

Feb. 15, 1927.

S. M. SALPAS

1,617,545

ATOMIZER

Filed June 3, 1926

Fig. 1.

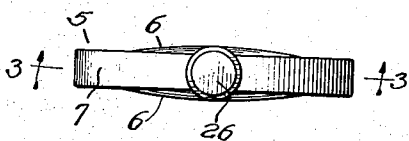


Fig. 2.

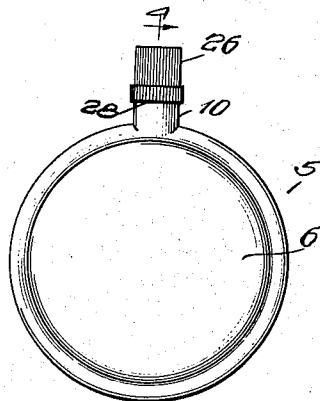


Fig. 3.

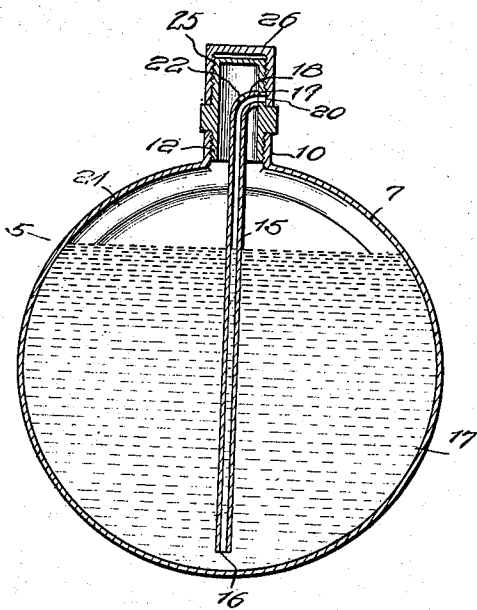
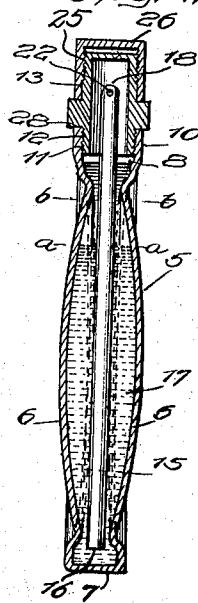


Fig. 4.



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## UNITED STATES PATENT OFFICE.

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## ATOMIZER.

Application filed June 3, 1926. Serial No. 113,354.

This invention relates to atomizers and may be characterized as an improvement upon the atomizer illustrated and described in Antony Thomas United States Letters Patent No. 1,573,334, issued February 16, 1926.

The object of the present invention is the provision of a generally improved and simplified construction that may be economically produced and which will discharge a more finely atomized spray.

The invention is illustrated in the accompanying drawings, in which—

Fig. 1 is a plan view of a device embodying my invention;

Fig. 2 is a face view of the device shown in Fig. 1;

Fig. 3 is a section taken on the line 3—3 of Fig. 1; and

Fig. 4 is an enlarged section taken on the line 4—4 of Fig. 2.

Referring to the drawings, the device shown comprises a casing 5 having flexible sides 6 and a relatively rigid frame-like portion 7. The frame and sides may be of metal, the sides being preferably of relatively flexible sheet metal and the frame-like portion may be of circular or any other suitable or preferred configuration.

The casing 5 has an opening 8 which constitutes the filling opening of the device. In the embodiment shown, this opening 8 is through the frame-like portion 7 and is defined by a nipple 10. The nipple 10 is internally threaded at 11 to receive the lower threaded end 12 of a closure member 13.

