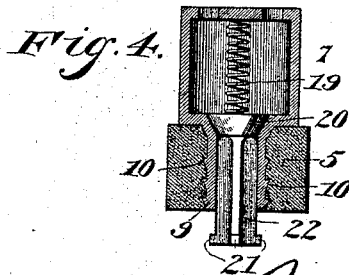
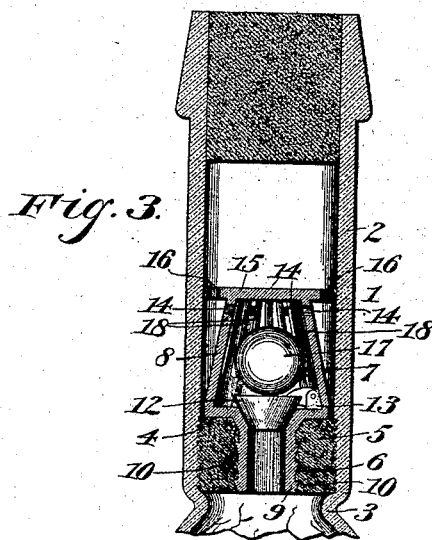
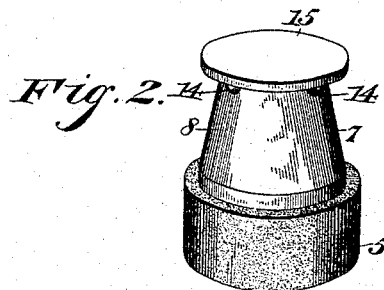
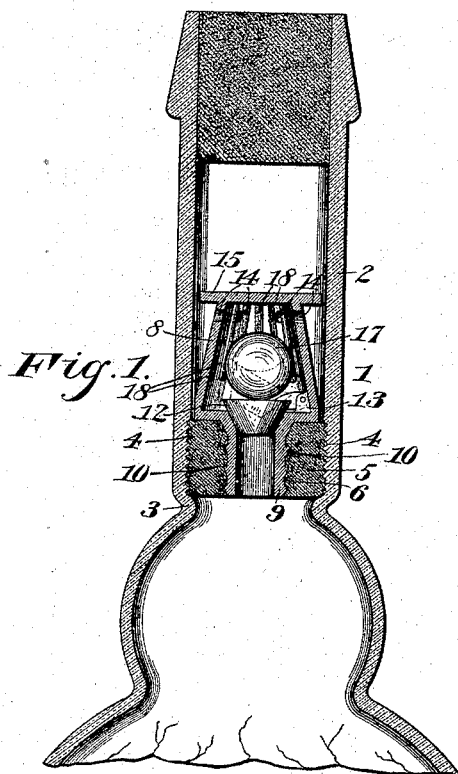


(No Model.)

G. B. BARNES.
BOTTLE AND STOPPER THEREFOR.

No. 526,674.

Patented Oct. 2, 1894.



Witnesses;
J. M. Withers
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UNITED STATES PATENT OFFICE.

GEORGE B. BARNES, OF BELLAIRE, OHIO.

BOTTLE AND STOPPER THEREFOR.

SPECIFICATION forming part of Letters Patent No. 526,674, dated October 2, 1894.

Application filed December 19, 1893. Serial No. 494,043. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. BARNES, of Bellaire, county of Belmont, State of Ohio, have invented a certain new and useful Bottle and Stopper Therefor, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce a bottle and means which, while permitting the unrestricted flow of liquid from the bottle, prevents the same from being re-filled after having been emptied.

In the accompanying drawings: Figure 1 is a central vertical sectional view of my bottle, showing the stopper in place and showing, in dotted lines, the positions the movable parts assume during the emptying. Fig. 2 is a detail view of the stopper detached. Figs. 3 and 4 illustrate modifications of my device.

Referring to the figures on the drawings: 1 indicates a bottle having a preferably parallel-sided neck 2 and a restriction or internal annular flange 3. The neck may be provided at its base with corrugations 4, for a purpose hereinafter specified.

5 indicates a compressible disk provided with a central perforation 6 beveled at its upper end.

