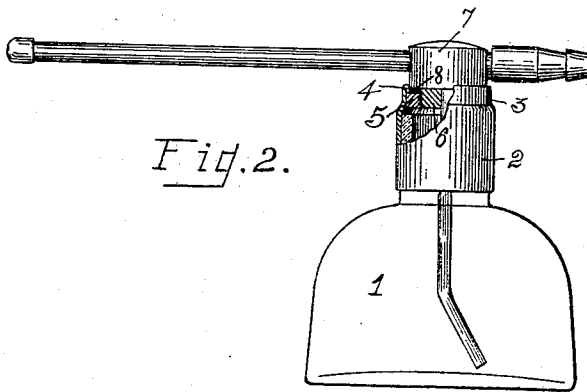
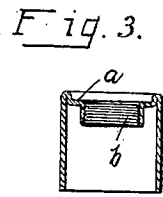
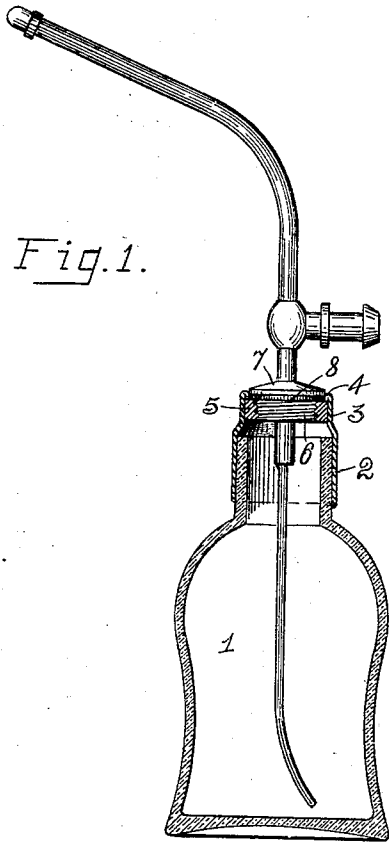


T. A. DE VILBISS.
CAP FOR ATOMIZER BOTTLES OR THE LIKE.
APPLICATION FILED JAN. 31, 1908.

898,845.

Patented Sept. 15, 1908.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS A. DE VILBISS, OF TOLEDO, OHIO, ASSIGNOR TO THE DE VILBISS MANUFACTURING COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

CAP FOR ATOMIZER-BOTTLES OR THE LIKE.

No. 898,845.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed January 31, 1908. Serial No. 413,510.

To all whom it may concern:

Be it known that I, THOMAS A. DE VILBISS, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Cap for Atomizer-Bottles or the Like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to the caps or closure members of the class employed for use in connection with atomizers or other like apparatus to close the neck openings of the liquid receptacles thereof and to carry the spraying tubes or parts, and has particular reference to metal caps or closures of the two part type.

In practice it has been customary to use two forms of metal caps of this kind, one form being in one piece and adapted to fit over the bottle or receptacle neck in a manner to permit a ready removal thereof, and the other form being in two pieces and comprising a ferrule member, which is swaged on or otherwise suitably secured to the bottle neck, and a plug portion, which is threaded into the ferrule and adapted to carry the spray parts. In order to form an air and liquid tight joint between the two parts of the latter form of cap the plug is customarily provided with a gasket-faced shoulder which seats against the outer end of the ferrule member. This manner of connecting the two parts, while efficient in its operation, forms a very objectionable and unsightly form of cap due to the exposed position of the gasket member between the two metal parts.

The object of my invention is the provision of a simple and highly efficient two part cap of this character, which is so constructed that when the ferrule and plug members are in engagement the gasket member is entirely hidden from view and the two parts have the appearance of a single piece, thus materially improving the appearance and enhancing the commercial value of the article to which the cap is applied.

The invention is fully described in the following specification and illustrated in the accompanying drawings, in which,—

Figure 1 is a central vertical section of one form of atomizer embodying my invention, Fig. 2 is a side elevation of another form of atomizer embodying the invention with a portion of the ferrule member of the cap broken away, and Fig. 3 is a central longitudinal section of a modified form of the ferrule member.

Referring to the drawings, 1 designates the bottle or liquid receptacle of the atomizer or other apparatus with which the cap embodying the invention is associated, and 2 is the ferrule member of the cap, which is securely fixed to the bottle neck by shrinking or swaging it thereon.

The ferrule 2 has its outer end preferably, but not necessarily, contracted over the end of the bottle neck to reduce its diameter, as shown at 3, and has its outer end portion rolled inwardly upon itself so that it lies in substantial parallelism with the body portion of the ferrule with its edge facing the opposite end of the ferrule and forming a shoulder or stop below the end of the ferrule body against which the internally threaded bushing-member or ring 5 seats. The bushing 5 is secured within the outer end portion of the ferrule by solder, or in any other suitable manner, and has its opening of less diameter than the outer end opening of the ferrule to form an inner annular seat at the base of the inturned end portion 4 thereof against which the gasket faced shoulder of the plug member of the cap abuts when said plug is screwed home within the bushing.

The plug member of the cap comprises the threaded stem portion 6, which is adapted to thread into the bushing 5, and the head or enlarged portion 7, which is of suitable diameter at its base to adapt it to fit within the socket of the ferrule forced by its inturned end and the bushing 5 and shoulder against the top of said bushing. While this plug should be provided with the stem and enlarged portion as stated, its general form may be changed as the type of atomizer to which it is applied or the arrangement of its liquid and air-tubes may require. To provide a liquid-tight joint between the ferrule and plug the usual ring gasket 8 is disposed

between the shoulder of the head 7 and the bushing top, said gasket being of suitable size to fit within the ferrule socket, and its thickness is preferably such that when the plug is screwed home the gasket will be pressed out of sight within the socket by the coaction therewith of the plug shoulder, thus giving the ferrule and plug the appearance of a single piece.

In Fig. 3 the ferrule member is shown as having its outer end portion turned inwardly in such a manner as to provide the countersunk seat *a* and the contracted threaded opening *b* into which the stem of the plug may thread, thus providing a simple and cheap form of ferrule and eliminating the use of the separate bushing piece shown in the other views.

It is apparent that my invention not only forms a two part cap of the character described which is pleasing to the eye, but one which has its parts so formed and connected as to provide a strong, tight and practically invisible joint between them thus materially enhancing the commercial value and practicability thereof.

I wish it understood that I do not wish to be restricted to the exact details of construction and arrangement of the parts shown and described, as obvious modifications will occur to persons skilled in the art.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent, is,—

1. The combination with a bottle, of a ferrule incasing the neck thereof and having its outer end portion turned inwardly upon itself, said outer end portion being provided with an inner annular seat which is countersunk relative to the outer end of the ferrule and provided with a threaded opening, and a plug member threaded into said opening and having a gasket-faced portion for seating against said seat.

2. A cap of the class described, comprising a ferrule having one end portion rolled inwardly, a separate bushing piece secured within the ferrule in abutment with the inward end thereof and forming an annular internal shoulder which is countersunk relative to the ferrule end, a gasket disposed on said shoulder, and a plug having an enlarged portion for seating within the ferrule end against said gasket and a reduced portion which coöperates with the bushing to effect a tightening of the enlarged portion against the gasket.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

THOMAS A. DE VILBISS.

Witnesses:

C. W. OWEN,
CORNELL SCHREIBER.