hair brush.



11424.

11419.	Boekel's Dry Heat Sterilizer, 9x9x12 inches, with Bunsen Burner, Thermometer and Regulator,	\$16 50
11420.	" " " " " 9x9x15, " " " " " " " "	19 50
11421.	" " " " " 9x9x18, " " " " " " " "	21 75
11422.	" " " " " 12x12x24, " " " " " " " "	30 00
11423.	" " " " " 18x20x24, " " " " " " " "	40 00
11424.	Reichert's Improved Gas Regulator.....	2 50

Measurements given are inside measurements.

HOSPITAL FURNISHINGS.

STEAM STERILIZERS.

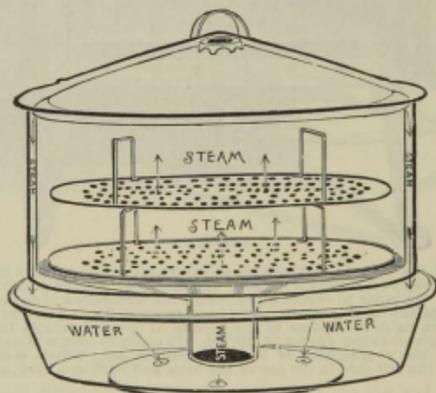
ANTISEPSIS HAS BEEN FOLLOWED BY ASEPSIS.

The present aim of the surgeon is not to load the wound with dressings saturated with antiseptics, which are at the same time irritating and possibly excoriating, but to protect the aseptic wound with aseptic pads and aseptic bandages.

Every physician feels more or less uncertain and uneasy about dressings that have been kept on the shelves of the druggist's store and in the cabinets of his office awaiting use. They accumulate dust, and with it germs. The recent practice in the leading hospitals is to sterilize all dressings in the operating room and to remove them from the sterilizing chamber just at the moment of need.

Many surgeons who formerly used carbolic and corrosive sublimate solutions for disinfecting wounds now operate with a continuous, gentle flow of sterilized (aseptic) water over the wound, thereby obtaining a better healing surface. Antiseptic solutions require to be of such strength to be efficacious that when applied to raw tissue they cause it to become white, in part cauterized. This film of cauterized surface must become absorbed in the healing process. In warm aseptic water this cauterization is not present, and the approximated edges and surfaces unite by first intention.

THE ARNOLD STEAM STERILIZER.



11426.

This apparatus is relied on for sterilizing for bacteriological work, and subjects itself continually by that very work to the most crucial test. This instrument is already a necessary part of every surgeon's office stock. Most surgeons keep it continually mounted over a gas burner, and after every operation steam their instruments for an hour before putting them away. Before each operation all dressings and instruments are sterilized for an hour or more.

DESCRIPTION.

Water is poured into the pan or reservoir, whence it passes slowly through three small apertures into the shallow copper vessel beneath, becomes converted into steam and rises through the funnel in the center to the sterilizing chamber above. Here it accumulates under moderate pressure at a temperature of 212° F. The excess of steam escapes about the cover, becomes imprisoned under the hood and serves to form a steam jacket between the wall of the sterilizing chamber and the hood. As the steam is forced down from above and meets the air it condenses and drips back into the reservoir.

This is the only inexpensive apparatus which maintains an unvarying temperature of 212° F. (100 C.) in all parts of the sterilizing chamber without needing any care or attention. For this reason they are rapidly displacing all other methods heretofore employed by prominent institutions throughout the country.

Made oval in shape. Size of chamber, 14 inches long, 9½ inches wide, 6 inches deep, with two racks for instruments.

11425.	Arnold's Steam Instrument Sterilizer, Heavy Tin, Copper Bottom.....	\$ 5 00
11426.	“ “ “ “ all Copper.....	12 50

LARGER SIZES MADE TO ORDER.

HOSPITAL FURNISHINGS.

STEAM STERILIZERS.

A NEW COMBINATION STERILIZER FOR ASEPTICIZING SIMULTANEOUSLY
WATER, INSTRUMENTS AND DRESSINGS.

BY FRANK J. THORNBURY, M. D.,

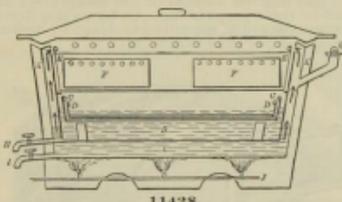
DEMONSTRATOR OF BACTERIOLOGY, MEDICAL AND DENTAL DEPARTMENTS, UNIVERSITY OF BUFFALO.

This apparatus is designed to meet the requirements of the general practitioner as well as the specialist in surgery, obstetrics, and gynecology.

It consists of a boiler (*B*) in which the water is sterilized, a tray (*C*) containing soda solution in which the instruments are sterilized, and an upper chamber (*E*) for sterilizing the dressings.

The steam for the latter is generated in a jacket of water (*A*), which envelops the lower boiler and upper instrument tray. The dressing chamber is provided with double walls separated by a space a few centimetres in width and corresponding to the outer water compartment below. Through the upper intervening space steam ascends from the water jacket, to enter, through a line of perforations, the inner chamber at the top. Hot air passes up around the dressings through the outermost space (*K*), so they are warmed before the steam encounters them. The water jacket extends from the bottom of the water boiler on all sides upward to the top of the instrument tray. It has drain (*I*) and inlet pipe (*G*) attached. The inner walls of the boiler above the shallow instrument tray with soda solution. The cover of the tray is formed by the bottom of the removable chamber for dressings above.

In the latter are contained two sub-compartments (*F F*)—small closed boxes—with two rows of perforations in the top and bottom, left open for entrance of steam while the dressings are sterilizing, afterward closable to preserve them uncontaminated. The communication between the top of the jacket and the outer steam compartment of the upper chamber is direct, in fact, what is the water jacket below corresponds with the outer steam space above. The steam, after permeating and traversing the dressings, gauze, cotton bandages, etc., contained in the boxes in the upper chamber, escapes through a vapor pipe at the side into the open air, or may, in case of an apparatus of large proportions, be conducted through a coil of lead pipe to be condensed in a vessel of cold water.



MADE IN TWO STYLES.

No. 1 entirely of Tin.
No. 2 of Copper, with
Russian Iron Cover.

DIMENSIONS.

17 inches long.
13 inches wide.
18 inches high.

11428.

A, water jacket; B, water boiler; C, soda tray; D, instrument tray; E, upper steam chamber; F, boxes for dressings; G, supply pipe to boiler; H, tap to sterilized water boiler; I, faucet to water jacket; J, gas supply pipe; K, hot-air chamber.

Supply and drain pipes are provided to the water boiler so that it may be filled, or sterilized water drawn off, as desired.

The whole apparatus is closed at the top by a tightly fitting cover which sets into a water seal around the periphery. The temperature will be found to be uniformly 100° C. in the steam chamber and 104° C. or more in the boiling water and soda. The apparatus is heated by means of a gas pipe (*J*) running underneath and containing a number of jets so that the heat may be distributed over as great an extent of surface as possible. Owing to the compactness of the apparatus, its comparatively small size, and the provision for rapid heating, the entire sterilizing process occupies but a short time.

The water and soda are boiled in three to five minutes—the instruments sterilizing in the soda—the upper chamber is filled with steam in twelve minutes, and in twenty-eight minutes the dressings are sterilized.

Two boxes of dressings may be sterilized at one time, and in the intervals a quantity sufficiently large to last for a number of operations, so that, in case of emergency and want of time, only a delay of about ten minutes is occasioned. This short time for sterilizing the instruments and water may be made to occupy the interval of details preliminary to the operation.

The dressings, after having been aseptized, are removed in the small boxes (no secondary handling and contamination being permitted) and allowed to dry out, although there has not been much saturation through condensation, owing to the dressings having been warm before the steam encounters them. They set directly over and rest upon a tray of hot soda solution. Secondly, the steam is generated rapidly, is saturated and under considerable tension, and consequently has not much tendency to condense on the articles.

To cause evaporation of any moisture that may have occurred, however, and dry thoroughly the dressings so they may be preserved for future use, hot air may be passed through them in a manner to be hereafter described. The dressings, having been sterilized and dried, keep aseptic indefinitely in the tightly closed boxes. One of the latter may be taken by the surgeon to cases in private practice, sterile gauze being thus constantly at hand. In using this combination sterilizer, first the boiler is filled with water; second, a one per cent soda solution is placed in the tray, and in the latter the instruments are submerged in a shallow wire basket (*D*). Next the boxes are filled with dressings (leaving the cover and bottom orifices open) and set into the sterilizing chamber. Water is now allowed to flow from the hydrant to fill the jacket, and then the gas is turned on. After the sterilizing process is completed the water is drawn from the jacket through a faucet at the side, and water from the hydrant is allowed to course through around the sterilized water in the boiler, cooling it for immediate use. The instruments have been sterilized in the soda which has boiled each. The gas flame allowed to continue generates dry heat (the jacket being empty), which takes the same course to dry the dressings as the steam did in sterilizing them. This constitutes the apparatus and its workings complete.

[Extract from N. Y. Medical Journal, Dec. 1892.]

11427. Thornbury's Combination Sterilizer, No. 1, Tin..... \$15 00
11428. " " " " " 2, Copper..... 20 00

HOSPITAL FURNISHINGS.

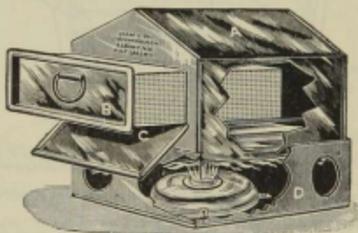
STEAM STERILIZERS.

VAN HEUSEN COMPRESS HEATER AND STERILIZER.

The necessity and growing importance of sterilization in medical science is obvious. It is equally true that no simple or satisfactory apparatus for this purpose has hitherto been made. It is confidently claimed that the Van Hensen Compress Heater and Sterilizer not only meets this need, but combines advantages and uses never contemplated by other apparatus. Among the distinguishing features are:

Its simplicity, safety and portability. The rapid generation of steam and its absolute confinement to the apparatus. The contents are removed without scalding the hands; there is no escape of steam in operating room, as with other sterilizers that open at the top, nor has air a chance to cause condensation and saturation with water on the contents during their removal. Little condensation takes place upon the contents of the drawer in operation, for the water, condensing on the sides and roof of box, returns to the tank without coming into contact with it. The re-condensation inside the box causes little or no loss of energy, and allows almost indefinite continuance of operation. The fact that no surplus vapor can condense on instruments placed in the drawer, which would cause them to rust, makes this the only complete sterilizer for the purpose. In the sterilization of bandages, heating of compresses, preparation of poultices, etc., saturation with water is most detrimental. No other apparatus obviates this.

The efficacy of hot applications is obtaining increasing recognition, though the discomforts and dangers incident to the treatment hitherto have seriously impaired its value and restricted its use. The Van Hensen Compress Heater and Sterilizer is the first and only apparatus that does away with the old tedious and imperfect method of heating compresses, bandages, etc. There is no further need of wringing out hot cloths and scalding the hands. In ten seconds a moist, aseptic compress is secured, heated to any desired temperature up to 212° F., which can be easily applied to the patient, and which becomes absolutely dry when the heat leaves it. Oil silk or rubber protectors, once necessary, are now superfluous; there is no possibility of wetting the bedding, and the patient is no longer subject to colds or chills, which have always been a constant source of danger. Any desired number of hot compresses are always ready for application as needed, and no skill is required in their preparation. Compresses, dressings, etc., may be quickly and thoroughly saturated with volatile disinfectants, soporifics or drugs by making the necessary preparation in the water used to generate the steam.



11429.

DESCRIPTION.

In the above cut "A" represents a box of finest tin-lined copper; "B" a sliding drawer of perforated tempered brass, nicked; "C" outer door, which is closed in operating and prevents escape of steam; "D" frame for holding the sterilizer proper, "A," and to protect lamp flame from air currents. When not in use the lamp is placed in drawer, "B," and the frame, "D," receives box, "A," securing compactness in transportation. In bottom of box, "A," is a small tank containing water.

OPERATION.

The instruments, or dressings to be heated or sterilized, are placed in the drawer, which is then slid into position and the door closed. The necessary amount of water in the tank being small, steam is almost instantly generated, forces itself through the material placed in the drawer, condenses on the roof of the apparatus, and runs down its walls, returning to the tank. Little condensation can take place on the material in the drawer, which is thus rendered free from excess of moisture, and there is no escape of steam in the room while the apparatus is in operation.

11429. Van Hensen's Compress Heater and Sterilizer, No. 2, 8 inches by 16, full Copper, controllable new triple forced Flame Lamp, Nickel trimmings.....	\$ 14 00
11430. Van Hensen's Compress Heater and Sterilizer, No. 3, 12 inches by 24, full Copper, controllable new triple forced Flame Lamp, Nickel trimmings.....	25 00

These apparatus are all adapted for the use of Bunsen burner.

