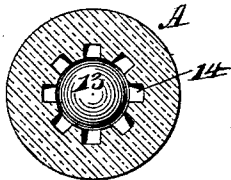
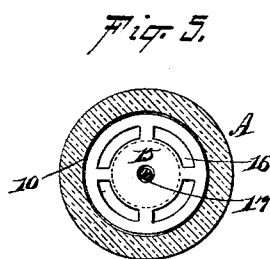
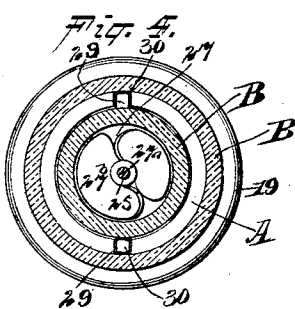
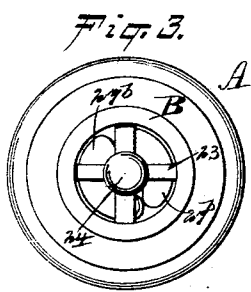
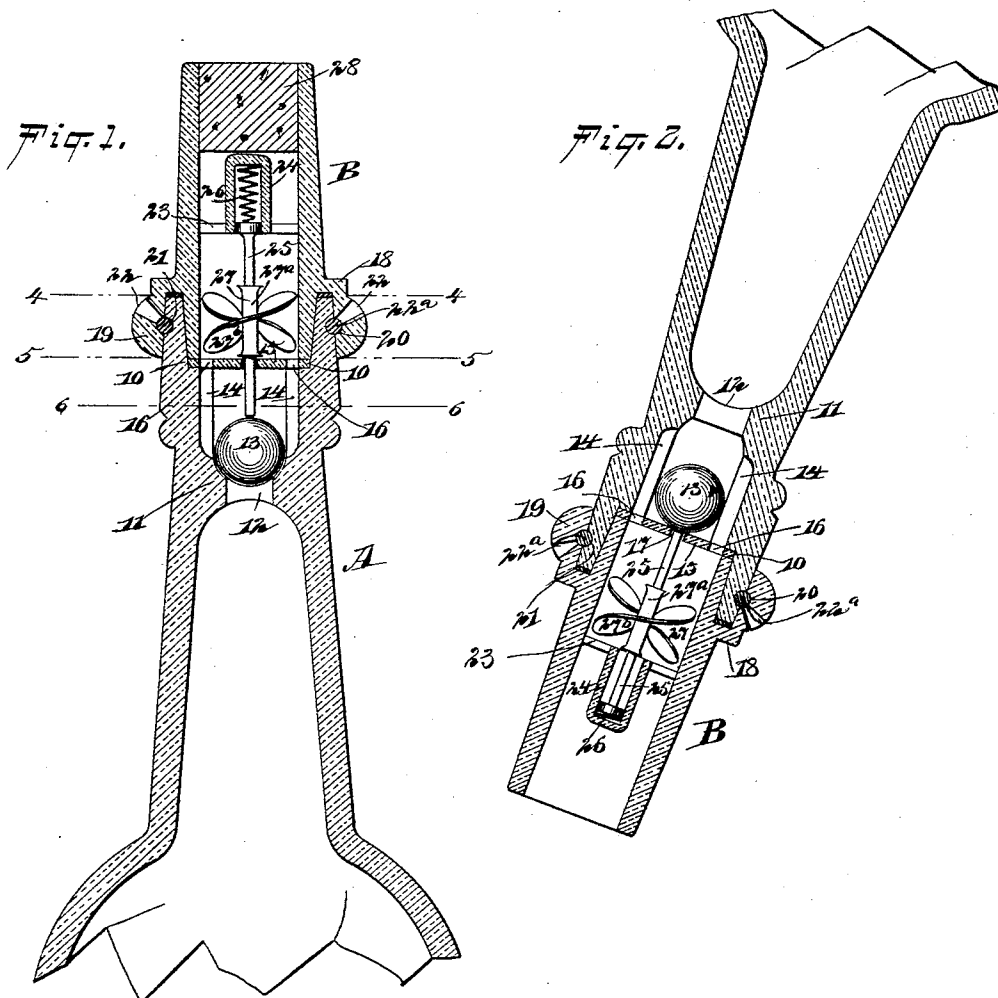


(No Model.)

