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H. J. LUTZ & H. W. FRIEDEL.

NON-REFILLABLE BOTTLE.

APPLICATION FILED OCT. 17, 1905.

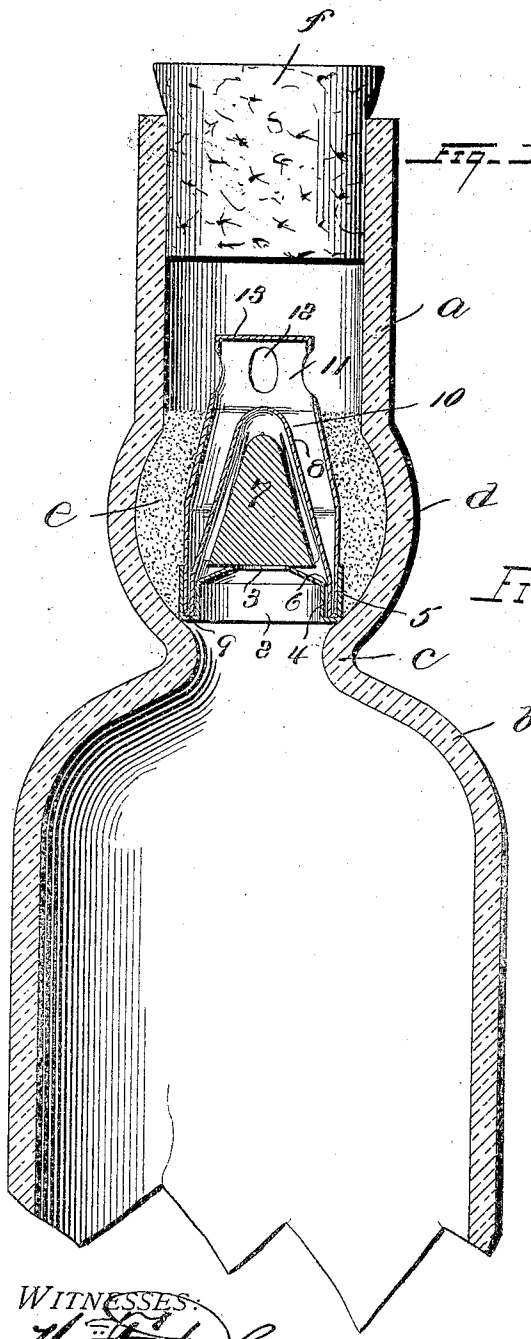

Fig. 1.

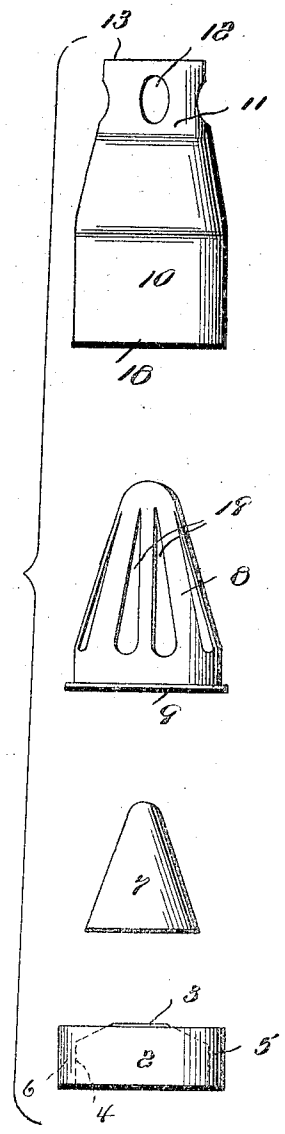

Fig. 2.

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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

No. 818,181. Specification of Letters Patent. Patented April 17, 1906.

Application filed October 17, 1905. Serial No. 283,127.

To all whom it may concern:

Be it known that we, HARRY J. LUTZ and HARRY W. FRIEDEL, citizens of the United States, residing at Wheeling, in the county of Ohio and State of West Virginia, have invented certain new and useful Improvements in and Relating to Non-Refillable Bottles, of which the following is a specification.

Our invention relates to attachments for preventing the refilling of bottles; and it has for its object to produce a device of this character consisting of few parts and one that may be easily assembled and placed in position in the bottle-neck.

Figure 1 is a vertical section of a bottle-neck provided with an attachment embodying our invention, the latter being also in section. Fig. 2 is a view showing the several parts of which the attachment is formed separated from each other and in elevation.

The attachment that forms the subject of our invention is arranged when secured in a bottle-neck to permit the free outward flow of the liquid contents of the bottle when the latter is tipped, but to prevent the refilling of the bottle so long as the attachment remains in place and also to prevent any unauthorized manipulation or tampering with the valve that constitutes a part of the attachment.