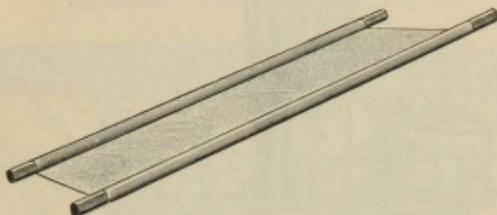
11431. Portable Sterilizer Case for No. 2 apparatus.....	1 50
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Apparatus with two or more drawers or special sizes may be had.

HOSPITAL FURNISHINGS.

STRETCHERS.

WATERPROOF CANVAS POLE STRETCHER, No. 56.



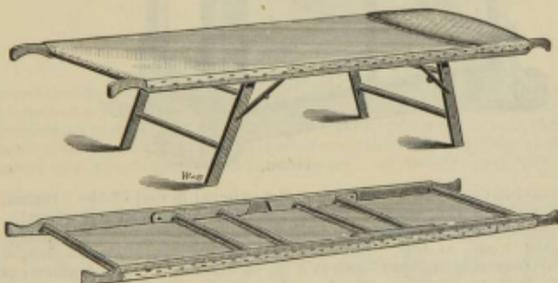
11432.

Size, 6 feet long by 27 inches wide; weight, 10 lbs.

The poles in this stretcher are 6 feet 8 inches long, making the handles 4 inches long at each end. These poles can be slipped out of the pockets of the canvas cover so that the canvas may be washed. This stretcher rolls up very compactly.

11432. Canvas Pole Stretcher, No. 56per dozen, \$ 18 00

WATERPROOF CANVAS FOLDING STRETCHER, No. 48.



11433.

Size, 6 feet by 2 feet 3 inches; weight, 14 lbs.

The handles extend 6 inches at each end, making total length 7 feet.

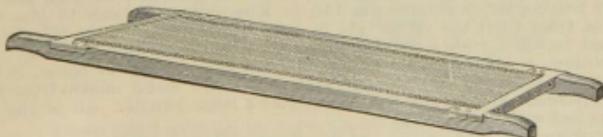
The frame is made of best hard-wood, and the cover is 15 ounce white waterproof duck.

This stretcher can be used with the legs opened or closed.

We can furnish this stretcher with an enamel duck cover at an extra cost, if desired.

11433. Canvas Folding Stretcher, No. 48.....per dozen, \$ 22 00

WOVEN WIRE STRETCHER, No. 7.



11434.

Size, 6 feet long by 24 inches wide; weight, 25 lbs.

Heavy double weave fabric, on hard-wood frame, well varnished. The handles extend 6 inches at each end. Entire length, 7 feet. We put legs like on No. 48 Stretcher on this Stretcher, if desired, at a small extra cost.

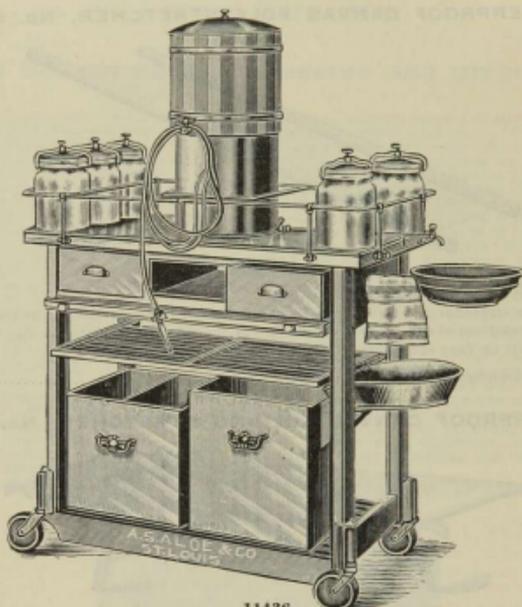
11434. Woven Wire Stretcher, No. 7.....per dozen, \$ 30 00

11435. Woven Wire Folding Stretcher, No. 7, with folding legs..... " " 36 00

HOSPITAL FURNISHINGS.

WARD CARRIAGE.

11436. MORTON'S IMPROVED SURGICAL WARD DRESSING CARRIAGE.



11436.

The Ward Dressing Carriage is made upon the general model of the original one introduced first by Dr. Thomas G. Morton, some years ago, in the Pennsylvania Hospital. It consists of a framework 40 in. high (height is inclusive of glass slab and casters, hereinafter alluded to) by 20 in. wide and 43 in. long—at top. The body of framework measures $38\frac{3}{4}$ in. long by 17 in. wide, supported by four solid rubber casters 4 in. in diameter. The framework is divided by a stationary slatted shelf, $4\frac{3}{4}$ in. from the floor; a second slatted shelf (sliding), $20\frac{3}{4}$ in. above first; a third solid sliding shelf, $5\frac{1}{2}$ in. above second, and the top is covered by a slab of $\frac{1}{4}$ in. plate-glass. The top of framework is surrounded by a $3\frac{3}{8}$ in. brass rod railing, supported by ten brass rod uprights.

On top of carriage are five one-gallon jars for dressings. A five-gallon copper tank (for either distilled or carbolized water) with projecting faucet, supported by a brass plate, for supplying an agate iron ware basin, which is supported in brass rod framework at one end of carriage. On top of copper tank is a stone jar for Hg Cl₂ solution, inclosed in a wooden jacket, which has a copper cover. The stone jar is supplied with a hard-rubber faucet and $10\frac{1}{2}$ feet of heavy rubber tubing, with Esmarch's hard-rubber stop-cock, for irrigating.

Between the top of the carriage and third shelf are two drawers of full width of framework, between these drawers is an open compartment, extending entirely through carriage; on the lower shelf are two copper receivers—one $15\frac{1}{4}$ in. long by $14\frac{3}{4}$ in. wide by $14\frac{1}{2}$ in. deep, with a partition 9 in. from side; the other $14\frac{3}{4}$ in. long by $11\frac{3}{4}$ in. wide by $17\frac{1}{4}$ in. deep, with a spout at one end, in which rests a spouted basin, the dimensions of which are: Top, $13\frac{1}{4}$ in. in diameter; bottom, $8\frac{1}{4}$ in. in diameter; length from edge to end of spout, 16 in. Both receivers have riveted handles. On back of carriage are two metal hooks, from which towels, etc., can be suspended; and at one end is attached a large handle. All of the above-named articles are supplied with the carriage.

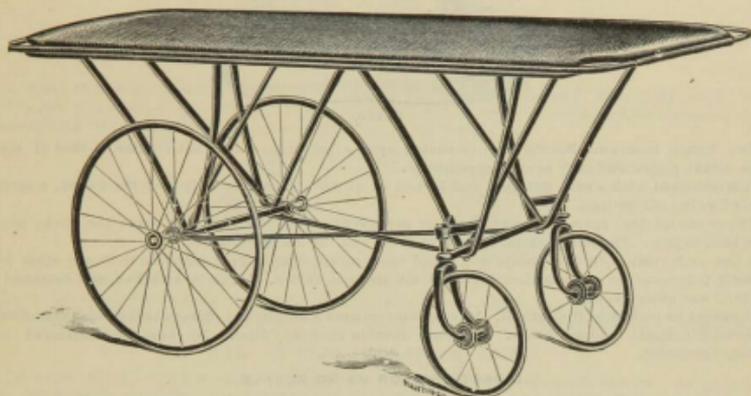
Upon the carriage are kept, in jars, cut dressings, cotton, sponges, towels, gauze bandages, silk protective and drainage tubes; also minor operating instruments in a closed glass tray, constantly immersed in a three per cent carbolized glycerine solution. Bandage and plaster scissors, a palette knife, common cotton bandages, towels and lint, a large duster for iodoform, bottles for iodine, turpentine, alcohol, fluid soap, soap linament, etc., and a jar of boracic acid ointment, together with basins, rubber cloth, wax paper, soap dish, nail brush, adhesive plaster and lamp, about complete the dressing carriage outfit. All portions of the carriage are simple of construction, so that they can be readily taken apart and rigorously cleansed.

Prices on application.

HOSPITAL FURNISHINGS.

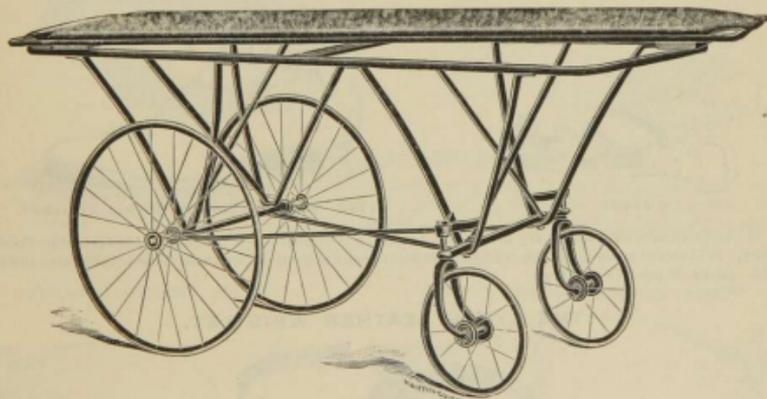
WHEEL TABLE.

HOSPITAL WHEEL TABLE, No. 1.



11437.

We desire to call the attention of the medical profession and hospital managers to the Hospital Wheel Table, as shown in the engravings, filling as it does a long felt want of hospitals for conveying patients from one part of the building to another. It is entirely new from anything there is in the market, and highly recommended wherever in use. It has two 24 inch and two 12 inch round rubber tire steel suspension wheels; the latter are attached by a swivel which allows the stretcher to be moved in any direction.



Wheel Table showing Stretcher partly removed from Frame.

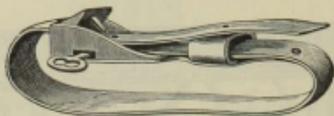
The entire frame is of wrought iron, steel axles, and finished in black throughout. The stretcher, which is well padded and covered with oilcloth, is capable of carrying a weight of 600 pounds. The height of the apparatus is generally that of the ordinary operating table, so that the patient can be transferred from one to the other without the slightest jar. The stretcher can be removed and lowered to the level of the bed, and the patient can be transferred with the same satisfactory results. Length 6 feet, width 2 feet 2 inches, height 2 feet 10 inches. Will pass through a 28 inch doorway.

11437. Hospital Wheel Table, No. 1.....\$35 00

HOSPITAL FURNISHINGS.

APPARATUS FOR HUMANE RESTRAINT.

THE LYNCH RESTRAINT BUCKLE.



11438.

The Lynch Restraint Buckle is constructed upon a principle somewhat similar to that of the Yale lock—is nickel plated and very neat in appearance.

It is unlocked with a neat flat key, and locked by slipping back the bolt with the finger; a spring pin prevents locking till desired.

There are no steel springs to rust, break or get out of order. Nothing can reach the works to clog or impede their action. The straps cannot be cut or broken at the buckle-tongue.

A one inch strap with this buckle will stand more strain than a three inch one with any other buckle; this result is secured by an exceedingly simple mechanical device. It can be attached and detached much easier than any other buckle.

It cannot be picked by the patient. Its adoption secures a uniformity of keys throughout the institution. It is more economical than any other. It is more durable than any other. In short, it is unrivaled in every necessary particular.

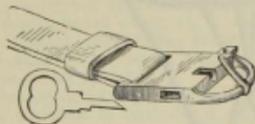
DIRECTIONS FOR USING BUCKLE.

To unlock, push in the key straight.

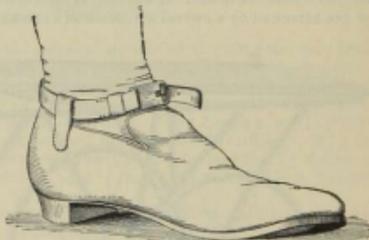
To lock, press down small pin in end of bolt with the fore-finger of the right hand, then push in the bolt with thumb of same hand.

The pin is to prevent locking till ready. When not in use, slip in the bolt.

THE LYNCH SHOE AND CLOTHING BUCKLE.



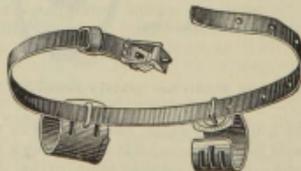
11439.



11440. Slipper, Showing Buckle Attached.

We are also now offering a very neat small buckle, a modification of the larger, for fastening shoes and clothing. It is nickel plated; can be readily attached; locks and unlocks on the same principle as the larger buckle. Saves its price in a day.

THE LYNCH LEATHER WRISTLET.



11441.

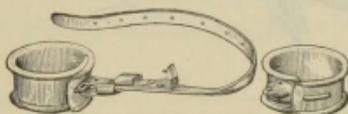
These are made of the best Heavy Russet Stock and lined with best Buckskin. A roll is turned on the side next the hand. The Wristlet is attached to the waist strap by a brass staple and plate, and is adjustable for three sizes of wrists.

