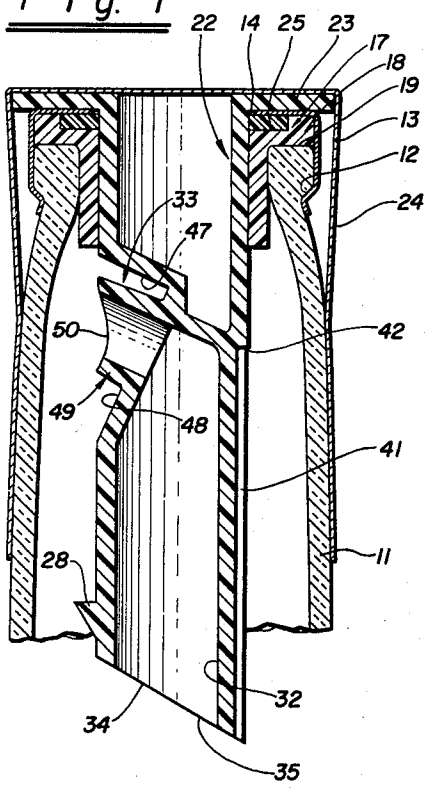
Dec. 29, 1959 I. A. HALPERN 2,919,057

CONTAINER CLOSURE AND POURING SPOUT

Filed March 18, 1957

Fig. 1



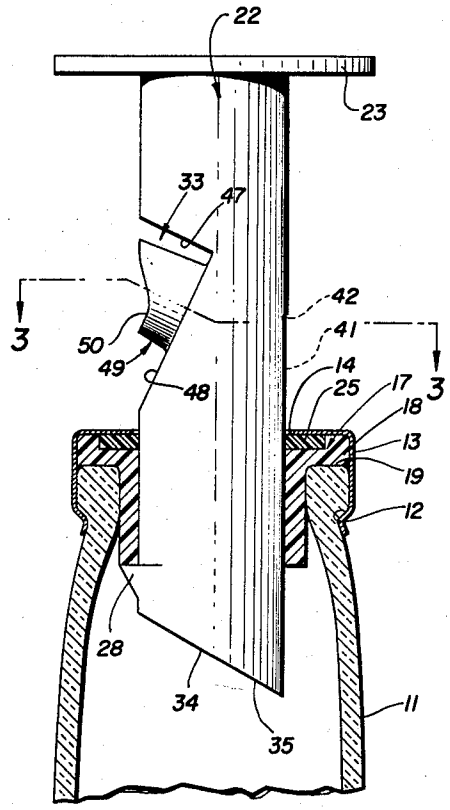


Fig. 2

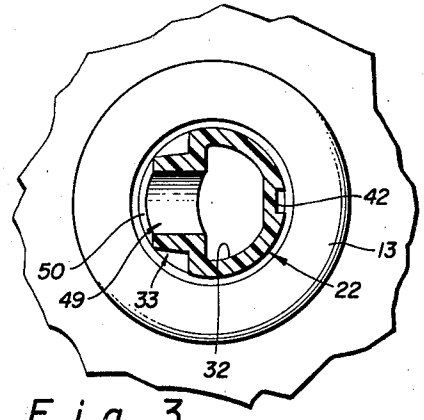


Fig. 3

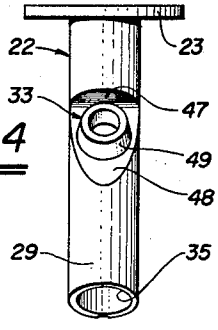


Fig. 4

INVENTOR.
Israel A. Halpern

BY Townsend and Townsend

Attorneys

United States Patent Office 2,919,057 Patented Dec. 29, 1959

2,919,057

CONTAINER CLOSURE AND POURING SPOUT

Israel Alfred Halpern, Daly City, Calif.

Application March 18, 1957, Serial No. 646,878

9 Claims. (Cl. 222—484)

This invention relates to a new closure for containers and pouring spout for containers, as glass bottles adapted to contain liquids such as liquor, vinegar, salad oil and the like. The present invention is a continuation-in-part of my copending application Serial No. 476,149 filed December 20, 1954, now Patent No. 2,790,582.

It is an object of the present invention to provide an improved closure and pouring spout for containers wherein the contents of a glass bottle or the like may be effectively sealed therein and yet which operates as a pouring or dispensing spout when in operaive pouring position. It is a principal object of the present invention to provide a pouring spout which effectively prevents dripping or leakage of the fluid product dispensed upon termination thereof.

