No. 897,070. PATENTED AUG. 25, 1908.

M. ECKER.

NON-REFILLABLE BOTTLE.

APPLICATION FILED JUNE 3, 1907.

Fig. 1.

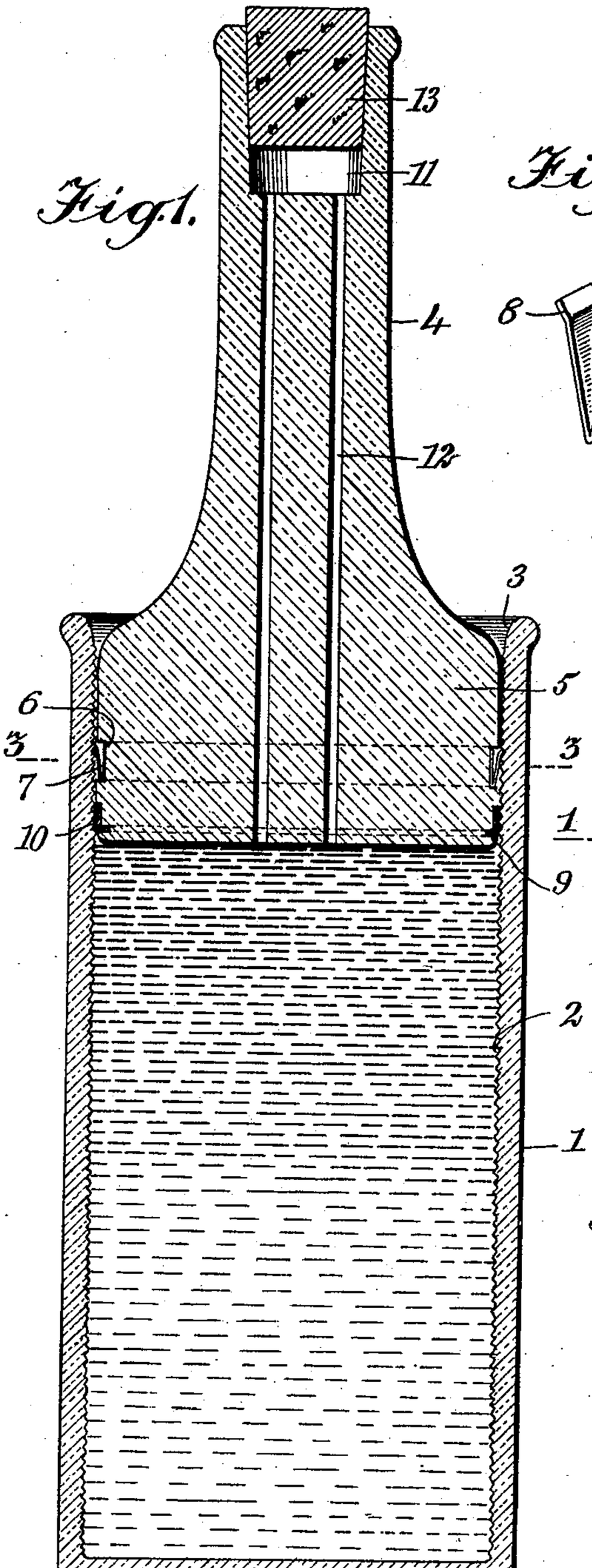


Fig. 4.

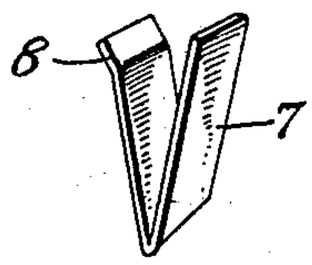


Fig. 2.

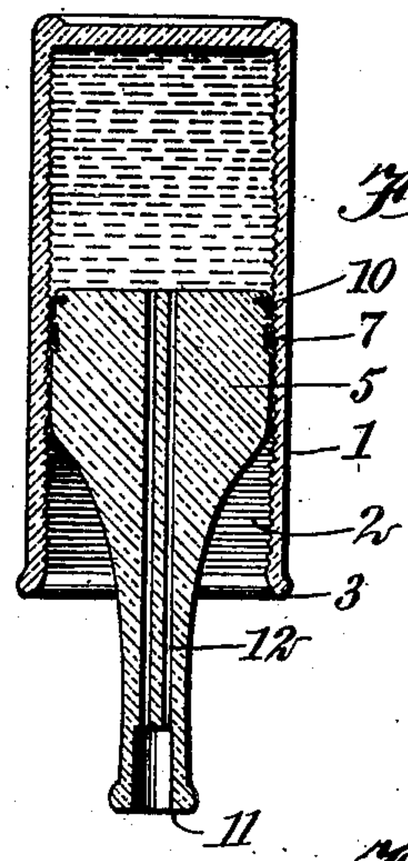


Fig. 3.

