(No Model.)

C. B. SPONSLER.

Bottle Stopper.

No. 238,726. Patented March 8, 1881.

Fig. 1.

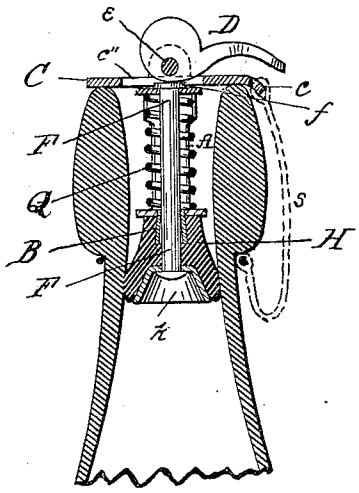


Fig. 2

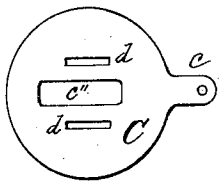


Fig. 3

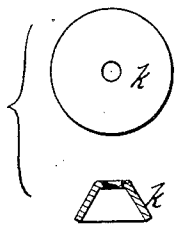


Fig. 4.

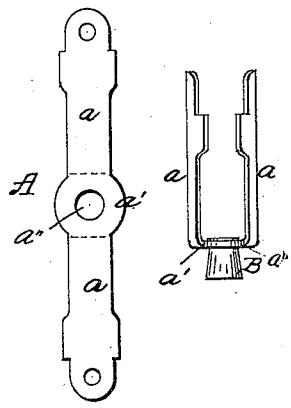


Fig. 5.

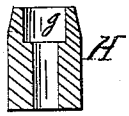


Fig. 6.

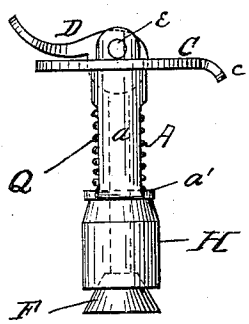
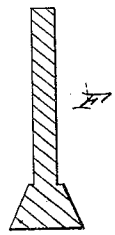


Fig. 7.



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UNITED STATES PATENT OFFICE.

CALVIN B. SPONSLER, OF PITTSBURG, PENNSYLVANIA

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 238,726, dated March 8, 1881.

Application filed December 10, 1880. (No model.)

To all whom it may concern:

Be it known that I, CALVIN B. SPONSLER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Bottle-Stoppers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 shows a bottle-neck with my stopper in closed relation, the view being a vertical transverse section. Fig. 2 is a top view of the blank cap. Fig. 3 shows the mode of forming the conical plug of sheet metal, the upper part of the figure, showing the blank disk, and the lower part showing the disk struck up into a conical plug. Fig. 4 shows the blank and complete shell. Fig. 5 shows the gum gasket in section. Fig. 6 shows the complete stopper ready for insertion or withdrawal. Fig. 7 is a modified plug and stem.

My improvement has reference to the invention for which Letters Patent of the United States, dated November 18, 1879, No. 221,874, were granted me for improvements in bottle-stoppers.

My present improvements have for their object to provide an efficient substitute for the nut and screw shown in said Letters Patent, and to otherwise improve and cheapen the construction of the device. Said substitute consists of a spring and lever combined with a conical plug, whereby the gasket is expanded in the neck of the bottle, and the stopper retained therein.

Referring to the annexed drawings, A designates a blank of sheet-metal, which forms the main shell of a holder. To form the shell the blank is struck up to produce two sides, *a a*, in Fig. 4, leaving the disk-shaped center *a'* with central opening *a''*.

B represents a conical shell, which is fastened to the shell A by inserting it in the opening *a''*, and retaining it by its own elasticity or heading it therein.

C, in Fig. 2, represents the head or cap of the stopper, which consists of a disk with an ear, *c*, a longitudinal slot, *c''*, and two openings, *d d*, on either side of said slot. The cap is retained on the shell A by causing the two sides *a a* to pass through the openings *d d*, a pin, *e*, being then passed through said sides and then riveted. This pin serves as the fulcrum of a cam-lever, D, whose cam works through the central slot and impinges on the top of the stem of the conical plug F.

Q is a spiral spring fitting in the shell A, and bearing against the disk portion *a'* of the said shell and the head *f* of the plug-stem F. Said head consists of a washer, which is held on the plug-stem by heading up the latter, or the head may be formed solely by heading up the stem. H is a gum gasket, which surrounds the lower shell, B, being formed with a recess, *g*, to enable it to be easily and snugly fitted on the said shell.

The operation is as follows: Normally the parts occupy the position shown in Fig. 1, the spring Q being expanded and holding the conical plug up so as to distend the gasket, and keep it firmly pressed against the inside of the bottle, below the most contracted part thereof. In this position the stopper cannot be withdrawn from the bottle. To withdraw it the lever D is turned completely over on the cap, pressing down the plug-stem and pushing the plug out of the gasket, permitting the latter to contract, so that its external diameter will be less than the most contracted part of the neck of the bottle. In this position of the parts the holder can be readily both inserted and withdrawn from the neck of the bottle. *s* represents a wire or string secured to the neck of the bottle, and to the ear *c*, to prevent the stopper from being lost when withdrawn from the neck of the bottle.

The advantages from the foregoing described construction are briefly as follows: The shell A being produced from a blank by bending up the two sides *a a*, is more easily and cheaply made, and takes less material, than a shell made of a complete cylinder, as shown in Letters Patent above referred to. The cap being fastened to the shell by means of a pivot-pin is more rigid than a soldered cap, and can be more readily and cheaply fastened in position than the latter. The plug being held up by a spiral spring is an improvement over the screw arrangement shown in the previous patent, because the spring constantly tending to expand,

always exerts a pressure on the plug and causes the latter to distend the gasket, even if the latter should become hardened by lack of use. The internal pressure of the fluids in the bottle also aids the plug in expanding the gasket with the spring arrangement, an assistance which is not rendered where the plug has a screw-stem, as shown in the above-mentioned Letters Patent. The cam-lever can be more readily manipulated, and with greater effect than the nut, and also avoids the objection of the corrosion of the thread of the nut and screw shown in my Letters Patent. In both positions of the lever—when thrown over to fasten the stopper in the bottle, and when moved to push the plug out of the gasket—it is at its dead point, and the tendency of the spring is to hold said lever in the position to which it has been moved.

Instead of the stem and plug being made as already described, the construction may be as shown by Fig. 7, where they are both made in one solid piece.

Having described my invention, what I claim and desire to secure by Letters Patent, is—

The combination of the main shell A, conical shell B, slotted cap C, cam-lever D, conical plug *k*, stem F, gasket H, and spiral spring Q, said parts being constructed and arranged for operation substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CALVIN B. SPONSLER.

Witnesses:
D. E. DAVIS,
T. J. MCTIGHE.