

# Einhorn

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THE STOMACH.

BY  
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## A POWDER BLOWER FOR THE STOMACH.\*

BY MAX EINHORN, M. D.

OUR deeper knowledge of gastric pathology and the better therapeutic results attained nowadays must be ascribed to the new special methods of diagnosis as well as of treatment of the local conditions of the stomach.

Methods of direct treatment of the affected organ always merit consideration. Several years ago I devised a spray apparatus for the local application of medicaments to the mucosa of the stomach. This method has since acquired numerous followers here and abroad. By means of the spray, however, only soluble drugs can be applied, but not substances which are either soluble with great difficulty or not at all. In order to facilitate the introduction of the latter I have devised a powder blower for this purpose. The stomach powder blower † (Fig. 1) consists of an ordinary, not too flexible rubber tube (A), twenty-eight inches and a half long, the distal end of which connects by means of a hard-rubber

\* Demonstrated at the Society of German Physicians of the City of New York, January 27, 1899.

† The stomach powder blower can be obtained at J. Reynders & Co., 303 Fourth Avenue, New York.

piece with an air-suction bulb (*B*), the proximate end of which is attached to a hard-rubber piece (*C*). The latter is hollow and pierced with several small openings

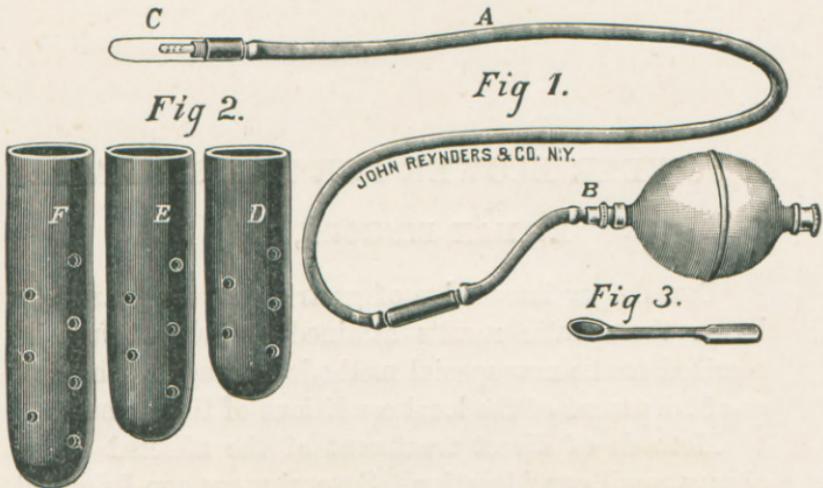


FIG. 1.—The stomach powder blower. *A*, the tubing part; *B*, connection with the bulb; *C*, hard-rubber end with screw thread for capsule.

FIG. 2.—(Natural size.) The capsule-shaped powder receptacles.

FIG. 3.—The small spoon for putting the powder into the capsule.

at the side for the passage of air, and provided with a screw thread for the capsule. The capsule (*D*) has numerous holes, and is made in three different sizes (three, three and a half, and four centimetres long), (Fig. 2). It is filled with the necessary quantity of powder, by means of a very small spoon (Fig. 3), and screwed on to *C*.

*Method.*—Insufflation of the stomach with powder can naturally only be done when the organ is empty. It should therefore be performed in the fasting condition, and, in cases in which the stomach is not empty in the morning, after previous lavage. Proceed as follows:

According to the quantity of medicament required, one of the capsules, *D*, *E*, or *F*, is filled with the powder and screwed on to the apparatus. The tube is moistened with warm water and inserted into the stomach. The bulb is then compressed three or four times in quick succession. By holding the ear over the gastric region of the patient during insufflation the entrance of air (consequently also of the powder) is distinctly heard. In cases in which there is much mucus in the pharynx and cesophagus its entrance into the holes of the capsule may be prevented by covering them with vaseline in a thin layer. The latter forms a protecting covering and prevents liquids from coming in contact with the powder. When the apparatus is in the stomach and the

