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G. J. MALONEY

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BEVERAGE DISPENSING BOTTLE

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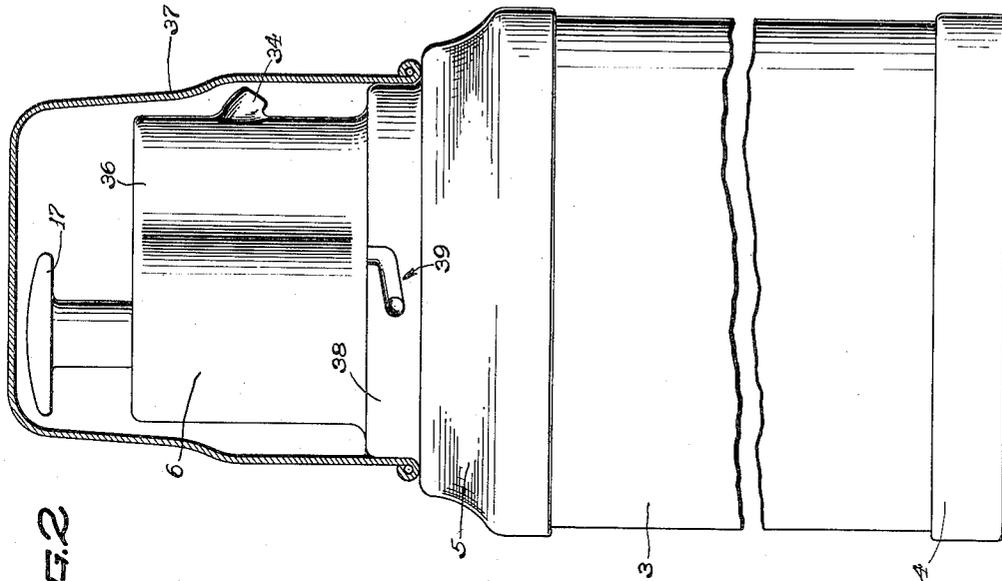


FIG. 2

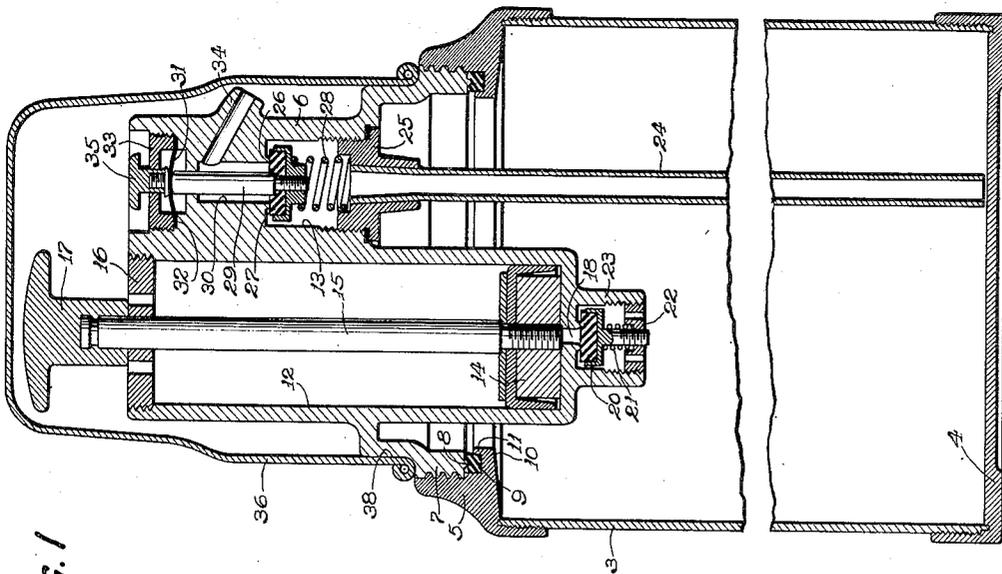


FIG. 1

Inventor
George J. Maloney
By *Chincolt, Parkers, Carter*
Attorneys

UNITED STATES PATENT OFFICE

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BEVERAGE DISPENSING BOTTLE

George J. Maloney, Long Beach, Calif.

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7 Claims. (Cl. 221-77)

My invention relates to beverage dispensing bottles and more particularly to a bottle in which the contents of the bottle may be placed under pressure by a pump carried by a removable stopper for the bottle and discharged through a spout by opening a valve also supported by the stopper.

A general object of the invention is to provide a novel arrangement of the pump and discharge mechanism in a bottle of the above character which arrangement provides for simplicity and compactness of the parts, convenience in manipulation thereof, and enclosure of such parts by a removable cap for the bottle.

The invention also resides in the novel construction and arrangement of the parts of the valve by which the structure as a whole is simplified and dripping of the beverage from the spout is effectually prevented.

