(No Model.)

J. SCHREIBER & J. HOLLER.

NON-REFILLABLE BOTTLE.

No. 590,075. Patented Sept. 14, 1897.

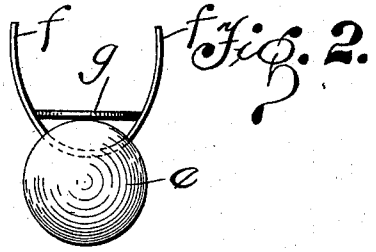


Fig. 2.

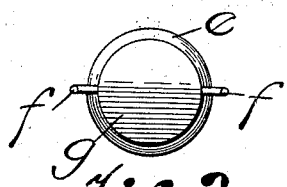


Fig. 3.

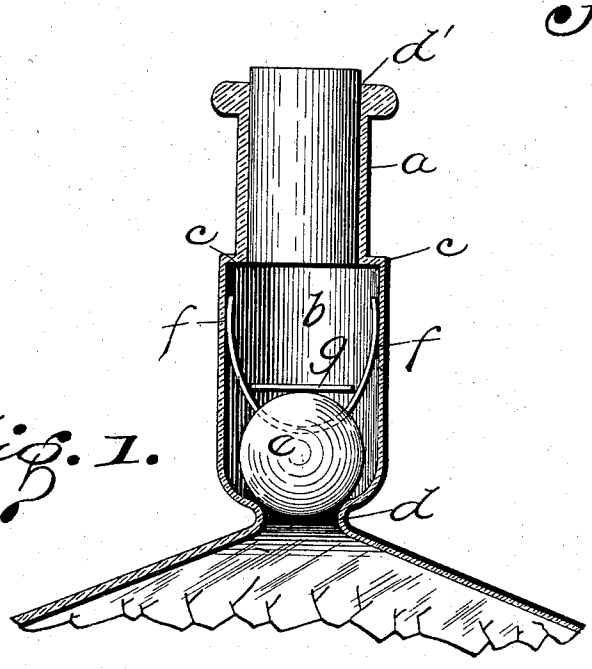


Fig. 1.

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UNITED STATES PATENT OFFICE.

JOHN SCHREIBER AND JACOB HOLLER, OF PITTSBURG, PENNSYLVANIA.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 590,075, dated September 14, 1897.

Application filed September 4, 1896. Serial No. 604,851. (No model.)

To all whom it may concern:

Be it known that we, JOHN SCHREIBER and JACOB HOLLER, citizens of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in bottles, and more particularly to that class of inventions known as "non-refillable bottles."

The invention has for its object to provide new and novel means whereby a bottle that has once been emptied cannot conveniently be refilled; furthermore, to construct a bottle of the above-referred-to class that will be extremely simple in its construction, strong, durable, and comparatively inexpensive to manufacture.

A still further object of our invention is to provide means that will shield the ball and prevent the same from being tampered with or raised from its seat to admit liquid into the bottle.

With the above and other objects in view the invention finally consists in the novel details of construction, combination, and arrangement of parts, to be hereinafter more particularly described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification and wherein like letters of reference indicate similar parts throughout the several views, in which—

Figure 1 is a vertical sectional view of a bottle-neck provided with our improvements. Fig. 2 is a detail view of the rubber ball and spring, showing the same in side elevation. Fig. 3 is a top plan view of the same.

In the drawings, *a* represents the neck of the bottle, said neck having an enlarged portion *b*, forming shoulder or offset *c*. It will be seen that the neck of the bottle is provided with the usual opening, the said opening having differential diameters—namely, the opening *d* at the lower extremity of the neck being less in diameter than the opening *d'* at the upper portion of the bottle, the said opening being also contracted when compared with the enlarged portion *b*. The neck of the bottle is provided with a flexible ball *e*, which is preferably made of rubber or other suitable material. Said ball is provided with a U-shaped spring, forming guides *f f*. Between said guides is arranged a metal cap *g*. The diameter of the cap *g* is slightly less than that of the upper opening *d'*, so as to allow the cap to be easily passed through said opening.

The operation of our improved bottle is as follows: We will assume, for the purpose of describing the above-referred-to invention, that the bottle is filled with liquid and it is desired to place the parts in position. The upper opening *d'* of the neck being of less diameter than the ball the latter is forced down into the neck of the bottle. The spring-guides will contract and will be allowed to expand when forced to their normal position, as shown in Fig. 1 of the drawings. The contracted opening *d*, being less in diameter than the ball, will prevent the latter from being forced into the body portion of the bottle. When it is desired to empty the contents, the stopper is first removed, the latter being of any desired form. The bottle is then reversed and held in a position so as to admit the contents to readily flow through the ordinary channel. To admit of this, the ball will fall by gravity and force the spring-guides against the shoulder *c*, thus limiting the movement of the ball within the enlarged portion, as heretofore mentioned. It will be seen that the spring-guides are so constructed as to abut against the shoulder *c* and only slightly come in contact with the interior walls of the enlarged portion in order to admit of a free and easy movement of the ball.

It will be seen that when the bottle is once empty it cannot conveniently be refilled, as the ball will always close the lower opening when the bottle is in an upright position.

It will be noted that various changes may be made in the novel details of construction without departing from the general spirit of our invention. For example, it will be seen that the ball may be provided with a number of spring-guides to perform the same function.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a non-refillable bottle, the neck provided with a contracted portion at each end and the enlarged portion between the ends, the upper end of the enlarged portion terminating in a shoulder combined with a compressible ball-valve, a curved spring which is embedded in the top of the ball, and a plate placed upon the top of the valve to protect it; the ends of the spring being turned outwardly so as to catch behind the shoulder, substantially as shown.

2. In a non-refillable bottle, the neck contracted at each end, and having an enlarged portion between the ends, combined with a compressible valve that is forced through the contracted upper end of the bottle into the enlarged portion, a curved metallic spring which is embedded in the valve at its center, and has its ends curved outwardly and upwardly, and a metallic plate that is placed upon the top of the ball between the prongs of the spring and centered in position thereby, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN SCHREIBER.
JACOB HOLLER.

Witnesses:
A. R. APPLEMAN, JR.,
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