

No. 750,260.

PATENTED JAN. 26, 1904.

F. B. COMINS.  
ATOMIZER.

APPLICATION FILED SEPT. 11, 1903.

NO MODEL.

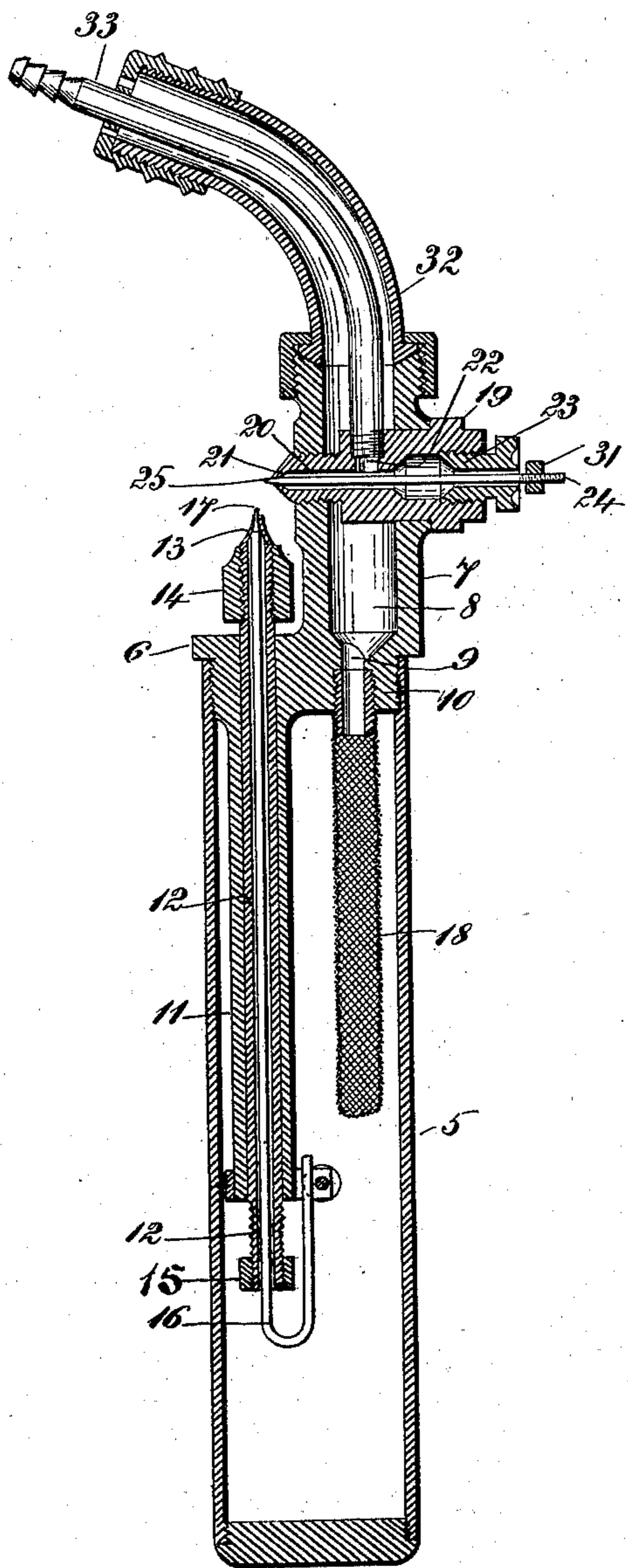


Fig. 1.

WITNESSES:

Wm. H. Varnum  
S. Goetzay.

