(No Model.)

E. RILEY.

NON-REFILLABLE BOTTLE.

No. 588,603. Patented Aug. 24, 1897.

Fig. 1.

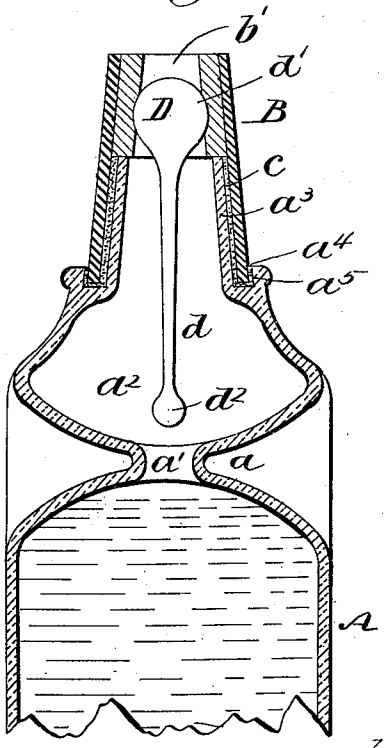


Fig. 2.

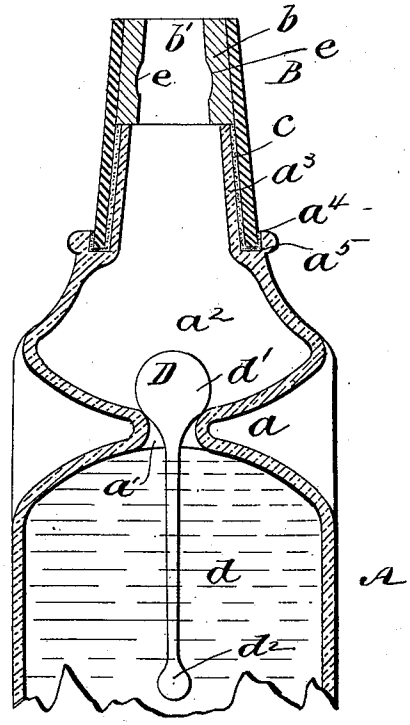
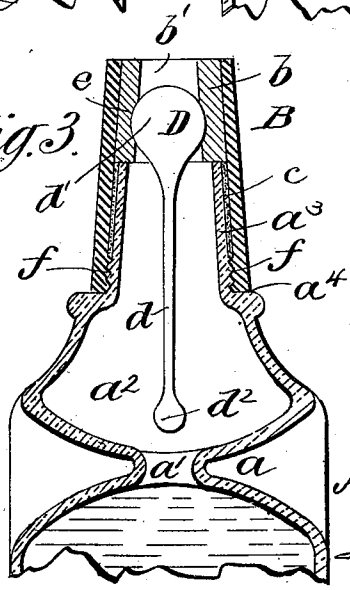


Fig. 3.



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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 588,603, dated August 24, 1897.

Application filed December 7, 1896. Serial No. 614,683. (No model.)

To all whom it may concern:

Be it known that I, ELIZABETH RILEY, a citizen of the United States, and a resident of Newport, county of Newport, and State of Rhode Island, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to that class of safety or non-refillable bottles which are adapted to preclude unauthorized refilling or reuse of the bottle without detection; and it has for its object to provide a simple and improved bottle of this character which will be inexpensive, simple in construction, and effective in use.

In the drawings, Figure 1 is a vertical transverse sectional view showing my improved bottle with the stopper closed. Fig. 2 is a corresponding view showing the position of the stopper when the bottle has been opened for use. Fig. 3 is a vertical transverse sectional view illustrating a modification in the construction.

Referring to the drawings, A designates the body of the bottle, which is provided at its top with a contracted portion a, forming interiorly a small neck or reduced portion a', above which the body, at its top end, is bowl-shaped, as shown at a^2, and from this top bowl the neck proper, a^3, projects.

At the top of the bowl a^2 and the base of the neck a^3 I provide an exterior horizontal circumferential shoulder a^4, in which is formed an annular groove a^5, surrounding the base of the neck.

