

WE  
K51v  
1864



ARTIFICIAL  
LIMBS

APPROVED AND ADOPTED  
BY U. S. GOVERNMENT.

KIMBALL & LAWRENCE

639

VULCANITE RUBBER  
ARTIFICIAL LIMBS.

639  
ARCH  
ST.



WE  
K51v  
1864

Film 7928, Item 6

Kimball and Company, Philadelphia

*A New Invention. The wonder of every "Seer."  
Wooden Clubs and Metallic Tubes for Artificial  
Limbs "among the things that were."*

---

**VULCANITE RUBBER**

# Artificial Limbs,

(ARMS AND LEGS,)

**MOULDED FROM LIFE IN FORM.**

ADJUSTABLE SOCKETS—LOCK-KNEE JOINT—SLIGHT LATERAL MOTION IN  
ANKLE—CORRUGATED SIDE-KNEE JOINT—FRICTIONLESS TOE JOINT—  
VELVET FINISH, AND WARRANTED OF ONE-THIRD LESS  
WEIGHT AND TWICE AS DURABLE AS THE BEST  
WOODEN LIMBS IN USE;

*Without a String or Ligament in Arm or Leg,*

ALL LEVERS—PERFECTLY WATER PROOF.

---

*\$100 to \$150.*  
PRICE \$~~100~~, VARIED SLIGHTLY TO CIRCUMSTANCES.

---

MANUFACTURED BY

**KIMBALL & LAWRENCE,**  
**639 ARCH STREET,**  
**PHILADELPHIA.**

BRYSON & SON, PRINTERS, Nos. 2 AND 8 NORTH SIXTH STREET.

WE  
K51v  
1864

Small dark ink smudge or stamp.

## INTRODUCTION.

---

In presenting our new invention to the public, as an especial need of this age, we beg leave to offer a few remarks regarding the manufacture and use of artificial limbs.

In tracing the slow progress of our difficult art we find that artificial limbs have hitherto been made of a great variety of materials, such as iron, steel, brass, german silver, cork, wood, raw-hide, &c.,—often with a combination of several of the above named materials, and with all of which some serious objection has been found, on trial: either too weighty, noisy, clubby, too weak, or too strong “in smell.” Lately, best artificial limbs have been made of willow-wood, a light porous wood, very susceptible to perspiration or other moisture, and easily jammed or split. This wood is carved or shaped as near the natural form as gift of maker will admit, and are *at best but naturalized clubs*. More extensive still has been the mechanical appliances introduced, and numberless the kinds of strings and ligaments used to bring natural manipulations, and which, in utility and durability, have as signally failed. The inventor, calculating on the same recuperation as in natural limbs, which, being impossible, failed,—thereby reducing artificial limbs to mere machines, to which the common principles of philosophy (*i. e.* of levers) are only applicable. For instance: We once had the privilege of enduring the tuition of the most famous self-styled Surgeon Artist to the Government for fourteen weeks, who, wearing one of said stringed instruments of his own make, (thence, of course, having the benefit of the best) to our knowledge was obliged to remain in bed twice in said time to have his limb tuned to the playing of a slow march about his “studio.” We learned this much, at least, while there, that if his was the best limb that could be made, every wearer should have, like him, a shop in his own house always ready to keep him in walking order. By this we do not pretend to say that artificial limbs have never been made to answer a tolerable purpose, for otherwise, we are well aware that when amputations have been favorable, and the wearer’s power of endurance equal to the task of becoming accustomed to them, they have been made to answer for a short time. But in numberless cases, in trial after trial

of them, they have been laid away as unbearable, and crutches or the old straight stick and socket, redonned for comfort and safety; and that in more than a majority of cases they have only been borne by the most obdurate perseverance. And now, while we proceed to illustrate and explain our claim at improvement, we do not assert we can make an artificial limb that will entirely make good the loss of natural limbs; but without the necessity of issuing "new rules for amputation," thereby suggesting the need of cutting flesh and bone to fit what we make, but with confidence we claim that in *every case* where stump is sound, we can fit a limb answering well the purpose for which it is intended, and which can be worn with ease and comfort; further, that in many cases where the stump is too sensitive to be borne upon, by other appliances, we can make them answer an equally good purpose.—*That we have made more than a step's advancement in the art.*

Having, as we said before, learned, at least, the need of something better than the best, we started in a new direction, and, after long experimenting, we have at last succeeded in perfecting and patenting artificial limbs where exterior natural forms are moulded *in forms copied from life*, and the mechanical arrangements of which in the strictest sense anatomical, have applied the closest principles of philosophy of levers together with the nicest science of machinery. Here let us say a word in regard to the nature of vulcanite or hard rubber, the material used for exterior form. With most people the terms caoutouch, india-rubber, gum-elastic, gutta-percha, are synonymous, meaning a soft elastic substance, perfectly impervious to moisture, with an offensive smell, and becoming sticky with small amount of heat, same as gum boots and shoes. While the above, named substances are by no means the same, vulcanite is entirely unlike either, being a compound having india-rubber as one of its component parts, which, when subject to certain degrees of heat, becomes an entire different substance, not in the least affected by the chemicals used in dissolving india-rubber. A hard, elastic, tough substance; very much lighter than whalebone, horn, or ivory, *the strongest known substance of its weight, with less smell than ivory*, unaffected by cold or heat at less than 240° F., yet mouldable into every conceivable form and shape. It will occur to every thinker that this substance is wonderfully adapted to the manufacture of artificial limbs.

In the treatment of the vast variety of cases included in "every kind," it will be impossible for us to illustrate all of said varieties, for, while we scarcely make two hands or legs alike, we have classed them as follows, which includes as far as possible the whole :

### ARMS.

One of the manifest faults of artificial arm inventors of the past, has been in an idea akin to that of perpetual motion, (*i. e.*) a motion of making something that shall work itself, instead of studying man closely and taking advantage of all the powers and facilities to be found in their attachments, and at the same time knowing and bearing in mind the science of machinery and philosophy of levers.

