

No. 745,191.

PATENTED NOV. 24, 1903.

F. W. JOHNSON.
SELF CLOSING BOTTLE STOPPER.

APPLICATION FILED MAR. 14, 1903.

NO MODEL.

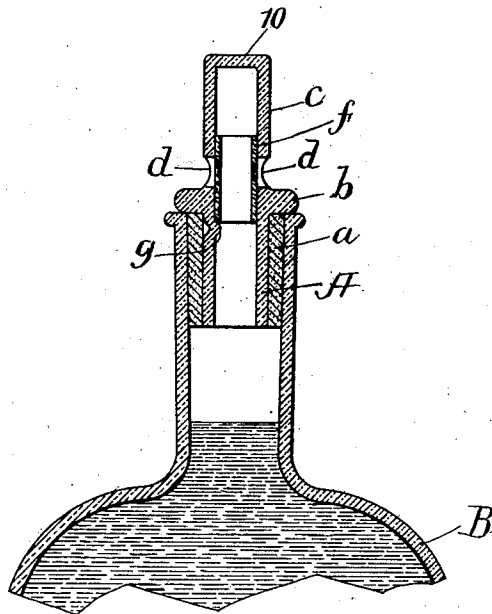


Fig. 1.

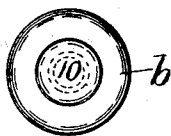


Fig. 3.

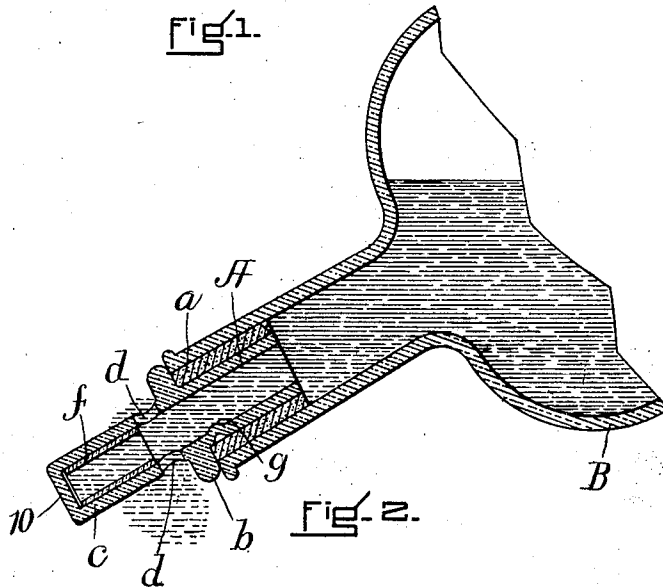


Fig. 2.

WITNESSES.

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INVENTOR

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Att'y

UNITED STATES PATENT OFFICE.

FREDERICK W. JOHNSON, OF WALTHAM, MASSACHUSETTS.

SELF-CLOSING BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 745,191, dated November 24, 1903.

Application filed March 14, 1903. Serial No. 147,845. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. JOHNSON, a citizen of the United States, residing at Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Self-Closing Bottle-Stoppers, of which the following is a specification.

My invention has for its object to provide a self-closing stopper of simple construction which is especially adapted for use with bottles containing liquors and other thin liquids which are in frequent use and which will permit of the free outpour of the liquid from the bottle and will effectually exclude dust and prevent the entrance of flies and other insects.

To this end my invention consists in a bottle-stopper comprising a hollow body or stem encircled by an elastic sleeve or facing and surrounded by a flange adapted to rest on the upper end of the neck of the bottle, a nozzle above said flange closed at its upper end and provided at or near its base with one or more discharge-openings located immediately above said flange, and a loose cylindrical valve slidably arranged within said nozzle and adapted to normally close the outlet therefrom and to automatically uncover the same when the bottle is inverted, as hereinafter more fully described.

In the accompanying drawings, Figure 1 is a vertical section through the neck of an ordinary bottle having my self-closing stopper applied thereto. Fig. 2 is a similar section showing the bottle tipped to pour out the liquid therefrom. Fig. 3 is a top view of the stopper.

