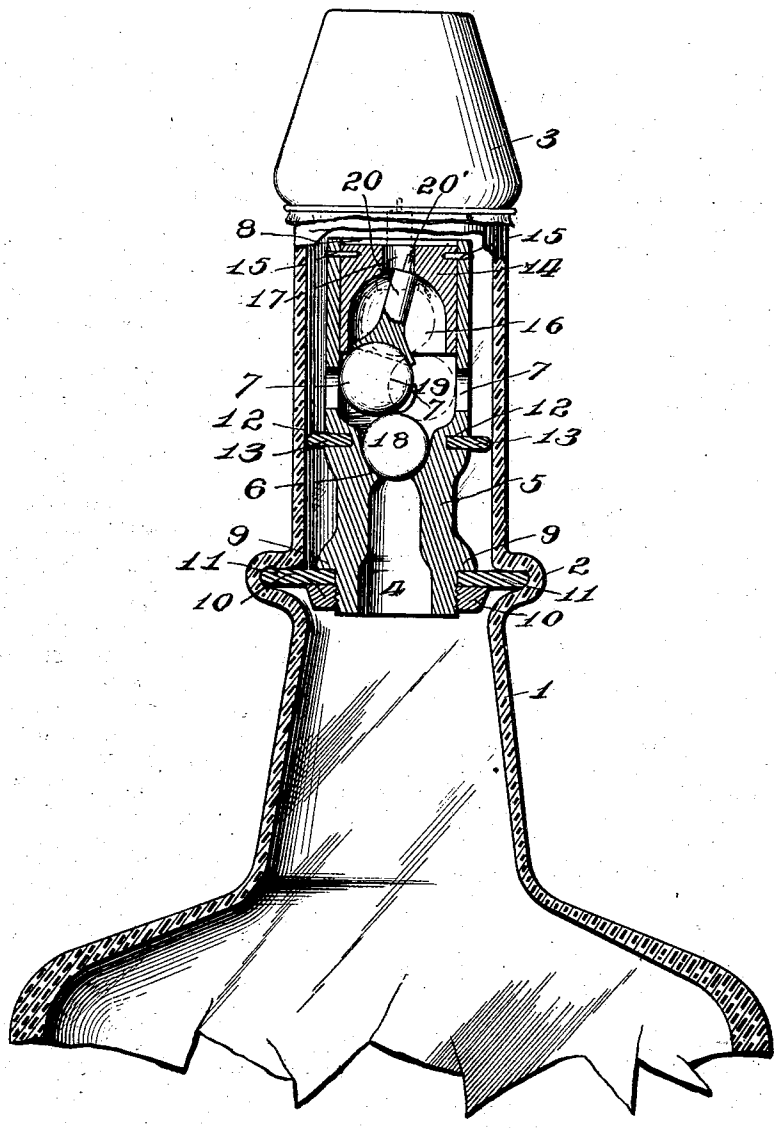
No. 696,275. Patented Mar. 25, 1902.

J. M. SHEPPARD, JR.

NON-REFILLABLE BOTTLE.

(Application filed July 8, 1901.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES M. SHEPPARD, JR., OF COLUMBIA, TENNESSEE.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 696,275, dated March 25, 1902.

Application filed July 8, 1901. Serial No. 67,480. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. SHEPPARD, Jr., a citizen of the United States, residing at Columbia, in the county of Maury and State of Tennessee, 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 improvements in means for preventing the fraudulent refilling of receptacles, and more particularly to that form employing a non-removable valved stopper.

It consists in certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the accompanying drawing the figure represents a longitudinal vertical section through a valved stopper embodying the features of the present invention, the said stopper being in position within the throat of any desired receptacle.

Referring to the drawing by numerals, 1 represents the neck or throat of a receptacle provided with an annular flare or bulb, as at 2, forming a suitable internal annular groove and adapted to be closed by any suitable cap ordinary stopper, as 3, which cap may be removed and replaced at will.

In order to accomplish the object of the present invention, I provide a valved stopper, as 4, which in operation is placed within the neck 1. This stopper comprises a tube, as 5, which is provided at a suitable point with a valve-seat, as 6, apertures 7 7 above the same, and an enlarged upwardly-flaring opening at the upper end, as at 8. Near the lower end of tube 5 is provided an annular shoulder, as 9, and the lower end of the said tube is threaded to receive a suitable nut, as 10, which nut in operation serves to clamp a suitable preferably elastic washer, as 11, against the said shoulder 9, whereby a flexible annular flange is formed of the said washer. Above the said shoulder 9 is preferably formed an annular groove, as 12, within the said tube, which groove is adapted to receive a preferably elastic washer, as 13, the said washer being preferably sprung into position within the said groove, but may be applied in any preferred manner, as by being divided. It will be seen by reference to the drawing that washer 11 is of sufficient diameter to fit snugly within the flared portion 2 when in position, and washer 13 is of a diameter a little more than equivalent to that of the passage within throat 1, so as to fit closely the walls thereof, whereby liquid is prevented from passing downwardly into the receptacle past the said washer 13.