It is a well known fact that loss of liquid by dripping from the pouring end of a bottle causes considerable loss. In the case of whiskey, for example, the loss by dripping may be very substantial and work an economic loss of considerable magnitude in bars or other such locations. In the case of salad oils, drippings from the open or pouring end of the bottle quickly discolors labels attached to the bottle, and affords a very unsightly appearance to the container. The present invention provides a pouring spout which prevents after-pouring leakage or dripping.

Further objects of the present invention are to provide a closure and pouring spout which may be employed with conventional containers such as glass bottles, and used in the place and stead of conventional stoppers, caps, and the like. The dispensing spout is so arranged that when in closed or inoperative position a revenue stamp, as used with liquor bottles, may be installed in conventional fashion. It is a specific object to provide a pouring spout wherein the breathing orifice is built into the plug in such a way as to insure proper breathing during pouring.

Additional advantages of the present invention stem from employment of a closeable dispensing spout which operates as an efficient closure for a bottle to prevent evaporation or spillage of contents and further prevents ingress of insects and the like to the contents, as happens with pouring spouts presently in use.

Other objects and advantages of the invention will be apparent upon review of the specification and reference to the accompanying drawings in which similar characters of reference represent corresponding parts in each of the several views.

In the drawings:

Fig. 1 is a vertical sectional view through a portion of a container with the pouring spout in closed position;

Fig. 2 is a view similar to Fig. 1 with the pouring spout in open or pouring position;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2; and

Fig. 4 is a front elevational view of the plug member.

The device of the instant invention is illustrated as installed in the neck 11 of a conventional bottle pro-

vided with an external groove 12 on the upper end thereof. A metal cap 13 engages groove 12 and is formed with a central aperture 14. Cap 13 holds the pouring spout in place. Seated within the bottle top is a sleeve 17 formed of impervious plastic material such as polyethylene resin, neoprene or the like. The sleeve is provided with an annular flange 18 which fits against the top of the neck of the bottle and is sandwiched between metal cap 13 and the top bearing surface 19 of the bottle. Disposed slidably within sleeve 17 and through cap aperture 14 is a plug member indicated generally at 22. The plug is preferably formed of liquid impervious plastic material such as polyethylene resin or neoprene or other suitable material. The plug is provided with an enlarged head 23 which is superposed over cap 13 when in closed position. An annular recess may be formed in the top surface of flange 18 to receive a cork gasket 25. A revenue stamp is illustrated at 24 and may be applied in the usual fashion to prevent unauthorized opening of a sealed bottle.

Plug 22 fits slidably and snugly within sleeve 17 and is provided with an external bead 28 adjacent its lower end to limit withdrawal of the plug beyond a predetermined limit relative to sleeve 17. The plug is provided with a central bore 32 extending up from its bottom to enable liquid to discharge from the interior of the container through a pouring hole indicated generally at 33. The bottom of the plug is cut away at an oblique angle in respect to the longitudinal axis of bore 32, as indicated by reference numeral 34 so that the liquid opening 35 is generally elliptical and presents an enlarged initial opening for liquid to travel from container interior to pouring hole.

In order to provide for entry of air into the container to replace the liquid being poured therefrom, a breather duct 41 is provided by a groove extending from the bottom of the plug to egress port 42 communicating with atmosphere when the plug is in open or pouring position, as indicated in Fig. 2. When the plug is in a retracted or closed position, shown in Fig. 1, port 42 is disposed within the container and sealed from atmosphere. The duct 41 is formed in the wall of the plug adjacent the lowermost part of opening 35, so that the bottom of duct 41 lies in approximately the same horizontal plane as a portion of opening 35.

The plug is formed with a recess, as indicated by reference numeral 47, adjacent but spaced downwardly from its upper end so that it is entirely within the bottle when the plug is closed, as shown in Fig. 1. Recess 47 has an oblique wall 48 disposed at about a 60° angle from which projects spout 49 disposed at about a 45° angle to the central axis of plug 22. The inside diameter of spout 49 is considerably less than bore 32. The terminal of spout 49 is formed with a curve 50 to reduce tendency to drip. The larger diameter of bore 32 as compared with spout 49 insures that upon completion of pouring, the liquid contained in pouring spout 49 is forced back into bore 32 and thence into the container interior by reason of the atmospheric pressure exerted at the pouring lip. Additionally, the curved edge orifice 50 assists in preventing spillage or dripping upon completion of pouring.

