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COMBINATION CLOSURE MEMBER, POURING DEVICE
AND INSERT CUP FOR A CONTAINER
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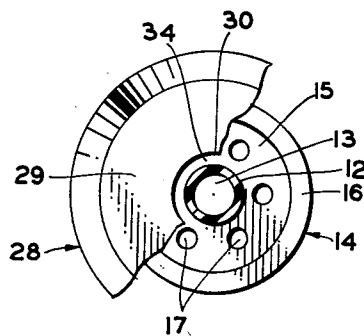


FIG. 3

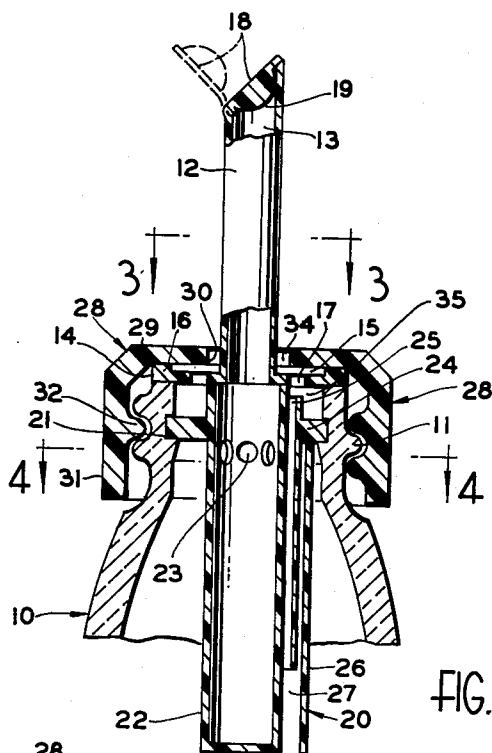


FIG. 1

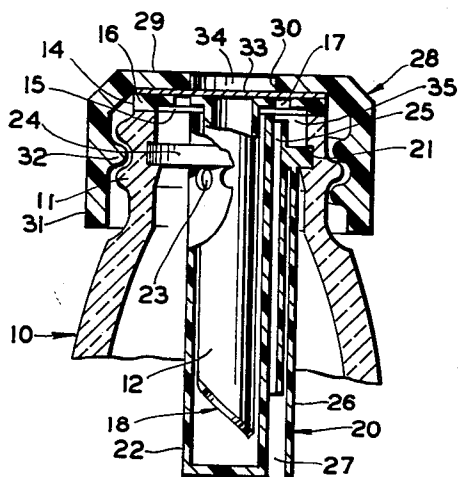


FIG. 2

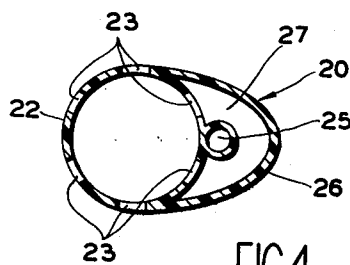


FIG. 4

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COMBINATION CLOSURE MEMBER, POURING DEVICE AND INSERT CUP FOR A CONTAINER

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4 Claims. (Cl. 222-482)

The present invention relates to a container, and more particularly, to a closure member, pouring device and insert cup for the container.

It is an object of the present invention to provide a closure member and a pouring device which is inserted entirely within the neck of the bottle so the bottle has a self-stored pouring device therein.

It is another object of the present invention to provide a self-stored pouring device for the neck of the bottle so the bottle may be shipped or transported to a point of use which eliminates the necessity of providing separate packages or cartons for shipment of pouring devices.

It is another object of the present invention to provide a self-stored pouring device that fits within the neck of a conventional bottle requiring no particular design of the bottle in order to accommodate the pouring device.

It is another object of the present invention to provide a bottle cap having a central opening in it for receiving a pouring device, and a sealing disc closing off the central opening to prevent the liquid contents of the bottle from leaking during shipment, until the pouring device stored in the bottle neck is inserted through the opening.

It is still another object of the present invention to provide a cup member permanently disposed within the neck of a bottle so that the bottle cannot be reused or refilled once its contents have been emptied.

It is yet another object of the present invention to provide an insert member permanently disposed within the neck of a bottle and a pouring device which is stored within the cup member during shipment of the bottle.

It is another object of the present invention to provide the combination of a closure member, a pouring device and an insert member permanently disposed within the neck of the bottle, in which the pouring device and the insert member cooperate with one another when the pouring device is positioned in its pouring position, to provide air-venting means for permitting ingress of air into the neck of the bottle.

