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DISPENSING VALVE AND SPOUT STRUCTURE

Filed July 13, 1966

Fig. 1

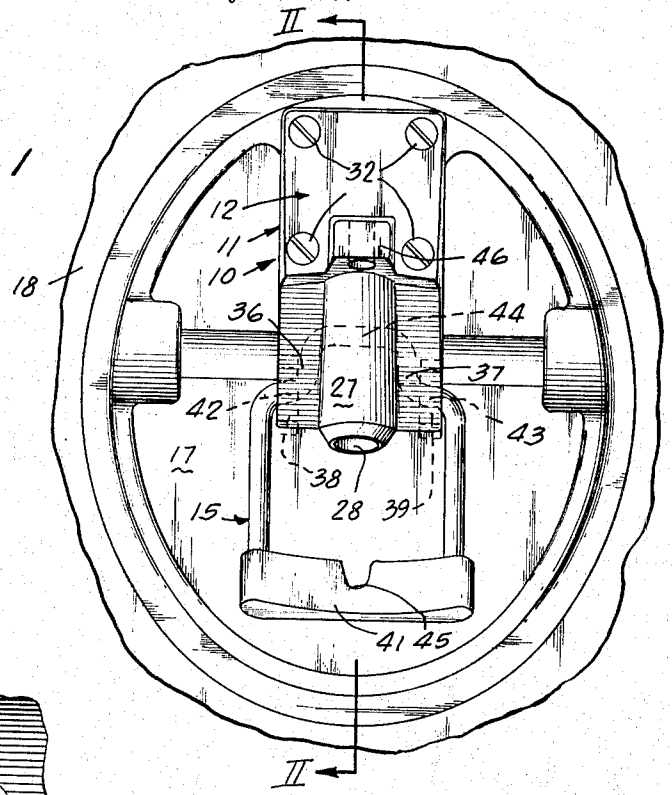
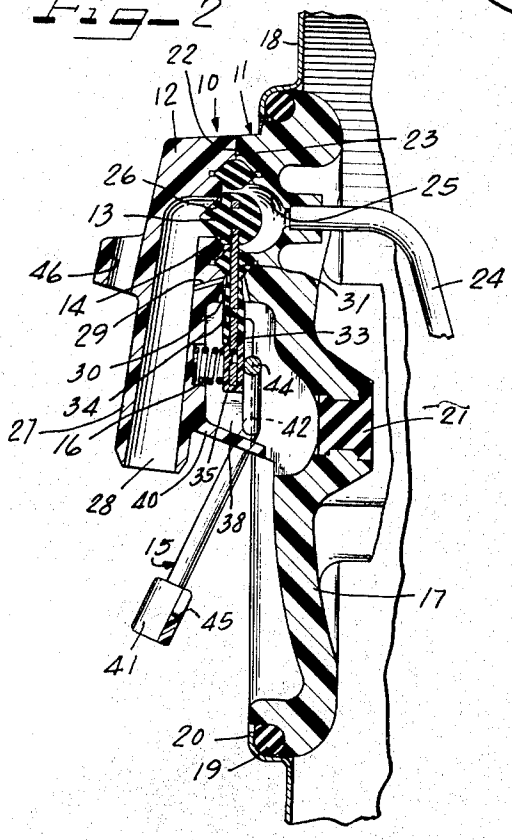


Fig. 2



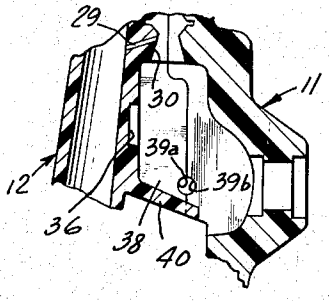


Fig. 3

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DISPENSING VALVE AND SPOUT STRUCTURE

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This specification relates generally to dispensing valves, and more specifically to a manually actuated beverage dispensing valve.

Although the principles of the present invention may be included in various valve devices, a particularly useful application is made when the dispensing valve forms a part of the cover of a pressurized tank, particularly where such apparatus is used as a home-type beer dispenser that is normally stored in a refrigerator.

Prior constructions of dispensing valves for home beer dispensing tanks have been characterized by including a stem around which unwanted material can collect, thereby creating both a leakage problem (in that such foreign matter may not allow the valve to seat fully) and a sanitation problem. Moreover, valve constructions of the stem-type are not readily washable in that such constructions must be completely disassembled in order to clean them thoroughly. The present invention contemplates the utilization of a pivoted valve employing no stem, thereby having a high degree of washability without disassembly. More particularly, the present invention contemplates certain actuator structure for operating such pivoted valve.

