No. 809,289. PATENTED JAN. 9, 1906.

W. J. DOLAN & F. H. SHOEMAKER.

NON-REFILLABLE BOTTLE.

APPLICATION FILED MAY 29, 1905.

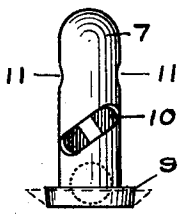

Fig. 2.

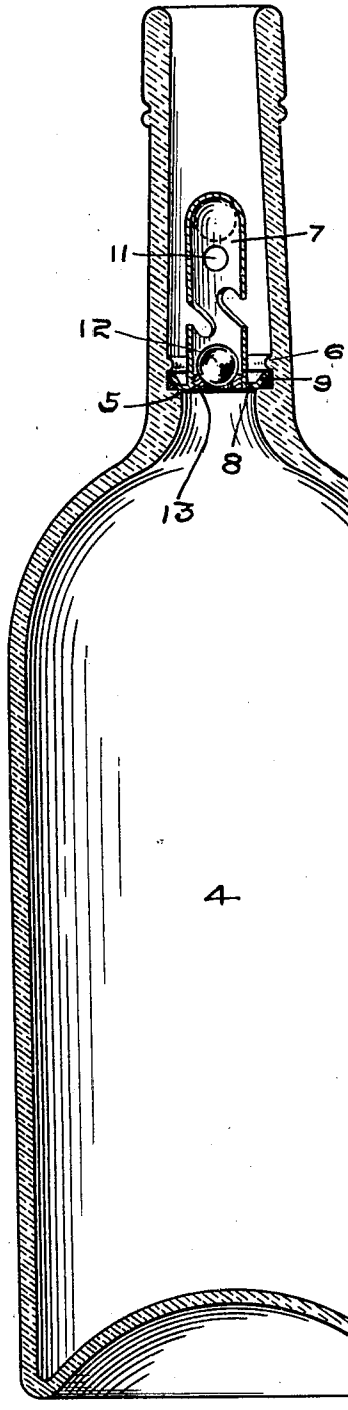

Fig. 1.

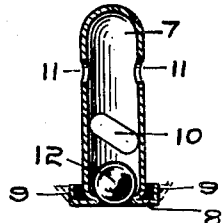

Fig. 3.

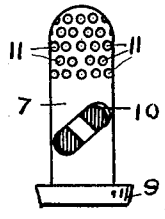

Fig. 4.

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UNITED STATES PATENT OFFICE.

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NON-REFILLABLE BOTTLE.

No. 809,289. Specification of Letters Patent. Patented Jan. 9, 1906.

Application filed May 29, 1905. Serial No. 262,804.

To all whom it may concern:

Be it known that we, WILLIAM J. DOLAN and FRANK H. SHOEMAKER, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to improvements in non-refillable bottles; and the object of the invention is to provide a means which will permit the original contents of the bottle to be poured out freely in the usual way, but which will prevent the refilling of the bottle.

The object is to provide an inexpensive as well as an efficient device for the purposes intended, and we accomplish the various objects of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of a bottle, showing our invention applied thereto in operative position and shown in longitudinal vertical section. Fig. 2 is a view in side elevation of the valve mechanism removed from the bottle. Fig. 3 is a longitudinal vertical section of a modified form of the valve mechanism, and Fig. 4 is a detail of the perforated shell.

Like characters of reference indicate like parts throughout the several views of the drawings.

4 represents a glass bottle of any usual and well-known size and shape externally. The neck of this bottle differs in its internal construction from the common glass bottle in that the opening through the neck expands downwardly from the mouth of the bottle to near the end of the neck, where it decreases abruptly in diameter to form the shoulder 5, and at a short distance above the shoulder is preferably formed the inside annular flange 6, the purposes of which shoulder and flange will presently be made apparent.

