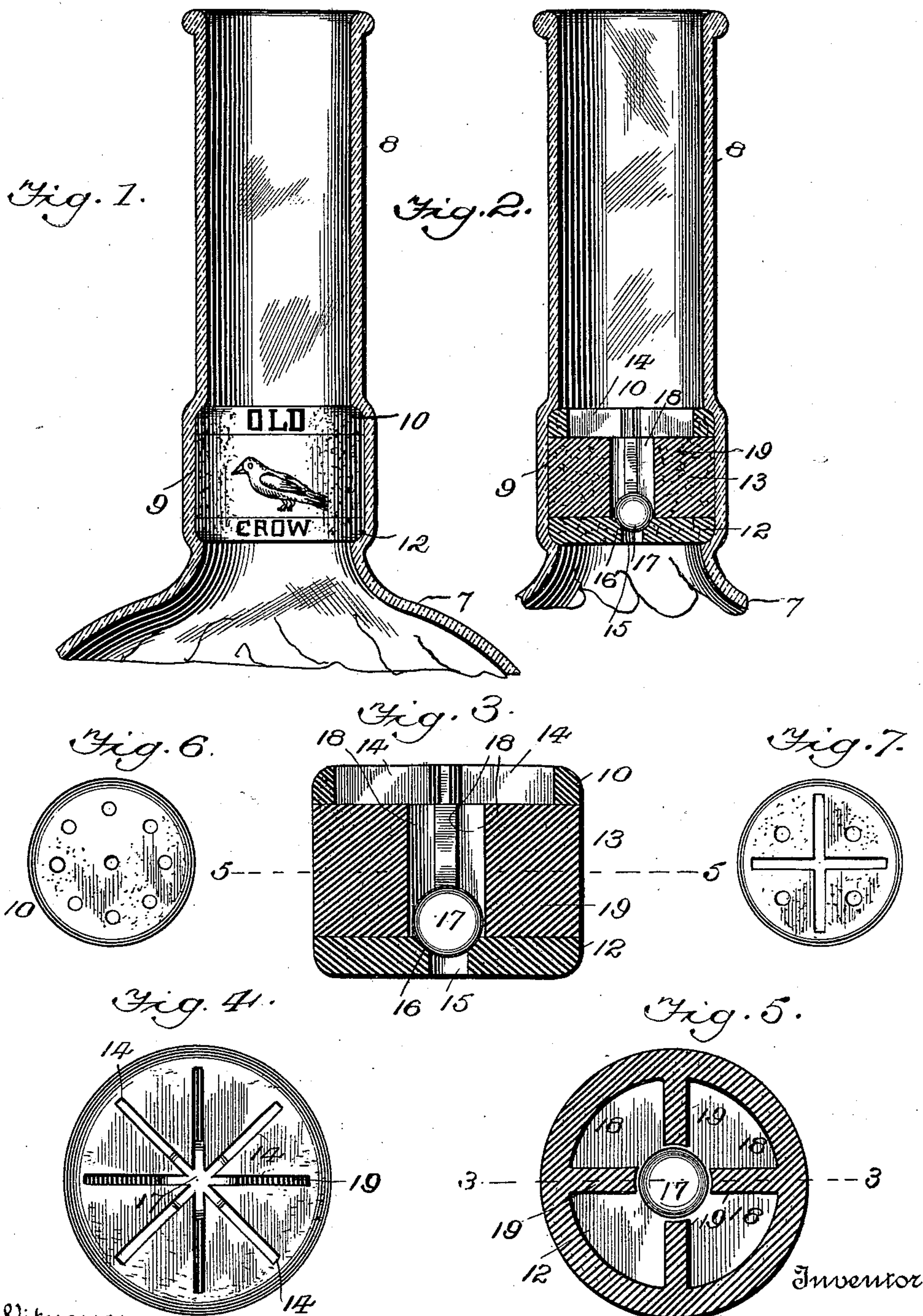


(No Model.)

C. M. JOHNSON.
NON-REFILLABLE BOTTLE.

No. 587,003.

Patented July 27, 1897.



Witnesses
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UNITED STATES PATENT OFFICE.

CLAUDE M. JOHNSON, OF LEXINGTON, KENTUCKY.

NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 587,003, dated July 27, 1897.

Application filed December 1, 1896. Serial No. 614,095. (No model.)

To all whom it may concern:

Be it known that I, CLAUDE M. JOHNSON, a citizen of the United States, residing at Lexington, in the county of Fayette and State of Kentucky, have invented new and useful Improvements in Non-Refillable Bottles, of which the following is a specification.