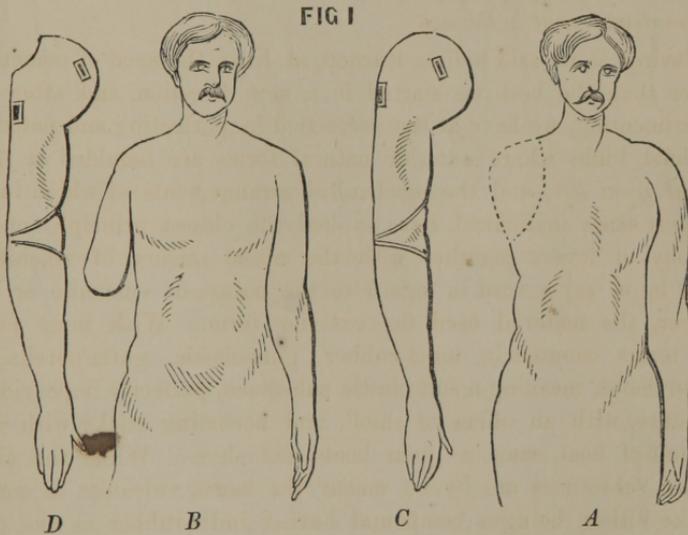


Fig. 1 illustrates two amputations of arms above elbow: *A* at shoulder; *B* between elbow and shoulder. *C* is a correct figure of an arm we should make for *A*. It has no motive power, thence is ungovernable in itself. An adjustable elbow joint is made so that the forearm can be elevated and fixed there at any angle by use of other hand. It has spring fingers of two joints, which are of use only the same as a ladies' sewing-bird. It has a hooked little finger on which can be carried a bucket or basket. Said arm looks perfectly natural,

and can be worn with comfort in all cases. *D* is similar to *C*, except that when the stump is long enough to govern arm, the motive power of the shoulder is applied to the movement of the fingers by means of two straps; one, the fastening of the arm being elastic, the other connected to fingers by means of a system of levers, and is non-elastic, thence the stretching of one pulls the other, clasping the fingers. This arm is a wonder to all who see it.

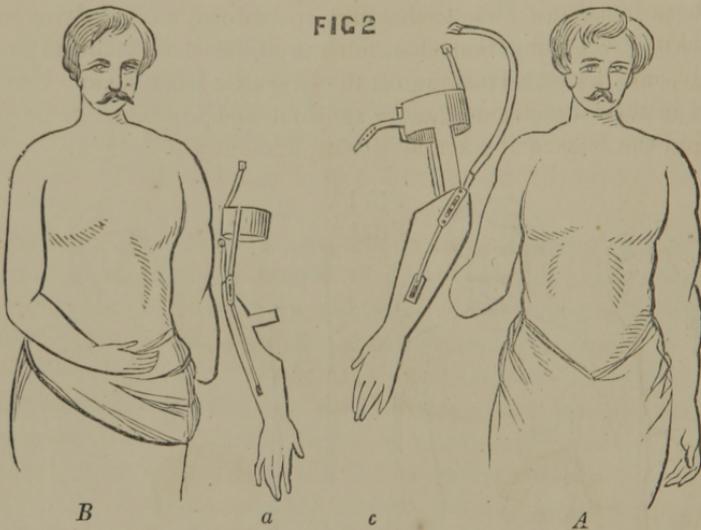
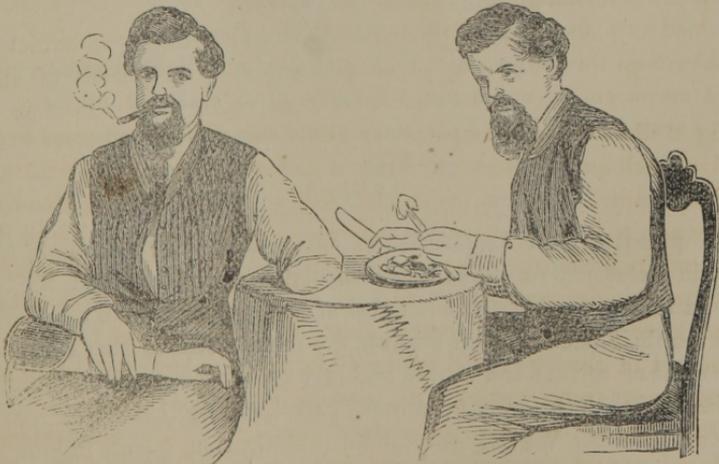


Fig. 2 illustrates two amputations below the elbow; and arms to be used on such amputations (*A*) has two to four inches stump with use of elbow-joint. The arm (*c*) has two side joints with arms extending up the arm to a clasp above the elbow, which is fastened around the arm, and from the top of which the elastic fastening extends around opposite shoulder, and with it another non-elastic strap fastened to a slotted lever which slides around pivot of elbow-joint, and which is connected at the other end by a metallic strap to levers of hand, enabling fingers to be clasped, with forearm in any position.

With this arm all the movements of the natural arm are perfectly produced, except the bending and twisting of wrist-joint. The following cuts were taken from photographs of Chas. M. Butterfield, wearing an arm of this description. He plays the violin well, and eats, with ease and grace, with this arm.

(7)



(B) of Fig. 2 illustrates amputation at or near the wrist; (D) an arm to fit. It has but one elbow-joint, and that made to rotate as well as bend, so that when the patient has stump enough to twist his

wrist he gains that motion also in artificial arms, otherwise this arm operates much like (c). The above are some of the most common forms of artificial arms made by us, while numberless are the contrivances made by us for special cases. For holding knife and fork without the trouble of the tension of fingers, we make a double clasp which holds to fingers and to knife, fork, or tool, allowing them to be placed in position for use. With the mechanical arrangement of the levers the utmost care is taken to secure a still, easy movement with a direct application of motive power to its use. The weight of said arms is from ten to twenty ounces, an average of two-thirds the weight of lightest wooden ones.

The exterior form is moulded from life, of vulcanite rubber entirely. The levers are made of reed or spring brass, which is as strong as steel and will not rust. Every bearing is of brass, every pivot of steel, which obviates the necessity of lubrication. The arm is finished with a coating of fine flesh colored silk plush, which may be washed as safely as flesh itself. In fact we warrant the hand and arm to be perfectly waterproof. *That a ride in a day's rain will not hurt it in the least.*

The hand is finished to imitate a dark kid glove, or, like the arm, flesh color, at the choice of wearer.

The sockets are lined with thin hogskin, and in every case where there is need, an adjustable socket is so arranged as to be tightened or loosened and yet retaining its perfect fitting form.

Above all things, we claim that in the extreme lightness and quick, easy movement of our arms, we obviate two essential needs of all other arms: a *windlass to lift them*, and a *steam engine to operate them*.

