Dec. 27, 1955 E. S. SCANNELL ET AL 2,728,490

BEVERAGE CONTROL SYSTEM AND DISPENSING MEANS

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Fig. 2.

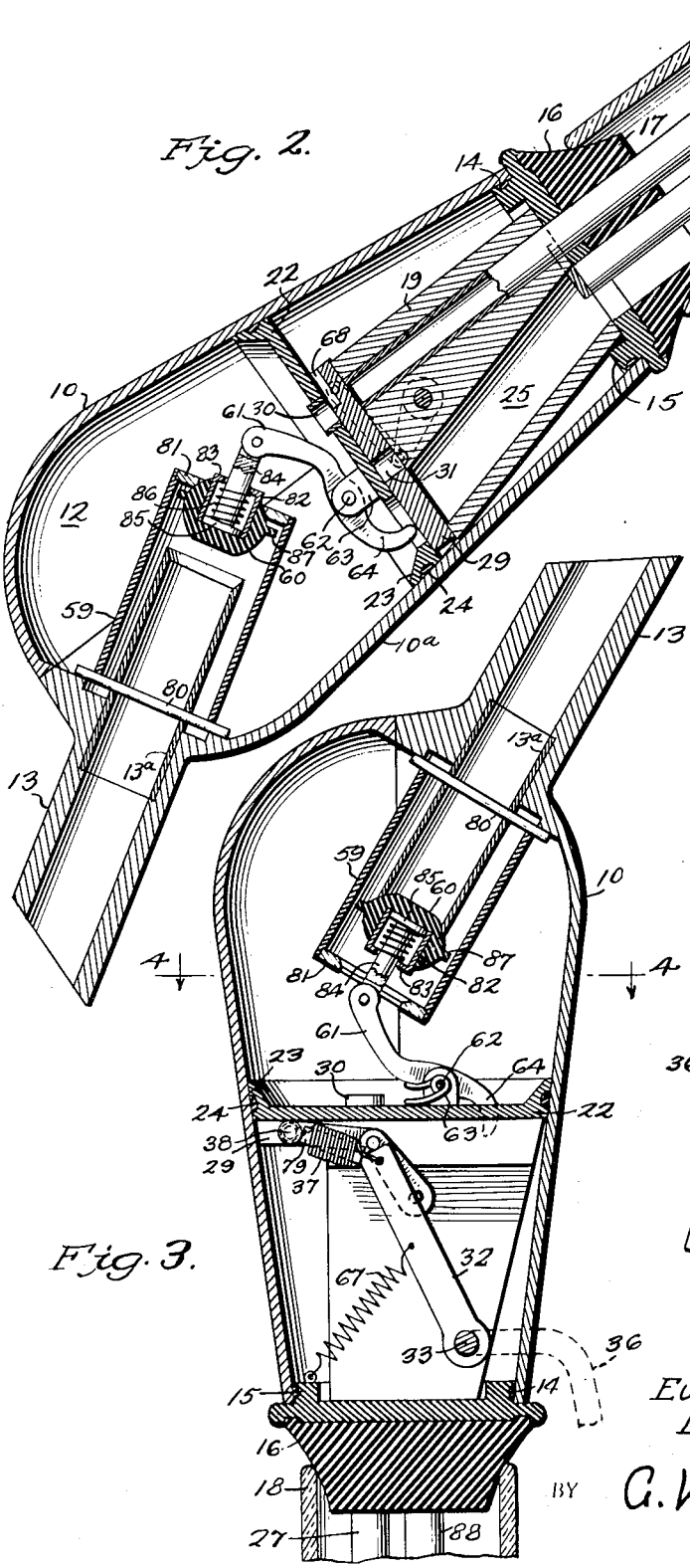
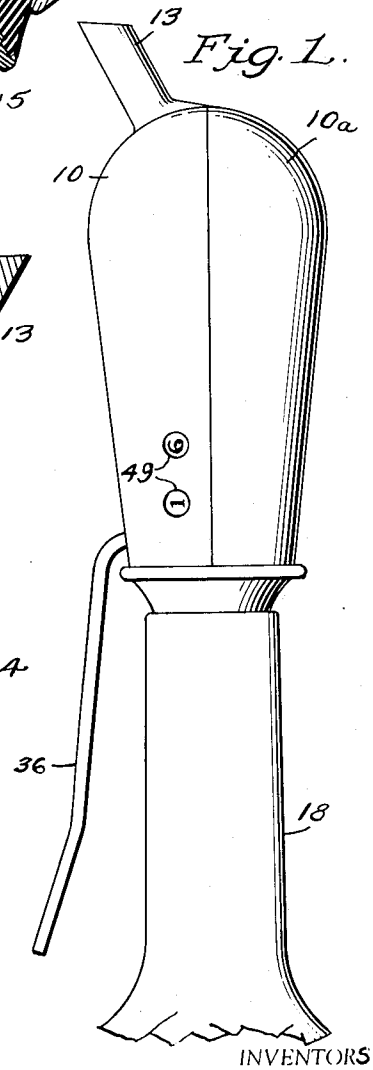


Fig. 3.

Fig. 1.



