R. J. BARRY.

NON-REFILLABLE BOTTLE.

APPLICATION FILED MAR. 7, 1911.

1,011,011.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

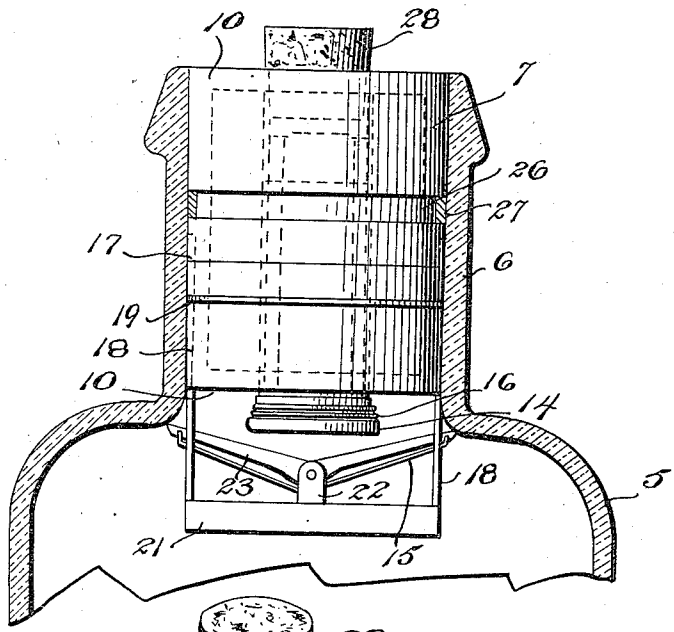
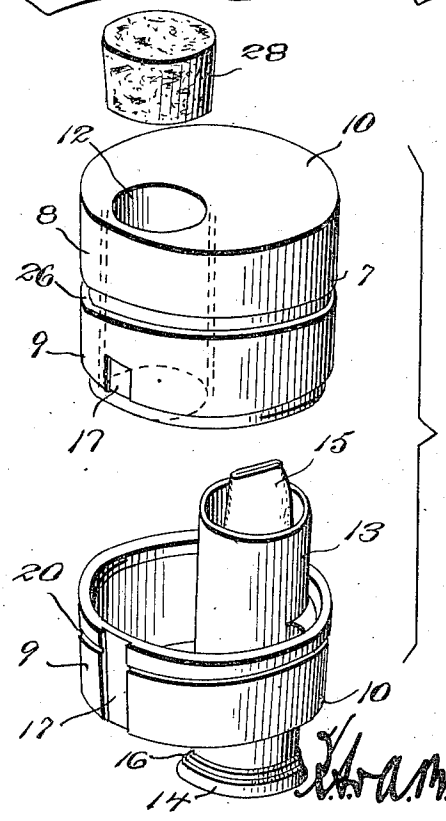


Fig. 4.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

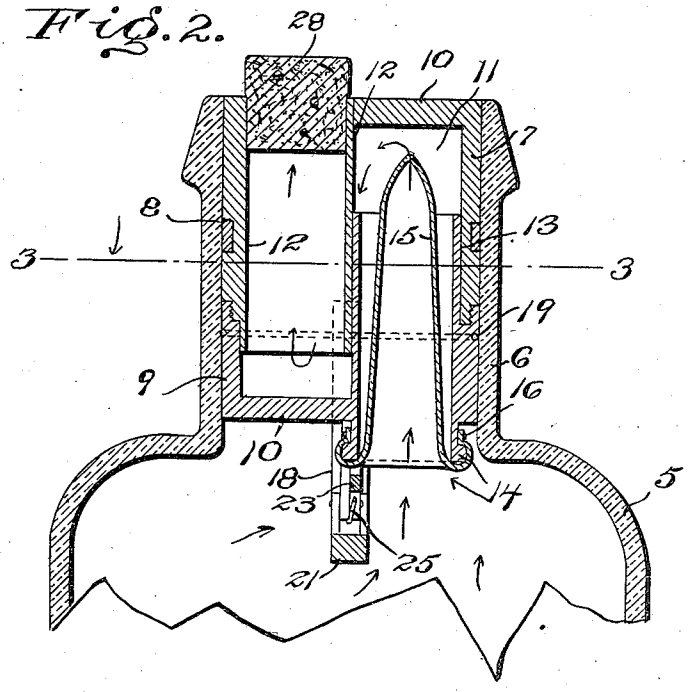
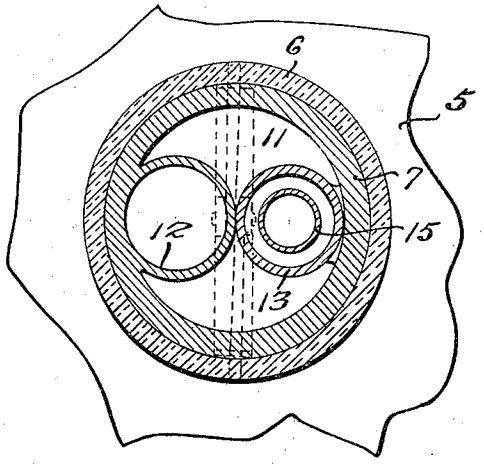


