May 10, 1955 O. S. REID 2,708,056

VALVE WITH VENT

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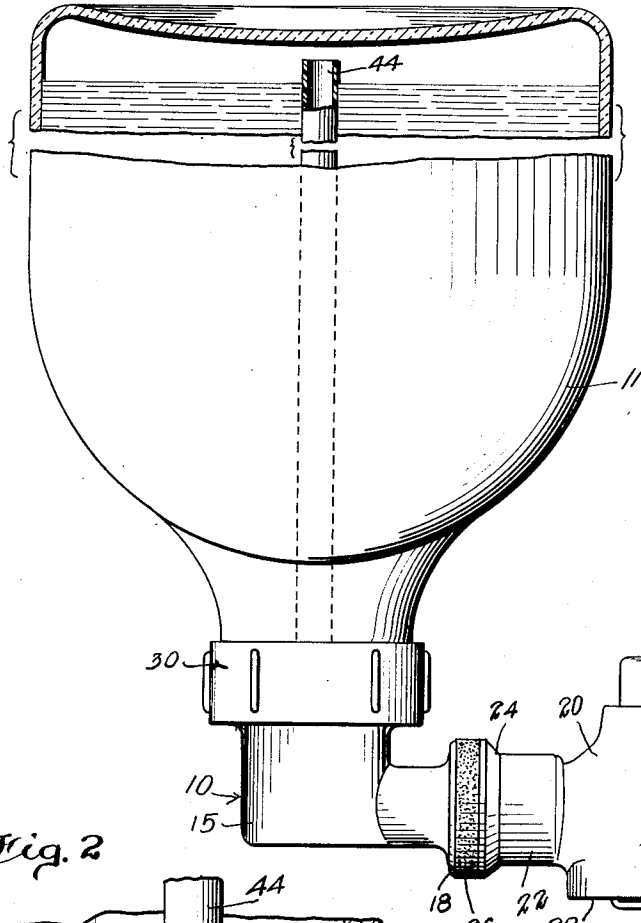
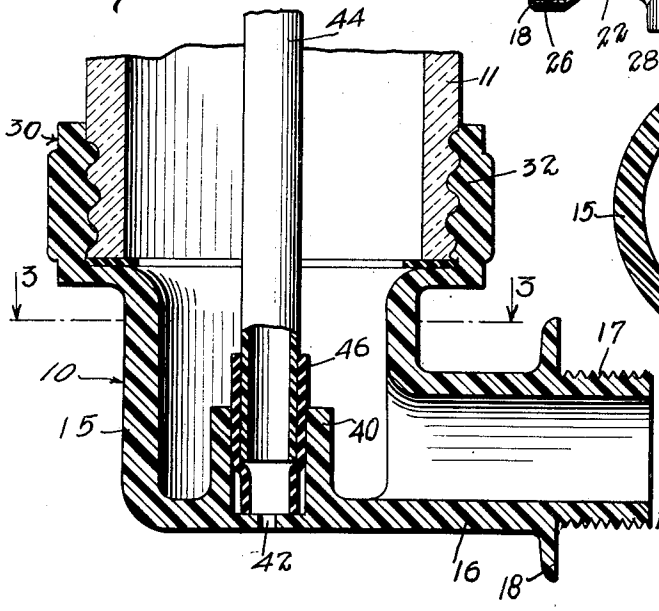


Fig. 1

Fig. 2



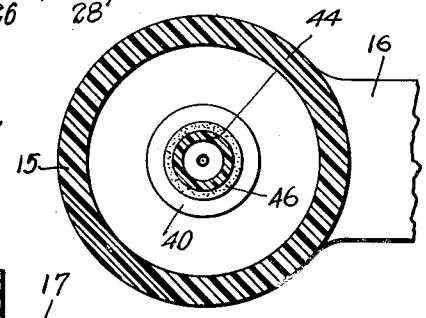


Fig. 3

INVENTOR.
OTTO S. REID
BY
Lyon & Lyon
ATTORNEYS

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VALVE WITH VENT

Otto S. Reid, La Canada, Calif.

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3 Claims. (Cl. 222—481)

The present invention relates to an improved arrangement for dispensing liquids employing a vent tube.

The present arrangement contemplates dispensing means for dispensing liquids from bottles having a screw-thread neck, and the use of a vent tube in such means to assure a steady flow of the fluid.

An object of the present invention is to provide means of this character which is relatively simple and inexpensive.

Another object of the present invention is to provide means of this character containing certain parts which may be readily disassembled for cleaning and sanitary purposes.

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. This invention itself, both as to its organization and manner of operation, together with further objects and advantages thereof, may be best understood by reference to the following description taken in connection with the accompanying drawings in which:

Figure 1 is a view in side elevation showing dispensing means embodying features of the present invention attached to a conventional screw-threaded bottle in a position to dispense fluid.

Figure 2 is an enlarged vertical section of the valve means.

Figure 3 is a sectional view taken substantially on the line 3—3 of Figure 2.

As shown in the drawings, the dispensing means which incorporates a vent tube has the general reference numeral **10** and has a screw-threaded portion engageable with the conventional screw-threaded portion on the neck of the bottle **11**. Such bottle **11** is sold or supplied commercially with a conventional screw-threaded metal top (not shown), such top being removed and the dispensing means **10** replaces such top.

Thus, besides serving as a dispensing means, the arrangement **10** serves also as a closure member when the bottle is in its upside-down position shown in Figure 1, and also when the bottle is placed in an upright position.

