

H. C. NIEDERÉE.
NON-REFILLABLE BOTTLE.
APPLICATION FILED APR. 14, 1910.

963,926.

Patented July 12, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

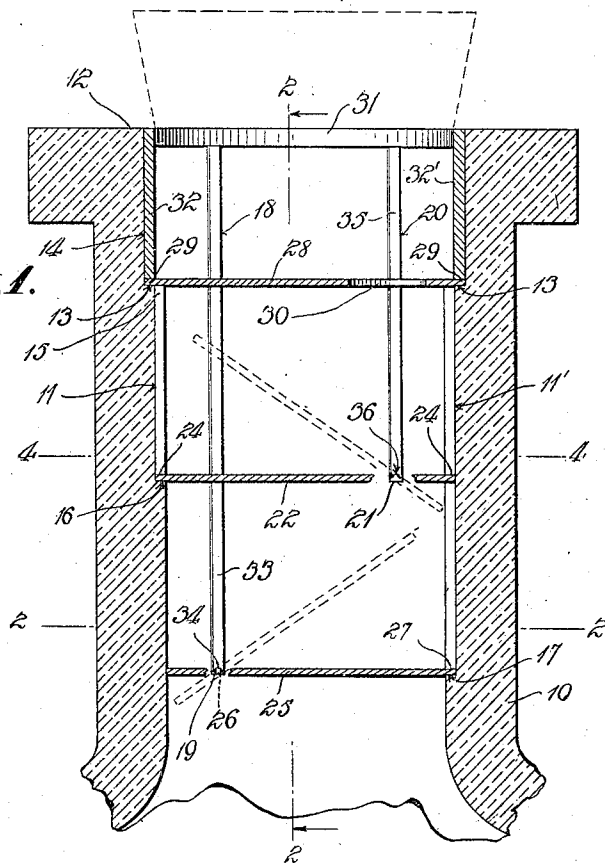
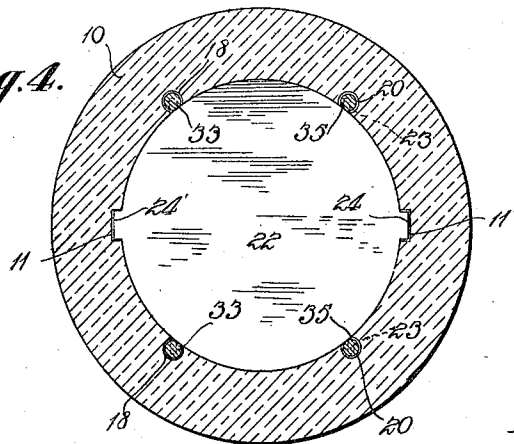


Fig. 4.



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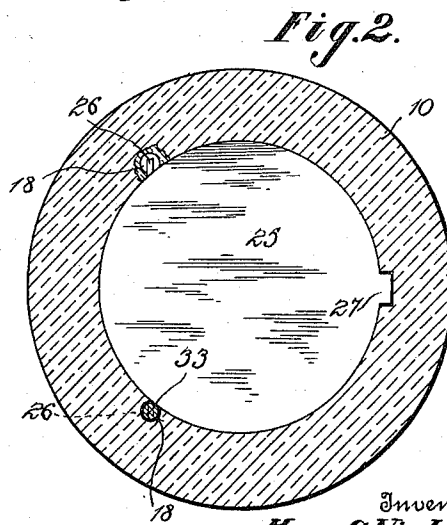
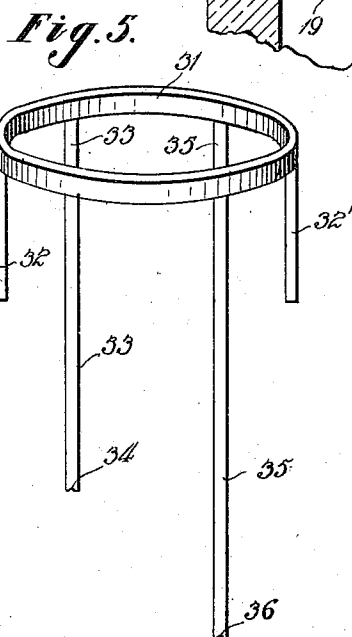
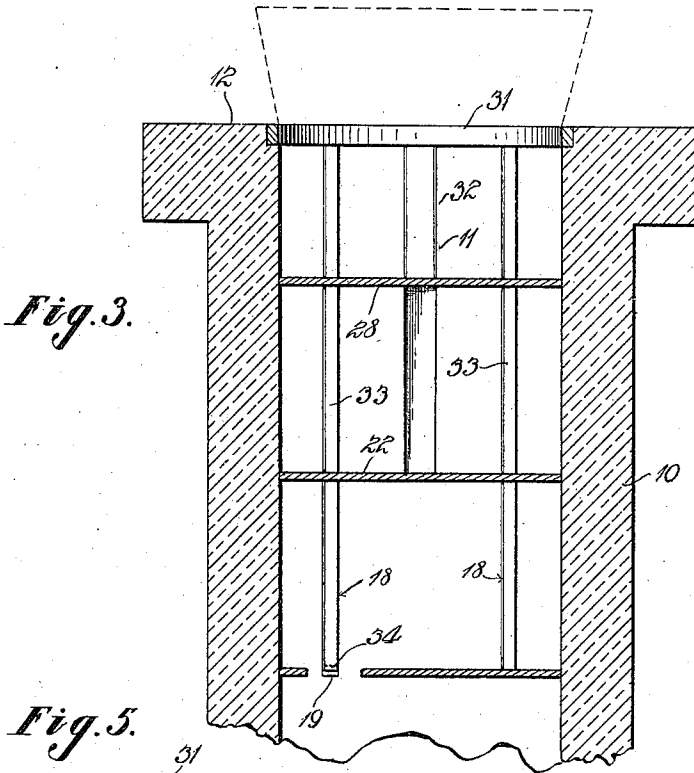
Attorneys

