No. 740,995. PATENTED OCT. 6, 1903.

J. M. STAFFORD.

NON-REFILLABLE BOTTLE.

APPLICATION FILED MAY 26, 1903.

NO MODEL.

Fig. 1.

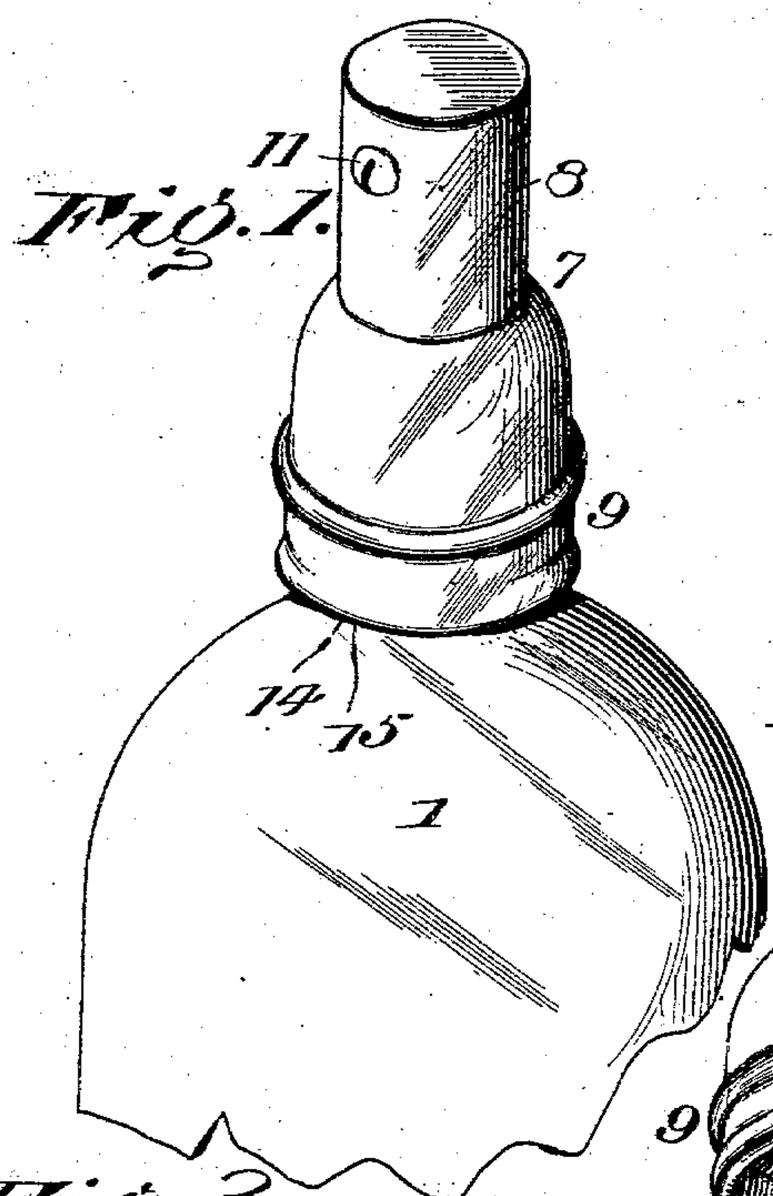


Fig. 2.

