No. 827,910. PATENTED AUG. 7, 1906.

J. A. HOLLENBERGER.

APPARATUS FOR ADMINISTERING LIQUID ANESTHETICS.

APPLICATION FILED SEPT. 14, 1905.

Fig. 6.

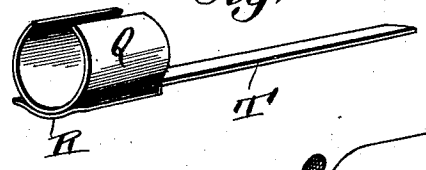


Fig. 1.

Fig. 2.

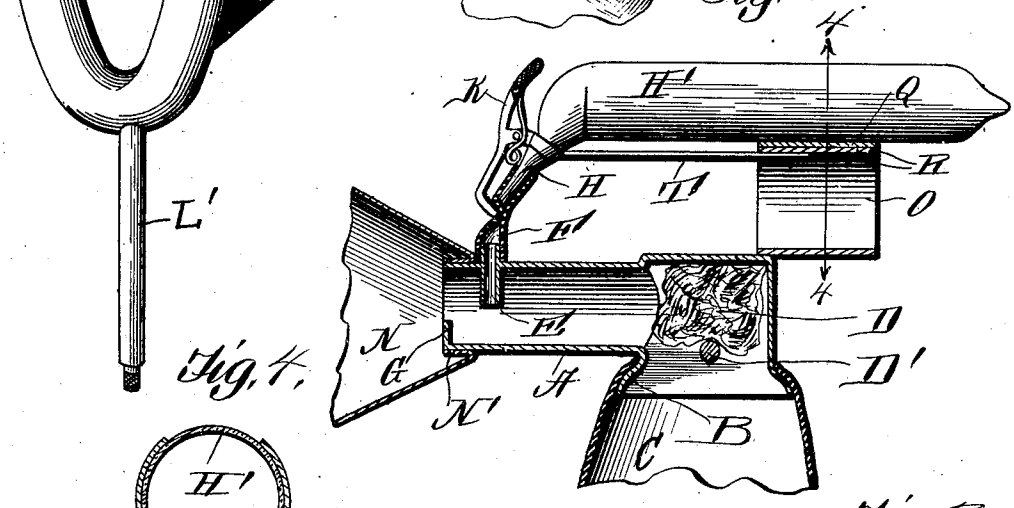


Fig. 4.

Fig. 5.

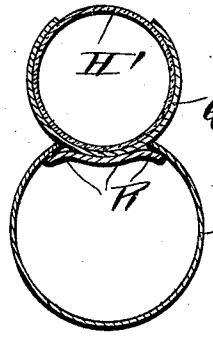
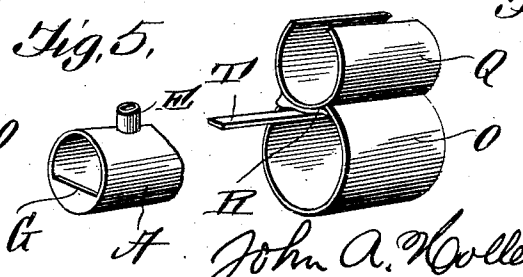


Fig. 3.



Witnesses

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APPARATUS FOR ADMINISTERING LIQUID ANESTHETICS.

No. 827,910. Specification of Letters Patent. Patented Aug. 7, 1906.

Application filed September 14, 1905. Serial No. 278,475.

To all whom it may concern:

Be it known that I, JOHN A. HOLLENBERGER, a citizen of the United States, residing at Hagerstown, in the county of Washington and State of Maryland, have invented certain new and useful Improvements in Apparatus for Administering Liquid 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in inhalers or respirators; and the object in view is to produce an apparatus especially adapted for the administration of somnoform and kelene, both well known and extensively used anesthetics, and in carrying out my invention I aim to produce means whereby the waste of volatile liquids and expensive anesthetics is reduced to a minimum by the provision of apparatus which allows the anesthetic to be turned on or liberated at each inhalation of patient a small quantity at a time. In this way there is absolutely no waste and the patient breathes without any of the usual manifestations of suffocating.

More specifically, the invention comprises a holder for the bottle or tube of the liquid anesthetic and also a flexible and valve-regulated tube through which the anesthetic passes into a passage-way communicating between a mouthpiece and a yielding bag.

My invention comprises various details of constructions and combinations and arrangements of parts, which will be hereinafter fully described, and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved apparatus for administering an anesthetic, a part of the bag being broken away. Fig. 2 is a vertical sectional view through a portion of the apparatus. Fig. 3 is a detail perspective view of the receptacle-holders. Fig. 4 is a cross-sectional view on line 4 4 of Fig. 2. Fig. 5 is a detail perspective view of one end of the shell over which the mouthpiece fits, and Fig. 6 is a detail perspective view of a kelene-tube holder.

Reference now being had to the details of the drawings by letter, A designates a hollow tubular shell, one end of which terminates in an enlarged chambered portion A′, which has its lower end B outwardly flaring, forming a flange over which the contracted opening of the bag C is caught, as shown clearly in the drawings. Said chambered portion A′ contains a sponge D, which is adapted to be saturated with alcohol or any other suitable liquid which is provided for the purpose of acting as a stimulant and offsetting any tendency to nausea to the patient being treated, and a rod D′ is secured in said chambered portion and affords means for supporting the sponge. Opening through said shell is an open-ended tube E, over the outer end of which one end of the flexible tube F is placed, as shown clearly in Figs. 1 and 2 of the drawings, and the other end of said flexible tube is fitted over the nozzle H of the tube H′ of the ordinary receptacles for kelene and somnoform anesthetics. A spring-pressed valve K, which is fastened to the neck of said receptacle H′, holds a part of the flexible tube F against the nozzle end H to prevent the escape of the liquid anesthetic, excepting at such a time as it might be desired to allow the same to escape through the flexible tube F and tube E into the shell A.