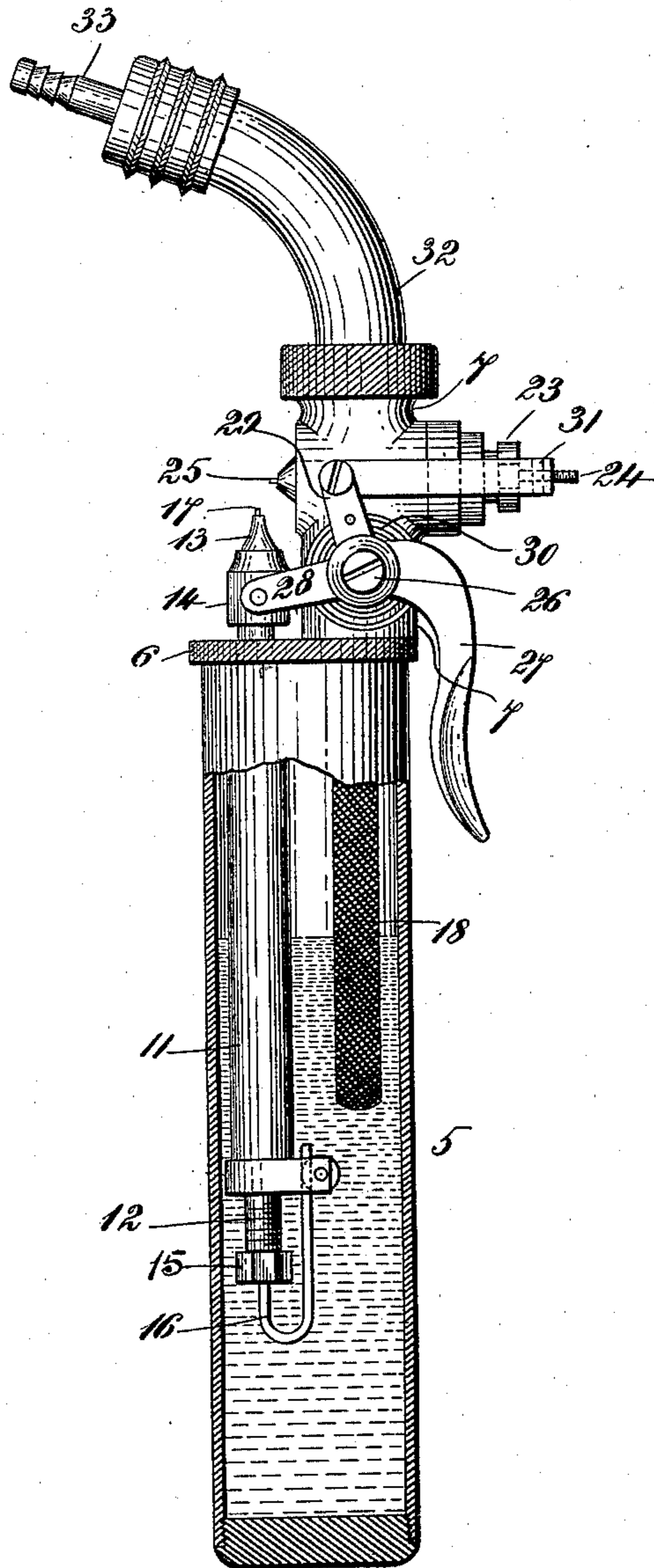


Fig. 2.

INVENTOR=  
Frank B. Comins  
per Henry J. Miller  
att'y.

# UNITED STATES PATENT OFFICE.

FRANK B. COMINS, OF SHARON, MASSACHUSETTS, ASSIGNOR TO  
AMERICAN MOISTENING COMPANY, OF BOSTON, MASSACHU-  
SETTS, A CORPORATION OF MAINE.

## ATOMIZER.

SPECIFICATION forming part of Letters Patent No. 750,260, dated January 26, 1904.

Application filed September 11, 1903. Serial No. 172,768. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK B. COMINS, of Sharon, in the county of Norfolk and State of Massachusetts, have invented certain new and  
5 useful Improvements in Atomizers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has reference to improvements in atomizers designed to reduce moisture to atomic spray.  
10

The object of the invention is to provide a simple and convenient atomizer to which when under operation a constant supply of fluid and air or gas may be supplied, the delivery of  
15 spray from the atomizer being constantly under the control of the operator.

The object of the invention is also to more perfectly control the delivery of spray from the atomizer and to positively clear the outlet-  
20 orifices from time to time.

The invention consists in the means whereby water or other liquid to be atomized and air or other gas may be received from supply-pipes and the means for controlling the de-  
25 livery of atomic spray from the device.

The invention also consists in the means for controlling the water-supply.

The invention also consists in the fixed air-nozzle and in the combination therewith of  
30 the movable water-nozzle.

The invention also consists in such other novel features of construction and combination of parts as will hereinafter be more fully described in their preferred forms, and pointed  
35 out in the claims.

