C. McKEEVER.

BOTTLE STOPPER.

APPLICATION FILED MAR. 27, 1915.

1,167,092. Patented Jan. 4, 1916.

Fig. 1

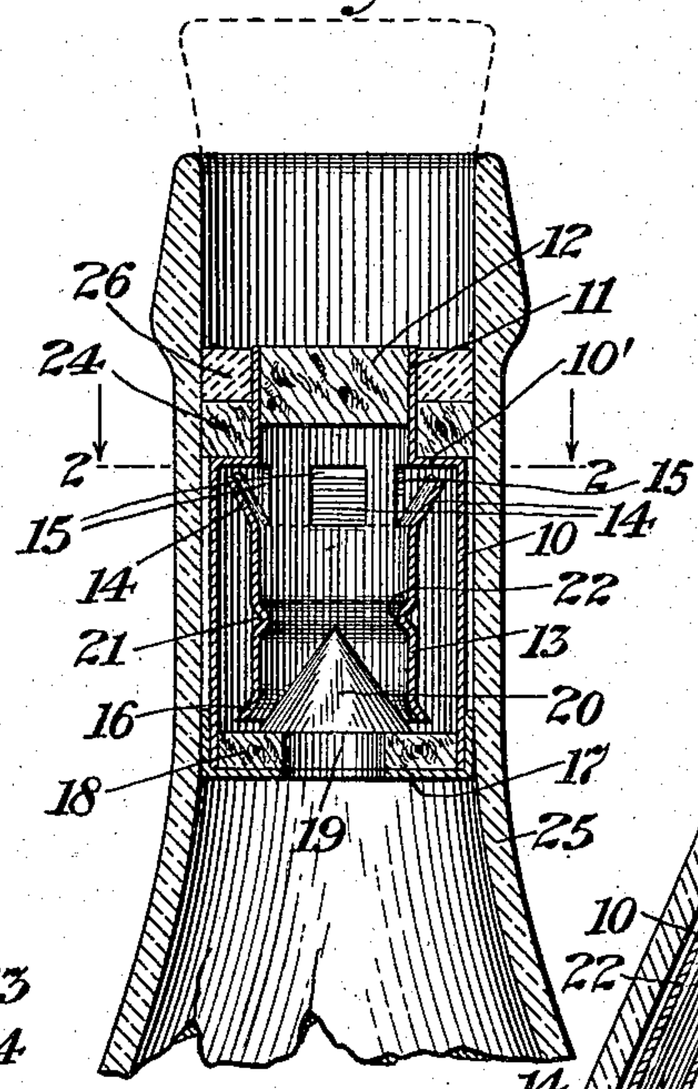


