

(No Model.)

M. SCHOTT.
BOTTLE STOPPER.

No. 542,687.

Patented July 16, 1895.

Fig. 1.

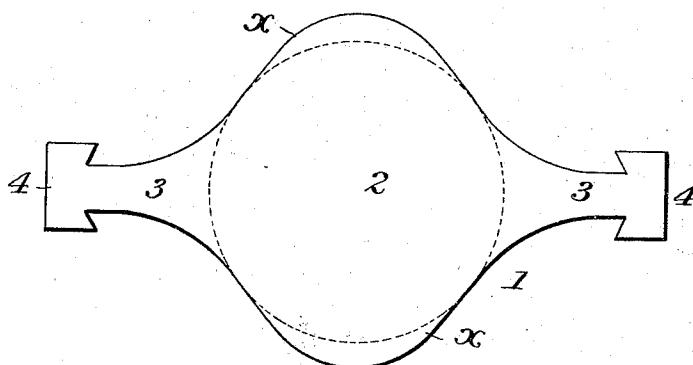


Fig. 2.

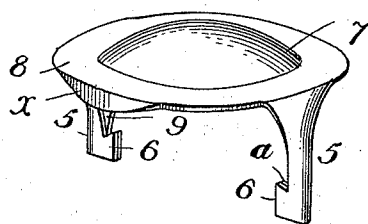


Fig. 3.

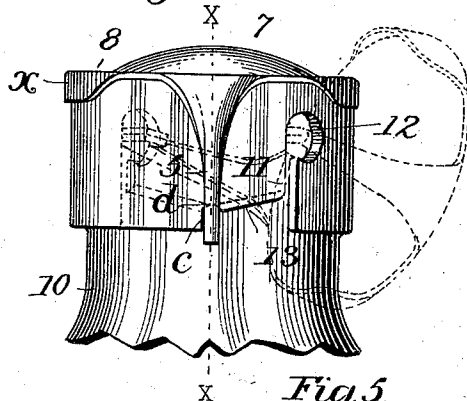


Fig. 7.

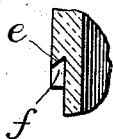


Fig. 4.

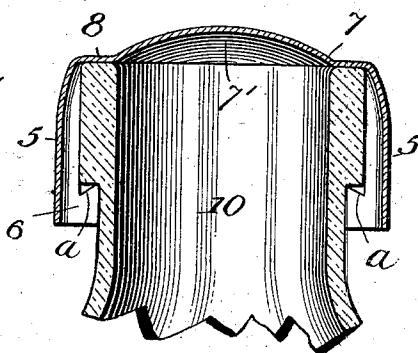


Fig. 6.

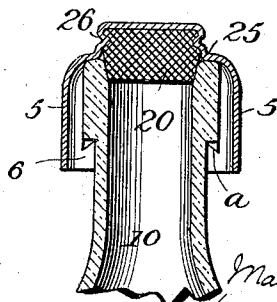
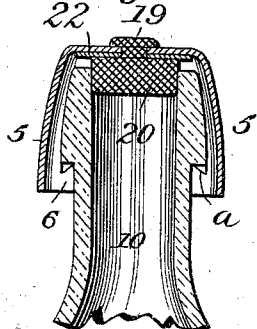


Fig. 5.



Witnesses
J. G. Hinkel
E. C. Ellis

Inventor
Mathilde Schott
by
Jesse Truman
Attorneys

UNITED STATES PATENT OFFICE.

MATHILDE SCHOTT, OF BROOKLYN, NEW YORK.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 542,687, dated July 16, 1895.

Application filed January 3, 1895. Serial No. 533,754. (No model.)

To all whom it may concern:

Be it known that I, MATHILDE SCHOTT, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

This invention relates to bottle-stoppers; and it consists substantially in such features of improvement as will hereinafter be more particularly described.

My invention has reference more particularly to that class of stoppers in which the stopper is held to its closed position by means of bails or yokes, the lower ends or extremities of which move within or beneath cam grooves or surfaces formed around the neck of the bottle or other vessel.

Heretofore with this class of stoppers great disadvantage has been experienced from the insufficiency of construction to prevent accidental opening of the stopper, and besides, in a great many former instances, considerable loss has resulted from the easy manner in which the stoppers become detached from the bottle while permitted to remain in an open position. Other defects have also arisen from the fact that the stoppers are difficult to open as well as to close.

The object of my invention is to overcome the disadvantages attendant upon the use of many former constructions, and also to provide a stopper embodying, as nearly as practicable, the characteristics of simplicity and efficiency, combined with cheapness and the easy manner in which the same is manipulated.

