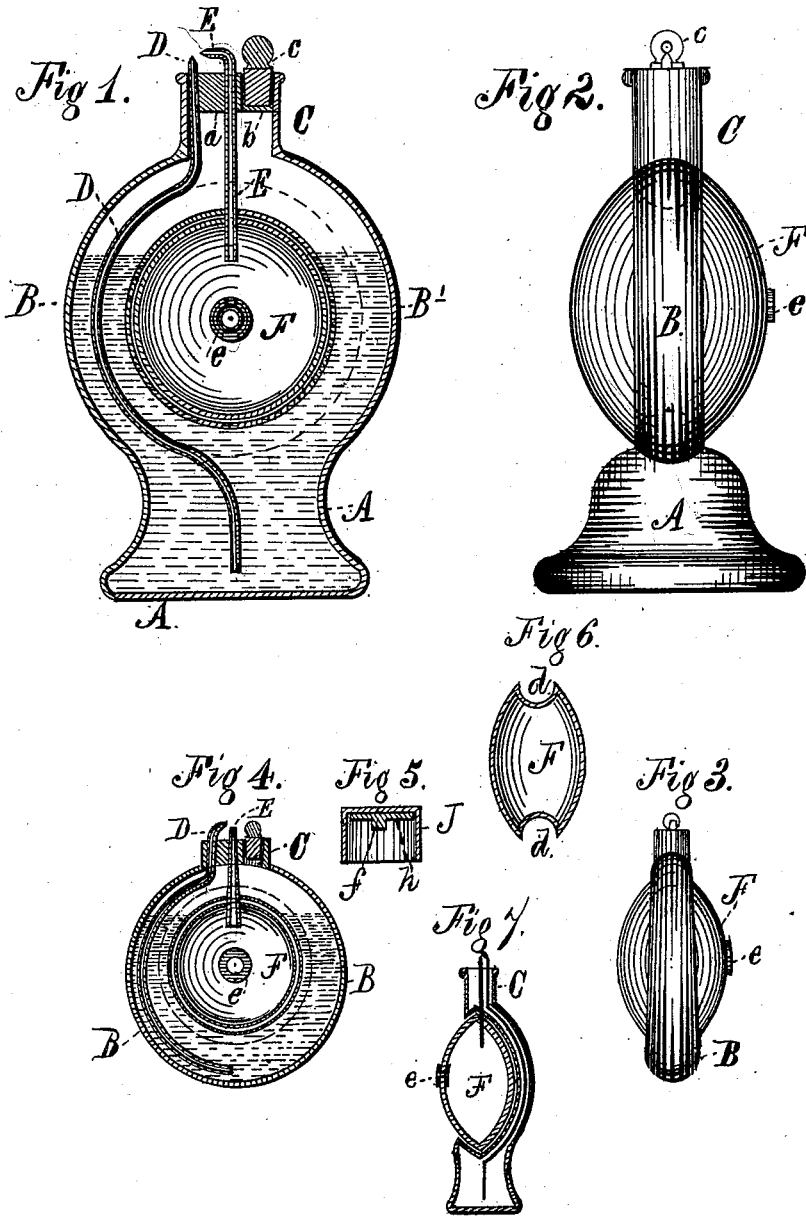


L. WILKINSON.  
Atomizer.

No. 201,898.

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# UNITED STATES PATENT OFFICE.

LEWIS WILKINSON, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN ATOMIZERS.

Specification forming part of Letters Patent No. **201,898**, dated April 2, 1878; application filed August 29, 1876.

*To all whom it may concern:*

Be it known that I, LEWIS WILKINSON, of the city of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Atomizers or Vaporizers, of which the following is a specification:

This invention relates to that class of apparatus usually known under the name of "atomizers" or "vaporizers," and arranged and used for the purpose of converting liquids into a jet of spray or vapor by the application of a jet of air under pressure across a small minute column of liquid; and in the present instance the invention consists in the presentation of the entire apparatus in a new, attractive, and compact form, and adapted both for pocket and toilet use. Its peculiarities consist, mainly, in the novel shape of the vessel and bulb, and in the method of attaching the bulb to the vessel, all of which, together with the details of construction and operation, will hereinafter be fully pointed out and described.

In the drawings which form a part of this specification, Figure 1 represents an end elevation of an atomizer in which is fully embodied my invention. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is an end elevation of an atomizer arranged for pocket or portable use. Fig. 4 is a vertical longitudinal section of the same. Fig. 5 is a detached sectional view of the cap or cover for the same. Fig. 6 is a cross-section of the rubber bulb, and Fig. 7 represents a modification of my invention.

The same letters of reference found in the several figures of the drawings will designate and locate corresponding parts.

The many and varied forms of atomizers and vaporizers now in use are well known, as well as the fact that many objections are found in their practical use. The main difficulty has been found in their cumbersome shape, and from the necessity of using both hands in their manipulation, one hand holding the rubber bulb, the other the vessel.

The application of the collapsible rubber bulb to the vessel and its retention in place, and the ease with which it is manipulated, are of great importance.

