March 8, 1949. W. E. TURNER 2,463,922

LIQUID DISPENSER WITH RECEPTACLE OPERATED OUTLET VALVE

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Fig. 1.

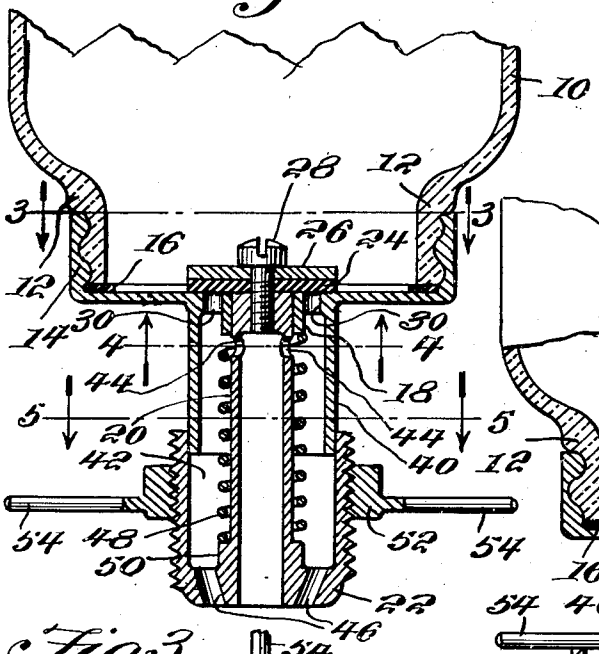


Fig. 2.

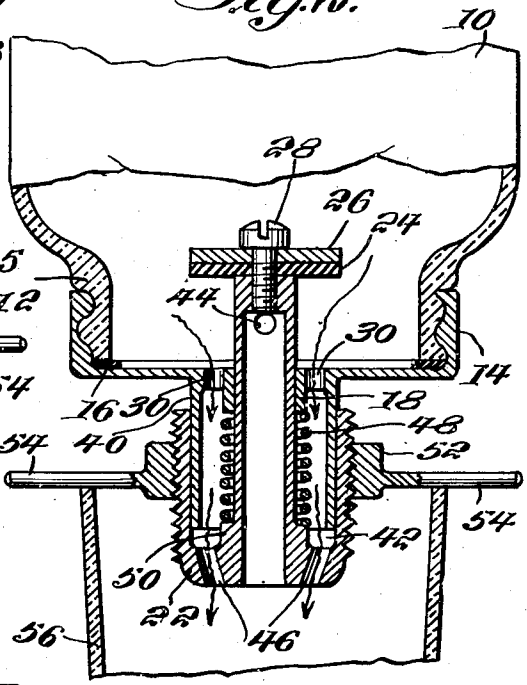


Fig. 3.

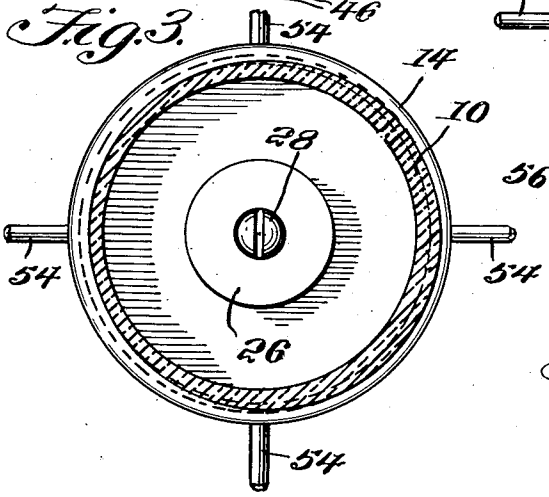


Fig. 4.

