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(54) CLOSURE FOR TINS

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FERMETURE POUR CONSERVES

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Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a closure for cans, particularly for food cans, specifically of the type in which the lid of the can is embodied as a frame that can be attached to the can body or form part of it, determining a wide opening that is closed by a detachable film.

[0002] The object of the invention is to achieve a maximum simplification of the means used to attach the film to the frame and a perfect protection of these against the effects over time on the content of the can and on its surrounding environment, all of this with a complete absence of risk to the user when handling the can to open it.

BACKGROUND OF THE INVENTION

[0003] It is known that conventional food cans are constructed by a body made from a metal plate suitable treated both externally and internally, said body adopting a prismatic, cylindrical or other shape, which in any case and after it is filled receives on its opening a closure lid that is also made of metal and has similar characteristics, mechanically flanged on said opening to determine, in addition to a tight seal, a peripheral flange used for its subsequent opening or as a support for a conventional can opener.

[0004] In order to simplify opening the can for consumers, said conventional cans are increasingly being replaced by those that incorporate a system referred to as "peel-off" in which the lid is provided near the aforementioned peripheral flange with a punch-out determining a weakened line that allows to peel off the lid, for which purpose the detachable part of the lid is provided with a ring, which is first used to initiate the detachment and then as a handle to continue peeling off the lid.

[0005] This solution allows to simplify greatly the opening of the can compared to the traditional can opener, but it implies a considerable risk during the operation of opening the can of cuts in the user's hands, so that the latest trend is toward the construction of closures in which the lid is embodied as a peripheral frame attached, generally by heat sealing, to a detachable film which, due to its nature, cannot harm the user.

[0006] The problem presented by this solution is that the inner, cut-out edge of the ring configured by the aforementioned frame, as it is not covered in varnish, is liable to rust in contact with the contents of the can, leading to a contamination of said contents.

[0007] Some patents have attempted to solve this problem by flanging, curling or folding the cut-out edge to avoid its contact with the contents of the can and prevent its oxidation.

[0008] In this sense may be cited European Patent EP 0 408 268 in which the inner cut-out edge of the ring determined by said frame is flanged outwards.

[0009] However, this solution has certain drawbacks. On one hand, the flange or curl of the edge of the ring as foreseen in the aforementioned patent implies a risk to the consumer after the container has been opened, as said edge is unprotected and may result in cuts.

[0010] On another hand, said patent foresees the presence of a double sealing area of the closure area of the container, so that both faces of the plate forming the frame or the ring must have a plastic coating for heat sealing, which increases the cost of the product greatly and worsens the mechanical properties regarding a simple opening of the container. In addition, the two areas where heat sealing must be applied have a different thickness, specifically double in one than the other, requiring to adapt the process to the area of greater thickness therefore using a higher temperature and increasing the duration of the process, endangering the microbial safety of the product. On another hand, the effect of the heat sealing will in principle flatten the curl and in the long term can produce a rebound effect, both of these factors affecting the conditions of the two seals and therefore the sealing level of the container. It must also be mentioned that double heat sealing does not only make it more difficult to open the container but may also lead to breaking of the lid or spilling the preserving liquid when the can is opened.

[0011] Another solution is disclosed in Spanish Patent ES 2 029 432, in which the frame or ring is configured as a monobloc extension of the body of the can and in which the edge is concealed by a disposition of the body of the can in layers, made by folding the body inwards. However, this disposition of the can body is difficult to carry out and implies a very complex clidping. In addition, the proposed disposition in layers proposed by this patent requires a forced position of the can which can also lead to a rebound effect due to the heat sealing that must be applied in the area, separating the layers from one another and exposing the edge, with the corresponding risk for the can user and risk of oxidation of the product contained in the can.

[0012] On another hand, the solutions proposed hitherto do not allow to use different materials in the body and in the lid or film, so that if the two materials are different when the inner cut-out edge comes in contact with the detachable film a galvanic corrosion will eventually take place that will cause a premature destruction of the closure lid of the container.

[0013] Finally, on NL 1013957 is described a closure for cans, but although discloses a flange being at a lower height than the rest of the lip, it is not described any means for simplifying the heat soldening process and the subsequent operation for detaching the film acting as a lid.

DESCRIPTION OF THE INVENTION

[0014] The can closure proposed by the invention solves the aforementioned drawbacks in a fully satisfactory manner as regards the various issues discussed.

[0015] To do so, based on a body with any configuration made of a metal plate, ending at its opening with an inner peripheral lip to which a film is attached by heat sealing, the invention relies on the fact that said lip has a marginal area, internal or external, flanged or folded by mechanical means to determine a substantially cylindrical curl or flange, so that the marginal area of said flange near its free end is mechanically attached to the initial area of the flange, producing a mechanical closure by contact of the two surfaces and thereby protecting the free and initially cutting edge of the body.

