E. J. HEIL & J. BIRNER.

NON-REFILLABLE BOTTLE.

APPLICATION FILED AUG. 19, 1911.

1,035,007. Patented Aug. 6, 1912.

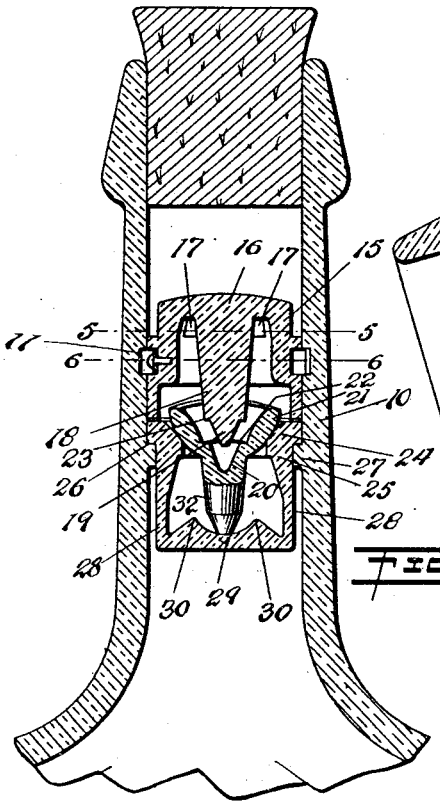

Fig. 1.

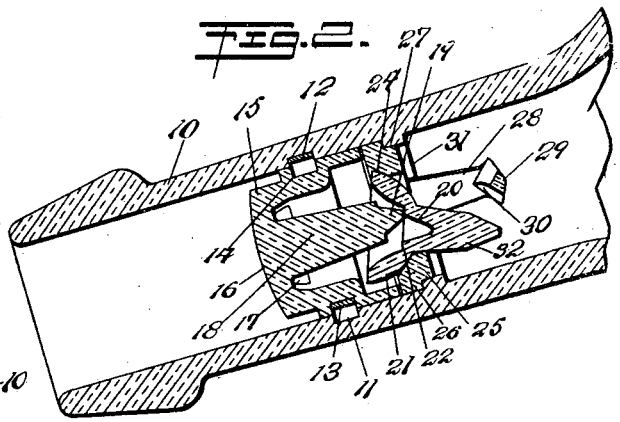

Fig. 2.

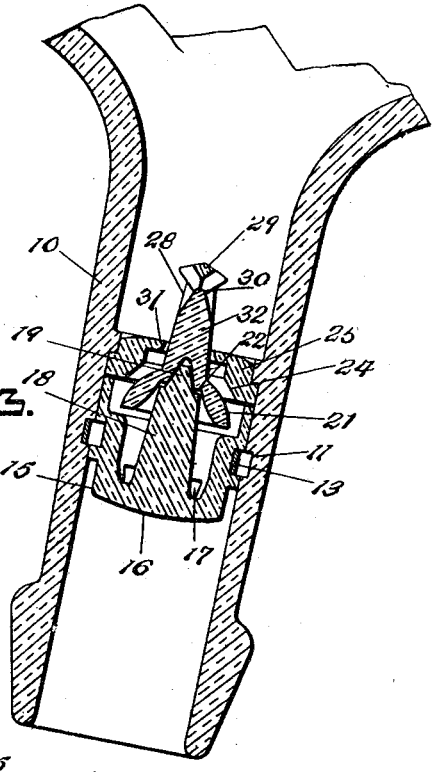

Fig. 3.

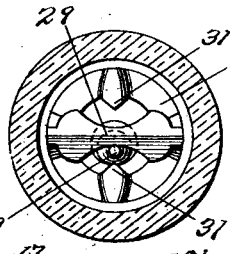

Fig. 4.

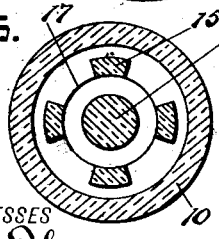

Fig. 5.

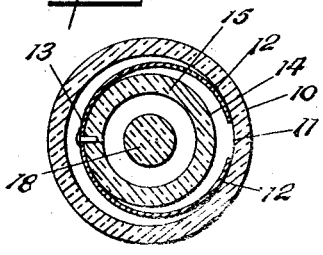

Fig. 6.

WITNESSES

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NON-REFILLABLE BOTTLE.

1,035,007. Specification of Letters Patent. Patented Aug. 6, 1912.

Application filed August 19, 1911. Serial No. 644,910.

To all whom it may concern:

Be it known that we, EDWARD J. HEIL, a citizen of the United States, and a resident of Carteret, in the county of Middlesex and State of New Jersey, and JOSEPH BIRNER, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented a new and Improved Non-Refillable Bottle, of which the following is a full, clear, and exact description.

Our invention relates to non-refillable bottles, and it has for its object to provide one with a member having an annular groove in which is disposed a resilient catch the terminals of which extend into a recess in the neck of the bottle, to prevent the removal of the member after the member has been pushed into position.

Another object of our invention is to provide the member with a depending pin which is disposed in a cup-shaped valve, the pin having an annular shoulder fitting a shoulder in the valve when the bottle is inverted, the terminal of the pin engaging the shoulder in the cup-shaped valve when the bottle is disposed obliquely for holding the cup-shaped valve on its valve seat. Depending from the cup-shaped valve there is a pin which engages members which serve to agitate the pin and the cup-shaped valve to make certain that the first-mentioned depending pin engages the shoulder in the cup-shaped valve, when the bottle is disposed obliquely.

Additional objects of our invention will appear in the following specification, in which the preferred form of the invention is described.

