T. S. PHILLIPS.

NON-REFILLABLE BOTTLE.

APPLICATION FILED JAN. 11, 1915.

1,164,014. Patented Dec. 14, 1915.

Fig. 1.

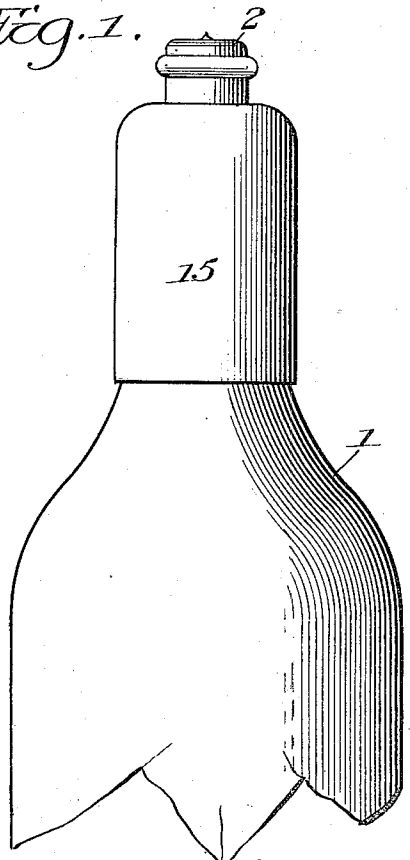


Fig. 2.

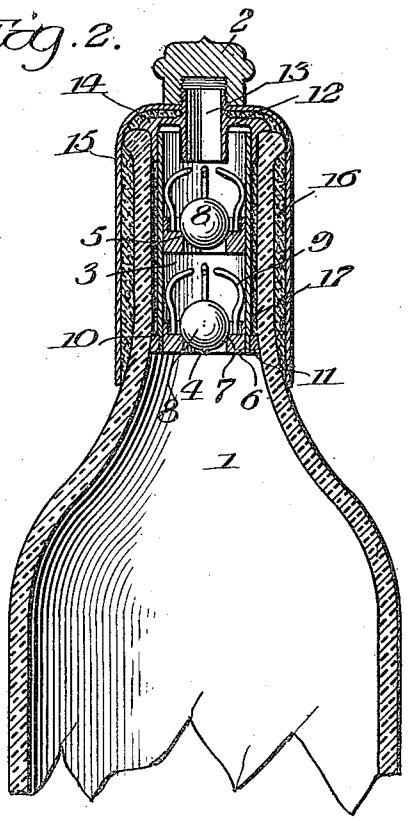


Fig. 4.

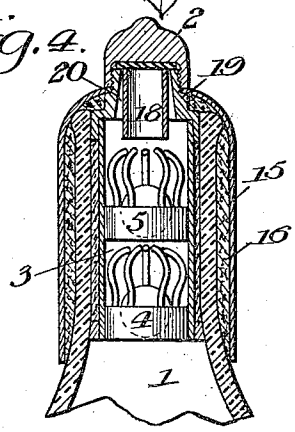


Fig. 3.

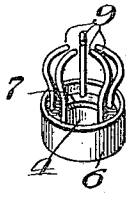
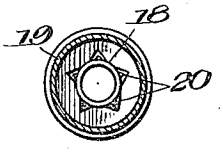


Fig. 5.



Witnesses
O. M. Kermick
Hazel A. Jones.

Inventor
Thomas S. Phillips
by Mary W. Zabel
Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS S. PHILLIPS, OF MILWAUKEE, WISCONSIN.

NON-REFILLABLE BOTTLE.

1,164,014. Specification of Letters Patent. Patented Dec. 14, 1915.

Application filed January 11, 1915. Serial No. 1,532.

To all whom it may concern:

Be it known that I, THOMAS S. PHILLIPS, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and useful Improvement in Non-Refillable Bottles, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to non-refillable bottles and has for its object the provision of an improved stopper or closure for accomplishing the above purpose.

My invention is designed primarily to provide means which prevent refilling of a bottle after it has once been emptied, but which means have such characteristics that a free flow of the liquid from the bottle may be had.

