(No Model.)

F. W. WATERMAN.

BOTTLE STOPPER.

No. 568,286. Patented Sept. 22, 1896.

Fig. 1.

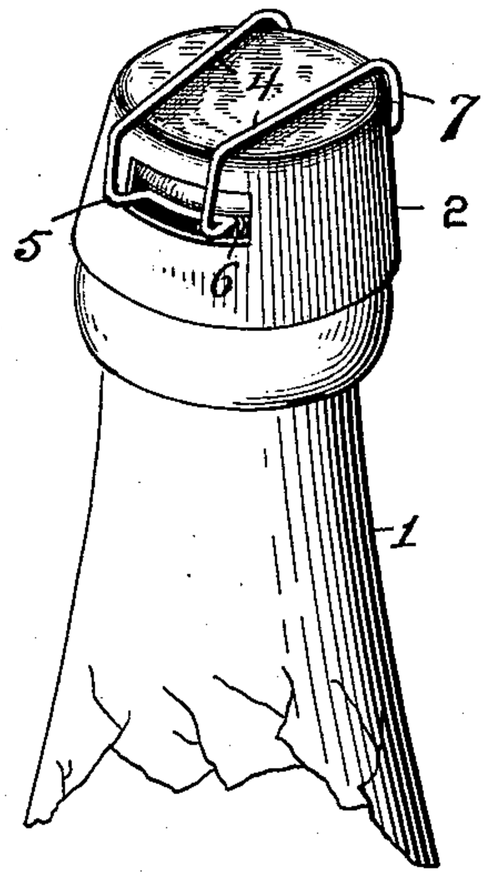


Fig. 2.

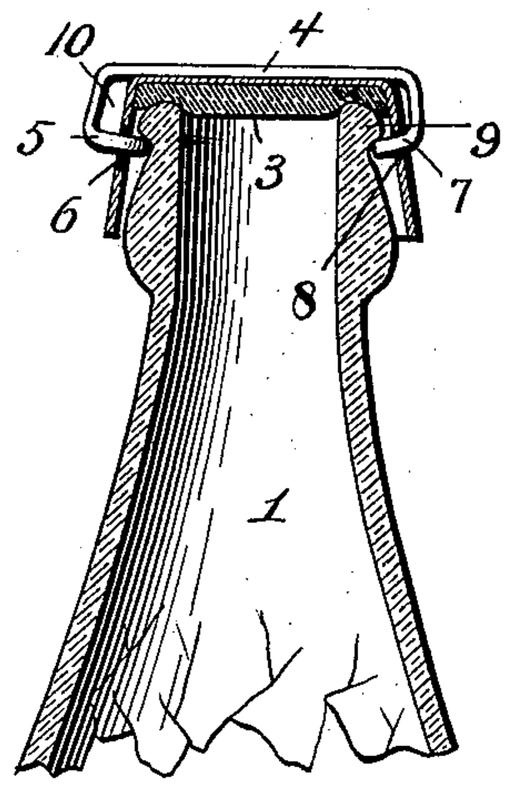


Fig. 3.

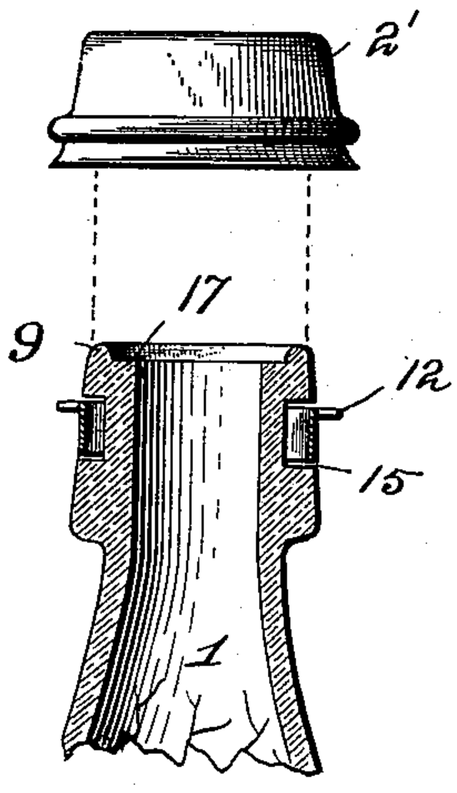


Fig. 5.