B designates a frusto-conical cap-piece which has its lower edge seated in said groove, so that the cap-piece surrounds and incloses the neck a^3 and projects some distance above the same, as shown.

The cap-piece B is permanently secured in connection with the bottle by means of a layer of cement c, arranged between the cap and neck and in the groove-seat.

Interiorly, at its top end, the frusto-conical cap B is provided with an enlargement, as shown at b, forming a reduced throat-orifice b'. This reduced throat member b is preferably formed of cork or other pliable or elastic material and interiorly rests upon the top of the neck a^3, as shown.

The neck of the bottle and the frusto-conical cap are preferably of conical shape, so that their walls converge upwardly, and this relative conical construction provides for a secure connection between the cap and its interior enlargement b.

D designates the stopper, which comprises a stem or shank d, carrying at its top end a bulb, head, or knob d'. The lower end of the stem d may be provided with a small knob d^2.

The stopper is arranged interiorly within the bowl portion of the body of the bottle and its bulb or head d' is normally secured within the pliable throat b' of the cap, for which purpose the walls of the throat may be concave, as shown at e, Fig. 2, if desired. The stopper is thus locked in connection with the throat of the cap and is normally maintained in this relative position, and it cannot be withdrawn upwardly from said throat without leaving permanent evidence of such operation.

In practice the bottle is first filled and then the cylindrical cap B is cemented in position with the stopper D in its normal position within the throat. When it is desired to withdraw the contents of the bottle, the stopper is pushed downwardly from engagement with the throat b', when its stem drops through the interior neck a' of the body of the bottle, and then when the bottle is inclined or tilted the stem of the stopper will rest in the neck a', with the head or bulb d' in the bowl a^2, thus permitting the pouring of the contents. When the bottle is in upright or erect position, the bulb or head d' of the stopper will always close the interior neck-orifice a', (see Fig. 2,) so that the bottle cannot be refilled, and after the stopper has been once disengaged from its normal position in the throat b' to enable use of the contents the stopper cannot be again restored to its normal position in the throat, so that unauthorized reuse or refilling of the bottle is obviated.

In Fig. 3 I have illustrated a modification in the construction in which in lieu of the groove a^5 the cylindrical cap is adapted to have a screw-threaded connection, as shown at f, with the neck a^3.

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

1. An improved bottle of the class described, comprising the body having the interior neck or reduced portion above which is formed the top bowl from which rises the neck proper, a cylindrical cap permanently secured in a position surrounding the neck and projecting above the same and provided with a concave interior enlargement forming a pliable reduced conical throat above the neck portion of the bottle, in combination with a stopper-valve embodying a stem having a bulb or head normally seated within said concave pliable throat portion, substantially as and for the purpose set forth.

2. An improved bottle of the class described, comprising the body having the interior neck or reduced portion a' above which is formed the top bowl a^2 from which rises the neck proper a^3, the cylindrical cap inclosing said neck portion and projecting above the same, said cap being interiorly provided at its top with a pliable conical enlargement forming a reduced throat, said enlargement provided with interior concave walls and resting upon the top of the neck portion of the bottle, a cement filling for permanently securing the cap to the neck, and an interiorly-operating stopper embodying a stem and having a bulb or head normally seated and retained within the concave enlargement, substantially as and for the purpose set forth.

3. An improved bottle of the class described, comprising the body having the interior neck or reduced portion a' above which is formed the bowl a^2 from which projects the neck proper a^3 and provided with the annular groove a^5 formed in the circumferential shoulder a^4 at the base of the neck portion, a cylindrical cap having its lower edge seated in said groove, said cap inclosing the neck and projecting above the same and being provided with the pliable reduced throat b', a cement filling for securing said cap in connection with the neck, and a stopper provided with a stem carrying a bulb or head normally seated in the pliable neck, and a second bulb at its lower end, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 30th day of November, 1896.

ELIZABETH RILEY.

Witnesses:
A. O'D. TAYLOR,
H. L. TAYLOR.