

(No Model.)

E. ERMANN.  
NON-REFILLING BOTTLE.

No. 548,307.

Patented Oct. 22, 1895.

Fig: 1.

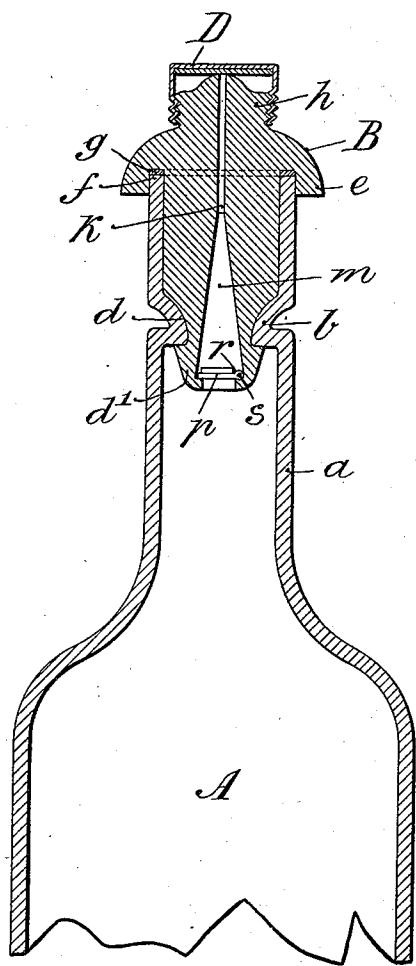
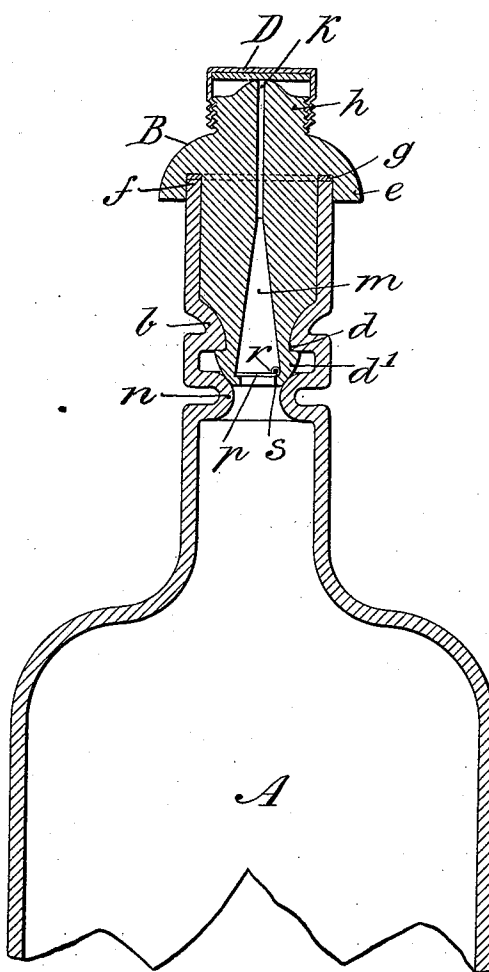


Fig: 2.



Witnesses:  
Thomas M. Smith.  
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# UNITED STATES PATENT OFFICE.

ESTELLE ERMANN, OF PHILADELPHIA, PENNSYLVANIA.

## NON-REFILLING BOTTLE.

SPECIFICATION forming part of Letters Patent No. 548,307, dated October 22, 1895.

Application filed July 3, 1895. Serial No. 554,849. (No model.)

*To all whom it may concern:*

Be it known that I, ESTELLE ERMANN, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Non-Refilling Bottles, of which the following is a specification.

My invention has relation to bottle-stoppers of that class wherein it is desirable to prevent the refilling of said bottles; and in such connection it relates particularly to the general construction and arrangement of such a non-refilling bottle.

The principal object of my invention is to provide an efficient, durable, and comparatively inexpensive stopper, which in position in the bottle cannot be removed and while permitting of the discharge of the contents thereof yet efficiently preventing refilling of the bottle.

My invention, stated in general terms, consists of a non-removable bottle-stopper for preventing refilling of the bottle, constructed and arranged in substantially the manner herein-after described and claimed.

