Oct. 30, 1956 W. K. BEUTEL 2,768,771

DISPENSER FOR CARBONATED BEVERAGES

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FIG. 1.

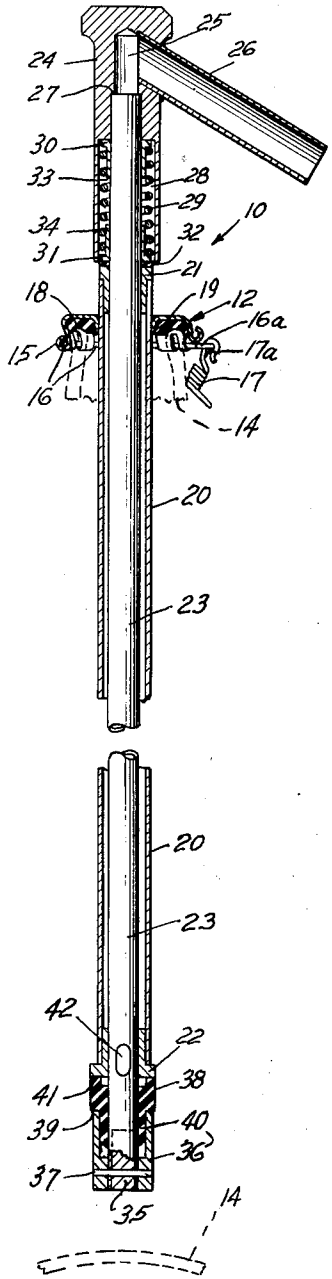
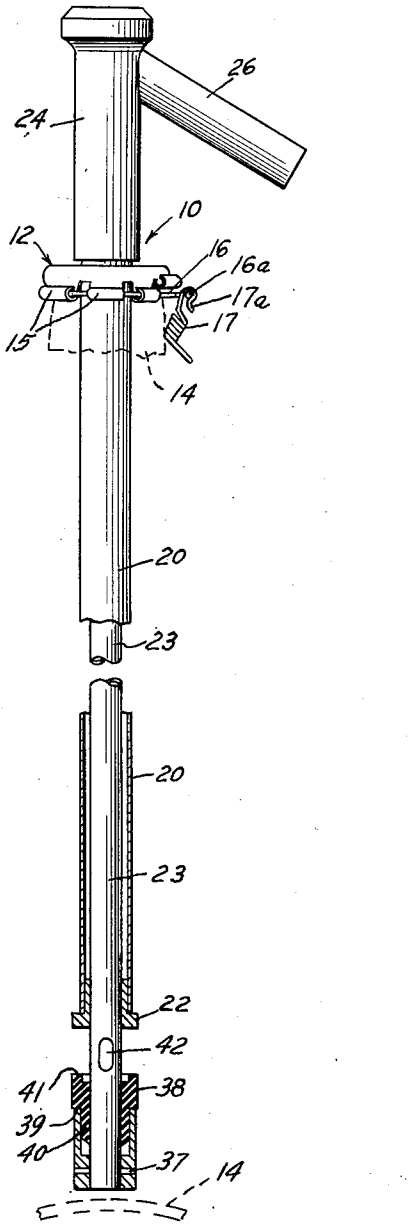


FIG. 2.



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DISPENSER FOR CARBONATED BEVERAGES

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4 Claims. (Cl. 222—394)

This invention relates to a beverage dispenser and, more specifically, to improvements in a dispenser for carbonated bottled beverages.

It is the general object of the invention to provide a simple and foolproof dispenser which can be used to advantage in dispensing carbonated bottled beverages and which incorporates means for tightly sealing the bottle so as to prevent the escape of the liquid and gaseous contents thereof during periods of non-use and which will thereby preserve the quality and palatability of the beverage.