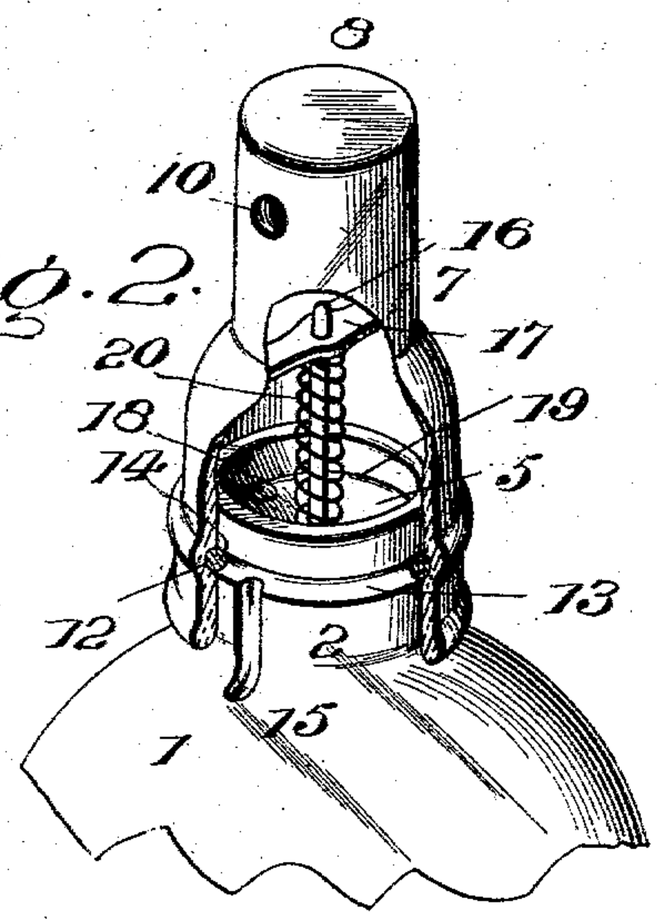


Fig. 3.

Fig. 4.

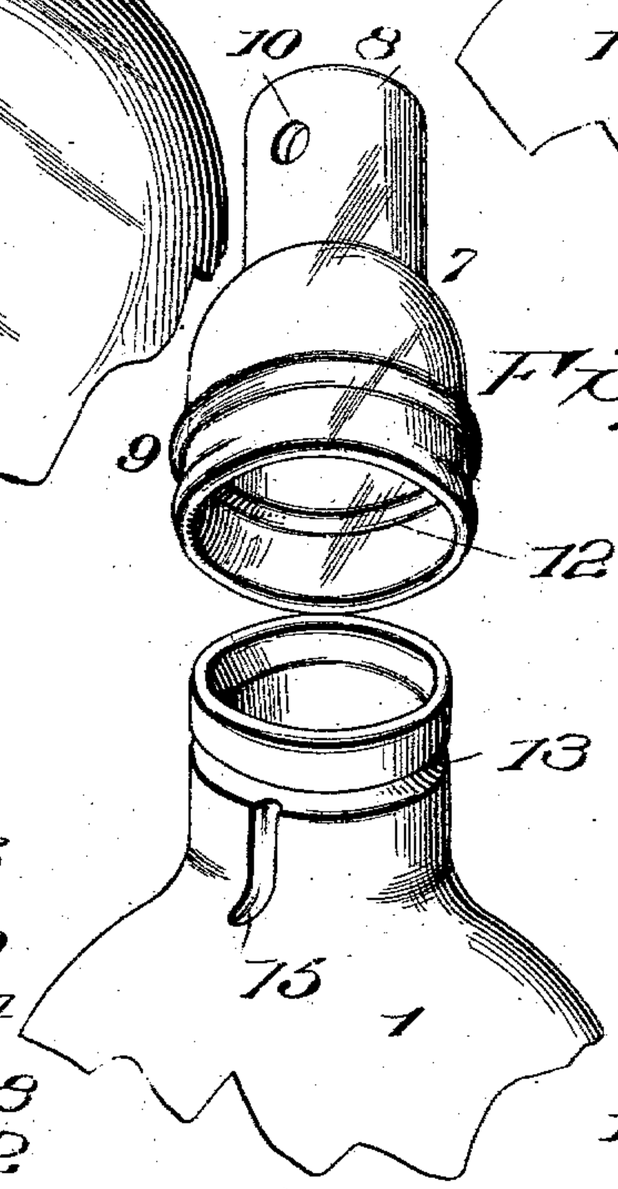
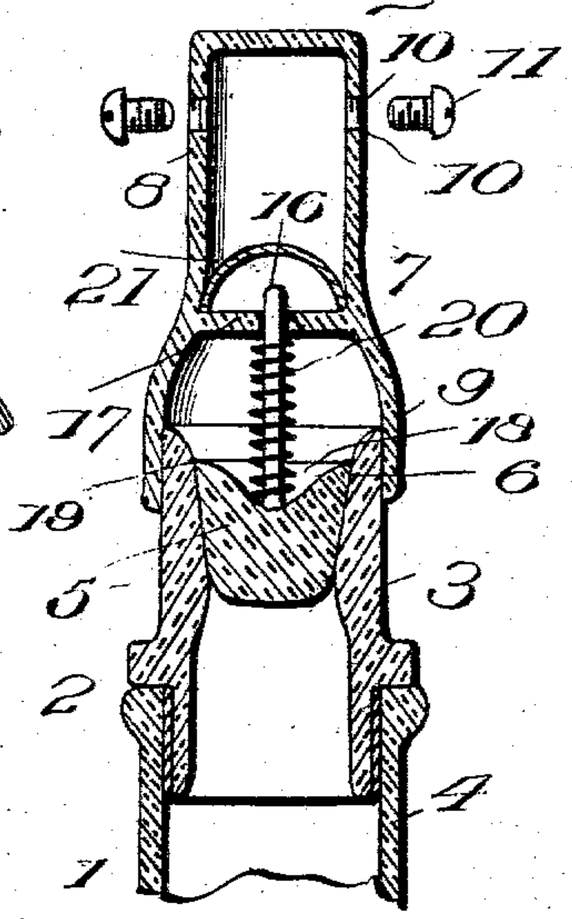


Fig. 5.



