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⑤④ **A closure cap for closing a container under vacuum.**

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Description

This invention relates to a closure cap for closing a container under vacuum, said container provided with two beads, the first one being located at the container rim and the second one spaced apart from the first one on the neck of said container, the closure cap comprising a circular closing disc having a flanged edge, a sealing compound provided therein, and a sealing ring of synthetic plastics material having an L-shaped cross-section, and including an edge directed radially inwardly and forming an abutment for the circular closing disc and a substantially cylindrical skirt enclosing the flanged edge of the circular closing disc, said skirt having on its inside radially inwardly directed projections adapted to engage underneath the first bead of the container to be sealed, and the sealing ring being further provided with a guaranty construction, to render the closure cap tamper proof.

A cap of this type, which is sometimes referred to as a vacuum snap cap, is disclosed in Dutch patent application 7407362 (corresponding to GB—A—1 446 388). In this prior cap, the guaranty construction is formed by a tear-off guaranty ring provided at the bottom of the skirt, which ring is fitted with a pull tab projecting radially outwardly of the cap, and with which the cap can be opened without any tool being required. The tear-off guaranty ring forms an extension of the skirt of the sealing ring and is in circumferential sealing contact with the outer surface of the second bead of said container. The radially projecting pull tab impedes the automatic supply of sealing rings via a sealing-ring hopper, since sealing rings thus designed continually become jammed in the hopper. It is true that after the guaranty ring has been torn off, the cap can be reused for closing containers, but is not suitable for re-closing jars, i.e. containers provided with a double thickened edge, as those which are usually employed for the vacuum preservation of foodstuffs. In order to get, after re-closing, a closure which is insect-infection-proof, the lower edge of the skirt in such containers or jars should be in sealing contact with the second bead of the container. This is not the case with the prior cap after the guaranty ring has been torn off. A tear-off guaranty ring connected to the lower edge of the skirt of such a re-usable closure cap would form an undesirable extension of that skirt.

It is an object of the invention to provide a cap of the above described type that can be used for re-closing containers having a double bead, which is devoid of the drawbacks going with the above described guaranty construction.

To this effect the invention provides a cap in which the guaranty construction comprises a tiltable tear-off tab disposed within the overall height of the skirt of the sealing ring, which tear-off tab is connected to the skirt by means of two tear lines extending in axial direction of the skirt, said sealing ring adjacent the tear-off tab is made double-walled, with an outer wall being

formed by the tear-off tab itself and an inner wall constituting a continuous extension of the lower edge of the skirt, said lower edge being designed to be in circumferential sealing contact with the outer surface of the second bead of said container.

For the purpose of rendering it difficult for the cap to be opened otherwise than via the tear-off tab, the lower edge of the skirt outside the tear-off tab is preferably bevelled inwardly. In this manner there is no proper grip on the cap except at the tear-off tab. In order that there may be a proper grip on the cap at the tear-off tab, the tear-off tab extends radially slightly beyond the peripheral edge of the skirt and is provided at the bottom with a nail edge. In order to facilitate the tilting of the tear-off tab, the wall thickness of the skirt at said tab is thinner than the rest of the skirt.

One embodiment of the snap cap (closure cap) according to the invention will now be described, by way of example, with reference to the accompanying drawing, wherein:

Fig. 1 is a top view of the sealing ring;

Fig. 2 is a front elevational view of the sealing ring;

Fig. 3 is a cross-sectional view taken on the line III—III of Fig. 1;

Fig. 4 is a bottom view of the sealing ring;

Fig. 5 shows a detail of the sealing ring on an enlarged scale;

Fig. 6 illustrates a portion of a jar rim with a part of a snap cap according to the invention thereon at the position of the tear-off tab;

Fig. 7 is a cross-sectional view similar to Fig. 6 at a position beyond the tear-off tab.

The sealing ring 1 (see Figs. 1—5) has an L-shaped cross-section, the one leg of which is formed by the skirt 4, substantially of cylindrical shape and the other leg by the radially inwardly extending edge 3, forming an abutment for a closing disc 18 usually made of metal (see Figs. 6—7). Provided in the wall of the skirt 4 is a tear-off tab 2 which is connected through tear lines to the wall of the skirt 4. The tear lines 6 extend only along a part of the height h of the sealing ring. Above the tear-off tab 2 the wall thickness 7 of the skirt 4 is thinner, so that the tear-off tab 2 is adapted for tilting movement, as will be explained in the following. The lower edge 5 of the skirt 4 is bevelled inwardly in order to thus reduce the grip on the cap beside the tear-off tab 2.

Provided on the inside of the skirt wall are projections 8, directed radially inwardly and uniformly distributed over the circumference of the skirt (4). These projections 8 have a triangular cross-section and are adapted to engage underneath an outwardly thickened edge of a container to be sealed.

