

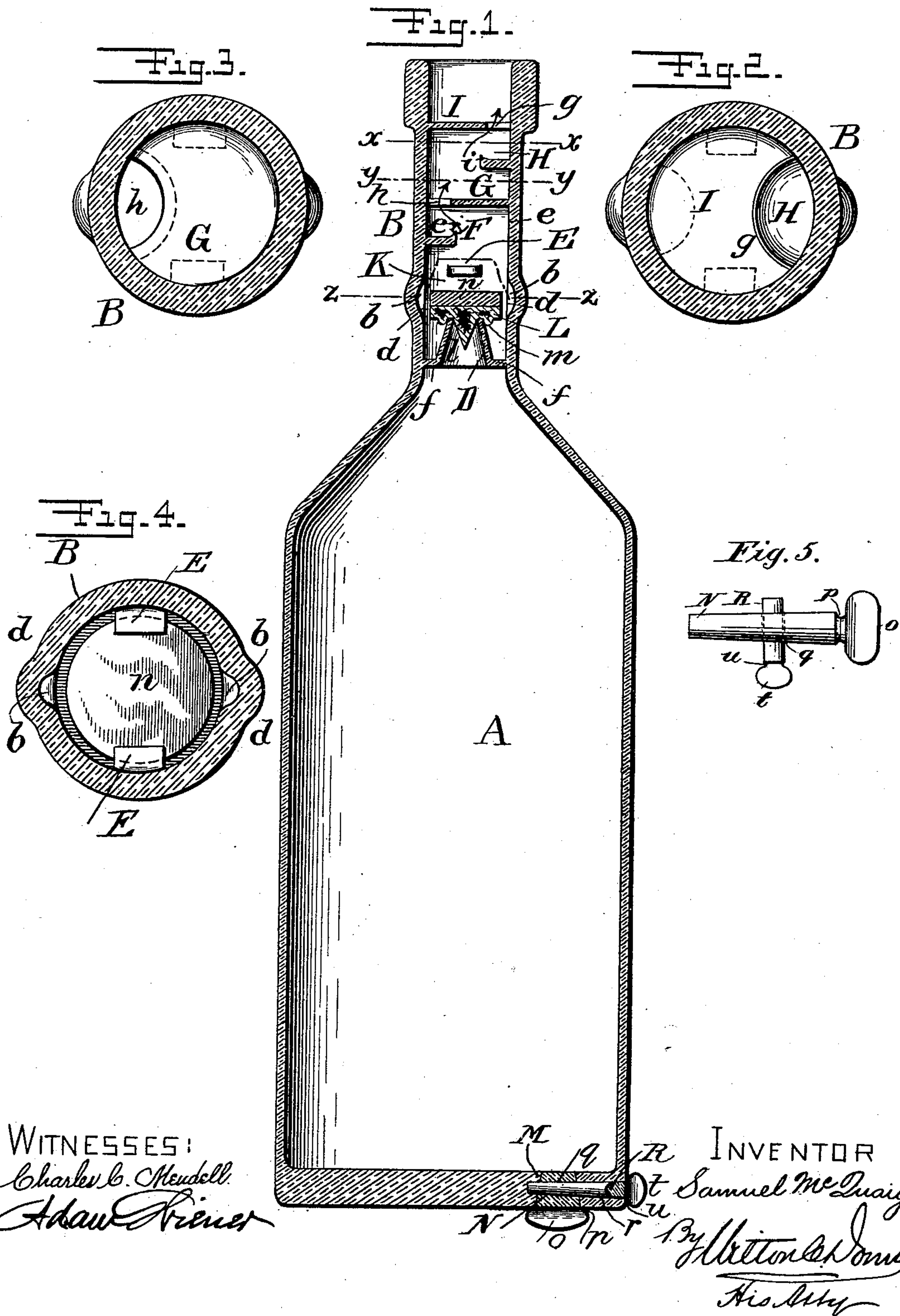
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Patented Nov. 18, 1902.

S. McQUAIG.
NON-REFILLABLE BOTTLE.

(Application filed Feb. 3, 1902.)

(No Model.)



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NON-REFILLABLE BOTTLE.

SPECIFICATION forming part of Letters Patent No. 714,018, dated November 18, 1902.

Application filed February 3, 1902. Serial No. 92,246. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL McQUAIG, a subject of the King of Great Britain, residing at New York, borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in Non-Refillable Bottles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to bottles and means for preventing the refilling of the same when emptied with fraudulent imitations of the contents which they originally contained.

The object of my invention is to produce a bottle capable of being rapidly and completely discharged of its contents, but that can be filled once only, so that when emptied it cannot be refilled or used again for the reception of an imitation of the substance with which it was filled originally.