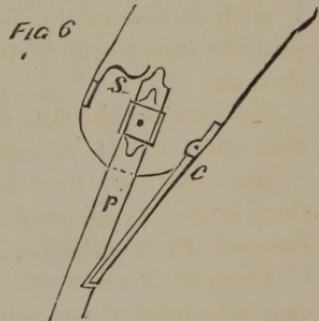
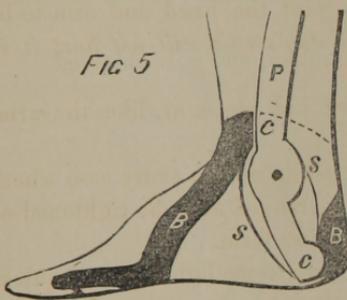
#### LEGS.

In presenting an explanation of our artificial leg in which, to a certain extent, is embodied a new theory, we bear in mind the ten thousand new worthless wonders that are daily presented to the public, and see their fate. But as we note the mighty strides that every department of science and art are making, we know very much must be good; and with this view we present ours, knowing that it will receive its just deserts. We only ask candid investigation, honest judgments.

A leg, unlike an arm, is for but one use, to walk with; and the great points requisite to its utility are comfort, lightness, with durability, and natural in form and manipulations. Now we claim it is

utterly impossible for man to imitate a live leg, only in form and purpose. That the idea of imitating the flexibility of muscles and strain of tendons, and to have them, to any great extent, durable without the aid of a life principle and a recuperative power, is *simply as absurd to attempt, as to expect a lifeless natural leg to be a durable walker*. Now, then, we have our work laid out and circumscribed, to sieze every kind of material within our knowledge, and, apply the strict philosophy of levers, (the bones of the natural limb and the only portion in any degree durable), the closest science of machinery, together with a life-like form, and make a machine to walk with.

The following is the way *we* make said machine. We have already spoken quite lengthly enough of our material for exterior natural form, vulcanite or hard rubber, its strength, toughness and lightness—the ease and perfection we copy life with it, convinces everybody that it is the right thing.



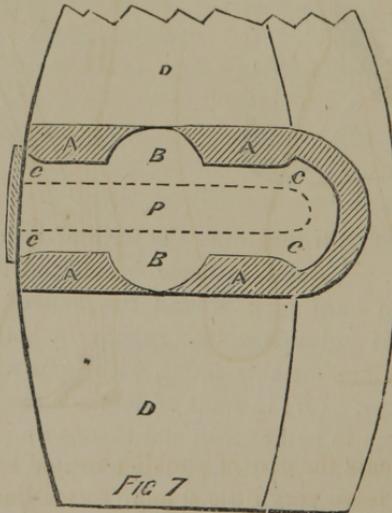
The outline of Fig. 5 illustrates the form of a foot moulded from life in a stocking. A joint is made by vulcanizing a strip of pure gum-elastic to the hard gum around the ball of foot, while a steel plate, perforated, is vulcanized into rubber in bottom of foot. The rest of ankle-joint are metallic bulbs, with arms which are also vulcanized into rubber. (B) in front of foot is a strong brace of wood, running from instep to ball of foot, and thence up into toe with which to gauge spring of toe. (B) in heel is a block of wood. (P) is a pitman or bone of the strongest wood, split like a crutch at upper end, and running from above knee-joint (if the leg is amputated that high up, Fig. 6,) to bottom of foot, Fig. 5. (c c) are two points of contact on opposite sides of pitman, at equal distance from ankle-joint, and are packed with soft gum-elastic. (S S) are two springs, one to lift the toe when the limb is bent, the other to lower the toe when limb

is straightened. By the above arrangement of pitman, ankle-joint, and opposite points of contact, (*c c*), which receive the strain of foot when weight of body is on the toe, at least (in a hundred and fifty pound man) is five or six hundred pounds; thus the ankle-joint is relieved of said strain, while by the use of heel cords the whole strain comes on ankle-joint, same on knee-joint, when said cord extends above the knee. Thus by this simple arrangement, we relieve both knee and ankle-joint of at least four hundred and fifty pounds at every step.

#### LATERAL MOTION.

Much ado has been made by one manufacturer of artificial limbs over a lateral motion of the foot. Although the idea is good, its application is wrong end foremost, like the lifting one's self with a string attached to the short end of a lever, with the fulcrum an unsteady point, under one heel, making it far from impossible to find one's self walking on the *top of his foot*.

The following illustrates our lateral motion, and how obtained.

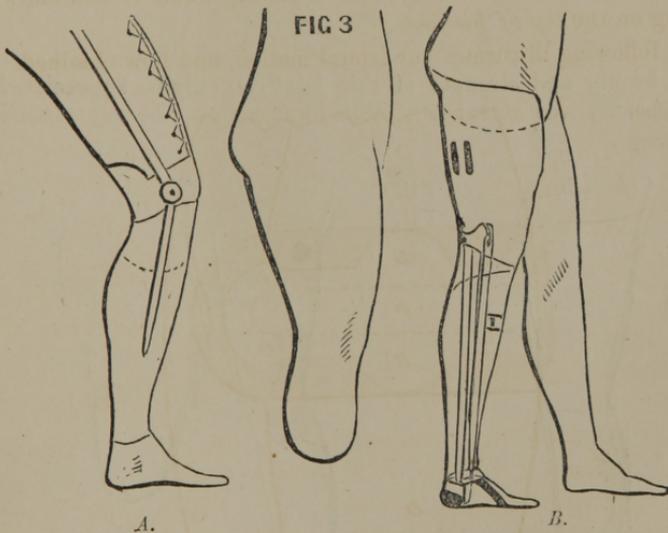


*D D* of Fig. 7 represents a half section of our pitman around ankle-joint, cross division. (*B B*) represents bulb of hollow cylinder. *c* and *c* arms of bulb or cylinder. *A* and *A* tubular soft gum-elastic packing. (*P*) is a hole through which ankle-pin passes from outside of

foot. The sides of pitman are rounded, with centre of bulb as a common centre. With this simple adjustment, a lateral motion is produced, sufficient and complete without the possibility of dislocation, and with no cords to wear off by said lateral motion.

Another prominent fault, ever has been, the unsafety of the knee-joint of artificial limbs above the knee, requiring a constant unnatural holding back of stump; even then, often throwing the wearer.

