

Feb. 7, 1961

J. S. LEVENSON

2,970,722

PRESSURE SEAL FOR PRESSURIZED LIQUID CONTAINER

Filed July 7, 1958

FIG. 1

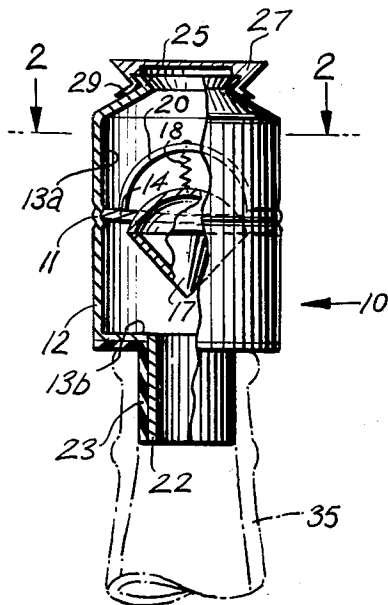


FIG. 2

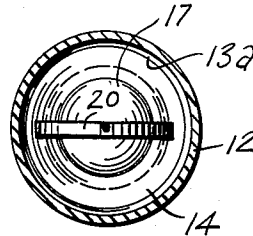


FIG. 4

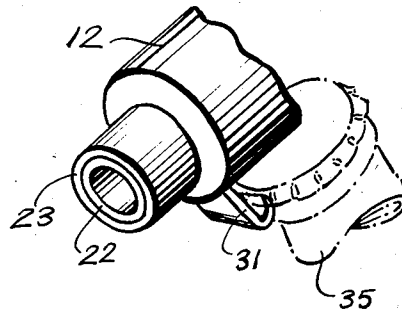
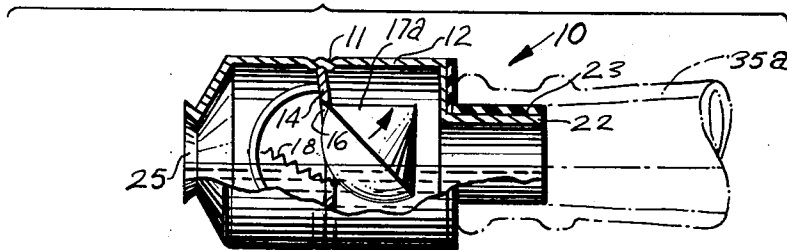
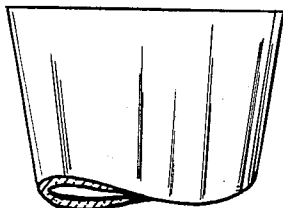


FIG. 3



INVENTOR.
JORDAN S. LEVENSON

1

2,970,722

PRESSURE SEAL FOR PRESSURIZED LIQUID CONTAINER

Jordan S. Levenson, Los Angeles, Calif., assignor of one-tenth part to Gadget-Of-The-Month Club Inc., North Hollywood, Calif., a corporation of California

Filed July 7, 1958, Ser. No. 746,950

2 Claims. (Cl. 222—62)

This invention relates to valves and more particularly to a valve for preventing the loss of gas from pressurized fluid containers.

It is an object of the present invention to provide a fluid pressure seal for pressurized fluid containers that will effectively prevent the loss of pressurization of the liquid and which will enable the liquid to be poured outwardly from the container in such a way as to automatically open the valve during the pouring operation.

Another object of the present invention is to provide a fluid pressure seal for pressurized fluid containers of the above type that is attached to the container upon the first opening thereof, and which remains intact upon the container throughout the use thereof until it is completely empty, thus preventing accidental loss of the closure and reducing the handling ordinarily required.

Other objects of the invention are to provide a fluid pressure seal bearing the above objects in mind which is of simple construction, has a minimum number of parts, is inexpensive to manufacture and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in conjunction with the accompanying drawing, in which:

Figure 1 is a side elevational view, partly in section, of a fluid pressure seal made in accordance with the present invention in operative use with a soda bottle shown in phantom lines;

Figure 2 is a transverse cross sectional view taken along line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 1, showing the fluid pressure seal valve member in an open position in response to tilting of the soda bottle with which it is associated into a horizontal pouring position; and

Figure 4 is a fragmentary perspective view of the food pressure seal illustrating a bottle cap remover associated therewith.

