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S. W. PLUMMER & F. DAVIS.

NON-REFILLABLE BOTTLE.

APPLICATION FILED APR. 10, 1902.

NO MODEL.

FIG. 1.

F I G . 2 .

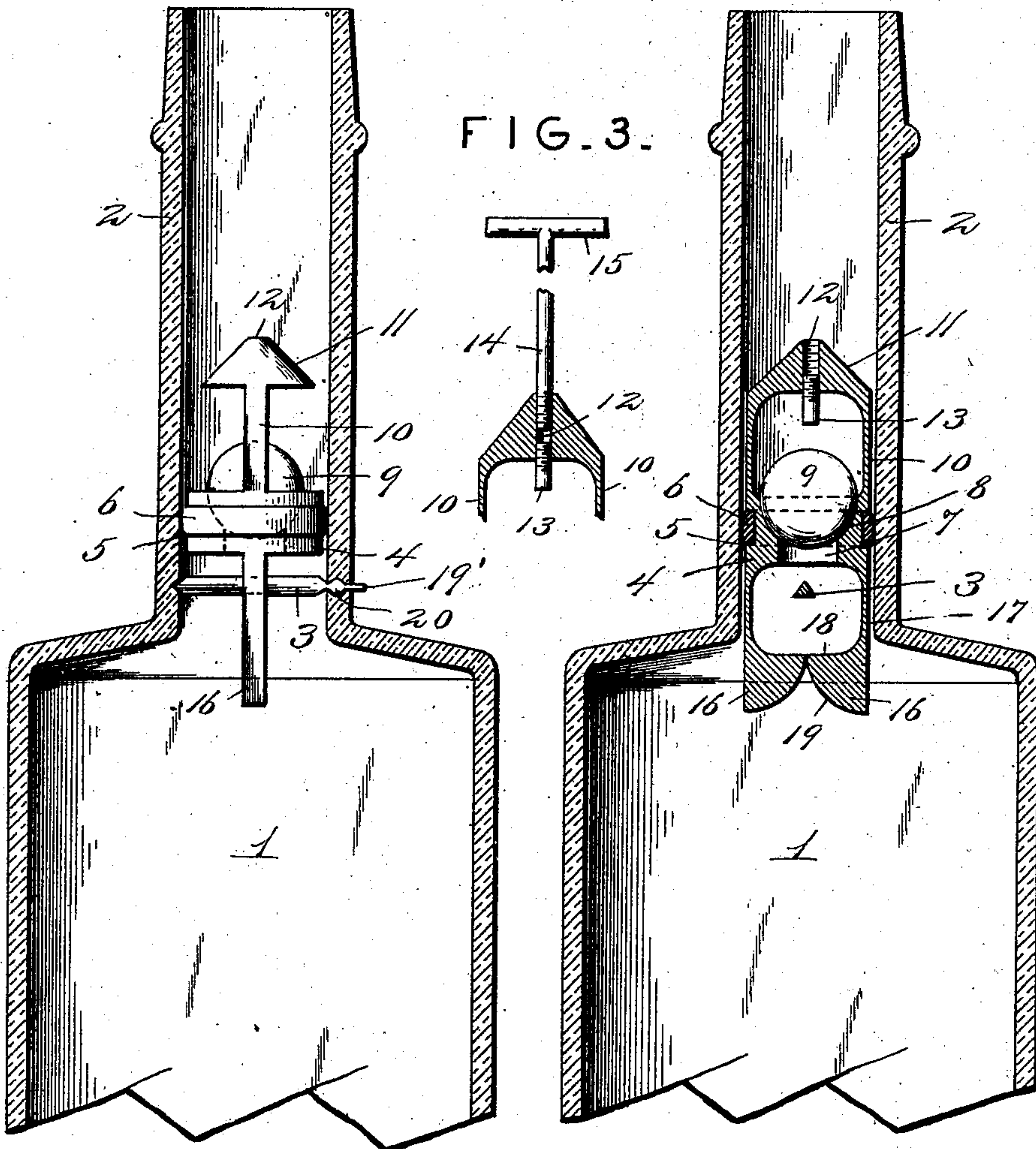
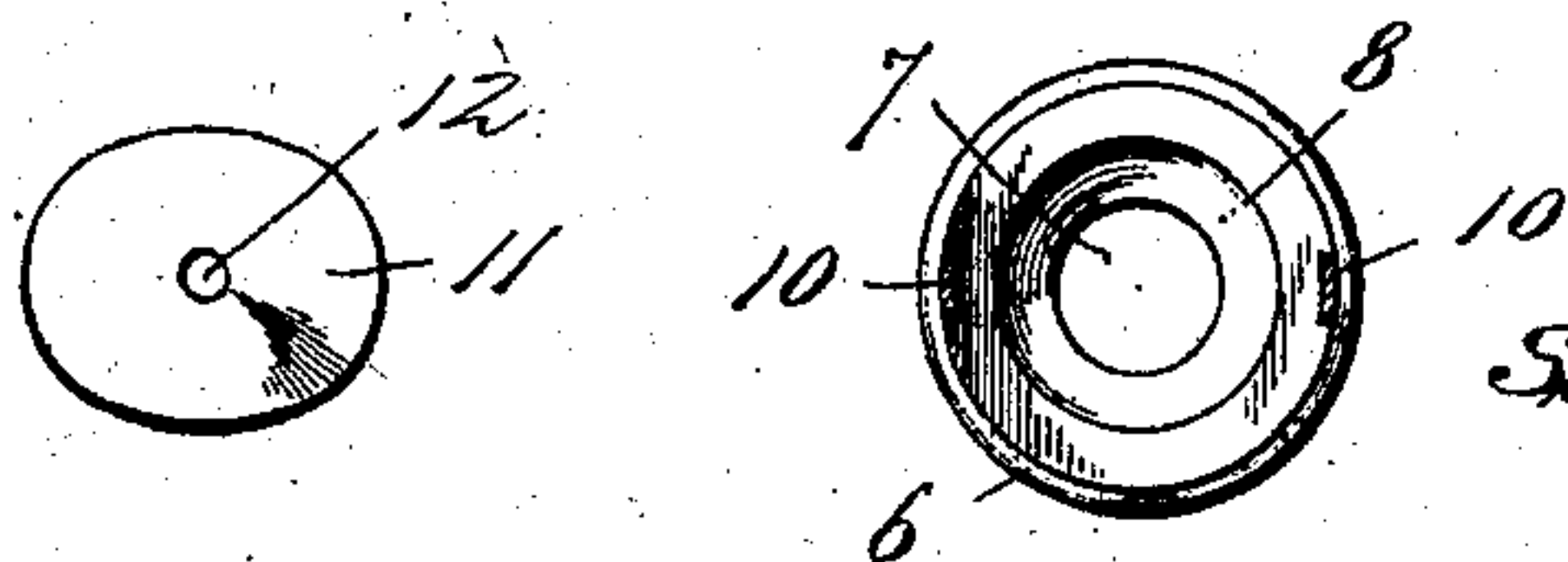


