

Dec. 28, 1954

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2,698,113

DISPENSING BOTTLE CAP DEVICE

Filed April 10, 1953

2 Sheets-Sheet 1

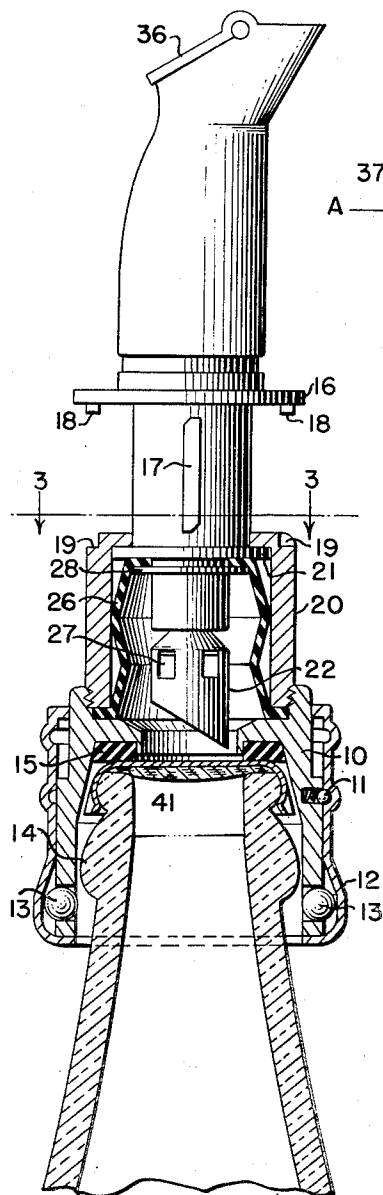


FIG. 1

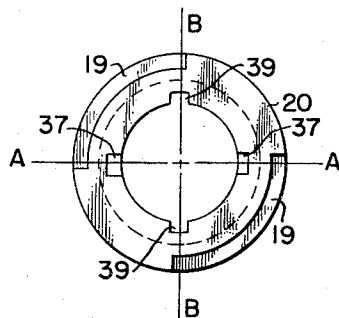


FIG. 3

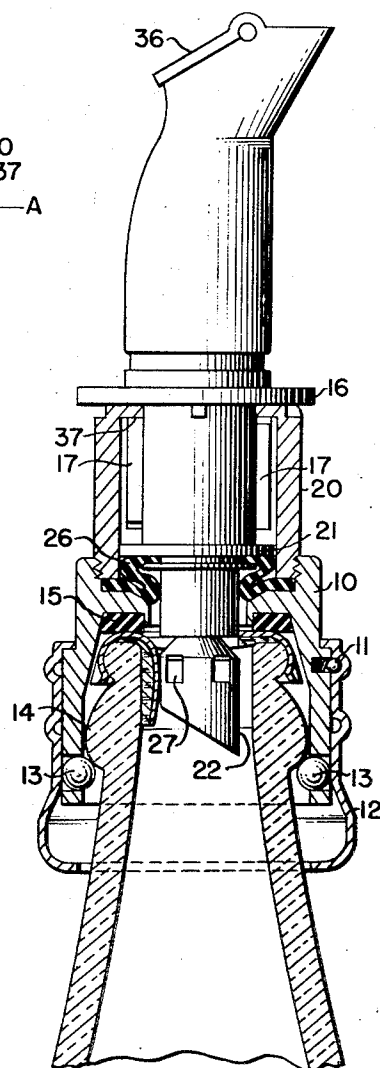


FIG. 2

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2 Sheets-Sheet 2

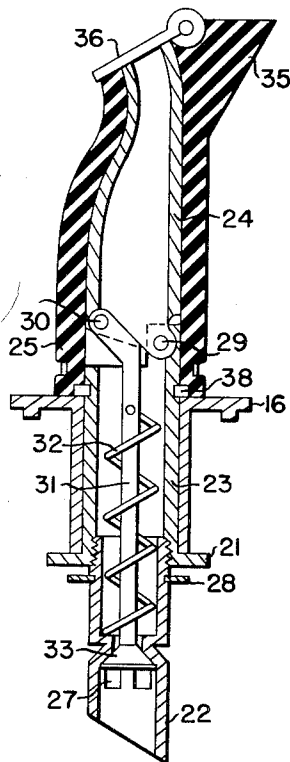


FIG. 4

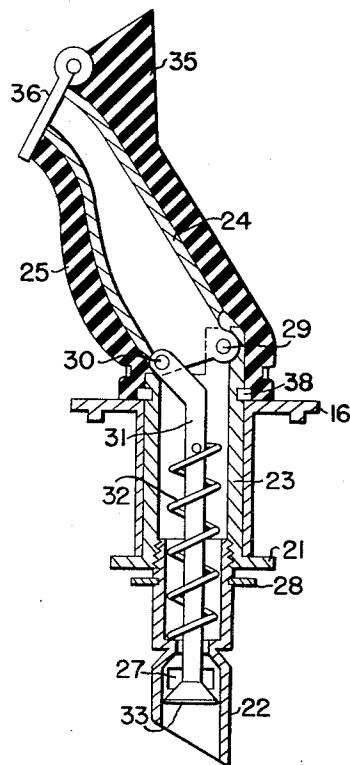


FIG. 5

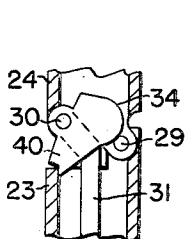


FIG. 6

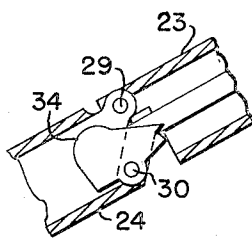


FIG. 7

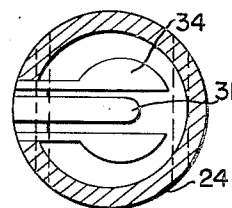


FIG. 8

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2,698,113

DISPENSING BOTTLE CAP DEVICE

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Application April 10, 1953, Serial No. 347,947

10 Claims. (Cl. 222—83)

This invention relates to dispensing devices and more particularly to improved discharge valves for dispensing the contents of carbonated beverages from bottles normally provided with the well known crown type of seals.

The carbonation of these beverages causes them to be maintained in the bottle under substantial gas pressure as long as the bottle is tightly sealed, but when the crown seal is removed, the pressure is necessarily released, and some of the beverage may then come boiling out of the bottle before it can be closed by a stopper or dispensing cap.

An object of this invention is the provision of a dispensing bottle cap device which may be applied to a conventional beverage bottle having a crown type seal without permitting the release of pressure from the bottle when such seal is broken.

Another object of the invention is to provide a dispensing device of the above described character which is incapable of being operated in such a manner as to release the compressed gas from the bottle before the liquid therein is discharged.

Another object is to provide a dispenser cap device which may be easily attached to a charged beverage bottle without the necessity of removing the usual crown cap, yet which, when attached, forms a tight seal between the dispenser cap and the crown seal cap, and being constructed and arranged so as to be capable of piercing the crown seal without losing any of the charge.

These objects and other more detailed objects hereinafter appearing are attained by the devices illustrated in the accompanying drawings, in which

Figure 1 is an elevation of the novel dispenser cap device applied to the neck of a bottle, parts being shown in section.

Figure 2 shows the same device as shown in Figure 1, but with the dispensing cap locked to the neck of the bottle and with the crown seal perforated by the end of the dispenser tube.

Figure 3 shows a sectional plan view taken along the line 3—3 of Figure 1, certain parts being omitted.

Figure 4 is a sectional view of the dispensing tube, valve, and cutting assembly.

Figure 5 shows the same parts as shown in Figure 4 with the valve open and the parts in operating position.

Figure 6 is a detail view showing the locking device in locked position which prevents either accidental or intentional opening of the valve except when the bottle is turned over into a pouring position.

