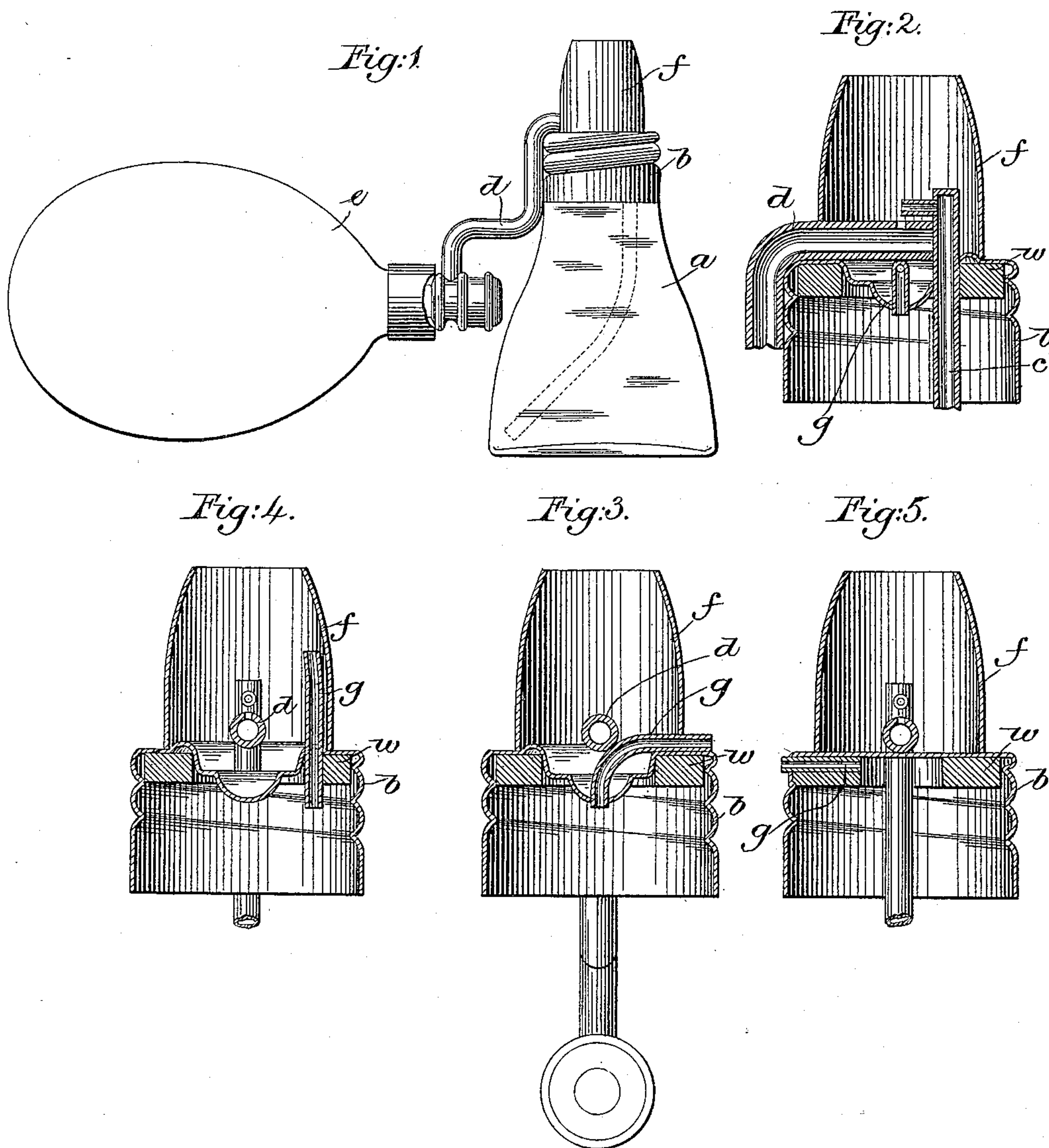


(No Model.)

