C. E. BLANCHARD.

BOTTLE CLOSURE.

APPLICATION FILED DEC. 10, 1919.

1,352,650.

Patented Sept. 14, 1920.

Fig. 1

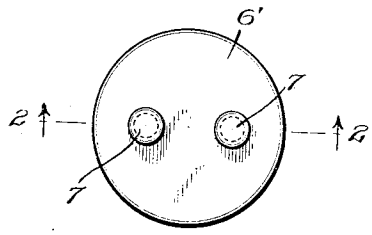


Fig. 2

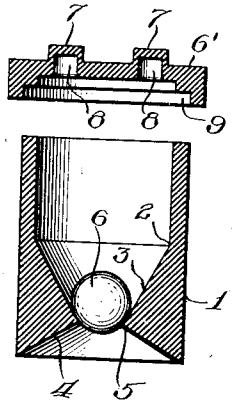


Fig. 3

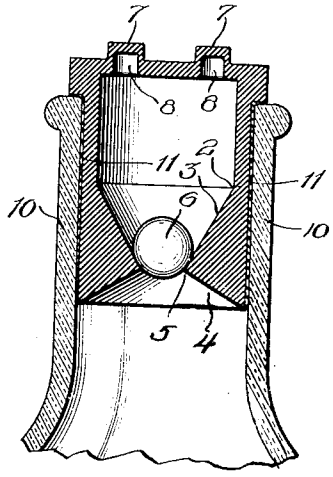
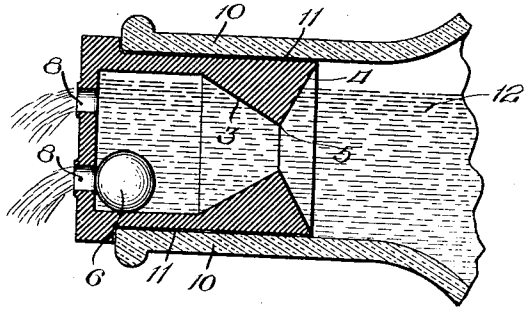


Fig. 4



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BOTTLE-CLOSURE.

1,352,650. Specification of Letters Patent. Patented Sept. 14, 1920.

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To all whom it may concern:

Be it known that I, CASPER E. BLANCHARD, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Bottle-Closures, of which the following is a full, clear, and exact description.

My invention relates to improvements in bottle closures, and it consists in the combinations, constructions, and arrangements herein described and claimed:

An object of my invention is to provide an inexpensive bottle closure which may be secured to a bottle containing a liquid and which will substantially prevent the refilling of the bottle without detection.

A further object of my invention is to provide a closure, of the type described which hermetically seals the bottle, it being only necessary to cut off a portion of the closure to permit the pouring out of the contents of the bottle.

A further object of my invention is to provide a closure of the type described having a valve member which is open to permit the contents of the bottle to flow out when the bottle is tilted, but which will be reseated when the bottle is placed in an upright position, thereby preventing the evaporating of the contents of the bottle.

A further object of my invention is to provide an inexpensive closure which may be manufactured cheaply in quantities.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings, forming part of this application, in which—

Figure 1 is a plan view of the closure,

Fig. 2 is a section along the line 2—2 of Fig. 1 showing the construction of the closure,

Fig. 3 is a section through the neck of a bottle showing the closure in its normal position before being cut, and

Fig. 4 is a section through the neck of a bottle showing a portion of the closure removed and the liquid flowing out of the bottle.

In carrying out my invention, I provide a body portion 1, which is preferably made of rubber. It will be noted that this body portion is cylindrical in shape. The interior walls taper inwardly from the point 2, as shown at 3, while at the lower end, the walls taper inwardly, as shown at 4. This forms a valve seat 5, which is relatively thin. A ball valve 6 of any suitable material, such as metal, is disposed within the body portion 1 and normally rests on the valve seat 5. A cap 6′ of rubber is provided with upstanding lugs 7 having recesses 8 extending from the under side of the cap above the upper surface of the cap. The cap is provided with a shoulder 9 arranged to receive the upper edge of the cylindrical body portion 1, so that when the cap is vulcanized, or cemented it forms an integral closure therewith, as shown in Fig. 3.

This closure is secured in the neck 10 of a bottle, after the latter has been filled with liquid, by means of a suitable cement 11 if necessary. The bottle with its contents may now be placed on sale.

When it is desired to pour out some of the liquid contents, the lugs 7 and 8 are cut off, so that the recesses 8 now become openings into the interior of the closure. When the bottle is tipped, the ball valve 6 will roll down the inclined walls 3, thus permitting the liquid 12 to flow past the valve seat 5 and out of the openings 8. When the bottle is placed in an upright position, the ball valve returns to its seat 5, thus effectually closing the bottle and preventing evaporation. I have found that by making a conical recess underneath the valve seat, which is formed by the tapering walls 4, the action of the device is greatly facilitated, since, when the bottle is tipped to pour out the liquid, any air which is confined between the liquid and the valve will be concentrated on the bottom of the valve to unseat it, while on the other hand, when the bottle is placed in an upright position and the valve returns to its seat, it is held more firmly by a vacuum which is created by the liquid in assuming its normal position. Furthermore, the thinning of the valve seat 5 permits the valve to spring the latter slightly so as to be firmly wedged in, thus effectively preventing evaporation. The wedging, however, is not sufficient to prevent the instant movement of the ball valve from its seat when the bottle is tipped.

Any attempt by ordinary persons to fill the bottle would result in the mutilation of the closure and in consequent detection. It will be understood that this device is

primarily intended to prevent the refilling of the bottle by the general public without detection, since it is obvious, of course, that any bottle may be refilled by a professional.

I claim:

1. The combination with a cylindrical bottle neck of a cylindrical rubber closure cemented to said neck, said closure having interior walls tapering toward the central axis of the closure to form a circular valve seat, said closure having an integral cap, and integral hollow lugs carried by said cap, said lugs having recesses extending above the upper face of the cap.

2. A bottle closure for cylindrical bottle necks comprising a cylindrical body portion, an integral cap closing one end of said body portion, said cap being provided with a plurality of integral lugs, each of said lugs having a recess extending above the upper face of the cap, the walls of the body portion tapering inwardly from the bottom of the closure and from a point between the bottom and top of the closure, said tapering walls intersecting to form a circular valve seat, and a ball valve normally disposed on said valve seat.

3. The combination with a bottle neck of a resilient closure formed with interior walls tapering toward the central axis of the closure to provide a valve seat, said closure having a portion arranged to enter the bottle neck and being secured therein, a second portion adapted to be removed to permit access to the interior of the closure, and a valve normally closed when the bottle is in an upright position and adapted to open when the bottle is tilted.

4. The combination with a cylindrical bottle neck of a hollow cylindrical closure cemented in said neck, a portion of the closure being removable to permit access to the interior of the closure, said closure being formed with interior walls tapering toward the central axis of the closure to form a valve seat, and a valve normally closed when the bottle is in an upright position and adapted to open when the bottle is tilted.

CASPER E. BLANCHARD.