

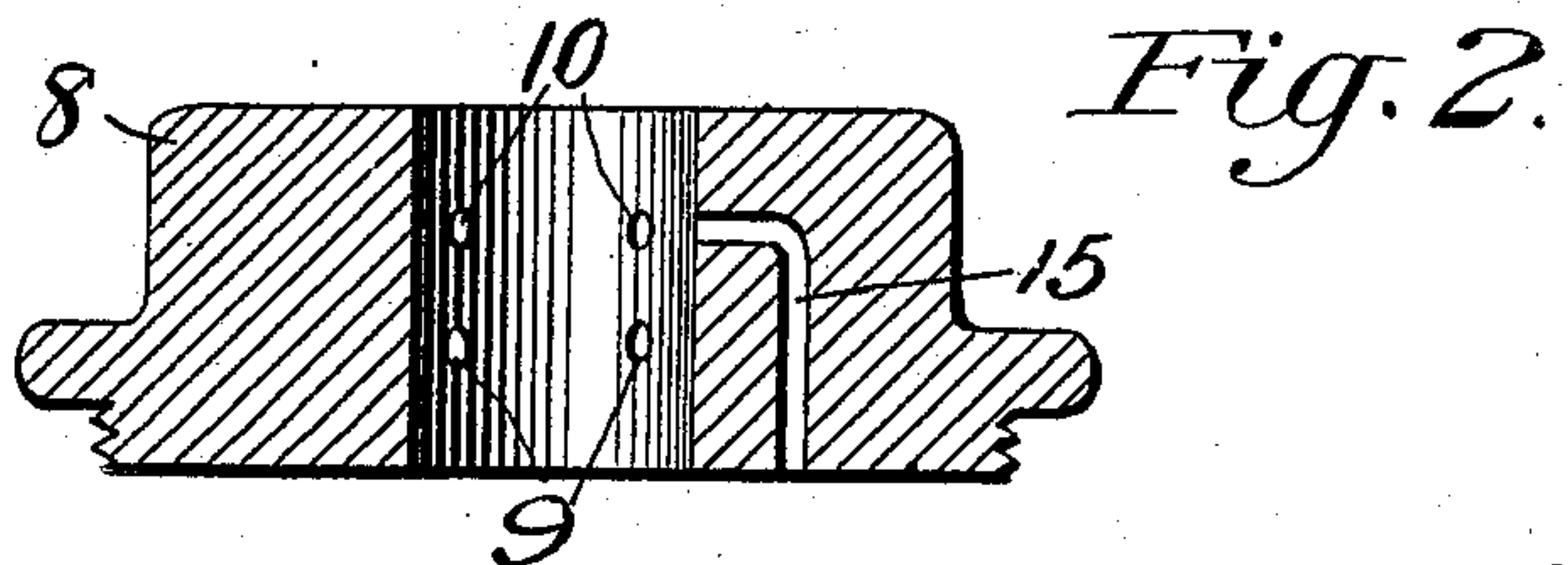
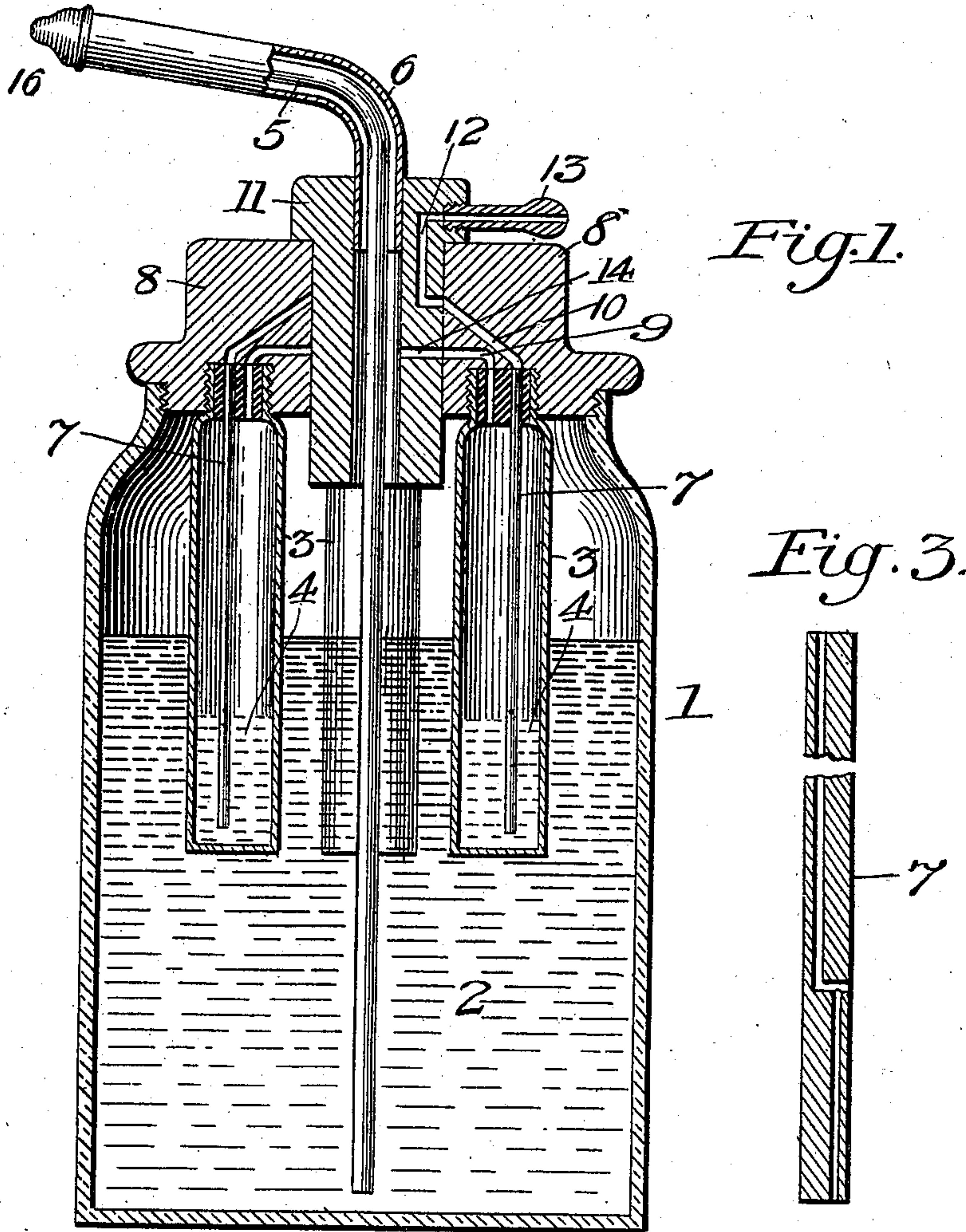
No. 692,552.

