

F. SULLIVAN.
NON-REFILLABLE BOTTLE.
APPLICATION FILED JAN. 31, 1913.

1,062,998.

Patented May 27, 1913.

Fig. 1.

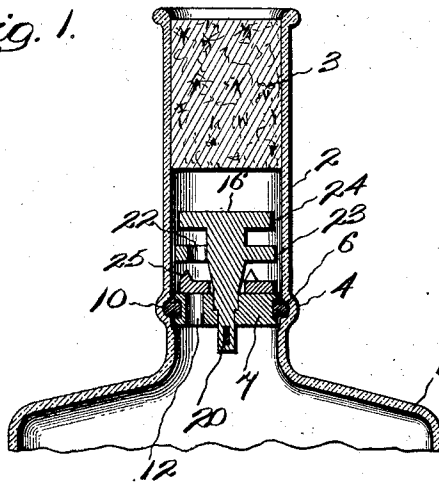


Fig. 6.



Fig. 2.

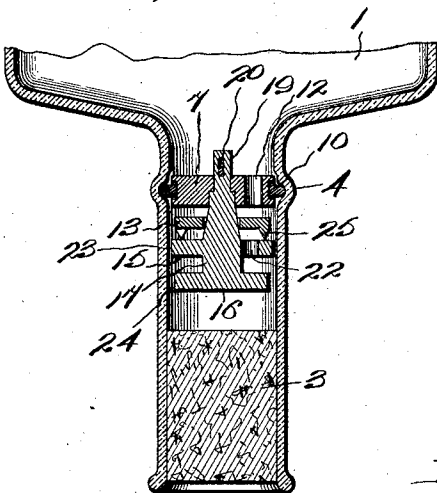


Fig. 5.

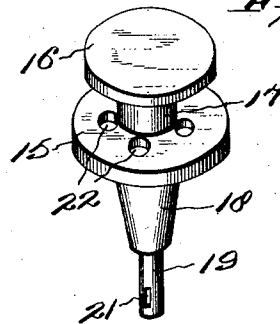


Fig. 3.

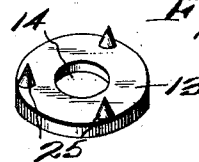
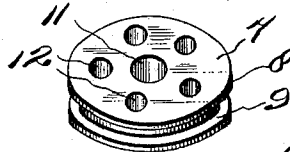


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

1,062,998.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK SULLIVAN, a citizen of the United States, residing at Port Royal, in the county of Beaufort and State of South Carolina, 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.

The present invention relates to bottles of the non-refillable type, and has for its purpose to provide a bottle of that character which, after its initial filling, may not thereafter be refilled, to the end of protecting the dispensers of honest goods against the substitution of inferior products.

The invention has for its further purpose to provide a non-refillable bottle which will be simple in design and manner of operation; wherein the cost of manufacture thereof will be comparatively small; and one wherein the device which prevents the refilling may be applied to bottles of the usual type with but slight variations in the bottle structure.

Another object of the invention consists in providing a non-refillable bottle which will be guarded against tampering to defeat its purpose; and wherein the bottle neck will require to be broken before the bottle can be refilled.

With these and other objects in view the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like numerals designate like parts in all the views:—Figure 1 is a central vertical sectional view illustrating the application of the invention; Fig. 2 is a view corresponding to Fig. 1, but showing the bottle inverted and the valve open for emptying the bottle's contents; Fig. 3 is a detail perspective view of the valve; Fig. 4 is a detail perspective view of the member providing the valve seat; Fig. 5 is a detail perspective view of the guard; and Fig. 6 is a detail perspective view of the guard securing key.

Referring to the construction in detail, 1 designates a bottle having the usual neck 2 fitted with an ordinary stopper 3, and said

neck is enlarged, as at 4, to provide an annular groove 6 adapted to provide the means for holding the non-refillable device *per se*, as will be explained further.

