

1,038,067.

J. BAILEY.
BOTTLE STOPPER.
APPLICATION FILED APR. 30, 1912.

Patented Sept. 10, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

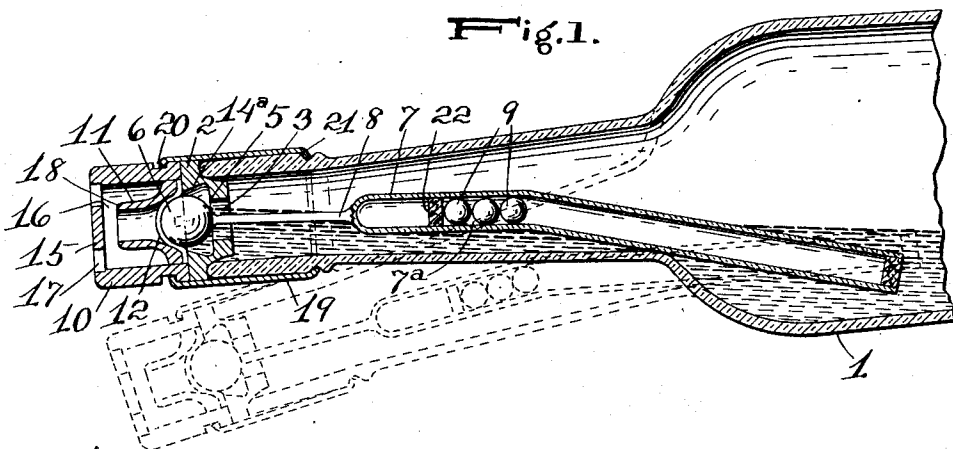


Fig. 2.

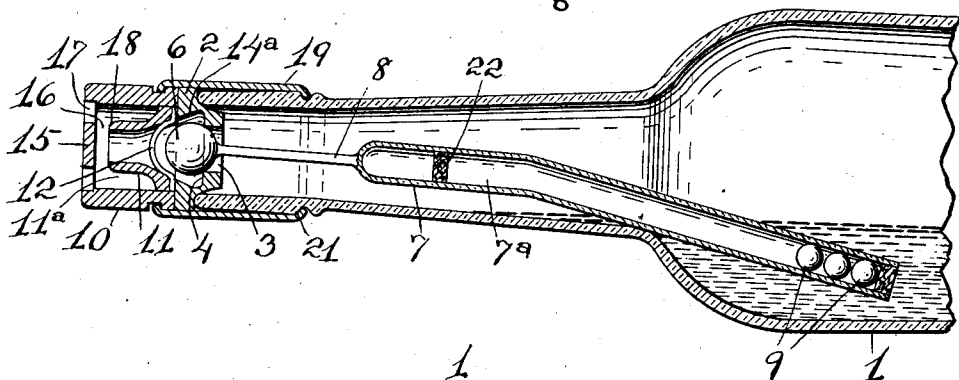
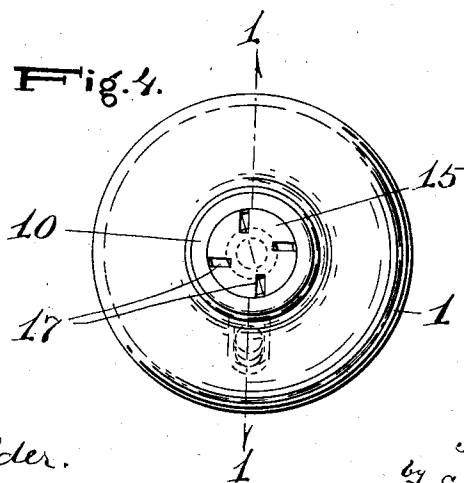


Fig. 3.



