

A. DE VILBISS.  
CLOSURE FOR FLUID RECEPTACLES.  
APPLICATION FILED NOV. 3, 1909.

949,170.

Patented Feb. 15, 1910.

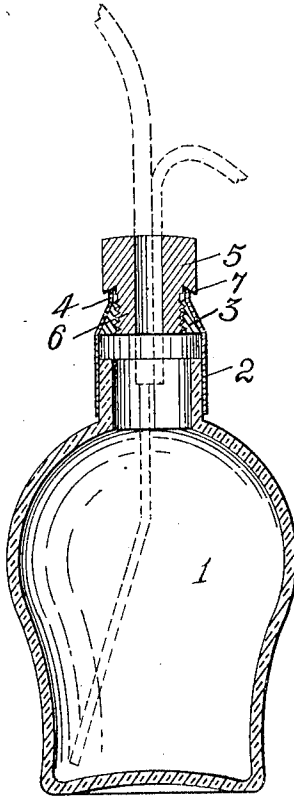


Fig. 1.

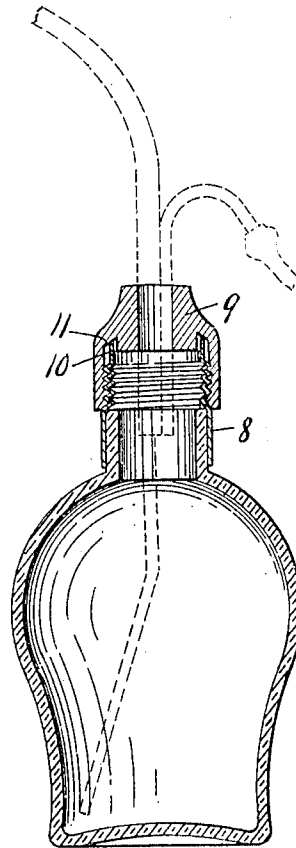


Fig. 2.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

ALLEN DE VILBISS, OF TOLEDO, OHIO.

CLOSURE FOR FLUID-RECEPTACLES.

949,170.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed November 3, 1909. Serial No. 525,991.

*To all whom it may concern:*

Be it known that I, ALLEN 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 Closure for Fluid-Receptacles; 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 closure members for bottles and other receptacles for either liquid or gases in which it is desirable to secure a tight closure, and while it has particular reference to use in connection with atomizers and nebulizers, it is not restricted to use in such connection but may be employed in connection with any receptacle, as for instance, lamp fonts, or the like, where it is desirable to provide a close fluid tight joint between the receptacle and the closure member for its mouth or opening.

The object of my invention is the provision of a simple, efficient and inexpensive closure of the character described which is composed of a minimum number of parts, and with which it is possible to secure a fluid tight joint between two members without the use of ground joints or of gaskets, washers, or packing of any kind, thus providing a sanitary and commercially practical closure of this kind.

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

Figure 1 is a preferred embodiment of the invention in association with an atomizer receptacle, and Fig. 2 is a slightly modified form of the same.

Referring to Fig. 1 of the drawings, 1 designates a bottle or receptacle of any suitable form, shape, or size, and for any purpose, to the neck of which is secured a ferrule 2 comprising one of the members of my invention. This ferrule is preferably formed from sheet metal or other suitable material of a flexible nature, and is slipped over the receptacle neck and connected or otherwise secured thereon to form a tight joint therewith. The ferrule 2 has its upper end ex-

tended a short distance above the neck of the receptacle and preferably contracted to restrict the size of such end relative to the lower end thereof. This, however, is not necessary. Provided within the contracted end of the ferrule and in the present instance forming a separate bushing piece, which is soldered or otherwise suitably fixed therein, is a part 3 having a cylindrical bore therethrough concentric to the ferrule. The upper end of this part terminates short of the upper end of the ferrule to provide the flexible extension 4 at such end of the ferrule.

5 designates a plug-form of closure member for the open end of the ferrule, and is provided with the reduced portion or stem 6, which is adapted to thread into the part 3 of the ferrule. This member is shown in the present instance as being adapted for carrying the air and liquid tubes of an atomizer or nebulizer, which tubes are indicated by dotted lines, but may be solid, if desired to completely close the ferrule opening, or adapted for carrying any other parts. The head or enlarged portion of the plug 5 forms a shoulder 7 at its inner end which is preferably radially beveled as indicated. When the stem 6 is turned into the threaded part 3 of the ferrule, the shoulder 7 is drawn into close contact with the flexible ferrule end 4 and the lateral pressure occasioned on such end by the bevel of the shoulder causes it to conform to any slight irregularities in the shoulder, thus forming a fluid tight joint.

In Fig. 2, 8 designates the flexible ferrule and 9 the closure member therefor, which is shown as being of cap form and threaded over the ferrule. The outer end portion 10 of the ferrule is projected straight for a short distance beyond the threads thereof and, when the cap 9 is screwed home thereon, is adapted to seat against and to coöperate with an annular radially beveled surface 11 within the cap to form a fluid tight joint therewith.

While it is preferable to so incline the shoulder 7 or surface 11 of the closure member to tend to cause a contraction of the flexible end of the ferrule when seating thereagainst, it is obvious that such inclination may be reversed if desired without departing from the scope of my invention. I also wish it understood that my invention is not limited to any specific construction

or arrangement of the parts except in so far as such limitations are specified in the claims.

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

1. The combination with a fluid receptacle, of a ferrule fitted to the neck thereof and provided with a pliant outer end, a  
10 closure member for said ferrule having a beveled surface coacting with said pliant part to form a close joint therewith, and cooperating means on said ferrule and member for drawing the member to its seat.

2. The combination with a fluid receptacle, of a ferrule fitted to the neck thereof and provided with a pliant end portion, a closure member threaded to said ferrule and having a beveled annular surface for seating  
on said pliant end to form a close joint  
therewith when the member is screwed home. 15 20

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

ALLEN DE VILBISS.

Witnesses:

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E. E. THOMAS.