L. J. A. FERNANDES.
BOTTLE AND STOPPER.

No. 573,773.

Patented Dec. 22, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LOUIS JOSEPH ARTHUR FERNANDES, OF NEW YORK, N. Y.

BOTTLE AND STOPPER.

SPECIFICATION forming part of Letters Patent No. 573,773, dated December 22, 1896.

Application filed June 22, 1896. Serial No. 596,462. (No model.)

To all whom it may concern:

Be it known that I, LOUIS JOSEPH ARTHUR FERNANDES, of New York city, in the county and State of New York, have invented a new and useful Improvement in Bottles and Stoppers Therefor, of which the following is a full, clear, and exact description.

My invention relates to an improvement in non-refillable bottles, or bottles designed to be so constructed that they cannot be refilled having once been emptied.

The object of the invention is to provide a simple and economic construction, capable of application to almost any form of bottle, whereby liquid may be freely poured out from the bottle, but after the bottle has once been filled and emptied it cannot be filled a second time, thus preventing a fraudulent package being offered as a genuine one.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical section through the neck of a bottle and the attachment thereto, the bottle being in an upright position. Fig. 2 is a view similar to Fig. 1, the neck of the bottle being in inverted position, or in position to discharge the liquid. Fig. 3 is a plan view of the bottle and its attachment with the cork stopper removed. Fig. 4 is a horizontal section taken practically on the line 4 4 of Fig. 1. Fig. 5 is a horizontal section taken substantially on the line 5 5 of Fig. 1, and Fig. 6 is a similar section on the line 6 6 of Fig. 1.

In carrying out the invention the neck of the bottle A is widest at its mouth portion, forming an interior annular shoulder 10, and a predetermined distance below this shoulder a transverse partition 11 is made in the neck of the bottle, having a central opening 12 extending through from top to bottom, and preferably both the upper and the lower faces of this partition are concaved, and at the upper end of the opening 12 a seat is formed for a ball 13, adapted to act as a valve.

In the inner surface of the neck of the bottle a series of longitudinal channels 14 is produced, extending from the partition 12 to the shoulder 10, and these channels at their upper ends coincide with openings 16 made in a plate 15, which rests upon the aforesaid shoulder 10, the said plate having a central aperture 17 produced therein. The neck A of the bottle is provided with an extension B, and this extension at its lower end is shaped to enter the mouth of the bottle and rest upon the apertured plate 15.

Just above the mouth of the bottle an annular horizontal offset 18 is exteriorly formed, from which an annular flange 19 is projected downward, the inner face of the flange being adapted to engage with the outer surface of the neck A of the bottle adjacent to its mouth, so that the mouth portion of the bottle-neck will be held between the lower portion of the extension B of the neck and the flange 19.

An annular horizontal groove 20, preferably of semicircular shape, is made in the inner face of the extension-flange 19, and this groove, when the extension is in position on the neck of the bottle, will register or coincide with a similar channel 21 made in the outer face of the bottle-neck. Ordinarily two openings 22 are produced in the flange 19, communicating with the inner channels, so that when the extension of the neck is in position on the bottle a cement may be poured in one of the openings 22, the air escaping through the other opening. The cement will by this means be made to fill up the coinciding channels 20 and 21 in the neck of the bottle and in the flange of the extension, forming an annular seal 22^a, as shown in both Figs. 1 and 2.

