O. A. HANFORD.

AUTOMATIC BOTTLE STOPPER.

APPLICATION FILED NOV. 11, 1911.

1,048,960. Patented Dec. 31, 1912.

FIG. 1.

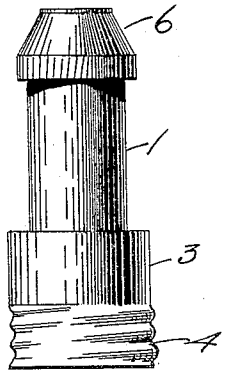


FIG. 2.

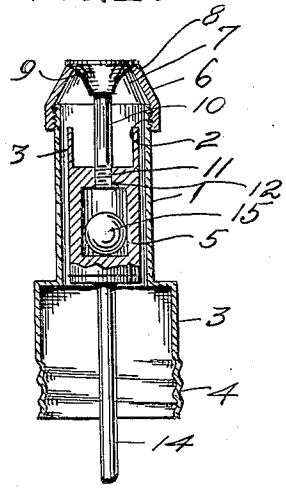


FIG. 4.

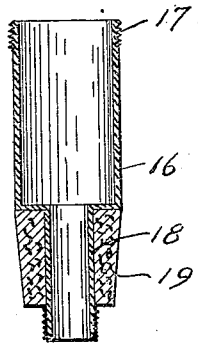
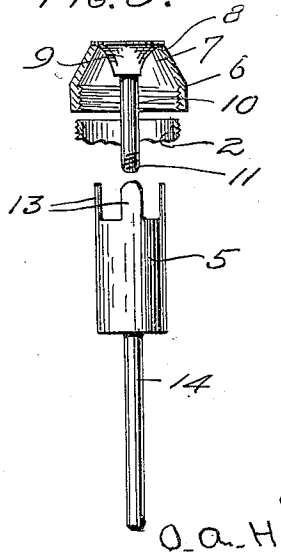


FIG. 3.



Witnesses

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AUTOMATIC BOTTLE-STOPPER.

1,048,960. Specification of Letters Patent. Patented Dec. 31, 1912.

Application filed November 11, 1911. Serial No. 659,815.

To all whom it may concern:

Be it known that I, ORRIN A. HANFORD, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Automatic Bottle-Stoppers, of which the following is a specification.

This invention relates to automatic bottle stoppers, and has for its object to provide an improved automatic bottle stopper which will be effective in operation and will readily permit the contents of a bottle to be discharged therefrom.

The invention further has for its object to provide an improved automatic bottle stopper so constructed and arranged that it may be readily taken apart for cleaning purposes or repair.

Referring to the accompanying drawing—Figure 1 is a view of an automatic bottle stopper constructed in accordance with this invention. Fig. 2 is a view thereof in vertical section. Fig. 3 is a detail view showing the parts of the bottle stopper unassembled with one of the members in longitudinal section. Fig. 4 is a view of a modified form of the stopper with the separable members removed therefrom.

In carrying out the invention a stopper is formed with a short tube or cylinder 1 having one end threaded as at 2, and the other end formed with an enlargement 3, adapted to be seated over the mouth of the neck of the bottle and preferably formed with a threaded portion 4, by means of which it may be screwed on to the threaded end of the neck of the bottle.

Loosely mounted within the tube 1 is a small cylinder 5, of such a width as to permit the passage of the contents of a bottle between it and the inner wall of the tube 1. Screwed on to the upper threaded end of the tube 1 is a cap 6, formed of metal and in the shape of a frustum of a cone and having an opening 7, with a beveled edge 8, on which is adapted to be loosely seated a conical head 9, and a stem 10, projecting through the cap 6 and detachably connected to one end of the cylinder 5 by having its threaded end 11 engaging a threaded hole 12, in one end of the cylinder 5. In order that the cylinder 5 may not close up the opening 7 in the cap 6, it is formed with projections 13, which abut against the inner end of the cap 6, and form openings to admit the passage of the contents of the bottle through said opening and the opening 7 in the cap 6. The cylinder 5 is formed at one end with a stem 14, which serves to clear any substance collecting in the cylinder 1 and in the neck of the bottle as for example when catsup is used.

It will be seen from the foregoing description, that with the parts constructed and arranged as described the conical head 9 will be seated on the opening 7 with the cap 6, and prevent air from getting into the bottle, and that when it is desired to use some of the contents of the bottle by tilting the same, the inner cylinder 5, will drop toward the outer end of the cylinder 1, and the conical head 9 will be moved away from the opening 7 so as to permit the discharge of some of the contents of the bottle. In order to facilitate the movements of the cylinder 5, in the cylinder 1, a ball 15 is loosely mounted in the cylinder 5, and rolls from end to end thereof. When it is desired to clean or repair the stopper, the cap 6, and the cylinder 5 may be readily removed from the cylinder 1.

In Fig. 4 is shown a modification of the invention in which a cylinder 16 is employed similar to the cylinder 1, and formed with a threaded end 17, on which the cap 6 may be screwed and with a small tubular projection 18 at its other end on which a cork 19, having a central hole may be mounted. By means of this construction, the cylinder may be mounted on a neck of a bottle by inserting the cork 19 therein, instead of employing the threaded enlarged portion 3, of the cylinder 1. The small cylinder 5 and the cap 6 are employed with the cylinder 16.

Having described the invention, I claim:

An automatic bottle stopper, consisting of a cylinder adapted to be detachably mounted on the mouth of a bottle, a cap provided with a frusto conical wall and having a discharge opening, said cap being detachably mounted on one end of said cylinder, a closed inner cylinder loosely mounted and longitudinally movable in said cylinder and having a stem projecting from one end through the inner end of the first named cylinder and spaced therefrom to provide an annular passage, a ball freely movable within the inner cylinder and a

stem projecting from its other end and movable through the opening in the cap, and having an inverted substantially frusto conical head adapted to close said opening from the outside, and projections on one end of said inner cylinder adapted to be seated against the inside of the frusto conical wall of the cap and form openings communicating with the opening in the cap.

ORRIN A. HANFORD.

In presence of—
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