H. G. CLABAUGH.

BOTTLE.

APPLICATION FILED AUG. 20, 1910.

980,601. Patented Jan. 3, 1911.

Fig. 1.

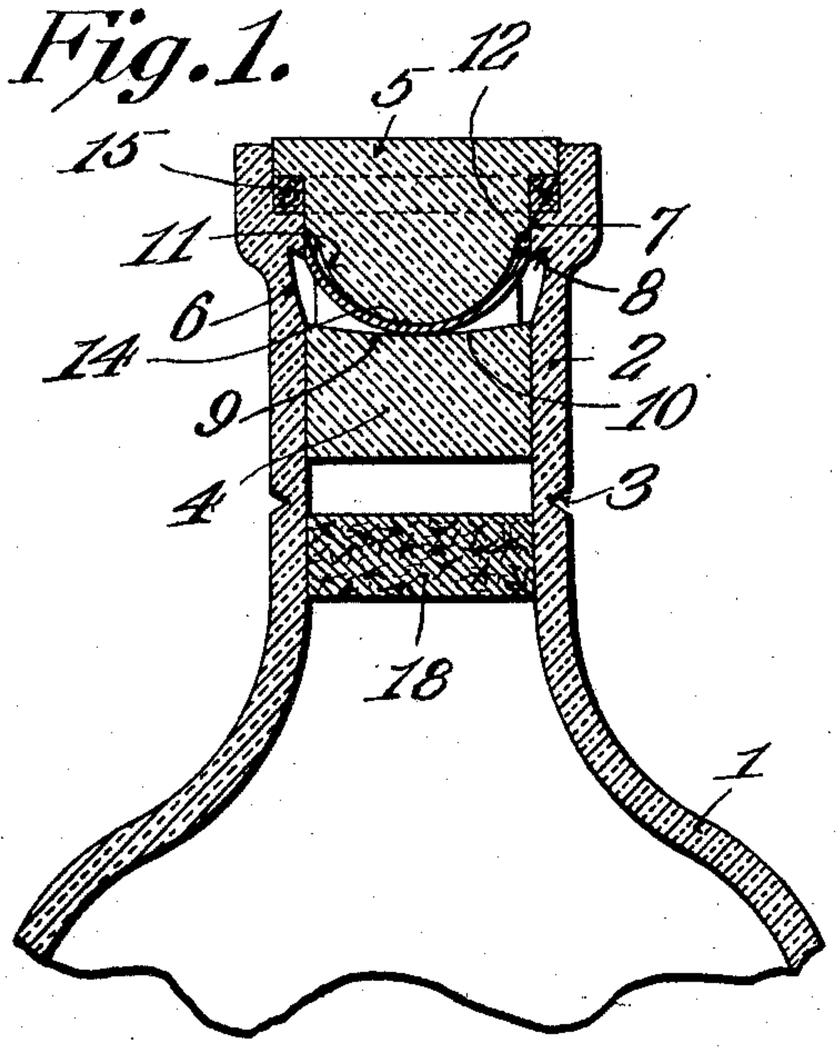


Fig. 2.

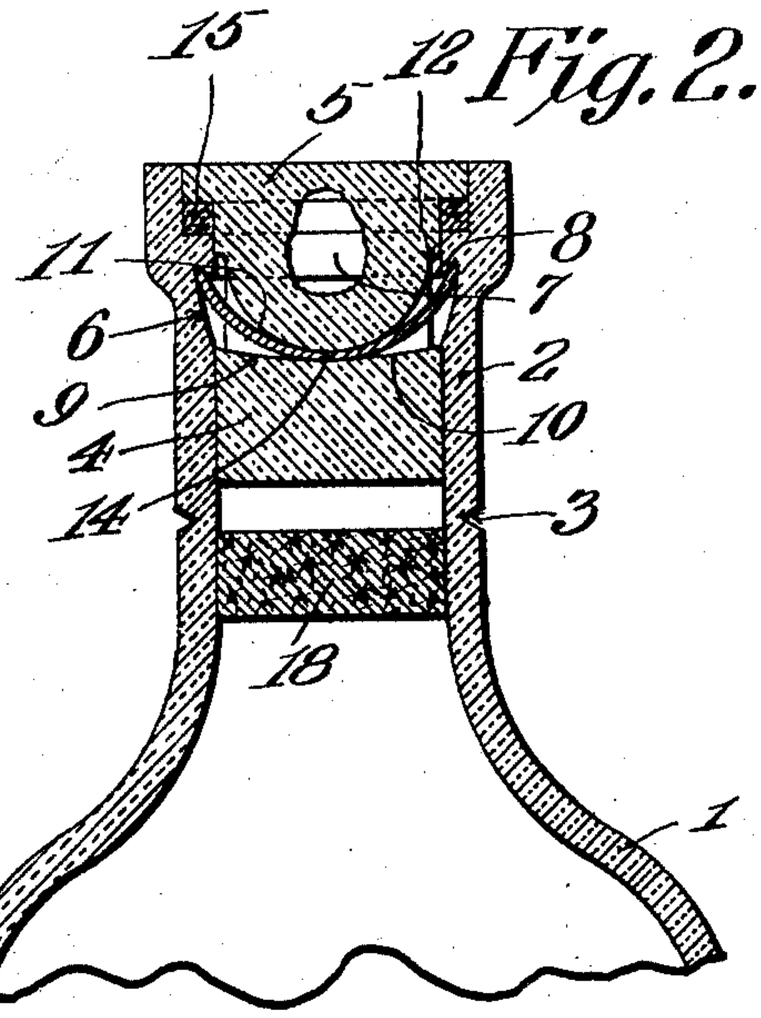


Fig. 6.

