No. 692,848. Patented Feb. 11, 1902.

J. B. GOODMAN.

NON-REFILLABLE BOTTLE CORK.

(Application filed Apr. 13, 1901.)

(No Model.)

Fig. 1.

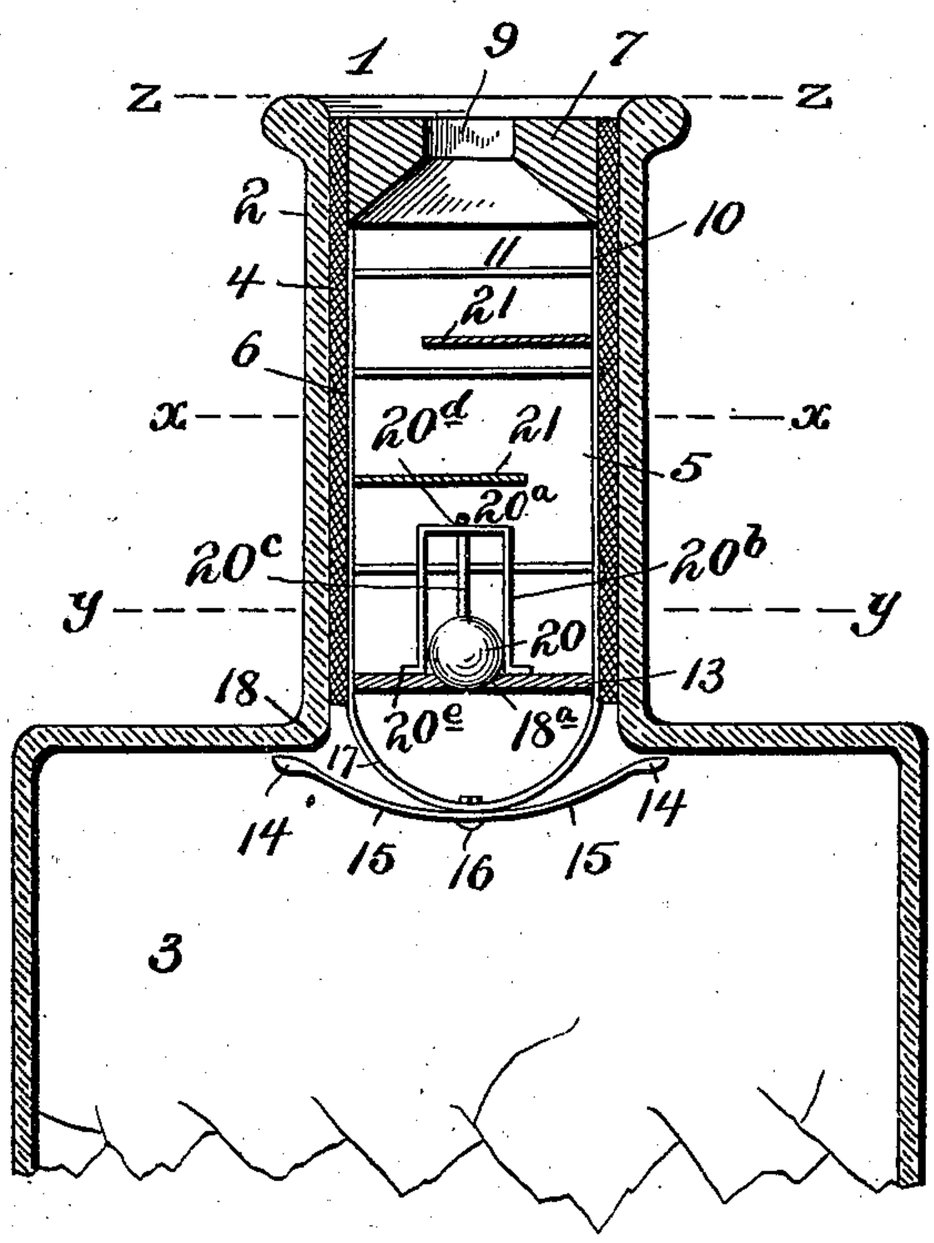


Fig. 3.