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BEVERAGE CONTROL SYSTEM AND DISPENSING MEANS

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Fig. 4.

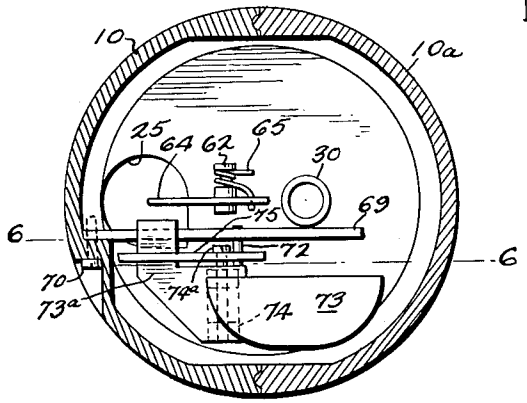


Fig. 7.

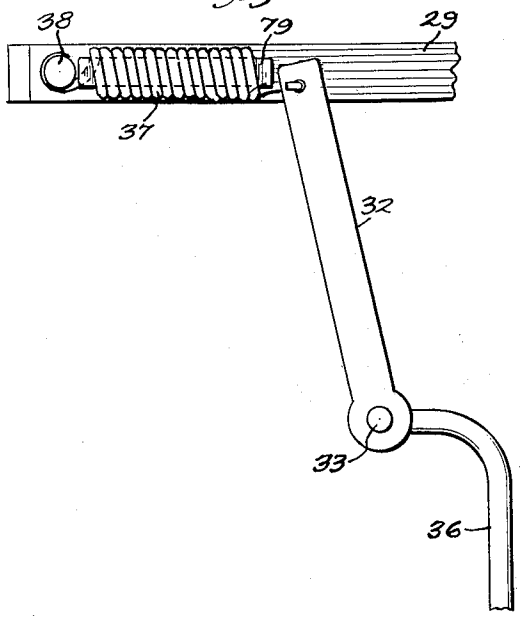


Fig. 5.

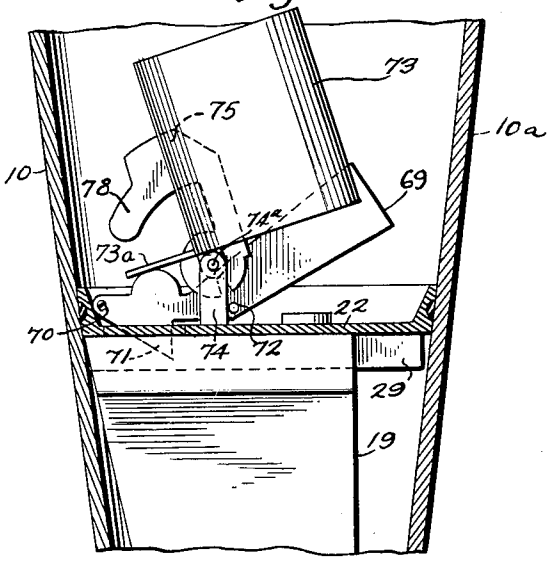


Fig. 8.

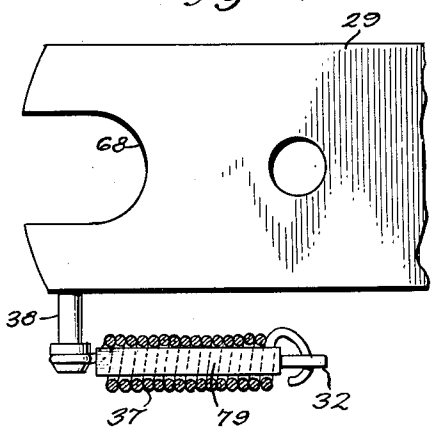
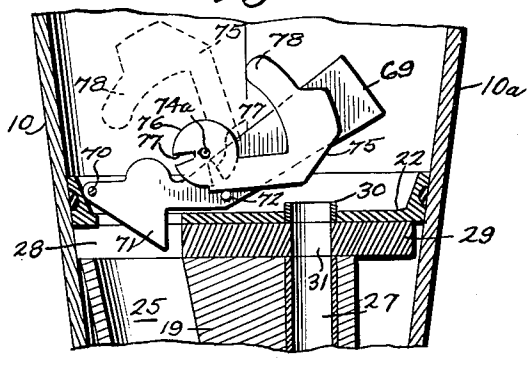


Fig. 6.



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BEVERAGE CONTROL SYSTEM AND DISPENSING MEANS

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Fig. 9.