The invention will be described first in connection with the old and well-known parts of a bottle and afterward specifically pointed out in the claims.

In the accompanying drawings, Figure 1 represents a vertical section of a bottle provided with my invention. Fig. 2 is a horizontal section of the neck of the bottle, taken on line *x x* of Fig. 1. Fig. 3 is a similar view of the neck of the bottle, taken on line *y y* of Fig. 1. Fig. 4 is a similar view taken on line *z z* of the same figure. Fig. 5 is a separate detail view of the stopper for the filling-orifice and the key for locking it.

Referring to the drawings, A is the bottle, the body of which is of the usual construction and may be of any desired shape or size. The neck B in its general exterior appearance does not differ essentially from ordinary bottles, except that it is somewhat larger than usual, and at a greater or less distance from the shoulders its sides are bent out at opposite points, thereby forming on the inside of the neck short longitudinal grooves *bb*, that serve as channels through which the liquid contents of the bottle flow out and pass the floating cork or stopper, hereinafter described. As these outward bends do not extend entirely around the neck the inside walls

of the neck (indicated by the straight lines *d d* between them) are of the same diameter as the parts of the neck above and below them—as, for instance, at *e e*. At the base of the neck, on the inside and near its junction with the shoulders of the bottle, there is a hollow conical nipple D, having at its bottom an outwardly-extended circular flange *f*, that joins the walls of the neck and supports the nipple and also prevents the contents of the bottle passing out except through the nipple. Above the nipple there are spurs E E, that project more or less from the walls of the neck, that serve as stops for limiting the movement of the weight, hereinafter referred to, and above the stop is a series of bafflers F G H I, to prevent inserting a wire or other implement for the purpose of tampering with the cork by lifting it off its seat and holding it up.

The bafflers F H are lunette-shaped and they project from opposite sides of the neck, the former between the spurs E E and baffler G and the latter between bafflers G and I. The bafflers G and I also project from opposite sides of the neck and they are provided with lunette-shaped openings *h g*, respectively, the edges of these openings overlapping slightly the edges of the bafflers F H. By means of the bafflers a devious channel or passage-way through the neck of the bottle is formed, the course the outflowing liquid will have to take to escape from the bottle being indicated by the arrows, and a wire or other implement inserted in the bottle to reach the cork will have to take the same course, this practicably being an impossibility. To further prevent the cork from being reached, the edges of the bafflers F H are turned up to form upwardly-projecting lips *ii*, so that when the end of the tampering-wire or other implement strikes the baffler and bends it will be caught by the lip and stopped; but if from skilful manipulation it is successfully passed by the baffler H and so on down through the opening in G its end will be caught by the lip on the baffler F, and it will be impossible to force it in any farther.

In the chamber K, between the nipple D and the stop E, is placed a floating cork L. On the under side of this cork there is a conical projection *l*, that fits accurately in the open-

ing at the top of the nipple, and around this conical projection and at a short distance from it is a circular bead *m*, the space between the bead and the conical projection being sufficient to receive the upper edges of the nipple, so that when the cork settles down on the top of the nipple the opening therein will be closed perfectly. On top of the cork a weight *n*, made of glass or any other suitable material, is placed loosely to retain the cork in place and to force it down on top of the nipple to close the same when displaced by tipping or reversing the bottle to discharge the contents thereof.

In the bottom of the bottle there is a filling-orifice *M*, which is tapered and ground to receive a ground-glass stopper *N*. This stopper has a thumb-piece *o*, by which it is held and inserted in the orifice and turned to tighten it. Between the stopper and the thumb-piece there is a crease *p*, which when the stopper is inserted is about in line with the surface of the bottom. Through the stopper is a transverse tapered hole *q*. In the bottom of the bottle at one side a transverse tapered and ground socket *r* is formed that intersects the filling-orifice. A tapered ground-glass key *R* is fitted to this socket, so that when the stopper is inserted in the orifice, with its tapered hole *q* in line with the socket, the ground-glass key can be passed through the same, and thus fasten and lock the stopper. The key is also provided with a thumb-piece *t*, to facilitate its insertion in the socket, and with a crease *u* between it and the end of the key to enable the thumb-piece to be broken off flush with the surface of the bottle after it is filled.

In the construction of this bottle the nipple *D* is formed or blown at the same time with the neck, and the floating cork and weight are inserted, after which the bafflers are successively fused to the neck, beginning with the innermost one.