In my invention I have aimed to obviate all the faults heretofore found, and to present an atomizer not only entirely different in its outward shape as regards the liquid-vessel and the collapsible bulb, but to produce an apparatus adapted to both the toilet-table and for pocket use.

The advantages of an atomizer that is so arranged that it can be carried about the person, and the innumerable occasions upon which such an article is called for, are well known, and so apparent that they need not be detailed herein.

In the case of an atomizer designed for the toilet-table and ordinary use, the liquid-vessel is shaped as shown in Figs. 1 and 2, its base A being oblong or circular in shape. From the top of this base the vessel takes a ring-shaped formation, as is distinctly shown in Fig. 2, thus forming two arms, B and B', both of which are filled with liquid, as well as the base A. The apex of this ring is formed into a mouth or neck, C, similar to that of the neck of a bottle. This vessel may be blown from glass or constructed from metal by means of any of the well-known mechanical processes, or cast from any other suitable material.

D is the liquid-tube, and E the air-tube. They are arranged in the usual manner to atomize or spray the liquid by crossing the jet of air under pressure over the liquid-tube, both tubes being passed through the plug *a*, and being securely fastened therein. This plug *a* is also provided with an opening, *b*, through which the liquid is introduced into the vessel, and it has a stopper, *c*, of any ordinary form.

When inserted in the neck C of the liquid-vessel, the liquid-tube D passes through one arm of the ring B B' and reaches to the bottom of the vessel, as shown, while the air-tube passes through the ring and projects a short distance below its exterior.

The rubber bulb F is convex in form, as shown in Fig. 6, and is provided with a cavity or recess, *d*, which extends around its entire circumference, corresponding in its shape with the shape of the ring B B'. This bulb is provided with an open air-valve, *e*, as is usual in such cases. When this bulb is inserted in the vessel A the recess *d* closely fits the ring B B', extending over one-half of its circumference,

as shown by the dotted lines, its shape and the elasticity of the rubber causing it to be retained securely in its position.

The air-tube E enters the bulb through a perforation provided in its top for that purpose. It is obvious that, on compressing the bulb F between the fingers, the thumb covering the valve *e*, the air therein contained is expelled through the tube E and across the top of the liquid-tube D, drawing the liquid therefrom and dispersing it in the form of spray or vapor. On releasing the pressure from the bulb it at once expands to its normal position, and the operation may be repeated.

In adapting my invention as a portable or pocket atomizer I dispense with the base A, as previously described, and simply use a vessel of proper size, preferably formed in the shape of a ring, as shown in Fig. 4, the collapsible bulb and the air and liquid tubes being arranged substantially as in the case described, the neck and opening for the introduction of the liquid being modified to meet the change in the size and use of the apparatus.

To prevent the liquid from escaping from the liquid-tube D when it is carried in the pocket or about the person, I provide a cap, J, which is shown as detached from the vessel in Fig. 5, and in the apex of this cap I affix a suitable rubber packing, *h*, which has depending from it a projecting piece, *f*. This packing being cut to fit the interior of the cap, its elasticity will cause it to remain in place; or it may be secured therein by any suitable means. When this cap is applied over the neck C of the vessel this projection *f* will rest upon or press against the top of the liquid-tube D, thus closing its orifice and preventing the escape of liquid therefrom. This cap may be used on both forms of the apparatus, and, if desired, it may be hinged thereto, and varied in form to suit the circumstances.

While I prefer the ring-shaped formation for retaining the rubber bulb in place, yet the shape of the vessel may be changed and modi-

fied to suit the fancy, the main object being to so introduce the rubber bulb through the body of the vessel that it may be grasped on both sides and operated from either.

It is obvious that many variations in the form of the apparatus may be made, one of which is shown in the sectional view marked Fig. 8. In this case, instead of forming an opening through the vessel, a recess is formed in the side thereof, into which the rubber bulb is inserted, the air and liquid tubes and other parts being arranged as in the previously-described apparatus.

The pocket apparatus may be provided with chains and hooks, by means of which it may be attached to a belt or to a fan, if so desired.

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

1. In an apparatus arranged for converting liquids into vapor or spray, the combination of a vessel provided with the usual air and liquid tubes, having an opening through its body for the reception of a collapsible bulb, and a collapsible bulb provided with an air-valve, both being arranged, applied, and operating conjointly, as herein shown and set forth.
2. The combination of the ring-shaped vessel B, liquid-tube D, air-tube E, cap J, provided with packing *h*, and rubber bulb F, arranged, applied, and operating as and for the purposes as herein shown and set forth.
3. The collapsible rubber bulb F, provided with the depression or recess *d* and air-valve *e*, arranged for insertion in an opening in the body of a liquid-vessel, as and for the purposes as herein shown and set forth.
4. The cap J, provided with packing *h*, having projection *f*, in combination with an atomizer, arranged and operating substantially as herein shown and set forth.

LEWIS WILKINSON.

In presence of—

A. L. MUNSON,  
WM. J. SCHILLING.