The nature, characteristic features, and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a vertical central section of a bottle with a stopper embodying features of my invention, and Fig. 2 is a similar view of a modified form of a bottle with its stopper.

Referring to the drawings, A represents the bottle having a neck *a*, which neck is provided on its interior surface with an annular conoidal projection *b*. This internal projection or shoulder *b* is formed by indenting or pressing in the walls of the neck, as illustrated in the drawings. The lower edge of the shoulder *b* is straight, while the upper edge is rounded and beveled.

In the neck *a* of the bottle A is fitted a stopper B, the lower end of which is annularly grooved, as at *d*, to form a flange *d'*, adapted to fit snugly under the shoulder *b* of the neck *a* of the bottle, the groove *d* fitting closely against the rounded and beveled edge of said shoulder *b*. Near the upper end the stopper

B is provided with a circular overlapping flange *e*, fitting the upper edge *f* of the neck *a* of the bottle. Between the edge *f* and the stopper B is mounted a gasket or washer *g*, of leather, rubber, or other preferred material. The stopper B is provided at its extreme upper end with a screw-threaded nipple *h*, onto which is adapted to be screwed a metallic or other suitable cap D.

The stopper B is preferably formed of hard rubber, gutta-percha, celluloid, or other material sufficiently elastic or yielding to permit of the grooved ends *d'* to slip over and to be clamped against the shoulder *b* or the neck *a*. The stopper B is also vertically perforated, a portion *k* of said perforation at the upper end of said stopper being straight and of uniform diameter, while the lower portion *m* of said perforation is enlarged and substantially conical.

In the form of stopper illustrated in Fig. 2 the neck *a* is provided with two internal shoulders *b* and *n*, the upper of which *b* corresponds in detail with the shoulder *b* of the stopple of Fig. 1, but the lower shoulder *n* is a completely rounded indentation. In this form of stopper the shoulder *d'* of the stopper is held between the straight portion of the shoulder *b* and the curved portion of the shoulder *n*. In the stopper B, of both forms at the lower portion *m* of the perforation, is fitted a flap-valve *p*, preferably weighted and opening upward to permit the escape of liquid when the bottle is turned upside down or tilted, but closing downward to close the lower end of the perforation in the stopper when the bottle is in upright position, as illustrated, for example, in the drawings. The valve *p* is pivoted, as at *r*, by means of a pin, passing through the stopper B.

In assembling the parts together the bottle A is first filled with liquid, and the stopper B is then driven to place in the neck of the bottle, the lower end *d'* yielding or springing sufficiently to pass by the shoulder *b* in the neck *a* of the bottle and to fit snugly against and under the same, or, as in the form shown in Fig. 2, under the shoulder *b* and above the shoulder *n*. The cap D, in case of carbonated liquids, must be screwed down upon the nipple of the stopper B to close the perforation be-

fore the stopper is driven to place, in order to prevent escape of the internal gases of the liquid contained in the bottle A.

To discharge the liquid from the bottle, the cap D is removed and the bottle inverted or tilted, the liquid lifting the valve *p* and will pass through the perforations *m* and *k*. When the contents of the bottle have been removed, the stopper B cannot be removed, and the weighted valve *p* will seal the perforation of the stopper when the bottle has been caused to assume an upright or substantially such position, and hence the bottle cannot be refilled.

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

The combination with a bottle having a neck indented to form two parallel curved shoulders, of a stopper vertically perforated and provided with an annular groove adapted

to fit closely upon the curved sides of the upper shoulder and between the two shoulders, the perforation in said stopper being substantially conical and enlarged at the lower end, a weighted flap-valve pivoted within the enlargement of said perforation and adapted when the bottle is not completely inverted to close said perforation, said stopper being provided at its upper end with an overlapping flange inclosing the rim of said neck and with a threaded nipple above said flange, and a cap adapted to screw down upon said nipple to seal the bottle, substantially as described.

In testimony whereof I have hereunto set my signature in the presence of two subscribing witnesses.

ESTELLE ERMANN.

Witnesses:

FLORA ERMANN,  
THOMAS M. SMITH.