Fig. 2

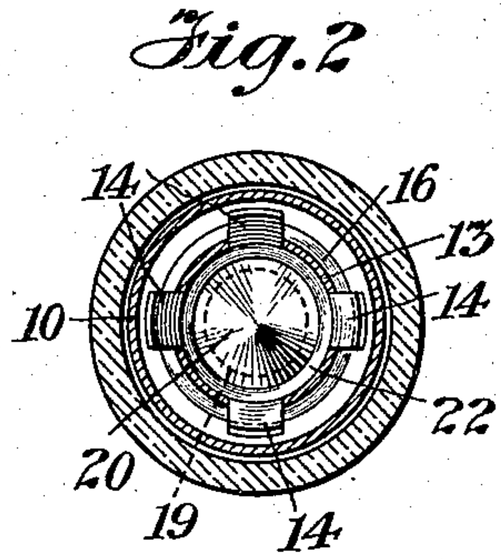


Fig. 3

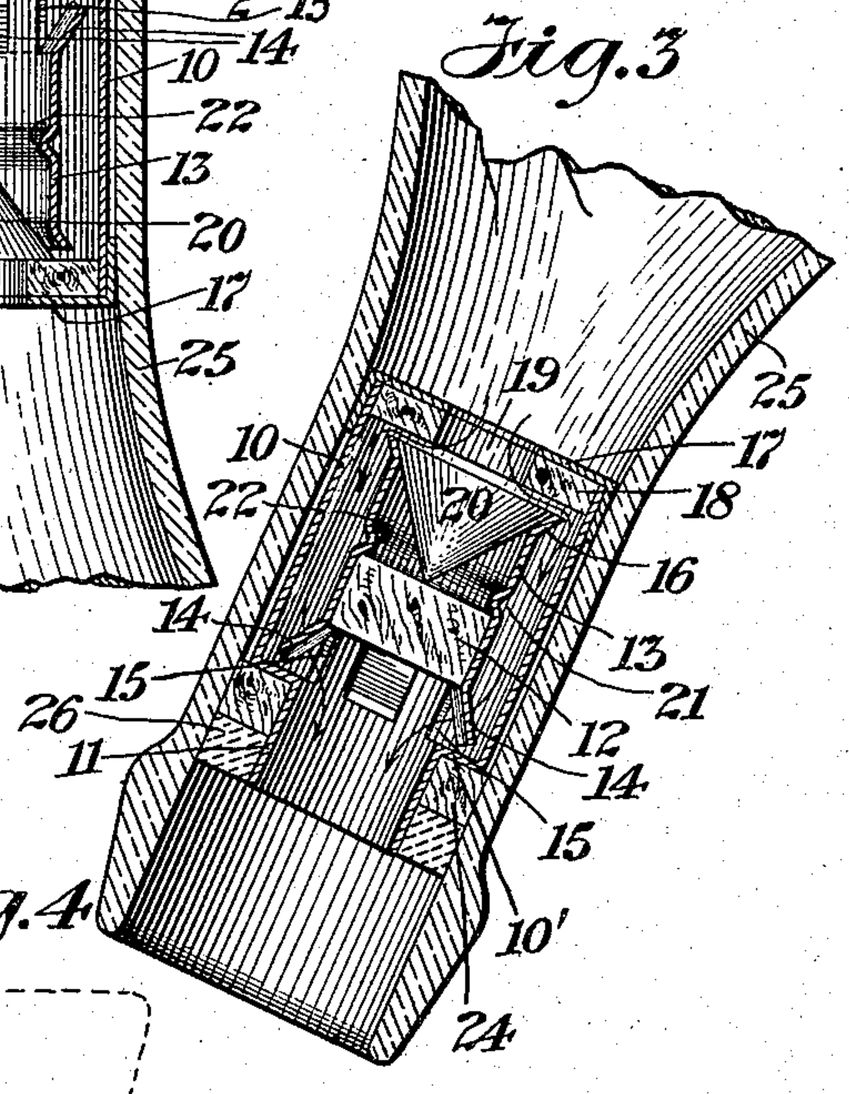
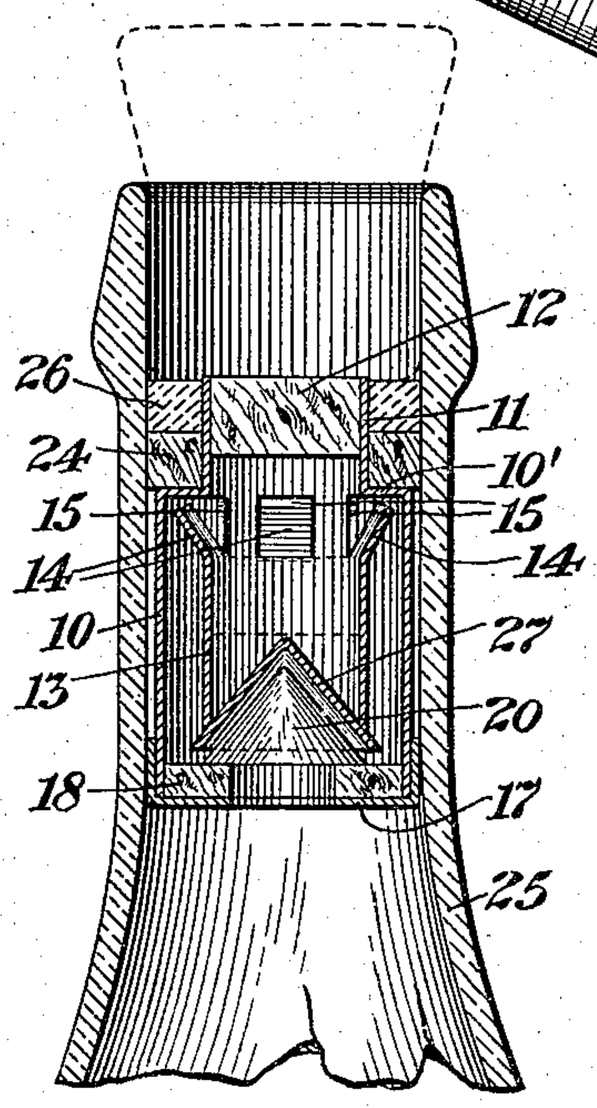