WITNESSES

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No. 740,995. Patented October 6, 1903.

UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 740,995, dated October 6, 1903.

Application filed May 26, 1903. Serial No. 158,874. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. STAFFORD, a citizen of the United States, residing at Petersburg, in the county of Pike and State of Indiana, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

The proprietor of a meritorious or particular brand of goods and the consumer thereof have not infrequently been imposed upon by the nefarious practice of refilling the package with an inferior and cheaper class of merchandise or article.

This invention is designed to protect the proprietor and the consumer of a special brand and kind of goods by providing a novel form of closure which will preclude the refilling of the bottle, receptacle, or package after being emptied without rendering detection certain and easy by the average person exercising reasonable care and scrutiny.

The invention consists, essentially, of a tube, a valve closing downward with reference to the tube, a cap secured to the tube and having the valve opening upward therein, and means arranged within the cap for directing the valve in its movements and adapted to insure proper seating thereof.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the upper portion of a bottle or kindred package embodying the invention. Fig. 2 is a view similar to Fig. 1, having a portion of the cap broken away. Fig. 3 is a vertical central section of the parts shown in Fig. 1. Fig. 4 is a perspective view of the upper portion of a bottle or like receptacle and the cap coöperating therewith, the parts being separated. Fig. 5 is a view similar to Fig. 3, showing a modification, the latter consisting of having the tube composed of sections.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The bottle, receptacle, or package embodying the invention is indicated at 1 and provided with tube 2, which constitutes the usual neck. The parts 1 and 2 may be of any form and construction. In the construction shown in Fig. 5 the tube is composed of sections 3 and 4, the latter being preferably the neck of the bottle or package, and the section 3 being cemented or secured thereto in any substantial way, so as to prevent separation of the parts by ordinary means without insuring mutilation and rendering detection possible. The upper end of the tube, whether of integral or sectional formation, is constructed to form a seat for valve 5, which is adapted to close downward with reference to the tube and to open upward. In the preferable construction the tube has the upper end of its opening flared to form a valve-seat, as indicated at 6, and the valve 5 is of corresponding taper to obtain firm and tight seating thereon.

A cap 7 is cemented or otherwise secured to the tube 2 by means of a substantial joint, and its upper end is contracted, as shown at 8, and its lower portion swelled or enlarged, as indicated at 9, so as to encircle the upper portion of tube 2 and provide ample room for the upward movement of valve 5 when unseating. Openings 10 are provided in the sides of cap 7 near its upper end and are adapted to be closed by plug 11 threaded therein to facilitate removal of the plug when it is required to pour off the liquid contents of the bottle or package. Usually two openings 10 are provided and are located at diametrically opposite points, one of the openings constituting an outlet for the liquid, and the other opening acting in the capacity of a vent for the admission of air to take the place of the liquid drawn off. When the tube and cap are specially constructed for coöperation with each other, complementary grooves 12 and 13 are formed in the opposing or meet-

ing walls, so as to register and form a passage to receive a cementing substance 14, by means of which the two parts are firmly united. A filling-channel 15 is formed in one of the parts and communicates at its upper end with the annular groove thereof, its lower end being exposed to admit of the cementing substance being forced therein and directed by said filling-channel into the annular space formed by the matching annular grooves 12 and 13. As shown, the filling-channel 15 is formed in a side of tube 2. To prevent tampering with the joint between the parts 7 and 2, the cap is constructed so that when in position its lower edge will touch the body portion of the bottle or package at the base of the tube, as indicated most clearly in Fig. 3.