HOSPITAL FURNISHINGS.
 APPARATUS FOR HUMANE RESTRAINT.
THE LYNCH LEATHER ANKLETS.



11445. With Small Buckles.

We make two styles of Anklets, one with small and one with large buckles. Those with small buckles do not become separated when detached from the patient, but are always together when required for use. They are adjustable to any ankle, and are especially designed for day use.



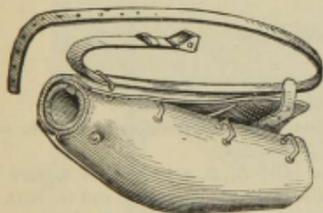
11444. With Large Buckles.

Those with large Buckles may be used separate, and are best adapted for night use. Both are made of No. 1 russet leather, lined with best buckskin, and rolls are turned on both edges.

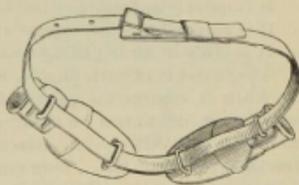
THE LYNCH LEATHER MUFF.

Is of a new design, much superior to all the older styles, and made of russet leather. Its form is permanent. Permanent wristlets are attached and so fitted with buckles as to be adjustable to any size of wrist. These wristlets are turned on the edge and lined with best buckskin, as are also the seams in the Muff. The most thorough ventilation is secured by perforations on the under surface and back.

Furnished with Waist Strap and Patent Lock Buckle, complete.



11442.



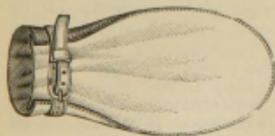
11443.

THE LYNCH LEATHER MITTS.

This cut represents our Leather Mitts. The wristlet and upper part of palm are made of heavy russet leather and lined with best buckskin. The front and back of hand are of calf russet, soft and pliable. Ventilation is secured by perforations in the back. Attachment to waist strap is made by two brass staples on each wrist, as shown in cut.

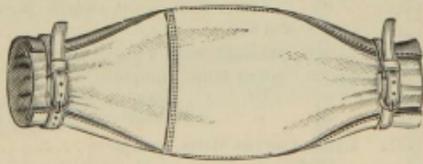
Furnished with Waist Strap and Patent Lock Buckle, complete.

THE LYNCH CANVAS MITT.



11452.

THE LYNCH CANVAS MUFF.



11449.

Our Mitt and Muff of drab canvas—above illustrated—have become great favorites in many hospitals. They are neat in appearance, light, durable and washable. The use of our small Lock Buckle on the wristlet renders it impossible to obstruct circulation in the hand by too tight buckling.

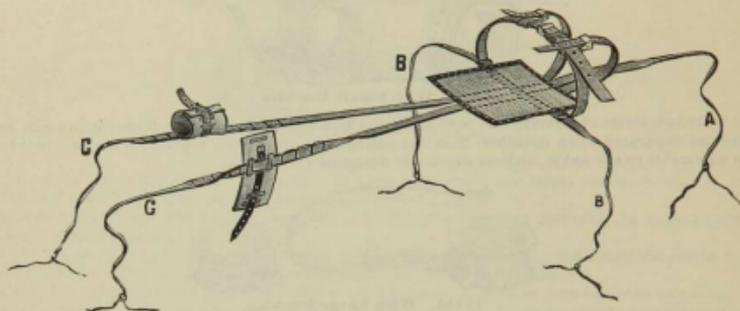
In the Muff the hands are separated by a thickness of the canvas.

Furnished, complete, with Waist Straps and Buckle.

HOSPITAL FURNISHINGS.

APPARATUS FOR HUMANE RESTRAINT.

THE LYNCH BED STRAP.



11446.

In offering this new device for keeping delirious patients in bed, we feel that we are supplying one of the most important articles in the whole hospital armamentarium. It deserves to, and we believe it will, quickly find its way into every hospital of every description and every place where delirious persons are treated or detained. It is the product of many months' experimentation, stimulated by hundreds of inquiries for such an apparatus, and aided by the suggestions and criticisms of a large number of the most expert physicians and surgeons in this country.

- 1st. It is new, simple, practical and durable.
- 2d. It is quickly and easily attached to beds of every size.
- 3d. It is adjustable to persons of every size.
- 4th. It is made of strong hemp web manufactured especially for this purpose.
- 5th. The anklet is of soft, pliable, woven material which will not chafe.
- 6th. While it secures the patient firmly to the bed, sufficient freedom of motion may be permitted to allow him to rest on either side.

THE LYNCH BED STRAP.—A, attachment to head rail; B, B, attachments to side rails; C, C, attachments to foot rail. Turn cords around rails two or three times, and tie with small cords at end; draw tightly. To permit patient to turn on one side, relax at B or B.

11438.	Lynch Patent Lock Buckle and Strap.....	each,	\$ 2 50
11439.	Lynch Patent Shoe Buckle.....	each, 75c.; per dozen,	8 00
11440.	“ “ “ “ with Strap and Loops.....	“ 90c.; “ “	9 00
11441.	Lynch Leather Wrislet, with Patent Lock Buckle and Waist Strap..	per pair,	5 50
11442.	Lynch Leather Muff, “ “ “ “ “ “ “ “ ..	each,	8 00
11443.	Lynch Leather Mitts, “ “ “ “ “ “ “ “ ..	per pair,	8 00
11444.	Lynch Leather Anklets, “ “ “ “ “ “ “ “ ..	“ “	6 00
11445.	“ “ “ “ Small Buckles ..	“ “	6 00
11446.	Lynch Bed Strap.....	each,	10 00
11447.	Lynch Camisole, with 4 Small Buckles.....	“	10 00
11448.	Lynch Canvas Muff, complete ..	“	5 00
11449.	“ “ “ “ without Waist Strap.....	“	2 50
11450.	“ “ “ “ Waist and Wrist Strap.....	“	1 00
11451.	Lynch Canvas Mitts, complete ..	per pair,	5 00
11452.	“ “ “ “ without Waist Strap ..	“	2 50
11453.	“ “ “ “ Waist and Wrist Strap.....	“ “	1 00

These goods are thoroughly reliable, and are all hand made. Each article is first pressed into shape while wet, then dried and afterwards lined and stitched. This secures permanence of shape and prevents wrinkling of the lining.

ALL INSTRUMENTS ILLUSTRATED ARE DESIGNATED BY BOLD-FACED FIGURES.

HOSPITAL FURNISHINGS.
APPARATUS FOR HUMANE RESTRAINT.

CANVAS STRAIGHT JACKET (CAMISOLE).

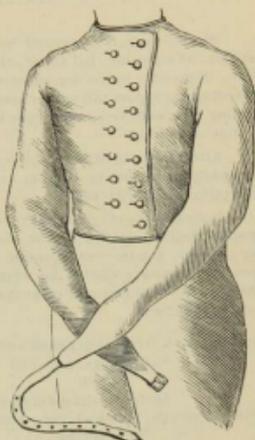
MADE OF CANVAS WITH LOCK BUCKLE.

Although in the present day Lunatics are treated kindly and allowed all the liberty and favor consistent with their own welfare, it may sometimes become necessary to either separate them from their families or their surroundings, or confine them, to prevent them doing harm to others. This is the object of the Straight-Jacket.

It should be slipped on, buttoned and the arms folded across the back and buckled.

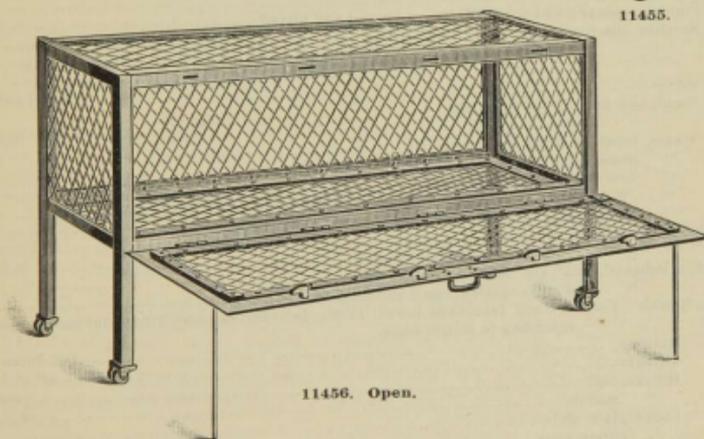
Patients should be treated with all possible kindness, and the jacket taken off as soon as they become docile.

11454.	Canvas Straight Jacket, long.....	\$7 50
11455.	“ “ “ short.....	6 00



11455.

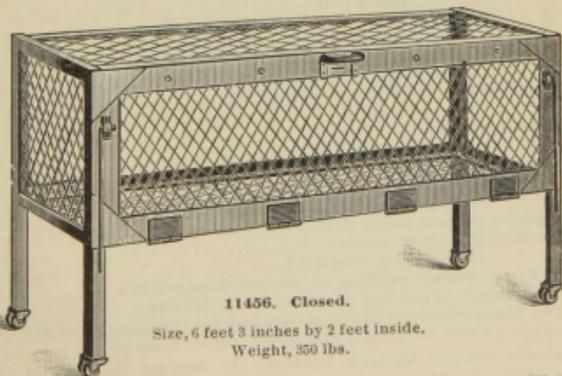
WIRE PROTECTION BED FOR THE INSANE.



11456. Open.

This bed is double the strength of anything ever before manufactured for the purpose, and is provided with four spring locks opened by one key, the catches being placed at equal distances, thus equalizing the strain.

The frame is heavy angle steel, with net work of No. 5 wire, all enameled black. Heavy double wheel casters are used on this bed and the door is so constructed that a patient can be laid on it and easily rolled into the bed and at the same time the door can be closed and locked.



11456. Closed.

Size, 6 feet 3 inches by 2 feet inside.
Weight, 350 lbs.

11456.	Wire Protection Bed No. 46.....	\$65 00
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REPAIRING, NICKEL-PLATING, ETC.—Continued.

Hypodermic Syringes, new barrels, glass, plain.....		\$0 85	
“ “ “ “ “ graduated		50	
“ “ “ “ “ packing.....		25	
“ “ “ repacked and new piston.....		60	
“ “ “ needles sharpened and polished.....		15	
“ “ “ “ “ cleared.....		25	
“ “ “ new needles (see page 573).			
Lancets, abscess, bleeding, thumb, and vaccinating, sharpened and polished	each,		15
Mirrors, new glass costs as much as a new mirror, see page 227.			
Obstetrical Forceps, polished.....	\$0 50 to		1 00
“ “ “ “ and nickel-plated.....	1 50 to		1 75
Ophthalmoscopes, new round mirrors, Liebreich's, 75c.; Loring's and Knapp's.....		1 50	
“ “ “ new lenses in disc.....		75	
“ “ “ re-blackening and re-numbering.....		2 00	
Ophthalmoscope Cases, empty, Morocco covered.....		1 75	
Perforators, polished.....	\$0 85 to		60
“ “ “ “ and nickel-plated.....	75 to		1 00
Placental Forceps, polished.....	50 to		75
“ “ “ “ and nickel-plated.....			1 00
Pocket Case Instruments, sharpening and polishing each blade.....		15	
“ “ “ “ “ “ “ scissors.....	\$0 15 to		25
“ “ “ “ “ “ “ polishing and plating forceps.....	15 to		25
Pocket Cases, empty, Aloe's, 2 fold, black morocco.....		1 75	
“ “ “ “ “ 3 “ “ “		2 25	
“ “ “ “ “ 4 “ “ “		3 00	
“ “ “ “ “ aseptic, alligator		2 00	
“ “ “ “ “ black morocco.....		2 50	
“ “ “ “ “ miniature, black morocco.....		1 50	
“ “ “ “ “ students', “		1 50	
“ “ “ “ “ vest pocket, black morocco.....		1 50	
“ “ “ “ “ Clapp's, “ “ “ “		1 50	
“ “ “ “ “ Eve's, alligator, with patent springs for knives.....		2 75	
“ “ “ “ “ Gross', turkey morocco.....		2 00	
“ “ “ “ “ Hayward's, turkey morocco.....		3 00	
“ “ “ “ “ King's, black calf, with metal plate and clamp for knives		3 50	
“ “ “ “ “ Leonard's No. 1, alligator, with patent clamp for knives.....		3 00	
“ “ “ “ “ No. 2, “ “ metal plate and patent clamp for knives.....		4 00	
“ “ “ “ “ Marsh's, alligator, with patent springs for knives.....		2 00	
“ “ “ “ “ Nonpareil, turkey morocco.....		3 00	
“ “ “ “ “ Sumner's, No. 1.....		2 50	
“ “ “ “ “ No. 2.....		2 00	
“ “ “ “ “ Williams'.....		2 25	
Sound, Uterine, polished and silver-plated.....		30	
“ Urethral, “ “ “ nickel “		25	
Syringes, Enema, new bulbs and cleansed.....		75	
“ “ “ “ valves.....	each, \$0 10 to		25
“ “ “ “ tubing.....	25 to		50
Stethoscopes, Camman's, metal tubes, nickel-plated.....		50	
“ “ “ “ new hard-rubber or ivory ear tips	each,		25
“ “ “ “ “ flexible tubing attached.....		1 00	
“ “ “ “ “ hard-rubber or wood parts, complete.....		75	
“ “ “ “ “ bells		25	
“ “ “ “ “ soft “ “		25	
Specula, metallic, rectal and vaginal, polished.....	\$0 50 to		1 00
“ “ “ “ “ “ and nickel-plated	1 00 to		2 00
Scarificators, sharpened and polished.....		each blade	15
Thermo-Cautery Burner, new platinum point.....		2 50	
Tooth Forceps, polished.....		75	
“ “ “ “ “ and re-pointed.....		40	
“ “ “ “ “ nickel-plated.....		50	
Tourniquets, Petit's, new straps.....		50	
Tonsillotomes, sharpened and polished, 75c. to \$1.00, sharpened and plated	\$1 00 to		1 50
Trocars, hydrocele, paracentesis, etc., polished and re-pointed.....		15	
Trusses, new spring.....	-\$0 75 to		1 25

All other instruments promptly and reasonably done.

