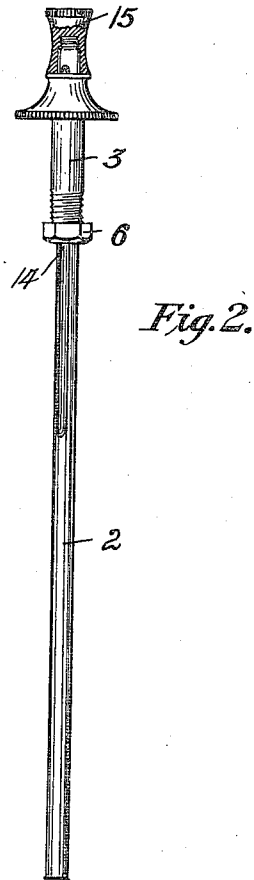
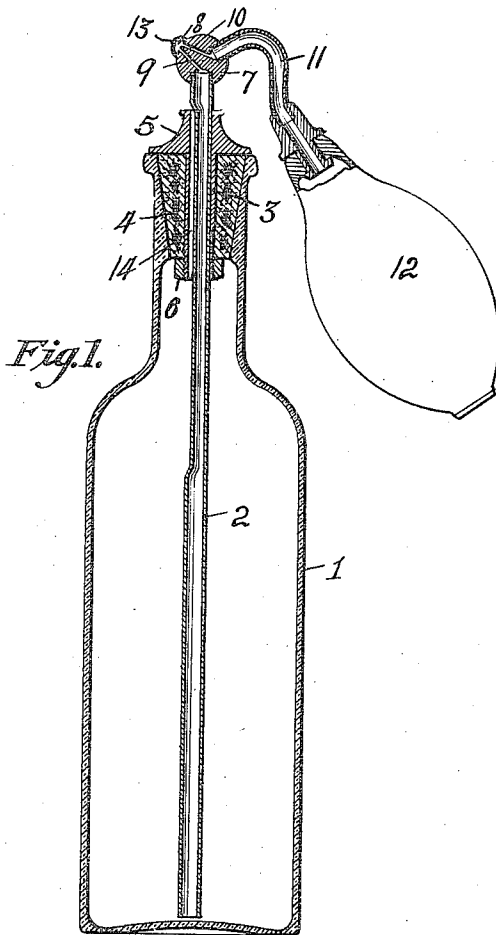


T. A. DE VILBISS.
DROPPER.
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959,847.

Patented May 31, 1910.



Witnesses.

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UNITED STATES PATENT OFFICE.

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DROPPER.

959,847.

Specification of Letters Patent.

Patented May 31, 1910.

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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 Dropper; 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 instruments adapted to facilitate a dropping of liquids from bottles or the like, and has particular reference to use in connection with instruments adapted for the spraying of perfumes or the like, but, is not restricted to such use, as it may be employed in any connection for which it may be adapted or appropriate.

The object of my invention is the provision of an improved apparatus of this class, which is simple and inexpensive in its construction, efficient in its operation, and capable of being easily and quickly removed from one and inserted into another bottle or liquid receptacle, thus particularly adapting it for use by perfume demonstrators or the like, and which is capable of being sealed against leakage to facilitate a packing of the same without liability of liquid escaping from an associated receptacle.

The operation, construction and arrangement of the parts of the invention are fully described in the following specification, and a preferred embodiment thereof illustrated in the accompanying drawings, in which,—

Figure 1 is a central vertical section of an apparatus embodying my invention and an associated liquid receptacle, and Fig. 2 is a side elevation of the apparatus with a cap closing the outer end of such tube and the air passage, the cork or stopper-member and spraying parts being removed from the liquid tube.

Referring to the drawings, 1 designates a liquid bottle or receptacle of any suitable form or construction. Extending down into the bottle to near the bottom thereof is the usual liquid-tube 2, which carries a stopper-member for closing the neck of the bottle and holding such tube in suspension therein.

