J. B. MARS & N. STRAMAGLIA.

NON-REFILLABLE BOTTLE.

APPLICATION FILED JAN. 29, 1917.

1,239,803.

Patented Sept. 11, 1917.

Fig. 1.

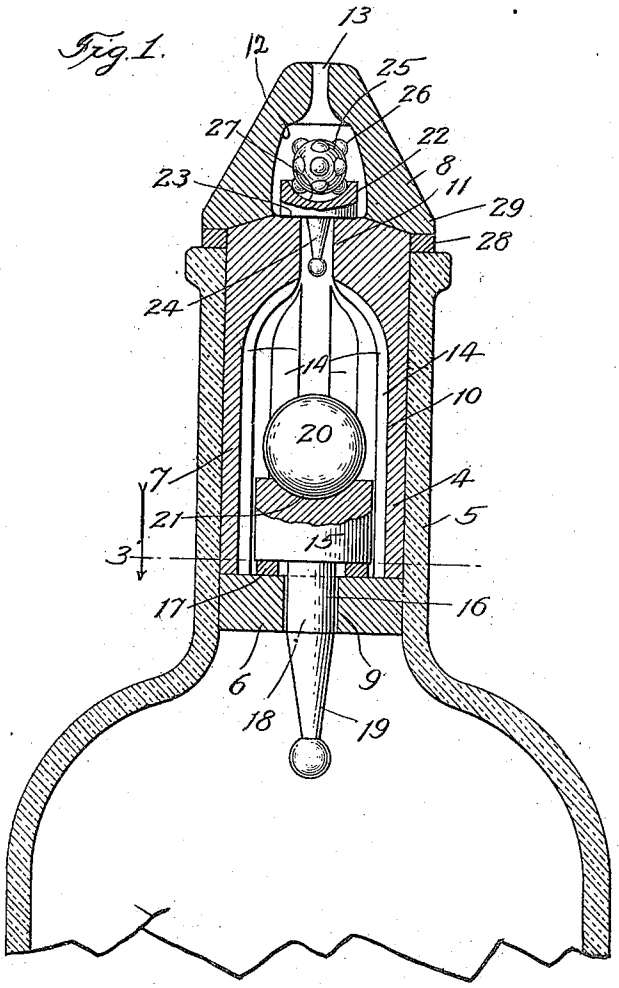


Fig. 2.

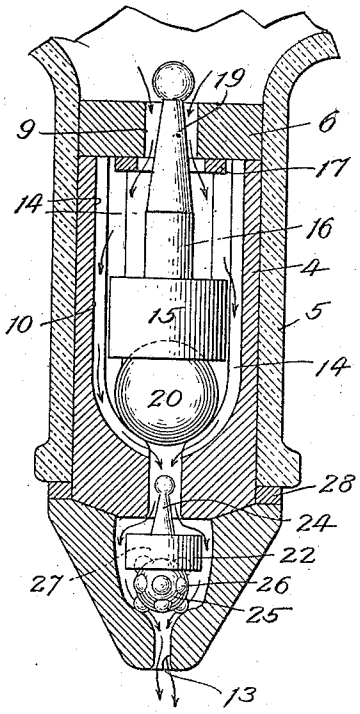
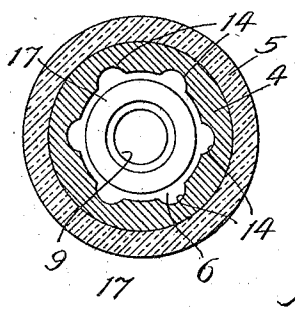


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JESSE B. MARS AND NICK STRAMAGLIA, OF GARY, INDIANA.

NON-REFILLABLE BOTTLE.

1,239,803. Specification of Letters Patent. Patented Sept. 11, 1917.

Application filed January 29, 1917. Serial No. 145,243.

To all whom it may concern:

Be it known that we, JESSE B. MARS and NICK STRAMAGLIA, subjects of the King of Persia and the King of Italy, respectively, residing at Gary, in the county of Lake and State of Indiana, have invented a new and useful Non-Refillable Bottle, of which the following is a specification.

Our object is to provide a novel, simple, practical and economical construction of bottle stopper, which will permit of the emptying of the contents of the bottle equipped with the device, but prevent the pouring or forcing of liquid into the bottle, to refill it.

Referring to the accompanying drawings:

Figure 1 is a view in vertical sectional elevation of the upper end of a bottle shown as equipped with stopper means in accordance with our invention.

Fig. 2 is a similar view of the construction shown in Fig. 1, with the bottle inverted; and

Fig. 3 is a section taken at the line 3 on Fig. 1 and viewed in the direction of the arrow.

