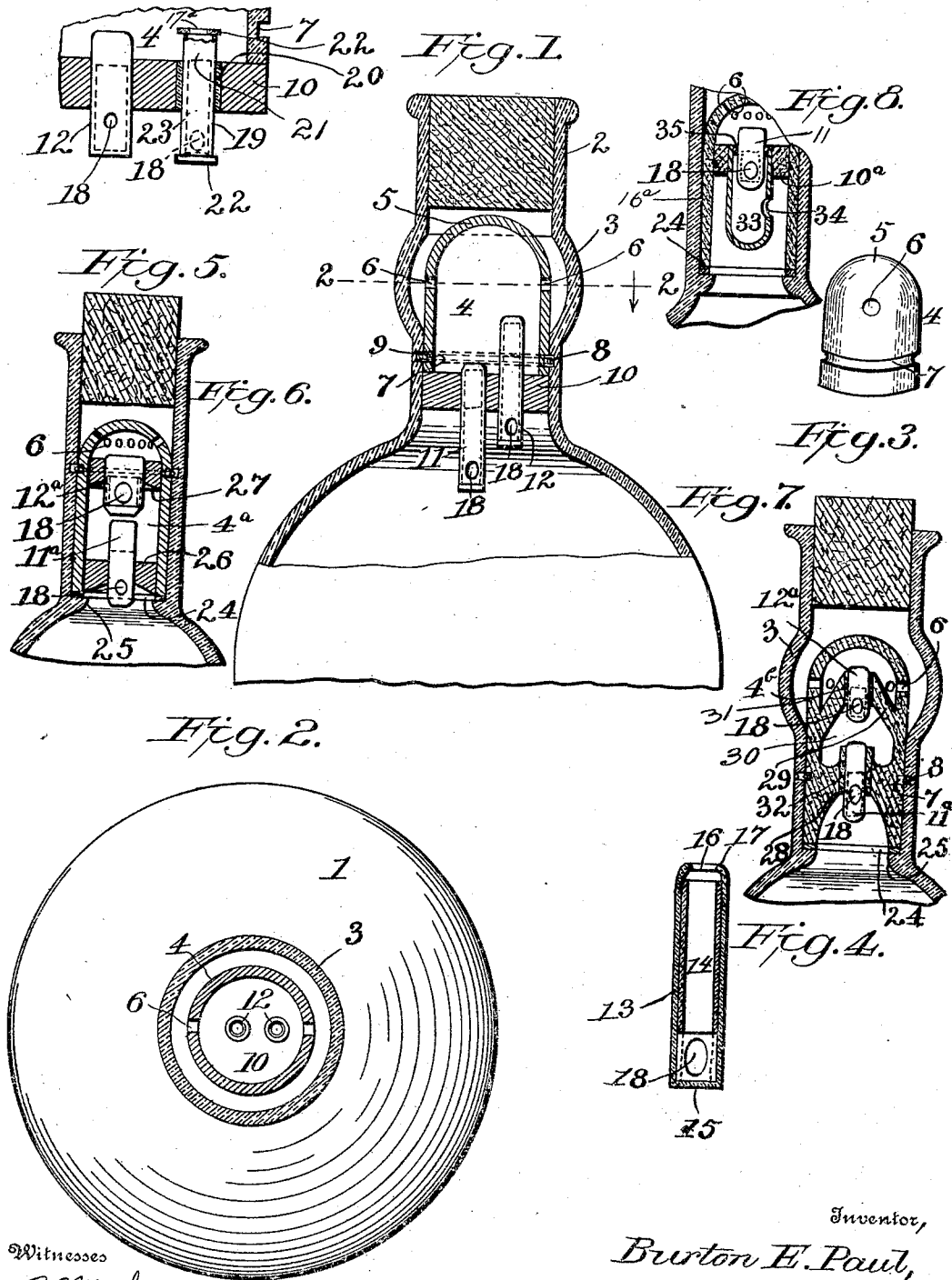


B. E. PAUL,
NON-REFILLABLE BOTTLE.
APPLICATION FILED MAY 11, 1908.

954,044.

Patented Apr. 5, 1910.



Witnesses
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UNITED STATES PATENT OFFICE.

BURTON E. PAUL, OF TACOMA, WASHINGTON.

NON-REFILLABLE BOTTLE.

954,044.

Specification of Letters Patent.

Patented Apr. 5, 1910.