Figure 7 is a detailed view of the same parts shown in Figure 6, but tilted to the pouring position, and with the locking device disengaged to permit the opening of the valve.

Figure 8 is a sectional plan view along the lines 8—8 of Figure 6 showing the locking device inside the tube and straddling the valve stem.

This invention is an improvement upon the device shown in my copending application Serial No. 234,073, filed June 28, 1951. The reference numeral 10 indicates a cap and sealing body member which carries a detent 11 which may be a spring pressed ball for the purpose of holding the slip ring 12 in either of the positions shown in Figures 1 and 2 by engaging suitable grooves on the inner surface of the slip ring. The body member 10 carries three or more balls 13 which are inserted in corresponding holes in the body member 10 from the outside, these holes being too small at the inside to permit them dropping out when not in use and are for the purpose of being held inwardly

by the slip ring 12 when it is moved downwardly to the position shown in Figure 2 for the purpose of clamping the lower side of the large bead 14 on the neck of the bottle so as to lock the dispenser in position. The body member 10 has an inwardly extending shoulder against which is carried a rubber washer 15 to form a seal between the upper part of the crown seal and the capping body.

The reference numeral 16 indicates a flanged member carrying a pair of vertical keys 17 and a pair of pins 18 for limiting the rotational movement of the member 16 in its different vertical positions. The grooves 19 formed in the guide and bellows chamber body 20 cooperate with the pins 18 to limit the rotational movement of the flange 16 when the dispenser cap is in its operative position. A flange 21 contacting an upper inturned flange at the top of the member 20 and having a downwardly extending tube 22 is formed as a part of an upwardly extending tube 23 to which the downwardly extending tube 22 is attached as by screw threads. The upper part of the dispenser tube compresses a member 24 surrounded by a rubber jacket 25 which is flexible so as to permit operation of the dispenser valve by flexing the upper end of the dispenser tube as hereinafter described.

The reference numeral 26 designates a rubber bellows which forms a flexible seal within the guide and bellows chamber 20. This bellows is sealed at the bottom between the capping body 10 and the bellows body 20 by an outstanding flange. It will be noted that the downwardly extending dispenser tube 22 is provided with ports 27 to permit the fluid to enter the tube above the valve, or when the valve is opened, and a metal ring 28 is carried by the tube section 22 in such a manner as to seal the upper inturned flange with rubber bellows 26 against the flange 21. The middle section 23 of the dispenser tube is hinged to the upper section 24 by means of a pin 29 as shown in Figures 4 and 5, and the side of the tube 24 opposite the pin 29 is provided with a pin 30 which forms an operating connection with the valve stem 31 to move the stem against the pressure of the spring 32 so as to open the valve 33 when the parts are moved to the position shown in Figure 5. A weight operated locking device 34 is loosely carried on the pin 30 so that when the device is in vertical position as shown in Figure 6, the latch 40 on the small end of the weight 34 is moved over against the upper part of the tube 23, thereby preventing the downward movement of the valve stem 31 in such a manner as to open the valve. For this reason, neither accidental nor intentional pressure on the thumb rest portion 35 of the rubber jacket 25 can be effective to rock the member 24 about the tube 23 on pivot 29 in such a manner as to open the valve once the bottle has been turned to a nearly upside down position.

The upper end of the jacket 25 is provided with a pivoted lid 26 to keep insects or foreign matter from entering the tube when the device is not in operation. The upper part of the body member 20 is provided with an inturned flange 37 which forms the upper limit of movement for the flange 21 and the parts associated therewith, and downward movement thereof is provided except when the keys 17 are turned in position to slide downwardly through the grooves 39 formed at the inside of flange 37. In this manner, the accidental puncturing of the crown seal is prevented. The ring and cylinder body 16 is locked in position on the tube section 23 by means of a split ring 38 which is sprung into a groove in the periphery of member 23 just above the flange 16.

