

(No Model.)

H. G. BOSTON.
STOPPER FOR BOTTLES HOLDING POWDERS, LIQUIDS, OR
OTHER SUBSTANCES.

No. 417,981.

Patented Dec. 24, 1889.

FIG. 3.

FIG. 1.

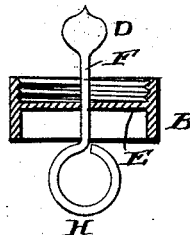
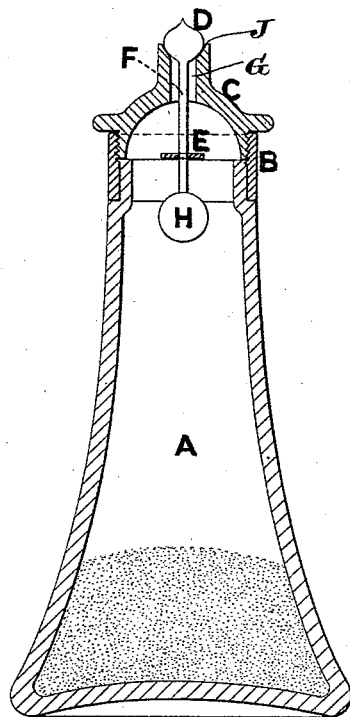
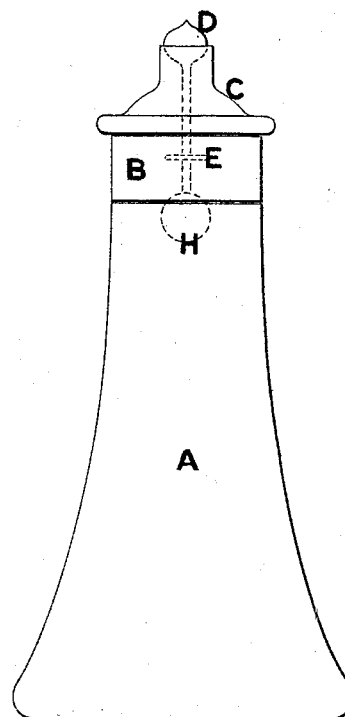


FIG. 2.



Witnesses,
Herbert Drenn.
Arthur Addison.

Inventor
H. G. Boston

UNITED STATES PATENT OFFICE.

HENRY GEORGE BOSTON, OF YORK, COUNTY OF YORK, ENGLAND.

STOPPER FOR BOTTLES HOLDING POWDERS, LIQUIDS, OR OTHER SUBSTANCES.

SPECIFICATION forming part of Letters Patent No. 417,981, dated December 24, 1889.

Application filed May 23, 1888. Serial No. 274,834. (No model.) Patented in England November 9, 1887, No. 15,264; in France May 12, 1888, No. 177,561; in Belgium May 14, 1888, No. 60,855, and in Canada December 6, 1888, No. 30,346.

To all whom it may concern:

Be it known that I, HENRY GEORGE BOSTON, a subject of the Queen of Great Britain, residing at York, in the county of York, England, have invented a new and Improved Stopper for Bottles Holding Powders, Liquids, or other Substances, (for which I have obtained patents in Great Britain, No. 15,264, dated November 9, 1887; in France, No. 177,561, dated May 12, 1888; in Belgium, No. 60,855, dated May 14, 1888, and in Canada, No. 30,346, dated December 6, 1888,) of which the following is a specification.

This invention has for its object to provide a novel, simple, and comparatively inexpensive bottle for salt, pepper, and like material, whereby the passage of the material through a single delivery-orifice in the bottle-mouth is checked by a valve-stem passing there-through, and having a spherical valve which automatically gravitates to a closed position when the top of the bottle is uppermost, for stopping the discharge-mouth, while at the same time the valve-stem acts to prevent the single delivery-orifice from choking up.

The invention consists in the features of construction and combination of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a salt or pepper bottle constructed according to my invention; Fig. 2, a side elevation of the same; and Fig. 3, a detail view of a valve, its stem, and the collar with its bridge-piece.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, where—

The letter A indicates a glass or other bottle, having at its top an attached metallic collar B, which is internally screw-threaded and receives the screw-threaded part of the cap C, that comprises the bottle-mouth. The bottle-mouth is composed of a single orifice G, terminating at its top in a concave or hemispherical seat J for a spherical or ball valve D, that is fixed to the upper end of a cylindrical valve-stem F, extending downward through and beyond the orifice G. A bridge-piece E is secured to the collar B, and the valve-stem

passes through an opening therein, while the lower end of such stem is provided below the bridge-piece with a shoulder or head H to limit the outward movement of the valve and stem. The spherical or ball valve automatically opens by gravity when the bottle is inverted and automatically gravitates to its closed position when the delivery-mouth in the top of the bottle is uppermost, so that the spherical part of the valve accurately fits down into the concave or hemispherical seat to secure a perfect closure of the bottle when the latter stands upright, and the orifice is of a diameter about twice the diameter of the valve-stem, whereby the material can be discharged through the single orifice around the stem and the latter serves to retard the too free passage of such material and prevents the bottle-mouth from becoming clogged by reason of the reciprocating movement of the stem when shaking the bottle to dredge out some of the material therein contained. By the enlarged delivery-orifice terminating in the hemispherical valve-seat, if any salt or pepper lodges on the seat, the tendency of the ball-valve in seating itself is to push such salt or pepper down into the orifice below the seat, so that the valve under ordinary conditions will always accurately seat itself for a perfect closure of the bottle. Where a series of small perforations are provided in a cap on the mouth of the bottle, they will be choked up by the material, especially if the latter be damp, unless each perforation be provided with a valve-stem to prevent choking as well as to close the bottle when it stands upright; but such construction of a bottle-cap with numerous perforations and valves and valve-stems is expensive, and hence objectionable, besides which it is not practicable to provide each perforation with a concave or hemispherical seat for a spherical or ball valve to secure a perfect closure of the bottle. Further, where a flat-faced valve seats itself on a flat-faced cap, any salt or pepper lodging on the latter under the valve prevents such valve tightly closing, and if all the valve-stems be rigidly connected, as heretofore, and one is not accurately seated, none are accurately seated.

A bottle has heretofore been made wherein

the cap is furnished with a concave seat and numerous discharge-orifices and a convex valve having a valve-stem passing through and closely fitting a central hole in the cap; 5 but while such construction provides means for closing all the perforations there is no provision for keeping the delivery-orifices free from accumulating material, and therefore they will become choked.

10 By my invention a simple, economical, and efficient salt or pepper bottle is provided wherein a single delivery-orifice is furnished with a concave seat for the perfect closure of the bottle by a spherical or ball valve that 15 gravitates to an open position when the bottle is inverted and gravitates to a closed position when the delivery-mouth in the top of the bottle is uppermost, while the flow of material is checked by the valve-stem, and also 20 prevented from choking up the orifice.

Having thus described my invention, what I claim is—

The combination, with a salt and pepper bottle, of a screw-threaded collar fixed thereon and provided with an internal bridge- 25 piece having a perforation, a cap secured to the collar and containing a single delivery-orifice terminating at its upper end in a hemispherical valve-seat, and a self-closing spherical or ball valve having a valve-stem loosely 30 passing through the delivery-orifice and bridge-piece and provided beneath the latter with a shoulder or head, substantially as described.

HENRY GEORGE BOSTON.

Witnesses:

HERBERT DUNN,

ARTHUR EDDISON,

*Both of 17 and 18 Royal Exchange Chambers,
Boar Lane, Leeds.*