Dec. 4, 1928. 1,694,304

G. J. ARMSTRONG

LIQUID DISPENSING CONTAINER

Filed Aug. 22, 1927

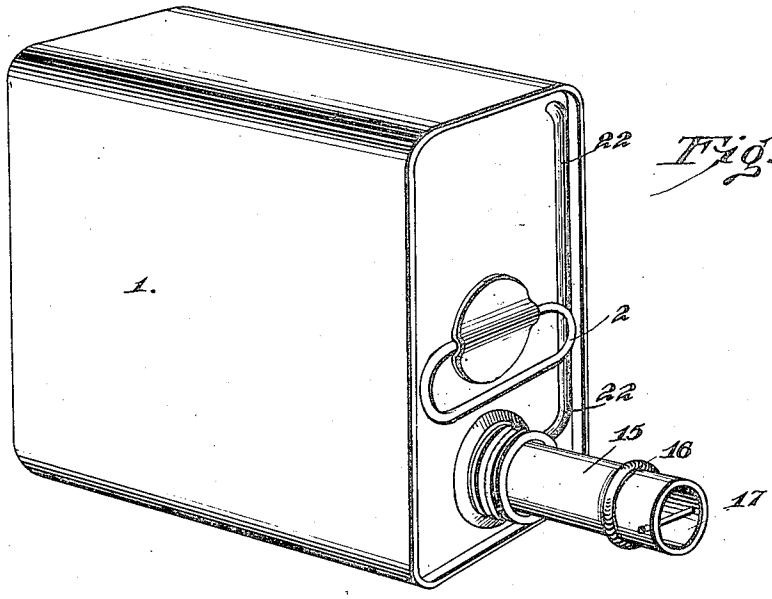


Fig. 1

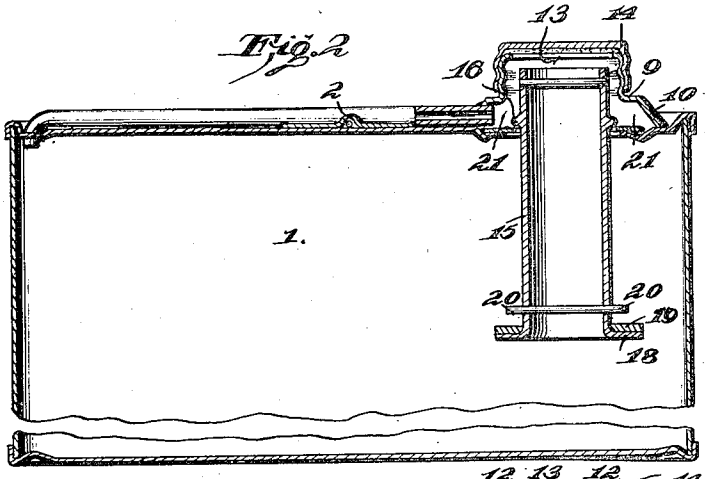


Fig. 2

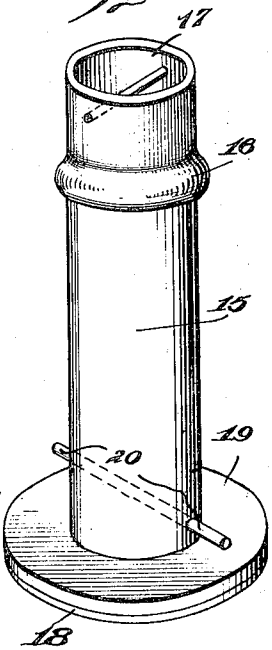


Fig. 3

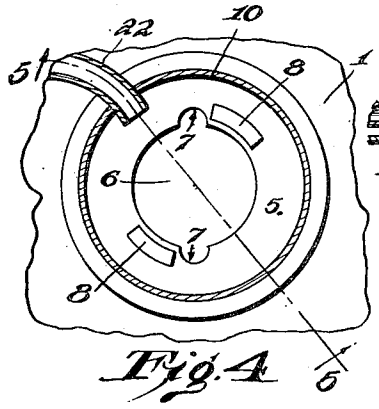


Fig. 4

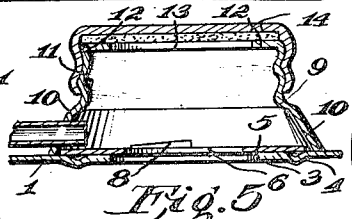


Fig. 5

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Patented Dec. 4, 1928. 1,694,304

UNITED STATES PATENT OFFICE.

