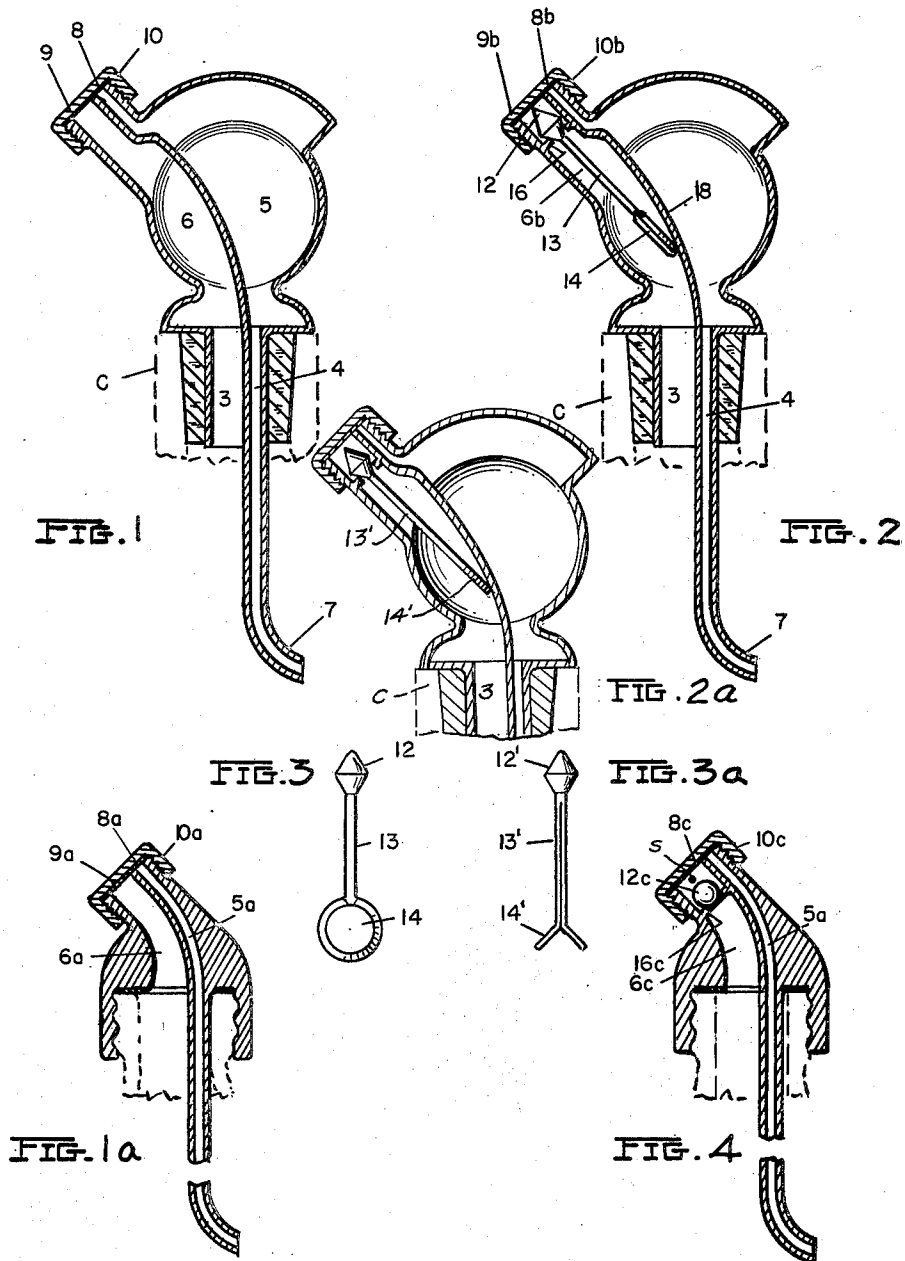


Oct. 23, 1945.