A. M. SHURTLEFF.
ATOMIZER.

No. 451,078.

Patented Apr. 28, 1891.



Witnesses:

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UNITED STATES PATENT OFFICE.

ASAHEL M. SHURTLEFF, OF BOSTON, MASSACHUSETTS.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 451,078, dated April 28, 1891.

Application filed November 24, 1890. Serial No. 372,515. (No model.)

To all whom it may concern:

Be it known that I, ASAHEL M. SHURTLEFF, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Atomizers, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve the construction of atomizers, the improvement herein to be described and claimed being more especially adapted for nasal atomizers.

My invention consists in the combination of a vessel or vial, a cap or stopper therefor, a nozzle erected on said cap or stopper and forming in conjunction therewith a condensed-spray-retaining receptacle, atomizing-orifices contained in said nozzle, an air-tube connected with an air-forcing device to conduct the air to the air-orifice, and a liquid-tube extending down through said cap or stopper into the vessel to conduct the liquid to the liquid-orifice, and another tube extending through the said cap or stopper to supply the vessel with air, the entrance to said tube being located so that it does not permit the entrance of the condensed spray, substantially as will be described.

Figure 1 shows in side elevation a nasal-atomizer to which my invention may be applied; Fig. 2, a vertical section of the cap or stopper, atomizing-orifices and nozzle, and an independent air-inlet tube, on an enlarged scale; Fig. 3, a vertical section of the parts shown in Fig. 2, taken in a vertical plane at right angles to the plan taken in Fig. 2; Fig. 4, a modification to be referred to; Fig. 5, another modification to be referred to.

The vessel *a* has a cap or stopper *b*, herein shown as a metallic screw-threaded cap adapted to fit upon the neck of the vessel *a*, a suitable washer being placed in said cap to insure a tight connection. The liquid-tube *c* extends down through the cap *b* into the vessel *a*, and the air-tube *d*, leading from a suitable air-forcing device, as *e*, joins the liquid-tube *c* at substantially right angles, as best shown in Fig. 2. The tubes *c* & *d* each have an orifice, one of which is arranged over the

other, and which constitute the atomizing-orifices. A nozzle *f* is secured to the cap or stopper *b*, inclosing the atomizing-orifices.

An independent air-inlet tube is provided for supplying the vessel *a* with air, which, as herein shown, consists of a bent tube *g*, (see Figs. 2 and 3,) placed in the nozzle *f*, one end of which tube passes down through the cap or stopper *b* at or near its center and the other end passes out through the side wall of the nozzle *f* at or near its base. By means of this independent tube *g* air is taken from a fresh source to supply the vessel *a*. The nozzle *f* is made quite large in diameter to serve as a retaining-well for the condensed spray, and is made conoidal to enter the nostril. Referring to Fig. 4, the tube *g* is also placed in the nozzle *f* and extends down through the cap or stopper, and instead of passing out through the side wall of the nozzle it extends vertically nearly to the top of the nozzle; but I deem the construction shown in Figs. 2 and 3 preferable.

Referring to Fig. 5, the cap *b* has a nozzle *f* and a packing-ring *w*, and the independent air-inlet tube *g* passes through said cap just above the packing-ring.

I claim—

In an atomizer, a vessel or vial, a cap or stopper therefor, a nozzle erected on said cap or stopper and forming in conjunction therewith a condensed-spray-retaining receptacle, atomizing-orifices contained in said nozzle, an air-tube connected with an air-forcing device to conduct the air to the air-orifice, and a liquid-tube extending down through said cap or stopper into the vessel to conduct the liquid to the liquid-orifice, and another tube, as *g*, extending through the said cap or stopper to supply the vessel with air, the entrance to said tube being located so that it does not permit the entrance of the condensed spray, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ASAHEL M. SHURTLEFF.

Witnesses:

BERNICE J. NOYES,
EMMA J. BENNETT.