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LIQUID-DISPENSING CONTAINER.

Application filed August 22, 1927. Serial No. 214,628.

This invention relates to containers for liquids which are to be dispensed therefrom, and has for its object the provision of a leak-proof pouring spout cooperating with a closured discharge opening to seat within the opening and container when not in use and to project therefrom for pouring in leak-proof engagement with the container.

Dispensing containers as at present constituted, usually have two capped closures; one for dispensing the contents and the other for providing an air vent in connection with the contents discharge. By my invention, I am also enabled to dispense with one of these capped closures. To this end, an air vent tube is provided connecting the interior of the container with a chambered closure through which the spout projects and to which air is admitted.

As a further and related feature of the invention, I have provided a well to catch drippings from the spout and a conduit to convey them back into the container. This well is provided by a chambered closure overlying the discharge opening through which the spout projects and the return conduit for the dripping is conveniently provided for by the air vent tube which with the chambered closure has this double function.

These and other features of the invention are more fully described in the following detailed description which is to be read in conjunction with the accompanying drawings forming part thereof and in which:

Fig. 1 is a perspective view of a liquid container embodying the present invention, and shown with the pouring spout projected and in discharging position.

Fig. 2 is a vertical section on an enlarged scale through said container, the spout being in retracted position and the overlying chambered discharge opening closed.

Fig. 3 is a perspective detail of the spout detached.

Fig. 4 is a horizontal section on an enlarged scale through the chambered closure and combined vent and drain tube,

Fig. 5 is a vertical section on the line 5—5 of Fig. 4.

Referring to the drawings, 1 indicates a liquid container such as an oil can having the usual handle bail 2 secured to its top. At one side of the container, a circular opening 3 is made with an annular grooved edge 4 forming a solder or cement channel over which lays and is soldered or cemented the outer edges of a ring 5 whose central opening 6 forms the discharge opening of the container. This ring is formed with diametrically opposed notches 7 in its inner edge and on its upper face at adjacent opposed points with strips forming cam inclines 8 with both of which the pouring spout cooperates as will be presently explained.

This discharge opening 6 is overlaid by what I term a chambered closure, designated generically at 9 and in form approximating an inverted bottomless cup, the outwardly flared edges 10 (Figs. 2 and 5) of which enclose the ring 4 and are suitably affixed to the top of the container 1. The upper end of the closure 9 is formed with pressed threads and with an internally extending annular flange 12 leaving a central circular aperture 13 through which the pouring spout may project when the threaded cap 14 fitting over the upper threaded end of the closure 9 is removed.

The pouring spout is in the form of a tube 15 having an annular supporting bead 16 formed adjacent to its upper end and of a diameter to rest upon the ring 5 to support the spout therefrom as indicated in Fig. 2. Its upper end is provided with a cross wire 17 for convenience in lifting the spout out of the discharge opening. At its lower end, it is provided with an annular flange 18 overlaid by a washer 19 of suitable compressible material. At diametrically opposite points, located a distance above the washer approximating the combined thickness of the container wall and of the ring 5, ends 20 of a cross pin project from the sides of the tube 15. These ends are sized to slide through the ring notches 7 and have flat under faces to seat over and ride upon the cam inclines 8 on the upper face of the ring 5.