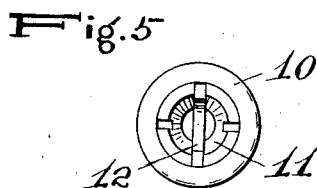
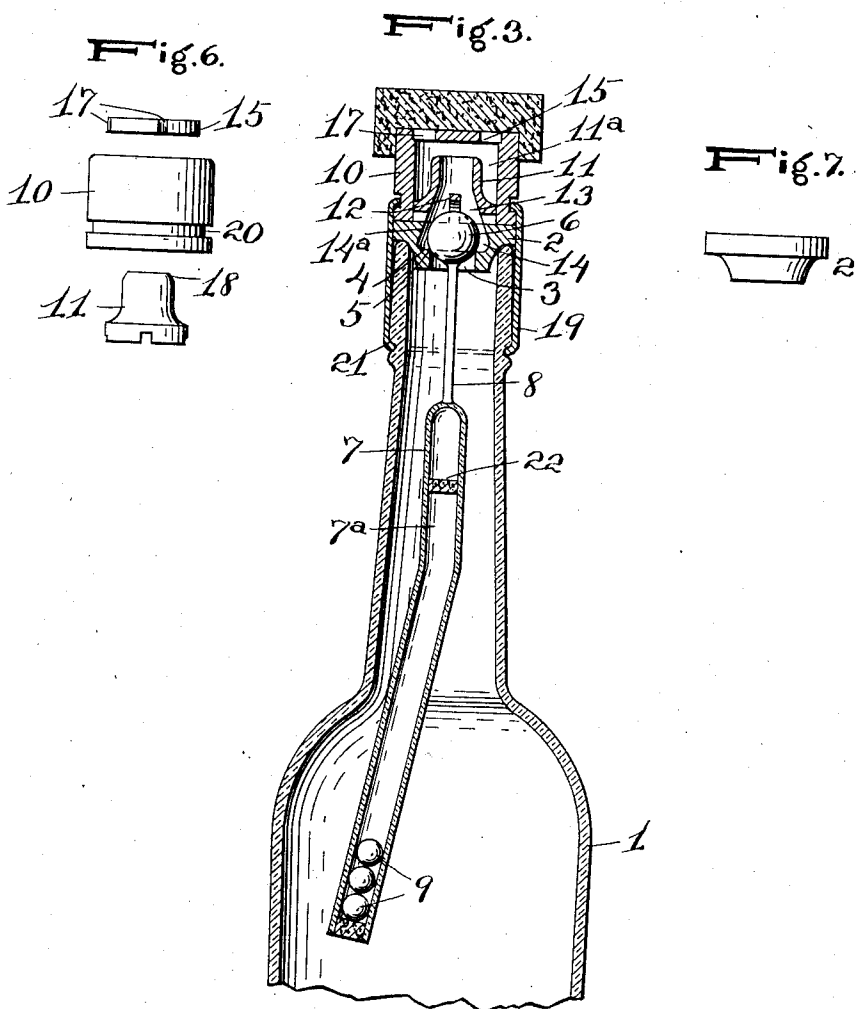
Witnesses
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOSEPH BAILEY, OF JERSEY CITY, NEW JERSEY, ASSIGNOR OF ONE-HALF TO CHARLES K. CURTIS, OF JERSEY CITY, NEW JERSEY.

BOTTLE-STOPPER.

1,038,067.

Specification of Letters Patent.

Patented Sept. 10, 1912.

Application filed April 30, 1912. Serial No. 694,107.

To all whom it may concern:

Be it known that I, JOSEPH BAILEY, a citizen of the United States, resident of Jersey City, in the county of Hudson and State of New Jersey, have made a certain new and useful Invention in Bottle-Stoppers; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the invention, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a central longitudinal section of the invention as applied with the bottle tilted as in pouring, the bottle being tilted to open the valve, as shown in dotted lines. Fig. 2 is a similar view with the valve closed. Fig. 3 is a similar view with the bottle upright, and the cork in place. Fig. 4 is a top plan view of the same. Fig. 5 is a detail bottom plan view of the plug. Fig. 6 is a detail side view of the cap piece, the plug and the guard plate separated from each other. Fig. 7 is a detail side view of the collar.

The invention has relation to bottle stoppers designed to be non-refillable for all practical or commercial purposes and it consists in the novel construction and combinations of parts as hereinafter set forth.

In the accompanying drawings illustrating the invention, the numeral 1, designates an ordinary bottle, and fitting upon the top of the neck of said bottle is a collar 2, having a central perforation 3, and an annular internal shoulder 4, preferably having an angular juncture 5 with the wall of said perforation, said angular juncture forming a seat for a ball valve 6, which is designed to have pivotal movement upon said seat and also movement of rotation or revolution thereupon. Depending from said ball valve is a bent tube 7, preferably of glass, and having a neck 8 connecting it with said valve, and working within the tube is a movable weight or weights 9.

Fitting upon the collar 2 is a tubular cap piece 10, provided at its lower end with a hollow plug 11, having means for limiting the outward movement of the ball valve, preferably a cross bar 12. The aperture of said plug is enlarged at the lower end at 13

to a diameter greater than that of the ball valve, and the upper portion of the aperture of the collar above the valve seat is also enlarged at 14 to a diameter greater than that of the ball valve and undercut at 14^a, whereby when said valve is moved outward and contacts with said cross bar, the liquid contents of the bottle are caused to pass around the valve and through the aperture of said plug.