7 is a metallic shell, made, preferably, of metal with parallel sides and closed at one end. This closed end will be placed uppermost when the shell is inserted in the neck of the bottle. The lower and opened end of the shell will be flanged outwardly at right angles and then upwardly at right angles, as shown at 8 and 9, respectively. The diameter of the part 8 will be such as to pass through the mouth of the bottle, but too large to pass through the opening from the neck into the body of the bottle at the shoulder 5. When the shell is introduced into the neck of the bottle with its flange 8 resting upon the shoulder 5, the withdrawal of the shell will be prevented by swaging the flange 9 out into the oblique position shown in full lines in Fig. 1 and indicated by the dotted lines in Figs. 2 and 3. This oblique flange 9 will engage the annular flange 6 if the bottle is formed with the flange 6, or, if the flange 6 is not provided in the bottle the flange 9 will engage the upwardly-decreasing walls of the neck and will thereby prevent the withdrawal of the shell. Before the shell is introduced into the bottle it will be provided with the oblique oppositely-placed slots 10, through which the contents of the bottle will be discharged, and in order to supply air necessary for the discharge of the contents of the bottle we provide the perforations 11, here shown as two in number, but which may be more or less without departing from the spirit of this invention.

12 represents a ball, preferably of some non-corrosive metal or other material, which is inserted in the shell 7 before the latter is introduced into the bottle, and after the ball is placed within the shell a metal ring 13 is screwed or otherwise securely fastened in the lower end of the tube 7 to prevent the dropping out of the ball 12 and to form a seat for said ball and a seal to prevent the introduction of liquid material into the bottle after the shell 7, having said ball 12, has been fastened in the neck of the bottle as above described.

While the ball 12 acts as a valve to prevent the passage of liquid into the bottle, it will be noted that it will not prevent the flow from the bottle of any liquid contents that has been placed therein before the valve has been placed in position in the neck of the bottle. When it is desired to pour the contents out of the bottle, the ball 12 will be forced by pressure of the contents and by gravity to the outer end of the shell 7, as shown by the dotted line in Fig. 1, thereby leaving unobstructed passages for the discharge of the contents.

In the modification shown in Fig. 3 instead of the valve-seat being formed by securing a separate metal ring in the end of the shell we have formed a valve-seat by contracting the walls of the shell itself at this end in the manner as shown, and it is not desired to limit

our invention to any specific means for reducing the outlet from the shell to form this seat for the ball.

Having thus fully described our invention, what we claim as new, and wish to secure by Letters Patent of the United States, is—

1. The combination with a bottle having a groove within its neck, of a shell closed at one end and introduced into the bottle and having its other end resting in said groove, said latter end being expansible to prevent the withdrawal of the shell, said shell having perforations and additional slotted openings through its walls and a valve-seat at its open end, and a ball-valve within said shell forming a closure with said seat against entrance to the bottle.

2. A bottle having a neck with an opening which increases in diameter as it extends into the bottle and terminating with a shoulder forming an opening of less diameter than the mouth of the bottle, a metal shell closed at one end and having a flange at its opposite end at right angles to the body of the shell and resting upon the shoulder of the bottle, said flange being bent up approximately parallel with the body of the shell for introduction into the bottle and afterward flared to prevent withdrawal, said shell having openings through its walls and said shell having its lower end restricted in diameter, and a ball within the shell making its seat upon the restricted portions at the mouth of the shell.

3. A bottle having a neck with an opening which expands downwardly to a shoulder, the opening at which shoulder is of less diameter than the mouth of the bottle, an annular flange between the shoulder and the mouth of the bottle, a metal shell introduced into the neck of the bottle, said shell being closed at one end and having an outwardly-extending flange at its other end, said flange resting upon said shoulder and forming the support for the shell, said flange having an upwardly-extended portion engaging the flange in the neck of the bottle, said shell having oblique slots in its opposite walls, and perforations between said slots and the upper end of the shell, a valve-seat in the lower end of the shell, and a ball placed loosely within the shell and operating with the valve-seat to prevent ingress to the bottle.

In witness whereof we have hereunto set our hands and seals, at Indianapolis, Indiana, this 23d day of May, A. D. 1905.

WILLIAM J. DOLAN. [L. S.]
FRANK H. SHOEMAKER. [L. S.]

Witnesses:
J. A. MINTURN,
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