Fig. 6, page 9, is a rough outline of knee-joint; (*P*) pitman; (*c*) a brace attached with joint to back of leg, and extending near to the foot, and so arranged that when the limb is extended and weight comes upon the foot it catches in a notch in pitman and holds the limbs perfectly stiff, until pitman comes in contact with foot at (*c. c.* Fig. 5,) when the limb bends perfectly easy to take another step. This arrangement is perfectly secure, and walks equally well up hill or down without the least inconvenience.

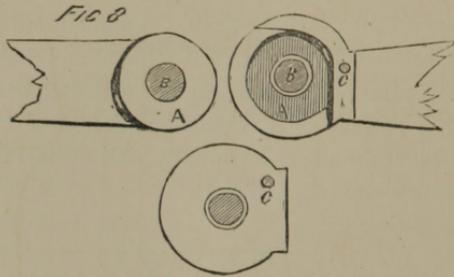


(*B*) Fig. 3 represents the case of a soldier treated by us with amputation so short as to leave very little stump (dotted line) and who had entirely failed to find a limb that he could take a step upon until he found ours, and upon whom we fitted one of the above limbs with which he could walk without a cane after a few trials.

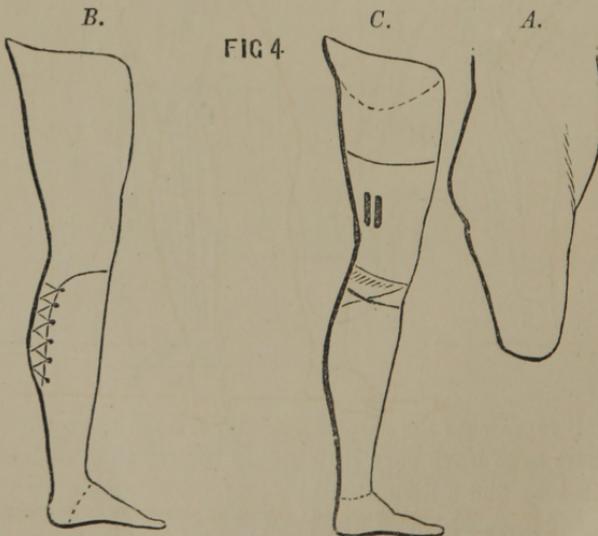
(*A*) Fig. 3 represents the most common case of amputation below the knee. Best side joints of this limb formerly have been made of

two pieces of steel, a slot cut in one, into which was inserted the other, and a bolt put through both. The immense strain on these joints with their necessary thin wearing surface, always has been more than they could bear, often breaking them and always grinding so much as to make them a continual nuisance to the wearer.

We have invented a joint with more than triple the wearing surface by means of corrugations, (Fig. 8, A A), the bolt of this joint is a part of the head itself, and can never work loose.

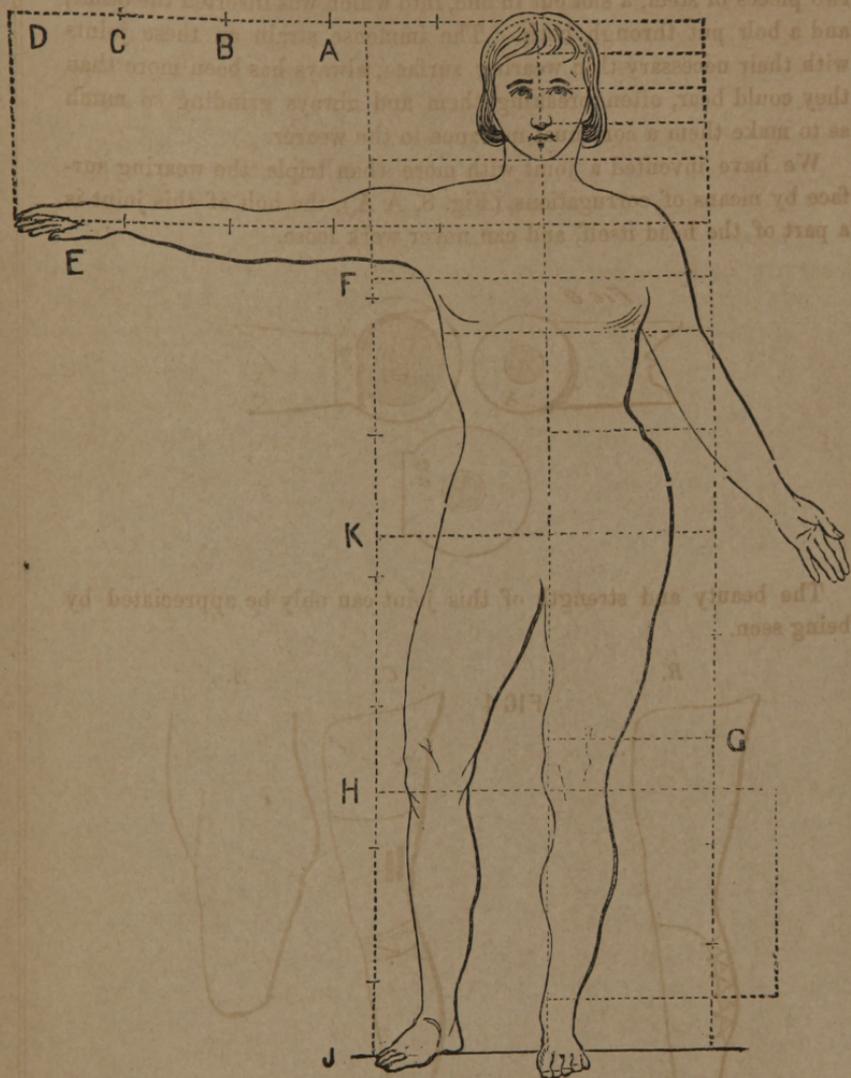


The beauty and strength of this joint can only be appreciated by being seen.



A, Fig. 4, illustrates the most common amputation above the knee. (C) limb to fit said amputation. While it is one of the easiest cases

# DIAGRAM FOR MEASUREMENTS.



[Sketch carefully on the above Diagram, closely following directions on page fourteen, and send by mail, which will in most cases, when we cannot have the presence of the patient, insure a perfect fit.]



to fit an artificial limb to, it is one of the most bothersome for the reason of its constant change of size on account of its great amount of flesh; it is very essential to its continued use that it should have some way of adjustment. With us it is comparatively easy to make for this class of cases an *adjustable socket*, allowing stump to swell or shrink, and yet retaining its perfect fit.