Other more specific objects of the invention will become apparent from the following description of the annexed drawing which, by way of preferred example only, illustrates one specific embodiment of the invention and in which,

Fig. 1 is a longitudinal sectional view of the dispensing device, the device being shown in "closed" condition; and

Fig. 2 is a view similar to Fig. 1 wherein parts are shown in elevation and wherein the parts are shown in the positions they assume while dispensing.

It is widely recognized that in the intermittent use of a carbonated bottled beverage, one faces the likelihood that the last used portions of the beverage will lack quality and palatability by reason of the escape of the entrained gases. Immediately after a bottle has been opened, the entrained gases will start to escape. While there have been a wide variety of stoppers or caps provided to close and seal the bottle after it has been originally uncapped and while such stoppers or caps have been highly developed and skillfully designed, the loss problem has not been completely solved because in removing such stoppers or caps for subsequent use or dispensing of the beverage, additional gases escape the bottle.

In accordance with my invention, I utilize one such highly successful cap in the construction of a dispenser which permits the user to intermittently dispense the beverage without removing the cap and without permitting free and unwarranted escape of gas.

More specifically, I provide a siphon type dispensing device indicated generally by the reference numeral **10** which is associated with a bottle closing cap **12** which has been found highly successful in sealing the opening in a conventional beverage bottle such as shown in broken outline by the reference numeral **14**. Only the neck portion and bottom of the beverage bottle are shown, since only those portions are necessary to describe the manner in which the cap **12** is closed on the bottle opening and to fully describe the utility of the dispenser. The cap **12** is of a well known type and has been shown in the U. S. Patent to Butts, No. 1,733,645 wherein it is explained that the cap is provided with a plurality of fingers **15**, **15** which extend downwardly and which have their lower end portions rolled upwardly to support a split wire ring **16** which is closed or opened by a wire operating lever **17**. More specifically, the ring **16** is passed through the rolled bottom edge portions of the fingers **15** with the free ends of the split ring being engaged by the lever **17** which has a hook portion **17***a* looped over hooks **16***a* formed on the free end portions of the wire **16**. When the lever **17** is positioned as shown in the drawing, the hooks **17***a* cams the ring hooks **16***a* together and thus tightens the fingers **15**, **15** around the neck of the bottle **14**. When the fingers are tightened in this manner, an annular seal **18** is compressed over the top of the bottle within the body portion of the cap **12** so as to seal the opening in the bottle. When the lever **17** is shifted upwardly, the hooks **17***a* and **16***a* are only loosely engaged so that the fingers do not grip the neck of the bottle and so that the cap can be removed from the bottle.

As shown in Fig. 1, the cap **12** has an annular inturned flange **19** defining a central opening through which a tube **20** extends. As will be shown in greater detail hereinafter, the tube **20** forms an important part of the dispenser **10** and is extended through the cap **12** with its major portion depending from the cap so as to extend to a point adjacent the bottom of the bottle and the tube **20** also projects a relatively short distance above the cap. In accordance with the present invention, the cap **12** is secured to the tube **20** in a liquidtight airtight manner, as by welding or the like, so that no gas or liquid can escape from the bottle along the tube **20**.

It is important to note that a bushing **21** is tightly fitted into the top end of the tube **20** and that a generally similar bushing **22** is tightly fitted into the bottom end of the tube **20**. The bushings **21** and **22** are adapted to slidably support an inner tube **23** in spaced substantially concentric relationship to the outer tube **20**. As will be explained in greater detail hereinafter, the inner tube **23** accommodates all of the fluid flow and will, therefore, be referred to as the flow tube. It is also important to note that the flow tube **23** is considerably longer than the outer tube **20** and projects a substantial distance above the top bushing **21** and a lesser distance below the bottom bushing **22**.