The lower end of the tube 22 is beveled and sharpened as indicated at 41 so as to be capable of puncturing a crown cork and seal without substantial distortion or damage to the seal except for the puncturing in the middle of the cap.

In operation with the parts in the positions as shown in Figure 1, except that the ring 16 is turned counter-clockwise 1/4 turn, thus placing the keys 17 in the A—A position, Figure 3, with their lower ends resting at 37 on top of the chamber body out of alignment with the slots 39. In this position, the tube assembly is locked with the cutting end retracted within the chamber. The dispenser is placed over the bottle, with the crown cork seal still capped tightly upon the bottle and the original gas charge undisturbed. By pushing the slip ring 12 downwardly,

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the tapering formation of the ring 12 forces the balls 13 into contact with the bead of the bottle neck 14. The farther the balls are forced in, the farther the cap of the dispenser is pulled down to form a tight seal between the top of the crown cork seal and the sealing washer 15.

With the dispenser thus firmly clamped and sealed on the bottle, the operator places his thumb and forefinger on the ring 16, rotating it clockwise one quarter turn which places the keys 17 in B—B position, Figure 3, and as shown in Figure 1, in alignment with slots 39 in the top of the chamber body. As the ends of the keys are beveled at one corner, it allows them to easily drop into the slots and with the continued downward pressure, the sharp point of the tube 22 cuts through the crown cork seal. As the top of the bellows 26 is sealed to the tube assembly, there is no loss of gas when the tube cuts through the bottle cap, and as the tube assembly is forced down, the flange 21 forces the bellows down and the trapped gas back into the bottle as shown in Figure 2.

The operator then turns the ring 16 another quarter turn clockwise which again places the keys in position A—A out of alignment with slots 39, but this time below the top of the chamber body as shown in Figure 2 at 37, thus locking the tube assembly in its downward position. In tipping the bottle, if the operator should exert premature pressure on the tube section or lever 24, the locking device 34, Figure 6, prevents the valve from opening, maintaining the parts as in Figures 4 and 6. After the bottle has been tipped to the pouring position with the liquid covering the ports 27, the weights of the locking device drop forward, Figure 7, tipping the device out of engagement with the top of the rim of tube section 23 which permits the valve to open. Then by applying pressure at 35, the tube section or lever 24 is forced to the position shown in Figure 5, forcing the valve stem down and the valve 33 open, allowing the liquid to enter the ports 27 and pass the valve 33, remembering of course that the bottle is in a more or less upside down position and the gas is trapped in the upturned bottom of the bottle and exerts pressure to dispense the soda water. By releasing the pressure at 35, the spring 32 quickly closes the valve. In this way, the partly used soda water can be kept indefinitely and used from time to time at pleasure without losing its gas or flavor.

When the bottle is empty, the ring 16 is backed off one quarter turn to the position B—B, and by pulling up on the ring, the tube assembly is retracted, and by backing the ring 16 another quarter turn to position A—A, the tube assembly is locked in the retracted position.

The slip ring 12 is then pulled up where the little ball 11 holds it in its upward position. Thus, with a simple continuous pulling motion, the soda dispenser is pulled off of the bottle, and by a continuous pushing motion, it is clamped and sealed on the bottle.

I claim:

1. In a dispensing device for bottles of the crown seal type, a body member constructed and arranged to fit the neck of the bottle without removal of the crown seal, a locking device for releasably holding said body member in position on the neck of the bottle and in sealed relation to the crown seal, a dispensing tube and assembly carried by said body member above said crown seal, said dispensing tube being provided with an end portion adapted to penetrate said crown seal and thereby permit the discharge of the contents of the bottle without removal of the crown seal, said dispensing tube assembly including a flexible discharge portion, a valve, and means connected to said valve and operable by flexing said flexible portion for opening said valve, said valve opening means being provided with a pendulum controlled latch for preventing the opening of the valve when the bottle is in substantially upright position.

2. In a dispensing device for bottles of the crown seal type, a discharge tube having a sharpened end capable of perforating said crown seal, a valve in said tube, and means controlled by the position of said bottle for preventing the opening of said valve when the bottle is in substantially upright position.