B, Fig. 4, illustrates an applied artificial foot, for amputation across instep. The shell-like thinness of the foot with the thin side joint, gives us rare opportunity to treat these cases without disfiguring the foot, and without stiffening or cramping ankle-joint.

#### SOCKETS.

We confine ourselves to no set theory in sockets, but use different kinds which the case suggests, always making them adjustable when the case admits. The thinness of our exterior forms gives us superior opportunity of adjusting them, and in all cases easily changed, refitted, raised, or lowered, without disfiguring other portions of the limb, much facilitating the getting of a perfect fit.

#### DURABILITY WARRANTED.

We propose to insure persons wearing our limbs, who choose to do so, with Artificial Limbs *for life*; warranting the wearer of them in every particular, except such accidents as would damage a live limb, or manifest or drunken carelessness, at prices at twenty-five per cent. less than statistics of best artificial limbs shall show; said insurance will vary slightly with occupation of wearer.

Our limbs have been worn in all weather, so that, with the arrangement of socket we make, we warrant them against the injurious effects of rubber on stump or flesh; nor is there the slightest smell to them when finished. Tens of thousands of people wear the same material in their mouths.

#### MEASUREMENT.

We cannot insure a limb to be a perfect mate to the other without the presence of patient at our office. Nor can we warrant a fit in many cases without at least a plaster cast of stump; but where persons are at a great distance, we submit the following rules for measurement, with which we can often hit just as well:—

## MEASUREMENT OF ARM.

Mark with plain figures, in inches, on the accompanying diagram, which is to be returned to us.

1st.—Length of whole arm from shoulder-joint to tip of fingers. (*A.* to *D.*)

2d.—From centre of elbow-joint to tip of fingers. (*B.* to *D.*)

3d.—From wrist-joint to tip of fingers, length of middle finger, &c. (*C.* to *D.*)

4th.—The size around hand, between thumb and fore-finger. (*E.*)

5th.—Mark circumference of whole arm, every four inches, between *E.* and *F.*

Sketch with pen in diagram the length of stump, if above the elbow from shoulder, marking with pen the point from which you measure, and measure from same point in both arms. Write whether hand is fat or lean, bony or round, what size glove you wear; if below the elbow, measure and sketch stump the same way; measure from shoulder-joint to end of stump, and from elbow-joint to end of stump; take a piece of strong paper, cut it to fit as closely as possible the stump, send that; any sore spot or peculiarity describe. The above directions, closely followed, will bring a perfect fit in most cases.

## MEASUREMENT OF LEGS.

Measure length of whole leg while standing upon it, with boot off, inside up to crotch, and outside to hip-joint. Sit down in a chair, which will bring the thigh as level as possible, and measure from floor to top of knee, and mark it on the upper dotted line *G.*; from hip-joint to end of knee, and mark on lower dotted line, (*H.*) near knee. Measure foot same as a shoemaker; give number of boot worn; measure round the whole limb once in every six inches, *J. K.*; write size between limbs in diagram, describe how much the foot turns out—whether limbs, bow or not, &c. Sketch in diagram length and shape of stump as near as possible, measure its length inside and out from crotch and hip, and, if below the knee, from centre of knee-joint and hip-joint both to end of stump. Cut a piece of thick paper to fit closely as possible, and mark on it the outside point in line with hip-joint. If below the knee, cut one paper to fit the thigh, at least ten inches wide, cut another paper to fit stump close under knee-joint, and mark paper where centre of knee-pan comes. Where amputations are very near the knee, we cannot fit a limb without the

presence of patient; and if stump is irregular or is very tender we must have a plaster cast. The easiest way of taking which is as follows: After soaping the stump thoroughly with soft soap, submerge it at least six inches deep in a paste made by mixing calcined Plaster of Paris with water to the consistency of indian-pudding, after the paste has hardened, carefully extricate stump, let the cavity remain an hour or two to harden, then thoroughly soap said cavity and pour more of said paste into it; let it remain a few hours, then break off outside with chisel or hatchet, taking care not to bruise cast of stump; send us cast by express.

#### EXTERIOR APPLIANCES.

Varied exterior appliances pertaining to the treatment of cases not strickly included in the manufacture of Artificial Limbs:—

We do not propose to enter into a scientific description of separate cases, and their treatment in this department of our business. We have not even room for the medical terms, with which we never burden book or reader. We make these following broad, general remarks, which we shall, at all times, be happy to substantiate by best of references. Daily we have presented to us some new, odd case, (the effect of some freaky bullet,) on tendons, bones, nerves or muscles, so as to cause deformity or loss of use of limb, often both;—thus presenting a field for extended and varied experiment; bringing opportunity and use for the rarest quality of inventive ingenuity and experience, such as never were presented in this country before. The good fortune which has attended our efforts in this direction, with hard rubber, has secured for us the exclusive patronage of Government in the treatment of injury of nerves and nervous centres—bones and tendons, so as to render limbs or other portions useless, yet, to appearance, nearly or quite whole. In all the variety of cases treated, we have never failed to give *perfect satisfaction*, which, with the first-class talent at our command, gives us the assurance to say, *that we can treat every variety of fault, of form or weakness—treatable by exterior appliances—better, easier, cheaper, with vulcanite than it can be done with any other material or at any other place in this country.*

#### LADIES' DEPARTMENT.

We have a department for ladies, with lady attendants skilled in fitting and adjusting every variety of appurtenance we make.

## MEDICAL CERTIFICATES.

Dr. WILDMAN, Professor of Mechanical Dentistry, in the Philadelphia Dental College, and whose practical knowledge of the nature of Vulcanized Rubber is equal to any in the land, writes thus:

“MESSRS. KIMBALL & LAWRENCE,

DEAR SIRS:—I am pleased to learn that you have adopted the use of Vulcanite or Hard Rubber in the manufacture of Artificial Limbs. For strength, durability, lightness and capability of fine finish it is vastly superior to any material heretofore used for such purpose.

E. WILDMAN, M. D.

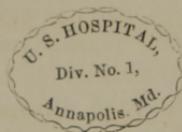
*Philadelphia, October 20th, 1864.*

I have examined the Artificial Limbs constructed by Kimball & Lawrence, and have no hesitation in saying that for simplicity, lightness, durability, and artistic elegance they have no superiors.

D. HAYS AGNEW, M. D.

*U. S. Hospital, Annapolis, Md., Oct. 21st, 1864.*

I corroborate the above statement.



