

T. A. DE VILBISS.
 ATOMIZER.
 APPLICATION FILED APR. 30, 1909.

932,604.

Patented Aug. 31, 1909.

Fig. 1.

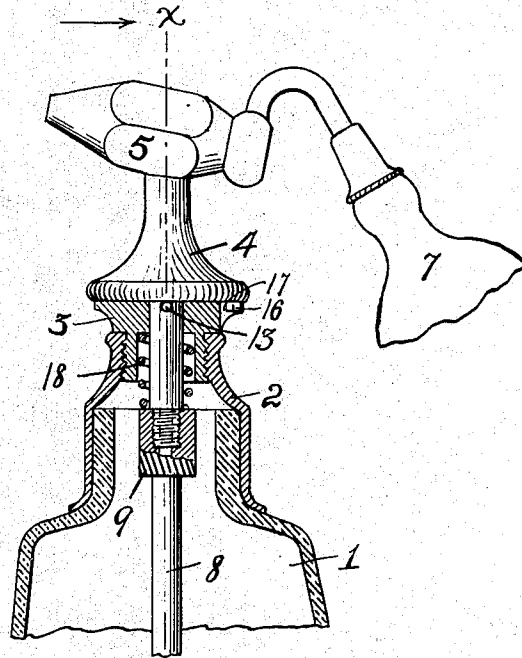


Fig. 2.

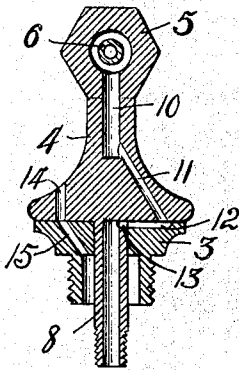


Fig. 3.

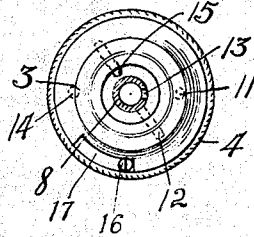
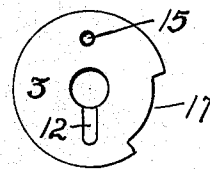


Fig. 4.



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.

ATOMIZER.

932,604.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed April 30, 1909. Serial No. 493,190.

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 Atomizer; 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 atomizers or like instruments; and has for its object the provision of simple and improved means for closing the communication both between the liquid receptacle and the spray-head and the atmosphere and such receptacle to enable the instrument to be packed, carried in the pocket or inverted without liability of spilling the contents of the receptacle, thus enhancing its practicability and commercial value.

The operation, construction and arrangement of the parts of the invention are fully described in the following specification, and while in its broader aspect it is susceptible of embodiment in numerous forms, a preferred form thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of the upper portion of an atomizer partly in central vertical section. Fig. 2 is a central vertical section of the head or working parts thereof on the line *x* in Fig. 1, with such parts in open position. Fig. 3 is a bottom plan view of the parts shown in Fig. 2 with the liquid-tube in section and said parts in closed position, and Fig. 4 is an inner face view of the lower valve part.

Referring to the drawings, 1 designates a liquid receptacle to the neck of which is secured the usual ferrule member 2 into which the plug 3 is screwed or otherwise suitably secured. Seating on the top of the plug 3, which is broadened for such purpose, is the enlarged base of a standard 4, which carries the spray-head 5 of usual or any suitable form on its top. Projecting into the throat of this spray-head is the air-injecting nozzle 6, which communicates with a bulb 7 or other suitable source of pressure.

8 designates the liquid-tube, which projects centrally from the bottom of the standard 4 through a registering axial opening in

the plug 3 and down into the receptacle to near the bottom thereof, and preferably comprises two sections which are joined together by a union-nut 9 or in any other suitable manner.

The upper end of the standard 4 is provided with a vertical channel 10 which opens at its upper end into the throat of the spray-head 5 and has its lower end communicating with the upper end of the tube 8 through a channel 11, the lower end of which is offset relative to the axis of the standard 4, a radial groove 12 in the top surface of the plug 3, the outer end of which terminates short of the outer edge of such plug, and an aperture 13 in the side of the tube 8, which aperture registers with the inner end of the groove 12, as indicated in Fig. 2. With this manner of communication between the interior of the receptacle and the spray-head throat it is apparent that the same may be completely closed by simply turning the standard 4 relative to the plug 3 so as to move both the lower end of the channel 11 and the aperture 13 in the tube out of register with the groove or other passage 12. Air, to take the place of the liquid drawn from the receptacle, is admitted thereto through a channel 14 in the base of the standard 4 and a channel 15 in the plug 3, the contiguous ends of which channels register when the channel 11 and groove 12 are in register.