Figure 1 represents a vertical sectional view of the improved atomizer. Fig. 2 represents an elevation, partially in vertical section, of the same.

40 Similar numerals of reference designate corresponding parts throughout.

As illustrated in the drawings in its preferred form, 5 indicates a reservoir in the nature of a handpiece and provided with the fitting 6, on which the working parts of the atomizer are mounted. The fitting 6 has the vertically-channeled neck 7, the channel 8 of  
45 which has the contracted extension 9, leading

through the base 10, this base having a screw-threaded portion to which the reservoir 5 may  
50 be screwed and the depending tubular guide 11, extending into said reservoir.

Within the tubular guide 11 is movably mounted the water-tube 12, having the tapering orifice 13 and furnished with the enlarged  
55 collar 14, the nut 15 being secured to the lower end of the water-tube to limit the upward movement thereof when intercepted by the end of the tubular guide 11. To the lower  
60 portion of the guide 11 is secured the bent portion of the clearer rod or wire 16, this rod extending upward through the bore of the tube 12 and having the conical end 17, adapted to fit the orifice 13 and to act as a closing-valve  
65 therefor, while the extreme end of this conical portion is adapted to extend through said orifice to mechanically clear the same from any solid matter which may gather therein.

The filter 18 is secured to the base 10 immediately below the channel 9 in order to fil-  
70 ter the water passing into the reservoir 5.

In transverse perforations of the neck 7 is secured the plug 19, having the longitudinal channel 20, furnished with internally-tapered orifice 21 and the lateral channel 22. Into the  
75 enlarged portion of the channel 20 is screwed the perforated nut 23, and working in the perforation of this nut and in the channel 20 is the clearer-rod 24, having the conical end 25, adapted to seat itself as a valve in the tapered  
80 orifice 21, and having an end portion adapted to extend through said orifice.

Secured in one side of the neck 7 is the stud 26, and on this stud is movably mounted the thumb-lever 27, having the arms 28 and 29  
85 and furnished with the coiled spring 30, one end of which is secured to the arm 29, while the other end is fixed to the neck 7. The arm 28 is pivotally connected with the enlarged collar 14 of the water-tube 12, while the arm  
90 29 is pivotally connected with the member 31, fixed on the clearer-rod 24.

To the upper end of the channeled fitting 7 is secured the water-supply pipe 32, adapted to be connected with any source of water-sup-  
95 ply, and to the channel 22 of the plug 19 is

connected the air or pressure supply tube 33, adapted to be connected with any source of pressure-supply.

With the parts in the positions shown in the drawings, the tubes 32 and 33 being connected, respectively, with water and air pressure supplies, the water and air outlets are closed, and the entrance of dust or other foreign matter to the orifices is prevented by the ends 17 and 25 of the respective valves. The initial movement of the thumb-piece of the lever 27 toward the reservoir 5 will effect the moving backward of the rod 24 sufficiently to carry the valve formed by the end of this rod away from its seat, permitting air to pass through the orifice 21; but at this time the orifice 13 of the water-tube 12 is located outside the area affected by the action of the air passing from the orifice 21, and no water will pass from said orifice 13. Continued movement of the thumb-piece toward the reservoir 5 will result in moving the tube 12 upward by means of the arm 28 until the orifice 13 is moved away from its seat on the conical end of the rod 16 and enters the area of the atmosphere displaced by the air under pressure passing from the orifice 21, the water from the reservoir 5 now passing up the tube 12 and out of the orifice 13, where it is atomized by the pressure of the air passing from the orifice 21 and is directed to the article to be moistened.

This implement provides a convenient means for applying moisture in atomic form to articles or material under process of manufacture, as it may be conveniently located for immediate use without danger of the accidental or overapplication of moisture, while the supply of water is always unlimited and orifices cannot become clogged.

When the thumb-piece of the lever 27 is released, the spring 30 acts to swing this lever and to operate the tube 12 to seat the orifice 13 on the end 17 of the wire 16 and to move the rod 24 forward until its end 25 is seated in the orifice 21 of the channel 20.

It is evident that the construction of the device may vary considerably from the preferred structure herein shown, the water and pressure supplies may be led to the orifices from a different direction than that shown, and other changes may be effected without departing from the spirit of this invention, and I do not desire to restrict my invention in any manner except as hereinafter claimed.