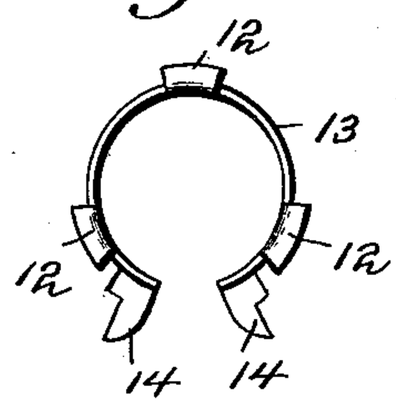


Fig. 7.

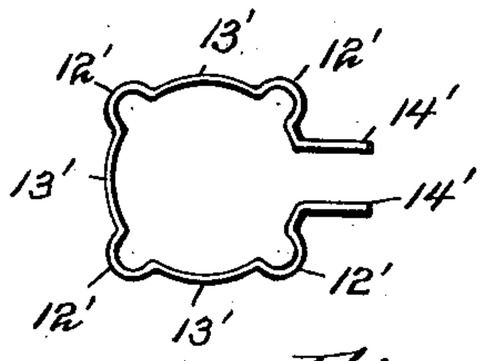


Fig. 4.

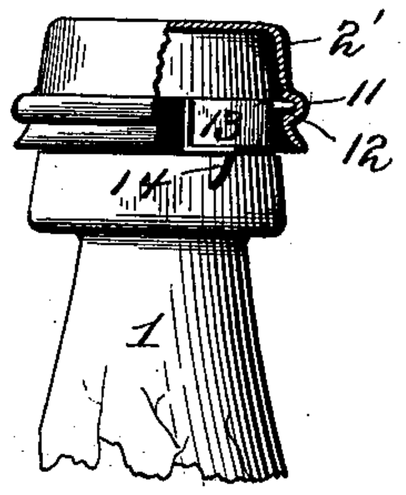
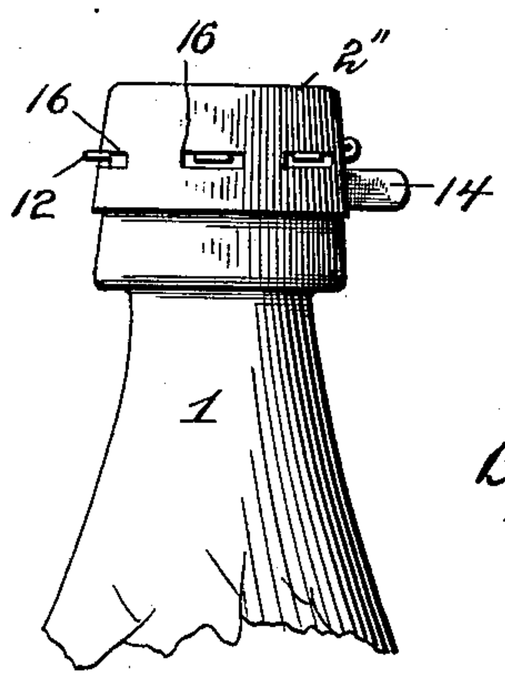


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRANK W. WATERMAN, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO CHARLES DE WITT, OF SAME PLACE.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 568,286, dated September 22, 1896.

Application filed December 3, 1895. Serial No. 570,936. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. WATERMAN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

My invention relates to bottle-stoppers, and particularly to cap-stoppers in which a locking device or fastener is employed to removably secure the cap to the bottle.

My objects are to provide a bottle-cap stopper and fastener therefor which will be effective for the purpose intended and simple and durable in construction, so that it can be manufactured at a minimum cost, while capable of ready application to and removal from the bottle.

Heretofore cap-stoppers have been made and used quite extensively, but objections have been encountered in the use of said stoppers on account of the difficulty of removing the cap from the stopper when it is desired to open the bottle. Furthermore, in a large number of instances the cap, in order to be properly secured to the bottle for effective sealing of the bottle-mouth, has been fastened in such a way that upon removal of the cap the latter is destroyed, thus preventing the use of the cap again.

