

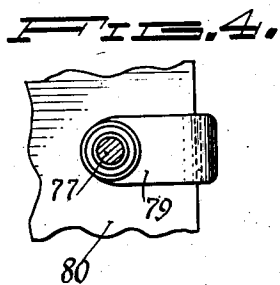
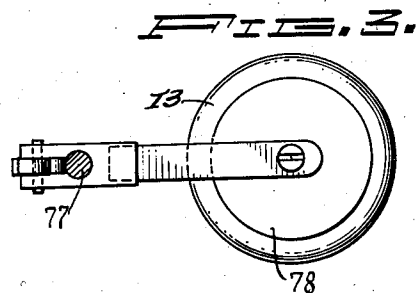
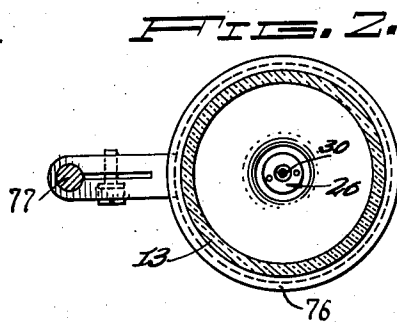
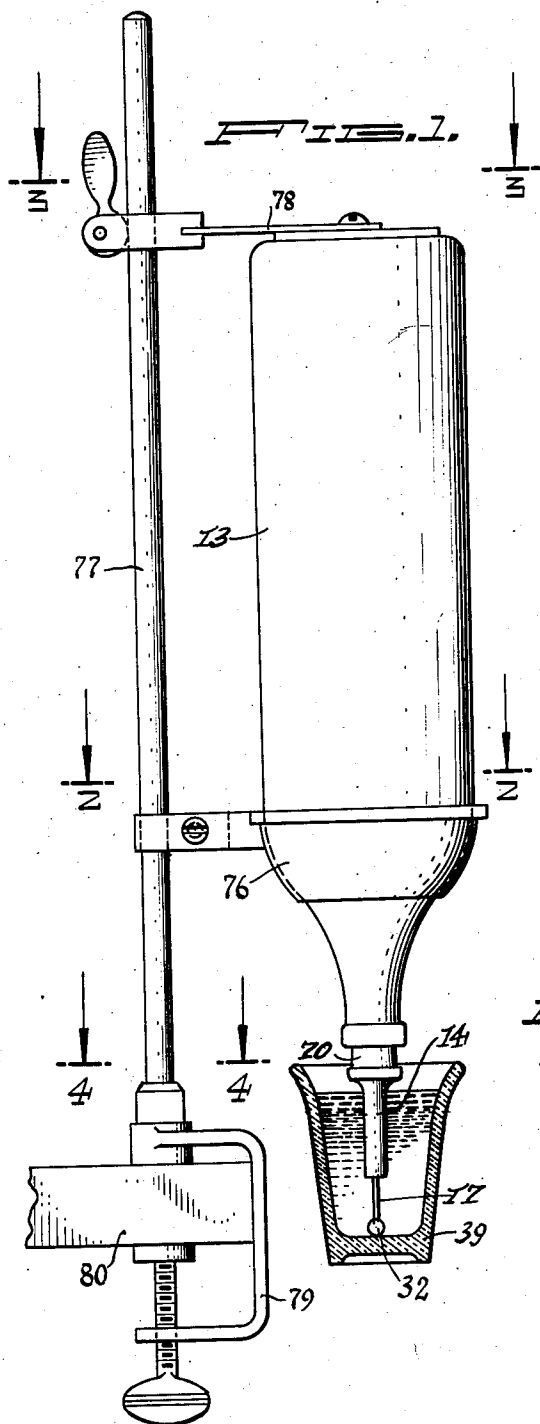
May 10, 1949.

2,469,746

J. SANCHIS
FILLING DEVICE WITH RECEPTACLE
OPERATED OUTLET VALVE

4 Sheets-Sheet 1

Filed May 10, 1945



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FIG. 5.