The arrangement or apparatus **10** is in the form of an elbow and has releasably secured thereto a valve **14** which per se forms no part of the present invention since it is understood that the valve **14** may be of different constructions.

The apparatus or elbow **10** has a vertically extending tubular leg **15** of relatively large internal diameter integrally formed with the horizontally extending leg **16** of smaller internal diameter than the vertical leg **15**. The horizontal leg terminates with the integrally formed external threaded nipple **17** and such leg **16** carries the integrally formed mounting flange **18** immediately adjacent the theaded nipple **17**. The valve **14** has its bonnet **20** integrally formed with an internally threaded sleeve **22**, which is threaded on the nipple **17**. The sleeve **22** turns with an integrally formed flange **24**. The spaced flanges **18** and **24** serve as clamping members to clamp

the composite structure, for example, to a vertical wall or stationary supporting member with the ring **26** of elastic material clamped therebetween so as to provide a fluid-tight seal.

The valve **20** has a manually operable member **23** which, using conventional structure, is normally spring biased upwardly as shown in Figure 1 to prevent the flow of liquid from the outlet opening **28**; but when the valve member **23** is manually pressed downwardly the valve is open and liquid flows out of the outlet **28**.

An annular flanged portion **30** is integrally formed with the upper end of the vertically extending tubular leg **15**, and a tubular ring **32** is integrally formed with such flanged portion **30**. The tubular ring has a diameter larger than the diameter of the vertically extending tubular leg and is arranged concentric therewith. The internal screw threads on the tubular ring **32** cooperatively engage the screw threads on the neck of the bottle **11**.

A tubular cup-shaped socket **40** is disposed inside the elbow and has its base integrally formed with the elbow with its axis aligned with the axis of the vertically extending leg **15** of the tubular ring **32**. Such cup-shaped socket **40** has an apertured portion **42** centrally disposed in its base to place such socket in communication with the atmosphere.

A venting tube **44**, preferably of transparent material such as glass or plastic, is axially aligned in the tubular socket **40**. A tubular elastic gasket **46** is disposed between the venting tube **44** and the tubular base to provide a seal therebetween.

The present arrangement, due to its specific constructional features, allows itself to be made relatively simply and inexpensively using mass production techniques and relatively inexpensive plastic material, with all parts integrally formed as described above. Moreover, it is observed that a simple compact arrangement is provided. Further, the arrangement allows easy cleaning and this may involve removal of the vent tube **16** and detachment of the elastic sleeve **19**.

While the particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects and, therefore, the aim in the appended clams is to cover all such changes and modfications as fall within the true spirit and scope of this invention.

I claim:

1. A dispensing apparatus of the character described comprising, an elbow having a vertically extending tubular leg of relatively large internal diameter integrally formed with a horizontally extending leg of smaller internal diameter than said vertically extending leg, said horizontally extending leg terminating in a threaded nipple, a clamping flange integrally formed with said horizontally extending leg immediately adjacent said threaded nipple, a valve bonnet integrally formed with a threaded sleeve cooperating with said threaded nipple, said threaded sleeve having a clamping flange cooperating with the aforementioned flange in providing a clamp, an annular flanged portion integrally formed with the upper end of said vertically extending tubular leg, a tubular ring integrally formed with said flanged portion of larger diameter than said vertically extending tubular leg and concentric therewith, internal screw threads on said tubular ring, a tubular cup-shaped socket inside said elbow having its base integrally formed with said elbow with its axis aligned with said vertically extending leg and said tubular ring, said cup-shaped socket having an apertured portion centrally disposed in its base to place said cup-shaped socket in communication with the atmos-

phere, a venting tube axially aligned in said tubular socket, a tubular elastic gasket disposed between said venting tube and said tubular socket to provide a seal therebetween.

2. Dispensing apparatus of the character described comprising, an elbow having a vertically extending tubular leg integrally formed with a horizontally extending leg, said horizontally extending leg terminating in means for mounting a valve, an annular flanged portion integrally formed with the upper end of said vertically extending tubular leg, a tubular ring integrally formed with said flanged portion of larger diameter than said vertically extending tubular leg and concentric therewith, internal screw threads on said tubular ring, a tubular cup-shaped socket inside said elbow having its base integrally formed with said elbow with its axis aligned with said vertically extending leg and said tubular ring, said cup-shaped socket having an apertured portion centrally disposed in its base to place said cup-shaped socket in communication with the atmosphere, venting tube axially aligned in said tubular socket, a tubular elastic gasket disposed between said venting tube and said tubular socket to provide a seal therebetween.

3. Dispensing apparatus of the character described comprising, an elbow having a vertically extending tubular leg integrally formed with a horizontaly extending leg, valve means mounted on the extremity of said horizontally extending leg, means at the upper end of said vertically extending leg for attachment to a threaded neck of a bottle and to provide a seal between said bottle and said vertically extending leg, a tubular cup-shaped socket inside said elbow having its base integrally formed with said elbow with its axis aligned with said vertically extending leg, said cup-shaped socket having an apertured portion centrally disposed in its base to place said cup-shaped socket in communication with the atmosphere, a venting tube axially aligned in said tubular socket, and tubular elastic gasket means positioned between said venting tube and said socket to resiliently mount said venting tube in said socket and to allow said tube to be disassembled from said socket for cleaning purposes.

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