When the cap 14 is removed, the spout 15 may be pulled up by its wire 17, the spout being turned so that the ends 20 enter the notches 7 and thereafter given a partial rotation to cause these ends to ride upon the inclines 8 and draw the washer 19 tightly against the underside of the container top at the edges of opening 6, sealing this opening against leakage. To release the spout the operation is reversed and the spout drops down into the inside of the container, its bead 16 resting

upon the top of ring 6 which supports the spout in its withdrawn position. The tube 15 forming the spout is of less diameter than the alined openings 6 and 13. An air chamber 21 is therefore formed by the outside of the spout walls and the inclosing flared edges 10 of the closure 9. This chamber 21 also functions as a well to receive drippings from the spout. A tube 22 connects the interior of this air chamber or well 21 with the interior of the container at the side opposite to that at which the spout is located and provides an air vent to the interior of the container dispensing with the need of the second or air vent cap usually provided on containers. This tube 22 also functions as a drain tube to conduct fluid dripping from the spout and trapped in well 21 back into the can.

The cap 14, when the spout is dropped down into the container, tightly closes the opening and to effectually accomplish this result is provided with a compressible packing disk which overlies and is forced against the flange 12 of the chambered closure 9. The container may be filled through the spout opening with the spout dropped down, the displaced air in the container passing out through tube 22 and chambered closure 9. No second filling (and air vent) opening is, therefore, necessary.

The described and illustrated construction represents one embodiment of the invention, but I do not wish to be limited to its specific structural features except as may be necessary from the state of the art or the specific language of the claims.

Having described the invention, what I desire to secure by Letters Patent is:

1. A liquid container having a cap closed dispensing opening, and a pouring spout of less diameter suspended therefrom within the container when not in use, and arranged to be lifted through and to project beyond said opening for dispensing purposes, said spout having a flanged lower end underlying the container at the edges of said opening with coacting members on the spout and container to clamp said flange against said edges in the projected pouring position of the spout.

2. A liquid container having a dispensing opening, a chambered closure overlying said opening, a pouring spout of less diameter than said opening suspended therefrom within the container and chambered closure when not in use, and arranged to be lifted through and to project beyond said opening for dispensing purposes, said spout having a flanged lower end arranged in spout projected position to underlie the container at the edges of said opening with cooperating means on said container and spout to clamp said flange tightly against the container, and an air vent tube connecting the interior of said chambered closure with the interior of the container.

3. A closure for liquid containers having a dispensing opening therein, an annular drip-trapping chamber enclosing and overlying said opening having an alined opening in its upper end and a removable closure cap therefor, a pouring spout of less diameter than said dispensing and chamber openings suspended from the dispensing opening within the container when not in use and arranged to be lifted through said alined openings and to project from said chamber opening for dispensing purposes, with cooperating means on spout and container providing leak-proof engagement therebetween at said discharge opening, and an air venting conduit and drain connecting the base of the chamber with the interior of the container.

4. A liquid container having a discharge opening therein, an annular chamber enclosing and overlying said opening and having an aligned discharge opening at its upper end provided with a removable closure cap, a discharge spout projectable and retractible through said container and closure openings and of less diameter, and a liquid return conduit communicating with the base of said chambered closure and with the interior of the container, said annular chamber providing a well to receive the drippings from the spout when projected therethrough.

5. A liquid container having a discharge opening formed therein adjacent one side, an annular chamber overlying and upstanding from said opening and having a capped discharge opening at its end, a tube connecting the interior of the annular chamber and the interior of the container at a point adjacent to the side opposite said discharge opening, a pouring spout projectable from and retractible within said container, with cooperating means on spout and container supporting the retracted spout within the container and annular chamber, and clamping together the spout and container in the projected position of the spout.

6. A container having a discharge opening, an annular chamber overlying and upstanding from said opening and having an alined capped discharge opening at its upper end, and a pouring spout of less diameter than said discharge openings mounted for sliding projection from and retraction into said container through said openings and entirely housed within said container and capped chamber when not in use and having means to be engaged with and clamped to the container when the spout is projected therefrom for pouring.

GEORGE JACOB ARMSTRONG.