The valve 5 may be of any suitable material and is provided with a centrally-disposed stem 16, which is directed in its reciprocating movements by guide 17, arranged within cap 7, and in the preferable construction consisting of a cross-bar centrally apertured for the passage of stem 16 therethrough. The upper end of the valve is depressed, as shown at 18, said depression being deepest at the root of stem 16 and flaring upward and outward and intersecting with the outer wall of the valve, so as to provide an approximate knife-edge 19, which will prevent engagement therewith of a wire or other object introduced through an opening 10 and passed down into the cap and tube with the intention of acting between the valve and its seat, so as to hold the valve open and admit of refilling the bottle or package. The edge 19 and the flaring wall of the depression 18 ward off any wire, instrument, or object and prevent the consummation of the object for which the same has been employed. A light spring 20 exerts a downward pressure upon valve 5 to hold the same seated under normal conditions, said spring being mounted upon stem 16 and confined between valve 5 and guide 17 and constructed of material not affected by the contents of the bottle or package. The spring 20 must be of just sufficient tension to hold valve 5 seated when the bottle is empty and inverted, but yield when the bottle or package contains any liquid and is turned to draw off the same. In other words, the tension of spring 20 is sufficient to counterbalance the weight of valve 5 and hold the same seated, but to yield under the combined weight of the valve and the liquid exerting a pressure thereon, so as to permit unseating of the valve and the pouring off of the contents of the bottle or package when the same is turned for this purpose in the accustomed way.

To further increase the safety of the device and prevent tampering with the valve, a guard 21 is located within the cap and extends over the upper end of stem 16. This guard 21 consists of an arched piece of such formation as not to obstruct the outflow of the liquid contents of the bottle, but yet prevent a wire or other instrument from reaching the valve or stem in an attempt to effect unseating thereof. In its simplest construction the guard 21 consists of a strip located above guide 17 and curved upward intermediate of its extremities.

In accordance with this invention it is essential that the bottle, receptacle, or package be filled prior to the application of the valve and cap thereto. The construction shown in Fig. 5 admits of the invention being applied to any kind of bottle, jug, jar, receptacle, or package having a neck, the latter forming, in effect, a part or section of the tube when part 3 is fitted thereto, the two parts being jointed in any effective and substantial way, as stated.

Having thus described the invention, what is claimed as new is—

1. In a non-refillable bottle or like package, the combination of a tube, a valve adapted to close downward with reference thereto, a cap secured to said tube and provided with openings in its sides adjacent to its upper closed end and plugs threaded into the said openings, substantially as set forth.

2. In a non-refillable bottle or like receptacle, the combination of a tube, a stemmed valve closing downward with reference to said tube, an exposed cap forming a prolongation of the tube and secured thereto and provided with an outlet, a guide arranged within said cap and apertured to receive the stem of the valve for directing the latter in its movements, and a spring confined between said guide and valve, substantially as described.

3. In a non-refillable bottle or like receptacle, the combination of a tube, a stemmed valve closing downward with reference to said tube, a cap secured to said tube and having its lower portion swelled and its upper portion contracted and a guide arranged within the cap at the juncture of the swelled and contracted portions thereof and having an opening to receive the stem of the valve, substantially as specified.

4. In a non-refillable bottle or like receptacle, the combination of a tube, a valve closing downward with reference to said tube and having an upwardly-extended stem, an exposed cap forming a prolongation of the tube and secured thereto, a guide located within the cap and coöperating with the stem to direct the valve in its vertical movements, and a guard located within the cap above the guide, substantially as and for the purpose set forth.

5. In a non-refillable bottle or like receptacle, the combination with a tube provided with a valve-seat, of a valve for closing downward upon said seat and having a depression in its upper end outwardly and upwardly flared and intersecting with the outer wall of the valve to form a knife-edge, substantially as and for the purpose specified.

6. In a closure for bottles, the combination

of a tube, a valve arranged to close downward on the tube and having a stem, a cap encircling the tube and secured thereto and having its upper portion contracted and provided in its sides adjacent to its closed end with plug-controlled openings, a cross-bar secured within the cap about at the base of its contracted portion and apertured to receive the stem of the valve, a light spring mounted on the stem and confined between the valve and the said cross-bar, and a guard arranged over the stem of the valve and secured within the cap at opposite points, substantially as specified.

7. In a closure for bottles and the like, a tube having its upper end flared to form a valve-seat, a cap having its lower end flared and contracted about and secured to the flared end of the tube, a valve adapted to close downward upon said valve-seat and open upward into the space of the cap formed by the lower flared end thereof, and means arranged within the cap for directing the valve in its movements and adapted to insure proper seating thereof, substantially as set forth.

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

JAMES M. STAFFORD.

Witnesses:

GENEVIEVE MATTHEWS,

GEORGE G. WATT.