

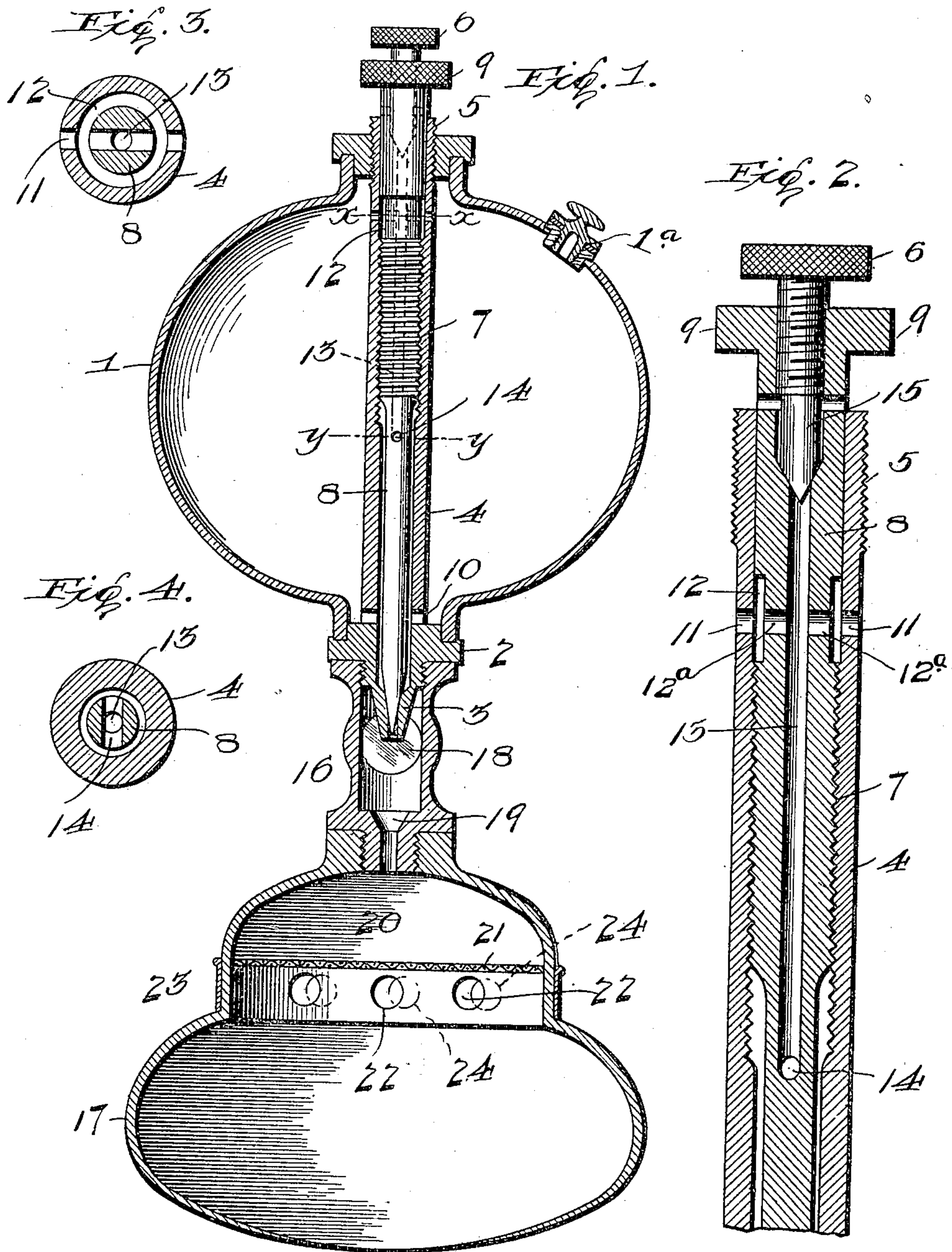
No. 837,171.

PATENTED NOV. 27, 1906.

H. W. WOLFE.

APPARATUS FOR ADMINISTERING ANESTHETICS.

APPLICATION FILED MAR. 6, 1905. RENEWED OCT. 25, 1906.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR ADMINISTERING ANESTHETICS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY W. WOLFE, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Apparatus for Administering Anesthetics; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in apparatus for administering anesthetics.