Accordingly, it is an object of the present invention to provide an improved dispensing valve.

A further object of the present invention is to provide a dispensing valve construction which can readily form a part of a cover of a pressurized tank.

Another object of the present invention is to provide simple manual actuator means.

A still further object of the present invention is provide manual actuator means for the valve which can be actuated by the same hand that is holding a vessel to be filled during such filing.

A still further object of the present invention is to provide actuator means which also controls vent means for the dispensing spout, thereby minimizing dripping.

Yet another object of the present invention is to provide a structure for trapping an associated blown blow-out plug.

Many other advantages, features and additional objects of the present invention will become manifest to those versed in the art upon making reference to the detailed description and the accompanying sheet of drawings in which a preferred structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

On the drawings:

FIG. 1 is an elevational view of a cover for a pressurized tank having a dispensing valve provided thereon in accordance with the principles of the present invention;

FIG. 2 is a cross-sectional view taken along line II—II of FIG. 1; and

FIG. 3 is a fragmentary view of a portion of FIG. 2 with movable parts omitted.

As shown on the drawings:

The principles of this invention are particularly useful when embodied in a liquid dispensing valve such as illustrated in FIG. 1, generally indicated by the numeral **10**. The dispensing valve **10** includes an inlet housing **11**, a spout housing **12**, a valve **13** carried on a pivoted lever **14**, the lever **14** being under the control of a manual actuator **15** and a spring **16**.

The inlet housing **11** in this embodiment forms an integral part of a cover **17** for a pressurized tank fragmentarily illustrated at **18**. Pressure within the tank urges the cover **17** against an O-ring **19** disposed on the inner side of an aperture-defining flange **20**. The cover **17** includes a blow-out plug **21** which is exposed to tank pressure on one side and to atmospheric pressure on the opposite side. This plug typically comprises rubber.

The inlet housing **11** has a face **22** which abuts against a face **23** on the spout housing **12**. A flow passage extends through the faces **22**, **23** and is defined by a liquid inlet line **24** leading to a cavity **25** in the inlet housing within which the valve **13** is disposed. The flow passage is normally blocked by the valve **13** which engages a main seat **26** on the spout housing **12**, the flow passage continuing in a downward direction through a spout or spout portion **27** and terminating at its lower end in an outlet or discharge portion **28**.

The spout housing **12** has a vent passage **29** which connects a point in the flow passage which is downstream of the valve **13** with an auxiliary valve seat **30**.

The valve **13** is molded to the inner end of the lever **14**, and an annular pivot seal **31** is molded to the lever **14** with the valve **13** being concentric with such seal. The seal **31** is clamped into sealing grooves provided in the faces **22**, **23** and is held along with the spout housing **12** in a fixed position by means of a number of screws **32** (FIG. 1). The lever **14** extends outwardly of the housing faces **22**, **23** from the seal **31**, the inlet and spout housings **11** and **12** being recessed to enable pivoting of the lever **14**. The lever **14** thus has an outer portion **33**, at least part of which has an elastomeric covering **34** that is engageable with the auxiliary valve seat **30** to close such auxiliary seat when the valve **13** is moved to an open position. A plastic wear cap **35** is provided on the lower end of the lever **14**. The spring **16** is seated in a recess **36** (FIG. 3) in the spout **27** and engages the outer portion **33** of the lever **14** at the plastic cap **35** to bias the valve **13** into closed relation with the main seat **26**.

Along the back edge of the spout **27**, substantially adjacent to the spring recess **36**, the spout housing extends as a web in directions perpendicular to the plane in which FIG. 2 is shown, as best seen in FIG. 1 at **36**, **37**. These portions of the spout housing **12** then are directed rearwardly to provide a pair of spaced flanges **38**, **39** which extend to the other housing **11**. The flanges **38**, **39** thus enclose the outer portion **33** of the lever **14**, and also enclose a space adjacent to the outer end of the blow-out plug **21**. As best seen in FIG. 3, the housings **11**, **12** are provided with confronting means which constitute split bearings, a bearing portion **39***a* comprising a recess on the rearward edge of the flange **38**, and a bearing portion **39***b* comprising a recess on a forwardly directed portion of the inlet housing **11**. A similar split bearing structure is provided on the flange **39**. The portions **36** and **37** of the spout housing **12** coact with the flanges **38** and **39** and with a filler portion **40** (FIG. 3) to define a space in which the blow-out plug **21** will be trapped if it is caused to blow out.