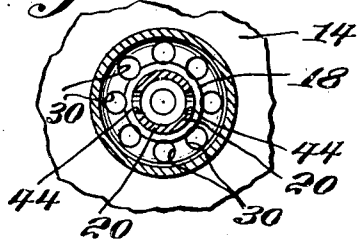
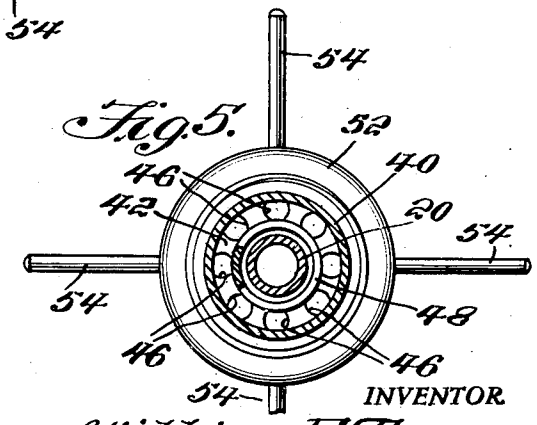


Fig. 5.



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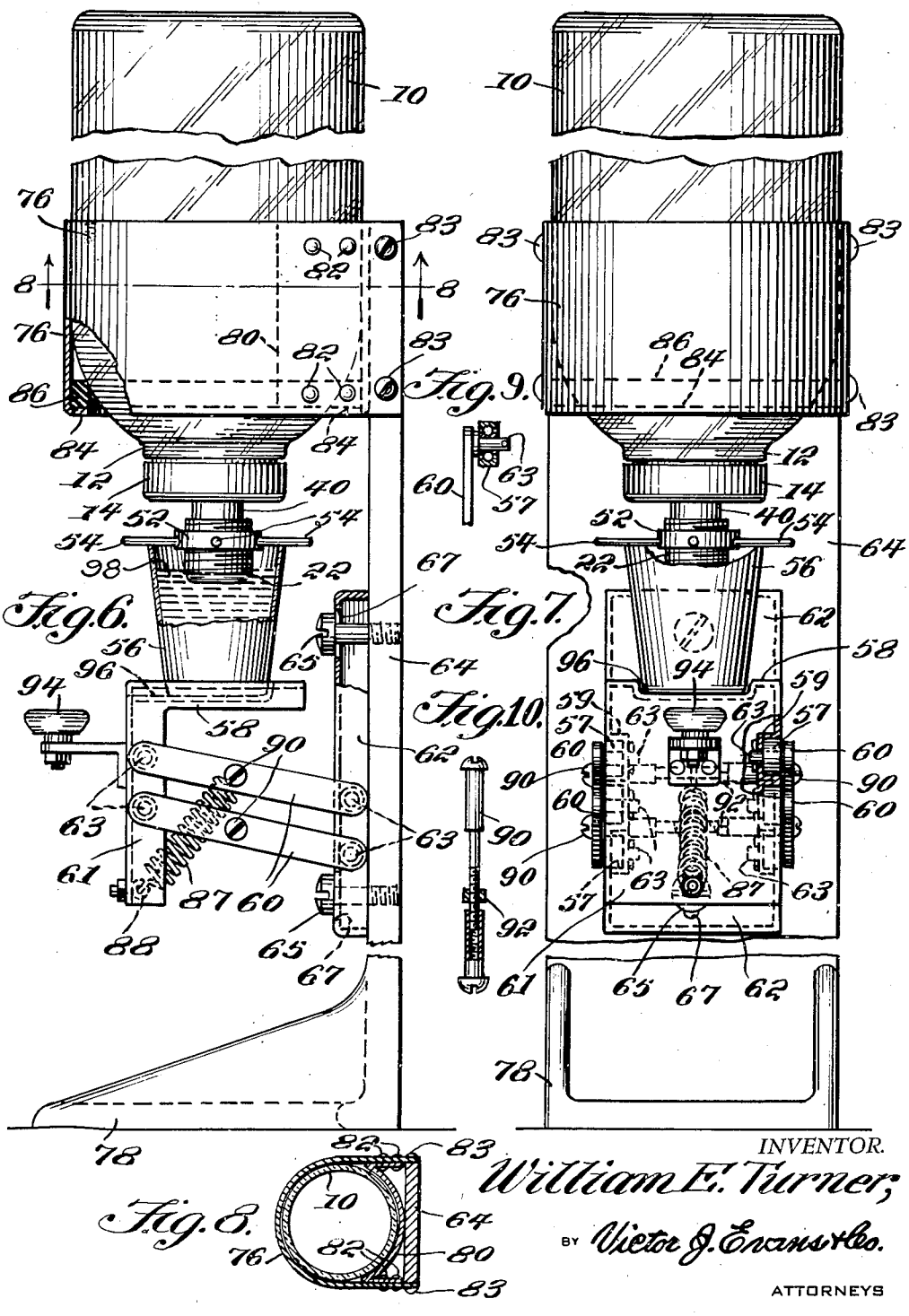

