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C. A. NATT.
BOTTLE STOPPER.
APPLICATION FILED JULY 19, 1909.

Patented Mar. 22, 1910.

Fig. 1.

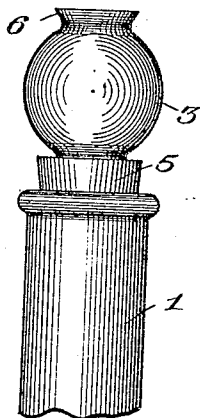


Fig. 2.

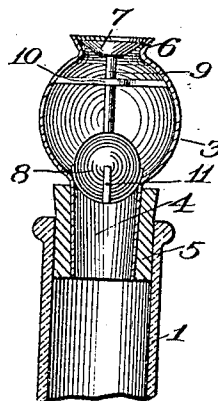
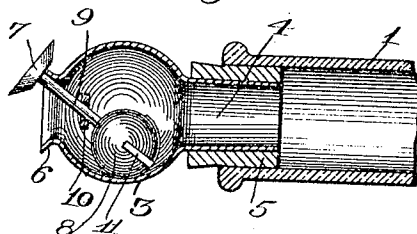


Fig. 3.



Witnesses
Walter B. Payne
H. H. Simms

Inventor
Charles A. Natt
By Church & Rich
his Attorneys

UNITED STATES PATENT OFFICE.

CHARLES A. NATT, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF TO NORMAN E. MACLEWAN, OF ROCHESTER, NEW YORK.

BOTTLE-STOPPER.

952,683.

Specification of Letters Patent. Patented Mar. 22, 1910.

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To all whom it may concern:

Be it known that I, CHARLES A. NATT, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Bottle-Stoppers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

The present invention relates to bottle stoppers and it has for an object to provide an improved construction employing a valve opening automatically to a position where it will not interfere with the discharging action when the bottle is tilted to discharge its contents.

Another object is to provide a construction which will permit the free flow of liquid from the bottle and at the same time prevent all waste due to dripping.

To these and other ends the invention consists in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is an elevation of my invention embodied as an attachment to bottles; Fig. 2 is a vertical section showing the stopper in closed position, and Fig. 3 is a vertical section showing the stopper in discharging position.

In the present embodiment the stopper is in the form of an attachment to a bottle but it is apparent that the invention is not limited to this construction. As shown it comprises a hollow member consisting of an enlarged or substantially spherical chamber 3 with a tubular portion 4 at one end surrounded by an externally tapering sleeve 5 of cork or other yielding material adapting it for insertion into the neck of a bottle 1. At its outer end the hollow member may be provided with a flared discharge 6 of frusto-conical form which cuts the liquid in such a manner that all dripping is prevented.

Arranged to close the discharge from the bottle is a valve 7 which preferably seats against the inner wall of the flared discharge 6 and is held in this position by a weight 8 that in this instance operates in the chamber 3 and is rigidly secured to a

stem 9 depending from the under surface of the valve 7. When the bottle is tilted to discharge the contents thereof the weight 8 moves forwardly in the casing or hollow member and carries the valve 7 away from the seat 6, the enlarged chamber 3 permitting the liquid to flow freely above the weight.

To the end that the valve 7 shall not interfere with the discharge of the liquid the said valve is shifted laterally in an upward direction relatively to its seat, being preferably at the same time moved outwardly to clear the seat 6. This result is accomplished preferably by a support or guide 10 which loosely engages the stem 9 between the weight 8 and the valve 7, the guide or support in this instance being in the form of a centrally perforated bar secured at its ends to diametrically opposite sides of the chamber 3. It is apparent that this construction permits the stem to move forwardly with the valve 7 and serves as a fulcrum member about which the said valve swings laterally in various directions away from a central position under the action of the weight 8 which is heavier than the valve 7 and will therefore move to a lower point than said valve.

It is preferred to make the valve 7 in the form of an inverted cone so that its side walls will be inclined and slide freely over the outer edge of the discharge 6.

This stopper has special advantages when used on bottles from which liquid is frequently dispensed, such for instance as whisky bottles and other bottles used in bar-rooms. When in an upright position the bottle is effectively closed against the entrance of dust, flies and bacteria, while the liquid may be dispensed almost instantaneously merely by the tilting of the bottle, the weight 8 moving forward and downward in the discharge passage causing the valve 7 to partake of an outward and upward lateral movement. In this position the liquid has a free passage through and from the stopper and is not caused to spread in various directions. Upon the uprighting of the bottle the weight 8 moves in an opposite direction from that which was imparted to it on the opening movement and draws the valve 7 firmly to its seat, the tapered portion of the valve facilitating the closing thereof while

the sharp outer edge of the discharge portion 5 cuts the outflowing stream of liquid and prevents any dripping.

It is desirable that when the valve 7 is closed the weight 8 shall engage within the tubular portion 4 for otherwise binding action will take place between the seat 6 and the guide 10 and the valve will not open until the bottle has passed the horizontal, whereas with the present construction in which a flared portion surrounds the upper end of the tube 4, the valve is moved outwardly at the first part of the tilting of the bottle and before the stem engages the guide 10 which afterward effects the upward movement of the valve. Upon the uprighting of the bottle the weight enters the upper end of the tubular portion and centers the valve 7. As liquid will remain in the chamber 3 after the closing of the valve 7 it is desirable that the weight should not close the tubular portion 4, and therefore it may be provided with ribs 11 on its under side which provide a passageway for the liquid from the chamber 3 to the bottle.

From the foregoing it will be seen that not only does this construction exclude the

extraneous matter from the interior of the bottle but it prevents a great deal of the waste that has heretofore occurred. 30

I claim as my invention:

1. In a bottle stopper, a tubular portion, an enlarged chamber having a flared discharging portion in proximity to said chamber, a valve seating in the discharging portion, a stem depending from the valve, a weight secured to the stem and seating in the end of the tubular portion, and a guide cooperating with the stem between the weight and the valve. 35 40

2. In a bottle stopper, a tubular portion, an enlarged chamber having a flared discharging portion in proximity to said chamber, a valve seating in the discharging portion, a stem depending from the valve, a weight secured to the stem and having ribs seating in the end of the tubular portion, and a guide cooperating with the stem between the weight and the valve. 45

CHARLES A. NATT.

Witnesses:

HAROLD H. SIMMS,
LUCY A. VAN COURT.