Fig. 3.



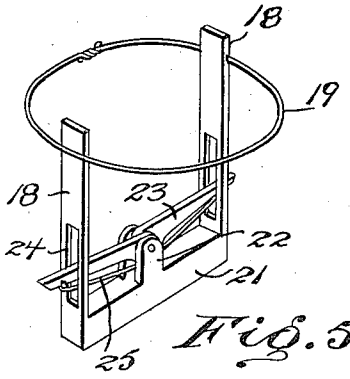


Fig. 5.

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NON-REFILLABLE BOTTLE.

1,011,011. Specification of Letters Patent. Patented Dec. 5, 1911.

Application filed March 7, 1911. Serial No. 612,834.

To all whom it may concern:

Be it known that I, ROBERT J. BARRY, a citizen of the United States, residing at Bingham, in the county of Somerset and State of Maine, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to non-refillable bottles and has for its object the provision of a comparatively simple and thoroughly efficient device of this character, the construction of which is such as effectually to prevent an unauthorized person from fraudulently refilling the bottle with an inferior grade of goods to that originally contained in the bottle.

A further object of the invention is to provide a bottle having a casing seated in the neck thereof and provided with liquid conducting tubes, one of which communicates with the interior of the bottle and is provided with a collapsible tube constituting a valve.

A further object is to provide improved means for fastening the casing within the neck of a bottle, and means for preventing leakage between the neck of said bottle and the casing.

A still further object of the invention is generally to improve this class of devices, so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a vertical sectional view of a portion of a non-refillable bottle constructed in accordance with my invention, the valve mechanism being shown in elevation; Fig. 2 is a vertical sectional view, showing the interior construction of the valve mechanism; Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2 and looking in the direction of the arrow; Fig. 4 is a perspective view of the valve mechanism removed from the neck of the bottle, the casing sections being shown separated and the depending frame detached in order to more clearly show the construction thereof; Fig. 5 is a perspective view of the pawl carrying frame detached.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved valve mechanism forming the subject matter of the present invention may be used in connection with bottles, jars and similar liquid containing vessels, and by way of illustration is shown applied to a bottle of the ordinary construction, in which 5 designates the body of the bottle and 6 the neck, the exterior of which may be of any suitable shape.

Seated in the neck of the bottle, is a casing 7, preferably formed in two sections 8 and 9, each having a head or closure 10, said casing being provided with an interior liquid receiving chamber 11. Disposed within the casing 7, are rigid liquid conducting tubes 12 and 13, one of which opens through the upper head 10, while the mating tube 13 opens through the lower head of the casing and communicates with the interior of the bottle, as shown.

The lower end of the rigid tube 13 projects through the adjacent head of the casing and is provided with an annular shoulder 14 to permit the attachment of a collapsible tube 15, the latter constituting a valve for preventing the entrance of liquid to the interior of the bottle after the original contents thereof have been discharged. The collapsible tube 15 may be formed of thin rubber, canvas or other flexible material, the lower end of said tube being extended over the shoulder 14 and rigidly secured thereto by a binding cord or wire 16. The upper end of the collapsible tube 15 preferably extends above the adjacent end of the rigid tube 13 and is normally closed so as to prevent an unauthorized person from introducing liquid through said tube to the interior of the bottle, the walls of said collapsible tube being adapted to expand and permit the discharge of the contents of the bottle when the latter is inverted or partially inverted.