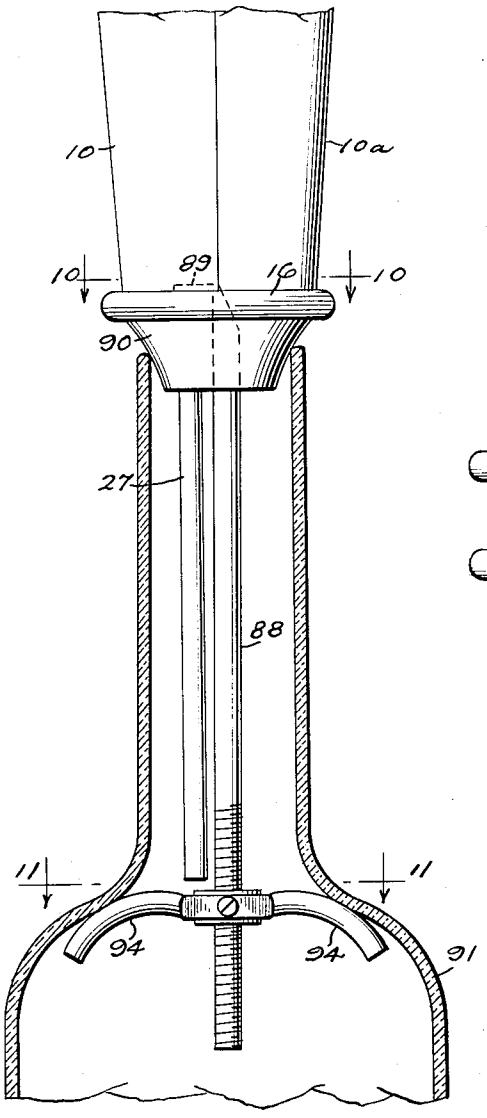


Fig. 10.

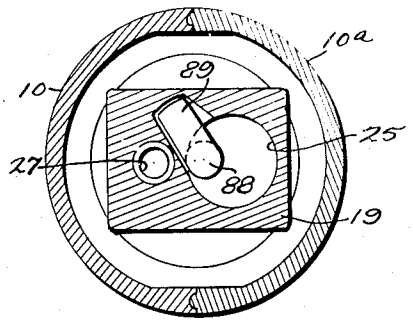


Fig. 11.

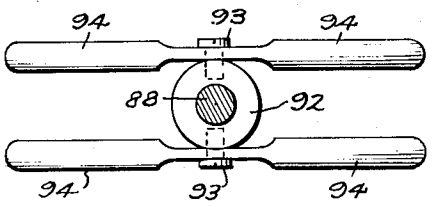
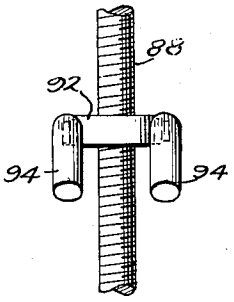


Fig. 12.



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United States Patent Office 2,728,490 Patented Dec. 27, 1955

2,728,490

BEVERAGE CONTROL SYSTEM AND DISPENSING MEANS

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Application August 4, 1952, Serial No. 302,560

11 Claims. (Cl. 222—153)

The present invention relates to dispensing means for use in the merchandising of bottled beverages, and is an improvement upon the invention disclosed in our copending application Serial No. 81,944, filed March 17, 1949, entitled Beverage Control System and Dispensing Means, now Patent No. 2,605,931, issued August 5, 1952.

An object of the invention is to provide an improved dispensing means attachable to a bottle to receive and subsequently to discharge a predetermined, measured quantity of the bottle contents.

Another object is to provide, in a dispensing means of the character indicated, means operative automatically to render the dispensing means totally inoperative unless and until a bottle to which the dispensing means is attached is in a dispensing position and the dispensing means is, at that time, conditioned to deliver only a predetermined, measured quantity of the bottle contents.

A further object is to provide, in a dispensing means of the character indicated, a novel valve mechanism controlling the outlet delivery.

Still another object is to provide, in a dispensing means of the character indicated, means operative automatically, upon attachment of the dispensing means in service relation on a bottle, to lock the dispensing means against detachment from the bottle until the bottle is rendered incapable of refilling.

Other and incidental objects will be apparent from the following description, taken in conjunction with the following detailed description and accompanying drawings, in which:

Figure 1 is an elevation of our improved dispensing means attached in service position in the neck of a bottle;

Figure 2 is substantially an axial section through the dispensing means in tilted, discharge position, with parts removed;

Figure 3 is an axial section of the dispensing means, partly in elevation, viewed from the reverse side of Figure 2 and with the bottle in normal upright, non-dispensing position, as in Figure 1;

Figure 4 is a horizontal section, partly in elevation, taken substantially on the line 4—4 of Figure 3, with detail added;

Figure 5 is a substantially a front elevation of the structure shown in Figure 4 with the parts tilted so that liquid begins to flow into the trap chamber;

Figure 6 is a fragmentary axial sectional view taken substantially on the line 6—6 of Figure 4;

Figure 7 is an enlarged fragmentary elevation illustrating details of the manual actuator and its operative connection with an element of the dispensing means;

Figure 8 is substantially a top plan view of the structure shown in Figure 7;

Figure 9 is an axial section, partly in elevation, through the neck portion of a bottle equipped with the dispensing means of this invention locked against detachment;

Figure 10 is a horizontal section taken substantially on the line 10—10 of Figure 9;

Figure 11 is a horizontal section taken substantially on the line 11—11 of Figure 9; and

Figure 12 is a fragmentary vertical section, rotated ninety degrees, through the showing of Figure 11.