Various other objects and advantages of the present invention will be readily apparent from the following detailed description, when considered in connection with the accompanying drawings forming a part thereof, and in which:

FIG. 1 is a fragmentary elevational section view of the closure member, pouring device and insert member of the present invention, with the pouring device extending above the closure member in its dispensing position;

FIG. 2 is a fragmentary view, similar to FIG. 1, partly in section, illustrating the pouring device in an inoperative position when it is stored within the neck of the bottle;

FIG. 3 is an enlarged detail section taken along line 3-3 of FIG. 1, illustrating the recess and apertures in the pouring device; and

FIG. 4 is an enlarged detail section of the insert member taken along line 4-4 of FIG. 1.

Referring to the drawings, the reference numeral 10 generally designates the neck of a bottle provided with conventional external threads 11 on the end thereof. The pouring device comprises an elongated tubular member 12 defining a liquid passage 13 therein having a circular outwardly extending rim or flange 14 on its lower

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end. Flange 14 has a diameter greater than the inside diameter of the rim of the neck of the bottle on which it seats so that it can be supported thereon, as clearly seen in the drawings. Flange 14 is provided with an annular recess 15 in the upper side thereof and an annular peripheral rib 16 adjacent the recess. Air vent ports or apertures 17 are circumferentially spaced in recess 15 to permit air to enter the neck of the bottle, as herein-after described. The upper end of the liquid passage 13 is provided with a flap valve 18 formed integrally therewith having a hemispherically shaped stopper 19 adapted to be pressed into the end of the liquid passage 13 to prevent leakage of liquid therefrom and evaporation of liquid, and to keep dirt out. The pouring device is preferably made of a molded plastic material having flexible and resilient properties such as polyethylene.

An insert member 20 is disposed within the neck of the bottle and is permanently swaged in a recess 21 formed on the inner surface of the bottle neck. The member 20 is elliptical in cross section, as seen in FIG. 4, and consists of a cylindrical elongated member or cup 22 closed at the bottom and open at the top, with a plurality of spaced inlet ports 23 disposed in the upper portion thereof just below an outwardly extending rim 24 permanently swaged in a recess 21 in the neck of the bottle. The upper end of cup 22 is positioned flush with the rim of the bottle neck so that flange 14 of the pouring device seats thereon and forms a liquid-tight seal when the pouring device is in a dispensing position. A cylindrical air vent tube 25 is disposed adjacent the outer wall of the cup and extends from a point just below the upper end of the cup 22 to a point substantially above the lower end of the cup. An arcuate skirt or baffle 26 having its opposite sides joined to the opposite sides of cup 22 extends from rim 24 downwardly to a point coextensive with the bottom of the cup. Baffle 26 is spaced from the tube so as to form a chamber 27 enclosing and surrounding the air vent tube. The insert member is made of a stiff material that can be swaged into the recess in the neck of the bottle such as polystyrene, but which is rather brittle so that once it is disposed in the recess, it is difficult if not impossible, to remove it from the neck of the bottle without breaking the bottle. The insert member prevents the bottle from being refilled or reused once the liquid contents of the bottle are emptied.

The closure member or bottle cap 28 may be made of metal, Bakelite or moulded plastic and includes a top 29 with a central opening 30 therein, and a sidewall or depending skirt 31 having internal threads 32 adapted to mate with threads 11 on the neck of the bottle. A circular disc or washer 33 which is of metal or other material and having approximately the same diameter as the flange 14 is provided to fit under the top and cover over the central opening, as seen in FIG. 2.

In assembling the pouring device, closure member and insert member in a bottle, the insert member is first inserted into the neck of the bottle and swaged in recess 21 so it is permanently secured in the neck of the bottle. Thereafter, the pouring device is seated on the bottle, so that annular rib 16 seats against the corresponding rim of the bottle neck with tubular member 12 inserted within cup 22, as shown in FIG. 2. The metal washer 33 is then disposed over flange 14 of the pouring device and the closure member is screwed in a liquid-tight relationship on the threads of the bottle. At this time, the pouring device is completely disposed within the neck of the bottle and washer or gasket 33 prevents leakage of the liquid out of the bottle and it is in condition for shipment to a point of use.

When it is desired to empty the contents of the bottle, the bottle cap 28 is unscrewed from the neck of the bottle, and the gasket removed by hand and discarded. The

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pouring device is then removed from its position within the insert member 20 by pulling it out of tube 22 and reversing it or inverting it so that the pouring device is in an upright position, as shown in FIG. 1. The tubular member 12 is then inserted through central opening 30 and the cap is screwed tightly on the neck of the bottle so that the resilient flange 14 seats on the bottle rim and the inner portion of the flange seats against cup 22. It will be noted the diameter of central opening 30 is substantially greater than the outside diameter of tubular member 12 to form an annular space 34 therearound. The valve 18 is then pulled out of its press-fit relationship with liquid passage 13 and the contents of the bottle are ready to be dispensed through the spout.