The turning of the standard 4 on the plug 3 is limited to stop in one direction of its movement with the channels 11, 12 and 14, respectively in register, and in the other direction of its movement with such channels out of register a predetermined distance, by a pin or stud 16 projecting from an edge of the standard base 4 and contacting with the end walls of a segment notch 17, which is provided in the side edge of the plug 3 and in which such pin works. The standard 4 is held closely to its seat on the plug 3 by a coiled expansion spring 18, which encircles the tube 8 intermediate the bottom of the plug 3 and the shoulder formed by the nut 9, against which the respective ends thereof have their thrusts. The tension of this spring may be regulated by a turning of the nut 9 on the upper section of the tube. It is thus apparent that by placing the spray-head 5 and standard 4 in the position shown in Fig. 2, communication is established between the spray-head

throat and the receptacle through the channels 10, 11 and 12 and tube 8, and communication is also established between the atmosphere and the interior of the receptacle through the channels 14 and 15, and that by turning the standard 4 to its opposite limit of movement relative to the member 3, the escape of fluid through either the air or the liquid passages is prevented.

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, the combination of a receptacle, means closing the neck of such receptacle, and spray-parts carried by such means and in communication therethrough with the interior of the receptacle, said spray-parts being capable of rotation relative to said means to close such communication, and said means and spray-parts having communication provided through portions thereof for the admission of air to the receptacle, which communication is closed by a relative turning of said means and parts.

2. In an instrument of the class described, the combination of a receptacle, a member closing the neck of said receptacle, spray-parts rotatably seating on said member, said member and spray-parts having channels, portions of which are offset relative to the turning axis of said parts, which, when said parts are in one position of their rotary movements relative to said member, open communication between the spray-parts and receptacle.

3. In an instrument of the class described, the combination of a receptacle, a member closing the mouth of such receptacle and having a channel therein, a part seated on said member for limited rotary movements relative thereto and having a tube projecting therefrom through said member and into the receptacle, a spray-head carried by said part, said part having a channel and said tube having a port in its wall which channel and port open communication between the tube and spray-head through the channel in said member when the member and part are in one position of relative movement.

4. In an instrument of the class described, the combination of a receptacle, a member closing the mouth of such receptacle and having a radially-disposed channel therein, spray-parts seated on said member for limited rotary movements relative thereto and having a channel adapted to open communication between said channel and one of said spray parts when the member and spray-parts are in one position of their relative movements, a tube projecting from said

spray-parts through said member and into the receptacle and having a port adapted to register with the channel in said member, and means yieldingly holding the spray-parts to their seat on said member.

5. In an instrument of the class described, the combination of a receptacle, a member closing the mouth of the receptacle and having a laterally-disposed channel, a tube projecting into the receptacle and having its channel in communication with said channel, and a spray-head rotatably seating on said member and having a channel adapted to open communication between the channel in said member and the spray-head throat when said spray-head and member are in one position of their relative movements.

6. In an instrument of the class described, the combination of a receptacle, a member closing the mouth of the receptacle and having a channel therein, a spray-head rotatably carried by said member and having its throat in communication with said channel when the member and spray-head are in one position of their relative movements, a tube projecting axially from the spray-head through said member and into the receptacle and adapted to have communication with said channel when the channel and spray-head throat are in communication, said member and spray-head having passages through portions thereof which register when the spray-head throat and said tube are in communication and permit the admission of air to the receptacle.

7. In an instrument of the class described, a receptacle, a member closing the mouth thereof, a standard rotatably seated on said member, a spray-head carried by said standard, a tube projecting from said standard through said member and into the receptacle, said standard and member having channels which coöperate to open communication between said tube and the spray-head throat when said standard and member are in one position of their relative rotary movements, a coiled spring coöperating with said tube and member to hold the standard to its seat, and communication provided between the atmosphere and the interior of the receptacle when said member and standard are in one position of their relative movements.

8. In an instrument of the class described, the combination of a spray-head, a receptacle and parts intermediate said spray-head and receptacle and having passages there-through adapted to open communication between the spray-head throat and the receptacle and between the atmosphere and the receptacle, said parts being relatively movable to open or close such passages.

9. In an instrument of the class described, the combination of a receptacle, a spray-head, relatively rotatable parts coöperating to close the mouth of the receptacle and sup-

port the spray-head, said parts having passages therethrough adapted to open communication between the receptacle and spray-head throat when said parts are in
5 one position of their relative movements and to close such communication when said parts are in another position of their relative movements.

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.