HYDROLEINE

Is now so well-known that it is universally indorsed by the medical profession.

It arrests decomposition, restores the wasted energies of the Body to Health, and rapidly increases weight and flesh. It is palatable, is readily assimilated by the stomach, and is now prescribed by leading physicians throughout the country in their daily practice.

Sole Agents for the United States,

THE CHARLES N. CRITTENTON COMPANY,

115 and 117 Fulton Street, NEW YORK.

GARROD SPA

OR

Lithia-Potash Water,

Compounded from the most reliable scientific sources for the alleviation and cure of

GOUT, RHEUMATISM AND URINARY DISORDERS.

It is uniform in composition, agreeable of taste, contains more LITHIUM BI-CARBONATE in one pint than any natural Lithia Water in one gallon, and dissolves

Stone in the Bladder and other Urinary Concretions

With less effort and expense than any of them.

Send for Pamphlets to

DR. ENNO SANDER,
ST. LOUIS, MO.

FOR SALE BY ALL DRUGGISTS.

THE BEST ANTISEPTIC
FOR BOTH INTERNAL AND EXTERNAL USE.
LISTERINE.

Non-Toxic, Non-Irritant, Non-Escharotic—Absolutely Safe, Agreeable and Convenient.

FORMULA.—LISTERINE is the essential antiseptic constituent of Thyme, Eucalyptus, Baptisia, Gaultheria and Mentha Arvensis, in combination. Each fluid drachm also contains two grains of refined and purified Benzo-boracic Acid.

DOSE.—Internally: One teaspoonful three or more times a day (as indicated), either full strength or diluted, as necessary for varied conditions.

LISTERINE is a well-proven antiseptic agent—an antizymotic—especially useful in the management of catarrhal conditions of the mucous membrane, adapted to internal use and to make and maintain surgical cleanliness—asepsis—in the treatment of all parts of the human body, whether by spray, injection, irrigation, atomization, inhalation, or simple local application, and therefore characterized by its particular adaptability to the field of

PREVENTIVE MEDICINE—INDIVIDUAL PROPHYLAXIS.

LISTERINE destroys promptly all odors emanating from diseased gums and teeth, and will be found of great value when taken internally, in teaspoonful doses, to control the fermentative eructations of dyspepsia, and to disinfect the mouth, throat and stomach. It is a perfect tooth and mouth wash,

INDISPENSABLE FOR THE DENTAL TOILET.

DISEASES OF THE URIC ACID DIATHESIS.

LAMBERT'S LITHIATED HYDRANGEA.
RENAL ALTERATIVE—ANTI-LITHIC.

FORMULA.—Each fluid drachm of "LITHIATED HYDRANGEA" represents thirty grains FRESH HYDRANGEA and three grains of CHEMICALLY PURE Benzo-Salicylate of Lithia. Prepared by our improved process of osmosis, it is INVARIABLY DEFINITE and UNIFORM therapeutic strength, and hence can be depended upon in clinical practice.

DOSE.—One or two teaspoonfuls four times a day (preferably between meals).

Close clinical observation has caused Lambert's Lithiated Hydrangea to be regarded by physicians generally as a very valuable Kidney Alterative and Anti-lithic agent in the treatment of

URINARY CALCULUS, GOUT, RHEUMATISM, CYSTITIS, DIABETES, HÆMATURIA, BRIGHT'S DISEASE, ALBUMINURIA, AND VESICAL IRRITATIONS GENERALLY.

REALIZING that in many of the diseases in which LAMBERT'S LITHIATED HYDRANGEA has been found to possess great therapeutic value, it is of the highest importance that suitable diet be employed, we have had prepared for the convenience of physicians

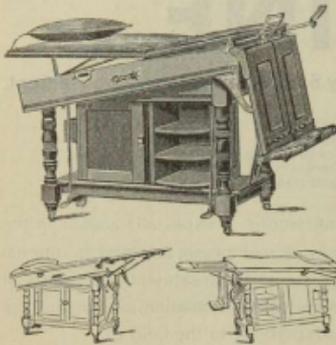
DIETETIC NOTES,

suggesting the articles of food to be allowed or prohibited in several of these diseases. A book of these Dietetic Notes, each note perforated and convenient for the physician to detach and distribute to patients, supplied upon request, together with literature fully descriptive of LISTERINE AND LAMBERT'S LITHIATED HYDRANGEA.

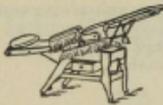
LAMBERT PHARMACAL CO., St. Louis, U. S. A.

British, Canadian, French, Spanish, German and South American Trade Constantly Supplied.

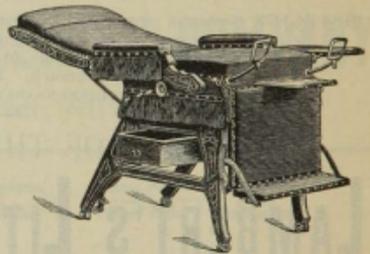
THE "ALLISON" PHYSICIANS' SPECIALTIES.



THIS TABLE can be instantly adjusted to any position desired, without inconvenience to operator or patient. It requires no lifting, no turning of cranks, and is as solid in one position as in another. The stirrups are adjustable. These tables are made in a number of different styles, and range in price from \$50 to \$100. They are substantially made and finished in excellent style.



OUR CHAIR can be easily and quickly adjusted to the different positions. It is made and finished in the best possible manner, and answers every requirement of the Surgeon, Gynecologist, Oculist, Aurist or General Practitioner. Prices range from \$50 to \$80. Liberal terms.



THE "ALLISON" COMBINATION CABINET.



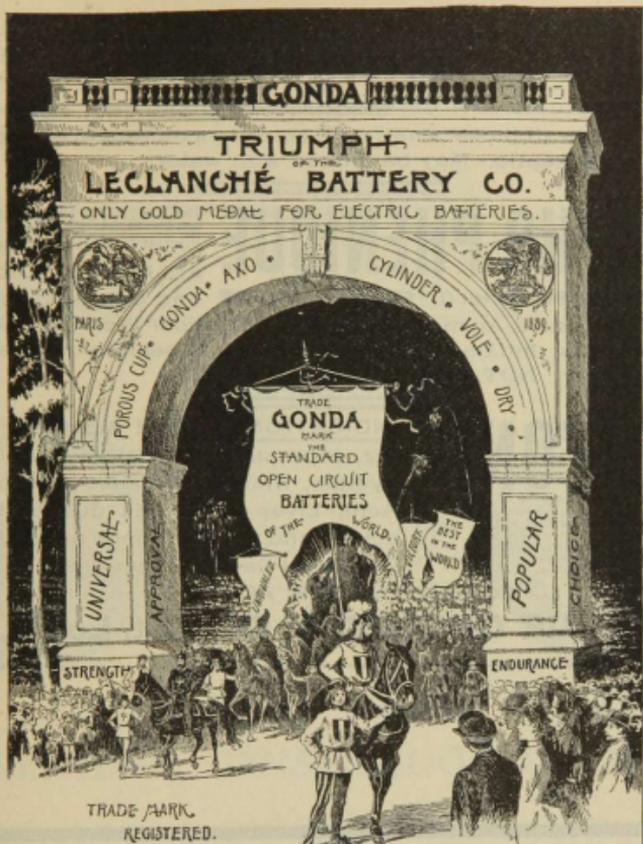
THIS is the only Cabinet that is thoroughly aseptic and proof against dust and dampness. The upper section revolves, enabling the operator to obtain any instrument in the Cabinet without changing his position. The apartment for wash basin, pitcher and jar is a convenience that is appreciated by every Physician. Prices from \$40 to \$65.

OUR INVALID ROLLING CHAIR can be reclined to any desired angle, by raising the caps on the arms. The foot-rest works automatically with the back. This Chair is comfortable and easily adjusted. Prices from \$20 to \$65. We guarantee first-class work and offer liberal terms.

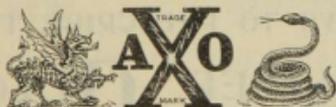


W. D. ALLISON CO., Manufacturers, Indianapolis.

A. S. ALOE COMPANY, Selling Agents.



TRADE MARK REGISTERED.



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[C₆ H₄ (O H) Cl.]

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Potassium Chloride 9.241	Calcium Carbonate .186
Lithium Carbonate .576	Sodium Silicate . . . 10.638
Sodium Carbonate 63.545	Potassium sulph. . . . 279
Magnesium Carb. . . 233	Organic Matter . . . 551
Ferrous Carbonate . 296	Bromide of Lithia 2.256
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INDICATIONS:—Acid Stomach, Vomiting, especially of Pregnancy, Acidity of System, Kidney Troubles due to Uric Acid, Liver Affections due to Hyperacidity and all Conditions dependent on Disturbed Gastric Functions.

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RECONSTRUCTIVE, DIGESTIVE, ALTERATIVE,

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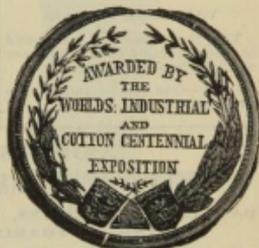
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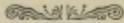
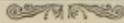
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<p>COOPER'S IMPROVED APHRODISIAC ELIXIR, DAMIANA, PHOSPHATES, NUX VOMICA AND CANTHARIDES.</p> <p>Each dessert spoonful contains 30 grains Damiana, 5 grains Phosphates with excess of acid, and 1 grain each of Nux Vomica and Cantharides. This preparation is a powerful tonic to the organs of generation when impaired by SEXUAL EXCESS or from SEMILE IMPOTENCE. It is also useful in Seminal Losses, Impaired Vitality, Spermatorrhea and all classes of nervous prostration from allied causes. Dose—From one to two teaspoonfuls in water or wine.</p>	<p>COOPER'S Lacto-Lithiated Strontium Compound.</p> <p>VAN NEES Formula. FOR THE TREATMENT OF BRIGHT'S DISEASE. The Salts of Strontium used in our preparation are entirely free from Barium, neutral, reliable and palatable. The Lithium is well washed in Alcohol, neutralized and dried. These Salts when combined, in the treatment of Bright's Disease, and in conditions associated with Albuminuria, give results which are so rapid that in twenty-four hours after dispensing, the Albumen excreted will be diminished one-half, and in ten days almost entirely disappear. Dose—One to two teaspoonfuls after each meal.</p>	
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Beware of unscrupulous imposters who, after being with us a short time, in a clerical and mental capacity, claim to counterfeit our goods. We have been in business too long and our specialties are too well known for us to make further comment.

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These goods are made from the finest tan stock, are very soft and pliable and are indispensable to every Surgeon.

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The Cushions are now used in all classes of operations, the inflated rim protecting the patient, and the flap on apron conducts the surplus water into a proper receptacle on the floor.

The Cushions are made in three sizes (two round and one square), but for general use the smaller round one is usually preferred.