R. VANDERKIEFF,  
*Surgeon, U. S. Vols. in charge.*

U. S. GOVERNMENT HOSPITAL EMORY,  
*Washington, D. C., November 3d, 1864.*

I fully concur in the above statement.

N. N. MOSELY,  
*Surgeon, U. S. Vols. in charge.*

*1604 Wallace Street, Philadelphia, November 2d, 1864.*

GENTLEMEN:—After a careful, and to me very interesting examination of the Artificial Limbs made in your factory, I believe them to be superior to any that have ever come under my notice. The beautiful and easy working of their mechanism, their lightness and great strength, stamp them as unrivaled.

Your philanthropic resolve to bring them, in point of price, within the reach of our disabled soldiers, should particularly recommend them to notice.

Yours truly,

R. TROUBAT, M. D.

MESSRS. KIMBALL & LAWRENCE.

ADDRESS OF SURGEONS WHO ARE ACQUAINTED WITH  
OUR LIMBS.

---

D. HAYES AGNEW, M. D., 16 North Eleventh Street, Philadelphia.

R. J. LEVIS, 1104 Arch Street, Philadelphia.

DR. BRAINARD, Surgeon U. S. A. in charge of U. S. Hospital, Broad and Cherry Street, Philadelphia.

J. L. LUDLOW, 10 Merrick Street, Philadelphia.

DR. CHRISTIAN, in charge of Turner's Lane Hospital, Philadelphia.

S. D. GROSS, M. D., S. E. corner Eleventh and Walnut Streets, Philadelphia.

N. N. MOSELY, Surgeon U. S. in charge of U. S. Hospital Emory, Washington, D. C.

DR. PANCOAST, M. D., Chestnut Street, below Eleventh, Philadelphia.

---

LETTERS.

---

THE following are a few of the many letters we have received from the most difficult cases we have treated, together with a list of names embracing nearly every variety of case, of both legs and arms, and to whom we refer those wishing limbs.

*Warnerville, Schoharie County, N. Y., October 3d, 1864.*

MESSEES. KIMBALL & LAWRENCE.

SIRS:—I lost my arm in the United States service, and was so fortunate as to secure one of your unapproachable Hard Rubber Arms, and I feel it my duty to tender to you my thanks, and at the same time speak a word for the benefit of those in need of artificial limbs. I examined quite a number of patents before hearing of yours, and in all cases concluded I should rather be without any, they all being *too heavy—too clabby—too tender*, none of which would endure a short exposure to rain or moisture. A friend advised me to examine your limbs, which I did at the first opportunity, and was so pleased with their lightness and beauty, that I ordered one immediately. I have worn it ten months in all kinds of weather, and kept it constantly in use, and it is as perfect every way as when I obtained it, and so much a part of myself has it become, that I cannot endure to be an hour without it.

Thankfully yours,

C. M. BUTTERFIELD.

MESSRS. KIMBALL & LAWRENCE,

GENTLEMEN:—I lost my arm in the service of the United States, and was supplied by B. F. Palmer, (for Government,) I was told that it would be of some use to me, that I could use the fingers, &c. But judge of my surprise when I received the arm to find the hand and fingers to be one solid block of wood without the semblance of a joint. (I do not pretend to say, that he cannot make a hand with fingers to work, but I do say, that the work that he and other wooden-limb makers turn off on the soldiers is an imposition both on soldier and Government.) I was obliged to take the arm but wore it but one day, when passing down Arch Street, Philadelphia, I saw Vulcanite Rubber Limbs and ordered one; have worn it some time, can work the fingers in every position, and am well satisfied it is the best of artificials.

You may use this for the benefit of those in want of what *I* wanted and *have found*: the best artificial limb to be had.

BURTON CARL.

---

*Philadelphia, October 25th, 1864.*

KIMBALL & LAWRENCE,

DEAR SIR:—I lost my left arm, near the shoulder, in the battle of Savage Station, Sunday, June 29th, 1862, and had been supplied with the Gildea arm at the expense of Government. By having it repaired several times I managed to keep it nearly a year, but with constant suffering, and I could not use it in the least for any purpose, so that I considered it an injury rather than a help to the wearer. I saw your advertisement of Vulcanite Rubber Limbs. Examined and ordered one and find it a complete success; although my stump is quite short above the elbow, I can operate and use it well for many purposes. So that I know it is the best arm made.

I remain, thankfully, your serv't,

JAMES G. HARRIS, Late 72d P. V.

Telegraphic Operator of the First District Station House, Philadelphia.

