No. 727,244. PATENTED MAY 5, 1903.

S. WILKINSON.

NON-REFILLABLE BOTTLE.

APPLICATION FILED MAY 26, 1902.

NO MODEL.

Fig. 1.

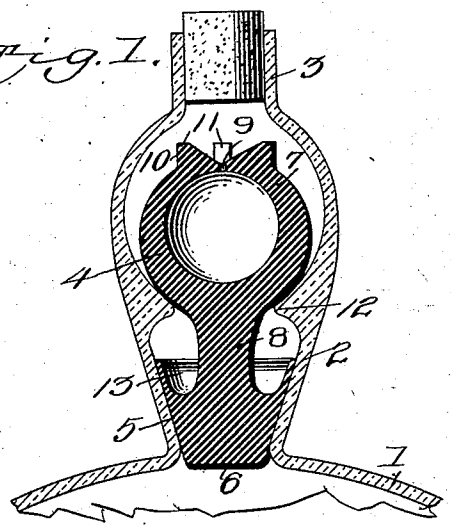


Fig. 2.

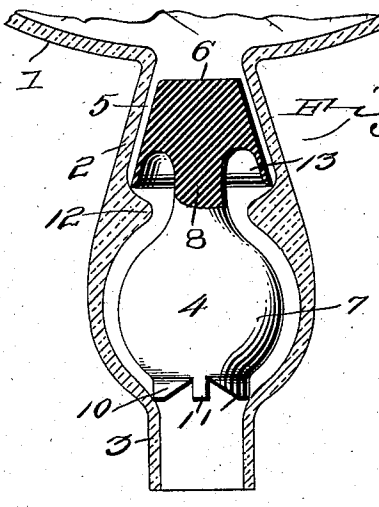


Fig. 3.

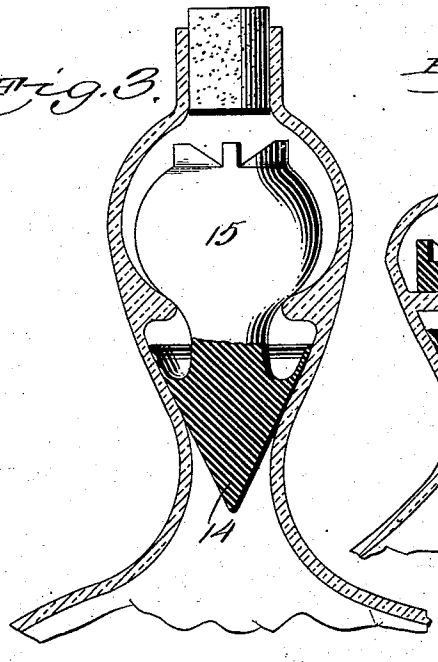


Fig. 4.

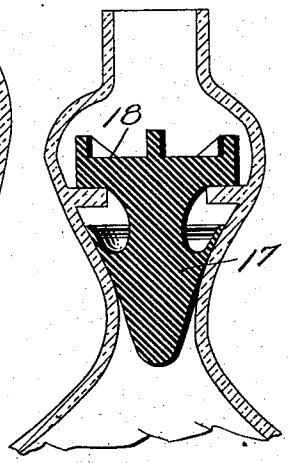
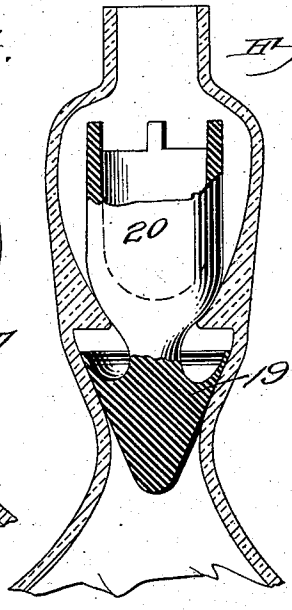


Fig. 5.



Witnesses
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No. 727,244. Patented May 5, 1903.

UNITED STATES PATENT OFFICE.

SAMUEL WILKINSON, OF OSCEOLA MILLS, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO EDGAR W. TURLEY, OF OSCEOLA MILLS, PENNSYLVANIA.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 727,244, dated May 5, 1903.

Application filed May 26, 1902. Serial No. 109,038. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL WILKINSON, a citizen of the United States, residing at Osceola Mills, in the county of Clearfield and State of Pennsylvania, have invented a new and useful Non-Refillable Bottle, of which the following is a specification.

The invention relates to improvements in non-refillable bottles.

The object of the present invention is to improve the construction of non-refillable bottles and to provide a simple and comparatively inexpensive one capable after a bottle or analogous receptacle has received its original contents of effectually preventing the introduction of a liquid into the bottle, whereby fraudulent adulterations and refillings will be rendered impossible.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a vertical sectional view of a portion of a non-refillable bottle constructed in accordance with this invention. Fig. 2 is a similar view illustrating the arrangement of the parts when the bottle is inverted. Fig. 3 is a vertical sectional view illustrating a modification of the invention. Fig. 4 is a similar view showing another form of the invention. Fig. 5 is a vertical sectional view of a further modification.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a bottle provided with a neck 2, having a contracted upper cork-receiving portion 3 and provided below the same with a valve-chamber, which is oppositely tapered, as shown, and which receives a valve 4. The upper portion 3 is adapted to receive the ordinary stopper and enables the bottle or other receptacle to be sealed in the ordinary manner. The tapering valve-chamber, which is preferably circular in cross-section, has an enlarged upper portion, and its lower portion 5 forms a valve-seat and is adapted to receive the lower portion 6 of the valve to close the neck of the bottle and prevent the entrance of a liquid into the same when the said bottle is in an upright position.

