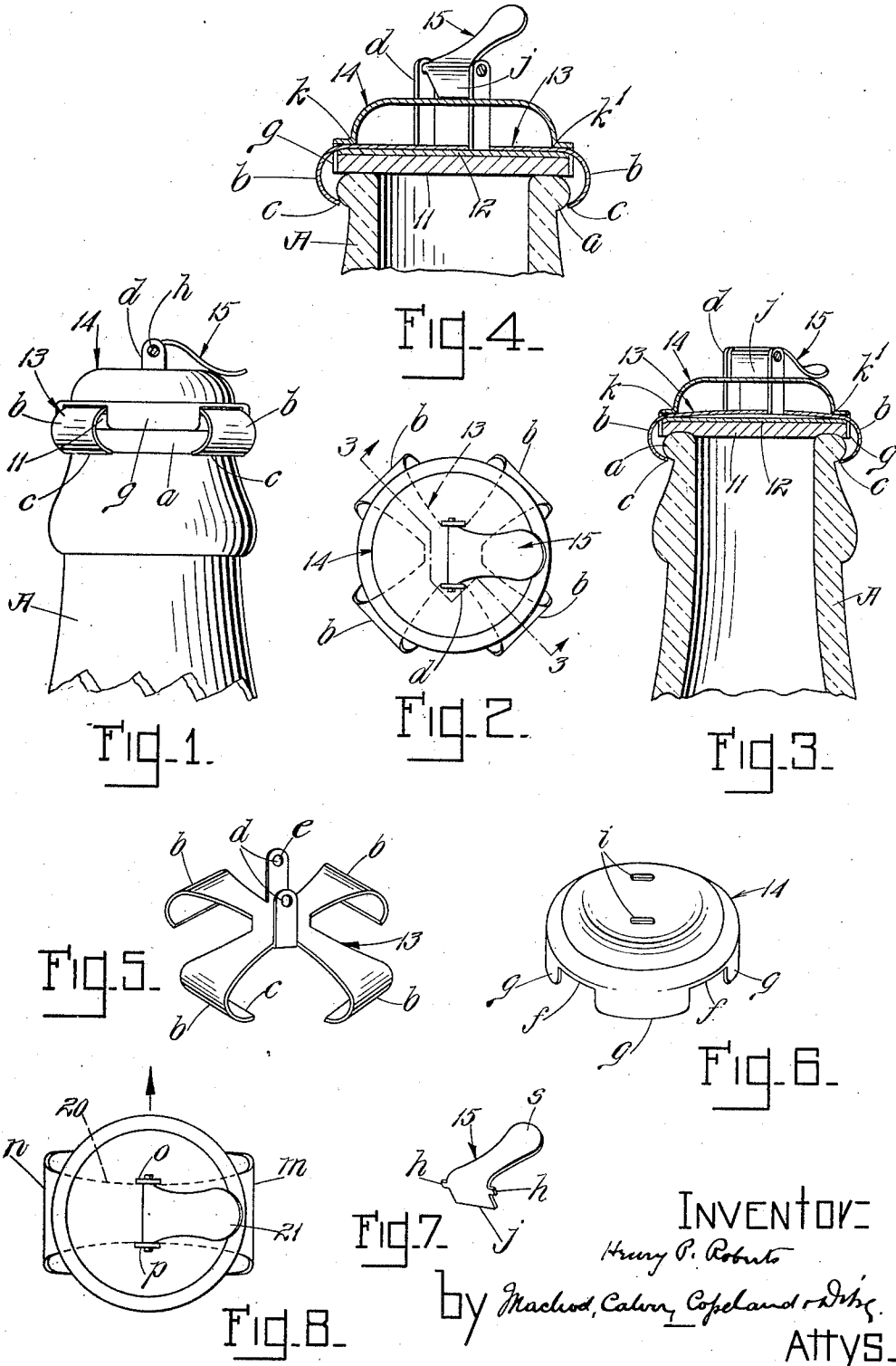


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 STOPPER FOR BOTTLES AND SIMILAR CONTAINERS.
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1,346,510.

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STOPPER FOR BOTTLES AND SIMILAR CONTAINERS.

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Specification of Letters Patent.

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Application filed March 5, 1919. Serial No. 280,705.

To all whom it may concern:

Be it known that I, HENRY P. ROBERTS, a citizen of the United States, residing at Boston, county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Stoppers for Bottles and Similar Containers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to stoppers or closures for bottles and similar containers. The invention has for its object a stopper which can be readily applied to and removed from the neck of a bottle or other container. There are on the market excellent bottle stoppers particularly of the Crown type which will effectively close the neck of a bottle, but such stoppers are injured when they are removed from the bottle and are incapable of further use. My invention provides a bottle stopper which, while performing the work of closing the bottle as effectively as the Crown stopper, may be used repeatedly without losing its effectiveness.

So far as the metal work is concerned, the stopper embodying my invention may be constructed entirely from stampings and therefore may be constructed so cheaply that it can compete with solid corks.

In the accompanying drawings, I have shown my invention embodied in a stopper for bottles of the kind ordinarily used to contain charged waters, but it will be understood that I do not limit myself to this construction or use, and that my invention may, by the exercise of mere mechanical skill, be adapted to other uses, such for instance, as stoppers for milk and cream cans, marmalade jars, thermos bottles and the like.

The invention will be fully understood from the following description when taken in connection with the accompanying drawings, and the novel features thereof will be pointed out and clearly defined in the claims at the close of this specification.

In the drawings, Figure 1 is a side elevation of the upper end of a bottle to which is applied a stopper embodying my invention.

Fig. 2 is a top plan view of the stopper shown in Fig. 1.

Fig. 3 is a section on line 3—3 of Fig. 2.