By my invention I am enabled to quickly and readily secure the cap to the bottle in such a way as to permit of its ready removal without destroying the same, so that it can be used to advantage several times.

My invention consists in the novel construction and details thereof, as illustrated in the accompanying drawings, hereinafter fully described, and pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a bottle-neck with my invention applied thereto. Fig. 2 is a vertical section thereof. Fig. 3 is a vertical section of a modified form with the cap in elevation. Fig. 4 is a perspective view thereof, partly sectional. Fig. 5 is a top view of another modification of the spring-clip fastener. Fig. 6 is a side elevation of the modification in which the said clip is used. Fig. 7 is a modification of the spring-clip fastener shown in Figs. 3 and 4.

Referring now particularly to the drawings, in which the same reference-characters indicate the same or corresponding parts in all the views, 1 indicates the ordinary crown bottle-neck, to which is fitted the flanged cap 2, on the inside of which cap is a flexible washer 3, preferably of cork, adapted to rest against the edges of the bottle-mouth to seal the same. In order to fasten the said cap upon the bottle, I provide a spring-clip fastener, one portion of which is arranged to engage with the rib or flange of the bottle-neck and the other with the bottle-cap, so as to bind the said cap firmly to the bottle-neck, one form of which is shown in Figs. 1 and 2. In this form of my invention the spring-clip fastener consists of a single wire 4, bent first in U shape and then having both ends bent downwardly and then upwardly toward each other, so as to form fastening-hooks 5 and 7, one of which is made by the body portion of the fastener, (indicated by the numeral 5,) which is adapted to be inserted through an opening or hole 6 in one side of the flange of the cap, and the other, formed by the free ends 7 of the fastener, is adapted to be inserted through openings 8 in the opposite side of the flange of the cap, so as to engage with the exterior rib 9 on the bottle.

To apply the fastener to the cap, the hooks are inserted through their corresponding holes and the fastener is then pressed downwardly against the top of the cap, so that the hooks or bends spring into place underneath the exterior rib 9, thus firmly pressing the cap against the bottle-mouth and holding the same in position. It is preferable to hold the cap and attached fastener in a tilted position with respect to the bottle-mouth, so as to insert the bend or hook 5 beneath the rib 9 first, and then, using the rib as a fulcrum and holding the cap in contact with the side of the bottle-mouth, quickly press the other side of the cap downwardly into place, the hooks 7 readily springing into place and locking the cap on the bottle.

In order to remove the cap, it is only necessary to pass a wire rod or nail through the opening 10 between the side of the cap and fastener and pull upwardly on the same, there-

by removing the hook 5 from engagement with the rib; or a suitable extracting-rod may be secured in any convenient place and the fastener slipped over the same, the rod passing through the space 10 and the bottle quickly pulled downward, thereby removing the cap. The cap cannot be removed or loosened by any pressure applied centrally thereto, but, on the contrary, application of such pressure tightens the cap on the bottle, so that in case of pressure from within the bottle the cap is more firmly bound and held in place.

In Figs. 3, 4, and 5 I have shown my spring-clip fastener in its preferred form, in which it will be seen that the cap 2′ is provided with an interior annular groove 11, with which groove the outwardly-turned lugs 12 on the spring-split spring-collar 13 are adapted to engage when the said clip is in position on the bottle-neck. This spring-clip is composed of a split collar 13, fitted to an annular groove 15 in the bottle-neck, and the free ends of said collar are provided with projecting end lugs 14, the said lugs extending outwardly beyond the side of the bottle and cap and serving as hand-grasps for the purpose of compressing the collar, so as to bring the lugs 12 out of contact with the inside of the cap 2′, in order that the latter may be slipped over the end of the bottle and the locking-lugs on the split collar. As soon as the cap is seated upon the bottle-neck the ends of the collar are released, whereupon it expands again to its normal position, forcing the lugs 12 into the groove 11, thereby locking the cap firmly in place upon the bottle-neck.