It has for its object, among others, to provide a compact device for holding the anesthetic and feeding it to the absorbent in the mask.

The invention consists in the features of construction and combinations of parts hereinafter described, and more particularly pointed out in the claims.

In the accompanying drawings illustrating the preferred embodiment of my invention, Figure 1 is a central vertical sectional view of apparatus made in accordance with my invention, the piston being shown in elevation. Fig. 2 is a slightly-enlarged broken sectional view of the upper half of the central tube in the bulb, with the piston also in central section. Fig. 3 is an enlarged cross-sectional view on the line *xx* of Fig. 1, and Fig. 4 is a cross-sectional view on the line *yy* of Fig. 1.

While the preferred embodiment of my invention is illustrated in the accompanying drawings and its construction and operation are described in this specification, the right is reserved to make such changes from the construction shown and described herein as the scope of the claims hereunto appended will permit.

In carrying out my invention I provide a bulb or receptacle for holding the anesthetic, such as chloroform, through the center of which extends a tube mounted on the lower stopper of the bulb. Said tube carries an adjustable stopper or cap for the other end of the bulb near its upper end. Longitudinally adjustable within said tube a plunger-pin is mounted, the lower end of said plunger being pointed and adapted to project into and close a pointed nozzle or opening in the lower stopper of said bulb. The plunger is smaller than the inside of the tube at its lower portion, leaving a passage for the liquid which enters the tube through perforations therein at its

base. Said tube is also provided with one or more perforations near its upper end, which register with perforations in the plunger, which in turn communicate with a central longitudinal passage in said plunger leading to the outside air. Thus air is admitted above the surface of the liquid in the vessel to prevent the creation of a vacuum therein as the liquid passes out. Adjustable means are also provided for stopping and regulating the flow of air into the hull or vessel. Between the bulb and the mask is arranged a tubular connection provided with a sight-aperture preferably covered by glass. Said sight-aperture is arranged directly opposite the end of the pointed nozzle, so that the flow of the liquid therethrough can be readily observed. The mask is provided with a series of perforations below the absorbent-chamber which are adapted to be partially or entirely closed by a similarly-perforated slide mounted around said mask. The perforations and slide enable the attendant or operator to regulate the supply of air to the mask according to the kind and quantity of anesthetic that is to be used in each particular case, the proportions of air and anesthetic being different with different anesthetics.

Referring more particularly to the drawings, 1 indicates the bulb or anesthetic-receptacle provided with the filling-nozzle 1^a; 2, the stopper, carrying the nozzle 3 below it and the tube 4 above. Said tube is screw-threaded at its upper end, as at 5, and carries a similarly screw-threaded stopper or closure 6 for the bulb. The central portion of the interior of said tube is also screw-threaded, as at 7, whereby the screw-threaded plunger-pin 8 is adjustable therein by turning the nut 9 at its upper end. Said plunger-pin is reduced from its lower end up past the perforations 10 in the base of the tube, and the extreme lower end of said plunger is preferably pointed to engage the nozzle 3 and permit of nice adjustments for dropping the liquid therethrough. The perforations 11 near the upper end of the tube register with a broad circumferential groove 12 in the plunger, said groove extending above and below said perforations 11 to permit of the movement of said plunger within the tube without cutting off communication between the interior of the bulb and the inside air via the central passage 13 in said tube communicating with said grooves

12 by means of the perforations 12^a. Said central passage 13 extends down past the apertures 12 and opens by port 14 on the space in the tube around the lower restricted portion of the plunger. By this means should any of the liquid in the bulb become jostled or in any other manner get into the air-passages in the upper portion tube and plunger said liquid will return by way of the central passage 13 to the level of the liquid within the bulb. The outlet of said passage is adapted to be closed by a pin 15, screw-threaded or otherwise adjustably mounted in the end of the plunger.

The connection 16 between the bulb and the mask 17 is tubular in form and is provided with the glass-covered sight-aperture 18 therein opposite the end of the nozzle. The upper end of the passage through the lower end of said tubular connection is flared, as at 19, to insure the free passage of the anesthetic therethrough into the absorbent-chamber 20 of the mask. The absorbent is retained in place by a screen of gauze 21 or other suitable device. Just below said screen are arranged the perforations 22 in the mask, and the slide 23, provided with similar perforations 24, is mounted around the mask, as shown.