G designates a transverse partition which is formed at one end of the shell A and is provided for the purpose of preventing any of the liquid anesthetic from running out the end of the shell.

N designates a mouthpiece of the usual construction, having a tubular pneumatic cushion L about its flaring end which is inflated through the medium of the pipe L′, and the tapering end of said mouthpiece has an inturned part N′, so shaped as to telescope over the outer end of the shell A, as shown clearly in Fig. 2 of the drawings.

Referring to Figs. 1 and 4 will be seen a shell O, which is circular in outline and is fastened to the chambered portion A′ near one edge of the top thereof. Said shell O is provided to receive a bottle, such as commonly contains somnoform, or bottles containing

other anesthetics, and which are provided with nozzles to which the rubber tubing may be connected. Q designates a similar shell to the shell O, adapted to hold the usual kelene-tube, and to the lower portion of the shell Q is fastened a slide-plate R, the edges of which are designed to slide between the yielding edges of the shell O and retain the shell Q securely in place. Projecting forward from the slide-plate R is a supporting-strip T, provided to prevent the kelene-tube from pushing back when pressing on valve, the forward end of said strip engaging the neck of the receptacle H' in the manner shown in Fig. 2 of the drawings.

From the foregoing it will be noted that I provide means for utilizing anesthetic-receptacles of different shapes and sizes, and when it is desired to dispense with the shell Q the latter may be removed from the shell O, and the receptacle, such as is commonly employed in storing somnoform, may be held by the shell O, in which instance the connection being made with the flexible tube, as illustrated in Fig. 2 of the drawings.

By the provision of my improved apparatus for administering liquid anesthetics it will be noted that any loss of the exceedingly volatile anesthetics which are commonly in use is absolutely prevented, for the reason that when the mouthpiece is held over the mouth and nose of a patient the patient inhales the air in the flexible bag and in so doing takes in the anesthetic, which is administered a little at each inhalation through the valve-regulated flexible tube, and in the exhalation from the lungs the air passes back to the bag, which being flexible will yield, and without the escape of any of the anesthetic to the atmosphere.

Heretofore in the administering of anesthetics which are of a highly volatile nature, as in the case of the kelene and the somnoform, a large percentage of the anesthetic is lost, as it evaporates in the atmosphere, and hence it has made the use of these highly-efficient anesthetics a considerable expense, whereas by the provision of my improved anesthetic apparatus I am able to administer volatile liquid anesthetics without any loss whatever.

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

1. An apparatus for administering liquid anesthetics comprising a shell, having a mouthpiece and a flexible bag communicating therewith, an anesthetic-receptacle and holder therefor, a flexible tube communicating between said receptacle and the interior of said shell and mouthpiece, and a valve for holding a portion of said flexible tube over the exit end of said receptacle, as set forth.

2. An apparatus for administering liquid anesthetics, comprising a shell, having a mouthpiece and a flexible bag communicating therewith, a holder secured to said shell, an anesthetic-receptacle supported by said holder, a flexible tube communicating between said receptacle and the interior of said shell and mouthpiece, and a valve adapted to hold a portion of said flexible tube against the exit end of said receptacle, as set forth.

3. An apparatus for administering liquid anesthetics, comprising a shell, having a mouthpiece and a flexible bag communicating therewith, a holder fastened to said shell, an anesthetic-containing receptacle supported by said holder and having a valve-regulated nozzle, an open-ended tube extending through the wall of said shell, a flexible tube fitted over one end of said open-ended tube and also over said nozzle and between the exit end of said nozzle and said valve, as set forth.

4. An apparatus for administering liquid anesthetics, comprising a shell, having a mouthpiece and a flexible bag communicating therewith, one end of said shell having a transverse partition partially closing an opening in the end thereof, and a chambered portion at the other end, the bag having an opening therein connected to said chambered portion, a mouthpiece telescoping over the end of the shell having said partition, an open-ended tube extending through the wall of the shell, a receptacle for a liquid anesthetic and holder therefor, a flexible tube communicating between said receptacle and open-ended tube, and a valve adapted to hold a portion of said flexible tube against the exit end of said receptacle, as set forth.

5. An apparatus for administering liquid anesthetics, comprising a shell, a mouthpiece connected at one end to said shell, its other end having a chambered portion with a bag having an opening, the marginal edges of which are connected to a flange of said portion, a shell fastened to said chambered portion and having its opposite longitudinal edges spaced apart and adapted to yield, a receptacle-holder, a plate secured thereto and adapted to be engaged by said yielding edges of the shell, an anesthetic-containing receptacle supported by said holder, and a valve-regulated tube communicating between the same and the mouthpiece, as set forth.

6. An apparatus for administering liquid anesthetics, comprising a shell, a mouthpiece connected at one end to said shell, its other end having a chambered portion with a bag having an opening, the marginal edges of

which are connected to a flange of said portion, a shell fastened to said chambered portion and having its opposite longitudinal edges spaced apart and adapted to yield, a receptacle-holder, a plate secured thereto and adapted to be engaged by said yielding edges of the shell, a metallic strip secured to said plate and projecting in advance of said holder, an anesthetic-receptacle supported by said holder and said strip, and a valve-regulated pipe communicating between said receptacle and the mouthpiece, as set forth.

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

JOHN A. HOLLENBERGER

Witnesses:

W. C. GRIFFITH,

J. E. KELLER.