In order to secure a double break-joint between the sealing disk or washer and the bottle-neck, I preferably form a flat annular seat 17, surrounded by the ordinary rib 9, thereby securing a better seal for the bottle.

Instead of using the form of split collar for the spring-clip shown in Fig. 5, I may use the construction shown in Fig. 7, where the spring-clip 13′ is made of a piece of wire, having the bent portions 12′ serving as the locking-lugs and the projecting ends 14′ serving as the hand or finger grasps.

In Fig. 6 I have shown the locking-lugs 12 projecting through openings 16 in the bottle-cap 2″, which openings or holes may be used instead of the groove 11.

In all of these modified forms the split collar, which serves as the spring-clip for fastening the bottle-cap, is applied to the groove 15 on the bottle-neck with the locking-lugs 12 normally projecting beyond the interior surface of the cap adjacent to the groove 11, or through the holes 16, so that when it is desired to apply the cap it is only necessary to compress the two ends of the clip, so as to permit the seating of the cap upon the bottle-mouth, the lugs 12 engaging the groove or the holes immediately upon the release of the ends of the clip, thus locking and firmly fastening the cap to the bottle-mouth.

When it is desired to remove the cap, the ends of the collar are compressed together in like manner and the cap is easily withdrawn.

It will thus be seen that my invention embodies a simple and effective bottle-cap fastener, in which the simple action of spring-pressure is relied on to hold and bind the cap in place on the bottle, and that, furthermore, the bottle-cap can be quickly applied or removed. It may also be used several times, if desired, and the internal washer renewed as often as found necessary.

I claim as my invention—

1. The herein-described improvement in bottle-cap stoppers consisting of the combination with a bottle having a rib around its mouth, of a flanged bottle-cap provided with means for engaging a fastener, and a spring-clip fastener separate from the cap and engaging the rib on the bottle-mouth and the said means on the bottle-cap, whereby the cap may be pressed upon the bottle-mouth and held thereon by the spring-pressure of the spring-clip fastener, substantially as described.

2. The herein-described improvement in bottle-cap stoppers consisting of the combination with the bottle having an exterior rib around its mouth, of the flanged bottle-cap having a depending portion provided with means for engaging a fastener, and a spring-clip fastener separate from the cap, one portion of said fastener being adapted to engage the depending portion of the bottle-cap and the other portion adapted to engage the under side of the rib, whereby the said cap may be pressed into place on the bottle-mouth and held thereon by spring-pressure of the said fastener, substantially as described.

3. The herein-described improvement in bottle-cap stoppers, consisting of the flanged bottle-cap having an interior groove, and the spring-clip having outwardly-turned lugs at each side thereof, seated on the bottle-neck, the said lugs engaging the groove in the bottle-cap, substantially as described.

4. The herein-described improvement in bottle-cap stoppers, consisting of the combination with the bottle-neck having the exterior rib at its outer end surrounding a flat annular seat, of a flanged cap provided with a flexible washer adapted to be seated in the bottle-mouth and seal the same, with which it forms a double break-joint, the said cap having a groove in its downwardly-projecting flange, and a spring-clip having on its body portion outwardly-turned lugs arranged to engage with the groove in the cap, substantially as described.

5. The herein-described improvement in bottle-cap stoppers, consisting of the flanged bottle-cap provided with an interior groove seated in the mouth of the bottle, in combination with a spring-clip fastener composed of a split collar having outwardly-turned lugs engaging the groove in the cap and having its free ends projecting outwardly from the side of the bottle-mouth to serve as hand-

grasps for compressing the collar to apply and release the cap, substantially as described.

6. The herein-described improvement in bottle-cap stoppers, consisting of the flanged bottle-cap seated in the bottle-mouth, the split spring-collar seated on the bottle-neck between the flange of the cap and the bottle and engaging the cap to lock it in place thereon, the free ends of said collar projecting beyond the side of the cap to serve as a hand-grasp for compressing the collar, substantially as described.

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

FRANK W. WATERMAN.

Witnesses:
WILLIAM H. BERRY,
MURRAY HANSON.