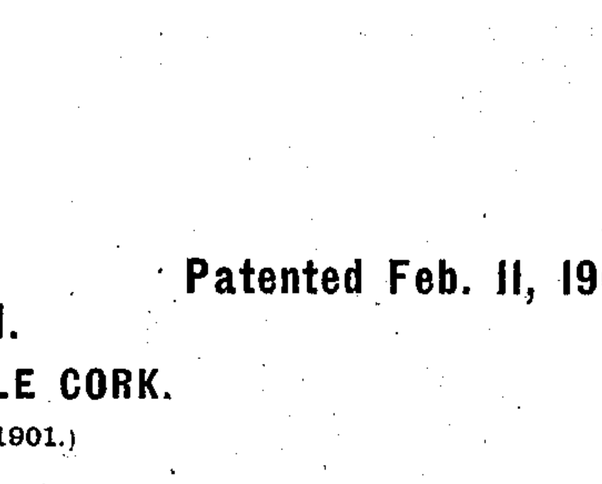


Fig. 2.

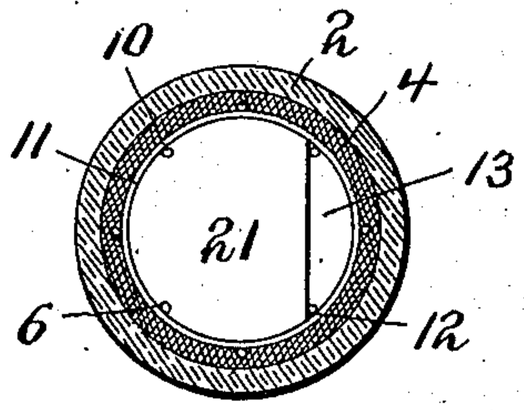
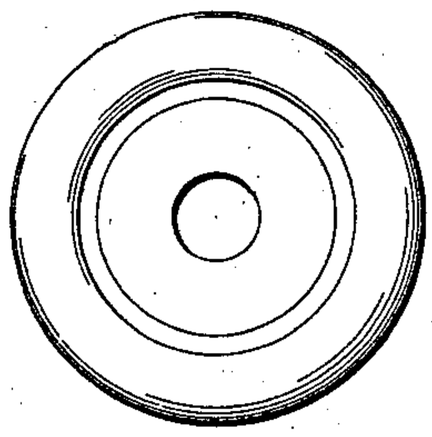


Fig. 4.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH B. GOODMAN, OF PHILADELPHIA, PENNSYLVANIA.

NON-REFILLABLE-BOTTLE CORK.

SPECIFICATION forming part of Letters Patent No. 692,848, dated February 11, 1902.

Application filed April 13, 1901. Serial No. 55,656. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BURNS GOODMAN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Non-Refillable-Bottle Corks, of which the following is a specification.

This invention relates to non-refillable-bottle corks; and it has for its object to provide an improved device of this class which shall be superior in point of positiveness and effectiveness of operation, simplicity and durability of construction, and general efficiency in use.

In the drawings, Figure 1 is a central longitudinal sectional view of a portion of a bottle embodying my improvements. Fig. 2 is a detail transverse sectional view of the same, taken upon the line *x x*, Fig. 1. Fig. 3 is a detail transverse sectional view taken upon the line *y y*, Fig. 1. Fig. 4 is a top plan view of the bottle embodying my improvements.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to the drawings, 1 designates my improved non-refillable-bottle cork, which in use is mounted in the neck portion 2 of the bottle 3. The cork proper consists of a thin cylindrical cork shell 4, which, when fitted in the bottle-neck, directly engages with the walls of the bottle-neck and forms a tight joint with the same. Within the cork shell 4 is arranged a frame 6 for the operative parts of the bottle-cork, which frame, when completely assembled with the operative parts, is inserted in the cork shell 4. The cork is provided at the top with a cylindrical plug 7, which fits within the reinforcing-shell 5 and which may be of cork, wood, or other suitable material. The plug 7 is firmly connected with the reinforcing-shell 5 and effectually closes the cork at the top, with the exception of a central pouring-opening 9, which is formed vertically and centrally through the plug 7.

In the preferred form of construction the frame 6, which constitutes the skeleton body of the cork, consists of a plurality of body-wires 10, which extend longitudinally of the bottle-neck, and a plurality of annular body-wires 11, which extend at right angles to the body-wires 10 and are firmly connected with the same at the points of intersection, as at 12. The frame 6 fits snugly within the reinforcing-shell 5, and the body-wires 11 maintain the frame in permanent cylindrical form. The frame 6 is maintained firmly in position in the reinforcing-shell 5 by the plug 7, against which it abuts at its upper end.

