G. W. RILEY.

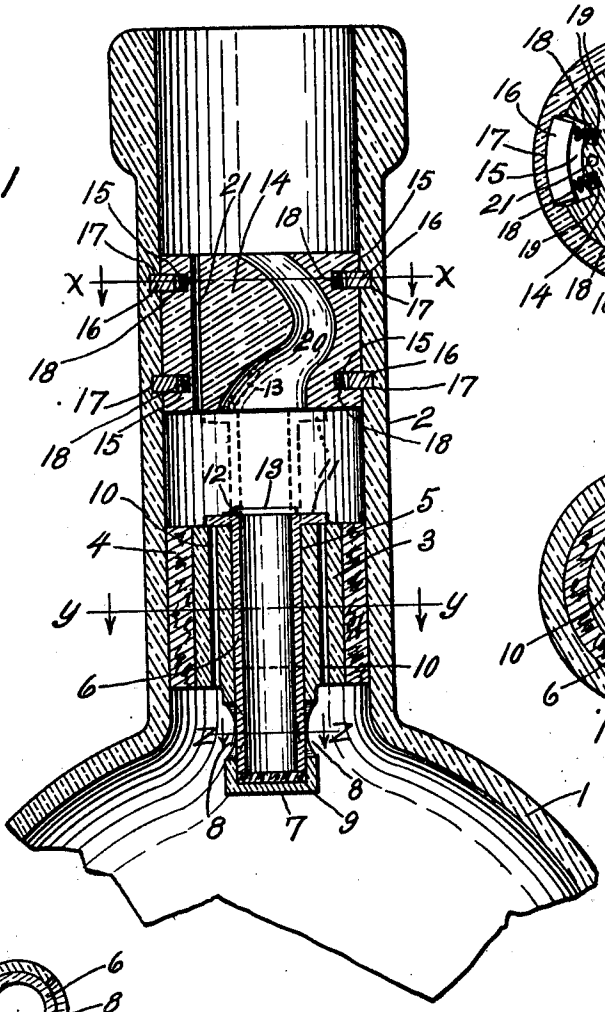
NON-REFILLABLE BOTTLE.

APPLICATION FILED AUG. 7, 1911.

1,027,003.

Patented May 21, 1912.

Fig. 1



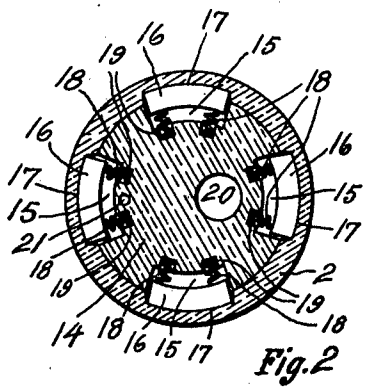


Fig. 2

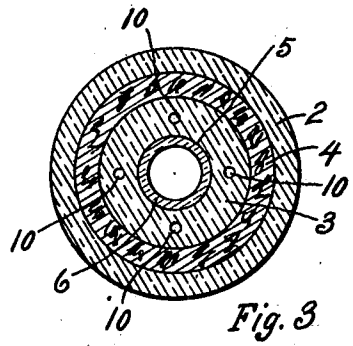


Fig. 3

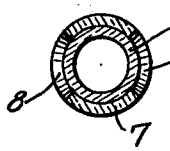


Fig. 4

Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE W. RILEY, OF CHICAGO, ILLINOIS.

NON-REFILLABLE BOTTLE.

1,027,003. Specification of Letters Patent. Patented May 21, 1912.

Application filed August 7, 1911. Serial No. 642,703.

To all whom it may concern:

Be it known that I, GEORGE W. RILEY, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

My invention relates to improvements in non-refillable bottles and has for its object the production of a bottle of this character which will be of durable and economical construction and efficient in operation.

Other objects will appear hereinafter.

With these objects in view my invention consists in a bottle characterized as above mentioned and in certain details of construction and arrangement of parts all as will be hereinafter fully described and more particularly pointed out in the appended claims.

My invention will be more readily understood by reference to the accompanying drawing forming a part of this specification and in which,

Figure 1 is a central longitudinal section through the upper end portion of a bottle embodying the preferred form of my invention, and Figs. 2, 3 and 4 are transverse sections taken on lines x—x, y—y and z—z respectively, of Fig. 1.

Referring now to the drawing 1 indicates the body of the bottle which is preferably formed of glass the same being of any ordinary or preferred design, 2 indicating the neck thereof which is of cylindrical interior conformation. Arranged within the neck 2 adjacent the lower or inner extremity thereof is a cylindrical preferably glass plug 3, the same being sealed and securely held therein by means of a cork or other suitable annular gasket 4. Formed centrally through said plug is a cylindrical passage 5 in which is slidably mounted a snugly fitting tube 6. At the lower end of said plug is formed a tubular extension 7 in opposite sides of which are formed liquid exhaust openings 8. The lower end of said extension is closed, a cork or other suitable disk 9 being arranged therein to form a seat for the lower extremity of the tube 6 and to thereby insure a liquid tight connection when the latter is at its lower terminal of movement. Also formed in the member 3 are longitudinally extending air vents 10, the upper extremities of the latter, when the tube 6 is in its lowermost position, being closed by an annular flange 11 formed at the upper extremity of said tube. Hinged at 12 to the upper extremity of the tube 6 is a spring pressed flap valve 13 adapted normally to close the passage through said tube. Said valve is, however, adapted to be swung to open position by the force of exhausting liquid thereon.