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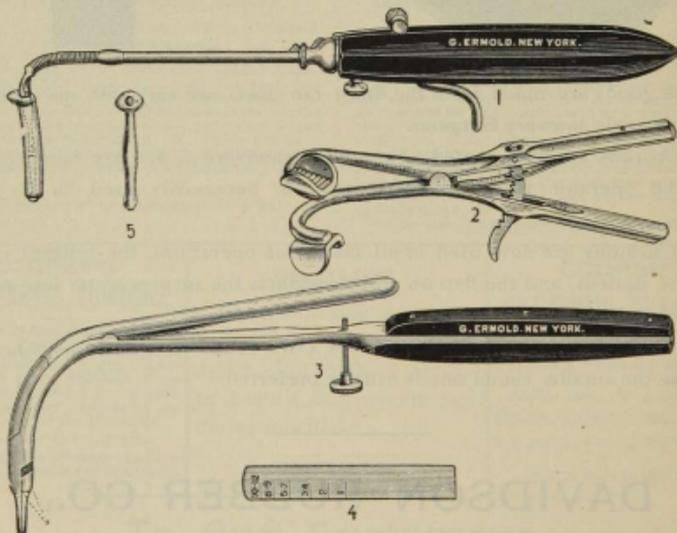
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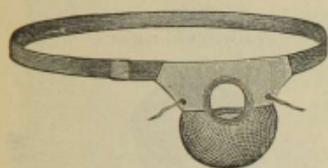


Fig. 3.

Draw-String to Tie in Front.

No. 19. Silk Faced, equal to All Silk.
No. 18. Thread.

Each in separate box, and one box contains half a dozen small.

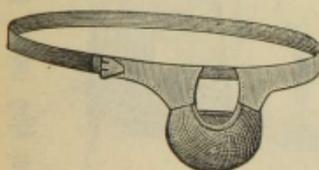
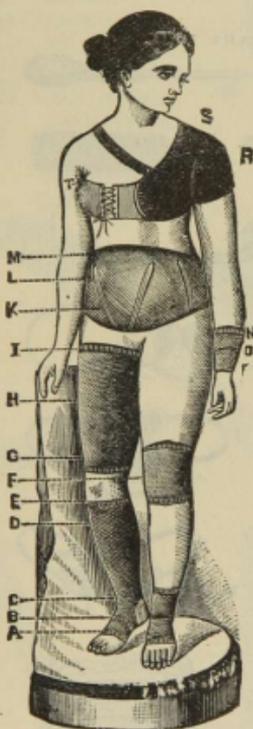


Fig. 2.

Representing 8 numbers of hand-made goods of superior style and correct form. Elastic draw-band woven into bag, assorted sizes; each one put up in a box separately.

J. G. 00. Full Fashioned Heavy Silk Sack.
0. Light Silk Sack.
1. Extra Stout Silk, open mesh.
2. Fine Silk Netting, open mesh.
3. Silk Netting, plain mesh.
4. Best Thread, open mesh.
5. Common Thread, open mesh.
6. Common Thread, plain in mesh.

Each in separate box, and one box contains half a dozen small.



HOLMES' Army Suspensory.

Elastic Band and Thigh-Straps.

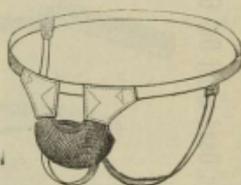


Fig. 1.

No. 8. Silk Sack, Full Buckled.

No. 7. Linen Sack, Full Buckled.

No. 6. Cotton Sack, Full Buckled.



Fig. 4.

Draw-String to Tie in Front.

No. 20. Very Light Common Fabric.

Directions for Special Measurements.

Take the exact circumference at points indicated with letters, and lengths as noted below. I allow for compression. Measurements should be taken in the morning.

Specials made to order at the risk of the purchaser, and silk always sent unless otherwise specified.

FOR AN ABDOMINAL SUPPORTER—Circumference at K, L, M. Depth from K to M.

FOR A THIGH STOCKING—Circumference at A, B, C, D, E, F, G, H, I. Length from sole of foot to F, and from F to I.

FOR A KNEE STOCKING—Circumference at A, B, C, D, E, F, G. Length from sole of foot to F.

FOR A GARTER STOCKING—Circumference at A, B, C, D, E. Length from sole of foot to E.

FOR A GARTER LEGGING—Circumference at C, D, E. Length from C to E.

FOR AN ANKLET—Circumference at A, B, C. Length from sole of foot to C.

FOR A WRISTLET—Circumference at N, O, P. Length from N to P.

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Hard Rubber, Leather Covered and Elastic
TRUSSES

Abdominal and Uterine Supporters, Shoulder Braces, Elastic Hosiery and Belts, Suspensories, Crutches, Pile Pipes, Etc.

The Old and Well-known Horn's Standard Springs Used in all Our Goods.

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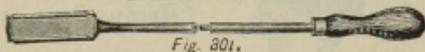


Fig. 301.



Fig. 301 C.



Fig. 301 A.



Fig. 301 B.



Fig. 9.



Fig. 11-B.



Fig. 17-A.



Fig. 29.



Fig. 20.



Fig. 22-B.

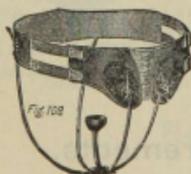


Fig. 108.



Fig. 15.

COLUMBIAN BRACE.



Fig. 113-A.

We Use the Finest Rubber Only in Covering Our Goods.



Fig. 127.



Fig. 115.

It is to your interest to handle goods that are fully reliable, and an experience of over HALF A CENTURY enables us to furnish practical Trusses, etc.

Our Catalogue containing 96 pages and over 250 illustrations, mailed to dealers on application, with price list and discount sheet.

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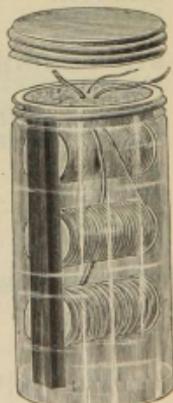
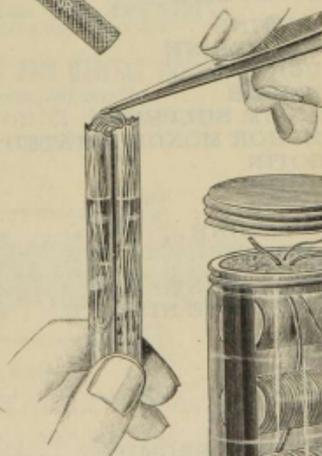
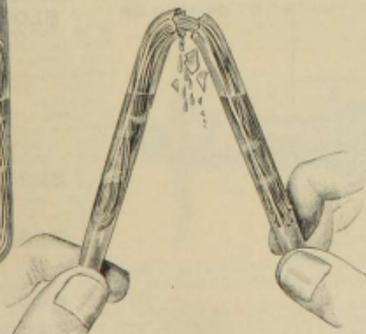
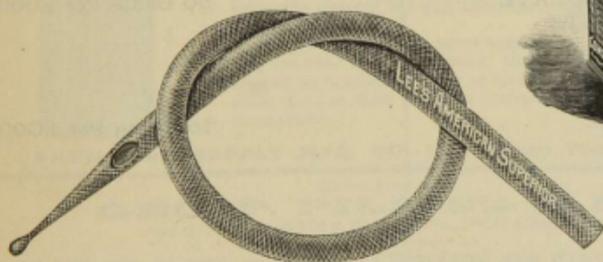
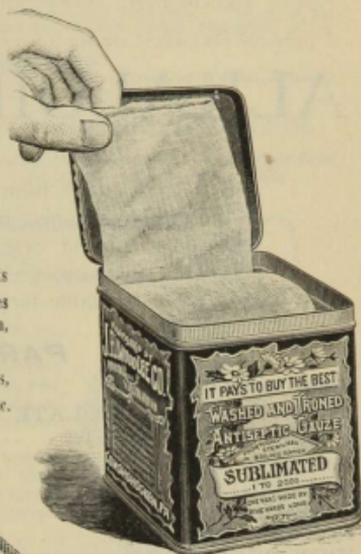
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LIGATURES BOILED IN ALCOHOL UNDER PRESSURE.

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Would please all men, but palatable Medicines please women and children. They cannot take nauseous drugs; they do not object to

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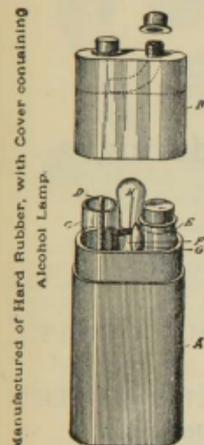
Manufactured of Hard Rubber with Nickel-Plated Top,
CONTAINING ALCOHOL LAMP.

Over 25,000 Sold.

The Case contains a scientifically correct urinometer enclosed in a cloth bag to prevent breakage, a heavy glass test tube serving as a urinometer jar and test tube, a package of Litmus test papers, a pipette for convenience in handling the urine, two vials to contain the test powders and spoon. With these the following points may be determined at the bedside, viz: The quantity of urine passed, the color, transparency, reaction, specific gravity, total solids passed and the presence or absence of sugar and albumen.

Each Bottle Contains Sufficient Powders for Some 50 Tests.

A small handbook containing instructions, formulae for the powders and valuable information obtained by recent investigations of Dr. Bartley and others, accompanies the case. By mail, \$2.00.



Manufactured of Hard Rubber, with Cover containing Alcohol Lamp.

THE HIBBARD ATOMIZER.

Over 500 Unsolicited Testimonials
Received Regarding This
Atomizer.

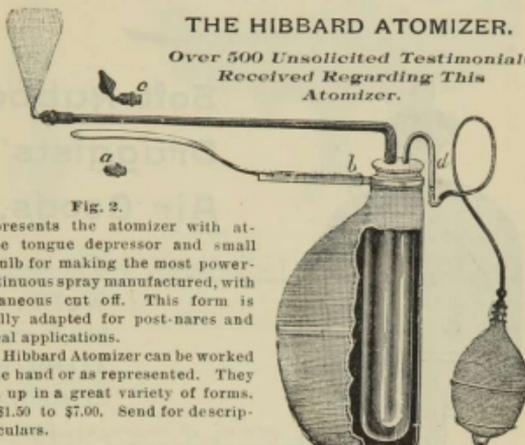


Fig. 2.

Represents the atomizer with attachable tongue depressor and small hand bulb for making the most powerful continuous spray manufactured, with instantaneous cut off. This form is especially adapted for post-nares and laryngeal applications.

The Hibbard Atomizer can be worked with one hand or as represented. They are put up in a great variety of forms. Price, \$1.50 to \$7.00. Send for descriptive circulars.

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McKEE VACUUM HYPODERMIC SYRINGE.

NO PACKING TO GET OUT OF ORDER.

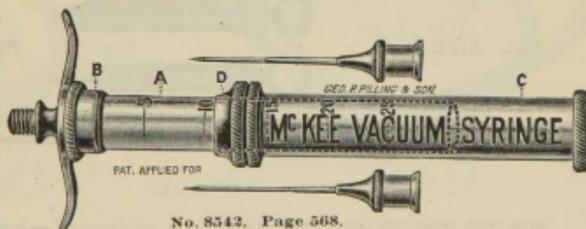
This Syringe consists of a graduated glass barrel (A), over which an air-tight suction cylinder (C) moves, thus doing entirely away with any interior plunger or packing. When the forward end of suction cylinder is a recessed separating screw-cap (D), in which is placed an ordinary washer, so that by screwing this cap (D) the washer is compressed on the barrel, thus preventing any leakage. When the plunger or packing (which is very seldom), separating-cap is simply slipped over barrel. The cap is screwed back into position and the Syringe is then ready for use. The above advantage alone will recommend this Syringe to the profession, who are constantly annoyed by Hypodermic Syringes that are continually out of order.

THOROUGHLY ASEPTIC—This Syringe is so made that it may be easily and quickly cleaned, which has never yet been possible on any other pattern of Hypodermic Syringe. Graduated glass barrel is made with the thread moulded directly on the glass tube (B), thus avoiding cementing the metal end on, as is usually done. The entire Syringe may be instantly taken apart, and is so simple that it is almost impossible to get out of order unless broken.

A VERY IMPORTANT FEATURE—By having no interior plunger or leather packing to get out of order (which alone is a very great improvement), interior of barrel is kept entirely free from oil and small particles of leather, thus preventing any foreign, objectionable matter mixing with the solution.

Syringe may be used in position from point downward to almost horizontal, but not with point upward. **FOR LYMPH INJECTION THIS SYRINGE WILL PROVE OF INESTIMABLE VALUE, ON ACCOUNT OF ITS ASEPTIC QUALITIES.**

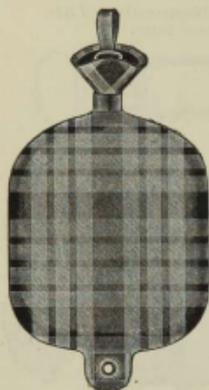
Each Syringe has two reinforced seamless steel needles, and is put up in neat case, with two vials and a cleaning brush. For price, see page 568.



No. 8542. Page 568.

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AKRON RUBBER WORKS,
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**Soft Rubber
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WATER BOTTLES,
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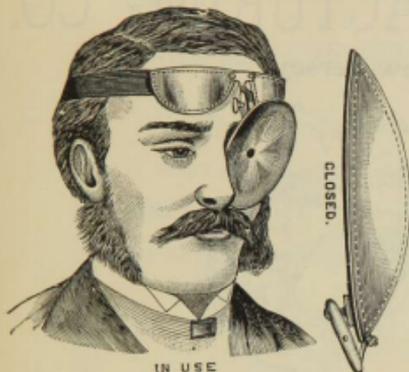
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Sardy Head Band No. 1.