As the bottle is inclined downwardly to pour the contents into a glass, the liquid within the bottle will flow through liquid ports 23 into cup 22 of the insert member and thereafter will be dispensed through the liquid passage 13. Simultaneously, the air will enter the bottle so as to permit the liquid to be readily dispensed, through annular space 34 formed around the periphery of tubular member 12. The air then passes inwardly through annular recess 15 and air vent ports 17 which in turn communicate with air vent tube 25 through the annular space 35 formed in the neck of the bottle between the cup rim 24 and flange 14 of the pouring device. The top of the air vent tube 25 is preferably at least $\frac{1}{16}$ of an inch lower than the top of cup 22 so as to insure communication between air vent ports 17 and the air vent tube. Air vent ports 17 are preferably disposed in recess 15 adjacent the tubular member 12 while central opening 30 is of sufficient diameter so that it overlaps the air vent ports 17. The liquid ports 23 in cup 22 are preferably disposed as near as possible below the lower side of rim 24 so that the liquid contents of the bottle may be completely emptied and used. The depending baffle 26 enclosing the air vent tube 25 and extending below it prevents any liquid from inadvertently getting into the air vent tube to clog it and prevent air from entering the bottle.

Thus, the present invention provides a simple and inexpensive liquid pouring device stored within the bottle neck when in an inoperative position, a closure member which prevents leakage during this time, and an insert member which prevents refilling of the bottle once the contents are used.

Inasmuch as various changes may be made in the form, location and relative arrangement of the several parts of the device without departing from the essential characteristics of the invention, it will be understood that the invention is not to be limited except by the scope of the appended claims.

What is claimed is:

1. A permanent unitary plastic insert member for the neck of a bottle comprising an elongated cylindrical member closed at the bottom and open at the top, an outwardly extending horizontal circular rim around the upper portion of said member and disposed below the upper edge of said cylindrical member for insertion in a recess in the neck of a bottle, said member having liquid inlet ports in the cylindrical surface thereof below and contiguous to said rim, an air vent tube extending through said rim outside said member from a point disposed below the upper edge of said member to a point disposed above its bottom edge, and an arcuate baffle joined to the opposite sides of said member enclosing said tube and forming a chamber therearound, said baffle extending from the bottom of said rim to adjacent said bottom.

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2. In combination, a bottle cap with a central opening, a removable sealing disc for closing off said opening, a tubular member forming a liquid dispensing passage, a flange on said member for supporting it on the neck of a bottle, said flange having an air vent and an air port therein in communication with each other, an open end cup for insertion and connected within the neck of a bottle with the closed bottom disposed lowermost, a rim on said cup adjacent said open end, liquid inlet means in said cup below said rim, an air vent tube extending through said rim outside said cup, said tubular member being adapted to extend into said cup, and to extend through said central opening when said washer is removed.

3. In combination, a bottle cap with a central opening, a removable washer closing off said opening, a tubular member forming a liquid dispensing passage, a flange on said member for supporting it on the neck of a bottle, said flange having an annular recess therein and an air port adjacent said recess to provide an air vent passage there-through, an open end cup for insertion and connected in the neck of a bottle with the closed bottom disposed lowermost, a rim around the upper end of said cup, liquid inlet means in said cup below said rim, an air vent tube extending through said rim, baffle means below said rim enclosing said air vent tube, said tubular member being adapted to extend into said cup, said tubular member being adapted to be inverted to extend above said cup and through said central opening when said washer is removed.

4. In combination, a bottle cap with a central opening therein, a removable washer closing off said opening, a tubular member forming a liquid dispensing passage, a circular flange on the lower end of said member for supporting it on the neck of a bottle, a peripheral rib on said flange, said flange having an annular recess therein surrounding said tubular member, said flange having an air vent port therein adjacent said recess, an open end cup for insertion and connected in the neck of a bottle with the closed bottom disposed lowermost, a rim around the upper end of the cup for insertion in a recess in the neck of a bottle, said cup having liquid inlet ports therein below said rim, an air vent tube extending through said rim from a point below the open end of the cup to a point adjacent its closed end, an arcuate baffle joined to the opposite sides of said cup enclosing said tube and forming a chamber therearound, said baffle extending from said rim to adjacent its closed end, said tubular member being adapted to extend into said cup, said tubular member being adapted to be inverted to extend above said cup and through said central opening when said washer is removed.

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