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Jacquemijns

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[54] **VACUUM CLOSURE FOR A JAR OR CONTAINER, ESPECIALLY A GLASS PRESERVING JAR**

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[52] **U.S. Cl.** ..... **215/42,** 215/46 A

[51] **Int. Cl.** **B65d 41/20**

[58] **Field of Search** ..... 215/42, 46 A, 46 R; 220/53, 54

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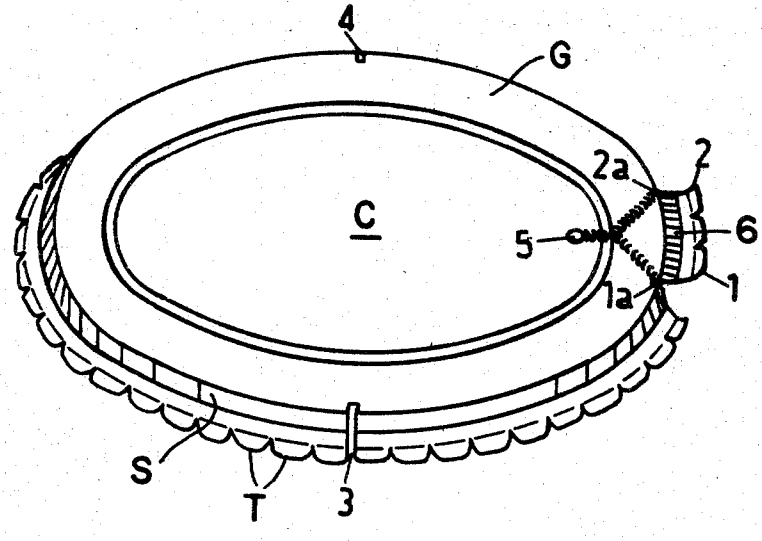
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[57] **ABSTRACT**

Vacuum closure for a jar or container, especially for a glass preserving jar, said closure consisting of easily deformable metal, the skirt of said closure being provided along the lower edge with inwardly directed teeth projections engaging the mouth of the jar to be closed, said skirt being provided from the lower edge of four vertical score lines, cuts or slits in or between the teeth two of these score lines, cuts or slits being arranged diametrically with respect to each other, and the two other score lines, cuts or slits arranged at a comparatively small distance, defining a tab.

4 Claims, 3 Drawing Figures



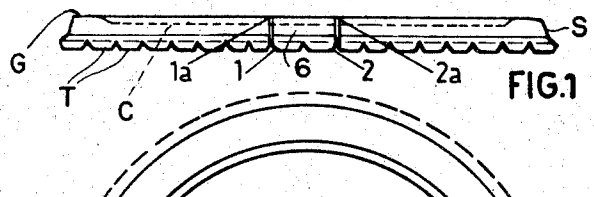


FIG.1

FIG.2

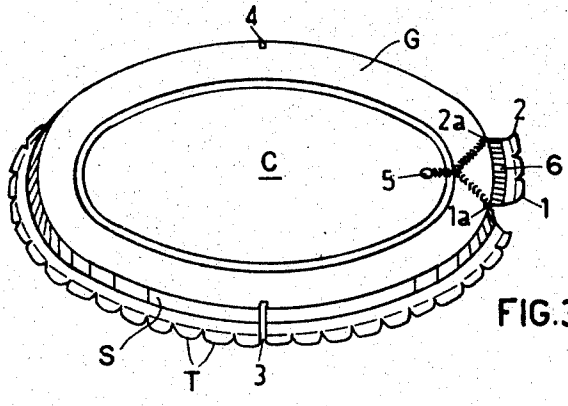


FIG.3

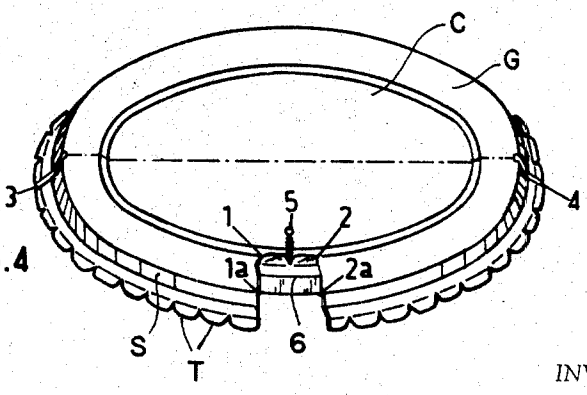


FIG.4

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VACUUM CLOSURE FOR A JAR OR CONTAINER, ESPECIALLY A GLASS PRESERVING JAR

The invention relates to a vacuum closure for a jar or container, especially a glass preserving jar, said closure consisting of easily deformable metal, for instance aluminium or thin gauge tin plate. The lower edge or skirt of said closure is provided with inwardly directed teeth or projections, engaging the mouth of the jar to be closed. Such a vacuum closure has been used in the trade for a long time. Such closures may be removed from the jar by the user by exerting an upwardly directed force on the skirt of the closure. Said force may be obtained by means of a suitable hook shaped tool, but it is also possible to provide the mouth of the jar at some distance under the skirt of the closure with a shoulder in order to remove the closure by turning or twisting a coin placed in the gap between said shoulder and the skirt of the closure.

An object of the invention is a vacuum closure of the kind mentioned above, said closure being arranged in such a way that the closure may be removed manually from the jar or container without the necessity to use a tool or a coin, in which last case said shoulder on the mouth of the jar may be omitted.

