Feb. 11, 1941. L. C. COON 2,231,055

SEALING CAP

Filed April 29, 1939

FIG. 1

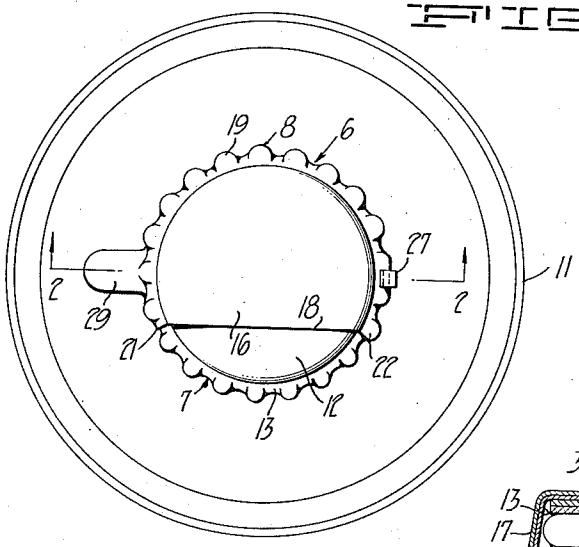


FIG. 2

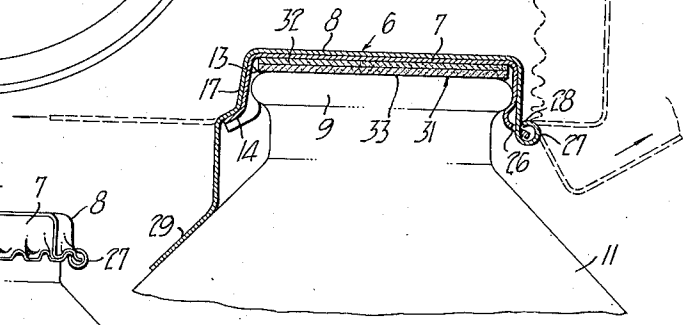


FIG. 3

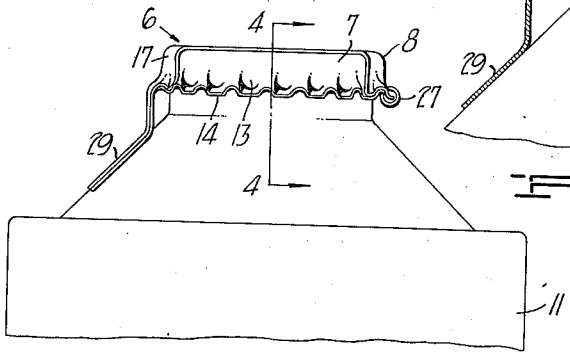


FIG. 4

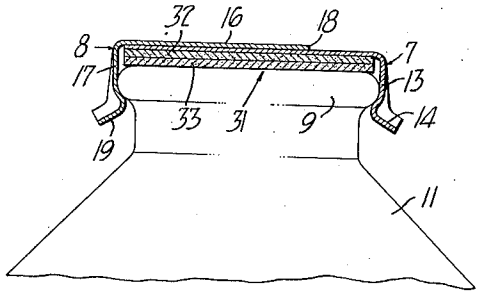
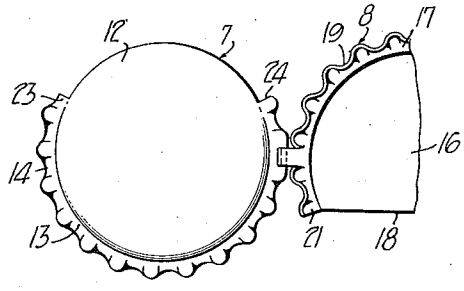


FIG. 5



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SEALING CAP

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7 Claims. (Cl. 215—39)

The invention relates to pressed or crimped-on sealing caps commonly used on the open beaded neck end of a bottle or container or the like, and commonly referred to as bottle caps.

An object of the present invention is to provide a cap of the character described which may be quickly and easily manually removed without the aid of a bottle opener or other separate tool.

Another object of the invention is to provide a cap of the character above which will provide an improved sealing strength and which may be firmly and positively engaged on the open end of a bottle or container and which will not be accidentally loosened or dislodged in the normal handling and packing of bottles or containers with which the cap is used.

A further object of the invention is to provide a sealing cap of the character above which, after removal from the bottle or container, may be replaced to provide an effective resealing of the bottle or container.

The invention possesses other objects and features of advantage, some of which with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawing:

Figure 1 is a plan view of a sealing cap constructed in accordance with the present invention and operatively applied on a container.

Figure 2 is a vertical sectional view of the cap and container taken substantially on the plane of line 2—2 of Figure 1.

Figure 3 is a side elevation of the cap and container.

