

Nov. 6, 1923.

1,473,048

H. P. ROBERTS

BOTTLE STOPPER

Filed Feb. 9, 1921

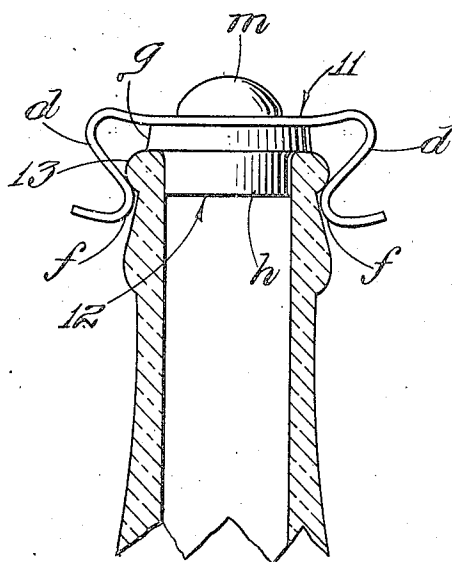


Fig. 1-

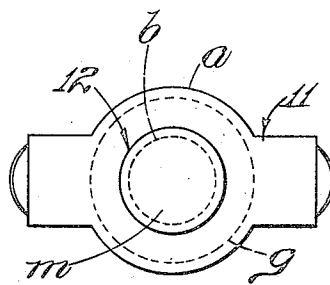


Fig. 2-

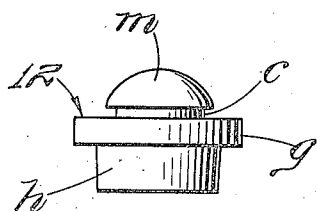


Fig. 3-

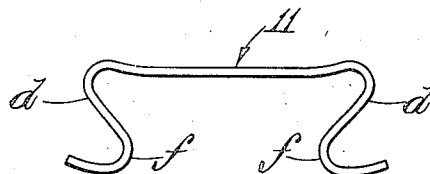


Fig. 4-

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UNITED STATES PATENT OFFICE.

HENRY P. ROBERTS, OF BOSTON, MASSACHUSETTS.

BOTTLE STOPPER.

Application filed February 9, 1921. Serial No. 443,667.

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 Bottle Stoppers, of which the following is a specification, reference being had therein to the accompanying drawings.

My present invention has for its object a simple and very cheap bottle stopper which can be used in connection with bottles having the ordinary rim or bead about the neck and intended to be permanently sealed with crowns. The bottle stopper embodying my invention is intended for repeated use and particularly with highly charged waters, soft drinks and the like, and can be made very much more cheaply than any bottle stopper capable of repeated use. The extreme cheapness of the stoppers embodying my invention makes it possible to use them not only to replace crowns and for home bottling purposes and the like, but also as an original closure for bottles which are likely to be opened and closed repeatedly.

The bottle stopper embodying my invention comprises only two parts of which one is a simple inexpensive metal stamping and the other is of soft rubber. It includes no moving parts and contains no parts which are likely to wear or to be injured by repeated use and, therefore, forms a durable structure capable of continuous use for a long time.

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, Fig. 1 is a side elevation of a bottle stopper embodying my invention.

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

Fig. 3 is a side elevation of the rubber member or plug.

Fig. 4 is a side elevation of the metal member.

Referring now to the drawings, the stopper comprises two parts, the metal member or clasp, see 11 in Figure 4, and the rubber member or plug, see 12 in Figure 3. The clasp comprises a single piece of sheet metal of considerable character and thickness died out and shaped as shown in Figures 1, 2 and

4. It comprises a central disk member *a* having a hole therein, *b*, to receive the neck *c* of the plug 12, and there are two downwardly bent ears *d*, *d* having rounded portions *f*, *f* adapted to fit under the bead 13 of the neck of the bottle. The disk portion *a* forms a support or rest for the entire surface of the disk portion *g* of the plug 12 so that the pressure exerted by the clasp 11 will compress the disk portion *g* of the plug 12 between the end face of the neck of the bottle and the disk of the clasp. The plug also includes a portion *h* which enters the neck of the bottle and which tends to expand sideways under the pressure of the gas contained in the contents of the bottle, thereby assisting in making a tight closure. The plug 12 is also provided with a head *m* connected with the body thereof by the neck *c*. This head *m* is of a greater diameter than the hole *b* in the clasp, but the compressibility of the rubber makes it compressible to force the head through the hole in the clasp, and afterward the head expands into the position shown in Figure 1. This construction is such that while it is relatively easy to assemble the parts as described, it is almost impossible to separate them after they have been assembled. This is a very important feature of my invention because a great deal of difficulty has been experienced in the past with stoppers which include rubber plugs owing to the fact that they become easily separated from the other parts of the structure.

It will be understood of course that the clasp 11, although to all appearances substantially rigid, has a slight amount of resiliency which, with the resiliency of the rubber, tends to hold the parts securely in place on the neck of the bottle. It will also be understood that the rounded portions *f* of the clasp engage the inclined under surface of the bead or rim of the neck of the bottle, but do not contact with the neck at its smallest diameter and therefore the resiliency of the rubber and of the clasp itself tends to hold the stopper more firmly in place on the neck of the bottle and does not have any tendency to work loose or spring off.

What I claim is:—

1. A bottle stopper comprising a sheet metal plate having a middle body portion with a hole therethrough for engagement with a rubber plug, and having downwardly

bent spring fingers integral with said body portion for engaging with the neck of a bottle, in combination with a rubber plug having a lower stopper portion adapted to fit within the mouth of the bottle, a peripheral flange portion on the upper side of said stopper portion, a neck surmounting said flange portion which fits the hole in the plate, said neck being surmounted by a head of larger diameter than the neck, the head, flange and neck forming a peripheral groove around the plug, the head being compressible to permit passage of the head through the opening in the plate, the plate and the plug being held in engagement with each other by the neck, head and flange of the plug.

2. A bottle stopper comprising two integral members, one of said members consisting of a sheet metal plate having a middle body portion with a hole therethrough for engagement with a rubber plug, and having

downwardly bent spring fingers integral with said body portion for engaging with a neck of a bottle, the other of said two members consisting of a rubber plug having a lower stopper portion adapted to fit within the mouth of a bottle, a peripheral flange portion on the upper side of said stopper portion, a neck surmounting said flange portion which fits the hole in the plate, said neck being surmounted by a head of larger diameter than the neck, the head, flange and neck forming a peripheral groove around the plug, the head being compressible to permit passage of the head through the opening in the plate for assembling the two members and being resilient so that when the parts are assembled the said head and flange will hold the two members in assembled arrangement.

In testimony whereof I affix my signature.

HENRY P. ROBERTS.