7 indicates a cylindrical stopper case having upwardly converging sides 8 and provided with a depending tube 9 adapted to fit tightly within the disk 5, being secured thereto in any manner desired, as by annular projections 10, and having a conical valve seat at its upper end for the reception of a valve 12 hinged to a projection 13 within the valve case. The walls of the valve case are provided with apertures 14 near their upper ends.

To overcome the objections usually urged against this class of devices, namely: the comparative ease with which they may be tampered with to defeat the ends for which they are designed, by means of wire or small instruments being introduced through the exits to hold the valve open while the bottle is re-filled, I provide a flange 15 at the top of the case which extends nearly to the sides of the neck, the flow of liquid from the bottle being through the annular space so left.

17 indicates a detached ball freely movable within the valve case above the valve adapted to prevent the valve from swinging too far

to readily gravitate to its seat and to aid, by its weight, in re-seating the valve. This ball is of such size, as compared with the upper end of the case, as to nearly fit the same. The apertures 14 being above the center of the ball in its highest position, it is necessarily forced against the valve to seat the same in the event of any liquid entering therethrough from the neck of the bottle. As it is sometimes preferable to use a compressible ball, as for instance, gum, corrugations 4 are provided within the case to prevent the possibility of the ball closing or obstructing the exit openings, to a material degree, when the liquid is poured from the bottle.

The stopper, consisting of the disk, valve case and connected parts, having been forced to the base of the neck is sustained against further downward movement by the restriction 3 and is held securely in place by the corrugations 4 within the neck of the bottle. Having been inverted, the bottle may be emptied of its contents, the valve and ball having gravitated toward the upper end of the valve case; but, having been so emptied, the re-filling is prevented by the valve gravitating to its seat and being additionally secured by the weight of the ball, the distance of the stopper from the mouth of the bottle making it permanent as it is impossible, as has been explained, to remove or otherwise tamper with it.

Instead of the ball, it may be preferable in some instances to use a spring of sufficient tensile strength to completely reseal the valve, but permit its movement under the pressure of the liquid within the bottle during the emptying. When this spring is employed, I prefer to use, instead of the hinged valve described, a check valve capable of vertical movement, limited by a perforated disk 21 carried upon the end of a stem 22 projecting downwardly from the valve and adapted to impinge against the lower end of the tube 9.

It will be seen that by this novel structure, I have produced a bottle which may be filled with liquid and which, (the stopper having been forced to the base of the neck) is incapable of being re-filled after having been emptied and, in consequence of the position of the stopper within the neck, the insertion

of the ordinary cork into the mouth of the bottle is made possible.

I do not confine myself to the exact details of construction herein shown and described, but reserve to myself the right to vary them at will within the scope of my invention.

What I claim is—

1. In a bottle stopper, the combination with a valve case having apertured converging sides, an annular flange thereabove and a depending retaining tube provided with corrugations, of a compressible disk adapted to be retained upon said tube and a valve within the valve case, substantially as specified.

2. In a bottle stopper, the combination with a valve case having apertured converging sides, an annular flange thereabove, and a depending retaining tube provided with corrugations, of a compressible disk adapted to be retained upon said tube, a valve within the valve case, and auxiliary means for reseating the valve, substantially as specified.

3. In a bottle stopper, the combination with a valve case having apertured converging sides, internal corrugations between the apertures, a superimposed annular flange, and a depending retaining tube, of a valve and compressible ball within the case, substantially as set forth.

4. The combination with a bottle provided with an internal annular flange below the neck, and corrugations thereabove, of a compressible disk provided with a central aperture, and adapted to be retained by said flange and corrugations, a valve case provided with a corrugated tube adapted to enter the aperture and be retained by the disk and a valve within the valve case, substantially as specified.

5. The combination with a bottle provided with an internal annular flange below the neck and corrugations thereabove, of a valve case having apertured converging sides, an annular flange thereabove, a depending corrugated tube and internal corrugations between the apertures, of a compressible disk secured to the retaining tube and adapted to be retained by the flange and corrugations within the bottle, and a valve and compressible ball within the valve case, substantially as specified.

In testimony of all which I have hereunto subscribed my name.

GEORGE B. BARNES.

Witnesses:

THOMAS CULLEN,
D. T. COWEN.