Patented Feb. 4, 1902.

C. J. SELTZER.
COMBINED ATOMIZER AND NEBULIZER.

(Application filed May 11, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

CYRUS J. SELTZER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
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COMBINED ATOMIZER AND NEBULIZER.

SPECIFICATION forming part of Letters Patent No. 692,552, dated February 4, 1902.

Application filed May 11, 1900. Serial No. 16,338. (No model.)

To all whom it may concern:

Be it known that I, CYRUS J. SELTZER, of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Atomizers and Nebulizers, of which the following is a specification.

My invention relates to improvements in atomizers and nebulizers in which the spray may be produced at will either outside of the vessel containing the liquid when it is desired to use the device as an atomizer or produced within the vessel and directed against an interior wall thereof when it is desired to employ the device as a nebulizer; and my present invention relates more particularly to a construction and arrangement by which the fluid contained in any one of a multiple of receptacles can be nebulized; and it consists in the mechanism as hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a central vertical sectional view showing my improved combined atomizer and nebulizer. Fig. 2 is a central vertical sectional view, on an enlarged scale, of the block or cap-piece 8, the section being taken on a different vertical plane from that of Fig. 1. Fig. 3 is a detail sectional view of the nebulizer-tube.

Like figures of reference indicate like parts in each view.

Referring to Figs. 1 and 2, which illustrate my multiple nebulizer in combination with an atomizer, 1 is a receptacle containing the liquid 2 to be atomized.

3 3 are receptacles containing liquids 4 to be nebulized.

5 and 6 are respectively the usual inner and outer tubes of an atomizer.

7 7 represent any usual or common form of nebulizing-tubes—such as shown, for example, in my Patent No. 638,481.

8 is a block or cap secured to the top of the receptacle 1 and provided with four recesses, in which are secured the upper ends of a corresponding number of receptacles 3. The cap 8 is also provided with four sets of passages 9 10, so arranged that passages of each of the sets communicate with the interior of one of the receptacles 3.

11 is a valve or plug rotatably supported by the cap 8. This valve is provided with a passage 12, in communication at one end with the passage through nipple 13 and having its other end situated in the plane passing through the upper ends of passages 10. The valve is further provided with a passage 14, communicating at one end with the interior of the tube 6 and having its other end arranged in the plane passing through the upper ends of passages 9. The cap 8 is further provided with a single passage 15, placed at some point between two adjacent sets of the passages 9 and 10. The upper end of the passage 15 is situated in the plane passing through the upper ends of passages 10, and its lower end is in communication with the interior of receptacle 1.