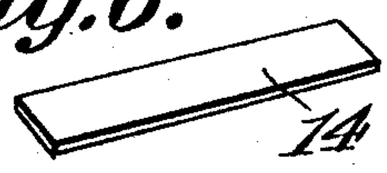


Fig. 3.

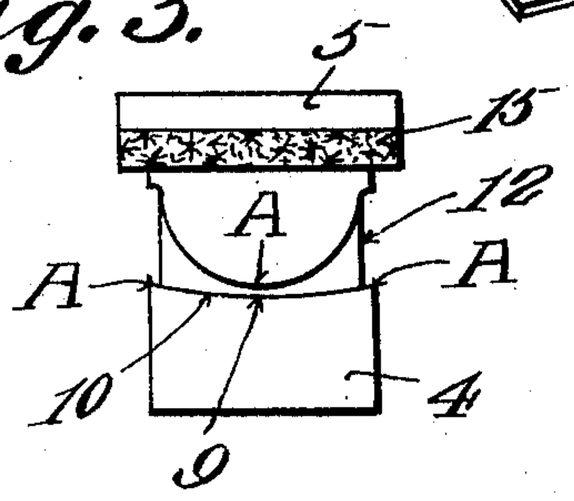


Fig. 4.

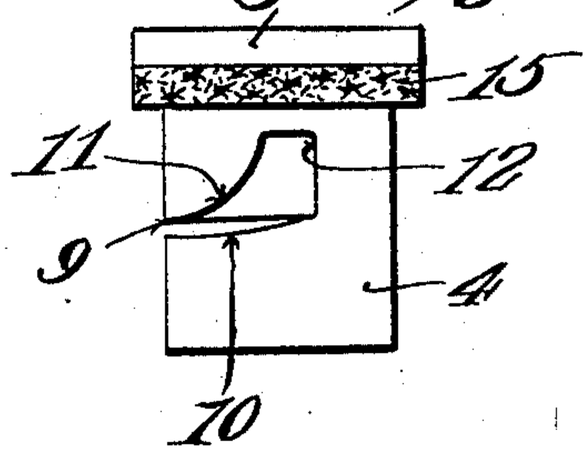
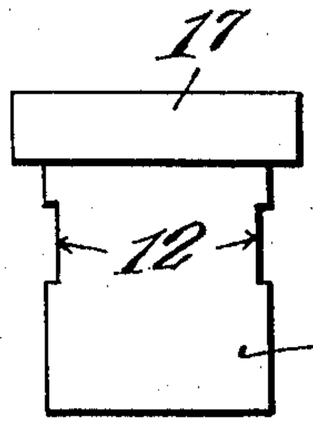


Fig. 5.



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UNITED STATES PATENT OFFICE.

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BOTTLE.

980,601. Specification of Letters Patent. **Patented Jan. 3, 1911.**

Application filed August 20, 1910. Serial No. 578,087.

To all whom it may concern:

Be it known that I, HARRY G. CLABAUGH, a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented a new and useful Bottle, of which the following is a specification.

It is the object of this invention to provide a bottle so constructed that, after it is sealed, the bottle must be rendered unfit for further use, by the operation of removing its contents.

Another object of the invention is to provide novel means for closing the bottle.

Yet another object of the invention is to provide novel means for holding the stopper in place within the bottle.

In the drawings, Figure 1 is a fragmental longitudinal section of a bottle constructed in accordance with my invention, the parts of the device being in the positions which they will assume immediately preceding the locking of the stopper in place within the bottle; Fig. 2 is a longitudinal section of the invention, showing the stopper locked in place; Fig. 3 is a side elevation of the stopper; Fig. 4 is a side elevation of the stopper, the stopper being rotated upon its axis to an angle of 90° from the position shown in Fig. 3; Fig. 5 is a side elevation of a modified form of stopper; and Fig. 6 is a perspective of the spring plate which is employed in locking the stopper in place within the bottle.

The bottle 1 is fashioned from glass, and is provided with a reduced neck 2, in the outer surface of which there is a circumscribing groove 3. This groove 3 weakens the neck 2 of the bottle, so that, under circumstances to be hereinafter described, the upper portion of the neck 2 of the bottle may be broken off. Seated in the neck of the bottle, below the groove 3, is an auxiliary stopper 18, preferably fashioned from cork. When the upper portion of the neck 2 of the bottle is broken off, this auxiliary stopper 18 serves to receive the fragments of broken glass, and to prevent the same from dropping into the bottle. These fragments of broken glass may be washed or blown off the auxiliary stopper 18. The stopper proper is preferably fashioned from glass, the stopper comprising a body 4 and a transverse head 5, integrally formed.