Fig. 4



WITNESSES

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BOTTLE-STOPPER.

1,167,092. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed March 27, 1915. Serial No. 17,342.

To all whom it may concern:

Be it known that I, CHARLES McKEEVER, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented an Improvement in Bottle-Stoppers, of which the following is a specification.

My present invention relates to a bottle stopper, and is so constructed that in ordinary attempts to re-fill a bottle with which my stopper is fitted, the apparatus will operate automatically to prevent a liquid flowing into the bottle, so that under such conditions the invention relates to a non-refillable bottle stopper, and the construction is also such that when attempts are made to refill the bottle, using pressure, for example, as is oftentimes done, the parts of the stopper are separated and certain of the same permitted to drop into the body of the bottle, thereby indicating that the stopper has been tampered with.

It follows, therefore, that the stopper made in accordance with my present invention is a device adapted to prevent the refilling of a bottle, and also under certain conditions to indicate that the apparatus is not in an operative condition, and the construction of my improved stopper will be hereinafter more particularly described.

In the drawing, Figure 1 is a central longitudinal section showing the stopper made in accordance with my present invention. Fig. 2 is a cross section on line 2 2, Fig. 1. Fig. 3 is a view similar to Fig. 1, showing the parts in an inverted position, and Fig. 4 is also a view similar to Fig. 1, showing a modified form of the invention.

Referring to the drawing, and particularly to Figs. 1, 2 and 3, my improved stopper preferably comprises a casing or shell 10 open at its inner end and at its outer end provided with a head 10′, connected to which is an extension 11. The shell and extension are preferably tubular and made of sheet metal or other similar material, and the tubular extension 11 is fitted with a cork or stopper 12, normally maintained in the position shown in Fig. 1, but which, when the apparatus is to be made operative, is moved by any suitable movement to the position shown in Fig. 3.

Within the shell or casing 10, I employ a tube 13. This is preferably a continuation of the tubular extension 11, and within the shell or casing and adjacent to the head thereof, the inner tube 13 is provided with tongues 14, bent outwardly so as to lie within the annular space between the casing and the inner tube and to provide discharge ports 15 for the outlet of the contents of the bottle.

At its inner end, the inner tube terminates an appreciable distance within the casing, and at its extremity is conically flanged, as indicated at 16. The inner end of the casing may also be provided with a cap 17, within which is a valve seat member 18, in both of which members there is a central aperture forming an outlet port 19 for the discharge of the contents of the bottle. I also employ a conical valve 20 adapted to bear normally against the valve seat member 18, and to extend into the inner tube 13. Also in a suitable position, as indicated in Figs. 1 and 3, the inner tube is recessed, as indicated at 21, to provide an inner projection 22 therein, this acting as a stop for the cork 12 when moved from the position shown in Fig. 1 to that shown in Fig. 3. The valve seat member 18 is frictionally maintained in position within the inner end of the casing and the cap 19, when employed, is provided with a flange extending over the outer surface of the casing and is frictionally maintained in position thereon.

The stopper, as hereinbefore described, is also preferably provided with a ring 24, of cork or similar material fitted over the extension 11 and resting against the outer surface of the head 10′, the ring 24 being of the same diameter as that of the neck of the bottel 25, in which the stopper is inserted. The stopper is preferably held in position in the neck of the bottle by means of a ring of cement 26, or other similar material being poured into the annular space surrounding the outside portion of the extension 11 and the adjacent portions of the neck of the bottle.