The manual actuator **15** includes a lower manually accessible portion **41** which preferably is concave so as to nestingly receive a drinking vessel. Embedded into the ends of the portion **41** is a wire of generally inverted U-shape having intermediate horizontally extending portions **42**, **43** which are pivotally supported in the split bearing means **39***a*, **39***b* in the flanges **38** and **39**. From the horizontal pivoted portions **42**, **43** the wire of the actuator **15** extends further upwardly to form a bight **44** which engages the outer portion **33** of the lever **14** at its plastic cap **35**. When a force is applied to the portion **41** to deflect it toward the cover **17**, the actuator **15** pivots at the split bearing means **39***a*, **39***b*, and rocks the bight portion **44** forwardly to rock the outer portion

33 of the lever 14 against the force of the spring 16 to open the valve 13. Release of such manually accessible portion 41 enables the spring 16 to restore the components to the position illustrated in the drawings. Preferably, the manually accessible portion 41 is disposed below the spout 27 so that a vessel to be filled, or a hand holding the vessel to be filled may engage that portion 41, thereby enabling single-handed operation of the dispensing valve.

The manually accessible part 41 of the actuator 15 is provided with a recess 45, and the central forward part of the spout housing 12 is provided with an apertured projection 46 which are mutually receptive of a sealing wire which, when properly tied and fastened, will preclude any operation of the actuator 15 and hence preclude any operation of the valve 13 at least until after the consumer has acquired possession of the device. This is particularly helpful when the pressurized tank is merchandise filled with beer.

Although various minor modifications might be suggested by those versed in the art, it should be understood that I wish to embody within the scope of the patent warranted hereon all such embodiments as reasonably and properly come within the scope of my contribution to the art.

I claim as my invention:

1. A liquid dispensing valve comprising in combination:

(a) an inlet housing having a face;

(b) a spout housing having a face secured to said inlet housing face;

(c) a flow passage arranged to be connected to a supply of liquid and extending through said housings at said faces;

(d) a valve disposed in said flow passage;

(e) a lever supporting said valve, said lever being pivotally supported by said housings at said faces, and having an outer portion projecting outwardly beyond said faces;

(f) confronting means on said housings remote from said faces jointly defining split bearing means; and

(g) a manual actuator pivotably supported by said split bearing means and engageable with said outer portion of said lever.

2. A liquid dispensing valve according to claim 1, having a vent passage in said spout housing connecting a point in said flow passage downstream of said valve with an auxiliary valve seat disposed to be closed by said outer portion of said lever when said valve is open.

3. A liquid dispensing valve according to claim 1, in which a spring acts between a downwardly directed spout on said spout housing and said outer portion of said lever and biases said valve in a closed direction.

4. A liquid dispensing valve according to claim 1, in which the manually engageable portion of said manual actuator is disposed at a level below the discharge end of said flow passage.

5. A liquid dispensing valve according to claim 1, in which said manual actuator and said spout housing have means receptive of a sealing wire for precluding operation of said actuator.

6. A liquid dispensing valve according to claim 1, in which said inlet housing comprises a part of a cover for a pressurized tank.

7. A liquid dispensing valve according to claim 1, in which one of said housings has a pair of spaced flanges extending to the other of said housings and enclosing said outer portion of said lever, said split bearing means being partially defined by edges of said flanges.

8. A liquid dispensing valve according to claim 7, in which said inlet housing comprises a part of a cover for a pressurized tank, and a blow-out plug disposed in said cover at an area enclosed by said flanges.

9. A liquid dispensing valve according to claim 8, which includes means coactive with said flanges for trapping any blown out blow-out plug.

10. A liquid dispensing valve comprising in combination:

(a) an inlet housing having a face;

(b) a spout housing having a face secured to said inlet housing face;

(c) a flow passage arranged to be connected to a supply of liquid and extending through said housings at said faces;

(d) a valve disposed in said flow passage;

(e) a lever supporting said valve, said lever being pivotally supported by said housings at said faces, and having an outer portion projecting outwardly beyond said faces;

(f) a manual actuator pivotally supported on at least one of said housings and engageable with said outer portion of said lever; and

(g) a vent passage in said spout housing connecting a point in said flow passage downstream of said valve with an auxiliary valve seat disposed to be closed by said outer portion of said lever when said valve is open.

11. A liquid dispensing valve according to claim 10, in which said outer portion of said lever has an elastomeric covering engageable with said auxiliary valve seat.

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