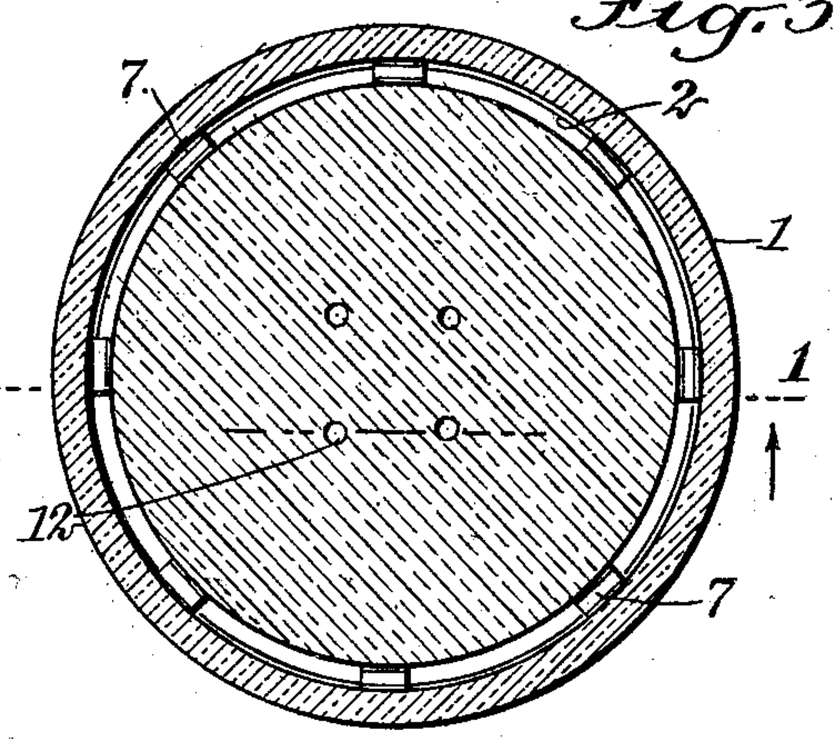
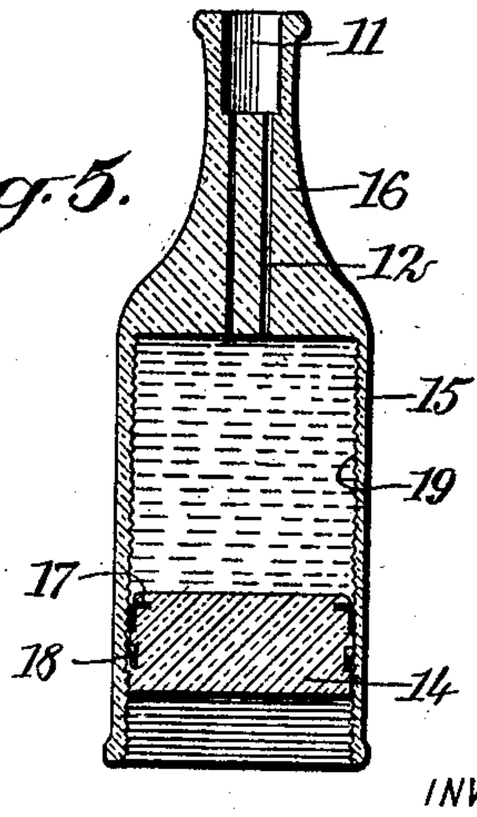


Fig. 5.



WITNESSES

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MAURICE ECKER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO LOUIS M. STERN, OF BROOKLYN, N. Y., AND ONE-SIXTEENTH TO JACOB ALEXANDER AND ONE-SIXTEENTH TO HARRY GANS, OF BOSTON, MASSACHUSETTS.

NON-REFILLABLE BOTTLE.

No. 897,070. Specification of Letters Patent. Patented Aug. 25, 1908.

Application filed June 3, 1907. Serial No. 377,065.

To all whom it may concern:

Be it known that I, MAURICE ECKER, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Non-Refillable Bottle, of which the following is a full, clear, and exact description.

This invention relates to non-refillable bottles, and its object is to provide a bottle of this class which cannot be refilled, and which is constructed without employing metallic parts or valves.