In the accompanying drawings, Figure 1 is a view representing a blank from which my improved stopper is made, and Fig. 2 is a view in perspective of the stopper after the same has been struck up into shape. Fig. 3 is a side view, representing in full lines the stopper as closed down upon the bottle, and in dotted lines as thrown open, the construction of the neck of the bottle being also clearly indicated. Fig. 4 is a vertical section on the line $x x$, Fig. 3. Fig. 5 is a sectional view illustrating a modification. Fig. 6 is a similar view representing a further modification. Fig. 7 is a detail view.

It will be understood at the outset that my

invention is applicable alike to bottles, jugs, preserve-jars, and all similar vessels, and although I have only illustrated the same herein in connection with a bottle, the terms "bottle" and "vessel," as hereinafter employed, are intended to embrace all well-known forms when constructed as hereinafter described.

In carrying my invention into effect—as, for instance, when employed in connection with bottles or vessels for containing milk, preserves, and the like—I preferably use no rubber or cork with the stopper, although it is evident of course that the same could be employed if so desired. Thus, while my improved stopper could be constructed in various different ways, I preferably stamp the same out of sheet metal into substantially the shape of blank indicated at 1, Fig. 1. As will be seen, the said blank comprises a circular cap portion or body 2, having at diametrically opposite sides the curved wings $x x$, and the branches 3 3, each of the latter terminating in the rectangular portion 4. After thus cut out the blank is struck up or bent into the form of stopper indicated at Fig. 2, wherein it will be seen that the branches are turned downwardly to form legs 5 5, the lower extremities of which are provided with the inwardly-turned feet 6 6, while the circular body portion of cap 7 is rendered concave at 7' with a continuous annular flange or rim 8, extending horizontally from said body portion, and the wings $x x$ are turned downwardly.

It will be understood, of course, that instead of forming the body oval and concave the same could be made flat throughout and still answer the same purpose. The depending legs, it will be observed, are partially folded together at 9, while the feet 6 6 are pressed or bent quite close together, so as to render them as thin as possible in transverse section, the purpose of which will be understood more fully hereinafter. It will be noticed further that the upper edges of the feet are beveled or notched inwardly at a , by which, when the stopper is turned to lock or fasten the same upon the bottle, the said beveled edges will be received under or beneath corresponding beveled or dovetailed portions formed on the bottle, and thus are the legs

prevented from spreading apart and all danger of loosening of the stopper obviated while in use. In bringing the sides of the feet closely together, so as to render the feet perfectly flat vertically, the sides of the legs are gradually brought together, as already alluded to at 9, and in consequence of this construction the curvature imparted to the legs greatly adds to the strength and resiliency thereof.

Having described generally the main features of construction of my improved stopper, I will now proceed to describe the construction of the bottle or vessel in connection with which said stopper is employed.

As shown in Figs. 3 and 4, the neck of the bottle or vessel 10 is formed or provided on opposite sides with vertical grooves or recesses 11, which are just wide enough to receive the flat-sided feet without permitting the latter to be turned, but yet permitting the same to move up and down, accordingly as the stopper is forced into place or released. The said vertical grooves or recesses terminate at their upper ends in enlarged oval or rounded offset continuations 12 12, which when the stopper is elevated or raised receive the feet 6 6 and permit the same to be turned therein so as to carry the stopper to one side of the neck of the bottle, as shown in dotted lines, Fig. 3. The feet being constructed as shown, and the extremities 12 12 of the grooves being rounded and about equal in diameter at all points to the highest point of the feet, the feet will find a bearing on opposite sides or edges of said rounded continuations to whatever position the stopper may be carried, and in this way there is no liability of the stopper falling off or becoming lost. Said enlarged continuations, also, by being offset from the vertical grooves, permit of the stopper being moved slightly to one side of the grooves when the feet have been brought to their uppermost position, and in this way the stopper when turned on its axis will be carried around without obstruction by the edge of the bottle.

Leading from the lower extremities of the grooves are the cam surfaces or edges 13, beneath which the feet of the stopper pass when turned in the proper direction. The legs of the stopper are more or less elastic or resilient, and it is evident that by fitting the stopper upon the bottle with the feet in the grooves, and then forcing the stopper down tightly and turning it to carry the feet beneath the cam-edges, the legs will be drawn downwardly and the stopper firmly secured in place. By turning the stopper in the reverse direction the same can be raised in the manner already explained.

The cam surfaces or edges extend to about one-half the distance between the vertical grooves and end in abrupt portions *c*, which constitute stops for the feet. Also, at the junction of the said cam-edges with said stops suitable notches *d* are formed into which the edges of the feet are received and by which

the stopper is firmly secured in place against accidental turning. The said cam surfaces or edges 13 13 are dovetailed or beveled inwardly at *e*, so as to leave spaces *f* beneath the same, which correspond to the construction of the upper edges of the feet 6 6. After forcing the stopper downwardly the same is then turned to the right, whereupon the beveled edges of the feet are received under or beneath the cam-edges in such manner as to firmly hold the legs inwardly and prevent spreading thereof. This construction is very desirable in many instances and forms a valuable feature of my improvements. Under some conditions, where there is little or no pressure to be sustained by the stopper, I might of course form the upper edges of the feet at right angles to the legs, in which event the edges of the cam-surfaces would be made to correspond. The construction shown, however, is that which is preferred.