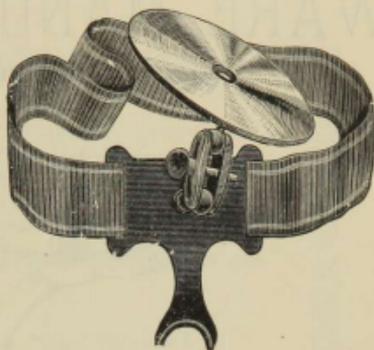
Combined Head Band with Protector.



IN USE

Folds over the face of mirror and protects the glass from breakage. Is self-adjusting to the forehead and rests more comfortably than any other head band. The mirror can be held in any desired position.

Sardy Head Band No. 2.



Can be used either with or without nose rest. Is lighter than any other head band with nose rest and can be folded closely to back of mirror. The nose rest is pliable and conforms to shape of forehead.

Head Band No. 1 is made of Steel and No. 2 of Brass; both are finely finished and supplied with the best English Silk Bands.

At Wholesale by the Makers

SARDY & COMPANY,
4 Cedar Street, NEW YORK.

Sold by A. S. ALOE COMPANY (See Prices on Page 303.)

Belfast Linen Catheters and Bougies.



Trade-Mark BELFAST LINEN, registered at home and abroad.

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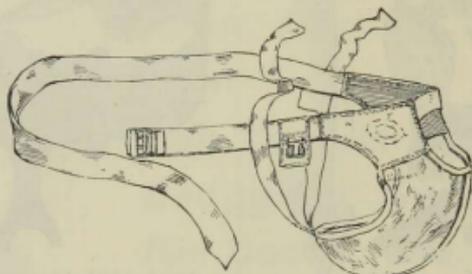
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That you may prove to your own satisfaction its great value.

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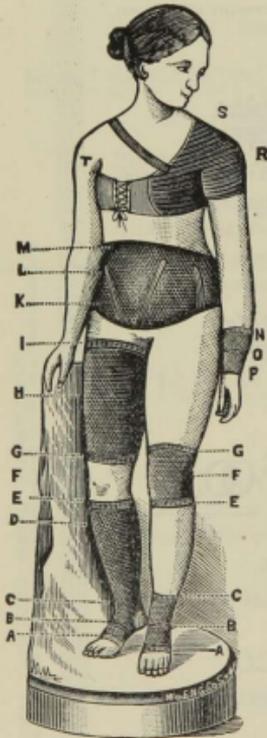
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I exercise the utmost care in the manufacture of these goods and my extensive experience of over twenty years, enables me to meet properly the requirements of all cases in "SPECIAL ORDERS" while my large trade insures FRESH, RELIABLE GOODS, at the lowest prices.

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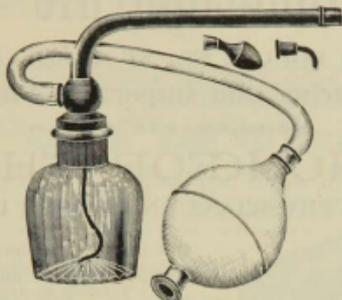
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This celebrated Atomizer possesses many qualities which place it far in advance of any other on the market. It is made only from the best materials, and great care is exercised in its manufacture.

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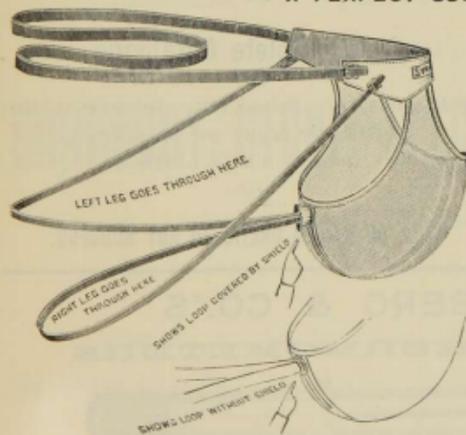
For Price see No. 6030, Page 315.

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THE SYRACUSE SUSPENSORY.

... A PERFECT SUSPENSORY ...



The Pouch (A) is supported by a Body Band, and also by a Leg Band which passes around the sides and back of legs and through the Sliding Loop at back of Pouch. The Sliding Loop plays freely on the Leg Band thereby allowing the Pouch to adjust itself as the movements of the body or clothing may require, consequently the Suspensory fits perfectly and gives best possible support no matter what position the body may assume. The Loop is protected by a cloth Shield which prevents any pinching on account of the play of the Leg Band through the Loop.

The Sliding Loop with Shield makes the "SYRACUSE" SUSPENSORY SELF-ADJUSTING, and gives FREEDOM OF MOVEMENT; prevents PULLING, CORDING AND CHAFING; gives SUPPORT WITHOUT RESTRAINT OF MOTION; renders DISPLACEMENT IMPOSSIBLE; makes our Suspensory PERFECT FITTING, and affords COMFORT AND RELIEF TO WEARER.

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Our preparations have gained a National reputation for their PURITY and RELIABILITY, both with the profession and the public at large,

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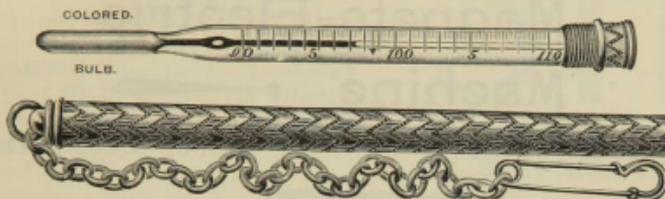


Are equal to the best in the market. All their Thermometers are guaranteed to be self-registering, their indices normal and indestructible, and do not vary their readings with age.

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Bayer's New Patented Colored Bulb Clinical Thermometers.



These instruments vary in the color of the bulbs, thus enabling physicians to apply a thermometer of a certain color into the "rectum" of a person, whereas those of other colors may be applied in the mouth and to other parts of the body. They are also somewhat more sensitive than the ordinary Glass Bulb Thermometers, and the mercury in the bore of the tube can be seen plainer. Every instrument guaranteed thoroughly seasoned and absolutely accurate. All these instruments must be marked "Bayer's Patent, May 29, '88." Please look for it.

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Adapted for all classes of work where lighting and power are required; also for medical and surgical uses.

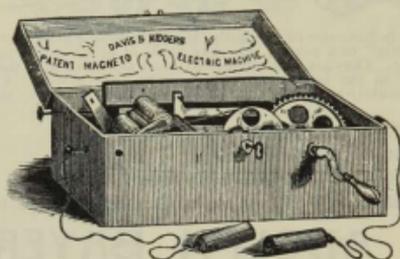
Lightest and most efficient Battery ever placed on the market. Its durability remains unquestioned. Can be set up in any form desired.

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Valuable literature upon application.

"No class of ailments are so annoying and difficult to reach, and yet so prevalent as those affecting the urinary organs. This is especially true of many men of middle age, and more so among those of sedentary habits."

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"The remedies that have been popular for many years such as Buchu, Uvi Ursi, Juniper, Cubebs, Acetate of Potassium, etc., do not prove curative, but only either temporarily alleviate or render no relief at all."

That you may relieve this large class of sufferers, we offer you *Tritica*, which you will find gives prompt relief in *Retention of Urine*, is unequalled in *Pyelitis, Cystitis, Urethritis*, and all affections of the mucous tissues. If you have not tried this remedy, we shall be pleased to send you a sample for trial.

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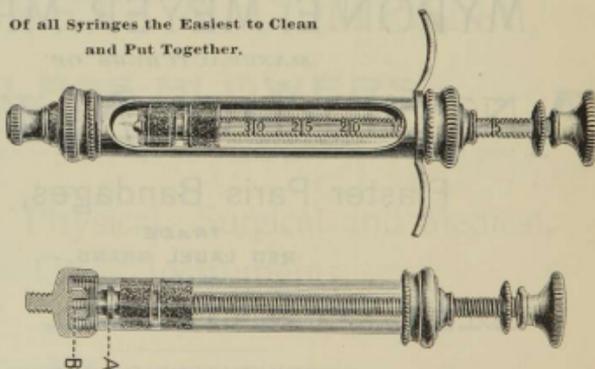
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Of all Syringes the Easiest to Clean
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In case the old piston gives out, or does not work properly, any physician, with very little trouble, can replace it by a new one. If the piston in the cylinder is too loose press down the piston rod so that parts A and B will connect; screw from left to right until the piston fits the barrel snugly. If the Syringe needs a thorough or perfect cleaning, or a new piston, screw from right to left until part A unloosens itself from the rod; then unscrew the upper chamber, pull out the glass and then the piston rod, and every portion of the Syringe is separate.

To put the Syringe together again it is only necessary to place the upper leather cap in the glass, press down the piston rod and oil chamber, push the lower leather cap in the glass, from the bottom, but be sure and push it in all the way before expanding (and then it will be impossible to break the cylinder) screw part A on the piston rod, then screw parts A and B together and the Syringe is complete.



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Indispensable to Restore a Patient after Alcoholic Excess.

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PREPARED FROM THE ALETRIS FARINOSA OR TRUE UNICORN.

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Dose.—One teaspoonful three or four times a day.

Unrivalled as a Uterine Tonic in Irregular, Painful, Suppressed and Excessive Menstruation.

It Restores Normal Action to the Uterus and Imparts Vigor to the Entire Uterine System. Where Women have miscarried during previous pregnancies, or in any case where miscarriage is feared, ALETRIS CORDIAL is indicated, and should be continuously administered during entire gestation.

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PINUS CANADENSIS.

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A NON-ALCOHOLIC LIQUID.

WHITE.

A MOST VALUABLE NON-IRRITATING MUCOUS ASTRINGENT.

INDICATIONS.—Albuminuria, Diarrhœa, Dysentery, Night-Sweats, Hæmorrhages, Profuse Expectoration, Catarrh, Sore Throat, Leucorrhœa and other Vaginal Diseases, Piles, Sores, Ulcers, Burns, Scalds, Gonorrhœa, Gleet, Etc.

When used as an Injection, to avoid staining of linen, the WHITE Pinus should be used.

RECOMMENDED BY PROMINENT EUROPEAN AND AMERICAN PHYSICIANS.

The above preparations are prepared exclusively for Physicians' Prescriptions, and a sample of each or all of them will be sent to any Physician who wishes to test them, if he will pay the Express Charges.

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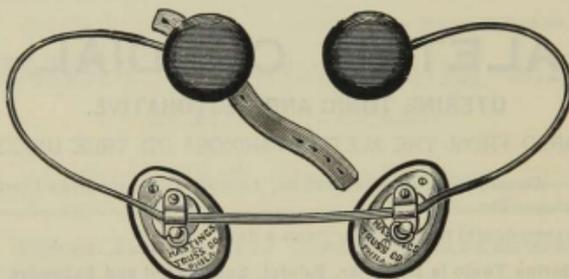
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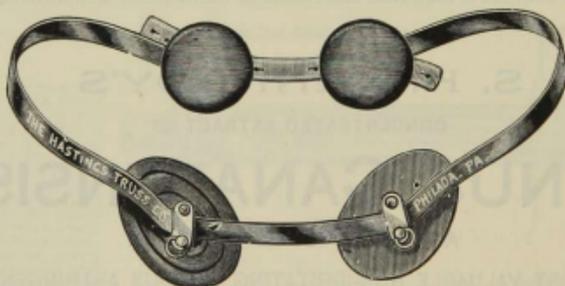
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Both are worn with or without cover, and are in the lead in the gradual evolution of scientific Truss Fitting. They recommend the new candidates for public favor.

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DR. MCINTOSH

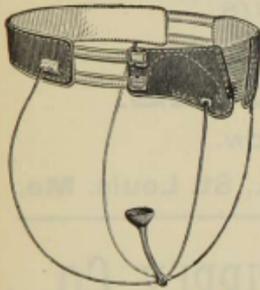
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This Supporter gives better satisfaction than any instrument ever placed before the medical profession. A few of the reasons why this instrument is used in preference to all others are:

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It is everything that its name implies—a Natural Uterine Supporter.



THE BEST IS THE CHEAPEST.

The materials and workmanship of this Supporter are such that it costs twice as much to produce as any other on the market. Its popularity with physicians is proven by thousands of testimonials from physicians and patients.

We wish to call your attention to our

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OF THE

Dr. McIntosh Natural Uterine Supporter.

Instrument, Complete, to Physicians,	each, \$5 00
Abdominal Belt, Separate, to Physicians,	each, 3 00
Cups, Separate, to Physicians,	each, 2 00
Rubber Tubes, Separate, to Physicians,	per pair, 25

Positively no reduction from these prices, which allow a fair margin to all, and it is hoped that those interested will not cut them.