The upwardly projecting portion of the flow tube **23** extends into a generally cylindrical head member **24** which is closed at the top and which has a central longitudinally extending bore **25** in communication with the open top end of the flow tube. The head **24** also receives a flow nozzle **26** which is in communication with the bore **25** and which is secured to the head as by welding or the like so as to extend radially and downwardly therefrom. The head and flow tube are secured together in any conventional fashion as, for example, by press fitting the flow tube within the bore so that the top edge of the flow tube will engage a shoulder **27** defined therewithin or, in the alternative, the top end of the flow tube may be threaded within the head.

An enlarged recess or well **28** is provided in the bottom of the head **24** to accommodate a coil spring **29** therewithin which can be disposed between top and bottom seat members **30** and **31** which slidably embrace the flow tube. The bottom seat member **31** engages an annular seal **32** which rests upon the bushing **21** in the top end of the outer tube **20**. Thus, it will be seen that the head **24** may be pressed downwardly against the spring **29** to extend the flow tube a greater distance into the bottle **14**. The movement of the head and flow tube is limited by the spring seat members **30** and **31** which have opposed sleeves **33** and **34** which will engage and stop downward movement of the head and flow tube in the position shown in Fig. 2. Obviously, when the head is pressed downwardly, the bottom portion of the flow tube will be extended beyond the bottom bushing **22**.

In further accord with the present invention, the projecting bottom end portion of the flow tube **23** is closed by a cylindrical plug **35** tightly seated within the flow tube. A generally cup shaped member **36** is also sup-

ported on the bottom end portion of the flow tube as by a pin 37 which extends through the cup 36, the flow tube 23, and the plug 35. The open top end of the cup shaped member 36 is in spaced generally concentric relationship to the flow tube 23 and is adapted to receive and seat a rubber or rubber-like seal member 38. More specifically, the seal 38 is provided with a shoulder 39 which is seated on the top edge of the cup member 36 and is also provided with a downwardly extending portion 40 which embraces the flow tube within the opening in the cup shaped member. The top face 41 of the seal member engages the bottom face of the lowermost bushing 22 to provide a seal around the flow tube.

Flow from the bottle into the flow tube 23 is accommodated through a pair of elongated openings 42, 42 which are provided in diametrically opposed relationship in the flow tube in that portion thereof which is normally embraced by the lowermost bushing 22. Accordingly, the flow openings 42 are provided with a double seal, namely, the bushing 22 and the rubber seal member 38. The openings 42, 42 are exposed when the head 24 is depressed whereby the seal 38 is thrust downwardly and the tube openings 42, 42 are extended beneath the bushing 22.

It is believed that a detailed description of the operation will be unnecessary in view of the foregoing description of the device. It will be readily understood that the elements associated with the bottom end of the flow tube constitute a valve which is doubly sealed in the closed position when the device is not being operated. The spring 29 in the head automatically closes the valve during periods of inoperation. To open the valve to dispense the liquid contents of the bottle, the head is pressed downwardly against the spring. It is quite apparent that in operating the dispensing device the cap does not have to be opened so that the bottle will remain sealed. It is also quite apparent that the liquid and gases within the bottle have no avenue of escape during non-use. It is quite important to note that during periods of use the gases in the bottle, which are not entrained in the beverage, cannot freely escape. The only avenue of escape during operation is through the ports 42, 42 in the flow tube and such ports are opened adjacent the bottom of the bottle so as to be within the body of the beverage. After the beverage contents have been dispensed to a point where the liquid level is near the bottom of the outer tube 20, the cap and dispensing device can be removed from the bottle and the remaining portion of the contents can be poured freely from the bottle.

Thus, it will be seen that with the above described dispensing device a bottled, carbonated beverage can be dispensed intermittently without gas leakage while the beverage is dispensed or during extended periods of non-use. Therefore, the beverage can be preserved in a palatable state for extended periods of time after the bottle has been initially opened.

While the invention has been described with specific reference to the one embodiment shown in the drawing, it is not the intent to limit the scope of the invention to the details of said embodiment otherwise than indicated by the claims which follow.

