This invention relates to improvements in tamperproof stopper seals for bottles and it consists of the matters hereinafter described and more particularly pointed out in the appended claims.

One of the objects of the present invention is to provide a bottle stopper seal, which is tamperproof in that it cannot be removed from the bottle fraudulently and then replaced, without leaving visible evidence of said removal and replacement.

Another object of the invention is to provide a seal for this purpose, which in the opening of the bottle, requires the removal of the cap skirt from the bottle, leaving only a part of the stopper enclosed by cap material and which in no manner interferes with the subsequent use of the stopper in connection with the bottle.

A further object of the invention is to provide a seal of this kind wherein the stopper includes a flanged head, and a sheet metal cap, one part of which is beaded under the head and is formed with a weakened tearing line and another part of which forms a skirt for a beaded or crimped engagement beneath a bead on the bottle neck, there being a second weakened tearing line extending across the skirt and connecting the first mentioned line with an edge of a digitally graspable tongue.

The above mentioned objects of the invention, as well as others, together with the many advantages thereof, will more fully appear as we proceed with our specification.

In the drawing:

Fig. 1 is a view in side elevation of a tamperproof stopper seal embodying the preferred form of the invention.

Fig. 2 is a view in side elevation of the seal when applied and secured to the neck of an associated bottle.

Fig. 3 is a view similar to Fig. 2 illustrating the manner in which the seal is operated in its removal from a bottle.

Fig. 4 is a vertical sectional view on an enlarged scale through the neck of the bottle and illustrates the seal in one step of its application to the bottle neck.

Fig. 5 is a view similar to Fig. 4 and illustrates the seal as fully applied to the bottle neck.

Fig. 6 is a vertical sectional view through the bottle neck and illustrates the manner of using the stopper with the bottle, after the removal of the skirt of the seal.

Referring now in detail to that embodiment of the invention illustrated in the accompanying drawing, 16 indicates a bottle stopper made of any material suitable for the purpose and which material is shown as cork. Said stopper includes a cylindrical body 11 having a flanged bead 12 at the top end of a diameter greater than that of the body so as to marginally overhang the same. In connection with said stopper, there is employed a sheet metal cap 13 of such character as may be torn along a weakened tearing line. This cap which is substantially in the form of an inverted cup, includes a top or crown 14 for engagement with the top of the stopper head, a side wall part 15 for engagement with the like part of the stopper head, and a depending skirt 16. That part of the cap between the skirt 16 and side wall part 15 is formed as an inwardly extending bead 17 whereby the cap is secured to the stopper. The bead, however, is of a radial depth less than that part of the head which overhangs the body of the stopper. Circumferentially of the bead 17 is a weakened tearing line 18.

At one side of the skirt there is provided a tongue or tab 19 which extends below the bottom edge of said skirt and a weakened tearing line 20 extends diagonally across said skirt. One end of said line 20 joins the first mentioned line 18 and the other end of said line 20 joins one edge of the tongue or tab 19.

The stopper seal above described is intended for use in connection with a bottle, the neck 21 of which is provided at the top end with one or more outwardly extending beads or shoulders. As shown herein, the bottle neck is provided with a pair of top and bottom beads 22 and 23 respectively, separated or spaced apart by an annular groove 24.

It is to be understood that the parts are so correlated that the skirt will have an inside diameter approximating the outside diameter of said bottle neck beads and that the body 11 of the stopper has such a diameter as will insure a snug, leakproof fit in the neck of the bottle.

In applying the stopper seal to the bottle neck, the body 11 of the stopper is inserted into the neck until the inward bead 17 engages upon the top edge of the bottle neck bead 22 and so that the skirt of the cap depends a suitable distance below the bottle neck bead 23 as best shown in Fig. 4. With the parts in this position, a circumferential portion of the skirt is beaded inwardly into the space 24 between the bottle neck beads 22 and 23 as indicated at 25 and the bottom marginal portion of the skirt is crimped under the bottom shoulder or bead 23 of the bottle neck as indicated at 26. The parts, when in this position, best appear in Fig. 5. It is to be noted that in crimping in this bottom