In the drawings similar characters of reference indicate corresponding parts in all the views, in which—

Figure 1 is a sectional elevation of the neck of a bottle showing our improvement; Fig. 2 is a view similar to that shown in Fig. 1, but indicating the position of the members when the bottle is disposed obliquely; Fig. 3 is a view similar to those shown in Figs. 1 and 2, but indicating the position of the members when the bottle is inverted; Fig. 4 is an inverted plan view of Fig. 1; Fig. 5 is a sectional view on the line 5—5 of Fig. 1; and Fig. 6 is a sectional view on the line 6—6 of Fig. 1.

By referring to the drawings it will be seen that the neck 10 of the bottle has a circular recess 11, in which is disposed the terminals 12 of the resilient catch 13, which is secured in the annular groove 14 in the stopper member 15. This stopper member 15 has a head 16, the diameter of which is less than the inner diameter of the neck 10 of the bottle, and there are openings 17 at the side of the head 16 which communicate with the interior of the member 15. Depending from the head 16 there is a pin 18, which has a pointed terminal 19 adapted to fit in the tapering recess 20 in the valve member 21. There is a shoulder 22 around the inner side of the valve 21, and there is a shoulder 23 on the depending pin 18, the said shoulder 23 being adapted to engage the shoulder 22 when the bottle is inverted and the valve rests on the pin 18. However, when the bottle is disposed obliquely as shown in Fig. 2 of the drawings, the terminal 19 of the pin 18 is adapted to engage the shoulder 22 in the valve 21. This valve 21 is provided for coöperating with the valve seat 24 on the valve member 25. This valve member 25 has a flange 26 for engaging a flange 27 in the neck of the bottle. The valve member 25 has two depending arms 28 which are connected by a transverse bar 29, this transverse bar 29 having two teeth 30, which are spaced from each other and also from the depending arms 28. The valve member 25 also has two horizontally disposed teeth 31, which are disposed a distance above the transverse bar 29 and at right angles thereto. Depending from the cup-shaped valve 21 there is a pin 32 this pin 32 engaging the teeth 31 and the teeth 30, when the bottle is disposed obliquely, so that the pin 32 and the valve member 21 connected therewith will be agitated to make certain that the terminal 19 of the pin 18 will be disposed in the shoulder 22.

In using the invention the valve member 25 is disposed in the neck of the bottle, so that its flange 26 will rest on the flange 27 of the bottle. The stopper member 15 is then inserted in the bottle, until the terminals 12 of the resilient catch 13 are pressed into the recess 11 in the neck of the bottle. When this has been done it will be seen that it will be impossible to refill the bottle, since when the bottle is disposed obliquely in any position the terminal 19 of the pin 18 will rest against the shoulder 22 to hold the valve 21 firmly against the valve seat. The teeth 31 are provided to agitate the pin 32 and the

valve 21, to make certain that the terminal 19 is disposed against the said shoulder. However, while this is true, when the bottle is inverted as shown in Fig. 3 of the drawings, the cup-shaped valve 21 will fit against the terminal 19 of the pin 18 to permit the valve 21 to move away from the seat and permit the fluid contained in the bottle to pass through the valve and out through the openings 17.

Having thus described our invention we claim as new and desire to secure by Letters Patent:

1. In a non-refillable bottle a stopper member having a depending pin, a valve seat, and a cup-shaped valve for engaging the valve seat, the cup-shaped valve having a circular inner shoulder adapted to be engaged by the pin for holding the valve on the seat when the bottle is disposed obliquely in an inverted position.

2. In a non-refillable bottle a stopper member having a depending pin, a valve seat, a cup-shaped valve for engaging the valve seat, the cup-shaped valve having a circular shoulder adapted to be engaged by the pin for holding the valve on the seat.

3. In a non-refillable bottle a stopper member having a depending pin with a shoulder therearound, a valve seat, a cup-shaped valve for engaging the valve seat, the cup-shaped valve having an inner shoulder adapted to be engaged by the terminal of the pin under certain conditions, and, under other conditions, by the shoulder of the pin.

4. In a non-refillable bottle a stopper member having a depending pin, a valve seat, a cup-shaped valve for engaging the valve seat, the cup-shaped valve having a circular shoulder adapted to be engaged by the pin for holding the valve on the seat, a pin depending from the valve through the valve seat, and teeth for deflecting the second-mentioned pin when the stopper is moved in an inclined position for moving the valve to a position where the first-mentioned pin will engage the circular shoulder.

5. In a non-refillable bottle a stopper member having a depending pin, a valve seat, a cup-shaped valve for engaging the valve seat, the cup-shaped valve having a circular shoulder adapted to be engaged by the pin for holding the valve on the seat, a pin depending from the valve through the valve seat, a cross member having two teeth spaced apart, the terminal of the second-mentioned pin being adapted to engage the teeth on the cross member for deflecting the second-mentioned pin to move the valve to a position where the first-mentioned pin will engage the circular shoulder.

6. In a non-refillable bottle a stopper member having a depending pin, a valve seat, a cup-shaped valve for engaging the valve seat, the cup-shaped valve having a circular shoulder adapted to be engaged by the pin for holding the valve on the seat, a pin depending from the valve through the valve seat, a cross member having two teeth spaced apart, the terminal of the second-mentioned pin being adapted to engage the teeth on the cross member, for deflecting the second-mentioned pin to move the valve to a position where the first-mentioned pin will engage the circular shoulder, and two additional teeth spaced apart and disposed at right angles to the cross member for co-operating with the first-mentioned teeth for deflecting the second-mentioned pin.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

EDWARD J. HEIL.
JOSEPH BIRNER.

Witnesses:
EVERARD B. MARSHALL,
PHILIP D. ROLLHAUS.