According to the preferred illustrated embodiment of our invention, a housing 4 is provided. This housing which is adapted to be introduced into the neck of a bottle, as indicated at 5, and to be held therein by any suitable means, against withdrawal, is formed preferably of porcelain and is made in three parts 6, 7 and 8 which are perfectly cemented together in the position shown in the drawing. The bottom of the housing 4, which is formed of the section 6 contains a centrally-disposed opening 9 which opens upwardly into a chamber 10 formed in the section 7, the top of the chamber opening into a restricted passage 11 which opens into a recess 12 in the section 8 connecting with a restricted passage 13. The walls of the chamber 10 contain grooves 14 which extend lengthwise of the member 7 and are disposed in an annular series about the inner surface of the chamber 10. The upper wall of the chamber 10 is rounded as indicated, and the grooves 14 reach preferably to the passage 11. Located in the chamber 10 is a valve 15 shown of cylindrical form which has sliding fit therein, and carries a stem 16 which projects downwardly through the opening 9 and into the bottle below said opening. The valve 15 which, with its stem, may be made of porcelain, or any other suitable material, preferably normally rests against a ring 17 of cork, or any other suitable material. The stem 16 is of such form as shown as to present a cylindrical portion 18 which closely, yet slidingly, fits the passage 9, in the case illustrated both the passage 9 and portion 18 being cylindrical. The portion of the stem below the portion 18 tapers downwardly as represented at 19 for a purpose hereinafter explained. A ball 20 of porcelain, or any other suitable material, rests upon the top of the valve 15, the latter being preferably dished as at 21 to center the ball, and the parts just described are so proportioned that when the bottle is inverted (Fig. 2) and the ball 20 rests against the end-wall of the chamber 10 adjacent the passage 11, the portion 19 of the valve-stem will be in the passage 9 and permit of a free flow of the liquid from the bottle. Located in the recess 12 is a valve 22 which is adapted to bear against the seat 23 surrounding the opening 11, this valve which may be of porcelain, or any other suitable material, having a stem 24 which extends into the opening 11. A ball 25 having nubs 26 at intervals on its periphery is located in the recess 12 and rests normally in the dished portion 27 of the valve 22, this ball and also the valve 22 extending relatively close to the inner wall of the recess 12.

In use the bottle is first filled with the liquid it is to contain and the stopper device illustrated, then secured in the neck of the bottle, a gasket 28 of cork, or other suitable material, being preferably interposed between the top of the bottle and a shoulder 29 on the section 8. To pour liquid from the bottle, the bottle is inverted, or partly inverted, the valves 15 and 22 unseating, and the balls 20 and 25 moving toward the passages 11 and 13, respectively, the portion 19 of the stem 16 extending in the opening 9. The liquid passes through the opening 9 thence into the chamber 10 and through the grooves 14 around the valves 15 and the ball 20 and through the opening 11 and into the recess 12 and around the valve 22 and ball 25 and out through the opening 13 as represented by the arrows in Fig. 2, the nubs 26 preventing the ball 25 from closing the opening 13.

The bottle cannot be refilled either by pouring or forcing liquid into it. The fea-

ture of the portion 18 of the valve, which for a relatively great length slidingly fits the opening 9, especially in combination with the ball 20, prevents the introduction of liquid into the bottle, by shaking it up and down when in upright position the ball 20 serving in the shaking operation to prevent the valve 15 from leaving its seat an undue distance due to the quick return of the ball; and the introduction of the liquid into the bottle by shaking it is still further prevented by the provision of the valve 22 and the ball 25. Furthermore the stem of the valve 15 operating in the opening 9 resists the unseating of the valve 15 when the bottle is tipped, if empty. The bottle cannot be filled by forcing liquid into it when inverted, as the valves will move to closed position and in this connection the stem of the valve 15 is useful as it prevents the valve from becoming lodged in the open condition in the chamber 10. It will also be noted that the valve 22 and the ball 25 prevent the introduction of instruments, wires, or the like, into the device to a position in which the inner valve may be held open. The balls also seem to weight the valves 15 and 22 and press them against their seats and thus tightly close the bottle when in normal condition.

While we have illustrated and described a particular construction embodying our invention, we do not wish to be understood as limiting it thereto as the same may be variously modified and altered without departing from the spirit of the invention, it being our intention to claim our invention as fully and completely as the prior state of the art will permit.

What we claim as new and desire to obtain by Letters Patent is:

1. The combination with a bottle, of a closure therefor comprising a member secured in the neck of the bottle with an opening in the outer end and presenting spaced portions containing openings, the wall between said spaced portions containing longitudinally extending grooves, a valve in said member between said portions and having longitudinal movement therein, a stem on said valve sliding in one of said openings, said stem being constructed and arranged to fit said last-named opening relatively closely when in normal position to substantially close said last-named opening and maintain the latter substantially closed during a portion of the movement of said valve away from said last-named opening and to afford a space between the stem and the wall of the opening upon the further movement of said valve away from said last-named opening, a ball arranged above said valve and movable longitudinally of said member, and engaging said valve, said grooves being so arranged that the ball will not close communication between the space in which it is located and the other of said openings when the bottle is inverted, a valve in said member above said last-referred-to opening and having a stem which extends into the latter, and a ball, having nubs, arranged above said last-named valve and adapted to engage the latter, said last-named valve and ball being movable in said member and confined therein, the whole presenting a series of passages through said member through which the liquid may pass from the bottle when the latter is inverted.

2. The combination with a bottle, of a closure therefor comprising a member secured in the neck of the bottle with an opening in the outer end and presenting spaced portions containing openings, the wall between said spaced portions containing longitudinally extending grooves, a valve in said member between said portions and having longitudinal movement therein, a stem on said valve sliding in one of said openings said stem being constructed and arranged to fit said last-named opening relatively closely when in normal position to substantially close said last-named opening and maintain the latter substantially closed during a portion of the movement of said valve away from said last-named opening and to afford a space between the stem and the wall of the opening upon the further movement of said valve away from said last-named opening, a ball arranged above said valve and movable longitudinally of said member, and engaging said valve, said grooves being so arranged that the ball will not close communication between the space in which it is located and the other of said openings when the bottle is inverted, a valve in said member above said last-referred-to opening and having a stem which extends into the latter, a ball arranged said last-named valve and adapted to engage the latter, said last-named valve and ball being movable in said member and confined therein, and means for preventing said ball from closing the outlet of said member, upon inverting the bottle, the whole presenting a series of passages through said member through which the liquid may pass from the bottle when the latter is inverted.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."