Extreme simplicity and effectiveness in operation are the principal objects.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical central section on the line 1—1 of Fig. 3, through a bottle constructed according to my invention; Fig. 2 is a view similar to Fig. 1, but upon a reduced scale; this view shows the bottle in an inverted position and partially empty; Fig. 3 is a cross section on the line 3—3 of Fig. 1; Fig. 4 is a perspective view showing a spring which constitutes a feature of the invention; and Fig. 5 is a vertical cross section showing a modified form which the invention may take.

Referring more particularly to the parts, 1 represents the body of the bottle, which is of cylindrical shape and adapted to be formed of glass. This body is open above so that it constitutes substantially an elongated glass cup. The interior of this cup is formed with circumferential ribs 2 preferably of "V" form. The upper edge of the body is formed with an outwardly projecting lip 3, the purpose of which will appear more fully hereinafter. The neck 4 of the bottle is formed below into an enlarged head 5, which fits tightly in the bore of the body. At diametrically opposite points the side face of the head 5 is provided with recesses 6 in which leaf springs 7 are attached. These springs are of "V" form, the apex or angle of the "V" being disposed downwardly, so that the springs present outwardly and upwardly inclined projecting tongues 8. When the springs are fastened in position as shown, the tongues tend to project beyond the side face of the head 5 so as to engage with the ribs 2 as will be readily understood.

Near the lower face of the head 5 a circumferential groove 9 is formed, which extends continuously around the head and affords means for attaching in position a packing strip or washer 10. This washer has preferably the form of a rubber band which is stretched so as to enable it to be inserted in the groove 9, the body of the washer being disposed on the side face of the lower portion of the head as shown. It should be understood that this washer fits closely to the inner face of the bottle wall, so as to prevent any possibility of the liquid within the bottle passing outwardly between the head and the body.

The upper end of the neck 4 is formed into a stopper chamber 11, and this chamber is in communication with the interior of the body by means of a plurality of ducts 12. These ducts are of small diameter so that they exert a capillary action upon a liquid within them.

With a bottle of this construction, it should be understood that if the bottle is inverted and the stopper 13 removed, the liquid within the bottle cannot be made to flow through the neck, by reason of the small diameter of the ducts 12. In order to pour from the bottle, it is necessary to invert it and force the neck toward the bottom of the body. In doing this it will be understood that the head 5 operates as a piston to develop a pressure upon the liquid within the bottle, and the liquid then readily forces its way through the capillary ducts 12 and flows freely from the mouth of the neck. In this way the bottle may be poured from from time to time until empty. It should be understood, however, that as the neck advances toward the bottom, the ends of the tongues 8 engage successively with the ribs 2, and this engagement prevents the neck from being withdrawn from the body. In this way the capacity of the bottle constantly decreases until the bottle is empty, and it is impossible, at any stage of the reduction of the capacity of the bottle, to re-fill it or replenish it; after the bottle

has been completely emptied, it must be thrown away, as it will break the bottle to remove the neck from its body.

In Fig. 5 I illustrate a modified construction in which the movable member is the bottom 14. This bottom is mounted in a cylindrical body 15, the upper portion of which is formed into a neck 16 which is similar in construction to the neck 4, except that the neck in this case is integral with the body of the bottle. The bottom 14 is constructed similarly to the head 5, and is provided near its upper face with a washer 17 which is arranged and operates in the manner described in connection with the preferred form. Leaf springs 18 are employed, and these are mounted in the side of the bottom and engage with the ribs 19 on the interior of the bottle, in the same manner as that described above. With this arrangement it should be understood that as the bottom 14 is advanced toward the mouth of the bottle, the contents of the bottle may flow from it, but the bottom cannot be forced downwardly, and the bottle cannot be used again after the bottom arrives at the limit of its movement.

Special attention is called to the fact that this bottle does not employ valves, and there are no metal parts in contact with the liquid within the bottle. In this connection, it will be observed that the washers effectually obstruct the passage of the liquid at the sides of the movable part, so that the liquid cannot come in contact with the springs. In other words, the washers are interposed between the springs and the body of the liquid. The movement which takes place between the parts of the bottle in pouring the liquid from it, may be described as a telescoping movement.

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

A non-refillable bottle comprising two telescoping members adapted to hold a liquid, one of said members having the wall thereof provided with circumferential ribs, and resilient members coöperating with said ribs, carried by the opposite member and adapted to prevent an outward movement of said members with respect to each other, one of said members having a neck with a plurality of capillary ducts passing therethrough from the interior of said bottle, the mouth of said neck having a chamber for the stopper thereof and receiving the liquid that flows outwardly through said ducts.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MAURICE ECKER.

Witnesses:
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JOHN P. DAVIS.