Attention is particularly called to the convenience with which this device may be used for the double operation of first applying liquid and then permitting the retraction of the tube 12 to a point where no liquid will be delivered therefrom while the rod 24 is still held away from its seat to permit the air to flow from the orifice 21 to act as a drying medium where too much moisture has been applied or when the liquid supplied to the reservoir car-

ries coloring or other matter from which it is desired to remove the moisture soon after its application to any article or material.

By loosening the screw-collar connecting the pipe 32 with the channeled portion 7 the pipes 32 and 33 may be swung to any convenient position.

It is herein understood that the terms "water" and "liquid" include any liquid which is adapted to be used in an implement of the nature described and that such water and liquid may carry coloring-matter or matter of a chemical or medicinal nature. The term "pressure" or "air-pressure" is intended to designate any pressure adapted for the atomization of the liquid referred to.

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

1. An atomizer comprising a reservoir, a liquid-feed pipe connected therewith, atomizer means mounted on the reservoir, and a pressure-supply pipe connected to such atomizer means.

2. An atomizer comprising a reservoir, a liquid-feed pipe connected therewith, a fluid-delivery tube, a pressure-tube mounted on the reservoir, and a pressure-supply pipe connected with such pressure-tube.

3. An atomizer comprising a reservoir, a liquid-delivery tube movably mounted in the reservoir and extending therefrom, a pressure-tube fixed on an extension from said reservoir, means for moving the liquid-delivery tube toward the pressure-tube, and supply-pipes connecting respectively with the reservoir and with the pressure-tube.

4. An atomizer comprising a fixed pressure-tube having a contracted outlet, a rod movably mounted in said tube and having an end adapted to close said outlet, a liquid-delivery tube movably mounted with respect to the pressure-tube and having a contracted outlet, a rod fixed in position and extending through the bore of the liquid-delivery tube and having a contracted end adapted to close the outlet of said tube, and means for moving the rod of the pressure-tube away from its closing position and the liquid-supply tube away from its rod.

5. An atomizer comprising a fixed pressure-tube, a liquid-supply tube movably mounted, a valve mounted within the supply-tube and fixed against movement, and means for moving the supply-tube away from its valve.

6. An atomizer comprising a fixed pressure-tube, a movable liquid-supply tube, movable means for closing and clearing the outlet of the pressure-tube, fixed means for closing and clearing the outlet of the liquid-supply tube and means for operating the movable closure of the pressure-tube and the movable liquid-supply tube.

7. The combination with the reservoir 5, the fitting 6 having the channeled portion 7 secured to said reservoir, a liquid-supply pipe con-

nected with such channeled portion, a pressure-tube mounted on said fitting; and a pressure-supply pipe connected therewith, of a liquid-delivery tube extending from the reservoir.

5 8. The combination with the reservoir 5, the fitting 6 having the base 10 and the tubular extension 11, secured to such reservoir, and the tube 12 movably mounted in the extension 11 and having a contracted outlet, the rod 16 secured to the extension 11 and extending  
10 through the bore of the tube 12, said rod having an end adapted to act as a valve and a clearer for the outlet in such tube, of means for moving the tube 12 to open its outlet.

15 9. The combination with the base 10 having the tubular extension 11 and the channeled portion 7, the plug 19 having the perforation 20 and the outlet 21 secured in said channeled portion, the rod 24 movably mounted in said  
20 perforation, the tube 12 movably mounted in the extension 11, and the rod 16 secured to

such extension and extending through the tube 16, of the thumb-lever 27, pivotally mounted on the portion 7, and having the arms 28 and 29, the arm 28 being connected with the tube 25 12, the member 31 connected with the arm 29 and with the rod 24, and the spring 30 connected with said lever and with the portion 7 and adapted to retract said arm, as and for the purpose described. 30

10. In an atomizer, the combination with a reservoir, of a liquid-supply pipe connected therewith, a pressure-supply pipe located within the liquid-supply pipe, and a pressure-tube with which the pressure-supply pipe is connected. 35

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

FRANK B. COMINS.

Witnesses:

CHARLES B. CUMMINGS,  
HENRY J. MILLER.