Fig. 4 is a section similar to Fig. 3 showing the position occupied by the parts when the lever handle is lifted.

Fig. 5 is a view in perspective of the clasp.

Fig. 6 is a view in perspective of the cap.

Fig. 7 is a view in perspective of the locking-lever.

Fig. 8 is a top plan view of a bottle stopper embodying my invention in modified form.

Referring now to the drawings, at A is shown the upper end of a bottle such as is ordinarily used for charged waters. The bottle is of well-known construction and has a rim *a* (see Figs. 1, 3 and 4) around the edge of the neck. At 11 is shown a disk of some compressible material such for instance as sheet cork, composition, or rubber. Above this, is placed a disk 12 of some rigid material, as for instance, sheet metal which will serve to distribute over the upper surface of the disk of compressible material the pressure applied to the disk 12 by the other members of the bottle stopper. At 13 is shown a clasp having a plurality of prongs *b* the outer ends of which are turned inwardly as shown at *c* to engage the underside of the rim *a*. The clasp 13 is provided with one or more upward projections *d* having holes *e* therein.

At 14 (see also Fig. 6) is shown a cap which extends down over the clasp 13. The cap is turned down to form a flange or depending edge *g* which extends over the edge of the disk of compressible material to hold the same in place. The cap is cut away at *f, f*, so that it will fit down over the prongs *b* of the clasp, and the cap 14 is provided with holes *i, i* through which extend the projections *d, d* formed on the clasp. A locking-lever 15 (see Fig. 7) is pivoted to the clasp by means of ears *h, h* which enter the holes *e, e* in the projections *d, d*. One end of the locking-lever 15 is formed into a handle *s*, and the other end *j* forms a cam member which engages with the upper surface of the cap 14. The cam member *j* is longer than the vertical distance from the holes *e, e* to the upper surface of the cap when the parts are in unlocked position so that it will exert pressure on the cap, and

the lever will lock itself in position when the end of the cam member passes said vertical line.

The device operates in the following manner:—It is assembled as shown in Fig. 1, and in this condition and with the lever lifted as shown in Fig. 4, is snapped on to the rim of the bottle. This is easily done because the prongs are somewhat flexible between the center of the clasp and their outer ends. When snapped on to the bottle, the ends of the prongs engage the undersurface of the rim of the bottle at a point just below the greatest diameter. The locking-lever 15 is then pressed down to the position shown in Fig. 3, thereby locking the parts in place. The pressure exerted by the cam lever on the cap is distributed evenly over the entire peripheral surface of the cork disk 20 by means of the metal disk 12. At the same time that the locking lever pushes down the cap, its reaction on the projection *d* of the clasp lifts up the center of the clasp. As the center of the clasp is lifted, the upper surface of each of the prongs engages the edge of the rim of the cap at the point *k* (see Figs. 3 and 4), and this acts as a fulcrum so that the outer ends of the prongs are forced inwardly under the lower surface of the rim of the bottle. This will be clearly seen by comparing Figs. 4 and 3. In Fig. 4, it will be seen that the clasp is horizontal from the point *k* to a point *k'*, while in Fig. 3 the clasp is curved upward between these two points. It will also be seen in Fig. 3 that the point *c* of each prong *b* has been forced under the rim of the bottle farther than it has in Fig. 4.

In Fig. 8, there is shown a stopper embodying my invention in a slightly modified form. In this figure, the clasp 20 is made with two prongs *m* and *n*, and the clasp is provided with upward projections *o* and *p* to which is pivoted the locking-lever 21. A bottle stopper made as shown in Fig. 8 is adapted for use where a stopper is required to resist relatively high pressures in charged waters because the clasp of this stopper may be made of stiff rigid material since it is not necessary to make it yielding to enable it to be snapped over the rim. This stopper is put in place on the bottle by being slid in the direction indicated by the arrow, that is, at right angles to the clasp 20.

What I claim is:

1. The stopper for use with a container having a rim, a layer of compressible material, a clasp having prongs engaging the rim of the container, a cap over said clasp, a

projecting member thereon which extends through the cap, and means engaging said projecting member to force said cap toward the rim of the container.

2. The stopper for use with a container having a rim, a layer of compressible material, a clasp having prongs to engage the rim of the container, a cap over said clasp, a projection thereon which extends through the cap and a movable member pivoted on said projecting member and engaging the cap to force the cap toward the rim of the container.

3. The stopper for use with a container having a rim, a layer of compressible material, a clasp having prongs engaging the under edge of the rim of the container, a cap over said clasp, a projecting member for the clasp extending upward through the cap, and a cam lever pivoted on said projection and acting on the said cap to force it toward the rim of the container.

4. A stopper comprising a layer of compressible material, a clasp having a plurality of prongs to engage the under surface of the rim of a bottle, a cap resting on the compressible material between the said prongs, and means acting on the said cap to spring the clasp away from the bottle, thereby forcing the prongs inwardly under the rim of the bottle and compressing the disk of compressible material.

5. A stopper comprising a layer of compressible material, a clasp having a plurality of prongs to engage the under side of the rim of the bottle, a cap the edge of which contacts with the upper surface of said prongs, and means acting on the said clasp and tending to move the center of the clasp about its points of engagement with the cap as fulcrums and thereby force the outer ends of the said prongs inwardly toward the neck of the bottle.

6. A bottle closure comprising a cap, a clasp on the under side of the cap having laterally extending arms which terminate in inwardly turned hooks, projections on the clasp which extend upwardly through the top of the cap, and a lever connected therewith whereby said clasp may be drawn up tightly within the cap and causing the said arms to be slightly bent over the rim of the cap as a fulcrum thereby drawing the ends of the hooks inwardly into closer relation with each other, and a layer of resilient material on the under side of the clasp.

In testimony whereof I affix my signature.

HENRY P. ROBERTS.