---

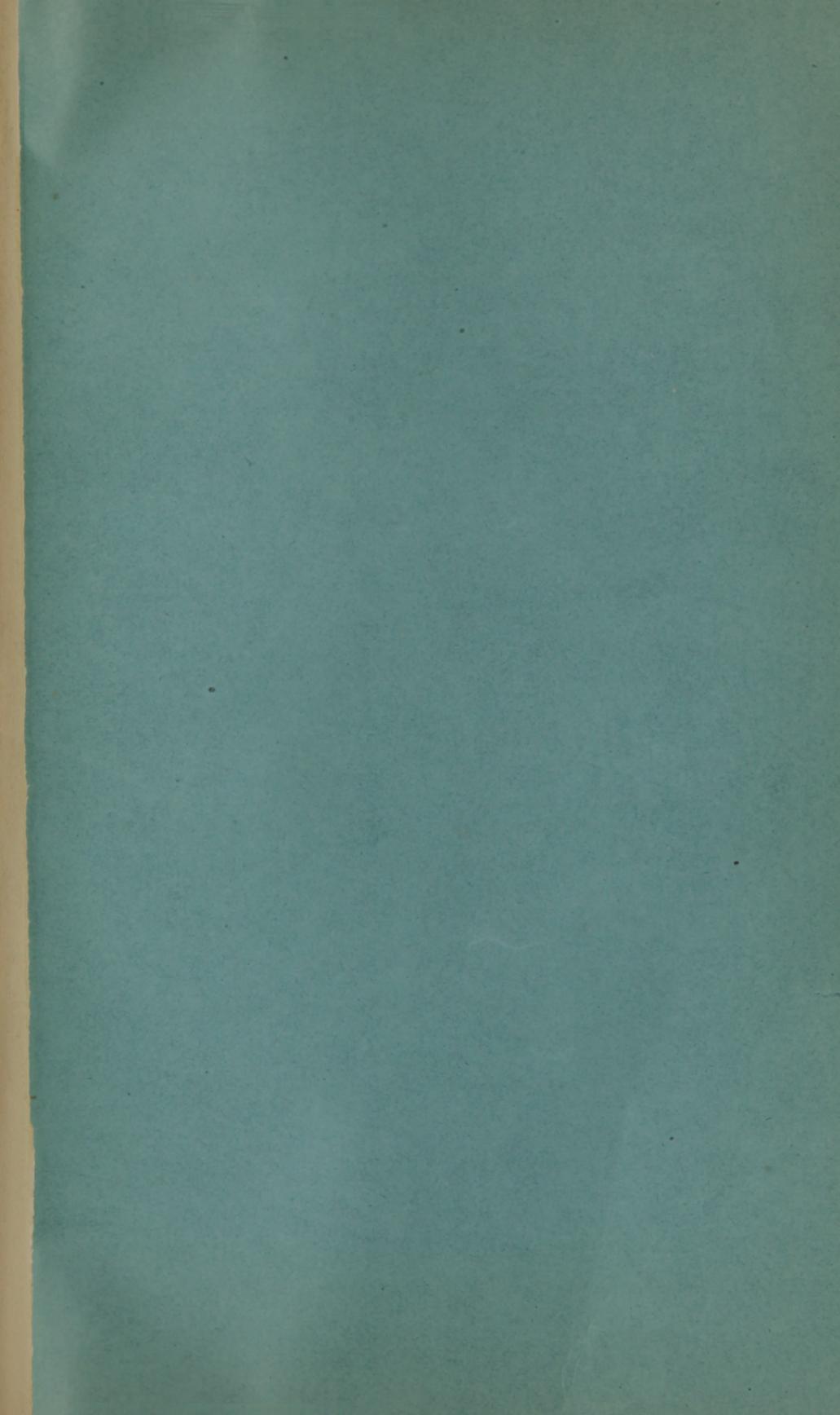
*Gettysburg, Pa., August 25th, 1863.*

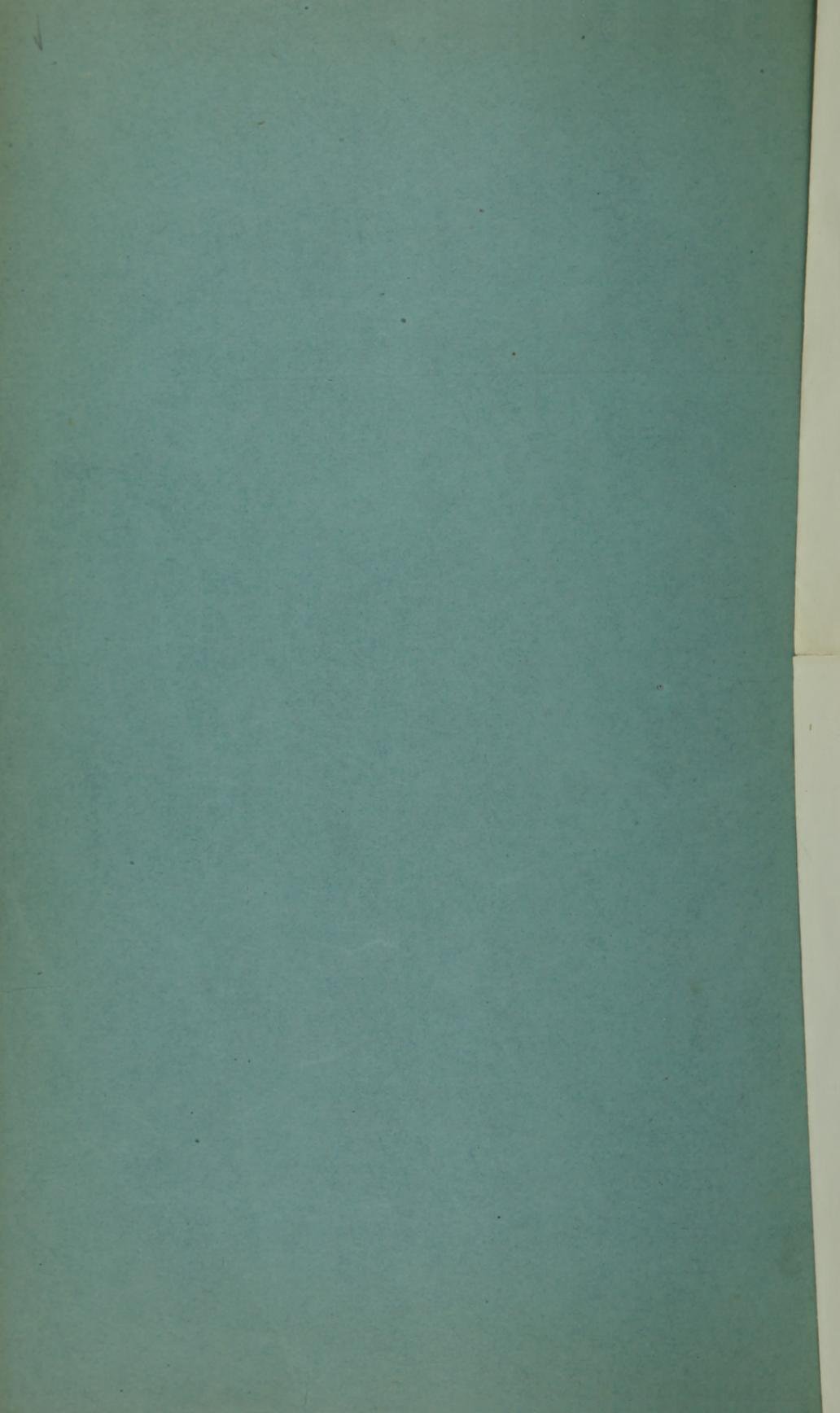
MESSRS. KIMBALL & LAWRENCE,

DEAR SIR:—Having lost my leg at the battle of Gettysburg, July 2d, 1863, and more unfortunate still, it was amputated so very near the body that after one trial of a wooden limb, on which I could not take a step, I despaired of ever getting a leg on which I could walk until I learned of your self acting lock-knee joint, and concluded to try one, and I am happy to write you that I have just been walking over the same ground on which I lost my leg. I am perfectly satisfied that yours is the *ne-plus-ultra* of Artificial Limbs.

Thankfully yours, &c.,

FRANKLIN CLARK.





