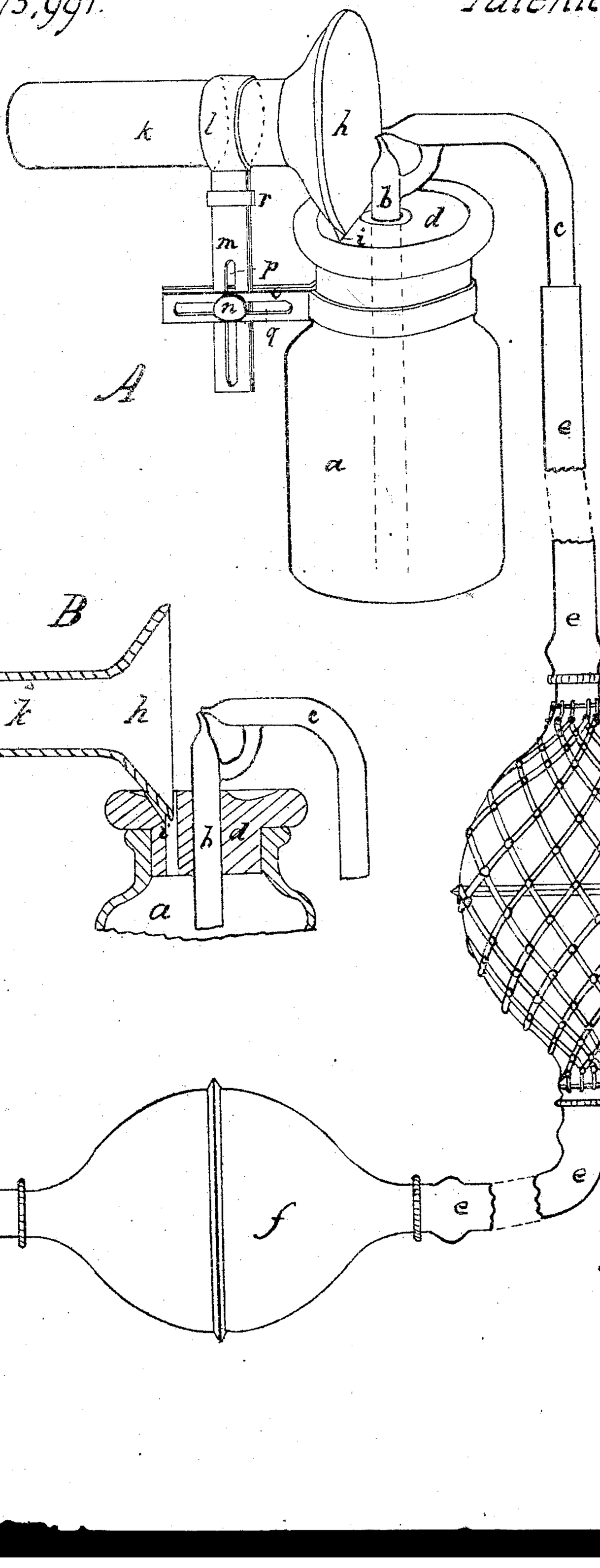
A. M. Shurtleff.

Atomizer.

No. 75,991. Patented Mar. 24. 1868.



Inventor.
A. M. Shurtleff.
by his Attys
Cooby Halsted & Fuller

Witnesses.
L. B. Kidder.
M. W. Frothingham.

United States Patent Office.

A. M. SHURTLEFF. OF BOSTON, MASSACHUSETTS.

Letters Patent No. 75,991, *dated March* 24, 1868.

IMPROVED ATOMIZING-APPARATUS FOR SURGICAL USE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, A. M. SHURTLEFF, of Boston, in the county of Suffolk, and State of Massachusetts, have invented an Improved Atomizing-Apparatus; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practise it.

The invention relates to the construction of an atomizing-apparatus, with reference to the better adaptation of these instruments to the application of atomized fluids in surgical and medical operations, and particularly in administering inhalations.

My invention consists in combining, with the vessel for containing the fluid to be atomized and the atomizing-tubes, a shield for protecting the parts adjacent to the surface or surfaces against which the spray is to be thrown, and a flexible air-bulb or bulbs and pipes, the arrangement or connection of these parts being such as to enable the apparatus to be as easily operated by the person receiving the application as by a physician or other second person.

The invention also consists in making the shield with a mouth-tube, which enables the atomized fluid to be applied directly to that part of the throat or mouth to be treated, and in supporting the shield by a band or ring encompassing the mouth-tube, this band being at the top of an upright, which sustains the shield in position relatively to the fluid-containing vessel.