The operation of the above-described apparatus is as follows: When it is desired to nebulize the liquid contained in some one of the receptacles 3, the valve 11 is turned to bring the ends of its passages 12 and 14 into register, respectively, with the ends of the particular passages 10 and 9 whose other ends are in communication with the desired receptacle 3. The nipple 13 being connected to a suitable source of air-supply, such as a reservoir of compressed air, air is forced through passages 12 and 10 into the nebulizer-tube 7 and a portion of the liquid in the receptacle 3 is nebulized. The nebulized liquid then escapes from receptacle 3 through passage 14 and tube 6, the tip 16 having been previously removed from the end of tube 6. When operating to atomize the liquid in receptacle 1, the tip 16 is placed in position. The valve 11 is turned to bring the lower end of its passage 12 into registry with the upper end of passage 15. Air is then forced through passages 12 and 15 into receptacle 1. The air thus forced into receptacle 1 produces a sufficient pressure on the liquid 2 to cause it to rise into the tip 16 through inner tube 5, and a portion of the air escaping through the tube 6 and the small passage 5 provided by the flattened sides of the end of tube 5 sprays the liquid in the tip in the usual manner. While I have illustrated my multiple nebulizer in combination with an atomizer, it is obvious that it could be used entirely independently

thereof, in which case the receptacle 1, the tip 16, and the tube 5 would be dispensed with and the lower end of tube 6 would be closed in any suitable manner, as by a plug.

5 It is equally obvious that while I have shown my multiple nebulizer as provided with four separate receptacles 3, and therefore with four sets of passages 9 10, a greater or less number of separate receptacles 3 could
10 be employed, if desired.

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

1. In a combined atomizer and nebulizer,
15 an atomizer, a plurality of nebulizers, a fluid-duct, and a single common means for connecting said fluid-duct in turn with either the atomizer or with any one of the plurality of nebulizers, substantially as described.

20 2. In a combined atomizer and nebulizer, a receptacle for containing liquid to be atomized, a plurality of receptacles for containing liquids to be nebulized, the usual inner and outer atomizing-tubes for said atomizing-receptacle, a nebulizing-tube in each of
25 said nebulizing-receptacles, a fluid-duct, and means constructed and arranged to connect said fluid-duct with any one of said nebulizing-tubes and simultaneously connect the interior of the particular receptacle containing
30 said tube with the outer atomizing-tube, or to connect said fluid-duct with the interior of the atomizing-receptacle, as desired, substantially as described.

35 3. In a combined atomizer and nebulizer, a fluid-duct, a plurality of receptacles for containing liquids to be nebulized, a nebulizing-tube in each of said receptacles, a block or cap-piece provided with an aperture, two pas-
40 sages in said block or cap-piece for each of said receptacles, one of said passages of each set being constructed to connect such aperture with one of the nebulizing-tubes, and the other passage of each set constructed to
45 connect such aperture with the interior of the nebulizing-receptacle, a plug or valve fitting in said aperture, and itself provided with a bore or aperture, passages in said plug constructed to connect the fluid-duct to that pas-
50 sage in the block which is in communication with any desired one of the nebulizing-tubes,

and simultaneously to connect that passage in the block which is in communication with the interior of the receptacle containing such particular nebulizing-tube with the bore or
55 aperture of said plug, substantially as described.

4. In a combined atomizer and nebulizer, a block or cap 8, two or more receptacles 3 for containing the liquid to be nebulized secured
60 to the bottom of said cap, a receptacle 1 for the liquid to be atomized secured to said cap and surrounding receptacles 3, two passages 10 and 9 in said cap for each receptacle 3, passages 10 and 9 arranged with their lower
65 ends in communication with said receptacles 3, a nebulizer-tube 7, in each receptacle 3 and arranged with its air-passage in communication with the lower end of the corresponding
70 passage 10, a valve 11 rotatably mounted in said cap and provided with an aperture, a discharge-pipe 6 secured in the aperture in said valve and arranged in communication with receptacle 1, a passage 12 in said rotat-
75 able valve, one end of said passage being provided with a nipple 13 constituting a suitable fluid-duct and the other end of said passage 12 located in the plane containing the upper
80 ends of passages 10, a passage 14 in said valve communicating at one end with the discharge-tube 6 and having its other end located in the plane containing the upper ends of pas-
85 sages 9, a passage 15 in said cap arranged with its lower end in communication with receptacle 1 and its upper end in the plane containing the upper ends of passages 10, a liq-
90 uid-tube 5 for the atomizer of smaller external diameter than the passage, or bore, of the discharge-tube 6, said tube 5 being arranged within said discharge-tube and hav-
ing its lower end located within receptacle 1, and a spray-nozzle suitably attached to the upper ends of the tubes 5 and 6, substantially as described.

In testimony whereof I hereunto set my
95 hand, this 5th day of May, 1900, in the presence of two attesting witnesses.

CYRUS J. SELTZER.

Witnesses:

EDWARD LEWIS,
HENRY B. McLAUGHLIN.