Viewed externally, as in Figure 1, the dispensing device appears as an irregular spheriod shell casing formed of two half-sections 10 and 10*a*. The edges of the halves meet in face contact over their full extent in a plane which intersects the longitudinal axis of the assembly. Securing means bind the halves tightly together in detachably connected engagement. The outer end of the shell is pear shaped and closed to encompass a trap chamber 12 for receiving a charge of liquid to be dispensed. A discharge spout 13 in the form of a tube open at both ends is integral with one of the shell sections and extends through the section wall in supported engagement therewith. The tube is inclined relative to the longitudinal axis of the shell and has an internal tube section 13*a* press fitted therein and extending well into the trap chamber.

The inner end of the shell is circular and open and is provided with an internal annular bead 14 which seats in a complemental receiving groove formed in the peripheral face of an annular mounting flange 15 integral with a bottle closure cap 16; thus securely locking the cap and shell against relative axial movement. The cap has a depending portion 17 adapted for detachable connection with a bottle neck 18 in the usual manner of closure caps.

A center section 19 is mounted within the shell between the trap chamber 12 and bottle cap 16. This section is here shown as a block rectangular in cross section axially of the shell and rigidly secured at its base to the cap 16. The cross sectional area of the block is appreciably less than that of the portion of the shell in which it is located, and three side faces of the block occupy planes parallel to its longitiudinal axis. The fourth side face, on the right in Figures 2 and 3, is inclined outwardly toward the shell wall from the base of the block to its outer end, thereby providing a longitudinal progression in the cross sectional area of the block. At its outer end, the body of the block 19 is laterally enlarged to provide an integral head 22 of oval form and dimension corresponding to the internal configuration of the shell at that point. The peripheral face of the head tightly engages the wall of the shell and is formed with an axially directed flange 23 that is externally grooved to seat over a complemental annular bead 24 on the interior of the shell, whereby the head and shell are locked against relative axial movement. The head constitutes a partition between the liquid trap chamber 12 and a register mounting portion of the assembly, and the oval configuration of the shell and partition prevents relative twisting of the parts.

Both the cap closure 16 and center section block 19 are bored to establish liquid flow and air passage communication between the bottle interior and the trap chamber 12. A bore 25 through the body of the block 19 substantially parallel to its inclined face opens to a registering aperture in the cap 16 and provides for flow of liquid from the bottle into the chamber 12 when the bottle is inverted. Air passage between the interior of the bottle and the chamber 12 is accomplished through an air tube 27 passed through the body of the cap and press fitted in a receiving bore in the block. The lower end portion of the air tube extends well into the bottle neck, and at its upper end the tube terminates substantially flush with the planar bottom of a valve guide channel 28 which extends diametrically through the block head 22 across the tube end and the liquid flow bore 25. A reciprocable slide valve 29 is housed within the guide channel. The roof of the channel is apertured in alignment with the air tube, and mounts in the aperture a

tubular conduit 30 which projects a short distance into the chamber 12.

Normally the valve 29 is seated in retracted open position as shown in Figures 4, 5 and 6. In this position its rear edge abuts the shell casing wall and its forward edge is retracted clear of the liquid flow bore 25. Also, in this position, a port 31 in the valve body registers with the air tube 27 and the conduit 30 to establish communication therebetween. When the valve is projected forwardly to closed position, as shown in Figure 2, the port 31 is shifted laterally to cut off communication between the air tube and conduit, and the valve body moves entirely across the bore 25 to cut off the flow of liquid from the bottle to the trap chamber and vice versa.

Operating movement of the valve 29 is effected by means of a lever 32 fulcrumed intermediate its ends on a pivot stud 33 on the center block 19 and extending laterally therefrom. The lever is formed with an outwardly directed portion coaxial with its pivot axis and which projects laterally through an aperture in the wall of the shell. At the outer end of the portion the lever is directed laterally to extend in spaced relation alongside the bottle 18 as a handle 36 offset with respect to the inner end portion of the lever housed within the shell. The terminal of this inner end portion has pivotal connection with one end of a retractile spring link 37 that is pivotally connected at its other end to a stud 38 carried by and extending laterally from the rear end portion of the valve 29. The stud 38 also is pivotally connected with one end of a forwardly directed link, not shown, operative by the slide valve 29 to register the number of drinks dispensed from the bottle.

The discharge spout 13*a* is controlled by a valve comprising a sleeve 59 telescoped over the inner end of the discharge spout. The sleeve has an internal diameter greater than the external diameter of the discharge spout whereby to provide a clearance space between the two. It is actuated from the slide valve 29 by means of an S-shaped lever 61 fulcrumed intermediate its ends on a pin 62 mounted transversely between two spaced parallel lugs 63 integral with the partition head 22, which projects through the partition head well into the liquid flow bore 25 in the path of movement of the forward edge of the slide valve 29. In the normal position of the parts, with the slide valve in retracted open position, the lever 61 is held by a spring 65 so that its cam end portion 64 is disposed in the path of movement of the slide valve 29 and its other end holds the discharge valve 60 closed against its seat in the end of the discharge tube. The spring 65 is mounted on the lever fulcrum pin between one of the lugs 63 and a head on the pin, and bears at its ends against the partition head and the lever.