FIG. 4.

FIG. 5.



Witnesses

H. L. Ames.  
J. W. Wiley.

## Inventors

Samuel W. Plummer  
Frank Davis.

By *Rexford M. Smith*

Attorney



# UNITED STATES PATENT OFFICE.

SAMUEL W. PLUMMER AND FRANK DAVIS, OF SALEM, OREGON.

## NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 720,476, dated February 10, 1903.

Application filed April 10, 1902. Serial No. 102,282. (No model.)

*To all whom it may concern:*

Be it known that we, SAMUEL W. PLUMMER and FRANK DAVIS, citizens of the United States, residing at Salem, in the county of Marion and State of Oregon, have invented a certain new and useful Non-Refillable Bottle, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to bottles, the object in view being to provide a bottle from which the liquid contents may be readily poured and which after being emptied cannot be re-filled without breaking or mutilating a portion of the bottle or stopper-retaining device, thereby indicating that the same has been tampered with, and thus protecting the original bottling agent from the bottle being subsequently filled with an inferior quality of liquid by unscrupulous persons.

20 With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts, as hereinafter fully described, illustrated, and claimed.

25 In the accompanying drawings, Figure 1 is a vertical sectional view of a bottle constructed in accordance with the present invention and showing the valve and other mountings arranged therein. Fig. 2 is a similar view taken at right angles to Fig. 1. Fig. 3 is a detail vertical section through the cap of the valve-cage, showing the implement by means of which the stopper is introduced and withdrawn. Fig. 4 is a plan view of the cap. Fig. 5 is a cross-section through the cage looking downward and showing the ball or valve seat.

30 Similar numerals of reference denote corresponding parts in all figures of the drawings.

35 In the drawings we have illustrated an ordinary bottle, comprising a body 1 and neck 2. In carrying out the present invention a cross-bar or breaker 3 is molded or blown into the bottle just above the junction of the neck and body. This cross-bar or breaker is preferably triangular or three-cornered in cross-section, as illustrated in Fig. 2, and has its opposite extremities embedded in the inner wall of the neck, as shown in Fig. 1, the arrangement being such that any excessive or violent pressure exerted against the cross-bar

or breaker will effect a breaking of the bar or else a portion of the bottle immediately adjacent to the point where the cross-bar 3 is anchored in the neck.

40 A stopper 4, preferably of some light and non-corrosive metal, is inserted in the neck, the body of the stopper being provided with an exterior annular groove 5, in which is fitted a gasket 6 of rubber or other suitable material for the purpose of obtaining a liquid-tight joint between the stopper and neck and at the same time compensating for any inequalities or irregularities on the inner surface of the neck of the bottle. A liquid-opening 7 extends centrally through the stopper 4, and the upper portion of said opening is enlarged in hemispherical form to constitute a seat 8, which corresponds in shape with a ball or valve 9, which seats itself snugly therein when the bottle is in an upright position.