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

HENRY C. NIEDERÉE, OF KERHONKSON, NEW YORK.

NON-REFILLABLE BOTTLE.

963,926.

Specification of Letters Patent.

Patented July 12, 1910.

Application filed April 14, 1910. Serial No. 555,336.

To all whom it may concern:

Be it known that I, HENRY C. NIEDERÉE, a citizen of the United States, residing at Kerhonkson, in the county of Ulster, State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles; and I do hereby 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.

This invention relates to non-refillable bottles and has for its principal object to provide a novel means for preventing the refilling of a bottle, this means being applicable to the neck of a bottle without forming conspicuous chambers in the neck or otherwise distorting the shape of the neck.

The invention resides in the novel details of construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings forming part of this specification, Figure 1 is a longitudinal sectional view through a bottle neck equipped with my improved valves. Fig. 2 is a transverse sectional view taken on the line 2—2, Fig. 1. Fig. 3 is a longitudinal sectional view taken on the line 3—3, Fig. 1. Fig. 4 is a cross sectional view taken on the line 4—4, Fig. 1. Fig. 5 is a detail perspective view of the valve retainer.

The reference character 10 designates a bottle neck. Formed in the walls of the bottle neck bore are a pair of substantially oblong longitudinal slots 11 and 11'. These slots are arranged at diametrically opposite points in the bore of the bottle neck. At a slight distance below the rim 12 of the bottle neck, the slots 11 are formed shallower than adjacent the rim, this construction providing an abrupt ledge or shoulder 13 at the meeting of the deep portion 14 and shallow portion 15 of the slot. One of the slots 11 terminates in an abrupt shoulder 16 at a point a short distance below the abrupt shoulder 13 thereon and the opposite slot 11' terminates in an abrupt shoulder 17 considerably below the abrupt shoulder 16 of the first mentioned slot. The abrupt shoulders 16 and 17 constitute stops to prevent the valves, hereinafter described, from gravitating from their operative positions.

Arranged on either side of the slot 11 are a pair of circular longitudinal slots 18 which terminate in abrupt shoulders 19 ar-

ranged in the horizontal plane of the shoulder 17 of the slot 11'. These slots 18 perform the functions of guides to direct the gudgeons of the before-mentioned valve downward until they rest upon the shoulders 19, as will presently be described.

Arranged upon either side of the slot 11' are a pair of circular longitudinal slots 20 which terminate in abrupt shoulders 21 in the horizontal plane of the shoulder 16 of the slot 11, and these slots perform the functions of guides to direct downward the gudgeons of a second valve until they rest upon the shoulders 21, as will now be described.

Disposed transversely in the bore of the bottle neck is a disk valve 22 having arranged adjacent one end a pair of alined gudgeons 23 which rest upon the shoulders 21 of the slots 20. The disk valve 22 is provided on its periphery with a pair of oppositely disposed oblong lugs 24 and 24' which snugly fit in the slots 11 and 11'. The lug 24' rests upon the shoulder 16 of the slot 11, this shoulder performing the function of a seat for the valve. As will be seen by referring to Fig. 1, the pivot of the valve is disposed remote from the shoulder 16 so that when the bottle is inverted the valve rocks to the position shown in dotted lines in Fig. 1 and permits of the escape of liquid through the neck of the bottle, but when the bottle is again returned to upright position the valve gravitates to the position shown in full lines, and prevents the ingress of liquid through the neck of the bottle.