The parts of the hereinbefore described stopper are normally in the position shown in Fig. 1, in which, as will be readily apparent, the contents of the bottle cannot be poured therefrom.

In the use of the bottle fitted with this improved stopper, the cork 12 is pushed inwardly by using any suitable implement, from the position shown in Fig. 1 to that shown in Fig. 3, in which, as will be un-

derstood, the cork is brought against the inner projection 22, which, under ordinary conditions, limits its movement.

When in the position shown in Fig. 3, the ports 15 are uncovered, and by suitably tilting the bottle, the valve 20 is unseated, lying upon the inner surface of the conical flange 16 at the inner end of the tube 13. In this position, the contents of the bottle may flow therefrom, as indicated by the arrows in Fig. 3.

In righting the bottle, the conical flange will slide in the opposite direction than the conical flange 16 and be returned to its position against the valve seat member 18, in which position the valve closes the ports 19 and prevents liquid under ordinary conditions from flowing into the bottle. If, however, attempts were made to re-fill the bottle by using pressure, the pressure will force the valve seat member 18 and the cap 19 away from the casing and permit the same, together with the valve 20 to fall into the bottle, thereby indicating that the stopper has been tampered with.

As shown in Fig. 4, I may employ a conical member 27 secured in any suitable manner to the inner end of a tube 13 instead of merely providing the conical flange at the end of this member, as shown in Figs. 1 and 3. The apex of this conical member acts as a stopper for the cork 12, and consequently in this form of the stopper, it is unnecessary to provide the inner projection 22, as illustrated in Figs. 1 and 3. Otherwise the construction of the modified form of the invention is the same as that hereinbefore described in connection with the preferred form and the operation of the modified form of the invention is in all respects similar to that of the preferred form.

I claim as my invention—

1. A bottle stopper comprising a shell, an inner tube secured in position in said shell and having discharge ports therein, a valve seat frictionally held in place within said shell, a conical valve adapted to bear against the said valve seat and to extend an appreciable distance into the inner end of said inner tube, and a member adapted normally to lie within the said inner tube adjacent the outer end thereof, and to be moved inwardly past said discharge ports to and against the stop provided therefor to uncover said discharge ports and lie in a position in which it will not connect with said valve.

2. A bottle stopper comprising a shell, an inner tube secured in position in the said shell and having discharge ports therein, a valve seat frictionally held in place in the said shell adjacent the inner end of the said inner tube, a conical valve adapted to bear against said seat and to extend an appreciable distance into a recess provided therefor in the inner end of the said inner tube, a movable member adapted to fit and normally lie in the said inner tube adjacent the outer end thereof and to be moved inwardly to uncover the said discharge ports in said inner tube, and a seat for the said member located beyond the said discharge ports in the inner tube and against which the said member is lodged when moved past the discharge ports to open the same and in which position the said movable member does not contact with the said conical valve.

3. A bottle stopper comprising a shell, an extension of reduced diameter at the outer end thereof, an inner tube concentric with the said shell and provided with ports adjacent the outer end of the shell and with a conical flange at its inner extremity, a valve seat member frictionally maintained in position in the inner end of the shell and provided centrally with an outlet port, a conical valve adapted to bear against the said valve seat member and to extend an appreciable distance within the said inner tube, and a cork lying normally within the said extension and adapted to be moved from its position in the same into the said inner tube and beyond the said ports therein in order to open the same for the use of the stopper.

4. A bottle stopper comprisng a shell, an extension of reduced diameter at the outer end thereof, an inner tube concentric with the said shell and provided with ports adjacent the outer end of the shell and with a conical flange at its inner extremity, a valve seat member frictionally maintained in position in the inner end of the shell and provided centrally with an outlet port, a conical valve adapted to bear against the said valve seat member and to extend an appreciable distance within the said inner tube, a cork lying normally within the said extension and adapted to be moved from its position in the same into the said inner tube and beyond the said ports therein in order to open the same for the use of the stopper, and a cap frictionally held in position on the inner end of the said casing and provided with an outlet port concentric with the aforesaid outlet port in the valve seat member.

Signed by me this 13th day of February, 1915.

CHARLES McKEEVER.

Witnesses:
B. M. Allen,
J. B. Le Blanc.