Fig. 5 shows the construction of the sealing ring 1 at the position of the tear-off tab 2 on an enlarged scale. The top face 23 of the sealing ring 1 is stepped to cause the thrust face 24 of the edge 3 to be off-set axially towards the centre plane through the skirt 4. There is thus formed a

chamber 9 which serves as a mechanical buffer for absorbing shocks on the edge, so that the risk of vacuum leaks is substantially reduced. At the position of the tear-off tab 2 wall 7 is thinner than the normal wall thickness of the skirt, the difference in thickness being indicated by reference numeral 10. The top side of the tear-off tab 2 has a bevelled face 14, so that when a force F is exerted on the tear-off tab 2, said tab will tilt about the tilting line 11, until the bevelled face 14 comes to abut against the thinned wall portion 7. During the tilting of the tear-off tab 2, the tear lines 6 through which the tear-off tab 2 is connected to the skirt 4 are broken. Accordingly it can be verified whether a container closed by means of a snap cap according to the invention is actually remained closed. At the bottom of the tear-off tab 2 there is provided a recess 13 designed as a nail edge in order to provide a better grip on the tear-off tab 2. Adjacent to the tear-off tab 2 to the skirt 4 is double-walled. The inner wall 12 is, in axial direction, a continuous extension of the thinned wall 7 and in circumferential direction a continuous extension of the wall of the skirt 4. During the tilting of the tear-off tab 2 about the tilting line 11 no force whatever is exerted on the inner wall 12, so that this retains its original shape.

Figs. 6—7 show the snap cap according to the invention disposed on a jar-type container to be sealed. The jar has a glass wall 15 with two thickened rims respectively designated by numerals 16 and 17. The snap cap comprises a disc 18 usually of metal, and profiled for strengthening. The closing disc 18 is provided with a flange 19, and a sealing compound 20 is provided at the inner side of the closing disc 18, to provide a vacuum-tight seal on the upper rim 16 of the glass wall 15. The closing disc 18 is pressed on the wall (15) of the jar by means of the sealing ring 1, whereby the radially inwardly directed edge 3 comes to lie in contact with the closing disc 18, while the inwardly directed projections 8 engage underneath the upper thickened rim 16 of the glass wall 15. The upper edge of the sealing ring 1 is stepped to form a buffer space 9.

In order to render the interspace 22 between the two thickened rims 16 and 17 insect infection-proof, the bevelled lower edge 5 should, at 25, be in sealing contact with the outer wall of the thickened rim 17.

Even after the guaranty structure has been ruptured, i.e. after the tilting of the tear-off tab 2, the space 22 must remain sealed and this can be achieved by means of the double-walled form of the skirt 4 of the sealing ring, as shown in Fig. 7. The inner wall 12 is in surface-to-surface contact with the outer wall of the thickened rim 17, so that even after the tilting of the tear-off tab 2 a sealing of the space 22 is achieved at the edge 21.

Claims

1. A closure cap for closing a container under vacuum, said container provided with two beads,

the first one (16) being located at the container rim and the second one (17) spaced apart from the first one on the neck of said container, the closure cap comprising a circular closing disc (18) having a flanged edge (19), a sealing compound (20) provided therein, and a sealing ring (1) of synthetic plastics material having an L-shaped cross-section, and including an edge (3) directed radially inwardly and forming an abutment for the circular closing disc (18) and a substantially cylindrical skirt (4) enclosing the flanged edge (19) of the circular closing disc (18), said skirt (4) having on its inside radially inwardly directed projections (8) adapted to engage underneath the first bead (16) of the container to be sealed, and the sealing ring (1) being further provided with a guaranty construction, to render the closure cap tamper proof, characterized in that the guaranty construction comprises a tiltable tear-off tab (2) disposed within the overall height (h) of the skirt (4) of the sealing ring (1) which tear-off tab (2) is connected to the skirt (4) by means of two tear lines (6) extending in axial direction of the skirt (4), said sealing ring (1) adjacent the tear-off tab (2) being double-walled, with an outer wall being formed by the tear-off tab (2) and an inner wall (12) forming a continuous extension of the lower edge (5) of the skirt (4), said lower edge (5) being designed to be in circumferential sealing contact with the outer surface of the second bead (17) of said container.

2. A closure cap according to claim 1, characterized in that the lower edge (5) of the skirt (4) outside the tear-off tab (2) is bevelled inwardly.

3. A closure cap according to claim 1 or 2, characterized in that the tear-off tab (2) extends radially slightly beyond the peripheral wall of the skirt (4) and is provided at the bottom with a nail edge (13).

4. A closure cap according to claim 1, 2 or 3, characterized in that the wall (7) of the skirt (4) is thinner adjacent the tear-off tab (2).