The inner ends of the tubes 12 and 13 overlap at the center of the casing and communicate with the liquid receiving chamber 11 so that when the bottle is inverted, the

liquid from the tube 13 will flow into the chamber 11, and thence into the tube 12, where it will be directed through the neck of said bottle into a glass or other receptacle designed to receive the same.

The exterior walls of the casing sections, are formed with longitudinal seating recesses 17 for the reception of the side bars 18 of a depending frame, said frame being retained in position on the casing by means of a binding wire 19 extending across the bars 18 and seated in a circumferential groove 20 formed in the lower casing section 9, as shown. The lower ends of the side bars 18 are connected by a cross bar 21 having spaced ears 22 secured thereto and between which are pivotally mounted spring actuated pawls 23. The outer ends of the pawls 23 extend through slots 24 formed in the side bars 18 and are normally held in extended position by an elastic band 25 secured to the lower longitudinal edges of the pawls at the outer ends thereof. An annular groove 26 is preferably formed in the upper section 8 of the casing for the reception of a packing ring 27 so as to prevent leakage between the casing and neck of the bottle. A stopper 28, formed of glass, cork, rubber or other suitable material, is seated in the upper end of the rigid tube 13 to form a closure for the latter. Thus it will be seen that by forcing the free ends of the pawls 23 upwardly in the direction of the bottom of the casing 7, the latter may be inserted within the neck of the bottle, and when the pawls clear the neck of said bottle, the spring 25 will automatically force the free ends of the pawls outwardly into engagement with the inner wall of the bottle, thus to effectually prevent withdrawal of the casing from the neck thereof.

In discharging the contents of the bottle, the latter is inverted or partially inverted, thus causing the liquid to flow through the collapsible tube 15 and chamber 11 into the tube 12 where it will be discharged at the neck of the bottle in the usual manner, the force of the liquid against the walls of the collapsible tube 15, serving to expand or separate the walls at the mouth thereof to permit the discharge of the liquid.

Should an attempt be made to fraudulently refill the bottle by forcing liquid under pressure through the tube 12, said liquid will merely fill the chamber 11 and space between the collapsible tube 15 and adjacent rigid tube 13, as no liquid can pass through said collapsible tube, owing to the fact that the upper end thereof is closed.

It will here be noted that by having the inner ends of the rigid tubes 12 and 13 overlapped, any attempt on the part of a person to introduce a tool through the tube 12 with a view to expanding the mouth of the collapsible tube 15 and refilling the bottle, will be effectually prevented.

The valve casing 7 may be formed of metal, porcelain or other suitable material and made with any number of liquid conducting tubes, without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is:

1. A bottle including a neck, a casing seated within the neck and provided with exterior guiding grooves, a valve disposed within the casing, a frame depending from said casing and having slotted side bars seated in the grooves of said casing, and spring actuated pawls pivotally mounted on the frame and having their free ends extending through the slots in said bars and engaging the inner wall of the bottle for preventing withdrawal of the casing from the neck of said bottle.

2. A bottle including a neck, a casing seated within the neck and provided with an exterior annular groove and vertically disposed seating grooves intersecting said annular groove, a valve disposed within the casing, a frame depending from said casing and having slotted side bars seated in the vertical grooves of the casing, a binding wire extending across said bars and seated in the annular groove of said casing, pawls pivotally mounted on the frame and having their free ends extending through the slots in the adjacent side bars thereof for engagement with the interior wall of the bottle, and a spring engaging the pawls for normally holding the free ends thereof in extended position.

3. A bottle including a neck, a casing seated within the neck, a valve disposed within the casing, a frame depending from said casing and including slotted side bars having their lower ends connected by a transverse bar, spaced ears carried by the transverse bar, pawls pivotally mounted on the ears and having their free ends reduced and extending through the slots in the side bars for engagement with the interior wall of the bottle beneath the neck thereof, and a spring operatively connected with the pawls for normally holding the free ends thereof in contact with said bottle.

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

ROBERT J. BARRY. [L. S.]

Witnesses:

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