[0016] The configuration of the curl proposed in the invention is such that the curl or flange is at a lower height than the rest of the lip or on the outside of the can, allowing the film to be attached by heat soldering to the tab in its flat greater sector along a peripheral attachment line with a single attachment, which facilitates the detachment of the film during the opening process without the need for an additional heat sealing line inside said curl or flange.

[0017] On another hand, this mechanical protection of the inner edge of the container, and its lack of contact with the film, prevent the galvanic corrosion effect related to the use of different metals joined to one another, which allows using different materials for the lid and the container, which until now was not possible.

[0018] According to another characteristic of the invention it is foreseen that the attachment of the film that constitutes the lid is effected by heat soldering on the ring or peripheral lip of the body in the flat, greater section of said lip without the inner edge being affected by said union.

DESCRIPTION OF THE DRAWINGS

[0019] To complete the description being made and in order to aid a better understanding of the characteristics of the invention, according to an example of a preferred embodiment, a set of drawings is accompanied forming an integral part of said description where for purposes of illustration and in a nonlimiting manner the following is represented:

Figure 1.- Shows a perspective view of a can provided with the closure that constitutes the object of the present invention, according to a classic example of a practical embodiment of said can in which it adopts a configuration tending towards a rectangular prism.

Figure 2.- Shows an enlarged detail in cross-section of the can of the previous figure, at its opening and according to a first embodiment of the invention.

Figure 3.- Shows a cross-section similar to that of the previous figure corresponding to a second embodiment of the invention.

Figure4.- Shows a third embodiment in which the closure is placed between the external fold and the content of the can.

Figure 5.- Shows a fourth embodiment in which the fold is concealed under the edge of the can.

PREFERRED EMBODIMENT OF THE INVENTION

[0020] In view of said figures, it can be seen that the closure taught is applicable to food cans obtained from a metal plate that has been suitably treated both internally and externally to withstand external environmental effects and those derived from its own content, a can which in the example of embodiment selected adopts a prismatic configuration, as mentioned above, but which could also be cylindrical, with an elliptical outline or with any other configuration. Said metal plate configures a body (1) that is open on the top and ends at a peripheral frame (2) which is attached to the opening of said body (1) by a conventional flanging method, as shown in figure 2, in which frame is defined an internal peripheral lip (3), preferably included in an imaginary horizontal plane, to which is attached by heat soldering, adhesive or any other suitable means a film (4) that constitutes the lid as such and which can be obtained from a conventional complex from a metal sheet internally coated with a plastic film.

[0021] However, as shown in figures 3, 4 and 5, the lid may lack said frame (2) as a physically independent part of the body (1), so that the lip (3') will be obtained from the body (1) of the can by curling its opening, as in the previous case attaching the aforementioned film (4) to this lip (3').

[0022] In both cases the film (4) can also be provided with a tab (5) to be pulled by hand which constitutes a grip used to open the can.

[0023] According to the invention and to protect the edge (6) defined when punching the lip (3-3'), which obviously is not provided with the inner varnish coating of the plate nor its outer coating, it is foreseen that said lip (3-3') incorporate in its marginal area an inner flange or fold (7), substantially cylindrical, as shown in any of figures 2, 3, 4 and 5. This said flange is obtained by mechanical means and will be displaced towards the interior of the container as shown in figures 2 and 3 or towards its exterior, as shown in figures 4 and 5, so that the marginal area (9) of said flange near its free end (6) is attached by a mechanical union to the initial area of the flange.

[0024] This embodiment prevents the contact between the unprotected metal of the edge of the body or the peripheral frame with the closure film, thereby preventing the galvanic corrosion of the closure film and the premature destruction of the container and its contents.

[0025] In the subsequent attachment by heat soldering of the film (4), said film is attached exclusively to the flat area (8) of the lip (3-3'), as the flange is at a lower plane than the lip, which simplifies greatly the heat soldering process and the subsequent operation for detaching the

film (4).

Figures 4 and 5 show corresponding embodiments in which the flange is placed in the can outside the soldering area of the film, so that for example in figure 4 said flange is raised and can even define a surface allowing a simple stacking of the containers, the exposed flange not contacting the inside of the container in any manner.

Figure 5 shows another embodiment of the flange in which it is concealed in the bottom part, forming a flat surface on which the closure film is sealed.