Patentansprüche

1. Verschlussdeckel zum Verschliessen eines Behälters unter Vakuum wobei der Behälter zwei Wülste aufweist, von denen der erste (16) sich am Behälterrand befindet und der zweite (17) mit Abstand vom ersten am Halse des Behälters liegt, welcher Verschlussdeckel eine kreisförmige Verschlussplatte (18) mit einem Flanschrand (19) aufweist, in dem eine Dichtungsmasse (20) enthalten ist, und einen Dichtungsring (1) aus synthetischem Kunststoffmaterial mit einem L-förmigen Durchschnit, versehen mit einem radial einwärts gerichteten Rand (3), der einen Anschlag für die kreisförmige Verschlussplatte (18) bildet und mit einem im wesentlichen zylindrischen Mantel (4), der den Flanschrand (19) der kreisförmigen Verschlussplatte (18) umschliesst, welcher Mantel (4) an seiner Innenseite radial einwärts gerichtete Vorsprünge (8) aufweist, die den ersten Wulst (16) des zu verschliessenden Behälters untergreifen können, wobei der Dicht-

ungsring (1) weiter mit einer Konstruktion zur Sicherung des Verschlussdeckels gegen Eingriffe versehen ist, dadurch gekennzeichnet, dass die Sicherungskonstruktion einer kippbaren Aufreissstreifen (2) aufweist, der innerhalb der Konstruktionshöhe (h) des Mantels (4) des Dichtungsringes (1) angeordnet ist, welcher Aufreissstreifen (2) durch zwei sich in axialer Richtung des Mantels (4) erstreckende Reisslinien (6) mit dem Mantel (4) verbunden ist, wobei der Dichtungsring (1) nahe dem Aufreissstreifen (2) doppelwandig ausgebildet ist, und zwar mit einer Aussenwand, die durch den Aufreissstreifen (2) gebildet ist und mit einer Innenwand (12), die eine kontinuierliche Verlängerung des unteren Randes (5) des Mantels (4) bildet, welcher untere Rand (5) so ausgebildet ist, dass er in abdichtender Umfangsberührung mit der Aussenfläche des zweiten Wulstes (17) des Behälters ist.

2. Verschlussdeckel nach Anspruch 1, dadurch gekennzeichnet, dass der untere Rand (5) des Mantels (4) ausserhalb des Aufreissstreifens (2) einwärts abgeschrägt ist.

3. Verschlussdeckel nach Anspruch 1 oder 2, dadurch gekennzeichnet, dass der Aufreissstreifen (2) sich radial etwas ausserhalb der Umfangswand des Mantels (4) erstreckt und unten mit einem Nagelrand (13) versehen ist.

4. Verschlussdeckel nach Anspruch 1, 2 oder 3, dadurch gekennzeichnet, dass die Wand (7) des Mantels (4) nahe dem Aufreissstreifen (2) dünner ist.

Revendications

1. Une capsule de fermeture pour fermer un récipient sous vide, ledit récipient ayant deux chapelets, le premier 16 étant placé au rebord du récipient et le second 17 espacé du premier sur le col dudit récipient, la capsule de fermeture comprenant un disque de fermeture circulaire 18 ayant un bord à brides 19, un composé d'étanchéité 20 prévu là-dedans, et un anneau

d'étanchéité 1 en matière plastique synthétique ayant une second transversale en forme de L, et comprenant un bord 3 orienté radialement vers l'intérieur, formant une butée pour le disque de fermeture circulaire 18 et une bordure substantiellement cylindrique 4 entourant le bord à brides 19 du disque de fermeture circulaire 18, ladite bordure 4 ayant sur son intérieur des projections 8 orientées radialement vers l'intérieur ménagées à se mettre en prise avec le dessous du premier chapelet 16 du récipient à sceller, l'anneau d'étanchéité 1 étant également muni d'une construction de garantie pour rendre la capsule de fermeture inviolable, caractérisée en ce que la construction de garantie comprend une patte d'affaiblissement 2 inclinable disposée dans la hauteur totale h de la bordure 4 de l'anneau d'étanchéité 1, laquelle patte d'affaiblissement 2 est connectée à la bordure 4 à l'aide de deux lignes d'affaiblissement 6 s'étendant en direction axiale de la bordure 4, ledit anneau d'étanchéité 1 voisin de la patte d'affaiblissement 2 étant à double paroi, avec une paroi extérieure formée par la patte d'affaiblissement 2 et une paroi intérieure 12 constituant une extension continue du bord inférieur 5 de la bordure 4, ledit bord inférieur 5 étant ménagé à être en contact d'étanchéité circonférentiel avec la surface extérieure du second chapelet 17 dudit récipient.

2. Une capsule de fermeture selon la revendication 1, caractérisée en ce que le bord inférieur 5 de la bordure 4 à l'extérieur de la patte d'affaiblissement 2 est un biseau vers l'intérieur.

3. Une capsule de fermeture selon la revendication 1 ou 2, caractérisée en ce que la patte d'affaiblissement 2 s'étend radialement légèrement ou delà de la paroi périphérique de la bordure 4 et est munie au fond d'un bord d'ongle 13.

4. Une capsule de fermeture selon la revendication 1, 2 ou 3, caractérisée en ce que la paroi 7 de la bordure 4 est plus mince près de la patte d'affaiblissement 2.

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