45 Extending upward from the stopper 4 is a ball-cage, consisting of oppositely-arranged and substantially parallel side bars 10 and a conical cap 11, which connects the side bars 10 and is provided with a central screw-threaded opening 12, in the lower portion of which is inserted a guard-pin 13, which is capable of being turned, so as to adjust the same longitudinally for the purpose of regulating the amount of play or movement of the ball 9 when the bottle is partially or wholly inverted for pouring off the contents, said pin acting as a stop for limiting the movement of the ball. The upper portion of the opening 12 is designed to receive the stem or shank 14 of a handle 15, having its lower end threaded to engage the opening 12, said handle being designed to facilitate the insertion and removal of the stopper and parts connected therewith.

50 Extending downward from the lower side of the stopper 4 are oppositely-arranged spring-catches 16, each consisting of a spring-arm 17 and an inwardly-extending lip 18, the lower or inner edge of which is beveled or rounded, as at 19. In the operation of inserting the stopper, when the spring-catches come in contact with the downwardly-diverging sides of the breaker or cross-bar 3 they yield apart in opposite directions until the lips 18 pass the cross-bar, when the catches



spring together beneath the cross-bar and thereafter prevent the extraction of the stopper.

From the foregoing description it will be understood that after the stopper is forced to its position in the neck any attempt to force the stopper downward or upward will exert a pressure in a corresponding direction against the breaker or cross-bar 3. Excessive pressure on said bar will cause a fracture of the bar 3 or the neck of the bottle itself and either completely sever the neck or mutilate the same or the bar 3 to an extent which will be clearly visible. This destroys the original appearance of the bottle and serves as a warning to purchasers. The guard-pin 13 may be adjusted to give the desired play to the ball 9 before introducing the stopper into the neck. The handle 15 is designed to insert the stopper in the bottle-neck, after which said handle is disconnected from the stopper and removed. The handle may be also used for removing the stopper in an upward direction instead of pushing the stopper downward into the bottle.

In order to conveniently mold the breaker in the neck of the bottle, said breaker is provided at one end with a terminal extension 19', which is adapted to fit in a hole in the mold and hold the breaker across the neck-cavity as the bottle is being molded. Adjacent to the extension 19' is a pointed or angular shoulder 20, around which the glass flows and sets in the mold, thus leaving the fracture-point of the breaker immediately adjacent to the inner wall of the bottle-neck.

It is preferred to form the stopper and cross-bar or breaker of the same material, such as aluminium, so that both will be acted upon in the same way by any acid in the liquid contents of the bottle. Thus an acid which will destroy the stopper will also destroy the cross-bar. The ball or valve may be made of the same metal or of glass, marble, or other suitable material which will give the requisite weight to the valve to cause it to seat itself as soon as the bottle is set upright.

It will be apparent that the invention is susceptible to changes in the form, proportions, and minor details of construction, and we therefore reserve the right to make such changes as properly come within the scope of the appended claims.

Having thus described the invention, we claim as new—

1. A bottle, in combination with a cross-bar permanently anchored in the neck thereof, and a valved stopper provided with catches for engaging said cross-bar, substantially as and for the purpose described. 60

2. A bottle having a cross-bar permanently anchored in the neck thereof, in combination with a valved stopper, and spring-catches connected with the stopper and adapted to engage beneath the cross-bar, substantially as described. 65

3. The combination with a bottle, of a triangular-shaped cross-bar permanently anchored in the neck thereof and having diverging sides, and a valved stopper insertible in the neck and provided with one or more catches adapted to be forced apart by the cross-bar and to engage beneath the same, substantially as described. 70

4. The combination with a bottle, of a breaker-bar extending transversely of the neck and having its extremities embedded therein and made inaccessible from the exterior of the bottle, and a valved stopper insertible in the neck and having means for engaging said breaker-bar. 80

5. The combination with a bottle, of a stopper insertible therein and provided with a liquid-passage, a cross-bar for locking the stopper in the neck, means on the stopper for engaging the cross-bar as the stopper is inserted, a cage carried by the stopper, a valve arranged within the cage, and an adjustable guard for regulating the amount of movement of the valve. 90

6. The combination with a bottle, of a breaker-bar having its extremities molded into the neck of the bottle, a stopper insertible in the neck and surrounded by a gasket and also provided with a liquid-passage, spring-catches on the stopper for engaging the breaker-bar, a valve for closing the liquid-passage, a cage carried by the stopper in which the valve is mounted, a conical cap for said cage provided with a threaded opening, and a guard-pin adjustably mounted in said threaded opening, substantially as described. 100

In testimony whereof we affix our signatures in presence of two witnesses.

SAMUEL W. PLUMMER.  
FRANK DAVIS.

Witnesses:

J. CONNER,  
R. J. FLEMING.