A disk-like member 7 is fitted within the bottle neck, and is provided on its periphery 8 with an annular groove 9 adapted to receive an expansible ring, or gasket, 10 constructed preferably of rubber. Said ring, or gasket, 10 is normally carried by the disk member 7 when said member, together with its associated parts, is inserted into the neck of the bottle to the position where said ring, or gasket, will extend to enter the groove 6, as will be obvious. The disk 7 is also provided with a central aperture 11, and a plurality of apertures 12 disposed radially with respect to said central aperture. The several apertures 12 provide the valve openings for the flow of the liquid, and the upper surface of said disk piece 7 forms the seat for the valve 13.

The valve 13 consists of a disk having a central opening 14, and said disk is adapted to rest on the valve seat and normally close the apertures 12, as in that position indicated in Fig. 1, and which position prevents any liquid entering the bottle from the neck, as will be obvious.

A guard and retaining device is provided for holding the valve in position, and for preventing any interference with the operation of said valve by the insertion of instruments, or the like, into the neck of the bottle. Said guard consists of a pair of disk-like members 15 and 16 formed integrally with a stem 17 that has a conical portion 18, and a reduced end portion 19. The end portion 19 passes through the central aperture 11 of the disk 7 and is secured thereto through the medium of a key, or pin, 20, that fits within a key opening 21 formed in said reduced stem portion 19. The disk 15 is formed with a plurality of annularly arranged openings 22 which readily permit of the flow of liquid in either direction through the bottle neck. And to further facilitate this flow, both the disks 15 and 16 are of a diameter less than the inner diameter of the neck of the bottle to form annular passages 23 and 24, as shown clearly in Figs. 1 and 2. The disk 16 presents a plain surface to the neck opening and by reason of which the inner mechanism of the device is guarded against the insertion of

instruments, or the like, for the purpose above stated. The valve 13 is provided with a plurality of projecting members 25 located on the upper face thereof, and which have
 5 for their purpose to engage with the disk 15, when the bottle is inverted as in Fig. 2, and in that position prevent said valve from closing the openings 23, but provide a clearance, or passageway, for the flow of the
 10 liquid when emptying the contents of the bottle.

The device may be manufactured of aluminum, glass, or porcelain, but preferably the latter, and since the parts employed are
 15 only four in number (excepting the gasket 10) it will be readily seen that these parts may be readily cast at comparatively small cost, and that their manner of assembling is simple.

20 It is obvious that those skilled in the art may vary the details of construction and arrangement of parts without departing from the spirit of my invention, and therefore I do not wish to be limited to such features
 25 except as may be required by the claims.

The conical portion 18 of the guard stem provides an inclined way or support for the valve 13, and acts to cause said valve to be seated when the bottle is held in a horizontal
 30 position, and in this manner prevents the bottle from being filled when it is held in a horizontal position.

I claim:—

35 1. A non-refillable bottle comprising a neck having an annular groove on the inner side thereof; an apertured disk member located in said neck and providing a valve seat; means engaging with said disk member and the bottle neck and holding the
 40 valve seat in position; a valve guard comprising a pair of spaced disks and a stem,

said stem passing through and secured to said apertured disk member; an apertured disk valve fitting on the guard stem between the valve seat and the adjacent guard
 45 disk, and adapted to close the openings of the valve seat when the bottle is in upright position; and a plurality of spacing members projecting from the valve seat and providing a flow passage when the bottle is in
 50 inverted position, substantially as described.

2. A non-refillable bottle comprising a neck having an annular groove on the inner side thereof; an apertured disk member located in said neck and providing a
 55 valve seat; means engaging with the disk member and the bottle neck and holding the valve seat in position; a valve guard comprising a pair of spaced disks and a stem formed integrally therewith, one of said
 60 disks having apertures providing fluid passages and the other disk guarding the perforated disk; said stem having a reduced end portion passing through the valve seat disk; a member passing through said
 65 reduced end portion of the stem, and securing the guard to said valve seat disk; an apertured disk valve fitting loosely on the guard stem between the valve seat and the perforated disk of the guard, and adapted to
 70 close the openings of the valve seat when the bottle is in upright position; and a plurality of spacing members projecting from the valve seat and providing a flow passage when the bottle is in inverted position, sub-
 75 stantially as described.

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

FRANK SULLIVAN.

Witnesses:

ANDREW KEAG,
 GINMAN FALCK.