Referring now more in detail to the drawing, and more particularly to Figures 1 to 3 thereof, the fluid pressure seal 10 for pressurized fluid containers, such as soda bottles, made in accordance with the present invention is shown to include an exterior shell 12 having a central peripheral crimp 11 that secures a segmental spheroidal partition wall 14 therewithin. This wall 14 divides the hollow interior of the shell 12 into one compartment 13a associated with the outlet 25 and another compartment 13b associated with the inlet duct 22. This wall 14 is provided with a central opening 16 that is normally closed by means of a hollow bulbous valve member 17 having an upwardly directed spherical surface. A tension spring 18 secured at one end to the center of the spherical portion of the bulbous member 17, is secured at its opposite end to the center of a bridge 20 that is supported upon the partition wall 14 and within the upper compartment 13a. This spring normally urges the bulbous member toward a normal valve closing position with the central opening 16, thus preventing the outward passage of fluids therethrough.

2

The inlet duct 22 communicates at one end with the interior of the vessel with which the device is associated and, at the opposite end, with the interior of the lower compartment 13b. The exterior of this duct 22 is encased within a resilient bushing 23 that provides a tight fit between the duct 22 and the vessel neck with which it is associated.

The outlet 25 communicating with the upper compartment 13a is flared outwardly so as to provide a dripless pour construction and to provide a pressure seat for receiving the inwardly flared flange 29 of a flexible closure cap 27.

In actual use, the valve assembly is secured to the neck of the bottle 35, in the manner illustrated in the drawing. When the bottle is in the upright position, the spring 18 maintains the bulbous valve member 17 in the closed position, the pressurized gas within the container further maintaining the valve in the closed position. However, when the vessel is tilted to the pour position 35a illustrated in Figure 3 of the drawing, the liquid coming into contact with the hollow bulbous member 17 causes it to float and move away from closing engagement with the opening 16 in the partition wall, such adjusted position 17a of the valve member allowing the liquid to flow outwardly through this opening 16 and through the outlet 25 of the shell. As soon as the bottle is returned to the upright position 35, the absence of liquid within the shell enables the spring 18 to return the bulbous member 17a to the normally closed position 17, which movement is further assisted by the escaping gases within the fluid of the receptacle. The hook 31 extending outwardly from the shell 12 may be used to remove the closure cap from the bottle 35 during the initial opening operation. Sufficient leverage can be obtained by grasping the duct portion of the unit and rotating it upwardly so as to dislodge the closure cap. It will be noted that the curvature of the partition wall 14 allows any liquid remaining in the upper compartment 13a to drain downwardly through the opening 16 when returning the bottle to the upright position, thus reducing waste and further preventing loss of gas from the pressurized fluid. All of the parts are readily cleaned and are virtually foolproof in operation. Once the unit is attached to the bottle, it can be permitted to remain there so long as liquid remains within the bottle, following which it may be removed and applied to a newly opened bottle.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

What I claim as new and desire to protect by Letters Patent of the United States is:

1. A pressure seal for pressurized liquid containers, comprising, in combination, a main body portion having an outlet at one end and an inlet at the opposite end provided with engaging means adapted to be removably sealingly engaged with a container for pressurized liquid, valve means intermediate the opposite ends of said main body portion controlling the passage of pressurized liquid therethrough, a removable closure cap carried by said outlet end of said main body portion, said valve means comprising an integral partition wall effectively transversely dividing the interior of said main body portion into a pair of separate compartments, one of said pair of separate compartments comprising an outlet compartment associated with said outlet and the other one of said pair of separate compartments comprising an inlet compartment associated with said inlet, said partition wall defining a central opening, and a bulbous partially spheroidal hollow valve member having effective aver-

3

age density less than the density of pressurized liquid adapted to be carried in a container removably engaged with said engaging means, said bulbous partially spherical hollow valve member releasably engaging and closing said central opening and extending substantially into said inlet compartment, a bridge supported within said outlet compartment and extending over said central opening longitudinally spaced from the partially spherical portion of said bulbous hollow valve member, and a tension spring connected between said bridge and said bulbous hollow valve member extending through said central opening, said bulbous hollow valve member being floatable upon a quantity of liquid within said inlet compartment into a position out of closing engagement with

4

said central opening in response to rotation of said main body portion out of its normal vertical orientation into a tipped position having a substantial transverse directional component.

2. The combination according to claim 1, wherein said partition wall is of substantially segmental spherical shape concave in a direction toward said outlet.

References Cited in the file of this patent

UNITED STATES PATENTS

1,591,799	Tinapp	July 6, 1926
1,879,205	Gunn	Sept. 27, 1932