

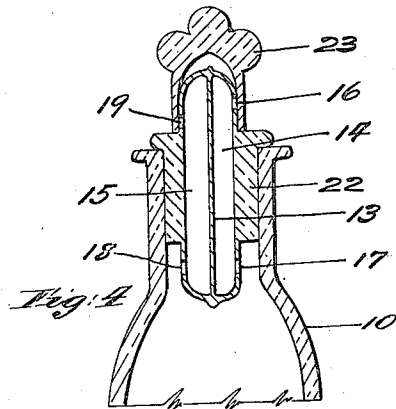
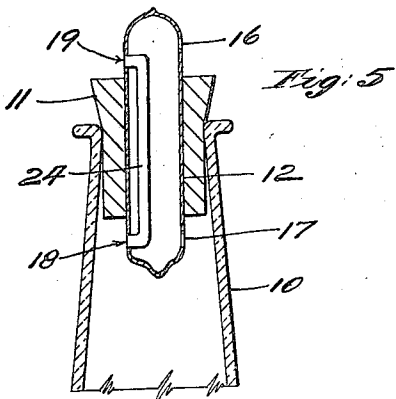
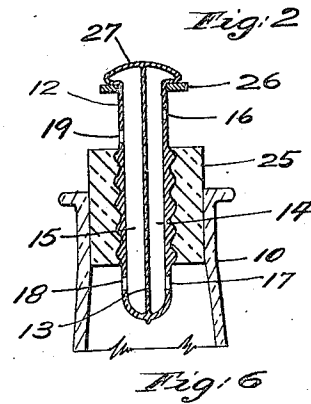
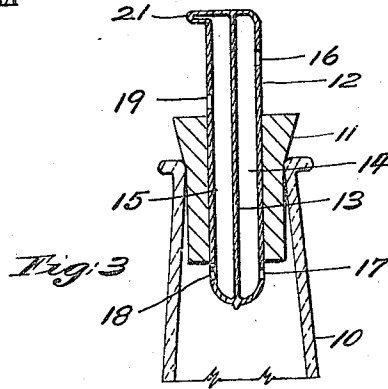
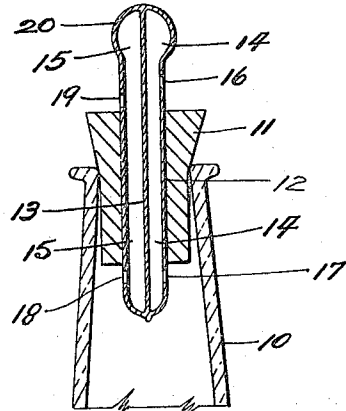
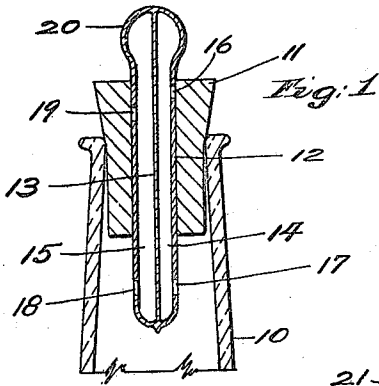
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C. L. SWARTZ

DROPPING ATTACHMENT FOR BOTTLES

Filed May 10, 1922



INVENTOR.

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UNITED STATES PATENT OFFICE.

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DROPPING ATTACHMENT FOR BOTTLES.

Application filed May 10, 1922. Serial No. 559,915.

To all whom it may concern:

Be it known that I, CHARLES L. SWARTZ, a citizen of the United States, residing at the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Dropping Attachment for Bottles, of which the following is a specification.

The leading object of the present invention is to provide a bottle or like vessel adapted to contain liquids of various kinds with a novel, inexpensive and efficient device for discharging the bottle contents in the form of drops. Other and further objects reside in the provision of general details of construction and arrangement and combination of parts for attaining the results sought by said leading object. Still further objects not at this time specifically mentioned will appear hereinafter.

The invention consists of the improvements hereinafter described and finally claimed.

The nature, characteristic features and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, and in which:

Fig. 1, is a fragmentary view, principally in section, of a bottle provided with a device embodying features of the invention, the device being shown in inoperative position.