3. In a dispensing device for bottles of the crown seal type, a body member having a seal constructed and arranged to fit over the crown seal, a locking device for engaging the neck of said bottle below said crown seal and to hold said seal in leakproof engagement with said crown seal, a discharge tube assembly carried by and vertically movable with respect to said body member, said

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discharge tube having a sharpened end adapted to perforate said crown seal when the tube is moved downwardly with respect to said body member, a valve in said tube, and means for preventing the opening of said valve while said dispensing device is in substantially upright position.

4. In a dispensing device for bottles of the crown seal type, a body member having a seal constructed and arranged to fit over the crown seal, a locking device for engaging the neck of said bottle below said crown seal and to hold said seal in leakproof engagement with said crown seal, a discharge tube assembly carried by and vertically movable with respect to said body member, said discharge tube having a sharpened end adapted to perforate said crown seal when the tube is moved downwardly with respect to said body member, said tube forming a discharge passage and including a pair of hingedly connected portions, a valve positioned in said tube for closing said passage, and means operated by moving one of said tube portions on its hinge to open said valve.

5. In a dispensing device for bottles of the crown seal type, a body member having a seal constructed and arranged to fit over the crown seal, a locking device for engaging the neck of said bottle below said crown seal and to hold said seal in leakproof engagement with said crown seal, a discharge tube and assembly carried by and vertically movable with respect to said body member, said discharge tube having a sharpened end adapted to perforate said crown seal when the tube is moved downwardly with respect to said body member, said dispensing tube including a pair of hingedly connected portions, a valve, means operated by hinging one of said portions about the other to open said valve, a latch for preventing the hinge of said portions of the tube with respect to each other, and a pendulum device for controlling said latch, whereby the opening of said valve is prevented except when the tube is tilted to a predetermined position.

6. A dispenser cap device for bottles comprising a gasketed portion for resting against the mouth of a bottle, annular structure projecting laterally from the periphery of said portion and radially contractable and expandable, a sleeve received about said annular structure and shiftable axially relative to said structure to selectively cause said structure to contract and grip a bottle neck beneath the bead thereon and to expand to clear said bead, a flexible spout for said device, a valve in said spout, means operated by flexing said spout for controlling said valve, a latch for controlling the flexing of said spout, and means including a pendulum for controlling said latch.

7. A dispenser bottle cap comprising a crown portion including a dispenser spout and a flange portion including structure projecting laterally from the periphery of said crown portion and with annularly arranged, radially shiftable elements, a sleeve received about said structure and movable along said structure to squeeze said elements inwardly for gripping a bottle neck, cooperable threads on said sleeve and said structure for causing relative longitudinal movement of said sleeve and said structure upon rotation of said sleeve about said structure, a flexible spout for said device, a valve in said spout, means operated by flexing said spout for controlling said valve, and means for preventing the flexing of said spout except when the bottle is in a predetermined position.

8. A dispenser bottle cap device comprising a crown portion, a gripping flange portion, a dispenser spout projecting from said crown portion, a valve seat in said tube and a valve therefor, an actuator for said valve extending to said spout, a portion of said spout being shiftable relative to said valve seat to cause actuation of said valve by means of said actuator, and pendulum operated means for preventing the actuation of said valve except when the device is in a predetermined position.

9. A dispenser bottle cap device comprising crown and gripping flange portions, a dispensing spout comprising an inner portion sealingly secured to said crown portion and an outer portion flexible relative to said inner portion, a valve seat in said inner portion, a valve for said seat, an actuator for said valve abutting said outer portion of said spout whereby shifting of said outer portion relative to said inner portion actuates said valve, and pendulum operated means for preventing the actuation of said valve except when the device is in a predetermined position.

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10. A dispenser cap as described in claim 8 in which the outer portion of said spout is pivoted to said inner portion and further includes a flexible sealing jacket for the joint between said spout turns.

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