Normally, the bottle is substantially inverted when pouring. Upon completion, the user puts the bottle back to an upright position and the liquid drains from bore 32 to the container interior by gravity. Atmospheric pressure forces liquid trapped in pouring spout 49 interiorly to the bore and spillage and dripping is thus effectively prevented.

In operation, the closure is placed on a bottle or the like and may be sealed as by a stamp 24 to prevent un-

authorized opening of the container. The user may break the seal and pull plug 22 upwardly, thereby exposing breather orifice 42 and pouring spout 49 to atmosphere, as shown in Fig. 2. Upon inversion of the container, fluid will flow through bore 32 outwardly through spout opening 50 while air is replaced through orifice 42 and duct 41. It is noted that opening 35 of bore 32 is enlarged and lies in part in substantially the same horizontal plane as the bottom of duct 41, thus facilitating pouring.

Upon completion of pouring, the container is moved to a generally upright position and the fluid within bore 32 flows back into the interior of the bottle. The fluid trapped in the pouring spout 49 does not drip by reason of the relative angles and diameters of the ports and curved edge 50.

Although the foregoing invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be practiced within the spirit of the invention and scope of the appended claims.

I claim:

1. A dripless pouring spout for a container comprising a sleeve dimensioned to fit within the mouth of a container and a plug slidable in said sleeve, said plug being formed with a pouring hole extending upwardly and thence outwardly and terminating in a spout, said plug being cut away around the periphery of said pouring spout to define a terminal lip, said spout being located in the side of said plug spaced downwardly from the upper end of said plug and in such position that when said plug is elevated said spout is open to atmosphere and when said plug is depressed said spout is slid inside said sleeve and closed off from atmosphere by the upper end of said plug sealing against said sleeve.

2. A dripless pouring spout in accordance with claim 1 in which the terminal lip of said spout comprises a peripheral curved edge.

3. A dripless pouring spout according to claim 1 in which said plug is formed with a recess having a wall disposed at an angle of about 60° and said spout projects therefrom at an angle of about 45°.

4. A dripless pouring spout comprising a sleeve dimensioned to fit in the mouth of a container and a plug slidable inwardly and outwardly of the mouth of the container inside said sleeve, said plug being formed with a central bore extending upwardly from the lower end of said plug to a position spaced downwardly from the top of said plug and a duct extending outwardly from a position adjacent the upper end of said central bore and terminating in an orifice spaced downwardly from the upper end of said plug, said orifice being located in such

position that when said plug is elevated said orifice is open to atmosphere and when said plug is depressed said orifice is closed off from atmosphere by the upper end of said plug sealing against said sleeve, said plug formed with a curved edge surrounding said orifice.

5. A dripless pouring spout according to claim 4 in which the side wall of said plug is cut away adjacent said orifice to form a spout disposed at an angle of about 45° to the axis of said plug.

6. A pouring spout for a container comprising a sleeve dimensioned to fit within the mouth of the container and a plug slidable in said sleeve, said plug being formed with a pouring hole extending upwardly and in fluid communication with an aperture located in the side of said plug in such position that when said plug is elevated said aperture is open to atmosphere and when said plug is depressed said aperture is closed off from atmosphere by said sleeve, said plug being formed with a breather duct formed in the wall of said plug and extending upwardly from the lower end of said plug to a point below the elevation of said aperture and on the side of said plug substantially diametrically opposite said aperture, the length of said breather duct being such that when said plug is elevated the upper terminus of said breather duct communicates with the atmosphere and when said plug is depressed said breather duct is closed off from atmosphere by said sleeve, the lower end of said plug being beveled and the longest portion of the beveled end of said plug being at the lower terminus of said breather duct.

7. A dripless pouring spout according to claim 2 in which said plug is formed with a recess having a wall disposed at an angle of about 60° and said spout projects therefrom at an angle of about 45°.

8. A dripless pouring spout according to claim 4 and wherein said plug is formed with a breather duct formed therein to communicate with atmosphere when the plug is elevated for pouring and to be closed from communication with atmosphere when the plug is depressed.

9. A pouring spout for a container according to claim 6 and wherein the plug is cut away around the pouring aperture in order to define a terminal lip having a curved edge.

References Cited in the file of this patent

UNITED STATES PATENTS

2,177,335	Ruetz	Oct. 24, 1939
2,574,991	Waite	Nov. 13, 1951
2,613,852	Frederick	Oct. 14, 1952
2,772,037	Rieke	Nov. 27, 1956

FOREIGN PATENTS

667,081	Great Britain	Feb. 27, 1952