The vacuum closure according to the invention is characterized by the fact that said skirt is provided with four vertical score lines, in which two of these score lines, outs or slits are arranged diametrically with respect to each other, and the two other score lines, outs or slits are arranged close to each other to define a tab. For the removal of a vacuum closure according to the invention it is not necessary to use a hook shaped tool or a shoulder on the mouth of the container in combination with a coin or similar part for opening the closure. The user may engage the tab with his fingers in order to bend said tab upwardly with respect to the skirt of the closure. During such upward bending of said tab the vacuum is broken. Preferably a recess or bulge is provided between the adjoining score lines defining said tab in order to promote the breaking of the vacuum when bending the tab. By exerting a continuously upwardly directed force on the tab the part of the closure adjoining the tab carries out a hinging movement with respect to the diametrical score lines. During this movement the whole closure disengages the mouth of the container.

It is remarked that when using the known vacuum closures mentioned above it is necessary to break the vacuum, i.e. by piercing the closure with a sharp object, before the removal of the closure may be under-taken. The application of a perforation is unnecessary when the vacuum closure according to the invention is used, because the vacuum becomes automatically broken during the upward movement of the tab. Whereas the use of score lines in the skirt of crown cork closures for containers with internal overpressure, i.e. containers for beer or other beverages containing carbon dioxide, is known, such prior crown cork closures are made from stiff non-easily deformable metal especially thick gauge tin plate, which necessitates the use of a bottle opener for removal. In the case of such crown closures it has been proposed to use a combination of score lines and skirt with a protruding horizontal tab, said tab functioning as lever when removing the closure. Said tab increases the material consumption when making such closures from tin plate sheet, contrary to the situation with the vacuum closure according to the invention, as in this case the tab may be shaped from the material of the skirt itself.

The character of the invention may be best understood by reference to one of its structural forms as illustrated by the accompanying drawings, in which:

FIGS. 1 and 2 respectively are a side view and a top view of a vacuum closure according to the invention;

FIGS. 3 and 4 are perspective views of said closure during removal.

The vacuum closure according to the drawings includes a top having an identical circular portion C surrounded by a portion G defining a downwardly facing, circumferential sealing groove overlying the mouth or rim of the associated container and having a depending skirt S provided with a considerable number of projections or teeth T, as shown, said teeth attaching the closure to the rim on the mouth of a glass preserving jar or container. Ordinarily the mouth of such a container has a relatively large diameter i.e. 100 mm or more. By providing two teeth or the space between adjoining teeth at the points 1 and 2 of FIG. 1 and 2 with cuts, slits or score lines, a tab 6 is obtained between said points 1 and 2, said tab having the normal length of the skirt of the closure. This tab may be raised easily with a finger of the user. By bending the tab 6 as indicated in FIG. 3 the vacuum is broken immediately, thus facilitating the complete removal of the vacuum closure from the mouth of the container. This removal is promoted according to the invention by cuts or score lines 3, 4 which are placed diametrically with respect to each other. The part of the closure between the score lines or cuts 3–1–2–4 bends easily in an upward direction when a lifting force is exerted on the raised tab. The part in question makes a hinging movement with respect to an imaginary line between the cuts or score lines 3, 4, see FIG. 4.

This arrangement of said points also promotes the complete removal of the closure.

An important factor in order to facilitate removal relates to the breaking of the vacuum. As long as the vacuum is present the removal of the closure takes a lot of force and may cause undesirable tearing of the metal in the vicinity of the tab 6. Breaking of the vacuum during the raising the tab 6 is promoted by forming a V-shaped configuration of folds which cross the sealing groove portion G of the closure at an oblique angle and facilitate the breaking of the vacuum. The forming and positioning of these folds may occur conventionally more or less by chance in the usual construction of the closure and therefore it is desirable to control these folds so that such one occurs in the manner indicated in FIGS. 1 and 2. This is obtained by deforming the top of the closure in the vicinity of point 5 (FIGS. 2, 3 and 4) by means of a bulge, indentation or recess of course without puncturing the metal, thus controlling a Y shaped configuration of the folds between points 1*a*, 2*a* and 5.

The vacuum closure according to the invention provides the following special advantages:

1. It is unnecessary to provide the skirt of the closure with a separate tab, said tab being obtained by local score lines, slits or cuts.
2. By raising the tab the vacuum is broken.
3. By means of a local deformation of the top of the closure the most efficient configuration of the folds in the vicinity of the tab is obtained, thus assuring

the breaking of the vacuum by bending and raising the tab.

4. By means of two further diametrical slits, cuts or score lines the closure may be bent easily over the centre thus promoting the removal from the mouth of the container.

What I claim is:

1. A vacuum closure for a jar or container, especially for a glass preserving jar, said closure having a circular top and a peripherally disposed depending skirt, said top including a centrally disposed depressed portion presenting a circumferentially extending portion defining a downwardly facing sealing groove overlying the mouth of an associated container, said skirt depending from the sealing groove-defining portion and having a free edge presenting circumferentially spaced teeth for inwardly directed engagement with the mouth of the associated container; a pair of diametrically opposed means leading from diametrically opposed junctures between said skirt and said sealing groove-defining portion to said free edge of the skirt for facilitating bending of said top between such means; a pair of tab-forming means leading from closely spaced junctures between said skirt and said sealing groove-defining portion to said free edge of the skirt for defining a tab which may be lifted upwardly separate from the remaining portion of said skirt, said tab being located substantially midway between said diametrically opposed means; and local deformation means in said depressed portion of the closure adjacent said sealing groove-defining portion and opposite said tab for creating a Y-shaped configuration of folds extending obliquely across said sealing groove-defining portion from said junctures associated with said tab-forming means.

2. A vacuum closure as defined in claim **1** wherein said tab-forming means are a pair of closely spaced vertical cuts in said skirt.

3. A vacuum closure as defined in claim **2** wherein said diametrically opposed means are a pair of diametrically opposed cuts in said skirt.

4. A vacuum closure as defined in claim **3** wherein said cuts extend between adjacent teeth.

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