A further object is to provide a new and improved packing forming an effective seal between the stopper and the bottle neck.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawing, in which

Figure 1 is a vertical sectional view of a beverage container embodying the features of the present invention.

Fig. 2 is a side elevational view of the bottle with the cap thereof shown in section.

Referring now to the drawing, 3 indicates the metallic tubular body of the bottle closed at its lower end by a head 4 and having an annular ring 5 secured to its upper end and defining an internally threaded opening which is of relatively large diameter so as to facilitate cleaning of the bottle and permit the pump and valve mechanism to be incorporated in the stopper. The latter is in the form of a casting 6 having a flange 7 at its lower end formed with external threads adapted to be screwed into the head 5.

In the present instance the end of the flange 7 is formed with an annular rib 8 which, when the stopper is screwed into place, engages a gasket 9 of soft material such as rubber seated in an upwardly opening annular pocket defined by an internal flange 10 on the ring 5 and an upturned rib 11 on the flange. The gasket is thus compressed and forced laterally against the sides of its seat so as to form an effective seal under all conditions in spite of looseness at the threads, due to ordinary manufacturing inaccuracies. By locating the gasket below the threads in the head 5, the threads are always dry

when the stopper is in place thereby contributing to cleanliness of the bottle.

Formed on diametrically opposite sides of the casting 6 are two parallel vertical passageways 12 and 13, the former being offset laterally from the axis of the container 3 and constituting the cylinder of the pump in which is disposed a piston 14 which is rigid with the lower end of a stem 15. The upper end of the stem projects through an apertured disk 16 screw threaded into the upper end of the cylinder.

When the pump is actuated by reciprocating a knob or handle 17 on the upper end of the stem 15, air under pressure is forced through an opening 18 in the closed end of the cylinder forcing a valve member 20 downwardly away from its seat and against the action of a spring 21 acting upwardly between the valve and an apertured disk 22. The latter threads into the lower end of a flange 23 which defines the valve casing and guides the valve stem. The contents of the bottle may be placed under the desired pressure by a few reciprocations of the pump handle.

The passageway 13 communicates with the lower end of the container through a vertical tube rigid at its upper end with a bushing 25 threading into the lower end of the cylindrical passage 13 at its upper end, a seat 26 is formed for a valve member 27 which is urged toward closed position by a compression spring 28 seated in the bushing 25. The stem 29 of the valve projects upwardly through a smaller vertical passageway 30 and bears against the under side of a diaphragm 31 preferably formed of rubber with its peripheral edge forced against a shoulder 32 by a clamping disk 33 thereby forming an absolute seal at the upper end of the valve passageway.

Projecting laterally from the casting 6 on the side thereof diametrically opposite from the pump is a lug 34 which is drilled to form an orifice communicating with the passage 30 between the diaphragm and the valve disk 27 and adapted to direct a stream of the fluid laterally of the stopper and in a slightly downwardly inclined direction. The hollow lug thus forms the nozzle or spout which is spaced above the open end of the container a distance sufficient to enable a cup or other receptacle to be filled conveniently when held in a horizontal position adjacent the upper end of the container.

The discharge valve is arranged to be opened by applying downward pressure on the head of a button 35 which projects through and is guided for limited vertical movement in the disk 23 with

its lower end bearing against the upper surface of the diaphragm in alignment with the valve stem 15. With the valve thus opened, the liquid contents of the bottle, if under pressure, flows up through the tube 24, around the valve disk 27

through the passageway 30, being discharged from the nozzle laterally and slightly downward. By arranging the valve so as to be opened by application of downward pressure to the button 35, it will be observed that the contents of the bottle may be dispensed conveniently and without danger of tipping the bottle over when it is resting on a supporting surface. Thus, the receptacle for catching the contents may be held in one hand while the valve is opened by the other hand. Preferably, the head of the button 35 is disposed within an upwardly opening pocket defined by a flange 36 which thereby protects the valve against unintentional opening.

Upon release of the button 35 and seating of the valve member 27, it will be apparent that the passageway 30 and the nozzle 34 will remain filled with liquid but dripping of the latter from the nozzle will be avoided effectually owing to the absolute seal formed by the diaphragm 31 which causes the entrapped liquid to be held in suspension by an atmospheric pressure. With such a packless seal for the valve, there is no danger of the valve binding or sticking in partially open position.

A sheet metal cap 37, which may be used as a receptacle for the beverage discharged from the bottle, is intended to be carried by the bottle in inverted position so as to constitute a protective casing for the parts of the discharging apparatus. To this end, the casting 6 is formed with an annular shoulder 38 over which the open end of the cap 37 is adapted to fit snugly being fastened thereto by a bayonet connection 39. By thus securing the cap to the stopper rather than to the ring 5, the same cap may be used on bottles of different capacities. It will be apparent that the use of a cap regular in shape and of a diameter substantially less than that of the bottle body, is made possible by the particular construction and arrangement of the discharge valve and pump and the construction of the discharge nozzle, none of the parts of which project outwardly beyond the maximum diameter of the stopper. Thus, with the arrangement above described, the parts of the pump and valve may be made large enough to facilitate convenient manufacture and at the same time are compactly arranged.