CAUTION.

We wish to caution the trade against buying or selling any imitations of our Supporters or substituting them as our instrument. Each of our Supporters has the name "Dr. McIntosh N. U. Supporter Co., Philadelphia, Pa.," stamped on the Belt in gilt letters, and the directions have the fac-simile signature of *Dr. J. D. McIntosh*

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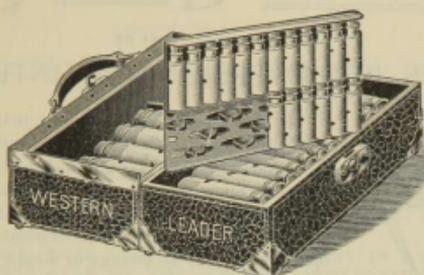
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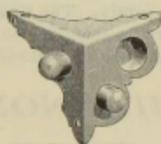


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CORNER, SOLID FOOT AND SOCKET IN ONE PIECE.



The Socket allows case to open flat and takes all strain from off the hinges. The solid feet do not wear through, and, being a part of the corner do not come off.

100 Per Cent Better than the old Leader No. 600, No. 900 or any other so-called Leader Medicine Case. Fitted with the CAPTAIN PATENT CORNERS and the LATEST IMPROVED WESTERN COMSTOCK PATENT ONE-PIECE SILVER-PLATED SPRING BOTTLE HOLDERS. These all metal Bottle Holders are removable for cleaning, and the case can be kept absolutely sweet and clean very easily. Covered with a black, morocco grained, oil filled, solid, water proof leather (cowhide), HAND-STITCHED AT EDGES, with sides, bottom and top, cut from one piece, making it dust and water proof. This one-piece cover extends over extra heavy hinges, thus protecting them from wear and forming double hinges for the case. Has heavy, hand-stitched handle, with metal piece through it, looped around the rings. Strong nickel lock with key. Corks kept in by metal flanges. Contains 24-1 ounce, 24-3 drachm and 4-3 ounce extra heavy, wide mouth, annealed bottles, with first quality of corks, and sundry space $5\frac{1}{2} \times 4 \times 1\frac{1}{2}$ inches. Size of Case, $10\frac{3}{4} \times 6 \times 4\frac{3}{4}$ inches. Weight, 20 per cent less than other cases mentioned above.

A. S. ALOE COMPANY, Selling Agents.

Sent by Express on Receipt of Price, \$5.50.

SHANNON'S Self-Adjusting Uterine Supporter

FOR THE RADICAL CURE OF

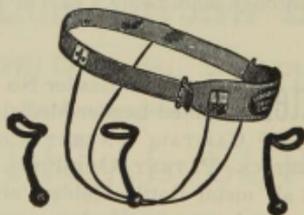
PROLAPSUS, RETROVERSION AND ANTEVERSION.



It is unquestionably the best instrument now in use for all displacements of the womb, because it is simple in construction and perfectly adapted to the parts, producing no pressure upon the neighboring organs. It is light, durable and elegantly made, and will last a life-time. It need not be removed when there is a movement of the bowels or micturition. It has no strings or straps to hold it in place, and to become foul and offensive, but is held in position by a pure coin silver spring that will not even soil the whitest linen.

Great care should be taken to ascertain the proper size in each particular case. If the ring is too large or too small it cannot be worn with comfort. The ring should be so adapted in size as to produce no possible constriction of the cervix, but allow the latter to play loosely in it. As a rule the calibre of the ring should be at least a quarter of an inch greater than the greatest thickness of the vaginal portion of the cervix. The rings vary in size from 1, $1\frac{1}{4}$, $1\frac{1}{2}$, $1\frac{3}{4}$, 2 and $2\frac{1}{2}$ inches, attached to stems varying from $2\frac{1}{4}$ to $3\frac{1}{2}$ inches. Care should be taken in the selection of the stem, so as not to put the vaginal canal on the stretch.

SHANNON'S ELASTIC SUPPORTER.



The accompanying cut represents this instrument. The pessary or internal portion is the same as the silver one, but is held in position by two elastic, pure gum tubes fastened at the front and back of the belt, as seen in cut.

This instrument is very simple in construction, durable, and is adapted to all displacements.

The belt is composed of a neat, elastic band, attached by means of two buckles to a handsome kid-covered pad 3 inches wide by 6 inches long, and is as efficient for abdominal support as the high-priced and cumbersome appliances used for that purpose. We make six sizes of rings attached to different lengths of stems so that any vagina can be fitted.

We also make cups for simple prolapsus, retroversion and anteversion for this instrument, and physicians who are using a cup supporter suspended by rubber tubes will find this more desirable, at much less cost and easier worn than any other on the market.

For Prices of Shannon's Supporters, either style, see Page 481.

Manufactured by **HALSEY BROTHERS, Chicago.**

A. S. ALOE COMPANY, Selling Agents.

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2a.	Farmer Miles' Caponizing Set, Improved	4 00
3.	Chinese Caponizing Set	4 00
4.	Latest Improved Caponizing Set	4 00
5.	Plain Caponizing Set	2 00
6.	Staples for holding Bird	10
7.	Patent Capon Scoop and Hook	1 50
8.	Capon Spoon Forceps, Straight	1 00
9.	Capon Spoon Forceps, Curved	1 00
10.	Capon Spreaders, Farmer Miles'	3 00
11.	Capon Forceps, Farmer Miles'	3 00
11a.	Capon Forceps, Farmer Miles', Improved	2 50
12.	Capon Knife, Farmer Miles'	1 00
13.	Capon Nickel-Plated Spreaders	5 00
13a.	Capon Nickel-Plated Spreaders, latest	1 00
14.	Capon Plain Wire Spreaders	50
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27.	French Poultry Killing Knife	50
28.	Anti-Feather Pullers	10
29.	Sterling Silver Milking Tubes	50*
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29c.	Heavily Silver-Plated Milking Tubes, patent applied for	50
29d.	Sterling Silver S. R. Milking Tubes, patent applied for	1 00
29e.	Heavily Silver-Plated S. R. Milking Tubes, patent applied for	75
30.	Sterling Silver S. R. Milking Tubes	70
30a.	Silver-Plated S. R. Milking Tubes	45
30b.	Instrument for Opening Obstructed Cow's Teats	60
31.	Wigmore's Cow Teat Slitters	2 00
31a.	Improved Three-Ring Teat Slitter	3 00
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36.	Practical Caponizing and How to Make Poultry Pay	25

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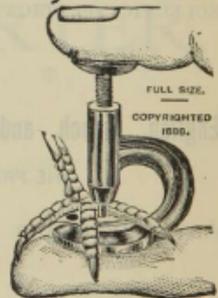


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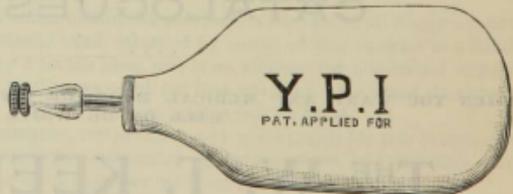
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8 x 10	2 40	12
10 x 12	3 80	3
8¾ x 14	4 50	3
11 x 14	5 00	3
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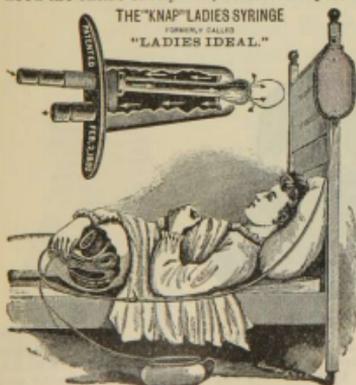
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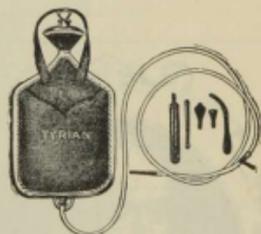
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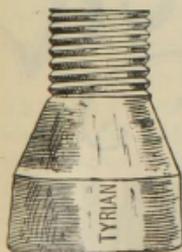
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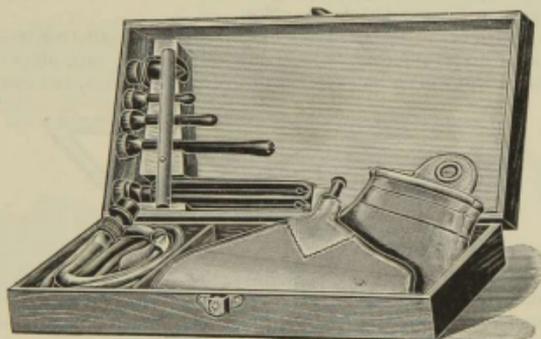
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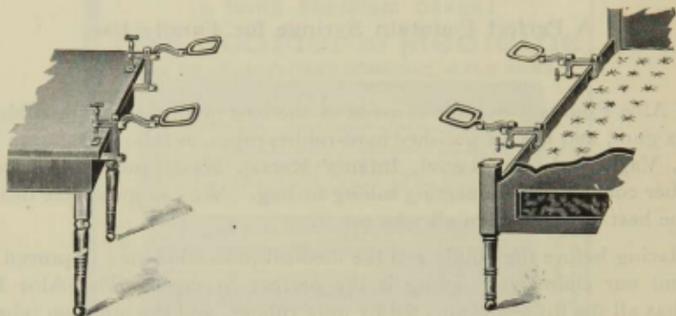
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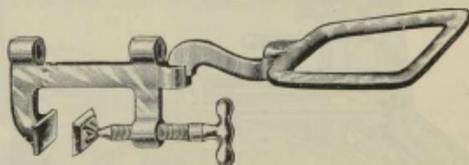
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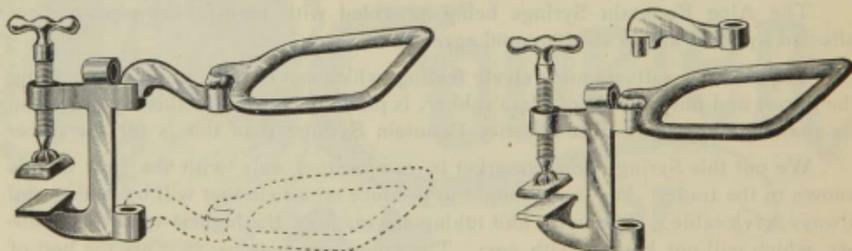


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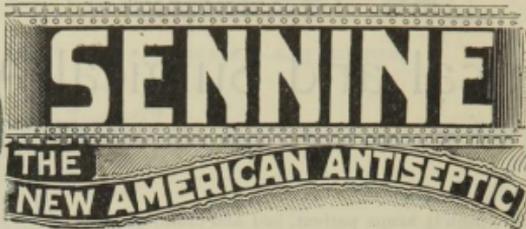
This Apron can be used in Gynæcological and Rectal Surgery where the patient's bedding or clothing needs protection.

By folding under the pelvic part it makes a rubber sheet one yard square. It is durably made of good rubber and can therefore be easily cleaned and made aseptic. Can be folded and carried in overcoat pocket or Obstetrical Satchel.