Fig. 2, is a similar view illustrating the device in operative position.

Fig. 3, is a similar view of a slightly modified form of construction.

Fig. 4, is a similar view of a further modified form of construction.

Fig. 5, is a similar view of a still further modified form of construction, and

Fig. 6, a similar view of still another modified form.

For the purpose of illustrating my invention I have shown in the accompanying drawings several forms thereof which are at present preferred by me, since the same have been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of

the instrumentalities as herein shown and described.

In the drawings, and referring now particularly to Figs. 1 and 2, 10 designates a bottle for containing liquid as medicine, toilet water, extracts, oil, acids and the like. While a bottle has been shown for illustrative purposes, obviously other forms of vessels may be employed. Fitted to the bottle neck is a cork 11 of conventional form except that it is centrally apertured, vertically considered, for the passage therethrough of a tube 12 preferably of glass. The tube is closed at each end and is divided by a partition 13 throughout its extent to form two compartments designated 14 and 15. Each compartment is provided with an intake and a discharge port. For illustrative purposes let it be assumed that port 16 of compartment 14 is for admission of air, and port 17 for the discharge of air and that ports 18 and 19 of compartment 15 are liquid intake and discharge ports respectively. In operation the pressure of atmospheric air as admitted through compartment 14 serves to cause the bottle contents to be discharged in the form of drops through compartment 15 and its ports, provided the bottle is properly tilted. It is desirable, when the bottle is not in use, that the upper air admission and liquid discharge ports be closed for sanitary and other reasons. In practice I have found that this can be readily, inexpensively and efficiently accomplished by moving the glass tube vertically through the bottle cork to cover and uncover the ports in question. In Fig. 1, it is to be observed that the tube has been so pushed down into the cork that ports 17 and 19 are closed. In Fig. 2, the tube has been elevated to open said ports. In order to provide a convenient finger-piece for elevating the tube and at the same time provide means for limiting the downward movement thereof, the tube is provided with a bulb-like portion 20. It may be here stated that the size and location of the ports depend upon the density of liquid employed and upon the proper balance of atmospheric pressure.

In Fig. 3, the construction is the same as above described except that instead of the bulb-like portion, the tube top is projected laterally to provide a combined finger-piece and stop 21.

In Fig. 4, the cork and tube are formed integral with one another. For instance it may be undesirable to employ cork or rubber stoppers in which case a stopper 22 of glass having the tube formed integral therewith may be employed. Of course in this case a separate closure 23 for the upper admission and discharge ports must be utilized.

In Fig. 5, instead of employing a central portion for tube division I connect the liquid inlet and liquid discharge ports by means of a small tube 24.

In Fig. 6, a cork 25 of hard rubber, glass or other suitable material is employed which is internally screw-threaded. Having screw-threaded relation therewith so as to be vertically adjustable therethrough is a tube similar to the tubes shown in Figs. 1, 2 and 3, except that a washer 26 is fitted around the tube so a tight joint may be effected between the cork top and the finger-piece or stop 27.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description and while I have in the present instance shown and described the preferred embodiments thereof which have been found in practice to give satisfactory and reliable results, it is to be understood that the same are susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

What I claim is:

1. In a device of the character stated a vessel for containing liquid, a stopper for said vessel and a tube carried by the stopper said tube being sealed at each end and having an air admission and liquid discharge hole pierced in the tube side wall above the stopper and having an air discharge and liquid admission hole pierced in the tube side wall below the stopper means being present whereby the first mentioned holes may be temporarily closed.

2. A construction as described in claim 1, characterized by said tube being arranged to be moved in a vertical manner through said stopper for effecting closing of said ports.

3. A construction as described in claim 1, characterized by said tube comprising an integral structure divided into two compartments, vertically considered, one compartment having an air inlet and exhaust holes and the other compartment having a liquid inlet and discharge hole.

4. A construction as described in claim 1, characterized by said tube being movable through said stopper and having formed integral with the upper part thereof means to limit the downward movement of the tube, said means forming a finger-piece with which to lift said tube to open a liquid discharge hole and air admission hole.

In testimony whereof I have hereunto signed my name.

CHARLES L. SWARTZ.