From the foregoing it will be apparent that I have provided a pressure bottle which is simple and inexpensive to construct, which is neat and attractive in appearance, which is convenient to operate, and which provides for a high degree of cleanliness in carrying and dispensing beverages.

I claim as my invention:

1. A beverage dispensing bottle comprising, in combination, a tubular container having an enlarged opening at its upper end, a stopper for said opening defining a cylinder with its axis extending parallel to but offset laterally from the axis of said container, a pump for placing the content of said container under pressure including a vertically reciprocable piston in said cylinder, a discharge passageway communicating with the lower portion of said container and extending through said stopper on the side thereof opposite said pump cylinder, and valve mechanism within the confines of said stopper operable from a point exteriorly of the bottle independently of

said piston and controlling the opening and closing of said passageway.

2. A beverage dispensing bottle comprising, in combination, a tubular container having an enlarged opening in its upper end, a stopper adapted to be secured in said opening and having two vertical passageways extending therethrough within the border of the stopper, one constituting a pump cylinder and having a piston therein with its stem projecting upwardly from the stopper for manual operation, a valve member movable axially of said other passageway and toward and from a seat therein to control the flow of liquid therethrough, a discharge opening communicating with said last mentioned passageway at a point above said valve member, and a vertical stem extending from said valve member upwardly through the stopper and depressible downwardly to open the valve.

3. A beverage dispensing bottle comprising, in combination, a tubular container having an enlarged opening in its upper end, a stopper adapted to be secured in said opening and having two vertical passageways extending therethrough, one constituting a pump cylinder and having a piston therein with its stem projecting upwardly from the stopper for manual operation, a valve member movable toward and from a seat in said other passageway to control the flow of liquid therethrough, a discharge opening communicating with said last mentioned passageway at a point above said valve member, and a shoulder rigid with and projecting outwardly from said stopper around the exposed end of said stem whereby to protect the latter against depression accidentally while permitting convenient manual depression thereof.

4. A beverage dispensing bottle comprising, in combination, a tubular container open at its upper end, a stopper adapted to be secured in said opening, a pump carried by said stopper and having a vertically movable actuating member, a passageway extending vertically through said stopper, a vertically movable valve member normally tending to move upwardly against a seat in said passageway, a substantially flat flexible diaphragm sealing the upper end of said passageway, a laterally extending discharge passage communicating with said first mentioned passageway between said diaphragm and said valve member, and a vertically reciprocable stem between said valve member and said diaphragm having bearing contact with the underside of the latter and depressible to open the valve by the application of a downwardly directed force to the upper side of said diaphragm.

5. In a beverage dispensing bottle, the combination of a removable stopper for closing the open end of the bottle, a pump supported by said stopper and adapted when actuated to place the bottle contents under pressure, a passageway extending through said stopper, a valve member normally tending to move toward a seat in said passageway to prevent the flow of fluid therethrough, a flexible continuous diaphragm providing a seal at the external end of said passageway, a discharge orifice communicating with said passageway between said diaphragm and said valve member, a motion transmitting connection between said diaphragm and said valve member having bearing contact with the inner surface of the latter, and a button mounted in said stopper and adapted when depressed to apply an inwardly directed pressure on said diaphragm whereby to move said valve member away from its seat.

6. A beverage dispensing bottle comprising, in combination, a tubular container open at its upper end, a stopper of a diameter approximating that of said container, a piston pump mounted in said stopper and having an operating handle disposed externally of the latter, a laterally and downwardly extending nozzle rigid with said stopper and disposed within the periphery of the latter, a passageway extending through said stopper and communicating with said nozzle, a valve controlling said passageway and operable from a point exterior of said stopper, and a cup-shaped cap with its open end adapted to fit around the stoppered bottle and having a body of smaller diameter than said bottle and wholly enclosing said pump, said valve and said nozzle.

7. In a beverage dispensing bottle, the com-

ination with a removable stopper for closing the open end of the bottle, a passageway extending through said stopper, a valve member normally tending to move toward a seat in said passageway to prevent the flow of fluid therethrough, a flexible diaphragm closing the outer end of said passageway, a clamping member mounted in said stopper and holding said diaphragm in its seat, means providing a discharge orifice communicating with said passageway between said diaphragm and said valve member, a push button extending through said plug for depressing the diaphragm to actuate said valve, and a motion transmitting connection between said valve and said diaphragm.

GEORGE J. MALONEY.