In the said drawings, A represents the body or stem of the stopper, which is composed of glass or other suitable material. This stem, which is hollow and open at its bottom, is encircled by a sleeve or facing *a*, of cork or other elastic substance, which closely fits within the neck of the bottle B, as shown. The upper end of the stem is surrounded by an integral flange *b*, which rests on the top of the neck of the bottle, and above this flange is formed a cylindrical nozzle *c*, which is closed at its upper end 10 and forms an extension or continuation of the tubular stem A, being made integral therewith. At the bottom or base of the nozzle, on opposite sides of the

same and directly above the flange *b*, are formed two outlet-openings *d d* for the discharge of the liquid contents of the bottle. I preferably employ two openings, as shown, to facilitate the entrance of air, and thereby secure a full and complete outflow of the liquid; but a single opening only may be provided or more than two, if desired.

Within the hollow nozzle *c* is placed a loose cylindrical valve *f*, composed, preferably, of a short sleeve or piece of tubing open at both ends and free to slide up and down within said nozzle, its movement being limited in one direction by contact with the closed outer end 10 of the nozzle and in the opposite direction by contact with a suitable stop *g*, projecting from the interior of the stem A beneath the flange *b*. The length of the cylindrical valve *f* must not exceed the distance between the upper ends of the openings *d d* and the outer closed end of the nozzle *c*, and the stop *g* must be so located as to check and retain the valve in a position to completely cover said openings. When the bottle is in an upright position, as shown in Fig. 1, the valve *f* rests on the stop *g* and normally covers the openings *d d* and closes the outlet from the bottle, at the same time excluding dust and dirt and preventing the entrance of flies and other insects. On tipping up the bottle the valve *f* by its own gravity will slide down into the outer portion of the nozzle *c*, as shown in Fig. 2, thus uncovering the openings *d d*, from which the liquid will then freely flow out. By the employment of a hollow cylindrical valve open at both ends, as shown, the liquid which runs to the outer closed end of the nozzle *c* when the bottle is tipped up is free to flow back into the bottle when the latter is returned to its normal upright position, thus preventing any liquid from remaining in the outer end of the nozzle, which if a solid valve were used would be liable to collect at this point and prevent the valve from moving sufficiently to uncover the openings at the base of the nozzle when the bottle was tipped up.

The above-described self-closing stopper, which may be made entirely of glass with the exception of the cork facing around the stem, is exceedingly simple, easily kept clean, and is free from liability to get out of order, thus

practically adapting it for liquor and other bottles in frequent use in place of the removable metal cap which has heretofore been commonly used with bottles of this description.

5 What I claim as my invention, and desire to secure by Letters Patent, is—

1. A self-closing bottle-stopper comprising a hollow body or stem adapted to fit within
10 the neck of a bottle, a nozzle forming a straight continuation of said hollow stem and having its upper end closed and provided at or near its base with one or more outlet-openings,
15 and a loose cylindrical valve slidably arranged within said nozzle, and adapted to normally close the outlet therefrom, and to automatically uncover the same when the bottle is inverted.

2. A self-closing bottle-stopper comprising
20 a hollow body or stem encircled by an elastic sleeve or facing and surrounded by a flange adapted to rest on the upper end of the neck of the bottle, a nozzle above said flange closed at its upper end and provided at or near its
25 base with one or more outlet-openings located immediately above said flange, and a

loose cylindrical valve slidably arranged within said nozzle and adapted to normally close the outlet therefrom and to automatically uncover the same when the bottle is inverted. 30

3. In a self-closing bottle-stopper, the combination of a hollow body or stem encircled by an elastic sleeve or facing and surrounded by a flange adapted to rest upon the upper
35 end of the neck of the bottle, a nozzle above said flange closed at its upper end and provided at or near its base with one or more outlet-openings located immediately above
40 said flange, a loose gravity-valve consisting of a short tube open at both ends and slidably arranged within said nozzle and adapted to normally close the outlet therefrom and to automatically uncover the same when the
45 bottle is inverted, and a stop for limiting the downward movement of said valve.

Witness my hand this 9th day of March, A. D. 1903.

FREDERICK W. JOHNSON.

In presence of—

P. E. TESCHEMACHER,
F. B. SPAULDING.