This invention relates to that class of bottles which are provided with valved devices to prevent the bottle being conveniently refilled after the original contents have been consumed or removed therefrom.

The chief object of my invention is to provide novel and extremely simple means which can be economically manufactured and expeditiously applied to bottles for preventing their convenient refilling.

The invention also has for its object to facilitate the manufacture of valved devices for preventing the refilling of bottles and to provide a sectional stopper composed entirely of cork, except as to the valve itself, which can be conveniently introduced by a cork driver or plunger and securely retained in the neck of the bottle without the employment of extraneous means, such as cement and metallic catches or locking devices.

The invention also has for its object to provide a new and improved device which entirely avoids the employment of metal in its construction and application to the bottle and which possesses such characteristics that if removed and replaced by another similar device the substitution is easily detected.

To accomplish all these objects, my invention consists, essentially, in the combination of a bottle having an annular groove in its neck with a valved stopper of substantially uniform diameter composed of a cork disk sprung into said groove and having a central passage, a series of parallel vertical guide-flanges, and a valve-seat at the lower end of the passage, a cork disk having a passage therethrough and sprung into the groove in the bottle-neck to rest upon the upper end of the other cork disk, and a ball-valve arranged in the said central passage and guided by said flanges.

The invention also consists in the combination of a bottle having an annular groove in its neck with a compressible valved stopper composed of three superimposed cork disks

sprung into said groove, the lower disk having a central valve seat and orifice, the uppermost disk having an outlet-passage, and the intermediate disk having a central passage and a series of parallel vertical guide-flanges, and a loose valve movable in said central passage and guided by said guide-flanges.

The invention is illustrated by the accompanying drawings, in which—

Figure 1 is a vertical central sectional view of a portion of a bottle provided with my invention and showing the inserted cork stopper in side elevation. Fig. 2 is a similar view showing the inserted cork stopper in section. Fig. 3 is a detail vertical sectional view taken on the line 3 3, Fig. 5. Fig. 4 is a top plan view of the stopper. Fig. 5 is a transverse sectional view taken on the line 5 5, Fig. 3. Figs. 6 and 7 are top plan views on a scale smaller than Figs. 3, 4, and 5, showing modifications.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 7 indicates a bottle having a comparatively long neck 8, which is formed during the process of manufacture with an annular groove 9 in its interior at a point in juxtaposition to the junction of the neck with the bottle-body. The bottle and its neck are preferably composed of glass molded into form and through which the valved stopper, hereinafter explained, is visible.

The valved stopper, as shown, is compressible and is composed of an upper cork disk 10, a lower cork disk 12, and an intermediate cork disk 13. The upper cork disk 10 is punched out to provide a passage which, as represented in the drawings, comprises a plurality of radiating slots 14. The number of slots may vary, but I prefer to provide eight of these slots for the purpose of permitting liquor to more freely escape from the bottle, as will hereinafter appear.

The lower cork disk 12 is punched out at its center to provide an orifice or passage having its upper portion reamed out to constitute a concaved valve-seat 16 for a loose ball-valve 17, preferably composed of glass.

The intermediate cork disk 13 is punched

out to create a longitudinal passage through the center thereof and to provide a plurality of channels 18 and guide-flanges 19, which are rectilinear and parallel with one another and extend from the top of the disk to the bottom thereof. I have represented four of these guide-flanges, but the number may be increased or diminished without altering the spirit of the invention. The guide-flanges 19 guide the ball-valve 17 and compel it to move in a right line. The ball-valve should accurately fit in between the inner edges of the guide-flanges, so that if liquid were forced into the upper end of the stopper the ball-valve would be pressed by the liquid down upon the valve-seat 16 and thus close the opening 15 and prevent the convenient introduction of liquid into the bottle below the stopper.

The channels or passages 18 between the guide-flanges 19 permit liquid from the bottle to flow out around the ball-valve through the slots 14 in the disk 10 when the bottle is tilted to discharge or pour liquid therefrom.

The compressible stopper, composed of the three cork sections, as above described, is designed to be driven or forced by a cork driver or plunger down into the neck of the bottle until it registers with the annular groove 9, when the cork will swell out and expand or spring into the groove and thus be firmly and securely held in position in the bottle-neck. The three cork sections can be superimposed and driven simultaneously into the groove or they may be separately inserted, first the disk 12, then the disk 13, and finally the disk 10, until all are properly placed in the annular groove 9. If the cork sections are moistened with water before they are inserted, they can be more easily driven and more effectually expand or spring into the groove when they reach the same.