I claim as my invention:

1. A dispensing device for bottled carbonated beverages comprising in combination, a cap detachably secured to the top of the bottle and sealing the opening therein, an outer tube secured in air-tight sealed relationship within said cap and projecting into the lower region of the bottle, a flow tube slidably disposed within said outer tube and having a closed bottom end projecting below said outer tube, said flow tube also having a transverse opening above the projecting bottom end portion, an annular bushing disposed between the bottom end portion of said outer tube and said flow tube to normally close said transverse opening, a seal connected to the projecting bottom end of said flow tube and having a surface normally engaging the bottom end of said annular bushing, an operating head connected to the top portion of said flow tube above said cap and having a discharge opening in communication with said flow tube, and a spring biasing said head and said flow tube upwardly to normally position said transverse opening within said bushing and to engage said seal and the bottom end of said annular bushing, whereby said head can be depressed to disengage said seal and to extend said flow tube into the bottle and thereby expose said transverse opening below said bushing and said outer tube.

2. A dispensing device for bottled carbonated beverages comprising in combination, a cap detachably secured to the top of the bottle and sealing the opening therein, an outer tube secured in air-tight sealed relationship within said cap with its bottom end extending into the lower region of the bottle, a flow tube slidably disposed within said outer tube with its bottom and top end portions projecting therebeyond, said flow tube also having a transverse opening above its projecting bottom end portion, means closing the bottom end of said flow tube, a bushing disposed between the bottom end portion of said outer tube and said flow tube and normally closing said transverse opening, a seal supported on the projecting bottom end portion of said flow tube having a surface normally engaging said bushing, an operating head connected to the upwardly projecting portion of said flow tube and having a discharge opening in communication with said flow tube, and a spring biasing said head and said flow tube upwardly whereby said head can be depressed to disengage said seal and said bushing and to expose said transverse opening below the bottom end of said outer tube.

3. In a dispensing device for bottled carbonated beverages, the combination comprising a cap detachably secured to the top of the bottle and sealing the opening therein, an outer tube secured in air-tight sealed relationship within said cap with its bottom end extending into the lower region of the bottle and with its top end projecting above the cap, a flow tube slidably disposed within said outer tube with its top end projecting above the outer tube and having a closed bottom end projecting below said outer tube, said flow tube also having a transverse opening above the projecting portion of its bottom end, a bushing disposed between the bottom end portion of said outer tube and said flow tube and normally closing said transverse opening, a seal secured to the bottom end of said flow tube and having a surface normally engaging said bushing, an operating head connected to the projecting top end of the flow tube and having a discharge opening in communication with said flow tube, and a coil spring disposed in said head to exert force between said head and said outer tube whereby said head can be depressed to disengage said seal and said bushing and to expose said transverse opening below said outer tube.

4. A dispensing device for bottled carbonated beverages comprising in combination, a cap having a central opening detachably secured to the top of the bottle to seal the bottle opening, an outer tube secured to said cap and extending through and sealed within said central opening with its bottom end projecting into the lower region of said bottle and with its top end projecting above said cap, top and bottom bushings disposed in the top and bottom ends of said outer tube, a flow tube extending through said outer tube with its top end projecting above said top bushing and with its bottom end projecting below said bottom bushing, said flow tube having a transverse opening normally closed by said bottom bushing, means closing the bottom end of said flow tube, a seal connected to the projecting bottom end of said flow tube and having a surface normally engaging said bottom bushing, a generally cylindrical operating head connected to the projecting top end of the flow tube and having a central longitudinal bore in communication therewith, discharge orifice means supported by

said operating head in radial relationship therewith and in communication with said bore, means in said operating head defining an annular spring chamber around said flow tube, and a coil spring disposed in said spring chamber to exert force between said operating head and said outer tube and to thereby bias said head and said flow tube upwardly with respect to said outer tube whereby said head and said flow tube can be depressed to disengage said seal from said bottom bushing and to expose said transverse opening below said outer tube.

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