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LIQUID DISPENSING MEANS

2,387,699

Filed March 14, 1942



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2,387,699

LIQUID DISPENSING MEANS

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Application March 14, 1942, Serial No. 434,634

5 Claims. (Cl. 215-74)

In dispensing liquids, beverages, flavoring extracts, etc., from narrow mouthed containers, such as bottles, jugs and the like, splashing and spilling is prone to occur on account of interference of the in-rushing air, and it is very difficult to gauge and control the amount desired to be poured. In an effort to mitigate this condition, air vents have been located in pouring stoppers, the liquid being supposed to flow out through one passage while air enters through a smaller auxiliary passage. This however has not satisfactorily removed the difficulty. Unless the device be handled very slowly and carefully, liquid is prone to flow out through both passages, and there is sufficient interference to also occasion running down of drops of liquid after the pouring operation is completed, thereby causing mussiness in the condition of the outside of the container. A satisfactory sealing of the device for shipping and the like, without recourse to a substitute supplemental closure has also been lacking. In accordance with the present invention however a construction may be had which can be used rapidly without special care, allowing the dispensing of such amount of liquid as desired, and the same device serves not only for dispensing, but also for sealing for shipping and storing, etc. Other advantages and distinctive features will appear from the following description.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described, and particularly pointed out in the claims, the following description and the annexed drawing setting forth in detail certain illustrative embodiments of the invention, these being indicative however, of but a few of the various ways in which the principle of the invention may be employed.

In said annexed drawing:

Fig. 1 is a vertical sectional view of an embodiment of the invention; Figs. 1a, 2, 2a, and 4 are similar views of modifications; and Figs. 3 and 3a are plan views of check-stopper detail.

In general, the invention involves a device adapted to be placed on a container C, such as a bottle, jug, etc., embodying a closure means which may have a cork or rubber fitting as a stopper in the neck of the container, or as a screw-threaded member engaging a screw-threaded form of container, as may be respectively preferred in any given instance. As in Fig. 1, a hollow chamber surmounts the closure, and this is divided into two compartments, 5, 6, each having communication to the container through the

passage-ways 4, 3, respectively, the former extending deeper into the container, and in preferred form terminating by a curved portion 7 turning toward the container wall. The passage-way 5 has an external opening 8, and the passage-way 6 an external opening 9 adjoining and in the same plane, and these are directed at an angle to the axis of the container. A cap 10 is arranged to hermetically seal both openings 8 and 9, together, by screw-threaded engagement.

In a more compact form, Fig. 1a, the passage-ways 5a, 6a, are shortened somewhat, their external openings 8a, 9a, terminating in the same plane, and directed at an angle to the axis of the container, and being adjoining such as to be hermetically sealed, together, by the screw-threaded cap 10a.

In the form shown in Fig. 2, the liquid passage-way 6b contains a check-stopper 12, which is gravity-operated, and whose stem 13 extends down and terminates in a flattened rudder 14, which has a relatively sharp edge. The stopper 12 is of advantage in automatically excluding possible entry of flies if the screw-cap is left off, and it normally rests on a seat 16, but readily opens by gravity when the container is turned up, and allows out-flow of the liquid, being stream-lined and permitting even and uninterrupted flowage of the liquid therearound.

The check-stopper, instead of being of the form shown in Figs. 2 and 3, may in some cases be of the form shown in Figs. 2a and 3a, in which the stem 13' is split and the rudder is diverging prongs 14'. This form has an advantage that with sufficient resiliency the prongs 14' may be pressed together, and the stem members 13' compensating somewhat, enough to allow of the end being inserted into its working position in the liquid passage-way in the initial assembly of the device. Otherwise, the housing must be made in two parts to be cemented together after the check-stopper is put in place.