In service, the dispensing register is attached to a bottle as described, with the air tube 27 extending well down into the bottle. With the bottle in upright position the slide valve 29 is held in open retracted position, as seen in Figures 4, 5 and 6 by the bias of a retracting spring 67 connected between the arm of the lever 32 within the shell and an attaching lug on the closure cap flange 15, as in Figure 3. In this position of the lever, its handle portion 36 is angled outwardly away from the bottle neck. When a drink is to be dispensed the bottle is inverted or tilted as shown in Figure 2, with the spout 13 in pouring position, whereupon liquid flows by gravity through the flow bore 25 into the trap chamber 12 displacing air which passes through the conduit 30, slide valve port 31, and tube 27 to the interior of the bottle. During this operation the slide valve 29 remains open and the discharge valve 60 remains closed. Also, the register actuating means is inoperative.

Liquid from the bottle continues to fill the chamber 12 until the level rises sufficiently to close off the air conduit 30, at which point the liquid ceases to flow as no more air can enter the bottle from the chamber. The liquid also rises above the inner end of the tube 13*a* and in the space between the discharge spout and the sleeve 59. At the same time, the rise of liquid within the trap chamber lifts the float 73 in the direction of the partition 22.

Under these conditions, when the handle 36 is pulled in toward the bottle the linkage system previously described moves the slide valve 29 forwardly to cut off the liquid flow bore 25 and also to block communication between the air tube 27 and air conduit 30. Thus no air can enter the bottle interior and no liquid can flow from the bottle into the trap chamber. At the same time, the forward edge of the slide valve engages the cam end 64 of the S-shaped lever 61 and rocks the lever on its fulcrum to pull the valve 60 from its seat and open the discharge spout. The sleeve 59 sets up a siphon action which empties the trap chamber contents through the discharge spout to dispense one measured drink from the bottle. Air for the siphon action is supplied above the liquid in the trap chamber through a shallow air channel 68 in the partition abutting face of the slide valve 29. This air channel opens at one end to the rear edge of the slide valve and extends longitudinally of the valve a sufficient distance to dispose its other end in registry with the partition air conduit 30 when the slide valve is in projected closed position, as seen in Figure 2. Air supplied through the channel 68 enters the shell through the handle lever aperture, and through the sight apertures 49 unless they are covered by transparent window panels.

As the slide valve moves forward under actuation from the handle lever it carries with it and operates the register actuating means. It is an important feature of our invention that the register cannot be actuated by operation of the slide valve unless and until the proper measured quantity of liquid is present in the trap chamber 12.

At the conclusion of a dispensing operation the bottle is restored to upright position and the handle is released, whereupon the handle lever spring 67 acts through the mechanism as described to return the parts to their original position. The upper face of the partition 22 is dished to a low point at the bore 25 so that complete drainage of the trap chamber is effected when the bottle is upright. If drinks are to be poured in quick succession from the same bottle, the bottle may be continued in its pouring position while the handle is released to permit reopening of the slide valve and refilling of the trap chamber.

In the normal upright position of a bottle with the dispensing register attached, the discharge control valve 60 is held firmly in closed position against its seat comprising the inner end of the tube 13*a*. This prevents the entry of fruit flies and other insects; it also prevents evaporation of the bottle contents and refilling or adulteration. Another feature of the invention is the high degree of accuracy obtainable with regard to the exact quantity of liquid to be delivered to the trap chamber at each filling. This is determined by the location of the air conduit 30; a deeper extension into the chamber makes the quantity delivered smaller, and a shorter extension makes the quantity larger.

Figures 4, 5 and 6 illustrate means for preventing operation of the register in the absence of a full charge of liquid in the trap chamber. In this embodiment, the register actuating means is biased into driving connection with the register in a conventional manner, so that the register is operated each time the slide valve 29 is moved into closed position. We employ a positive lock which holds the slide valve against closing at all times and in all positions of the assembly, except when the trap chamber is fully charged with a predetermined proper quantity of liquid delivered from the bottle.

This lock comprises a lever 69 pivotally connected at one end as at 70 on the flange 23 of the partition 22. This lever extends substantially parallel to the face of the partition within the trap chamber at one side of the major axis of the partition. A rigid lock member 71

fixed on the lever extends laterally therefrom into the mouth of the liquid flow bore **25** in the path of closing movement of the slide valve **29**, where it functions as a stop member that prevents closing of the slide valve. The lever **69** extends substantially midway across the face of the partition parallel to its major axis and is provided with a pin **72** directed laterally toward the casing wall. This pin **72** extends toward a substantially rectangular float **73** that is pivotally connected to a stud **74** carried by the partition and which rests normally in the position shown in Fig. 4 when the bottle is upright. The float has a lateral extension **73***a* which projects over the lever **69** and holds the lever against the face of the partition when the bottle is first tilted to dispensing position. The axis on which the float pivots is off center so that the major area of the float falls in the direction of the pivoted end of the lever **69** when the bottle is first tilted to dispensing position and biases the float in holding engagement against the lever in the absence of a full measure of liquid in the trap chamber.