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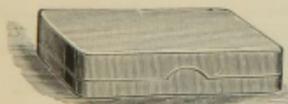
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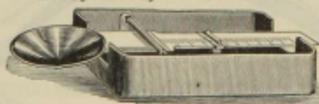
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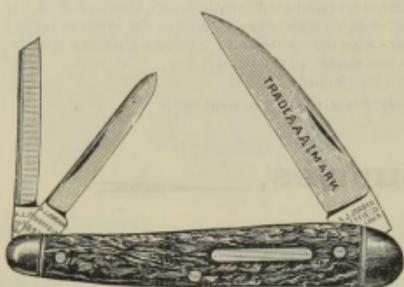
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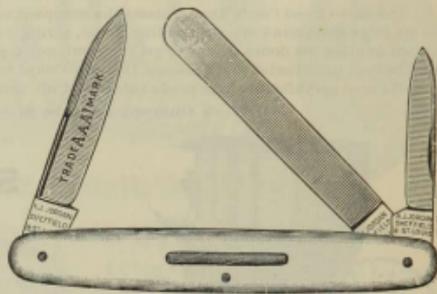
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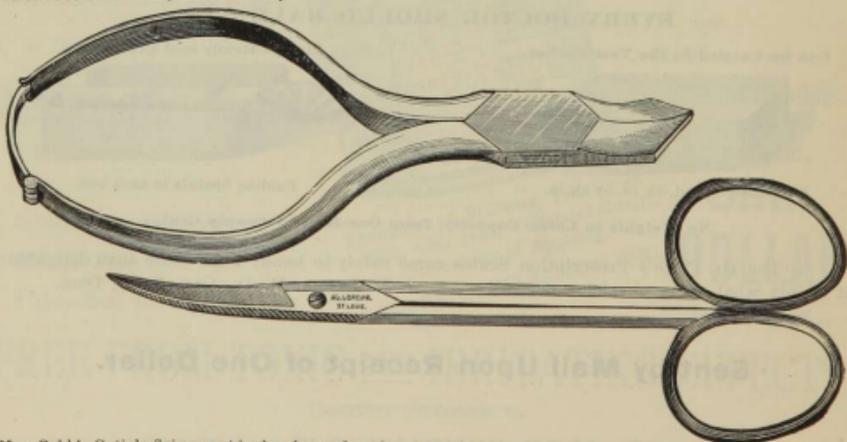
Physicians' Plaster-Splint Knife, Genuine Stag Handle	\$ 1 50
Ridlon's Plaster Knife, Ivory Handle	1 50
Physicians' Pocket Knife, with Flexible Spatula	2 00
Physicians' Pocket Knife, Pearl Handle, with Flexible Spatula	2 50



Mrs. Cobb's Cuticle Knife, Celluloid Handle	\$ 0 75
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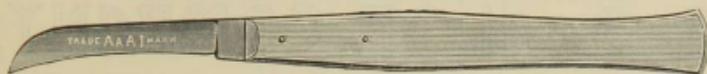


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Jordan's Superior Nail Nippers, 3¼ in., with Nail File on Clasp	1 25
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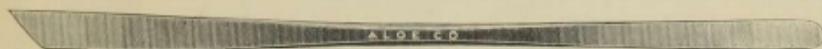
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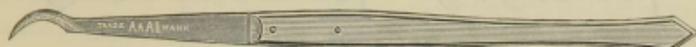
CHIROPODIST'S AND MANICURES' INSTRUMENTS.



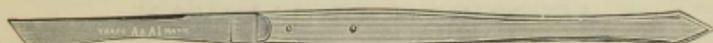
Concave Bunion Knife, Selected Ivory Handle..... \$ 1 25



Double End Corn Chisel, all Steel..... \$ 0 75



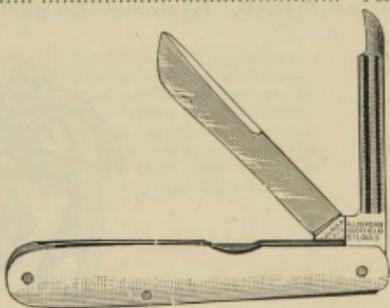
In-Growing Toe-Nail Knife, Selected Ivory Handle \$ 1 25



J. Parker Pray's Corn Knife, Selected Ivory Handle..... \$ 1 25



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Chiropodist's Folding Corn Knife, Ivory Handle \$ 1 00
 Chiropodist's Folding Corn Knife, with Nail Cutter and File, Ivory Handle..... 1 60

STEDMAN'S SILVER AUTOMATIC IN-GROWING TOE-NAIL SPRINGS.

This instrument is solid silver, and is usually applied as illustrated in Figure 1, while Figure 2 shows the instrument adjusted in cases where the nail is lacerating the flesh at its base, or where so much of the imbedded section of the nail has been removed as to leave no nail tissue in front to anchor the instrument to.

DIRECTIONS FOR APPLYING THE INSTRUMENT.

Bend the spring without fear of injury, so that by catching one hook under the inverted part of the nail and the other on the opposite side, the instrument will lie close to the nail, with a gentle pressure upon the top, and a steady lifting of them the imbedded parts.

As the nail gradually flattens detach the instrument (say once or twice a week), increase the pressure by bending down the centre, and replace as before. Continue this treatment until the nail tissue has sufficiently flattened, and the surrounding flesh resumed its normal condition. But as it is no annoyance or inconvenience to wear the instrument—the shoe tending to relieve rather than to increase any annoyance—efforts to effect a speedy cure by giving an uneasy tension is in no case advisable because not necessary.

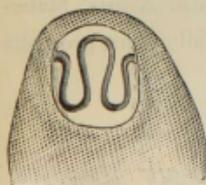


Fig. 1.

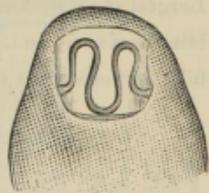


Fig. 2.

Stedman's In-Growing Toe-Nail Springs.....per pair, \$ 0 25

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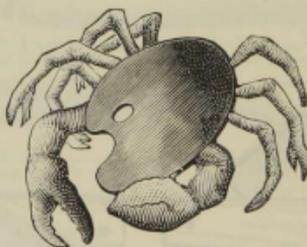
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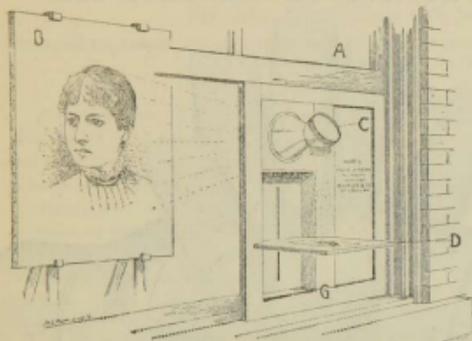
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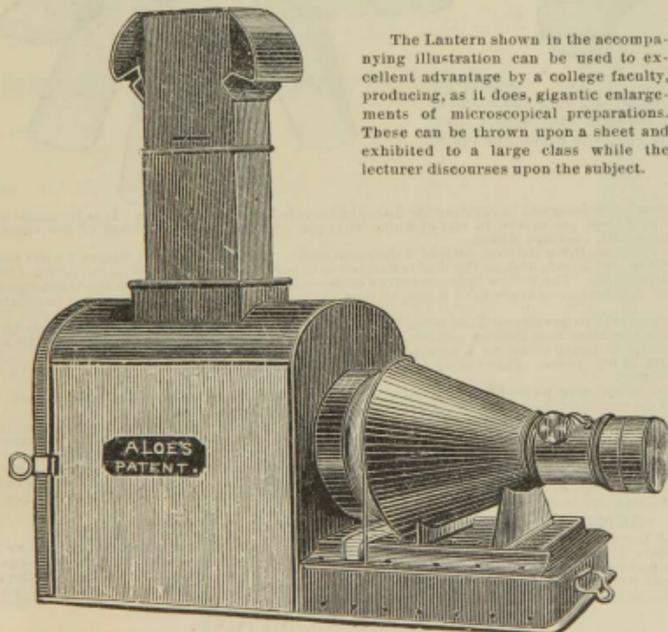
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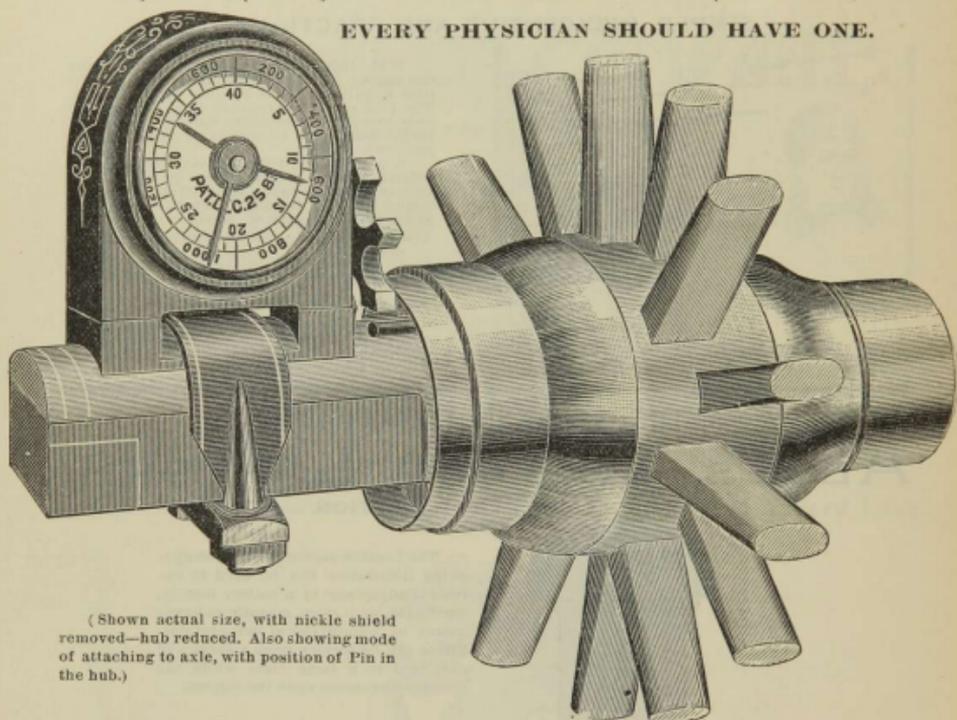
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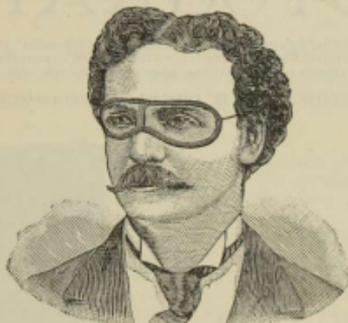
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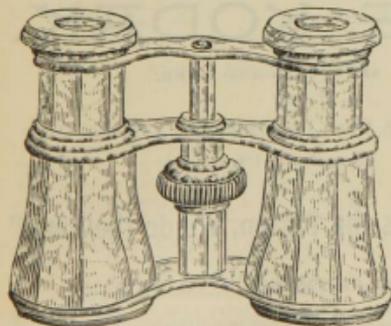
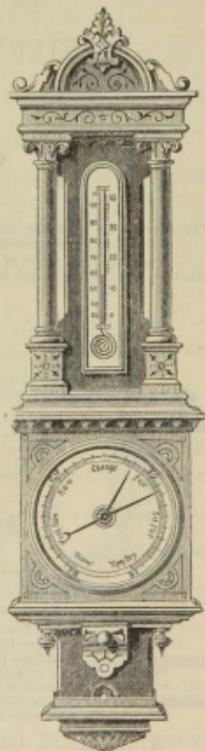
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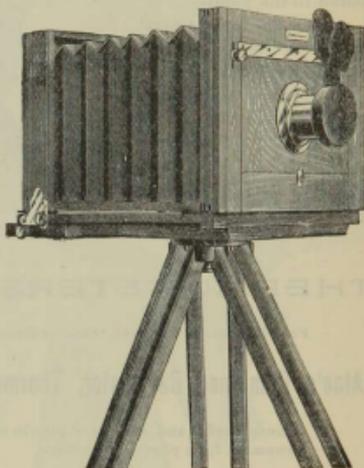
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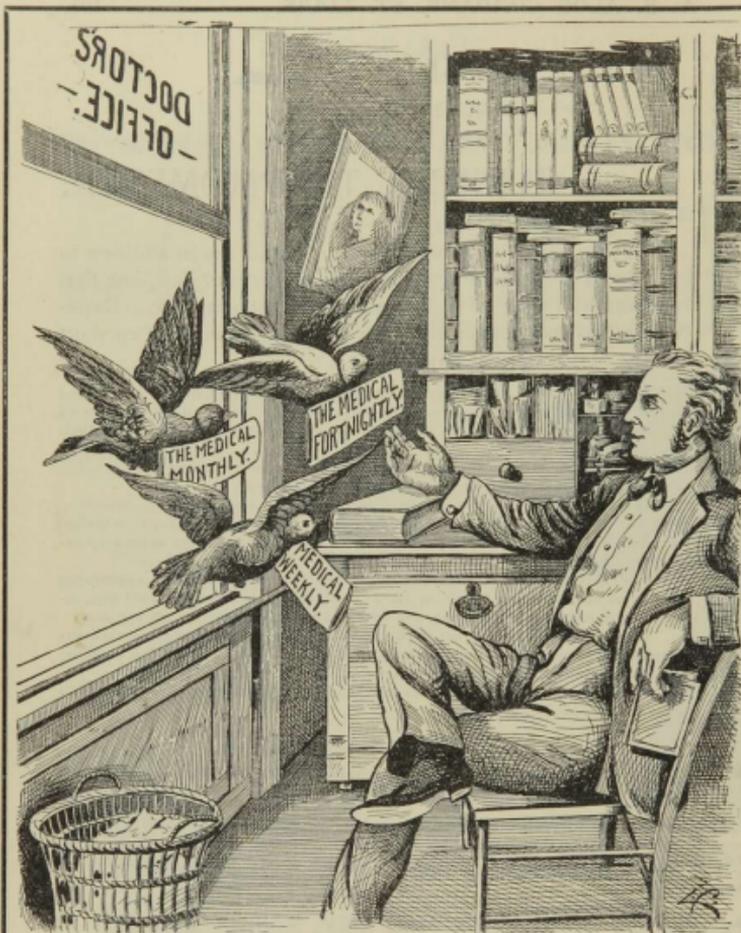
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