T. J. HOLMES.

Bottle Stopper and Sprinkler.

No. 207,279. Patented Aug. 20, 1878.

Fig. 1.

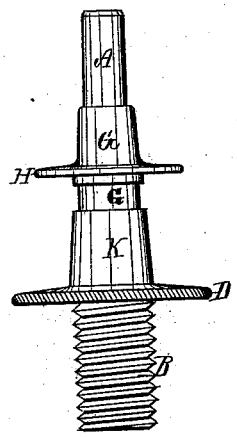


Fig. 2.

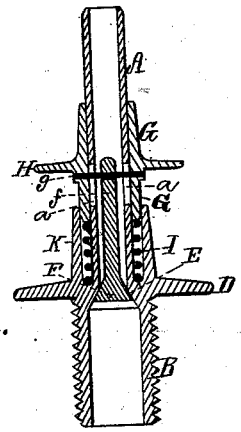
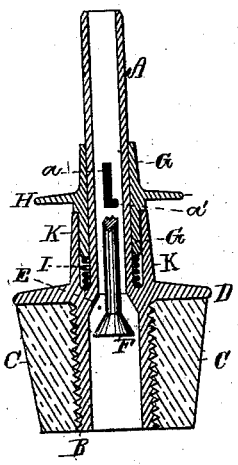


Fig. 3.



Witnesses.

E. A. Phelps.

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UNITED STATES PATENT OFFICE.

THOMAS J. HOLMES, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN BOTTLE-STOPPER AND SPRINKLER.

Specification forming part of Letters Patent No. **207,279**, dated August 20, 1878; application filed May 23, 1878.

To all whom it may concern:

Be it known that I, THOMAS J. HOLMES, of Boston, Massachusetts, have invented an Improvement in Bottle-Stopper and Sprinkler; and that the same is fully described in the following specification and represented in the accompanying drawing.

The object of my improvement is to provide a cheap and efficient self-closing stopper for sauce, perfume, and other bottles, and to furnish such stoppers with a valve adapted to be opened by pressure of the operator's hand and closed by the action of a spring.

My invention consists in a tubular stopper, having a suitable shank, discharge-tube, and valve-seat, in combination with a spring and a flanged sleeve, sliding upon the discharge-tube and carrying the valve; also, in such devices in combination with a stop, serving to hold the valve open, when desired.

The drawing represents my invention in the most approved form, Figure 1 being a side view thereof; Fig. 2, a vertical section of the same; and Fig. 3, a similar section, showing a stop for holding the valve open.

A is the discharge-tube, formed integral with, or as a prolongation of, the hollow shank B, which is adapted to screw into a cork or plug, C, fitting into the mouth of the bottle.

If preferred, the shank may be enlarged, and provided with a female thread, so as to screw upon the outside of the bottle-neck or plug.

D is a broad flange formed at the upper end of the hollow shank, serving to cover the cork and to facilitate insertion of the screw therein, for which latter purpose the edge of the flange is milled.

At a suitable point in the tube or hollow shank a valve-seat, E, is formed, and a valve, F, of any proper shape, works in connection therewith, carried by a sleeve, G, which has a sliding or longitudinal movement upon the tube A in opening and closing the valve.

As represented in Fig. 2, the valve is provided with a stem, *f*, hung upon a pin, *g*, secured to the sleeve, and working in vertical slots *a* in the discharge-tube. The valve is closed upon its seat by the pressure of a spiral spring, I, surrounding the tube A, and hidden from view by the circular wall K, formed integral with the tube and shank. The spring is placed in the annular space below the sleeve G, so that the sleeve rests by its lower edge upon the spring, and is pressed upward by it. A downward movement of the sleeve and valve against the resistance of the spring is effected by pressure of the fingers upon the upper side of the flange H, extending outwardly from the sleeve. Thus the valve is opened by a simple sliding movement of the sleeve, readily effected by the thumb or a finger of the hand holding the bottle, so that by inverting the bottle its contents, whether liquid or powder, may be dropped or shaken from the discharge-tube. On releasing the flange H from downward pressure the power of the spring immediately forces it upward, and automatically closes the valve, so that there is no danger that the valve will be inadvertently left open and the liquid accidentally spilled.

As a modification of the device above described, I sometimes omit the wall K, and in lieu thereof prolong the sleeve G downwardly far enough to hide the spring from view, shoulders being formed on the tube A and within the sleeve, for the ends of the spring to bear against. The sleeve may be also extended above the top of the tube A, and the valve-stem connected to it at that point in any convenient manner.

I have devised a stopper for barbers' bottles and for other purposes where it is at times desired mechanically to hold the valve open after the spring has been compressed. This construction is illustrated in Fig. 3, which shows the slots in the tube A formed with a recess or offset, *a'*, at the lower end, into which the pin *g* may be thrust by a partial rotation of the sleeve while the valve is open. As the slots are hidden from view by the sleeve G, the appearance of the article is not marred. This engagement of the pin in the recesses *a'* prevents the sleeve from rising under pressure of the spring, and hence the valve is kept open until, by a slight rotary movement, the parts are disengaged, permitting the automatic action of the spring to be resumed.

In practice, I form these articles mainly of soft metal, which is cheap, easily cast, and not readily oxidized, and I plate the spring and pin with nickel.

I claim as of my invention—

1. A bottle-stopper having a valved discharge-tube fixed with relation to the bottle, in combination with a flanged sleeve and spiral spring, surrounding the discharge-tube and serving to operate the valve, substantially as and for the purpose set forth.

2. A tubular stopper having a screw-shank, discharge-tube, and annular surrounding wall, formed integral with each other, in combination with a spiral spring placed between said tube and wall, a flanged sleeve surrounding the tube, and a valve operated by said spring and sleeve, substantially as set forth.

3. A valvular stopper having a screw-shank, whereby the discharge-tube is fixed with relation to the bottle, in combination with a flanged sleeve and spiral spring, surrounding the discharge-tube and serving to operate the valve, and a stop to hold the valve open when desired, substantially as set forth.

THOS. J. HOLMES.

Witnesses:
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