When the assembly is tilted to dispensing position liquid is delivered to the trap chamber through the flow bore **25**. As the level rises within the chamber the float **73** is buoyed to swing on its pivot against the bias of its weight, which is overcome. This movement continues until the rising liquid closes off the air conduit **30**, at which point the chamber is filled with the proper amount and no more liquid can flow from the bottle. Also at this point, the float will have swung sufficiently to permit the lever **69** to drop away from the partition far enough to remove the stop **71** from the path of travel of the slide valve **29**. As soon as the stop **71** clears the slide valve it may be closed to cut off the flow bore, actuate the register, and open the dispensing outlet valve in the manner previously described herein.

As shown in Figures 4–6, the support **74** for the float has also a pivotal connection **74***a* with a hold down lever **75** of the form shown. This lever is planar and has a substantially circular hub **76** provided with a radial notch **77** to accommodate the pin **72** of the lever **69** when the latter is tilted away from the partition **22** in pouring position of the bottle. Normally, when the bottle is in upright position, an arcuate extension **78** on the lever **75** provides a biasing weight which inclines the lever towards the partition **22** in a position to overlie the pin **72**. Also, when the bottle is in upright position, the biasing weight of the free end of the lever **69** holds this lever against the partition **22** with the portion **71** projected into the mouth of the flow bore **25** in the path of travel of the slide valve **29**, so that the valve cannot be moved to closed position.

When the bottle is tilted for pouring, as in the position shown in Figure 2, the lever **69** tends to fall away from the partition **22** but is restrained from such movement by the holding action of the float extension **73***a* which overrides the adjacent portion of the lever as best shown in Figure 4. At the same time the weight portions **78** of the lever **75** bias this lever to a position shown in dotted line in Fig. 6 in which the notch **77** is adapted to receive the pin **72** on the lever **69**. Also in this position of the bottle, the float **73** swings over on its pivot so that its extension **73***a* is held against the lever **69**. As previously stated, the slide valve **29** is normally held in open position, so that liquid from the bottle flows through the bore **25** into the trap chamber **12**.

As liquid rises within the trap chamber it buoys up the float **73** which swings upwardly on its pivot to a position in which the extension **73***a* is moved out of holding engagement with the lever **69** and to such extent that the lever **69** is permitted to fall away from the partition **22**. In this action the pin **72** on the lever **69** enters the notch **77** of the hold down lever **75**, so that the lever **69** swings sufficiently away from the partition **22** to carry the stop member **71** entirely out of the path of travel of the slide valve **29**.

As previously described the level of liquid in the trap chamber **12** cannot rise above a predetermined point, and this point is not reached until the stop **71** on the lever **69** has cleared the path of travel of the slide valve **29**. If the handle **36** is actuated before the stop member **71** clears the path of travel of the valve **29**, the valve cannot be closed and the contents of the trap chamber **12** cannot be dispensed. When the stop member **71** is removed from the path of travel of the slide valve, the handle **36** can be fully actuated to move the lever **32** against a biasing pull of the spring **67**. This movement of the lever, acting through the spring link **37**, pulls the slide valve **29** entirely across the mouth of the flow bore **25** into closed position so that no more liquid can flow from the bottle into the trap chamber. When the slide valve **29** moves across the mouth of the flow bore **25** its leading edge engages against and cams upwardly the terminal portion **64** of the S-shaped lever **61**. This camming action rocks the lever **61** on its pivot and opens the valve **60** so that the contents of the trap chamber **12** are dispensed through the discharge sprout **13**. When the contents of the trap chamber are dispensed, the handle **36** is released whereupon the biasing action of spring **67** returns the lever to its normal position and at the same time returns the slide valve **29** to fully opened position. When the valve **29** is fully opened, spring **65** returns the terminal portion **64** of the lever **61** into its original position for camming engagement with the slide valve when it is again closed.

As shown in Figures 7 and 8, the spring link **37** is a coiled spring which houses axially therein in loose engagement a rigid pin **79**. The pin extends over the full axial dimension of the spring **37** and bears at one end against the stud **38** on slide valve **29** and at its other end against the terminal portion of the lever **32**. By this arrangement it will be apparent that when the slide valve **29** is locked against movement to closed position, by which movement the register means, not shown, is actuated, movement of handle **36** may be accomplished without damage to the mechanism as the spring **37** permits movement of the lever portion **32** to a sufficient extent to prevent breakage of the parts. Of course when the lock means for the slide valve **29** is removed from the path of travel of the valve, the handle **36** may then be actuated. The spring **37** has sufficient tensile strength to serve in effect as a solid link which transmits the necessary actuating movement to the slide valve. When the handle **36** is released following delivery of the contents of the trap chamber **12**, spring **67** returns the lever **32** to its normal position as shown in Figure 3, and the movement of the lever is transmitted through the pin **79** to the stud **38** whereby the slide valve is returned to its normal open position.