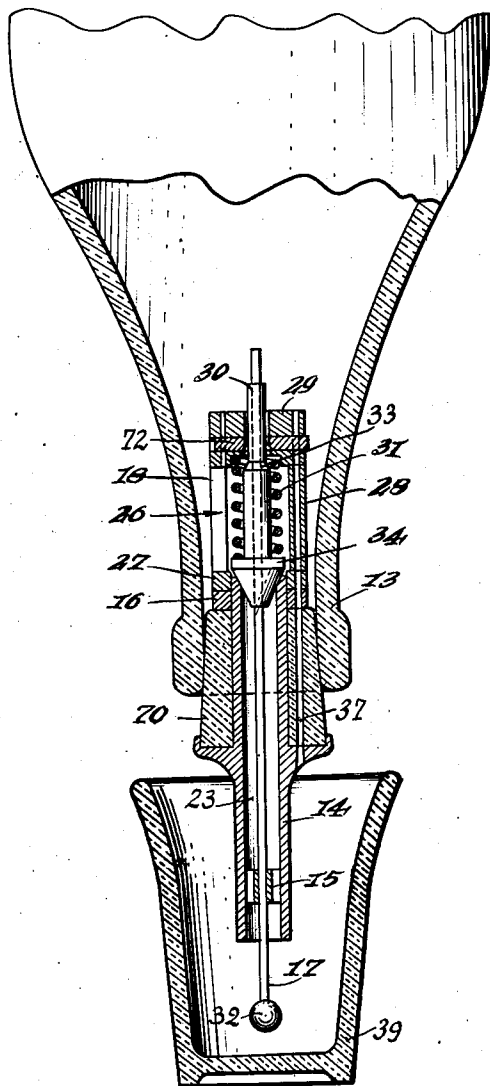


FIG. 6.

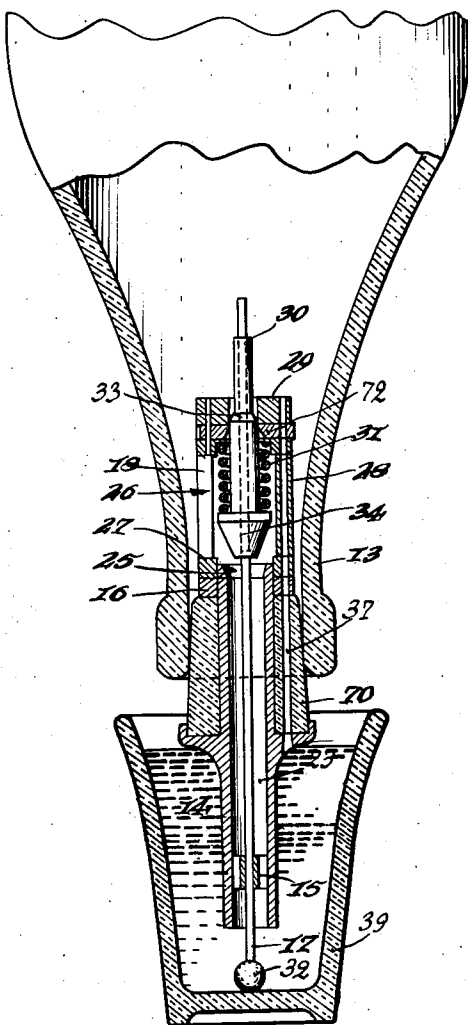
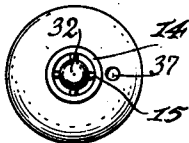


FIG. 7.