Referring to the drawings, 2 represents the lower valve-seat member of the attachment. It is annular or ring-shaped, as viewed from above or below, and its inner circumferential edge is inclined upward to form a valve-seat 3. Its outer circumferential wall is bent back upon itself, first downward and then upward, as shown at 4 5, to form an annular recess 6.

7 indicates the valve, preferably of conical shape and arranged to rest on the valve-seat 3. The valve is formed of any suitable material, such as glass or metal, its lower face or base preferably being ground to accurately fit the valve-seat 3. Surrounding the valve 7 is a hollow conical-shaped valve-retaining member or cage 8. The lower end thereof, 9, is cylindrical and arranged to rest within the annular recess 6 of the valve-seat member, fitting close against the inner wall 4 thereof, whereby it is supported and held in position and in turn serves to prevent the displacement of the valve 7. This valve-retaining member is sufficiently larger than the valve 7 to permit the necessary movements thereof, it falling away from the valve-seat when the bottle is tipped and again seating itself when the bottle is righted. The upper conical portion of the valve-retaining member or cage is provided with elongated slots 19 to allow the liquid to flow therethrough.

10 indicates the outer inclosing member of the attachment. It entirely surrounds the valve-seat, the valve, and the valve-retaining member and serves, in conjunction with the cage member 8, to protect the valve from being unseated by the unauthorized employment of a tool or piece of wire, as when an attempt is being made to refill the bottle, these two parts forming a tortuous passage or passages for the flow of the liquid from the valve-seat to the neck of the bottle outside the attachment. The lower end 18 of this outer inclosing member is cylindrical in shape and is adapted to rest in the annular recess 6 of the valve-seat member outside the lower part 9 of the valve-cage and close against the outer wall 5 of the recess. The opposite or upper end portion of the outer inclosing member is contracted, as indicated at 11, and in the side walls of this contracted portion are formed openings or passages 12 for the flow of the liquid from the bottle. The outer end of the member 10 is closed by a cap or top 13.

The several parts of the attachment designated, each as a whole, by the reference-numerals 2, 8, and 10, may be formed from any suitable material, aluminium being well adapted for this purpose, and they are so fitted to each other that when assembled as represented in Fig. 1 they will be securely united by frictional engagement, though they may be further secured by solder, if this be found desirable.

The attachment may be fitted into the necks of bottles of many different kinds and shapes. We have in the drawings represented a bottle-neck shaped especially to receive an attachment such as ours.

a represents the bottle-neck as a whole. Where it joins the body *b* of the bottle it is contracted, as represented at *c*, to form a bearing or rest for the lower member 2 of the attachment. Above the contracted portion *c* the neck expands at *d* to form a space for a filling of cement or other material *e*, that serves to hold the attachment in position within the bottle-neck. Above the attach-

ment the neck is continued and shaped to receive a cork *f*.

What we claim is—

1. In a non-refillable bottle, the combination with the bottle-neck, of the lower valve-seat member arranged to be seated in the bottle-neck and formed with a centrally-disposed opening, a valve-seat surrounding the opening and formed with an upward opening, annular recess arranged outside the valve-seat, a valve arranged to rest upon the valve-seat, and means for retaining in place and guarding the valve seated in the said annular recess, substantially as set forth.

2. In a non-refillable bottle, the combination with the bottle-neck, of a valve-seat member provided with an annular recess, a weighted valve, means for retaining the said valve in position, and an inclosing member surrounding the valve and valve-retaining means and having its lower edge supported in the said annular recess, substantially as set forth.

3. In a non-refillable bottle, the combination with the neck of the bottle, of a valve-seat member provided with an annular recess, a loosely-mounted conical-shaped valve arranged to rest on the valve-seat, a hollow conical-shaped device for retaining the valve in position, and an inclosing member for the valve and valve-retaining means supported in said recess in the valve-seat member and provided with openings in its side walls, substantially as set forth.

4. In a non-refillable bottle, the combination with the bottle-neck, of a valve-seat member provided with an annular recess, a loosely-mounted conical-shaped valve arranged to rest on the valve-seat, a hollow conical-shaped device for retaining the valve in position, the lower end thereof being cylindrical and arranged to rest in the said annular recess of the valve-seat member, and an inclosing member for the said parts provided with openings or passages in its side walls, substantially as set forth.

5. In a non-refillable bottle, the combination with the bottle-neck, of an annular lower member provided with a valve-seat and having an annular recess concentric with its outer edge, a conical-shaped valve arranged to rest on the said valve-seat, a hollow conical-shaped valve-retaining member provided with slots along its sides and having its lower end of cylindrical shape and arranged to closely fit within the said annular recess in the lower member, and an outer inclosing member surrounding the said lower member, valve and valve-retaining member, its lower end being cylindrical and supported in the said annular recess and its outer end being contracted and provided with openings in its side walls, substantially as set forth.

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