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To all whom it may concern:

Be it known that I, BURTON E. PAUL, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to non-refillable bottles, and has for its object the improvement of the construction of a simple device for insertion in the neck of a receptacle or bottle for preventing a fraudulent refilling
15 of a bottle.

Another object of the invention is the construction of a non-refillable bottle device comprising a minimum number of parts, is efficient in operation, as well as comparatively inexpensive to manufacture or construct.

A further object of the invention is the peculiar construction of a guard and valve means positioned below said guard; the guard means being, preferably, constructed of non-corrodible material.

With these and other objects in view, this invention consists of certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings: Figure 1 is a vertical, sectional view of a device constructed in accordance with the present invention. Fig. 2 is a horizontal, sectional view taken on line 2, 2, Fig. 1. Fig. 3 is a perspective view of the guard. Fig. 4 is an elongated, sectional view of one of the valve devices. Fig. 5 is a fragmentary, sectional view of another embodiment of the present invention. Fig. 6 is a fragmentary view of a bottle, showing in vertical section another embodiment of the present invention, secured in the neck. Fig. 7 is a fragmentary
45 view of a bottle, showing in vertical section another embodiment of the present invention, secured in the neck. Fig. 8 is a fragmentary, sectional view of another embodiment of the present invention.

Referring to the drawings by numerals, 1 designates the body of a receptacle, which is provided with a neck 2. The neck 2 is provided, at 3, with an annular, outwardly-bulged portion for facilitating the passage
55 of liquid between the neck and the guard 4. The guard 4 comprises an inverted cup-

shaped body having a rounded or semi-spherical, upper, closed end 5 and a lower open end. Formed in the sides of the guard 4 are outlet apertures or openings 6. The guard 4 is provided in its outer-face, near its lower open end, with an annular groove 7, which registers with a similar groove 8 formed in the neck 2 below the bulged portion 3. Within the registering apertures 7 and 8 is positioned a fastening member, as for instance, a spring 9, which spring is, preferably, a resilient split band that is placed in the groove 7 prior to the insertion of the guard, and after the groove registers with the groove 8 the spring or locking means 9 securely fastens the guard in the neck against displacement.

Prior to the placing of the guard 4 in the neck a supporting member 10 is forced down into the neck, which supporting member is formed of cork. The lower edge of the guard 4 engages the top surface of the supporting member 10, Fig. 1.

The supporting member 10 is provided, preferably, with a pair of vertical openings or apertures through which extend the valve devices. Each valve device is similar in structure, but valve device 11 has its lower end positioned farther into the body 1 than the lower end of the valve device 12, for the purpose hereinafter mentioned. Each valve device comprises a primary, outer, hollow member or tube 13, Fig. 4, and an inner, hollow member or tube 14. The primary, hollow member is closed at its bottom 15 and open at its top 16. The upper end of the member or tube 13 is shrunk or reduced, as at 17, constituting a flange for preventing displacement of a freely-movable, slidable auxiliary-member 14, which is mounted in said primary member 13. The auxiliary valve member 14 is open at both ends so that liquid passing through the elongated aperture or opening 18 into members 13 and 14, is permitted to pass through member 14, and out through the other end 16 of the member 13. However, upon the primary member 13 being moved to an upright position, the freely-movable valve member 14 will slide to the bottom of the outer tube or member carrying the same, and thereby close the inlet opening or port 18.

In carrying out my invention, the valve device 11 is provided for the entrance of air into the body of the receptacle while liquid is passing through the valve device 12, for

it is to be noted that the aperture or opening 18 of the valve device 12 is placed nearer to the supporting member or cork 10 than the aperture in the other valve device, and, consequently, liquid will pass through aperture 18 of the valve device 12, while air will enter the body through the other valve device and its aperture or opening. However, owing to the inner tubes being freely-movable in the outer tubes, as soon as the receptacle is moved to an upright position, or if liquid is discharged into the neck for fraudulently refilling the receptacle or bottle, the liquid coming in contact with the upper edge of the slidable, inner valve members will force the same to a closed position, and, after the apertures have been closed, it will be impossible to open the same while liquid under pressure is contained in the bottle-neck between the outer end of the neck and the supporting member or cork 10. Therefore, it will be noted that I have provided an efficient structure, which is positive and simple in operation.