This stopper-member is shown in the present

instance as comprising a sleeve 3, which fits closely around the tube 2 near its upper or outer end, and a tapered member 4 of cork, rubber or other suitable material, which closely encircles the sleeve 3 and is adapted to fit tightly within the neck of the bottle to close the same. The sleeve 3 is flanged or enlarged at its upper end as at 5, to abut against the member 4, and preferably projects slightly beyond the upper end of such member to serve as a stop for limiting the insertion of the stopper within the bottle neck. The cork or member 4 is retained in position on the sleeve 3 by a nut 6, which is threaded to the lower end of the sleeve.

Threaded or otherwise suitably secured to the upper end of the tube 2 is a spray-head 7, which has a vacuum chamber 8 on one side thereof and is bored, as at 9, to open communication between such chamber and the liquid-tube 2, and as at 10 to open communication between such chamber and the air-supply-tube 11. This tube attaches at one end to said head and leads to any suitable source of air pressure, such, for instance as an air-bulb 12. It is apparent that when air is forced under pressure through the bore 10 the discharge from the chamber 8 through the alining discharge orifice 13 creates a vacuum or suction within such chamber and a consequent drawing of liquid therein from the bottle 1 through the tube 2 and bore 9, which liquid commingles with the air and is discharged thereby in spray form from the head, as is common with instruments of this class.

In order to prevent a vacuum within the bottle when the liquid is drawn therefrom, air is admitted thereto through a channel 14 in the stopper-member. This chamber is shown in the present instance as being formed by providing a longitudinal depression or groove in one side of the tube, such depression extending through and being of greater length than the stopper-member to open without the opposite ends thereof, as shown.

To prevent leakage of the contents of the bottle through the channel 14 when the instrument is packed, the spray-head 7 may be removed from the tube 2 and a cap 15, Fig. 2, screwed thereover. The base of this cap seats closely on the top of the flange or enlargement 5 of the stopper-member and closes the outer end of the channel 14, as

shown. Should it be desired to use the instrument as a dropper for liquids or to shake the contents therefrom, the cap 15 can be unscrewed sufficiently to unseat it and partially uncover the outer end of the channel 14 to adapt it for such uses.

It is apparent that I have provided an instrument which is not only highly efficient for use either as an atomizer or dropper, but which is exceedingly simple in its construction and adapted for easy and quick application to or removal from the neck of any bottle for which it may be adapted.

I wish it understood that my invention is not limited to any specific construction or arrangement of parts except in so far as such limitations are specified in the claims.

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

1. In an instrument of the class described, a receptacle, a tube projecting into such receptacle, a stopper-member carried by the tube and adapted to close the neck of the receptacle, said stopper-member having a channel therethrough at the side of the tube which opens communication between the interior of the receptacle and the atmosphere, and a member adapted to thread over the outer end of said tube and to seat on the outer end of the stopper-member to close said channel and to be unseated to a predetermined extent to permit the shaking of liquid from the bottle through said channel.

2. In an instrument of the class described, a receptacle, a member closing the neck of

said receptacle, a tube projected through said member and into the receptacle, and having its outer end adapted to removably carry an atomizer spray-head, said tube and member coöperating to form a channel through the member at the side of the tube, and a cap adapted to thread over the outer end of said tube and to seat on the outer end of said member to close the outer end of said channel, or to be unseated to a predetermined extent to permit a shaking of the contents of the bottle therefrom through said channel.

3. In an instrument of the class described, a receptacle, a member for closing the neck of the receptacle, a sleeve projected through said member, a liquid tube projected through said sleeve and into the receptacle and having its outer end open and adapted to carry an atomizer spray-head, said tube having a portion longitudinally depressed to provide a channel between the sleeve and tube from the interior of the receptacle to the exterior of said member, and a cap threaded to the outer end of said tube and adapted to close the outer end thereof and, when seated on the outer end of said sleeve, to close said channel, substantially as described.

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

THOMAS A. DE VILBISS.

Witnesses:

C. W. OWEN,

H. FREDENBURG.