(No Model.)

E. E. KERNS.

NON-REFILLABLE BOTTLE.

No. 590,741. Patented Sept. 28, 1897.

Fig. 1

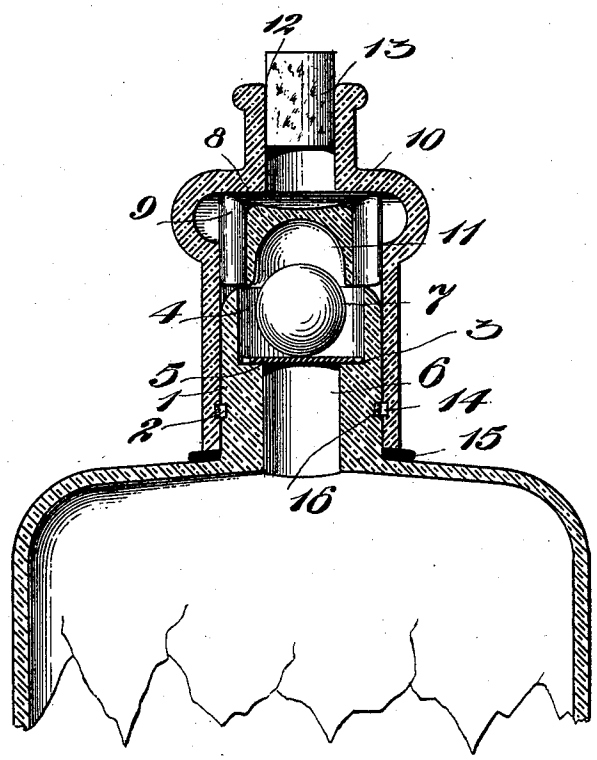


Fig 2

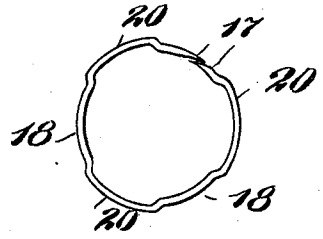
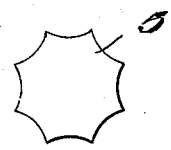


Fig. 3



Witnesses:
Edmund F. Strains.
Wm. F. Doyle.

Inventor
Elmer E. Kerns.
By H. B. Willson.
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ELMER E. KERNS, OF BRADFORD, PENNSYLVANIA.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 590,741, dated September 28, 1897.

Application filed December 5, 1896. Serial No. 614,568. (No model.)

To all whom it may concern:

Be it known that I, ELMER E. KERNS, a citizen of the United States, residing at Bradford, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Non-Refillable Bottles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in that class of bottles to be used once only and rendered useless for refilling; and the object is to provide a reliable device of this kind.

To this end the invention consists in the construction, combination, and arrangement of the same, as will be hereinafter more fully described, and particularly pointed out in the claims.

In the accompanying drawings the same reference-numerals indicate the same parts of the invention.

Figure 1 is a vertical section of a bottle embodying my invention. Fig. 2 is a plan view of the retaining-spring, and Fig. 3 is a similar view of the serrated disk valve.

1 represents the cylindrical neck of the bottle, which is formed with an external annular horizontal recess 2 and an internal shoulder 3, above which is a cylindrical chamber 4.

5 represents a serrated-edge disk valve of a diameter slightly smaller than the chamber 4, in which it is contained, and said valve seats on the shoulder 3 when the bottle is in its normal upright position and closes the orifice 6.

7 is a glass ball or marble resting on the disk 5 to assist in retaining it in place by gravity.

8 represents a cylindrical block having a serrated edge 9 and fitting snugly in the upper end of the inside of the hood 10. The lower face of the block 8 is formed with a semicircular recess 11 to retain the ball 7 in a central position when the bottle is inverted. The hood 10 is provided with a mouth 12, which receives the usual removable cork 13, and internally near its lower edge there is formed an annular horizontal recess 14, which registers with the corresponding recess 2 in the neck when the lower edge of the hood is forced down snugly on the packing-ring 15.

16 represents an expansible steel sealing-ring having free ends 17 17, which slide past each other when the ring is compressed. This ring is formed with inwardly-projecting sections 18 18, which correspond to the diameter of the recess 2 in the neck of the bottle, and outwardly-projecting alternate concentric sections 20 20, which correspond to the diameter of the recess 14 in the hood 10. It will be readily seen that when said ring is placed in the recess 2 and compressed to allow the hood to slip down over it, the recess 14 in the hood coming in line with said ring, it will expand laterally, so that its outer sections 20 20 will engage said recess 14 and prevent the possibility of removing the hood without fracturing it.

When it is desired to gain access to the contents, the cork 13 is removed and the bottle inverted in the usual manner. The ball then rolls into the recess 11 and the serrated disk-valve 5 is forced away from its seat on the shoulder 3 by the pressure of the liquid, which then escapes through the orifice 6 around the serrated edge of the disk 5, thence through the serrations 9 in the block 8, and finally through the mouth 12. This tortuous passage is such as to render it practically impossible to refill the bottle after its contents are exhausted without fracturing the hood.

Although I have specifically described the construction and relative arrangement of the several elements of my invention, I do not desire to be confined to the same, as such changes or modifications may be made as clearly fall within the scope of my invention without departing from the spirit thereof.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

1. A bottle provided with the cylindrical neck 1, external annular recess 2 and internal shoulder 3, in combination with the serrated disk valve 5, the ball 7 and the cylindrical block 8 having edge serrations 9, and semicircular recess 11, the hood 10, encompassing said cylindrical neck 1, and provided with the internal recess 14 registering with the recess 2 in the neck, and the expansible ring 16 formed with internal and external alternate sections 18 20 concentrically arranged to engage the

recesses 2 and 14, substantially as and for the purpose set forth.

2. A bottle formed with the cylindrical neck 1, having the external annular horizontal recess 2, the internal annular horizontal shoulder 3 formed at the bottom of the enlarged cylindrical chamber 4 in combination with the serrated-edge disk valve 5, seated on the shoulder 3 and adapted to close the passageway in the neck between said chamber 4 and the bottle proper, the ball 7 located in said chamber 4 and engaging said valve by gravity, the cylindrical block 8 formed with the vertically-serrated edge 9 and the semicircular recess 11 adapted to receive the ball when the bottle is inverted; the cylindrical hood 10 having the internal horizontal recess 14 located in the same plane and contiguous to the recess 2 in the neck, and the expansible steel sealing-ring 16 adapted to alternately engage the intermediate walls of the recesses 2 and 14, substantially as shown and described.

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

ELMER E. KERNS.

Witnesses:
W. W. BROWN,
H. A. WINTER.