Figure 4 is a vertical sectional view of the cap and container taken at right angles to the plane of Figure 2 and is indicated by the plane of line 4—4 in Figure 3.

Figure 5 is a plan view of the cap with the sections thereof shown in open form.

The sealing cap of the present invention as above explained, is adapted for use for sealing the tops of bottles or other containers such as soda water bottles, beer cans and the like, and has as its principal feature the attribute of ready removability without use of a special bottle cap opener or the like. The invention consists briefly in the forming of the cap of a plurality of supplementary cap sections which fit together and around the open beaded neck end of a container in such manner as to positively seal the container and at the same time afford the quick and ready release of the sections from each other and from the end of the container by manual operation.

With reference more particularly to the accompanying drawing, the sealing cap 6 of the present invention is composed of a pair of cap sections 7 and 8 which are fitted together and jointly pressed or crimped over the open beaded neck end 9 of a bottle, can or other container, 11. The inner of said sections here denominated by the numeral 7, is formed with a flat circular end 12 which is adapted to overlie the beaded end 9 of the container and the section is formed with a depending skirt 13 which circumscribes a peripheral portion only of the end 12, which portion is somewhat greater than a semi-circle or 180°, but less than the full circumference of the end. The skirt 13 is preferably corrugated in the usual manner and provided with a flared peripheral edge 14. The outer cap section here denominated by the numeral 8, is formed with a flared end 16 which is of circular segmental form somewhat greater than a semi-circle but less than a complete circle and is thus defined by a circular peripheral portion 17 and a straight portion 18 which extends across the end as a cord in the circular formation of the end. The outer section 8 is also provided with a corrugated depending skirt 19 which extends from the curved arcuate periphery 17 of the end 16, so that the peripheral extremities 21 and 22 of the skirt terminate in substantially aligned relation to the straight edge 18.

The cap sections are fitted together, as illustrated in the drawing, so as to position the end 16 of the outer section directly upon the end 12 of the inner section and with the skirts of the two sections extending around opposite circumferential portions of the cap. In this manner, since each of the skirt portions extends around the periphery of the cap for greater than one half of the cap periphery, the end extremities 21 and 22 of the outer skirt overlie and embrace the end extremities 23 and 24 of the inner skirt. In this manner the embraced skirt extremities are positioned in diametrically opposed relation at opposite sides of the cap, and each skirt portion by reason of its extension about more than one half of the circumference of the bead 9, is firmly attached to the bead. It will also be understood that due to the over-lapping and embracing of the skirt extremities, the extremity of the outer skirt acts to reenforce the grip of

the inner skirt on the bead 9 when the cap is pressed or crimped into position. This latter operation may be effected by pressing the open end of the assembled cap onto the open end of the container and crimping the lower end of the skirts around and under the bead on the container neck.

As an important feature of the present construction, a pair of embraced skirt extremities are hingedly secured together and this construction is here carried out by forming in the skirt 13 adjacent the extremity 24, an opening 26 and extending through such opening a tongue 27 formed on the skirt 19 adjacent the extremity 21. The tongue may be extended down through the opening 26 as illustrated in Figure 2, and then looped up and back on itself. The free end 28 of the tongue may be fixed by means of solder or the like, if desired.

A tab 29 is provided on the skirt 19 adjacent the peripheral extremity 22 thereof and is adapted for manual engagement to effect a removal of the cap from the container. The tab is preferably formed as a longitudinal continuation of the skirt and may be engaged by the die used in pressing on of the cap to press the tab neatly down and against the side of the container adjacent the neck end thereof.

To remove the cap, the tab is engaged and lifted and drawn outwardly as illustrated in Figure 2, so as to spring the peripheral extremity 22 of the outer skirt away from the bead 9 to thereby release the outer cap section. The latter is then swung upwardly, as illustrated in Figure 2, to the opposite side of the cap and then drawn away from such side so as to spring the peripheral portion 24 of the inner skirt away from the bead 9, so as to thereby release the inner section.

It will be understood that the cap sections readily adapt themselves to removal in the above described manner, by reason of the particular circumferential extent of the two skirts of the cap sections. Each of these skirts, as above indicated and as illustrated in the drawing, are of but slightly greater than semi-circular extent and therefore only a relatively short peripheral portion of the skirt bead need be sprung in order to release the cap section. Preferably, the cap sections are formed of sheet metal and somewhat greater strength is obtained with the present cap than in caps heretofore, due to the double metal thickness at the top and over-lapping sides of the cap.