As shown in Figures 2 and 3 the outlet valve **60** comprises substantially a ball valve which sits upon and closes the inner end of the discharge spout tube **13***a*. The sleeve **59** is fixed within the trap chamber casing by means of a transverse pin **80** which extends diametrically through the tube **13***a* in sealed engagement therewith and which at its outer ends is rigidly secured, as by spot welding or other suitable means, to the adjacent surface of the trap chamber wall at the outer end of the sleeve. By this means the outer end of the sleeve **59** is spaced from the wall of the trap chamber and is held from the floor of the trap chamber a distance that will insure that the area is equal to the area of the space between the sleeve and the tube **13***a*, so that liquid may flow freely into the space between the sleeve and the tube **13***a* so that the trap chamber may be emptied by a siphoning action set up when the ball valve moves off its seat on the end of the tube **13***a* and closes against an annular seat **81** on the inner end of the sleeve **59**. In the direction of the seat **81**, the ball valve **60** is apertured to receive in force fitted engagement a cylindrical plug **82** having a fixed washer **83** on its inner end which provides a guide for a plunger **84** that

extends axially through the valve seat 81 upon the inner end of the sleeve 59 and which has pivotal connection with the outer terminal of the S-shaped lever 61. The inner end of the plunger 84 has a fixed head 85 as an annular enlargement thereof and which provides a bearing for one end of a coiled expansion spring 86 that surrounds the plunger and which bears at its other end against the inner face of the washer 83. This arrangement provides a lost motion connection between the valve 60 and its actuator lever 61 so that damage to the mechanism is prevented and which insures adequate closing of the valve against its seat. The valve is centered by means of an annular flange 87 integral therewith and of sufficient extent to overlie the inner end of the tube 13*a* and also to contact the seat 81 when the valve is moved against that seat.

Our invention also includes a means for securing the dispensing register against removal from its position of attachment in the neck of the bottle after it is once installed. This means is shown in Figures 9 through 12 and comprises a threaded bolt stem 88 provided at its upper end with a head 89 suitably anchored in and through a stopper 90 that is secured to the bottom face of the base 16 of the dispensing register. The stem 88 is of sufficient length to extend axially within and through the bottle neck in spaced parallel relation with respect to the air vent tube 27, with the lower end of the stem extending well below the shoulder 91 of the bottle when the stopper 90 is fully seated. The lower threaded end of the stem carries a traveling nut 92, preferably of circular configuration, and which mounts diametrically opposed studs 93 upon which are pivoted a pair of latch members 94. Each latch member 94 is pivoted centrally between its ends on its respective pivot studs 93 and is of sufficient length, when in horizontal position, as shown in Figure 9, to extend well beyond the bottle neck beneath the shoulder 91. Each latch member is so balanced that it gravitates to a horizontal position following insertion through the bottle neck. In applying the lock mechanism, members 94 are tilted in substantially parallel relation with respect to the bolt stem 88 so that they pass freely through the bottle neck and fall into horizontal position after passing beneath the shoulder 91. The dispensing register is then rotated with the members 94 in contact with the bottle shoulder so that the stem 88 moves down relative to the nut 92 until the stopper 90 is securely wedged into fully seated engagement against the mouth of the bottle. The head 89 on the upper end of the stem 88 is so disposed that it prevents rotation of the stem 88 relative to the dispensing register on which it is mounted, so that the register and stem move as a unit.

Although we have illustrated and described certain details of structure and arrangement of parts which enter into this embodiment of our invention, it is to be understood that the structure disclosed is illustrative and not descriptive, and that within the scope of the invention as claimed any modifications and changes may be made in the details and arrangement of parts herein shown.

We claim:

1. Liquid dispensing means comprising a bottle attachable casing enclosing a liquid trap chamber, a dispensing outlet for the chamber through a wall of the casing, a conduit in the casing for delivering liquid to the trap chamber, a valve controlling said conduit and movable bodily between open and closed positions, means for operating said valve, stop means movable in the casing and gravity biased to a position blocking movement of the valve while the casing is in non-dispensing position, holding means movable in the casing and gravity biased into engagement with said stop means to hold the same against movement from valve blocking position while the casing is in non-dispensing position, and both said holding means and stop means being movable by gravity while the casing is in dispensing position whereby to remove said holding means from its engagement with said stop means and to remove said stop means from blocking engagement with said valve.

2. Liquid dispensing means comprising a bottle attachable casing enclosing a liquid trap chamber, a dispensing outlet for the chamber through a wall of the casing, a conduit in the casing for delivering liquid to the trap chamber, a valve controlling said conduit and movable bodily between open and closed positions, means for operating said valve, stop means movable in the casing and gravity biased to a position blocking movement of the valve while the casing is in non-dispensing position, a lever pivoted in the casing and having a portion engaging said stop means to prevent movement thereof from valve blocking position while the casing is in non-dispensing position, and said lever being gravity biased for movement to release said stop means when the casing is in dispensing position.

3. Liquid dispensing means comprising a bottle attachable casing enclosing a liquid trap chamber, a dispensing outlet for the chamber through a wall of the casing, a conduit in the casing for delivering liquid to the trap chamber, a valve controlling said conduit and movable bodily between open and closed positions, means for operating said valve, stop means movable in the casing and gravity biased to a position blocking movement of the valve while the casing is in non-dispensing position, a lever pivoted in the casing to overlie an element of said stop means in engagement therewith to prevent movement of said stop means from valve blocking position while the casing is in non-dispensing position, and said lever having a gravity bias to pivot to a position releasing said stop means when the casing is in dispensing position.