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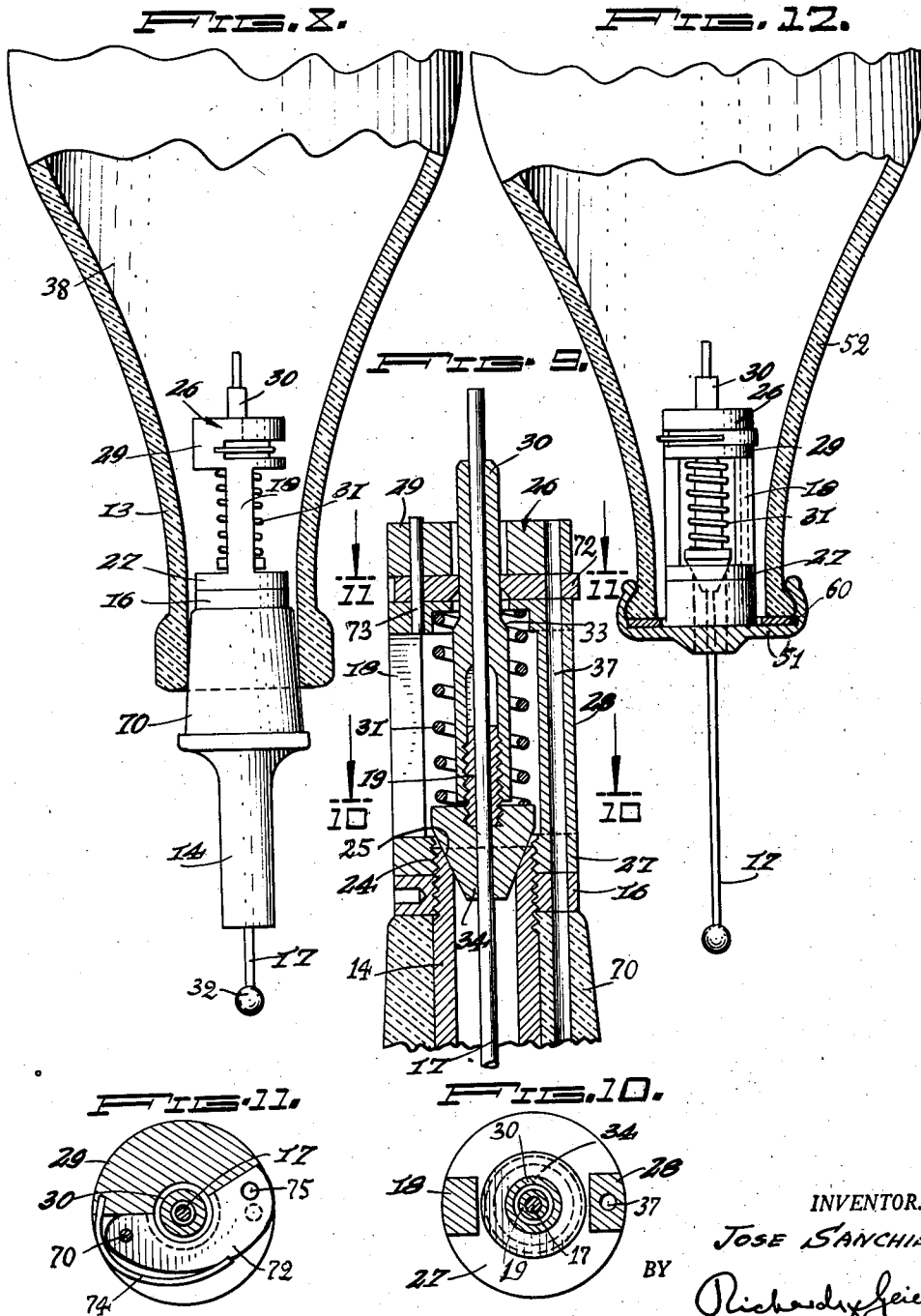
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Filed May 10, 1945

4 Sheets-Sheet 3



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2,469,746

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4 Sheets-Sheet 4

FIG. 13.

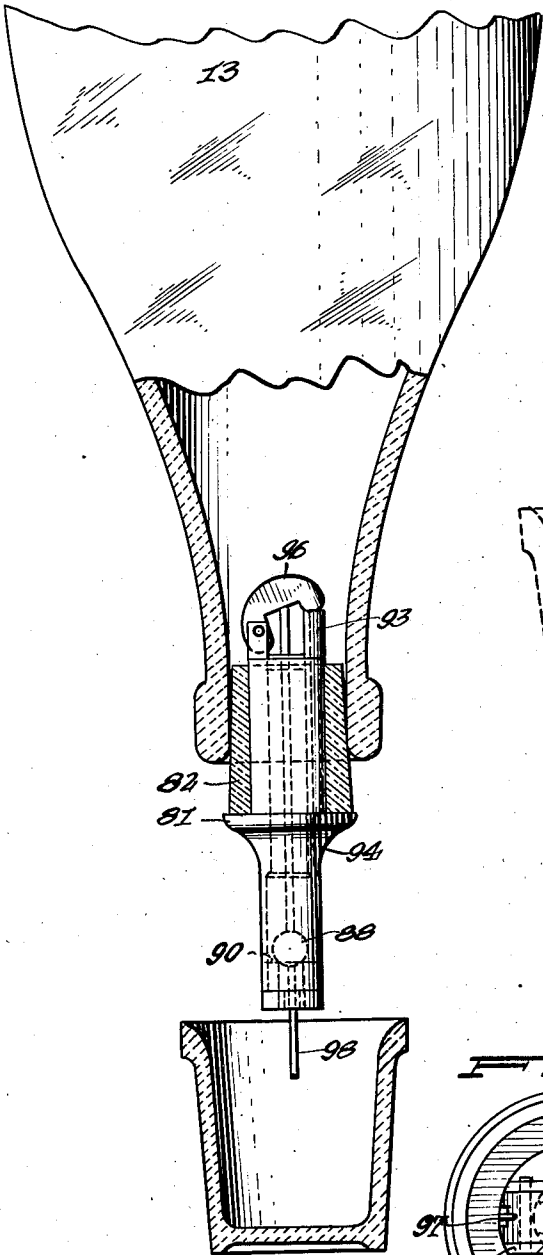


FIG. 14.

