

(No Model.)

G. LAUBENDORFER & F. LIPP.
ATOMIZER.

No. 474,605.

Patented May 10, 1892.

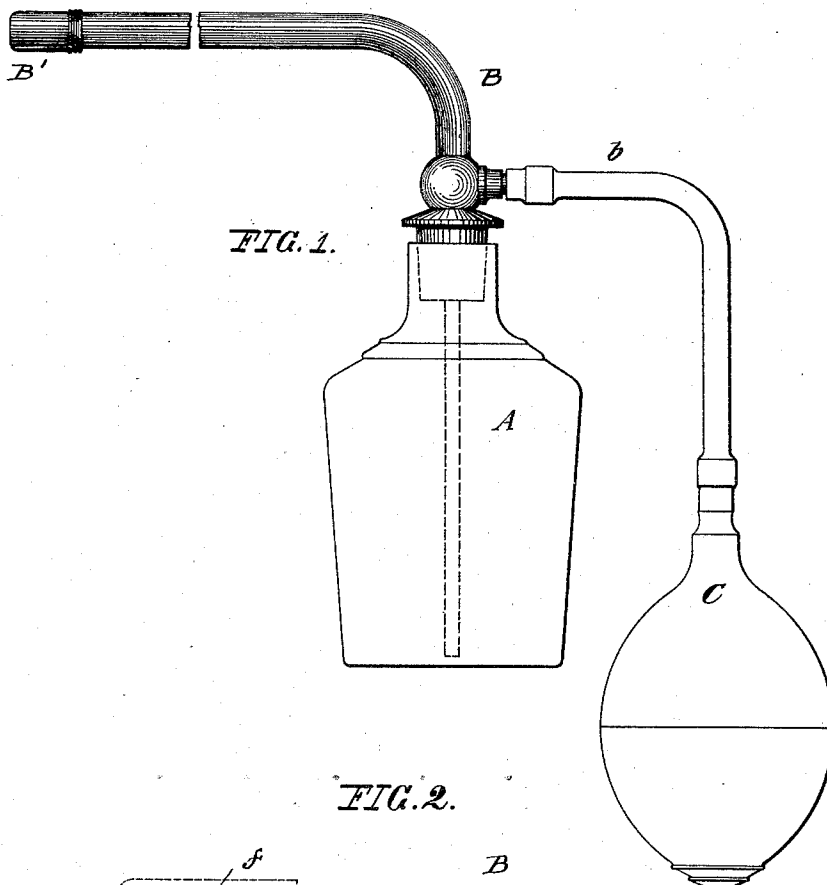


FIG. 1.

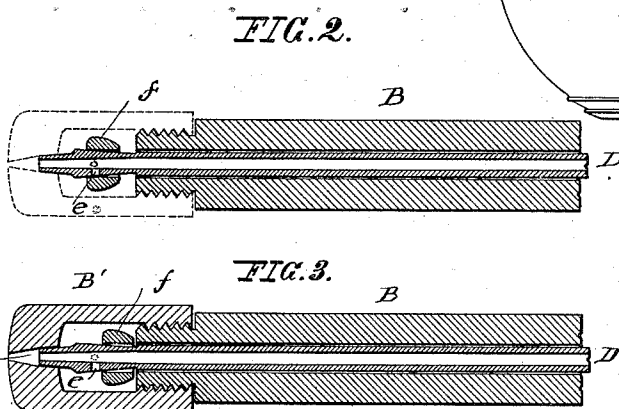


FIG. 2.

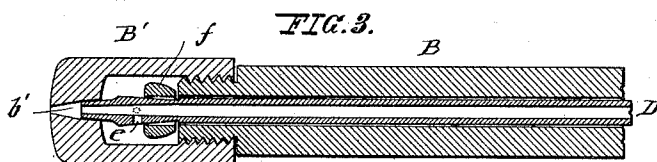


FIG. 3.

WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE LAUBENDORFER AND FREDERICK LIPP, OF NEW YORK, N. Y.,
ASSIGNORS TO WILLIAM HUGERSHOFF, OF SAME PLACE.

ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 474,605, dated May 10, 1892.

Application filed December 26, 1891. Serial No. 416,111. (No model.)

To all whom it may concern:

Be it known that we, GEORGE LAUBENDORFER and FREDERICK LIPP, both citizens of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Atomizers, of which the following is a specification.

This invention relates to an improved nozzle for atomizers whereby a uniform action of the same and a regular and continuous spray is produced, or when the spray is to be discontinued a regular jet action can be obtained; and it consists of a nozzle for atomizers, composed of a detachable cap having a discharge-opening screwed to the end of the air-supply tube and a suction-tube that passes through the air-supply tube and fits into the discharge-opening of the cap, the end of the suction-tube being provided with an aperture, so that the air is compelled to pass through said opening into the suction-tube and produce thereby the spray. On the end of the suction-tube is arranged a sliding collar, by which the opening in the air-suction tube can be closed whenever it is desired to produce a jet action by the nozzle.

In the accompanying drawings, Figure 1 represents a side elevation of an atomizer with our improved nozzle; and Figs. 2 and 3 are vertical longitudinal sections of the nozzle drawn on a larger scale and showing the sliding collar on the end of the suction-tube, respectively in position for closing the aperture in said suction-tube and in the position in which the same is uncovered.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a bottle or other vessel containing the liquid to be atomized.

B is the air-supply tube, which is preferably made of hard rubber and inserted by means of a cork into the mouth of the bottle A.

To the air-supply tube B is connected an elastic tube *b* with an air suction and compressing bulb C, by which the air is pumped into the air-tube B in the usual manner. To the end of the air-tube is screwed a cap-shaped nozzle B', which is provided with a conically-

tapering discharge-opening *b'*. The suction-tube D passes into the vessel A and through the air-tube B into the nozzle B', its tapering end being correctly fitted into the discharge-opening *b'* of the nozzle, so that no air can escape around the same to the outside of the nozzle B'. The suction-tube D is provided at some distance from its end with one or more apertures *e*, through which the air that is supplied from the air-tube B is compelled to pass into the end of the suction-tube and then through the aperture in the nozzle B'. The air in its passage through the end of the suction-tube acts on the liquid and breaks the same up and atomizes it, so as to form a fine spray of uniform density. Whenever it is desired to have a jet action instead of a spray, the nozzle B' is unscrewed and the collar *f*, that is placed on the end of the suction-tube D, moved forward, so as to close the aperture *e*. In this case the air cannot pass through the opening *e*, but is compressed in the vessel A, so that instead of a spray a regular jet is ejected from the nozzle. In this manner the nozzle can be adjusted at will either for atomizing action or jet action, as desired.

The construction described has the advantage that the nozzle produces always a reliable atomizing action without any tedious adjustment of the nozzle, the simple screwing of the nozzle on the air-supply tube producing a tight fit between the nozzle and the suction-tube, so that the air is compelled to pass through the opening in the end of the suction-tube and produce the breaking up or atomizing action on the liquid. No time-consuming adjustment of the nozzle is required and a uniform atomizing action is obtained.

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

1. The combination of an air-supply tube, a nozzle screwed over the same, said nozzle having a conically-tapering opening, and a suction-tube provided with a tapering end that is adapted to fit tightly into the discharge-opening of the nozzle, said suction-tube being provided with a lateral aperture, through which the air has to pass on its way through the discharge-orifice of the nozzle, so

as to produce an atomizing action, substantially as set forth.

2. The combination of the air-supply tube of an atomizer with a nozzle applied to the
5 same, said nozzle having a discharge-opening, a suction-tube the end of which is fitted into the discharge-opening of the nozzle and provided with an air-aperture at some distance from the end, and a collar on the end of the
10 suction-tube, which is adapted to be placed over the aperture in the same so as to prevent

the atomizing action and to produce a jet action of the atomizer, substantially as set forth.

In testimony that we claim the foregoing as our invention we have signed our names in
15 presence of two subscribing witnesses.

GEORGE LAUBENDORFER.
FREDERICK LIPP.

Witnesses:

PAUL GOEPEL,
CHARLES SCHROEDER.