Arranged in the neck 2 above the member 3 and slightly spaced therefrom is a snugly fitting preferably glass plug 14. The periphery of said plug is provided with a plurality of spaced slots 15 in which are mounted radially slidable arcual dogs 16. The latter are adapted to engage correspondingly positioned slots 17 provided in the adjacent inner surface of the neck in order to lock said plug against relative movement in the latter, said dogs being held in operative positions, that is, in engagement with the slots 17, by means of compression springs 18 which are arranged in seats 19 formed at the bases of the slots 15, the outer extremities of said springs resting against the inner sides of said dogs. With this arrangement insertion of the plug 14 may be readily and quickly effected by simply first depressing the dogs 16 to inoperative position in the slots 15 and then sliding said plug to its position within the bottle neck. Upon said plug reaching its proper position in the bottle neck said dogs will be automatically forced by the springs 18 to engagement with the slots 17, in which event removal of said plug and hence of any of the mechanism arranged below the same may be effected only by breaking of the neck.

Formed substantially centrally through the plug 14, is a tortuous liquid passage 20, the lower extremity of the latter terminating coaxially with the passage through the tube 6, the lower end portion of said passage being enlarged and of such form and dimensions as to adapt the same to accommodate the valve 13 and permit of open swinging thereof.

21 indicates an air vent.

With the construction as set forth it will be seen that, when the bottle is in upright or substantially upright position, that is, in any position in which pouring of liquid therefrom would be permitted, the tube 6 will, by gravity, remain in its lower terminal of movement preventing the admission of liquid to the bottle through the openings 8. The provision of the annular flange 11 at the upper extremity of said tube effects the closing of the air vents 10 when said

tube is in its lowermost position. Upon canting or tilting of the bottle to inverted or substantially inverted position, that is pouring position, said tube 6 will slide by gravity to open position permitting of the free passage of liquid through the openings 8 and of the free passage of air through the vents 10, opening movement of said tube being limited as indicated by the plug 14. The provision of the tortuous liquid passage in the latter and the normally closed valve 13 at the upper extremity of the tube 6 prevents the insertion of wires, hooks or other tools for the purpose of tampering with the operation of the mechanism within the neck of the bottle.

While I have shown what I deem to be the preferable form of my bottle I do not wish to be limited thereto as there might be various changes made in the details of construction and the arrangement of parts described without departing from the spirit of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a non-refillable bottle, the combination of a bottle having a neck of substantially cylindrical interior conformation; a tubular plug sealed in said neck adjacent the lower end thereof, said plug having an open upper end and a closed lower end, there being laterally opening liquid exhaust openings provided adjacent the lower end of said plug communicating with the interior of said bottle; a gravity governed tube open at both ends slidably mounted in said plug and adapted when said bottle is in upright or substantially upright position to close said liquid exhaust openings and when said bottle is in inverted or substantially inverted position to uncover said openings, said plug having air vents extending longitudinally therethrough; a flange at the upper end of said tube adapted to close said vents when said tube is in closing position; and a plug locked in said neck outward of said first mentioned tubular plug having a liquid passage and an air vent extending therethrough, substantially as described.

2. In a non-refillable bottle, the combination of a bottle having a neck of substantially cylindrical interior conformation; a tubular plug sealed in said neck adjacent the lower end thereof, said plug having an open upper end and a closed lower end, there being laterally opening liquid exhaust openings provided adjacent the lower end of said plug communicating with the interior of said bottle; a gravity governed tube open at both ends slidably mounted in said plug and adapted when said bottle is in upright or substantially upright position to close said liquid exhaust openings and when said bottle is in inverted or substantially inverted position to uncover said openings, said plug having air vents extending longitudinally therethrough; a flange at the upper end of said tube adapted to close said vents when said tube is in closing position; a flap valve provided at the upper end of said tube adapted when the bottle is in upright or substantially upright position to close the passage through said tube; and a plug having a tortuous passage and air vents extending therethrough locked in said neck outward of said first mentioned tubular plug, substantially as described.

3. In a non-refillable bottle, the combination of a bottle having a neck of substantially cylindrical interior conformation; a tubular plug sealed in said neck adjacent the lower end thereof; said plug having an open upper end and a closed lower end, there being laterally opening liquid exhaust openings provided adjacent the lower end of said plug communicating with the interior of said bottle; a gravity governed tube open at both ends slidably mounted in said plug and adapted when said bottle is in upright or substantially upright position to close said liquid exhaust openings and when said bottle is in inverted or substantially inverted position to uncover said openings; a flap valve provided at the upper end of said tube adapted when the bottle is in upright or substantially upright position to close the passage through said tube; and a plug locked in said neck outward of said first mentioned plug and slightly spaced therefrom, said last mentioned plug bearing a tortuous liquid passage, the lower end of said passage being co-axial with said tube and enlarged to afford clearance for said flap valve in swinging to open position, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE W. RILEY.

Witnesses:
W. C. Smith,
Joshua R. H. Potts.