# Artificial Limbs.

---

Dear Sir:

We beg leave to call your attention to our **New Improved Hard-Rubber Artificial Limbs, Appliances, &c.**, as follows:

Hard Rubber or Vulcanite, worn by thousands of people in their mouths; is the strongest known substance of its weight.

The Limbs are moulded in forms transferred from life with Plaster of Paris.

The Arms have every movement of the natural one, and are governed entirely without the aid of the other hand.

Neither Arm nor Leg have a catgut, string or ligament, all the movements being produced by simple levers.

For Amputation below the knee, we have a suspended upper socket, allowing a more free and easy use of the knee.

For Amputations above the knee, we have an adjustable lock knee, to be used or not, at the will of the wearer.

Our sockets are always moulded over plaster casts of stumps, and are adjustable when necessary. The joints are also worthy of careful inspection.

We also make every variety of appliances for paralysis, excisions, weaknesses and all faults of form, treatable by exterior appliance.

Please come and look at these limbs and appliances. It costs nothing, and we are always willing to show them. We append a few of the many Testimonials received by us within the last few weeks.

Very Respectfully,

Kimball & Co.,

November 1st, 1865.

No. 639 Arch Street, Philadelphia.



# Testimonials.

532 BROADWAY, NEW YORK,

October, 15th 1865.

MESSRS KIMBALL & CO.,

DEAR SIR:

I am happy to inform you that I am very much pleased with the leg you furnished me, and from considerable experience with other than your Artificial Legs, I am glad to inform you, wherein I consider yours an improvement in my case. I unfortunately have a very tender stump, and it is impossible for me to wear with comfort any socket except the admirably fitting one made on your plan of taking cast of stump. I consider that the manner in which you dispense with and supply the place of the old "heel cord" of other makes, makes it a complete success. The suspended upper socket and the manner of fastening it to the leg and your corrugated noiseless side-joint recommends itself to any one who has been annoyed by constant "click, click" at every step, as is sure to be the case with the side-joints of other makers after very little wear. The imperviousness of the material, its lightness and the beauty of the limb, show their own recommendation at sight. In conclusion allow me to add that I consider your limb superior in all points to those of any other maker, and shall be happy to answer any enquiries concerning the limb. I do heartily recommend them to all who desire a comfortable, light, durable and elegant limb.

Yours, &c.,

T. C. KENDALL,

Late Capt. V. R. C.

WEISS PORT, CARBON CO., PA.,

November 5th, 1865.

MESSRS KIMBALL & CO.,

DEAR SIR:

Will you be so kind as to send me another pair of straps. The ones you furnished are getting somewhat worn and I want another pair on hand.

I have to say to you that I am perfectly satisfied with the leg; am sure that no limb maker can do better for me. I have thrown away my cane and can walk as well as you or any other man. I cannot express my thanks to you for making me whole again, &c.,

Yours, Truly,

JOHN KROMER.

CAVENDISH, VERMONT,

October 10th, 1865.

MESSRS KIMBALL & CO.,

DEAR SIR:

Perhaps you remember putting an Arm on a Vermont Soldier last year. I write to show you how I can write with it, and I just want to tell you that I can beat any live man using an Artificial Arm. Can pick up a pin and stick in my sleeve. Play toss and catch as well as you, and write like this.

*Dennis O'Connor*

WARNERSVILLE, SCHOHARIE COUNTY, N. Y.

MESSRS KIMBALL & CO.,

DEAR SIR:

I write to ask a favor of you. Can you find me a job in Philadelphia? My Artificial Arm is all right. There is nothing in this country or any other like it.

Yours, &c.,

CHARLES M. BUTTERFIELD.

Please take note that all the following certificates bear very late date, and if the manufacturers of the old styles of limbs, have certificates from the same, by the date we prove that we have made improvements in Artificial Limbs.

NEW YORK, August, 26th, 1865.

MESSRS KIMBALL & CO.,

DEAR SIR:

I have carefully examined an Artificial Leg and Arm made by Mr. H. A. KIMBALL, and consider that they present many advantages over the Artificial Limbs now in use.

The material of which they are made, Vulcanized India Rubber possesses all the qualities requisite for a useful and durable Limb. The mechanism seems to be as perfect as any Artificial Limb now in use. Having had numerous opportunities of testing the advantages of Vulcanized India Rubber, in Surgical Appliances I cheerfully recommend it.

ALEX. B. MOTT, M. D.,

Professor of Surg'l Anat. in B. H. Med. Col.; Br't Lt. Col.  
Surg. U. S. Vol.

No. 1104 ARCH ST., PHILADELPHIA,

August 26th, 1865.

MESSRS KIMBALL & CO.,

DEAR SIR:

After having had extensive opportunities of practically testing the comparative merits of the different Artificial Limbs now before the public, I am convinced that those made by MESSRS KIMBALL & Co. present the greatest advantages, being exceedingly light, ingenious in construction, efficient in use and durable.

ROBERT J. LEVIS.

NEW YORK,

August 19th, 1865.

MESSRS KIMBALL & CO.,

DEAR SIR:

I have carefully examined KIMBALL'S Patent Vulcanite Rubber Artificial Limbs, and unhesitatingly pronounce them the best which I have seen. For simplicity of mechanical arrangement, for lightness and facility of adaptation to the stump, I do not see how they could be excelled, and I am only surprised that the material of which they are made should not at an earlier date have attracted the attention of mechanical inventors, as well for the manufacture of Artificial Limbs as for every kind of Surgical Splint and Appliance. I heartily commend the invention.

I. I. HAYES,

Late Surgeon and Br't Lt. Col U. S. Vol.

64 MADISON AVENUE, NEW YORK,

August 30th, 1865.

MESSRS KIMBALL & CO.,

DEAR SIR:

I have examined the Artificial Limbs, Arms and Legs constructed by H. A. KIMBALL of Philadelphia, and I take pleasure in saying that they seem to possess many points of excellence and some points of actual superiority: and while it might not be proper for me to affirm that they are better than all similar contrivances, I feel quite certain, and I desire to say that they are equal to any which have come under my notice.

FRANK H. HAMILTON,

Prof. of Military Surgery in Bellevue Med. Col.; Surgeon of Bellevue Hospital, Late Medical Inspector of the U. S. Army.

NATIONAL LIBRARY OF MEDICINE



NLM 03278145 4

ARMY  
MEDICAL LIBRARY