In use, on removing the screw cap which seals the air and liquid passage-ways, by turning the container up, the liquid flows smoothly and quietly out through the liquid passage-way, and air is supplied through the air passage-way, and in particular the precise amount of liquid desired to be dispensed may be accurately gauged by holding the device with the air and liquid openings 8, 9, etc. at the level in the receiving cup, spoon, etc. to which the amount of charge is desired, and as the openings 8 and 9 are together when the liquid poured out raises to such point it covers both openings, and flow immedi-

ately stops, and the container may be turned back to normal position. The screw cap not only serves to hermetically seal both openings to the container simultaneously, and when removed allows the accurate control of dispensing by virtue of the positioning of the openings 8, 9, etc. but in the form of the device shown in Fig. 2 can be set against the stopper 12 in addition to performing its hermetic sealing function. On removal of the screw cap, the dispensing usage of this form of the device is as described foregoing, the stopper 12 opening by gravity when the container is turned up, and the rudder 14 taking position in the stream and as determined by the partition wall 18, such that the stream-lined stopper head 12 centers in the outflowing liquid and permits even and smooth flow.

In Fig. 4, a check-stopper 12c of short form is shown inserted between a seat 16c and a stop projection or pin S.

This application is a continuation-in-part of my application Serial No. 334,233, filed May 9, 1940, now Patent No. 2,348,514, dated May 9, 1944.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided the features stated in any of the following claims, or the equivalent of such, be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A liquid dispenser, comprising a closure means adapted to be placed on a liquid container, said closure means having a liquid conduit with its external end cut at an angle to the axis of the closure means and an air conduit with its external end adjacent and cut in the same plane as that of the liquid conduit and having its internal end extending into the container and turned toward the wall of the container on which the closure means is placed, a shoulder in the outer end of said liquid conduit, a gravity stopper to close said liquid conduit only, being seatable against said shoulder and having a stem extending in the liquid conduit and terminating as a flattened sharp-edged rudder engageable against the wall of the liquid conduit, and a screw cap in common to block said air conduit and gravity stopper and liquid conduit.

2. A liquid dispenser, comprising a closure means adapted to be placed on a liquid container, said closure means having a liquid conduit with its external end cut at an angle to the axis of the closure means and an air conduit with its external end adjacent and cut in the same plane as that of the liquid conduit and having its in-

ternal end extending into the container on which the closure means is placed, a shoulder in said liquid conduit, a gravity stopper seatable against said shoulder and having a split stem extending in the liquid conduit and terminating in diverging prongs engageable against the wall of the liquid conduit, and a screw cap in common to block said air conduit and gravity stopper and liquid conduit.

3. A liquid dispenser, comprising a closure means adapted to be placed on a liquid container, said closure means having a liquid conduit with its external end cut at an angle to the axis of the closure means and an air conduit with its external end adjacent and cut in the same plane as that of the liquid conduit and having its internal end extending into the container and turned toward the wall of the container on which the closure means is placed, a shoulder in said liquid conduit, a gravity stopper seatable against said shoulder and having a stem extending in the liquid conduit with its end engageable against the wall of the liquid conduit, and a screw cap in common to block said air conduit and gravity stopper and liquid conduit.

4. A liquid dispenser, comprising a combined shipping and pouring closure means adapted to be placed on a liquid container and having a liquid conduit and an air conduit with external openings adjacent, being cut in a plane angular to the axis of the closure means and arranged to automatically compel orienting the air conduit on top of the liquid conduit if the container is to pour, a shoulder in said liquid conduit, a gravity stopper seatable against said shoulder, and having a stem extending in the liquid conduit, said stem being split and terminating in diverging prongs and being resilient whereby the prongs may be inserted past said shoulder in assembling into said liquid conduit.

5. A liquid dispenser, comprising a combined shipping and pouring closure means adapted to be placed on a liquid container and having a liquid conduit and an air conduit with external openings adjacent, being cut in a plane angular to the axis of the closure means and arranged to automatically compel orienting the air conduit on top of the liquid conduit if the container is to pour, a shoulder in the outer end of the liquid conduit, a gravity stopper closing the liquid conduit only, being seatable against said shoulder, and a screw cap in common to block said air conduit and gravity stopper and liquid conduit.

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