The enlarged opening 8 of tube 5 is preferably closed by a suitable plug, as 14, which is secured in position within the said tube by means of suitable pins, as 15 15. The plug 14 is provided in its lower end with an enlarged aperture, as 16, preferably of curved contour, and a perforation, as 17, communicates from the inner end of aperture 16 with the upper face of plug 14. A ball-valve, as 18, is adapted to be normally held against valve-seat 6 by means of its own weight, together with the pressure of a similar ball, as 19, resting upon the same. The ball 19 is held in position by means of a suitable valve-locking member or key, as 20, adapted in operation to rest upon the said ball 19, the said key being formed with a suitable concaved lower end for fitting the contour of ball 19 and a shouldered upper end providing a reduced portion, as 20', which reduced portion is adapted at all times to remain within the perforation 17, while the upper shoulder of the said key in locking position engages the conical wall of the aperture 16, and thereby prevents the jarring of ball 19, and with it ball 18, out of its normal position while the receptacle is held upright.

In operation the receptacle is first filled and then the stopper 4 is inserted within the throat 1, the washer 11 permitting compression by its elasticity and elevation on account of smaller annular shoulder 9 above nut, and when the stopper is in the position shown in the drawing the said washer will spring into the flared portion 2 and firmly retain the said stopper from removal. The shoulder 9 being of less circumference than the nut below will permit of device being shoved into position, but nut and washer will prevent its removal. A suitable cap 3 may then be applied as may

be desired. When it is desired to remove the contents of the receptacle, the cap 3 is removed and the receptacle inverted; but the valve 18 will not permit the passage of such contents until the receptacle is shaken sufficiently to disengage the shouldered portion of key 20 from the wall of aperture 16, whereby the said key will be caused to assume the position shown in dotted lines, and the valve will thereby be opened to permit the passage through apertures 7 of the contents of said receptacle.

A great advantage will be readily apparent in the particular construction of key 20 and the arrangements of balls 18 and 19, whereby the said balls will be held in position by the said key, owing to the engagement of its shoulder with the wall of aperture 16, regardless of any jarring or shaking action brought to bear upon the receptacle, as long as the same remains in an upright position, and after the receptacle has been inverted and part or all of the contents removed and then caused to assume its upright position the said key 20 will immediately assume its valve-locking position and prevent any refilling of the said receptacle.

Although I have specifically set forth one particular embodiment of the present invention, yet I do not wish to be understood as limiting myself to the exact form specified, but shall feel at liberty to deviate from the shape, size, and minor details of structure within the spirit and scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A non-refillable receptacle, comprising in its construction a throat formed upon a suitable body portion, a fold in the material of said throat forming an annular flare extending outwardly about said throat, a stopper provided with an elastic supporting and an elastic spacing or sealing flange for properly holding the stopper in place, the said stopper being adapted to be inserted into said throat after said receptacle has been filled, in such manner as to permit the said flange to enter the said flared portion, whereby the said stopper is incapable of removal, and means within said stopper for permitting the removal of the contents of said receptacle and for preventing the refilling thereof, substantially as described.

2. In a non-refillable receptacle, the combination with a throat thereof provided with an annular flared portion, of a stopper adapted to be inserted within said throat, an annular shoulder near the lower end of said stopper, a nut of greater external diameter than said shoulder adapted to be threaded upon the said end, an elastic washer adapted to be clamped between said nut and said shoulder, the construction being such that when the said stopper is inserted into the throat the said washer is adapted to yield to downward pressure on account of shoulder above being smaller in diameter than the nut below washer, said washer and nut forming a lock for stopper in neck or throat of both, the said stopper being formed with a longitudinal central bore, a valve-seat within the stopper, a valve adapted to rest thereupon, means for locking said valve in such position, and means for permitting the said valve to leave its seat, substantially as described.

3. In a non-refillable receptacle, the combination with the throat thereof provided with a shouldered portion, a stopper adapted to be inserted into said throat, an inner washer for engaging said shoulder for preventing the removal of said stopper, an outer flexible washer embedded in the material of said stopper and adapted to have its outer edge fit snugly the walls of said throat, the said stopper being provided with a longitudinal bore and side apertures communicating therewith, means for partially closing the upper end of said bore, a valve within the said stopper and beneath said closure, and a movable key above said valve for retaining the same in its seat when the bottle is not inverted, substantially as described.

4. In a non-refillable receptacle, the combination with the throat thereof, of a non-removable stopper within the same provided with a longitudinal bore and side apertures communicating therewith, a plug closing the upper end thereof, the lower end of the plug being formed with a conical aperture, and a perforation extending from the said aperture to the upper face of the plug, a valve-seat within said stopper, a ball-valve resting upon the same, a ball mounted upon said valve, a key provided with a concaved end adapted to rest upon said last-mentioned ball, and a reduced extension at the upper end of said key adapted to lie normally within said perforation, said reduced portion forming an annular shoulder near the upper end of said key, which shoulder is adapted to engage the walls of said first-mentioned aperture and thereby lock said valve in its seat, substantially as described.

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

JAMES M. SHEPPARD, JR.

Witnesses:

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FRANK H. SMITH.