The neck 1 of the bottle is recessed, as shown at 6, circumferentially, so as to form, in the interior of the neck 2, a shoulder 7, extended entirely around the neck of the bottle. Above this shoulder 7, the neck of the bottle is enlarged slightly in diameter, as clearly seen in Figs. 1 and 2. The lower face of the shoulder 7 is inclined, as shown at 8, to undercut the shoulder.

In the stopper there is a transverse slot 9. The bottom wall 10 of this slot 9 is downwardly convexed, the top wall 11 of the slot being likewise convexed downwardly, the radius of curvature of the top wall 11 being less than the radius of curvature of the bottom wall 10. By referring to Fig. 4 of the drawings, and comparing the same with Figs. 1 and 2, it will be seen that the ends of the slot 9 are carried upwardly to form recesses in the side walls of the stopper, as shown at 12. It is to be noted that the transverse slot 9 communicates throughout its entire extent with the outer face of the stopper. By reason of this construction, the spring plate, subsequently described, may be inserted transversely into the slot; thus greatly facilitating the mounting of the spring plate in place. The slot 9 is adapted to receive a spring plate 14 shown in outline in Fig. 6. This spring plate is simply a straight piece of spring metal, held in the position shown in Fig. 6, by its own resiliency. The body 4 of the stopper is surrounded by a resilient washer 15. This washer 15 is preferably fashioned from cork, although rubber or other resilient material may be employed to advantage in particular instances.

The operation of the device is as follows: The liquid is first placed in the bottle 1, the auxiliary stopper 18 being mounted in the position shown. The plate 14 is sprung into the slot 9, and by reason of the fact that the bottom wall 10 of the slot 9 and the top wall 11 thereof are both convexed downwardly, the spring plate 14 will, by its resiliency, be held against the stopper at three spaced points, denoted by the letter A in Fig. 3. Thus, when the spring plate 14 is once mounted in position in the stopper, the spring plate cannot accidentally be shaken out of the slot 9 before the stopper is mounted in the bottle. The stopper is now thrust into the neck 2 of the bottle. During the insertion of the stopper into the neck 2 of the bottle, the ends of the spring plate 14 will

be seated in the recesses 12, and be housed within the contour of the stopper. Owing to the curvature given to the spring plate 14, as shown in Fig. 1, it will be seen that the ends of the spring 14 will not interfere with the insertion of the stopper into the bottle neck. As the stopper is thrust home, the cork washer 15 will first come into contact with the shoulder 7, before the spring plate 14 has exercised its locking function. These positions of the parts are clearly depicted in Fig. 1. After the parts are positioned as shown in Fig. 1, if further force is applied to the stopper, the washer 15 will be compressed, the ends of the spring plate 14 passing downwardly below the shoulder 7. When the ends of the spring plate 14 are thus positioned, the ends of the spring plate will move out of the recesses 12 in the stopper, into the recesses 6 in the bottle neck 2, the ends of the spring plate passing beneath the shoulder 7 in the bottle neck, and engaging the undercut surface 8 of the shoulder. Thus, the stopper will be securely locked within the bottle neck 2. It is to be noted, referring to Fig. 2, that when the stopper is in place within the bottle neck, the stopper is housed entirely within the contour of the bottle. There is, therefore, no opportunity for an edged tool of any sort to be inserted beneath the head 5, for the purpose of prying the stopper out of the bottle. The contents of the bottle are removed, as hereinbefore pointed out, by breaking the neck of the bottle along the groove 3, and removing the auxiliary stopper 18.

Attention is called to the fact that the spring locking member 14 is merely a flat strip of resilient metal. This element may be readily stamped out of a sheet of metal, at trifling cost, the member 14 requiring no further machine work, in order to render it fit for manual insertion into the stopper.

If desired, the stopper may be modified as shown in Fig. 5. This modified stopper 16 is of the same general construction as the stopper hereinbefore described, with the exception that the head 17 of the modified stopper, is, in thickness, equal to the combined thicknesses of the head 5 and the washer 15; the stopper 16 being adapted to be employed without the washer 15.

Having thus described the invention, what is claimed is:

A bottle stopper provided with a transverse slot communicating throughout its entire extent with the outer face of the stopper and terminally extended upon the exterior of the stopper; and a straight spring plate adapted to be slid transversely into the slot, the ends of the plate registering in the extended portions of the slot during the insertion of the stopper into a bottle; the upper and lower walls of the slot convexing toward the bottom of the stopper, whereby the plate will, by its own resiliency, be bound against the ends of the lower wall and the middle portion of the upper wall.

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

HARRY G. CLABAUGH.

Witnesses:
Jos. Vogt,
P. F. Halton.