A relatively small tube 15 extends substantially centrally into the casing 5 and opens at its lower end at 16 into the liquid 17 to be sprayed, near the bottom of the liquid. The opposite end of the tube 15 is turned laterally at 18. The end of the laterally turned portion 18 is secured at 19 to the side wall of the closure member 13 with the relatively small duct or passage through the tube 15 opening out through the closure member 13 at 20. Within the space 21 above the level of the liquid 17 the tube 15 has an opening 22 conveniently at the bend where the tube 15 is turned laterally at 18, although this may of course vary as desired.

The closure member 13 is open at its lower end with its lower end externally threaded to be screwed into the filler opening 8, and its upper end externally threaded at 25

to receive a closure cap 26. Between its opposite threaded ends the closure member 13 has a radially extending flange-like portion 28, the periphery of which may be knurled to be conveniently grasped between the fingers for screwing the closure member into and from the opening 8.

The cap 26 is internally threaded to be screwed upon the upper end of the closure member 13 to close the spray outlet 20. When in closed position upon the nipple 10, the lower edge of the cap 26 is screwed down upon the flange-like portion 28. The periphery of the cap 26 may be knurled or otherwise finished to be conveniently grasped between the fingers for screwing it upon and from the closure member and in actual practice the flange-like portion 28 preferably extends beyond the cap 26 so that it may be held against turning with one hand while the cap 26 is threaded from the closure member with the other hand, thus assuring removal of the cap without removing the closure member when that is desired.

In use, the cap 26 is removable from the closure member 13 and the closure member 13 with the tube 15 may be detached as a unit from the casing 5 by unscrewing the closure member 13 from the nipple 10. The casing 5 may be filled with the desired liquid through the opening 8 to substantially the level shown in Figs. 3 and 4. The closure member 13 with its tube 15 may then be attached to the casing and when the sides 6 are pressed together as, for example, in the hands of the user, with the cap 26 unscrewed from the closure member 13 sufficiently to uncover the outlet 20, the level of the liquid 17 in the casing 5 is raised for example from the line *a—*a** to the line *b—*b** in Fig. 4 and a spray is discharged from the outlet 20. The normal condition of the sides 6 is shown in full lines in Fig. 4, and their pressed-in condition in discharging a spray, is shown in dotted lines in the same figure.

This pressing in of the sides 6 creates an air pressure in the space 21, the compressed air passing into the tube 15 through the opening 22. A lower pressure is thus created in the tube 15 below the opening 22 by the resulting aspirating action of the air, and the liquid 17 which is under pressure enters the lower open end 16 of the tube 15 and passes up through the tube and out through the outlet 20 at the end of the laterally turned portion 18. The air passing at

relatively high velocity through the upper end and laterally turned portion of the tube atomizes or breaks up the liquid passing up through the tube and the resulting discharge 5 from the outlet 20 is in the form of a finely atomized spray.

From the foregoing, it will now be apparent that the path of travel of the air is relatively short and that a more finely atomized 10 or divided spray may be produced; also that the construction is simplified and adapted for economical quantity production.

The device is operable to discharge the spray laterally with the tube 15 in upright 15 position which permits application of the perfume or other contents laterally onto the person, handkerchief or the like without turning the device into position with the tube 15 horizontally disposed.

20 The closure is simple, the making up of the tube 15 as a unit with the closure member 13 facilitating manufacture and assembly and the lateral opening 20 not only permits a lateral spray without leakage but in 25 the device provided the opening 20 may be

uncovered without completely removing the cap 26.

I claim:—

In an atomizer having a liquid container provided with flexible sides and a single leg 30 tube depending within the container and terminating near the bottom of the inside thereof, said tube being provided with an opening communicating with the interior of the 35 container above the level of the liquid therein, the combination of a closure comprising a closure member removably attached to the container and having a lateral discharge opening, said single leg tube having one end 40 secured to the closure member and opening laterally through said discharge opening, and a cap threaded upon said closure member and adjustable to close the opening of said tube through the closure member or to 45 expose said opening without removing the cap entirely from the closure member.

In witness whereof, I have hereunto set my hand this 1st day of June, 1926.

SPERO M. SALPAS.