14 designates means for preventing extraction of the cork after it has been inserted in the bottle-neck, and said means 14 consist in the preferred form of construction of a plurality of oppositely-projecting spring-fingers 15, which are secured at their inner ends, as at 16, to a downwardly-projecting loop 17, which forms part of the frame 6 and projects beneath the lower end of the cork proper. When the cork is inserted in the bottle-neck, the spring-fingers 15 are folded inwardly about the lower end of the cork proper, and when the cork has reached the point of insertion sufficient to bring the spring-fingers beneath the plane of junction, as at 18, of the bottle-neck and the major portion of the bottle the spring-fingers 15 expand laterally within the relatively broad major portion of the bottle and prevent extraction of the cork.

The lower end of the frame 6 carries an annular valve-seat 18^a, which may be provided with a suitable annular packing, and a ball-valve 20 operates with respect to the valve-seat 18^a, occupying a seated position when the bottle rests in normal upright position. The ball-valve 20 operates within a valve-cage 20^a, which is carried by the valve-seat 18^a and consists of two bent wires 20^b and 20^c, respectively, the central portions of which are crossed, as at 20^d, above the valve-seat, and the upright end portions of which are secured to the valve-seat, as at 20^e. The frame 6 also carries a plurality of alternately oppositely inwardly projecting segmental or mutilated flat guard-disks 21, which extend in predetermined arrangement between the valve-seat 18^a and the plug 7 and above the valve-cage 20^a. The guard-disks 21 prevent the direct insertion of a wire or other device or tool into a position within the cork such as would make it possible to unseat the ball-valve 20 and defeat the object of the invention.

The operation and advantages of my improved non-refillable-bottle cork will be read-

ily understood by those skilled in the art to which it appertains. The cork may be readily forced into the bottle-neck by applying the necessary pressure to the firmly-fixed plug 7, and when the proper degree of insertion has been reached the spring-fingers 15 will laterally expand and by engagement with the inner converging walls of the bottle will prevent forcible extraction of the cork. It will be understood that the cork is inserted after the bottle has been filled. In order to decant the contents of the bottle, it is only necessary to tilt the same in the customary manner, which tilting operation will unseat the ball-valve 20 and permit the liquid contents to flow about the ball-valve through the cork and about the guard-disks 21 in the direction denoted by the arrows and out through the pouring-opening 9 in the plug 7. As soon as the bottle is restored to upright position the ball-valve 20 will return to its seat 18ª and prevent refilling of the bottle through the cork by the injection of liquid through the pouring-opening 9, which is the only possible method of filling the bottle.

The cork shell 4 causes the cork to fit tightly within the bottle-neck and prevents any leakage between the cork and the latter. The wire frame 6 is assembled, together with the guard-disks 21, the valve-seat 18ª, and the depending loop 17, and the plug may readily be permanently secured within the reinforcing-shell 5 above the frame 6.

The ball-valve 20 is inserted in the frame 6 during the assemblage of the parts of the same and is securely maintained in operative position within said frame. The guard-disks 21 effectually prevent the passage of any implement through the cork to unseat the ball-valve and permit fraudulent refilling of the bottle.

The entire device is relatively simple in construction and is possessed of the required durability. The cork may be used successively in a number of bottles by releasing the same from an emptied bottle by breaking the latter and is thus superior in utility and effectiveness to non-refillable bottles which are rendered useless by emptying the same.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaption of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly falls within the scope of my invention and the terms of the following claims.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. An improved non-refillable-bottle cork, comprising a shell which is adapted to fit within the bottle-neck and is provided at its upper end with a pouring-opening, a wire frame which is secured within said shell and carries a valve-seat at its lower end, a valve which operates with respect to said valve-seat, a plurality of mutilated guard-disks secured to said wire frame within said shell and in alternately oppositely inwardly projecting arrangement, said wire frame being formed at its lower end into a depending loop which projects beneath the lower end of said shell, and spring-fingers carried by said loop and adapted to be folded upwardly when said wire frame is inserted into the bottle-neck and to project within the bottle to prevent extraction of the device from the bottle-neck.

2. An improved non-refillable-bottle cork, comprising a shell which is adapted to fit within the bottle-neck and is provided at its upper end with a pouring-opening, a wire frame which is secured within said shell and carries a valve-seat at the lower end of said shell, a valve which operates with respect to said valve-seat, said frame consisting of a plurality of longitudinal body-wires and a plurality of annular body-wires which extend transversely of said longitudinal body-wires, a plurality of mutilated guard-disks secured to said wire frame within said shell and in alternately oppositely inwardly projecting arrangement, said wire frame being formed at its lower end into a depending loop which projects beneath the lower end of said shell, and a plurality of spring-fingers carried by said loop and arranged to project within the bottle to prevent extraction of the entirety from the bottle-neck.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

JOSEPH B. GOODMAN.

Witnesses:
HARRY T. STODDART,
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