The embodiment depicted in Fig. 5 comprises one of the valve devices 12 and a valve device 19. The valve device 19 comprises a hollow or tubular section 20; said section 20 being placed within an aperture in the supporting member or cork 10. The section 20 is the same length as the thickness of said cork. Mounted in the tubular or hollow section 20 is a primary section 21, which fits comparatively snugly within section 20; the section 21 is provided with annular, integral collars 22 at its ends, which collars prevent the sliding inner valve member 23 from being displaced. The hollow section 21 is provided with an aperture or opening 18, the same as the outer member of the valve device 12, and the inner slidable section 23 normally closes said outlet or opening when the bottle is in an upright position. In the upper collar 22 is formed an outlet opening or aperture 17^a and it will thereby be seen that by having the collars 22 formed upon the ends of the section 21, thereby closing the lower end and partly closing the upper end, the valve-member 23, which has the form of an open ended tube and is positioned in the section or casing 21, will be held against displacement from the casing 21. It will, therefore, be seen that, in this embodiment, the same principle is involved, in as much as in each of the valve devices I employ an outer hollow section, open at its upper end, and provided near its inner or lower end with a side-opening or inlet and an inner hollow member or section, slidably mounted within the outer or primary section, and being adapted to close the side-opening of said outer section. The hollow members or tubes are, preferably, formed of non-corrodible material, as for instance, glass.

In the embodiment depicted in Fig. 6, the

casing 4^a is fixedly secured in the neck similar to the manner in which casing 4 is secured in the neck 3, but the casing 4^a rests at its lower end upon, preferably, a rubber washer 24. The washer 24 rests upon a ledge 25. The valve device 11^a is mounted in a filling-member 26, which is secured in the lower portion of casing 4^a, while the valve device 12^a is secured in a filling-member 27 positioned in the upper portion of casing 4^a.

In the embodiment depicted in Fig. 7, the neck is bulged the same as in the embodiment depicted in Fig. 1, and the general structure of the casing 4^b is similar to the casing 4, except that the casing is provided with substantially conical partitions 28 and 29, producing a central compartment 30. The partition 29 has a central opening, in which is mounted a cylindrical member 31, preferably, formed of cork, and within this cylindrical member, is mounted the valve device 12^a. In the central portion of the lower partition 28, is mounted a cylindrical filling-member 32, which is slightly larger than the upper cylindrical member 31, and in the member 32 is mounted the valve device 11^a.

In the embodiment depicted in Fig. 8, within the casing 16^a, is positioned a filling-member 10^a carrying, preferably, a transparent or glass receptacle 33, which has a side-opening 34. Within the upper opened end of receptacle 33 is positioned, preferably, a cork or rubber washer 35 surrounding the valve device 11. The structure depicted in Fig. 8 is employed when small quantities or amounts of a liquid is used at a time, for instance, as in the case of sauce, and the operator shakes or otherwise fills the lower portion of receptacle 33 (the receptacle is closed at its bottom), and then, subsequently, turns the bottle or device for permitting the contents of receptacle 33 to pass through the valve-opening 18 and be discharged in the upper portion of casing 4. It will be noted that when using a device of this kind, the liquid does not flow in a steady stream, as with the structures in the other embodiments, and this is desired in many cases, as suggested above.

In all of the embodiments, the same principle is involved of the valve devices and the guard casing partly or entirely surrounding the same.

What I claim is:

1. A device of the character described, comprising a guard casing, a valve-device, covered by said guard casing, said valve-device comprising a receptacle open at its upper end, and provided with a closed lower end and a side-opening, a stationary hollow valve-member covered by said guard casing, and movable valve-means in said stationary valve-member.

2. A device of the character described, 130

comprising a hollow guard-casing, a valve-
device supported in said guard-casing and
covered thereby, said valve-device compris-
ing a receiving-receptacle open at its upper
5 end and provided with a side-opening, a
stationary hollow, valve-member closed at
its lower end and provided with a side-
opening, and a slidable valve-member in said
stationary valve-member and adapted to
10 normally close the side-opening thereof.

3. In a device of the character described,
the combination with a bottle provided with
a neck, of a guard-casing in said neck, a
valve-mechanism in the neck and communi-

cating with the guard-casing, said valve- 15
mechanism comprising receptacles, each re-
ceptacle provided with a closed bottom and
a top opening in alinement with the longi-
tudinal axis of the receptacle, each recep-
tacle provided with a side opening near its 20
bottom, and valve-means for controlling the
flow of liquid through the receptacles.

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

BURTON E. PAUL.

Witnesses:

A. F. WILBUR,
C. F. KINCAID.