The valve is constructed of white rubber or other suitable material, and it is composed of the said lower portion 6 and an upper enlarged portion 7, which is arranged in the upper portion of the valve-chamber and which is connected with the lower solid portion 6 by a neck 8. The upper portion 7, which is approximately spherical, is hollow, as clearly shown in Fig. 1, and is provided at the top with perforations 9, forming vents and adapted to permit the escape of air from the interior of the upper portion of the valve when the latter is compressed to introduce it into the neck of the receptacle. The upper portion 7, which is of greater diameter than the cork-receiving portion of the neck, may be readily compressed to pass through the same, and the lower portion or plug is also capable of sufficient compression to readily pass through the upper portion of the neck of the receptacle. The valve may be provided with a flat upper face or top 10, and it has a series of projections 11, extending from the top and adapted to abut against the upper portion of the valve-chamber, as illustrated in Fig. 2, when the receptacle is inverted, whereby the body portion of the valve is offset from the walls of the valve-chamber to provide passages for the escape of the contents of the bottle. The projections, which are radially arranged, are shown tapering; but any other form of projection may be employed.

The valve-chamber is provided on its interior at a point between its ends with an inwardly-extending annular flange or projection 12, forming an upper seat and adapted to receive the enlarged upper portion of the valve when the body is in an upright position. The lower portion or plug, which is tapering, is provided at its upper edge with an annular flange or web 13, forming an extension of the side faces of the lower portion when the receptacle is in an upright position, as clearly shown in Fig. 1. This thin flange or web 13 is extremely flexible, and it forms a cup-shaped receptacle at the top of the lower portion of the valve and is adapted to be forced outward against the walls of the valve-cham-

ber by external pressure should any attempt be made to force a liquid into the receptacle. When the bottle is in an inverted position, the liquid contents are adapted to readily force the extension or flange inward, and the same will not obstruct the discharge of the contents of the bottle. The inwardly-extending intermediate annular projection or flange 12 is tapered and presents inclined upper and lower faces, and it extends inward over the flexible flange or extension 13 and forms a guard for the same to prevent an instrument from being introduced into the neck of the receptacle and interfering with the operation of the valve. Should the valve be raised by any means, the extension or flange 13 will be closed against the walls of the valve-chamber should a liquid be poured into the latter, and such liquid will be effectually prevented from entering the bottle or other receptacle.

The form of the valve-chamber and the valve may be considerably changed without departing from the spirit of the invention, and in Fig. 3 a conical lower portion or plug 14 is shown. The upper portion 15 of the valve is similar to that heretofore described. The valve 17 (shown in Fig. 4) is provided with a flat disk-shaped upper portion 18, which is solid, but which is adapted to be compressed sufficiently to pass through the upper stopper-receiving portion of the neck. In Fig. 5 of the drawings the valve 19 is provided with a cup-shaped upper portion 20, open at the top and adapted to be compressed in introducing the valve into the valve-chamber. The cup-shaped upper portion is adapted to coöperate with the cavity or recess at the top of the lower portion or plug in holding the valve closed when the same is subjected to external pressure.

The lower face of the intermediate flange forms a sufficient shoulder to effectually prevent the stopper from being withdrawn after it has been placed in position, and should the lower stopper or valve be drawn outward the annular flange or extension will be compressed against the lower face or shoulder of the intermediate flange, and the top of the lower portion or plug will be expanded sufficiently to prevent withdrawal.

It will be seen that the non-refillable bottle is exceedingly simple and inexpensive in construction and that it is capable of effectually preventing a liquid from being introduced into a receptacle after the valve has been placed in position. It will also be clear that the valve may be readily placed in the valve-chamber after the bottle or other receptacle has received its contents and that the improvements are applicable to all kinds of receptacles for all kinds of liquids.

It will be understood that various changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What I claim is—

1. In a device of the class described, the combination with a receptacle having a neck provided with a valve-chamber, said valve-chamber being provided with a lower seat and having an intermediate flange, of an elastic valve composed of a lower portion adapted to fit on the valve-seat and provided with a thin flexible flange or web arranged beneath the intermediate flange of the neck, and an upper compressible portion connected with the lower portion or plug, substantially as described.

2. In a device of the class described, the combination of a receptacle having a neck provided with a valve-chamber, said valve-chamber being provided with an intermediate flange and having a valve-seat below the same, and an elastic valve composed of upper and lower portions located above and below the flange and connected together and being of greater diameter than the space within the flange, substantially as described.

3. In a device of the class described, the combination of a receptacle provided with a neck having an upper stopper-receiving portion and provided with a valve-chamber, said valve-chamber being provided with an intermediate flange and having a valve-seat below the same, and an elastic valve composed of upper and lower portions and a connecting-neck, the upper and lower portions being of greater diameter than the diameter of the valve-chamber at the flange, substantially as described.

4. In a device of the class described, the combination of a receptacle having a neck provided with a valve-chamber having an intermediate flange, and an elastic valve having upper and lower portions located above and below the flange, the lower portion being provided at the top with an upwardly-extending flange or web forming a cup-shaped recess and adapted to be moved inward and outward by the liquid to permit the contents of the bottle to be decanted and to prevent a liquid from being introduced into the same, substantially as described.

5. In a device of the class described, the combination of a receptacle having a neck provided with a valve-chamber having an intermediate flange, and an elastic stopper or valve composed of upper and lower portions and a connecting-neck, the upper portion being compressible and provided at the top with projections and the lower portion being provided at the top with an upwardly-extending thin flexible flange or web, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL WILKINSON.

Witnesses:
JAMES A. STODDART,
GEORGE E. JONES.