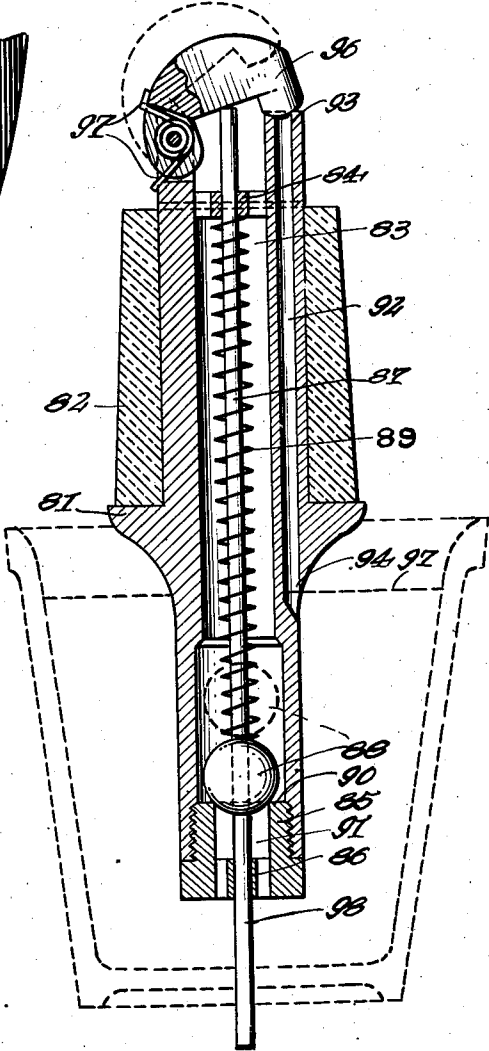
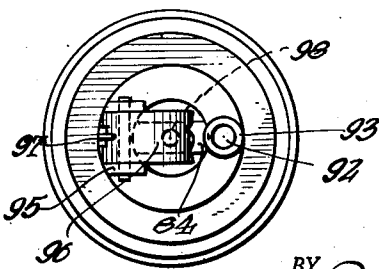


FIG. 15.



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FILLING DEVICE WITH RECEPTACLE
OPERATED OUTLET VALVE

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Application May 10, 1945, Serial No. 593,081

2 Claims. (Cl. 226—123)

1

This invention relates to a liquid dispensing device and refers more particularly to a closure for containers, which is provided with a valve or faucet device automatically delivering uniform quantities of a liquid to receptacles of the same size.

An object of the present invention is the provision of a liquid dispensing device which may be conveniently mounted upon a cap or other closure of a container and which can be easily operated to dispense a certain amount of liquid.

Another object is the provision of a dispenser which may be used in bars, restaurants, laboratories and the like and which may be placed upon bottles or jars for automatically supplying the same amounts of liquid to glasses or other containers of uniform size.

Other objects of the present invention will become apparent from the following specification.

In accomplishing the objects of the present invention it was found desirable to provide a cap or similar closure member with an elongated outwardly extending tube serving as or carrying a guide for a valve rod projecting outwardly beyond the tube and connected with a spring-loaded valve body adapted to interrupt the communication between the tube and the interior of the container carrying the closure member. The valve rod may be rendered quickly interchangeable for one of different length as more fully explained hereafter, by forming the valve seat and the guide for the lower end of the valve rod in a removable portion of the tube.

In operation, the valve rod is pressed against the bottom of a glass or other vessel into which the liquid is to be poured, thereby compressing the spring and raising the valve body from its seat upon the tube. If the container is placed upside down over the glass and if the closure member of the container is provided with an air vent, liquid will flow from the container and into the glass up to the level of the outer end of the vent, the flow ceasing when the liquid has sealed the vent.