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LIQUID DISPENSER WITH RECEPTACLE OPERATED OUTLET VALVE

William E. Turner, Summerville, Ga.

Application February 15, 1946, Serial No. 647,720

3 Claims. (Cl. 226—123)

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This invention relates to a liquid dispenser and more particularly to a dispenser having means for dispensing a predetermined quantity of liquid and means for automatically stopping the flow of the liquid upon the removal of such quantity.

An object of the invention is to provide a device which when applied to a container will dispense liquid from the container until such time as a predetermined amount is dispensed therefrom at which time the flow from the container is stopped.

With the above and other objects and advantages in view the invention consists of the novel details of construction, arrangement and combination of parts, more fully hereinafter described, claimed and illustrated in the accompanying drawings in which:

Figure 1 is an enlarged sectional view of the dispenser valve embodying the invention in its closed position.

Figure 2 is a similar view, illustrating the valve in its open position.

Figure 3 is a sectional view on the line 3—3 of Figure 1;

Figure 4 is a sectional view on the line 4—4 of Figure 1;

Figure 5 is a sectional view on the line 5—5 of Figure 1;

Figure 6 is a side elevation partly in section of the dispenser;

Figure 7 is a front elevational view thereof;

Figure 8 is a sectional view on the line 8—8 of Figure 6 in a reduced scale.

Figure 9 is a sectional view of the ball race and steel for mounting the linkage and;

Figure 10 is a view partly in elevation and partly in section of the bolts for the linkage.

Referring more in detail to the drawings the numeral 10 designates a liquid containing bottle having a neck 12 to which a screw cap 14 is threadedly connected. In Figures 1 and 2 a sealing ring 16 is interposed between the bottle neck 12 and the cap 14. Cap 14 is provided with a depending sleeve 18 which is integral therewith, in which is slidably mounted the tubular stem 20 of the tubular valve 22. A rubber disk valve 24 is mounted on the end of the stem 20 and is retained thereon by means of a metal plate 26 and a screw 28.

Small outlet openings 30 arranged concentrically of the sleeve 18 are normally closed by the valve 24 as shown in Figure 1. When the openings are uncovered as by lifting the valve 22, the liquid within the container is dispensed therefrom.

Depending from the cap 14 and concentrically

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of the sleeve 18 is a tube 40 engageable in the valve 22. Thus chamber 42 is provided by means of the valve 22 and tube 40 air inlet openings 44 are formed in the stem 20 adjacent the end of the sleeve 18 which openings permit air to enter the container when the valve is raised as shown in Figure 2 and openings 46 are formed in the valve 22, which communicate with the chamber 42; upon the stem 20 is mounted a compression spring 48 having its ends respectively abutting the sleeve 18 and a shoulder 50 formed on the valve stem 20 concentrically of the openings 46 and the valve 22. Thus the valve 22 is normally urged to the position of Figure 1 at which time the valve 24 covers the outlet openings 30 and the openings 44 being below the sleeve 18 are also closed as shown.

Upon the valve 22 is threadedly connected a collar 52, provided with laterally extending arms 54 which arms constitute an abutment for a receptacle or glass 56, which may be pressed there against for moving the valve 22 from its normally closed position of Figure 1 to the open position of Figure 2.

Figures 6 and 7 illustrate a stamped metal receptacle support 58 vertically movable through the medium of a parallelogram linkage 60 connecting the depending front wall of the receptacle support 58 with a stamped metal bracket 62 by means of studs 63, formed on the ends of the links 60. The side flanges 61 of the bracket 58 are provided with pockets 59 to receive ball bearing races 57 in which are journalled the studs 63 of the links 60.