It will be readily understood that by the use of this apparatus just enough of the anesthetic to suit the purpose may be administered and the amount being given at any time can easily be ascertained with absolute certainty. It also permits of fine adjustments and allows the flow to be changed or cut off entirely without removing the apparatus from the face of the patient.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In apparatus of the character described, the combination with a mask, of a vessel adapted to hold an anesthetic and a tubular connection, between said vessel and mask, provided with a sight-glass, said vessel having a nozzle extending downward free from the inner walls of said connection, and means to regulate the flow of the anesthetic through said nozzle.

2. In apparatus of the character described, the combination with a mask, of a vessel adapted to hold an anesthetic, and a tubular connection, between said vessel and mask, provided with a sight-glass, said vessel having a tapered nozzle extending downward free from the inner walls of said connection and means to regulate the flow of the anesthetic through said nozzle.

3. In apparatus of the character described, the combination with a mask, of a vessel adapted to contain an anesthetic and having a nozzle at its base, means to regulate the passage of said anesthetic through said nozzle and a connecting-tube between said

vessel and mask having a sight-glass arranged opposite the end of said nozzle.

4. In apparatus of the character described, the combination with a vessel adapted to hold an anesthetic, of a tube extending through said vessel and having a discharge-nozzle arranged below the base of said vessel, said tube provided with perforations near the base of said vessel for the passage of the anesthetic to the nozzle and other perforations near the upper end thereof, an adjustable pin having its lower end of less diameter than the bore of said tube, for closing said nozzle, said pin having a longitudinal passage communicating with the upper perforations in said tube, whereby air is admitted to said vessel, and means to cut off flow through said passage in said pin.

5. In apparatus of the character described, the combination with a vessel adapted to hold an anesthetic, of a tube extending through said vessel and having a discharge-nozzle arranged below the base of said vessel, said tube provided with perforations near the base of said vessel for the passage of the anesthetic to the nozzle and other perforations near the upper end thereof, an adjustable pin, having its lower end of less diameter than the bore of said tube, for closing said nozzle, said pin having a longitudinal passage communicating with the upper perforations in said tube, whereby air is admitted to said vessel, and adjustable means to regulate the flow through said passage in said pin.

6. In apparatus of the character described, a vessel adapted to hold an anesthetic, a tube extending through said vessel and having a discharge-nozzle arranged below the base of said vessel, said tube provided with perforations near the base of said vessel, for the passage of the anesthetic to the nozzle, and other perforations near its upper end, an adjustable pin having its lower end of less diameter than the bore of said tube, said pin having a longitudinal passage communicating with the upper perforations of said tube whereby air is admitted to said vessel, said passage extending below said upper perforations in the tube, and opening in the smaller-diametered portion of said pin, and means to cut off the flow through said passage in said pin.

7. In an apparatus of the character described, the combination, with a mask having an absorbent-chamber, of a vessel adapted to contain an anesthetic, a tubular connection, of less diameter than the absorbent-chamber, arranged between said chamber and the mask, means to regulate the flow of the anesthetic to the mask and a sight-glass in said tubular connection whereby the flow of the anesthetic may be observed.

8. In an apparatus of the character described, the combination with a mask having an absorbent-chamber, of a vessel adapted to contain an anesthetic and having means to

communicate with the mask, said mask
formed of an integral piece flared to form a
cup-shaped absorbent-chamber and thence
curved outward to form the mask proper,
5 said mask provided with air-inlet openings at
the juncture of said absorbent-chamber and
the mask proper, a perforated slide mounted
around said mask for the purpose specified,
and means to regulate the flow of the an-
10 esthetic to the absorbent-chamber.

9. In apparatus of the character described,
the combination of a vessel adapted to con-
tain an anesthetic and having a tubular
extension, of a mask formed of an integral

piece centrally connected to said tubular ex- 15
tension and flared to form a cup-shaped ab-
sorbent-chamber and thence curved outward
to form the mask proper, said mask provided
with air-inlet openings at the juncture of said
absorbent-chamber and the mask proper, 20
and a perforated slide mounted around said
mask for the purpose specified.

In testimony whereof I affix my signature
in presence of two witnesses.

HENRY W. WOLFE.

Witnesses:

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W. J. LLEWELLYN.