When the stopper is properly struck up into shape, the wings *x x* constitute portions which overlap the edge of the bottle, and which serve greatly in holding the stopper in place, as well as facilitating the turning thereof on the bottle in either direction.

Whenever it is desired to use a plug or disk of cork or rubber, I resort to either of the constructions shown in Figs. 5 and 6. In the first-named figure the construction of the stopper is in all respects the same as has been described with the exception that I form an opening in the center of the body or cap 7, up through which passes a projection or button-fastening 19, formed with the plug 20 of cork or rubber. When the stopper is forced into place, this plug is of course compressed and the bottle or vessel thereby hermetically sealed. To facilitate the turning of the stopper upon the plug of cork or rubber, I interpose between the inner side of the cap and the upper side of the plug a metallic ring or washer 22, which enables the stopper to be turned in either direction about the plug without friction. Whenever the stopper is turned either to bind or release the same, the plug does not have to be turned with it, but if the washer or ring 22 was not interposed there would be so much friction produced between the plug and cap as to render it difficult to turn the latter. As is obvious, the washer or ring obviates this objection. It is to be remarked at this point that it is preferable when using the plug to construct the body or cap 7 perfectly flat, such as is shown in Figs. 5 and 6, although if desired the same could be formed as in Fig. 2.

The construction of Fig. 6 differs from that shown in Fig. 5, in that the cap has no central opening and the plug of cork or rubber is in consequence devoid of the button-fastening 19. In lieu thereof the cap or body portion is formed a little deeper or with an annular ring at 25 to receive the plug, and the sides of the cap are then crimped or forced into the body of the plug, as shown at

26, in order to hold the plug in place. In other respects the stopper is the same as before described.

It is apparent that if desired I might in some instances employ malleable iron in the construction of my improved stopper; but, as stated, I prefer the use of sheet metal on account of its cheapness.

From the construction shown and described it will be seen that my improved stopper possesses many advantages, and that the same is fully equal to the performance or execution of all the functions ascribed to it.

The device is simple and capable of various immaterial departures from what has been shown and explained herein.

Therefore, without limiting myself to the precise details of construction and arrangement herein shown and described, I claim—

1. As a new article of manufacture, a bottle stopper comprising a cap or body of sheet metal constructed with pendent legs and inwardly projecting feet, the sides of the legs being gradually bent or brought together in the direction of the feet, and the sides of the feet being bent closely together to adapt the feet to narrow vertical grooves in the neck of a bottle, substantially as described.

2. As a new article of manufacture, a bottle stopper comprising a cap or body of sheet metal constructed with pendent legs and inwardly projecting feet, the sides of the legs being gradually bent or brought together in the direction of the feet, and the sides of the feet being brought closely together vertically and beveled on their upper edges, substantially as described.

3. The combination of the bottle having cam edges and formed with the narrow vertical grooves terminating upwardly in the enlarged rounded offset continuations, and the stopper comprising the cap formed or provided with pendent legs and inwardly projecting feet, the said feet being of a thickness to fit the grooves snugly but capable of vertical movement therein, and being of a height equal to the diameter of said offsets of the grooves,

substantially as shown and for the purpose described.

4. The combination of the bottle having the inwardly beveled cam edges and formed with the narrow vertical grooves terminating upwardly in the enlarged rounded offset continuations, and the stopper comprising the cap or body of sheet metal provided with pendent legs and inwardly projecting feet, the said feet being of a thickness to fit the grooves snugly but capable of vertical movement therein, and being of a height equal to the diameter of the offsets of the grooves and notched or beveled on their upper edges, substantially as described.

5. The combination of the bottle having the cam edges and formed with the narrow vertical grooves and their enlarged offset continuations, and also formed with the stops and notches at the ends of said cam edges, and the stopper comprising the cap constructed with the pendent legs and inwardly projecting feet, the said feet being of a thickness to fit the grooves snugly but capable of vertical movement therein and being of a height equal to the diameter of the enlarged offsets of the grooves, substantially as described.

6. The combination of the bottle having the cam edges and formed with the narrow vertical grooves terminating upwardly in the enlarged rounded offset continuations, and the stopper comprising the cap and an elastic plug, and constructed with the pendent legs and inwardly projecting feet, the said feet fitting the grooves snugly but capable of vertical movement therein and being of a height equal to the diameter of the enlarged offsets of the grooves, substantially as shown and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MATHILDE SCHOTT.

Witnesses:

WILLIAM SCHOTT,
THEODORE SPETH.