Preferably, a sealing gasket 31 is incorporated in the cap for direct engagement with the open end of the container to be sealed, and preferably such gasket is in the form of a disc-like member of compressible material, such as cork or the like, so as to completely engage and seal the open end of the container. In this connection it will be noted that in applying the cap the latter is pressed firmly down against the open end of the container so as to compress the gasket and is secured in place with the gasket compressed by reason of the crimping of the skirt portions of the cap under the bead 9 on the container. In accordance with the present invention and as an important feature thereof, I prefer to use a gasket formed of double layers 32 and 33 which may be readily separated for removal of one of the layers. This separation of the gasket and reduction of its thickness is utilized in effecting a resealing of the cap. In the original application of the cap to the bottle, the applying tool or capper exerts a force which is considerably greater than may be conveniently applied in recapping the bottle and hence it is not normally possible to spring the indented skirt portion back under the bead by manual pressure after the cap has once been removed. However, I have found that by removing approximately one-half of the gasket thickness by taking out the layer 33, the cap may be re-applied with the use of fingers of average strength and the indented skirt portions readily sprung under the bead on the container neck. In re-applying the cap the corrugations and indentations on the inner skirt act to cooperate with and receive the corrugations and indentations of the outer skirt with the result that the latter, when pressed downwardly towards a sealed position, will snap into place.

I claim:

1. A cap of the character described, comprising, interfitting cap sections having overlapping end portions defining a complete circular cap end and formed with skirt portions having opposite circumferential extension and each being greater in extent than a semi-circle but less than a full circle, the free extremities of the skirt of the outer section being formed to embrace the free skirt extremities of said inner section to define with the lapped end portions of said sections a complete end enclosure.

2. A cap of the character described comprising, interfitting cap sections having over-lapping end portions defining a complete circular cap end and formed with skirt portions having opposite circumferential extension and each being greater in extent than a semi-circle but less than a full circle, the free extremities of the skirt of the outer section being formed to embrace the free skirt extremities of the inner section to define with the lapped end portions of these sections a complete end enclosure, and a circular sealing gasket fitting in said cap against said lapped end portions.

3. A cap of the character described comprising, interfitting cap sections having overlapping end portions defining a complete circular cap end and formed with skirt portions having opposite circumferential extension and each being greater in extent than a semi-circle but less than a full circle, the free extremities of the skirt of the outer section being formed to embrace the free skirt extremities of the inner section to define with the lapped end portions of these sections a complete end enclosure, and means hingedly connecting one pair of embraced skirt extremities.

4. A sealing cap adapted to be pressed upon the open neck end of a bottle or container or the like and about a bead provided on said end, comprising, interfitting cap sections, one of said sections having a disc-like top and a depending skirt circumscribing a portion only of the periphery of said top exceeding 180°, the other of said sections having a top portion overlying the top of said first section and a depending skirt circumscribing a portion only of said top portion exceeding 180°, the free extremities of said second skirt embracing the extremities of said first skirt to provide a complete circular embrace of said neck end, means connecting one pair of embraced skirt extremities, a tab formed on the opposite skirt extremity of the outer cap section, and a sealing gasket mounted within said first section and adapted to engage said container end.

5. A sheet metal sealing cap comprising, a cap section having a circular end and a depending

skirt extending from more than one half of the periphery of said end but less than the full periphery, a second cap section having a circular segmental end greater than a semi-circle and having a depending skirt extending from the circular peripheral portion of said second end, said first section being inserted into said second section to define a full end enclosure with the two skirts extending about opposite circumferential sides and with the free extremities of the second skirt embracing the free extremities of the first skirt and with the embraced skirt extremities diametrically opposed to each other, means hingedly connecting a pair of said embraced extremities, and a tab on the outer of the opposite skirt extremities.

6. A sheet metal sealing cap comprising, a cap section having a circular end and a depending skirt extending from more than one half of the periphery of said end but less than the full periphery, a second cap section having a circular segmental end greater than a semi-circle and having a depending skirt extending from the circular peripheral portion of said second end, said first section being inserted into said second section to define a full end enclosure with the two skirts extending about opposite circumferential sides and with the free extremities of the second skirt embracing the free extremities of the first skirt and with the embraced skirt extremities diametrically opposed to each other, means hingedly connecting a pair of said embraced extremities, a tab on the outer of the opposite skirt extremities, and a gasket formed of a pair of super-imposed discs inserted into said cap against said first cap section end.

7. A sheet metal sealing cap comprising, a cap section having a circular end and a depending skirt extending from more than one half of the periphery of said end to less than the full periphery, a second cap section having a circular segmental end greater than a semi-circle and having a depending skirt extending from the circular peripheral portion of said second end, said skirts being corrugated with the corrugations thereof extending longitudinally to said ends, and being flared outwardly at their free longitudinal edge, said first section being inserted into said second section to define a full end enclosure with the two skirts extending about opposite circumferential sides and with the peripherally spaced ends of the outer section skirt embracing the peripherally spaced ends of the inner skirt and with the embraced skirt extremities diametrically opposed to each other, one of said skirt extremities being provided with an opening therein, the extremity of the engaging skirt being provided with a tongue engaged through said opening for hinging said sections together, and a tab on the opposite extremity of the outer skirt.

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