The invention will appear more clearly from the following detailed description when taken in connection with the accompanying drawings showing, by way of example, preferred embodiments of the inventive idea.

In the drawings:

Figure 1 shows in side elevation a container the closure of which is provided with a dispensing device constructed in accordance with the principles of the present invention, and a support carrying the container.

2

Figure 2 is a section along the line 2—2 of Fig. 1.

Figure 3 is a top view along the line 3—3 of Figure 1.

5 Figure 4 is a section along the line 4—4 of Figure 1.

Figure 5 shows in section and on an enlarged scale the dispensing device of Figure 1, in the closed position.

10 Figure 6 is similar to Figure 5 and shows the device in its open position.

Figure 7 is an end view of the device.

Figure 8 is a side view of the device.

15 Figure 9 shows a part of the dispensing device in section on an enlarged scale.

Figure 10 is a section along the line 10—10 of Figure 9.

Figure 11 is a section along the line 11—11 of Fig. 9.

20 Figure 12 illustrates a different dispensing device.

Figure 13 is a side elevation of another form of the device.

25 Figure 14 is a vertical section of the same with the open position shown in broken lines.

Figure 15 is a top elevation of the same, partly broken away.

The dispensing device shown in Figures 1 to 10 of the drawings is carried by a stopper 70 which is firmly connected with the cap or is integral therewith. The tube 14 extends beyond the stopper 70 and its axis may coincide with the longitudinal axis of the bottle.

30 The tube 14 is provided with an inner web 15 constituting a guide for a valve rod 17.

35 That portion of the tube 14 which is situated within the bottle is provided with outer screw threads 24 and has conical end surfaces constituting a valve seat 25. A distancing ring 16 is screwed upon the tube 14 and is mounted upon the stopper 70.

40 A spring support 26 has a ring portion 27 which is provided with inner screw threads and which is screwed upon the threaded end of the tube 14 and in contact with the ring 16. Two columns 18 and 28 connect the ring 27 with the cover 29, the inner surface of which has a recess enclosing one end of a coiled spring 31. The spring 31 embraces a stem holder 30 through which the valve rod 17 extends and which is connected by a threaded sleeve 19 with a valve body 34.

45 The inner end of the valve rod 17 extends beyond the support 26. The outer end of the valve rod 17 may extend to a comparatively great

distance beyond the outer end of the tube 14 and may have the form of a ball 32.

The valve body 34 is screwed upon the sleeve 19 and is held firmly upon the rod 17.

An air vent 37 extends through the stopper 70, the column 22, and the cover 29. The cover 29 is provided with a recess containing a disc 72 which is pivotally mounted upon a pin 73 and is maintained in a closing position by a spring 74; in this position the disc 72 closes the air vent 37. As is indicated in Figure 11, the air vent 37 is opened by the engagement of the conical surface 33, of the stem holder 30 in the course of an inward movement of the rod 17; the stem holder 30 will push the disc 72 sidewise to a position in which an opening 75 in the disc 72 will coincide with the air vent 37.

The operative length of the rod 17 may be conveniently varied by loosening the grip of the threaded sleeve 19 upon the rod 17, whereupon the rod is shifted in relation to the holder 30 to the desired extent; then the connections are tightened again.

When no external pressure is exerted upon the rod 17, the valve body 34 is pressed against the seat 25 by the spring 31, so that there is no communication between the interior 38 of the bottle 13 and the interior 23 of the tube 14.

In order to dispense a certain amount of liquid contained in the bottle 13, the bottle 13 is placed upside down over a glass 39 or any other vessel into which liquid is to be poured, and the end 32 of the rod 17 is pressed against the bottom of the glass. This pressure causes the rod 17 to move inwardly, thereby raising the valve body 34 off the valve seat 25 and compressing the spring 31.

The air vent opens at a point below the minimum level of the liquid in the supply container. Actual experiments which I have carried out show that the flow of liquid from the bottle 13 into the glass 39 will stop as soon as the liquid has reached a certain level in the glass 39, namely the level of the outer end of the air vent 37, and that the amount of the dispensed liquid is the same whenever glasses of the same size are used.

The described dispensing device may be conveniently used in bars, restaurants, laboratories and similar establishments wherein the same amounts of liquid are often dispensed into vessels of uniform size.

The amount of the dispensed liquid may be varied by varying the length of the projecting portion of the rod 17 and this is accomplished by changing the position of the valve body 34 and the stem holder 30 upon the rod 17.