The bracket 62 is adjustably secured to the vertical support 64 by bolts 65, positioned in the elongated slots 67 in the front of the bracket 62.

The bottle 10 is supported in a band 76 secured to the upper end of the support 64 and the support is provided with the foot 78 for resting on a table or any similar flat topped surface. The band 76 is aided in its support of the bottle 10 by an insert 80 which is fastened to the band by rivets 82 and the band is secured to the support by fasteners 83. The band and insert are provided an inturned flange 84 to support the gasket 86 on which the bottle 10 is seated.

The receptacle support is normally urged upwardly through the medium of a retention spring 87 having one end mounted in the eye 88 in the center of the front wall of the receptacle support 58 and the other end connected to the upper link 60 by means of the adjustable bolt 90 having the lock nut 92 thereon locking the bolt in position there is also a bolt 90 in the lower links. A knob

94 is attached to the receptacle support through the medium of which the support may be depressed downwardly to facilitate positioning the glass 56 in the seat 96 in the support 58.

In operation the glass 56 is placed in position in the seat 96 in the support 58 and the spring 87 urges the glass 56 upwardly, the glass being in engagement with the arms 54 for lifting the valve 22 to the position shown in Figure 2. When so positioned, liquid flows downwardly inside the tube 40 and into the glass 56. Air is permitted to enter the stem 20 for admission to the inlet openings 44 as the liquid rises in the glass 56 to the lower end of the valve 22, the valve becomes submerged in liquid flowing into the chamber 42 by way of the openings 46. Thus the liquid in the glass 56 closes the air inlet opening in the valve stem 20 to prevent further entrance of air therein. Thus liquid stops flowing from the bottle 10 when air is stopped flowing through the stem 20.

A construction such as that described dispenses a predetermined amount of liquid as indicated by the level 98. To vary the amount of liquid flowing into the glass 56 the collar 52 may be shifted axially of the valve 22 so as to raise or lower the level of the dispensed liquid in the glass.

While the present invention is illustrated in the nature of a beverage dispenser the device may be employed for dispensing other liquids of a similar nature.

Without further elaboration, the foregoing will so fully illustrate the invention that others may by applying current knowledge, readily adapt the same for use under various conditions of service.

It is also to be understood that changes in the details of construction, arrangement and combination of parts may be resorted to without departing from the spirit of the invention or the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A liquid dispenser comprising a liquid containing vessel having outlet openings, a sleeve having one end secured to the vessel intermediate of said outlet openings, a liquid outlet valve for

said outlet openings, a tubular stem on said liquid outlet valve slidably mounted in said sleeve and projectable inside the liquid containing vessel, said outlet openings being located beneath said liquid outlet valve and said liquid outlet valve normally engaging the vessel circumjacent the said outlet openings to normally close said outlet openings, a cup-like formation on the lower end of said tubular stem, a spring action on the vessel and the cup-like formation for urging the cup-like formation outwardly of the liquid containing vessel and holding said liquid outlet valve in engagement with the liquid outlet openings of said liquid containing vessel, said tubular stem being provided with inlet ports for the passage of air into the liquid containing vessel and said tubular stem having an open lower end and ports on the bottom of said cup-like formation to pass liquid into a second liquid containing vessel.

2. The invention as in claim 1 wherein said cup-like formation is provided with means for determining the level of the liquid dispensed from said first liquid containing vessel into said second liquid containing vessel.

3. The invention as in claim 1 wherein a shoulder is provided on said tubular stem and the spring providing said spring action is mounted on said tubular stem intermediate said shoulder and said sleeve.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,165,711	Ransom	Dec. 28, 1915
1,182,452	Bucklin	May 9, 1916
2,239,921	Majewski	Apr. 29, 1941
2,324,965	Turner	July 20, 1943

FOREIGN PATENTS

Number	Country	Date
149,053	Switzerland	Nov. 2, 1931