In accordance with my invention I utilize a plurality of preferably identical valve mechanisms, one superposed upon the other whereby the outer one will prevent tampering with the inner one and whereby the two devices break up the stream of liquid in such a way that it can readily flow and permit air to take its place within the bottle.

I will explain one form which my invention may take more in detail by referring to the accompanying drawing in which—

Figure 1 is a side view of a bottle showing my improved device; Fig. 2 is an enlarged sectional view illustrating the structure, Fig. 3 is a perspective view of one of the valve devices; Fig. 4 is a sectional view of a modification, and Fig. 5 is a sectional view on line *a*—*a* of Fig. 4.

My improved device is shown as mounted in place upon a bottle 1 and in its preferred form is cemented in the mouth of the bottle after the bottle has been filled, being then surmounted by a screw threaded cap 2 which seals the bottle and permits of closure of the bottle when not in use.

In general my device comprises a tubular element 3 having within its interior two valve elements 4 and 5, both being preferably identical and being shown in detail in Fig. 3. These elements 4 and 5 consist of rings or collars 6 having a valve seat 7 with which a ball 8 is adapted to coöperate. Prongs 9 protrude from this ring and confine the movement of the ball 8. The ball 8 when on its seat as shown in Fig. 2 of course prevents the return of liquid into the bottle. The duplication of the two devices 4 and 5 prevents tampering with the lower one as it is impossible to pass the upper ball 8 and reach the lower one for the purpose of inserting a tube or similar element. The use of the two balls also makes it possible to obtain a substantial stream as these two balls break up the stream of liquid so as to permit the air to pass by and into the bottle. The tube 3 has an offset portion at 10 so that when it is primarily inserted a little strip of blotting paper or similar material 11 may be held in place while the space between the tube 3 and the bottle neck is filled with a suitable cement which quickly hardens and seals the tube 3 in position. This sealing action also causes the permanent holding in place of a nozzle cap 12 which as shown surmounts the tube 3 and has a nozzle 13 and a hood 14 by means of which it is held in place between the tube 3 and the mouth of the bottle. The upper extremity of the nozzle 13 is screw threaded to accommodate the screw threaded cap 12. A hood or mantle 15 then preferably surrounds the mouth of the bottle to make a sightly appearance, the same also preferably being held in place by the cement 16, the cement 17 being used between the tube 3 and the bottle neck.

In Fig. 4 I show a modified form of structure in which I utilize the tube 18 projecting into a second tube 18^a which contains the valve mechanisms 4 and 5, which second tube is fastened to the cap 19. This cap as will be more clearly seen from Fig. 5 has a plurality of grooves 20 through which the air may enter outside of the tube 18 as the liquid is issuing forth through the tube 18. The surrounding cap 15 is again utilized as well as the closure cap 2.

From what has been described the nature of my improved device will be readily apparent and that it may accomplish the various features outlined above.

Having however thus described one form which my invention may take, what I claim as new and desire to secure by Letters Patent is:

1. A device of the character described comprising a bottle, a tube within the neck of the bottle, a plurality of similar valve mechanisms arranged in tandem within said tube, a nozzle of smaller diameter than said tube projecting into said tube, and means for holding said nozle in position, said last aforesaid means having openings to permit

air to enter said tube exteriorly of said nozzle.

2. A device of the character described comprising a bottle, a tube within the neck of the bottle, a plurality of similar valve mechanisms arranged in tandem within said tube, a nozzle of smaller diameter than said tube projecting into said tube, and means for holding said nozzle in position, said last aforesaid means comprising a cap surmounting said tube to which said nozzle is secured.

3. A device of the character described comprising a bottle, a tube within the neck of the bottle, a plurality of similar valve mechanisms arranged in tandem within said tube, a nozzle of smaller diameter than said tube projecting into said tube, and means for holding said nozzle in position, said last aforesaid means having openings to permit air to enter said tube exteriorly of said nozzle, said valve mechanisms each including a ring forming a valve seat, a ball, and limiting means for limiting the movement of said ball away from its seat.

In witness whereof, I hereunto subscribe my name this 10th day of November, A. D. 1914.

THOMAS S. PHILLIPS.

Witnesses:
HAZEL A. JONES,
MAX W. ZABEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."