About centrally in the extension B of the bottle-neck a spider 23 is secured in any approved manner, and at the center of the spider an opening is made, inclosed by a cap 24, and this cap receives the upper end of a spindle 25, the lower portion of which spindle is passed through the aperture 17 in the plate 15 of the bottle-neck and normally rests upon the ball-valve 13, holding the valve in its seat, and the valve is prevented from being accidentally unseated through the medium of a spring 26, located in the cap 24 and exert-

ing downward pressure upon the stem or spindle 25. The said stem or spindle has secured to it above the apertured plate 15 a wheel 27, comprising a hub 27^a and propeller-like wings or blades 27^b, attached to the said hub. After the bottle is filled the ball is dropped into position, and the extension B of the neck is then fastened on the neck of the bottle in the manner above described, while the upper end of the extension of the neck is closed by a stopper 28, which may be of cork or of any suitable material, the stopper preventing the contents of the bottle spilling in transportation.

In order that the extension B shall not turn in the neck of the bottle, the neck is provided with grooves 29, (shown in Fig. 4,) which receive lugs 30, formed on the extension, or the lugs may be placed in the neck of the bottle, and the grooves may be made in the extension of the neck, if desired.

While the bottle is in an upright position, or even when it is inclined to a certain extent, the spindle 25 will hold the ball 13 in its seat; but when the neck of the bottle is lowered, as shown in Fig. 2, the ball will drop against the under face of the apertured plate 15 and will press the spindle 25 outward, compressing the spring 26. The liquid from the bottle may then freely escape through the opening in the partition 11, passing through the channels 14 and out through the openings 16 in the apertured plate 15, and the liquid will thereupon revolve the wheel and will finally escape out through the openings in the spider 23. The construction of the bottle is exceedingly simple, and a bottle thus provided, it is thought, cannot be refilled.

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

1. A bottle, the neck of which is provided with a ball-valve and a seat for the same, a spring-controlled spindle normally resting on the said valve and maintaining the same in its seat, and an apertured partition through which the said spindle passes, located over the said ball-valve, the chamber in which the valve is located having side channels communicating with the openings in the aforesaid partition, as and for the purpose specified.

2. A bottle provided with a valve-seat in its neck and a ball-valve located in the said seat, a spring-controlled spindle serving to normally hold the said valve in its seat, a guard for the upper end of the spindle, an apertured partition through which the spindle passes and located over the ball-valve, and a propeller-like wheel secured to the said

spindle above the aforesaid apertured partition, as and for the purpose specified.

3. The combination, with a bottle having a valve-seat, a ball located in the said valve-seat, and an apertured partition located above the ball, the wall of the chamber in which the ball is located having channels communicating with the openings in the aforesaid partition, of a neck extension secured upon and entering the main neck of the bottle, a spindle loosely mounted in bearings in the extension of the bottle-neck, the spindle being passed loosely through the apertured partition to a bearing upon the valve, a cap protecting and concealing the upper end of the spindle, a tension device exerting pressure in an inwardly direction on the said spindle, and a propeller-like wheel secured on the spindle between the apertured partition and the cap for the spindle, as and for the purpose set forth.

4. The combination, with the neck of a bottle containing a valve and provided with an exterior horizontal channel, of an extension for the neck entering the mouth of the main neck of the bottle, and provided with a flange extending across the top of the mouth of the main neck and down the sides of the same, the pendent portion of the flange having a channel coinciding with the channel in the exterior of the main neck of the bottle, openings being provided in the aforesaid flange leading to the aforesaid channels, a valve-controlled device located in the extension of the neck adapted to have bearing upon the valve, and an apertured partition located over the valve, through which the controlling device loosely passes, as and for the purpose specified.

5. The combination with the neck of a bottle provided with an interior annular shoulder, and having a valve-seat, a ball located in the said valve-seat, and an apertured partition located above the ball and resting on the said annular shoulder, of an extension for the neck adapted to enter the mouth of the main neck and rest on the said apertured partition, and a spindle loosely mounted in the extension of the bottle-neck, the said spindle passing through the said apertured partition and normally resting on the said valve, the inner surface of the main neck of the bottle being provided with channels communicating with the openings in the said partition, as and for the purpose set forth.

LOUIS JOSEPH ARTHUR FERNANDES.

Witnesses:

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WM. O. OEHLER.