4. Liquid dispensing means comprising a bottle attachable casing enclosing a liquid trap chamber, a dispensing outlet for the chamber through a wall of the casing, a conduit in the casing for delivering liquid to the trap chamber, a valve controlling said conduit and movable bodily between open and closed positions, means for operating said valve, a first lever pivoted in the casing and having a stop member thereon, said lever being gravity biased to position its stop member in movement blocking engagement relative to said valve while the casing is in non-dispensing position, a pin carried by said first lever and projecting laterally therefrom, a second lever pivoted in the casing adjacent said first lever and having a portion overriding said pin when the casing is in non-dispensing position to prevent the movement of said first lever from its valve blocking position, and said second lever being gravity biased to swing clear of said first lever to free the same when the casing is in dispensing position.

5. Liquid dispensing means comprising a bottle attachable casing enclosing a liquid trap chamber, a dispensing outlet for the chamber through a wall of the casing, a conduit in the casing for delivering liquid to the trap chamber, a valve controlling said conduit and bodily movable between open and closed positions, means for operating said valve, a first lever pivoted in the casing, a stop member on said lever, said lever biased when the casing is in other than dispensing position to dispose its stop member in blocking relation to movement of said valve, a second lever pivoted in the casing and engageable in one position with an element of said first lever to hold said first lever in valve blocking position, said second lever biased to such holding position, and said second lever gravitating on its pivot to release said first lever when the casing is in dispensing position.

6. Liquid dispensing means comprising a bottle attachable casing enclosing a liquid trap chamber, a dispensing outlet through a wall of the casing, a conduit in the casing for delivering liquid to the trap chamber, a valve controlling said conduit and movable bodily between open and closed positions, means for operating said valve, a first lever pivoted in the casing adjacent said valve for oscillation, a pin projecting laterally from said lever, a second lever pivoted in the casing for oscillation in paral-

lel spaced relation to said first lever and having an edge overlying the pin on said first lever while the casing is in nondispensing position, said second lever having a weight portion normally biasing it to overlie said pin, said second lever gravitating on its pivot under the influence of its weight portion when the casing is tilted into dispensing position whereby to release said first lever for oscillation, said second lever having a recess for receiving for travel therein the pin on said first lever when the first lever is released, a stop on said first lever and blocking movement of said valve until said pin reaches substantially the limit of its travel into the recess of said second lever, and said first lever having a bias in dispensing position of the casing to swing on its pivot and thereby carry its stop out of blocking relation to said valve.

7. In the structure of claim 6, means responsive to liquid level in the trap chamber and preventing travel of said first lever pin fully into said second lever recess in the absence of a predetermined quantity of liquid in the trap chamber.

8. In liquid dispensing means having a bottle attachable casing enclosing a liquid trap chamber, a dispensing outlet for the chamber through a wall of the chamber and including a discharge tube open at both ends, said tube extending well into the trap chamber, a ball valve controlling said outlet and seating on the inner end of said tube, the body of said valve having a recess diercted away from the inner end of said tube on the axis thereof, a substantially cylindrical plug fixed in said recess, a plunger axially reciprocable in said plug and projecting outwardly thereof into the trap chamber, a head on the inner end of the plunger, an expansion spring surrounding the plunger between said head and an internal flange on the outer end of the plug, and a valve actuator in operative connection with the outer end of said plunger.

9. The structure of claim 8, and a sleeve telescoped over the tube within the trap chamber with clearance relative to the tube, said sleeve being open at both ends, means anchoring the tube at its outer end to the adjacent wall of the casing in axially spaced relation therefrom, an internal annular valve seat fixed in the inner end of said sleeve in clearance relative to said ball valve plunger, and said ball valve seating on said internal annular valve seat whereby to close the inner end of said sleeve when the inner end of the discharge tube is open.

10. In combination with liquid dispensing means including a bottle stopper and a liquid trap chamber casing thereon, fastener means comprising a stem headed in said stopper against rotation relative thereto and adapted to pass axially through a bottle neck with the free end of the stem well below the bottle shoulder when the stopper seats on the mouth of the bottle, a traveling nut threaded on the free end portion of said stem, and a pair of latch levers each pivoted midway between its ends on opposite sides of said nut, said levers being dimensioned such that when swung parallel to the stem they may pass freely through a bottle neck, and said levers being balanced to assume a position substantially perpendicular to the stem with their ends beneath the bottle shoulder for contact thereagainst to prevent removal of the stopper and trap chamber assembly.

11. Liquid dispensing means comprising a bottle attachable casing having therein a liquid trap chamber, a conduit in the casing for delivering liquid to the trap chamber, a valve controlling said conduit, an operating lever fulcrumed in the casing and having a handle portion passed through a wall thereof, a coiled spring link connected at one end to said lever and at its other end to said valve, and a solid pin loosely housed axially in said spring in free abutting engagement at one end with said lever and at its other end with said valve.

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