As shown in Figure 1, the bottle 13 may be held conveniently in the upside down position by means of a ring 76 which is adjustably mounted upon a stem 77. A clamp 79 may be used to attach the stem 77 to an edge of a table 80.

The dispensing device illustrated in Figure 12 is carried by a cap 51 which is affixed to the neck of a bottle 52 and which carries an elastic sealing ring 60 interposed between the bottle neck and the cap. In this construction, the tube 14 is eliminated, and the support 26 is mounted directly upon the cap 51. In other respects, the construction is the same as the one previously described and operates in the same manner.

Figures 13, 14 and 15 illustrate another form of the closure. In this form the tube 81 carries externally a cork 82 or other gasket means adapted to engage the neck of the bottle to seal same. An axial cylindrical passage 83 extends thru the

tube 81, and a spider 84 is located at the top end of passage 83. A threaded tubular plug 85 with a spider 86 is fitted in the lower end of passage 83. A rod 87 carrying a ball 88 slides in the spiders, and the coil spring 89 is mounted on the rod between the ball and the upper spider 84. The ball 88 is seated on the upper surface 90 of the tubular plug 85 so as to close the passage 91 therethrough, the ball and plug constituting a valve and valve seat.

The air vent passage 92 extends through the wall of the tube 81 and its upper end 93 projects thereabove, while its lower end opening 94 is formed in the exterior of the tube 81 a substantial distance below the cork 82.

Formed integral with the tube 81 are standards 95 in which the air vent cap 96 is pivoted, and a spring 97 normally keeps the cap in sealing engagement with the upper end 93 of the air vent.

In operation, a bottle 13 containing liquid and with the device inserted is inverted over a glass, preparatory to dispensing the liquid. The portion 98 of the rod 87 projecting below the plug 85 is pressed against the pressure of the spring 89, raising the valve 88 from its seat 90, the upper end of the rod 87 simultaneously swinging the air vent cap 96 away from the air vent upper end opening 93 as illustrated in broken lines. Liquid is thus free to flow through the spider 84, the tube 81, the passage 91 of plug 85 and the spider 86 into the glass. Simultaneously air is entering the air vent through the lower end opening 94 and escaping from the upper end 93 into the bottle 13. When the liquid in the glass reaches level 97 which is even with the top of opening 94, the air vent will be sealed. Liquid will no longer flow through tube 81 in appreciable quantity because the first few drops that do so flow will create a partial vacuum above the liquid in the inverted bottle, stopping further flow.

It will be noted that the amount which the rod 87 may be raised by pushing on its lower end is limited by the engagement of its upper end with the air vent cap 96. Therefore the distance from the lower end of rod 87 to level 97 is constant, and the amount dispensed will be constant as long as the same size and shape of glass is used. A different amount may be dispensed to the same sized glass by unscrewing the plug 85 and replacing the rod 87 with a rod whose projecting portion 98 is a different length. Of course the flow may be stopped at any time in any of the above forms of the invention by raising the bottle, or lowering the glass away from the bottle, thus closing the valve.

It is apparent that the illustrations shown above have been given by way of illustration and not by way of limitation, and that the structures above described are subject to wide variation and modification without departing from the scope or intent of the invention; all of such variations and modifications are to be included within the scope of the present invention.

What is claimed is:

1. A liquid dispensing device comprising, in combination with a closure member adapted to close a container, a tube extending through said closure member, said tube being formed with an air vent therein, said vent having an upper end portion projecting above said tube, an air vent cap pivotally mounted on said tube and spring urged into sealing engagement with said upper end portion, spiders located at both ends of said

5

tube and firmly connected thereto, a valve seat located within said tube and firmly connected thereto, a rod slidably mounted in said spiders, the upper end of said rod being engageable with said air vent cap to swing same out of engagement with said end portion, the lower end of said rod projecting outward from said tube, a body firmly mounted on said rod, said body comprising a surface constituting a valve surface and adapted to engage said valve seat, and a coil spring mounted on said rod and urging said valve against said valve seat, whereby said rod is adapted upon being moved inwardly to open said valve and said air vent, and is further adapted upon the release of inward pressure to close said valve and permit said cap to seal said air vent.

2. A liquid dispensing device according to

6

claim 1 comprising a removable tubular plug firmly engageable with the lower end of said tube, said plug having said valve seat and one of said spiders formed therein.

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