The invention further consists in connecting the shield directly with the top of the fluid-cup or vessel, in such manner that the shield will drip into the said cup or vessel.

Also in the construction of the stopper or cover to the fluid-cup or vessel, and in the manner of connecting the shield to or with relation to the fluid-vessel.

The drawings represent an apparatus embodying my improvements.

A shows a perspective view of the apparatus; B, a section through the mouth of the shield and the top of the fluid-vessel. *a* denotes the vessel for holding the liquid to be atomized and applied; *b c*, the atomizing-tubes, the tube *b* projecting down into the vessel or cup *a*, through a rubber stopper, *d*, and the air-tube *c* being connected by a flexible tube, *e*, with the air-bulb or elastic pump *f*, by working which the medicated liquid is drawn from the vessel and projected from the point of the fluid-tube in the form of spray, as is well understood. Connected to the vessel *a*, or to a base upon which said vessel is secured, is a shield, *h*, preferably made of glass, placed in the line of the eduction-end of the air-tube, and in such proximity with the point thereof, that all the spray thrown from the tubes is received within the shield, and is concentrated towards the centre thereof.

To conduct the excess of spray condensing upon the surfaces of the shield back into the fluid-vessel, the stopper *d* is provided with an elongated orifice, *i*, down into which the outer edge of the shield is entered, as seen in the drawings, the orifice opening into the vessel *a*, as seen at B.

As the fluid is exhausted from the vessel by the atomization, air drawn in through the orifice *i* to supply the place thereof, establishes a downward current through such orifice, which current takes with it the condensed liquid excess.

Projecting from the rear of the shield is a mouth-tube, *k*, which serves, while directing the current of spray against any part of the throat or other surface back from the mouth, to prevent the liquid from touching other than such surface, and also serves to keep the tongue from projecting up into the current of spray.

The shield and tube-piece are shown as held in place, relatively to the atomizing-tubes, by an encompassing band or ring, *l*, which is formed upon or fixed to a suitable standard, *m*, which standard may project from a base made to hold the vessel *a*, or may be connected directly with and supported by said vessel, as seen at A. To its connection with the vessel or base it may be hinged or jointed, as seen at *n*, so that the shield can swing up and away from the vessel, to allow the stopper *d* to be removed, the joint being such that the shield always swings down into place with relation to the stopper-orifice.

When connected directly with the vessel *a*, as shown, the two pieces *m* and *o* may have slots *p q*, (through which the joint-pin *n* extends,) by means of which the piece *m* may be adjusted in height or in distance (laterally) from the vessel *a*, to accommodate shields and mouth-tubes of different sizes or forms.

The band or ring *l* is made in halves, said halves forming parts of or extensions from corresponding parts of the piece *m*, a clasp, *r*, being slipped up towards or down from the ring, to clamp the halves against the tube, or to loosen them with respect thereto; this construction of the ring *l* also facilitating the application of tubes of various sizes.

In using this apparatus, the vessel *a* may be readily grasped and held in one hand in position for administering the atomized medicated liquid, while the bulb *f* may be as readily grasped and operated by the other hand, or the vessel *a* may be placed upon a table, or upon a base forming part of the apparatus.

I claim the combination of the elastic bulb *f*, and its flexible connection, with the atomizing-tubes, the vessel *a*, the atomizing-tubes *b c*, and the shield *h*, substantially as described.

I also claim constructing the shield *h* with a mouth-tube, *k*, substantially as set forth.

Also, arranging the mouth of the shield to drip directly into the vessel *a*, substantially as shown and described.

Also, making the stopper *d* with an orifice, *i*, for receiving the edge of the shield, and conducting the excess of fluid back into the vessel, substantially as described.

Also, supporting the shield by means of a ring or band encompassing the mouth-tube, substantially as set forth.

Also, connecting the shield directly to and supporting it by the liquid-containing vessel, substantially as described.

Also, applying the shield so as to swing up from and down into connection with the orifice *i*, substantially as set forth.

Also, applying the standard *m* so as to be adjustable in height and in distance from the vessel *a*, substantially as and for the purpose set forth.

Also, a stopper of rubber or rubber-compound, when made with a centre-hole for insertion of the atomizing-tube, and an orifice for return of the excess of fluid, substantially as set forth.

A. M. SHURTLEFF.

Witnesses:

FRANCIS GOULD,

L. H. LATIMER.