It is desirable to provide means to prevent the insertion of a wire through the aperture of the plug to and under the valve to hold it outward, and for this purpose I provide a guard plate 15 above the upper end of the plug and separated therefrom by an air space 16 of limited extent, being in the quart bottle about three sixteenths of an inch in depth. This guard plate is provided with perforations for passage of the liquid preferably edge notches 17 arranged chordwise so that a wire if inserted will be directed by the wall of the notch away from the center of the plug. For this purpose also the upper end of the plug is rounded at 18, to deflect the wire outward away from the plug aperture. In practice the cap piece, the plug and the guard plate will be formed of porcelain or other suitable material, and in the firing of the porcelain the three parts will become united as one.

The whole device is secured to the bottle by means of a seal 19, which is turned at its upper end into engagement with an annular groove 20 of the cap piece and at its lower end under the shoulder 21 of the bottle neck. So long as this seal is unbroken the purchaser may know that the contents of the bottle have not been tampered with, and when the seal is broken the whole device may be removed from the bottle, and sent back to the factory when there are a sufficient number on hand, the bottle itself being capable of use as an ordinary bottle.

If attempt is made to adulterate the contents of the bottle with liquid of a lower grade, the bottle must be held substantially horizontal to allow the lower grade liquid to pass into the bottle at the bottom side of the bottle neck and the air displaced from the bottle to pass out at the top side of the bottle neck. But in so manipulating the bottle, the bent tube will turn so that its inner bent end will occupy the lowest possible

position in the bottle, and in so turning will turn or revolve the ball valve upon its seat. The bottle now being tipped a little past the horizontal with the neck end of the bottle down, the little ball or shot weights will roll from the lower closed end of the tube, with which they are normally in contact at the end, down the inner bent part of the tube into contact with an obstruction at the upper end of the tube, preferably a partition 22, the impact of the ball weights against the partition causing the valve to open. But inasmuch as the bottle must be inclined considerably past the horizontal to thus open the valve owing to the bend in the tube, the liquid left in the bottle will very nearly close the neck opening of the bottle and leave but a small space above the liquid in said neck through which displaced air may pass out and adulterant pass in. And if the bottle should be tilted back again to but a small degree, the little ball weights will at once roll back down the incline of the bent inner end of the tube and through impact with the closed end of the tube close the valve again. It is designed that when the inner bent end of the tube moves to its lowest position as stated, the ball valve shall not only revolve, but also pivot upon its seat so that the upper part 7^a of the bent tube wherein the ball weights are located when the valve is open, and which is in line with the neck connecting tube and valve, will also be inclined with relation to the aperture of the bottle neck, but to a less degree than the lower bent end of the tube. In this way the little ball weights will remain in position in the part 7^a of the tube with the valve open, until the bottle is tilted back to about a horizontal position, as shown in Fig. 2, after the bottle has been tilted with the neck down to open the valve or to pouring position as shown in dotted lines, Fig. 1. This will facilitate the pouring of the liquid from the bottle.

The external diameter of the plug 11, from its lower portion that is seated in the cap piece is less than the internal diameter of the cap piece, whereby an annular interval 11^a is provided between cap and plug, this interval serving as an air space to cause

the liquid to pour more easily from the bottle.

The top of the neck of the bottle is sealed by any suitable means preferably a cork 23.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a bottle stopper, a valve seat, a ball valve capable of movement of reciprocation, and of movement of revolution and of pivotal movement upon said seat, a slender neck having connection with said valve, a tube having an upper portion in line with and connected to said neck, and a lower bent portion having an oblique angular relation to said upper portion, and a movable weight in said tube.

2. In a bottle stopper, a collar adapted to rest upon the top of the neck of a bottle and having an internal shoulder provided with an angular valve seat juncture with the collar aperture, and an upper enlargement of said aperture having undercut side walls, a ball valve capable of movement of reciprocation in opening and closing, and of movement of revolution, a bent tube, a slender neck having rigid connection with said valve and with said tube, and a movable weight in said tube.

3. In a bottle stopper, a collar adapted to rest upon the top of the neck of a bottle and having a valve seat, a ball valve capable of movement of reciprocation, and of movement of revolution and of pivotal movement upon said seat, a slender neck having rigid connection with said valve, a tube having an upper portion in line and in rigid connection with said neck, and a lower bent portion having an oblique angular relation to said upper portion, a movable weight in said tube, a hollow guard means resting upon said collar, and an external sealing means having connection with said guard means and with the bottle neck.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH BAILEY.

Witnesses:

GEORGE M. ANDERSON,
STUART HILDER.