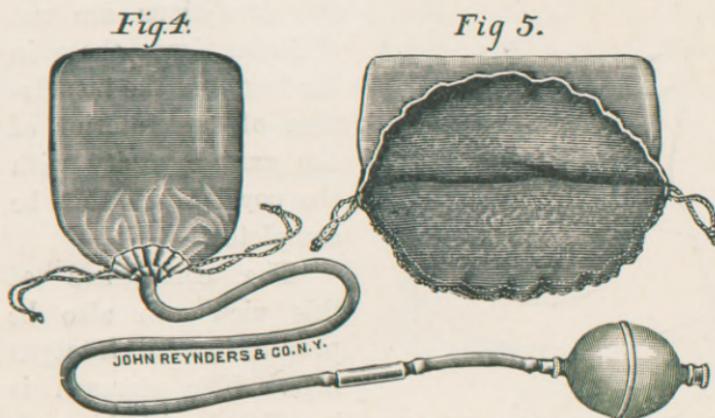


FIG. 4.—A rubber bag with the strings tightened and within the end of the stomach powder blower.

FIG. 5.—The bag opened; the white spots showing the powder.

bulb compressed, the air opens up the vaseline layer over the holes, and the powder can now escape.

The following simple experiment shows that the powder does not collect merely at one spot, but rather

spreads over the entire surface of the gastric mucosa:

Take a rubber bag (seven inches long and six inches wide), insert the end of the stomach powder blower filled with powder, and draw the strings together (Fig. 4). Then compress the bulb two or three times and remove the insufflator from the bag. If the latter is now opened, the powder is found equally distributed upon the entire inner surface of the bag (Fig. 5).

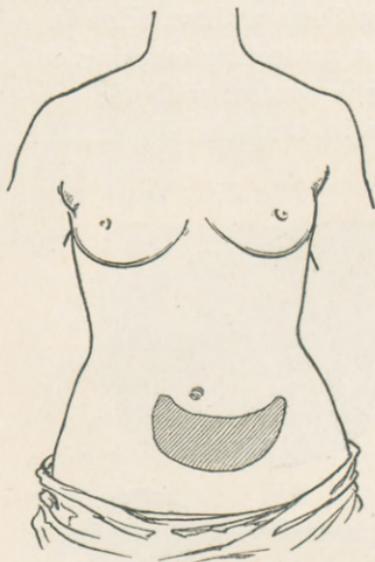


FIG. 6.—Fluoroscopic picture of the stomach of Miss C. after powdering it with bismuth. Pronounced gastropnoia.

This shows that the air disseminates the powder as fine dust over all parts of the inside of the bag. In the stomach the conditions are not different from those in the bag, and the insufflation of the interior of the gastric cavity with the powder will thus be complete.

The correctness of this view can also be proved by the Röntgen rays. The stomach is insufflated with bismuth powder and the patient exposed to the X rays.

On examining the gastric region with the fluoroscope the entire stomach is visible as a shadowy figure. This can occur only if the bismuth powder covers the entire inner lining of the stomach.

Dr. Willy Meyer has been so kind as to place at my

disposal the use of his excellent X-ray apparatus, and I take this opportunity to thank him most heartily for his courtesy.

The following drawing is an exact sketch of the stomach of a patient (Miss C.), as it appeared when fluoroscoped after insufflation of bismuth powder (Fig. 6).

The indications for powdering the stomach are manifold: In ulcer ventriculi, bismuth; in gastric hæmorrhages, antipyrine; in gastralgia, orthoform; and in erosion, protargol can be directly insufflated. Insufflation of the stomach with bismuth powder appears also to be of great help in X-ray examinations of this organ. The points just mentioned, and others, will have to be carefully investigated in a large number of cases in order to ascertain their real value. At present my intention has been merely to describe this method of powdering the stomach. At some later period I hope to publish the results therewith obtained.

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