The stopper constructed as described entirely avoids the use of metal, which is undesirable and objectionable in a valve-stopper for a non-refillable bottle in that metal will damage the beverage or liquid contained in the bottle. The stopper, composed wholly of cork except the ball-valve, is advantageous over glass and wood stoppers in that they require to be cemented in the neck of the bottle, which is difficult to accomplish, especially without damaging the liquid contained therein. The specific construction described provides very simplified means for securely retaining the stopper in the bottle-neck without the employment of extraneous securing devices or means, such as cement and metallic catches or locking devices.

A cork stopper for a non-refillable bottle constructed according to my invention can be very economically manufactured and applied expeditiously and conveniently in that the openings in the three sections can be readily punched out and the stopper can be inserted or introduced by the employment of a cork driver or plunger, while the annular

groove into which the stopper expands or springs will retain it sufficiently secure to render it difficult and inconvenient, if not impossible, to remove the same intact. The lower disk 12 is readily produced from cork and the opening 15 can be punched there-through, while the valve-seat 15 can be quickly formed by reaming out a portion of the disk to form the required concavity, into which the ball-valve will accurately seat itself. The slots 14 in the disk 10 and channels 18 in the disk 12 can also be readily formed by the employment of punches, so that it is possible to greatly reduce the cost of manufacture of valved stoppers for non-refillable bottles.

The stopper is designed to be branded or otherwise marked with the name and trade-mark, either or both, of the manufacturer of the liquor contained therein, which will effectually prevent the unauthorized substitution for the original stopper of a stopper seemingly the same, as unauthorized persons will not likely risk making the stopper and unlawfully providing it with the brand, name, or trade-mark of a manufacturer. If an original stopper were removed and in its removal it would be damaged or destroyed and another stopper inserted into place after refilling the bottle, the subsequently-inserted stopper would not bear the mark identifying the original stopper of the manufacturer of the liquid and the change would be apparent by the absence of such mark.

The stopper constructed in the manner shown and explained is comparatively inexpensive. It can be compressed and will spring or swell into the annular groove. It can be readily forced into place with a simple cork driver or plunger, and it can be easily punched out to form the necessary openings or passages.

The parallel arrangement of the guide-flanges 19 serves to retain the ball-valve coincident with the center of the stopper and in line with the orifice in the lower disk, so that if an attempt is made to introduce liquor by the use of a gooseneck-funnel while the bottle is held approximately horizontal the liquor will act upon the ball-valve and move it to and upon its seat, thus effectually preventing the passage of the liquor through the stopper into the bottle.

Instead of forming the passage in the upper cork disk 10 in the form of radiating slots the passage may be formed by a plurality of separate circular perforations, as shown in Fig. 6, or the passage may be formed by circular perforations and a cruciform slot, as shown in Fig. 7.

In the drawings I have represented the brand, name, or trade-mark on the cork stopper as composed of the words "Old Crow" and a figure intended to represent a crow; but I desire it understood that the brand or mark illustrated is only typical of many different brands or trade-marks that may be used for the purpose in hand.

Having thus described my invention, what I claim is—

1. The combination of a bottle having an annular groove in its neck, with a valved stopper of substantially uniform diameter, composed of a cork disk sprung into said groove and having a central passage, a series of parallel vertical guide-flanges and a valve-seat at the lower end of the passage, a cork disk having a passage therethrough and sprung into the groove in the bottle-neck to rest upon the upper end of the other cork disk, and a ball-valve arranged in the said central passage and guided by said flanges, substantially as described.

2. The combination of a bottle having an annular groove in its neck, with a compressible valved stopper composed of three superimposed cork disks sprung into said groove, the lower disk having a central valve seat and orifice, the uppermost disk having an outlet-passage, and the intermediate disk having a central passage and a series of parallel, ver-

tical guide-flanges, and a loose valve movable in said central passage and guided by said guide-flanges, substantially as described.

3. The combination of a bottle having an annular groove in its neck, with a valved compressible stopper bearing an exposed brand or mark and composed of a cork disk sprung into said groove and having a central passage, a series of parallel guide-flanges and a valve-seat at the lower end of the passage, a cork disk having slots therethrough and sprung into the groove in the bottle-neck to rest upon the upper end of the other cork disk, and a ball-valve arranged in the said central passage and guided by said flanges, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CLAUDE M. JOHNSON.

Witnesses:

PAUL E. JOHNSON,
VINTON COOMBS.