Arranged transversely in the bore of the bottle neck below the valve 22 is a disk valve 25 having adjacent one end a pair of alined gudgeons 26 which rest upon the shoulders 19 of the slots 18. The valve 25 is provided on its periphery with an oblong lug 27 which projects into the slot 11' and engages the shoulder 17 thereof, this shoulder performing the function of a seat to retain the valve normally in horizontal position. It is now clear that since the pivot of this disk valve is disposed remote from the lug 27 that when the bottle is inverted the valve will assume the position shown in dotted lines in Fig. 1 whereby the liquid may escape through the neck of the bottle, and when the bottle is returned to upright position the valve will gravitate to the position shown in full lines, and prevent of the ingress of liquid through

the neck of the bottle. It is clear that the lugs of both the valves 22 and 25 being snugly fitted in the slots 11 and 11' prevent any liquid being forced through the bottle neck under pressure. Arranged transversely in the bottle neck above the uppermost pivoted valve 22 is a stationary disk 28 which is similar in construction to the above described valves and is provided on its periphery with a pair of oppositely disposed lugs 29 which fit in the slots of the deep portions 14 of the slots 11 and 11' and bear upon the shoulders 13 thereof. An orifice 30 is formed in this disk and permits of the escape of liquid through the neck of the bottle when the valves are in open position.

For retaining the above described valves and stationary disk in the neck of the bottle, I provide a retaining member consisting of a ring 31 having arranged upon opposite sides of its lower face a pair of oblong legs 32 and 32' which snugly fit in the deep portions 14 of the slots 11 and 11' and bear with their lower edges against the top face of the disk 28 and prevent the withdrawal of said disk. Depending from the bottom face of the ring 31 on either side of the leg 32 is a pair of round legs 33 which terminate in concaved ends 34, the latter bearing directly upon the gudgeons of the lower valve 25 and retaining this valve in position. These legs 33 are sufficient in size to snugly fit in the circular slots 18 and prevent the withdrawal of the ring 31 without considerable force being used. Depending from the bottom face of the ring 31 on either side of the leg 32' is a pair of round legs 35, which terminate in concaved ends 36, the latter bearing directly upon the gudgeons of the uppermost valve 22 and retaining the valves in position. These legs also fit snugly in the circular slots 20.

In mounting the valves and retainer in the neck of the bottle, the gudgeons of the valves are slid downward in the guide slots as above described until the gudgeons rest upon the ends of the slots. The disk 28 is now dropped into position. The legs of the retaining member are now inserted in the guide slots and the retaining member lowered until the legs are in engagement with the gudgeons of the valves as above described. The retaining member is sufficient in size to require considerable pressure to be used in forcing it into the neck of the bottle, so that the retaining member cannot accidentally drop out of the bottle neck nor can it be easily removed from the bottle neck as sufficient purchase cannot be

obtained upon the retaining member to permit of the latter operation.

From the foregoing description taken in connection with the accompanying drawings, it is thought the construction and operation of my invention will be easily understood without a more extended explanation, it being understood that various changes may be made in the form, proportion, and minor details of construction within the scope of the appended claims.

What is claimed is:—

1. The combination with a bottle neck having a plurality of longitudinal slots formed in its bore, of a flap valve having gudgeons seated in said slots, and a retaining member having a ring fitting snugly in the bore of the neck and having spaced legs engaging said slots and bearing upon the gudgeons of said valve.

2. The combination with a bottle neck having longitudinally disposed slots in its bore, of a flap valve having gudgeons engaged in said slots, means within the bottle neck engaging the free end of said flap valve, and performing the function of a seat therefor, an apertured disk arranged in the bore of the neck above said valve, and a retaining member having spaced legs fitting in said slots, one pair of said legs engaging the disk and another pair of said legs engaging the gudgeons of said valve.

3. The combination with a bottle neck having a plurality of longitudinally disposed slots in its bore, of a pair of flap valves disposed transversely in the said bore and having gudgeons engaged in said slots, the gudgeons of one valve being disposed out of alinement with the gudgeons of the other valve, seats arranged in said bore engaging the free ends of said valves and retaining the same normally in closed position, an orificed disk arranged above said valves in said bore, and a retaining member having a plurality of spaced legs snugly fitting in said slots, one pair of said legs engaging said disk, another pair of said legs engaging the gudgeons of one valve, and another pair of said legs engaging the gudgeons of the other of said valves whereby to retain said disk and said valves in position.

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

HENRY C. NIEDERÉE.

Witnesses:

W. FRANK DAVIS,
H. PAINTER.