The operation of the invention is as follows: To fill the bottle, the stopper *N* is removed, the key having been first withdrawn to release it, and the liquid is poured through the opening *M*, and when the bottle is full the stopper is inserted tightly, care being taken to have the opening through the stopper in line with the socket *r*, and when the stopper is rightly placed and tightened in the orifice the key *R* is inserted, passed through the transverse opening in the stopper, and forced tightly into the socket, thus locking the stopper in the orifice. The thumb-pieces of both the stopper and the key are then broken off on the crease-line, and thus they will be immovably fixed in the bottle and cannot be removed for the purpose of refilling. To pour the contents from the bottle, it is inverted in the usual manner. This causes the weight to fall against the spurs, and the liquid forces the floating stopper off the nipple, whereupon the liquid passes around the stopper and through the grooves *b b*, whence it follows the

devious passage around the bafflers, as indicated by the arrows, and is discharged from the mouth of the bottle. While a free outward passage for the liquid is thus provided through the neck, it is evident that nothing can be passed down through the neck into the bottle, for as soon as the bottle is righted the floating cork falls back at once on top of the nipple, which it is caused to do by the weight *n* bearing upon it. The conical projection on the under side of the cork is of such length that it does not drop entirely out of the nipple when the bottle is inverted. Hence it serves as a guide when the bottle is righted to cause the stopper to return to its proper place on top of the nipple and close the same. Furthermore, if it is attempted to force the liquid into the bottle through the neck in any manner the pressure will act upon the weight and stopper, and thus force the latter more tightly on the nipple and close the neck perfectly, and it will be impossible to lift the stopper from off the nipple by means of a wire or other implement, for owing to the bafflers neither the weight nor stopper can be reached thereby from the mouth of the bottle.

The diameter of the floating cork and also of the weight *n* should be only so much less than that of the neck as to enable them to move up and down easily as the bottle is inverted and righted, so that if it happen that the end of a wire or other implement should be forced past the bafflers it cannot pass between the weight or cork and the walls of the neck.

The weight being of glass or similar hard material, it cannot be penetrated or caught by the wire, and it thus serves not only to hold the cork down on top of the nipple, but also as a protector for the floating cork, which is necessarily made of light and buoyant material, such as corkwood, or other material suitable for the purpose.

I claim—

1. In a non-refillable bottle the combination of the neck of the bottle, a series of bafflers placed in the neck and projecting from opposite sides thereof forming thus a devious passage through the neck, spurs projecting from the sides of the neck below the bafflers, an upwardly-projecting nipple at the base of the neck, a floating cork for closing the nipple, a circular weight placed in the chamber between the spurs and the floating cork the edges of which fit closely but movably against the sides of the neck, and longitudinal grooves in the sides of the neck adjacent to the weight for the passage of the liquid around the edges of the weight when the bottle is inverted, substantially as specified.

2. In a non-refillable bottle the combination with the conical nipple at the base of the neck of a floating cork having a conical projection on its under side, and, a circular bead surrounding the conical projection at such a distance therefrom that the end of the nipple

when the cork is in place rests between the bead and the conical projection, substantially as specified.

3. In a non-refillable bottle the combination of the neck of a bottle, a nipple placed at the base of the neck, a floating cork provided with a conical projection on its under side that enters the nipple, a weight on top of the cork, spurs to limit the movement of the weight and cork when the bottle is inverted, grooves in the neck of the bottle for the outflow of the liquid around the stopper and weight, and bafflers placed in the neck of the bottle to prevent access to the cork, substantially as specified.

4. In a non-refillable bottle, the combination with the body of the same provided with a filling-orifice, of a stopper for closing the orifice and a key for locking the stopper in the orifice, substantially as specified.

5. In a non-refillable bottle the combination with the body of the same having a bottom provided with a filling-orifice and a socket that intersects the same, of a stopper for the orifice having transverse opening through the same and a thumb-piece, a key having a thumb-piece inserted in the socket and passed through the opening in the stopper to lock the same the thumb-pieces of the stopper and

key adapted to be broken off when placed in their respective positions, substantially as specified.

6. In a non-refillable bottle the combination of a neck provided with bafflers to prevent access to the neck-stopper, a nipple at the base of the neck, a floating cork to close the nipple, a weight to hold the cork on the nipple, spurs to limit the movement of the cork and weight when the bottle is inverted, grooves in the neck for the passage of the liquid around the cork and weight, a filling-orifice in the bottom of the bottle, a stopper therefor provided with a transverse opening and a thumb-piece which is adapted to be broken off when the stopper is inserted, a socket that intersects the filling-orifice, a key passed into the socket and through the opening in the stopper provided with a thumb-piece that is adapted to be broken off when the key is inserted, substantially as specified.

In testimony that I claim the invention above set forth I have affixed my signature in presence of two witnesses.

SAMUEL McQUAIG.

Witnesses:

CHARLES C. MENDELL,
ADAM WIENER.