This invention relates to crown cap closures for use on bottle necks provided with beads adapted to be engaged by indentations in the skirts of the crown cap, and for use on other containers having outwardly flaring necks, which may be either smooth or provided with cap engaging corru-gations.

The invention is particularly adapted for use on the necks of containers of the types disclosed in my co-pending applications, Serial No. 229,710, filed October 29th, 1927, Serial No. 270,730 filed April 17th, 1928, and Serial No. 294,969, filed July 24, 1928.

The main object of the invention is to provide a closure of the crown cap type with a plurality of indentations on the inner corrugations of the common corrugated skirt, in order to provide a greater holding contact on outwardly flaring containers, such as the common tumbler or drinking glass; and to provide a plurality of crimped contact points adapted to engage a plurality of beads or corrugations formed on a bottle neck.

Other objects of the invention will appear as the detailed description thereof proceeds.

In the drawings:

Figure 1 is a central vertical section through a crown cap seated on a bottle neck having a plurality of beads parallel to the mouth of the bottle and adapted to be engaged by a corresponding number of crimps on the inner corrugations of the cap;

Figure 2 is a plan view of the crown cap shown in Figure 1;

Figure 3 is a central vertical section taken on the line 3—3 of Figure 1, but showing the crown cap cramped securely to the beads of the bottle neck;

Figure 4 is a horizontal section on the line 4—4 of Figure 3;

Figure 5 is a perspective view of the crown cap illustrated in the preceding figure;

Figure 6 is a fragmentary elevation of a bottle neck having spiral beads applied to the neck and having a crown cap cramped thereon;

Figure 7 is a section on the line 7—7 of Figure 6; and

Figure 8 is a fragmentary elevation of a common glass tumbler having a double-crimped crown cap applied thereto, part of the glass and crown cap being cut away and shown in section.

In Figures 1 to 5 of the drawings there is shown a bottle neck of the type disclosed in my co-pending application, Serial No. 294,969, and having a double-crimped crown cap applied thereto. The bottle neck 1 is provided with two beads 2 and 3 parallel to the mouth of the bottle and a cap 4 having a cork insert 5 seated on the top of said bottle neck to close the same.

The skirt 6 of the cap 4 is provided with a series of corrugations 7 extending smoothly from the top of the cap to the edge of the skirt.

These corrugations 7 alternate with corrugations 8 which are provided with indentations 9 and 10 spaced apart from the top of the cap to correspond with the width of the beads 2 and 3 when the cap is intended for use on bottle necks having such beads.

These caps may also be used on bottle necks 11 having spiral or upwardly sloping beads 12. The caps are designed to be applied to either of these two types of bottle necks by the downward pressure of the ordinary capper. Of course, where the beads are parallel as shown in Figure 1, the upper and lower indentations 9 and 10 seat under the bead when the cap is cramped in closing position as shown in Figure 3. When the caps are applied to bottle necks of the type shown in Figure 6 some of the indentations are seated between the beads but a sufficient number of them are crimped under the beads 12 to hold the cap securely in closing position.

The bottle necks of the type shown in Figures 1 and 3 are provided with filling portions 13 and 14, which cause the skirt of the crown cap to be spread whenever the crown cap is twisted on the neck itself and thereby eliminate the necessity of having a special opener of the well known lever type to spring the cap off the bottle neck.

The bottle necks of the type shown in Figures 6 and 7 have the sloping beads which act as inclined planes upon which the indentations 9 and 10 may ride when the crown cap is twisted in the direction in which the beads slope. In this type of bottle and closure, it is obvious that the twisting of the closure not only tends to spread the skirt apart but also causes the cap to rise from the mouth of the bottle.

In all cases where these caps are designed to be twisted off the bottle neck the caps may be used over again because their removal from the bottle necks does not involve mutilation of the cap.

The caps of the type described herein can readily be applied by the use of an ordinary capper to a tumbler or any other con-
tainer having an upward and outwardly flaring neck or mouth. In Figure 8 there is shown a common tumbler 15 having an upward flare and a crown cap 16 is shown crimped thereon. The plurality of indentations 17 and 18 give a comparatively large gripping surface for the smooth side of the tumbler and insure satisfactory closing fit between the crown cap and the tumbler.

The cap 16 must be removed by the usual lever crown cap opener as there is nothing provided on the tumbler to spread the cap by twisting movement, although a vertical filling piece similar to the parts 13 and 14 could be formed on the side of the tumbler to provide for spreading of the crown cap skirt in order that the cap could be removed from the glass by twisting movement.

The cap 16 may be provided with a skirt in which the inner corrugations have any number of indentations, as it is obvious that the greater the number of indentations, the greater will be the gripping power of the cap on the smooth side of the tumbler.

What I claim is:
1. The combination with a container of a crown cap crimped thereon, the skirt of said crown cap being provided with a plurality of corrugations, alternate corrugations being provided with a plurality of indentations each in contact with the side of the container.

2. A crown cap having a skirt provided with a plurality of corrugations, each of the inner corrugations thereof having a plurality of indentations formed thereon and adapted to engage the neck of a container.

In testimony whereof I affix my signature.

ANTHONY FRANCIS McDONNELL.