Claims

1. - Closure for cans, particularly food cans, in which participates a body (1) made of metal plate that ends at its opening with a peripheral internal lip (3,3') comprising a flat area (8) to which is attached by heat sealing a film (4) that acts as a lid, where
said lip (3,3') has a substantially cylindrical flange (7) and where said flange (7) is at a lower height than the rest of the lip (3,3'), and in that
the marginal area of said flange (7) near its free end is attached by a mechanical union to the initial area of the flange (7) by mechanical means, **characterised in that** said film (4) is attached exclusively to the flat area (8) of the lip (3-3')

2. - Closure for cans, according to claim 1, **characterised in that** the marginal area of the flange (7) near its free end is on the inside of the container, covered by the heat soldered film (4).

3. - Closure for cans, according to claim 1, **characterised in that** the marginal area of the flange (7) near its free end is on the outside of the container, protected from the contents of the inside of the container.

4. - Closure for cans, according to the previous claims, **characterised in that** the lip (3) is embodied as a piece that is physically independent of the container body (1) which is attached to the opening of the latter by the conventional curling.

5. - Closure for cans, according to previous claims, **characterised in that** the peripheral lip (3') forms a single body with the can body (1).

6. - Closure for cans, according to claims 1 to 5, **characterised in that** the film (4) that serves as a lid has an extension by way of a handle (5).

Patentansprüche

1. Verschluss für Dosen, insbesondere Lebensmitteldosen, zu dem ein Körper (1) gehört, der aus Blech besteht und an seiner Öffnung mit einer Umfangs-Innenlippe (3, 3') endet, die einen flachen Bereich (8) umfasst, an dem mittels Heißkleben ein Film (4) angebracht wird, der als ein Deckel wirkt, wobei die Lippe (3, 3') einen im Wesentlichen zylindrischen Flansch (7) aufweist, der Flansch (7) eine geringere Höhe hat als der Rest der Lippe (3, 3') und der Randbereich des Flansches (7) in der Nähe seines freien Endes durch eine mechanische Verbindung mit mechanischen Mitteln an dem Anfangsbereich des Flansches (7) angebracht wird, **dadurch gekennzeichnet, dass** der Film (4) ausschließlich an dem flachen Bereich (8) der Lippe (3, 3') angebracht ist.

2. Verschluss für Dosen nach Anspruch 1, **dadurch gekennzeichnet, dass** der Randbereich des Flansches (7) in der Nähe seines freien Endes an der Innenseite des Behälters liegt und mit dem heißgeklebten Film (4) abgedeckt ist.

3. Verschluss für Dosen nach Anspruch 1, **dadurch gekennzeichnet, dass** der Randbereich des Flansches (7) in der Nähe seines freien Endes an der Außenseite des Behälters liegt und gegenüber dem Inhalt im Inneren des Behälters geschützt ist.

4. Verschluss für Dosen nach den vorangehenden Ansprüchen, **dadurch gekennzeichnet, dass** die Lippe (3) als ein Teil ausgeführt ist, das physisch unabhängig von dem Behälterkörper (1) ist und an der Öffnung des Letzteren durch herkömmliches Bördeln angebracht wird.

5. Verschluss für Dosen nach den vorangehenden Ansprüchen, **dadurch gekennzeichnet, dass** die Umfangslippe (3') einen durchgehenden Körper mit dem Dosenkörper (1) bildet.

6. Verschluss für Dosen nach einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** der Film (4), der als ein Deckel dient, eine Verlängerung in Form eines Griffteils (5) aufweist.

Revendications

1. Fermeture pour des boîtes de conserves en particulier des boîtes de conserves alimentaires comprenant un corps (1) formé à partir d'une plaque métallique se terminant par une ouverture munie d'une lèvre périphérique interne (3, 3') ayant une zone plate (8) à laquelle est fixé un film (4) par thermosoudage, le film constituant un couvercle,

- la lèvre (3, 3') ayant une bride (7) essentiellement cylindrique,
- la bride (7) se trouvant en dessous du restant de la lèvre (3, 3'),
- la zone marginale de la bride (7) près de son extrémité libre, est fixée par un assemblage mécanique à la zone initiale de la bride (7), par l'intermédiaire d'un moyen mécanique, fermeture **caractérisée en ce que**
le film (4) est fixé exclusivement à la zone plate (8) de la lèvre (3, 3').

2. Fermeture de boîtes de conserves selon la revendication 1, **caractérisée en ce que**
la zone marginale de la bride (7) à proximité de son extrémité libre, se trouve sur le côté intérieur du conteneur couvert par le film (4) thermosoudé.

3. Fermeture de boîtes de conserves selon la revendication 1, **caractérisée en ce que**
la zone marginale de la bride (7) à proximité de son extrémité libre, se trouve sur le côté extérieur du conteneur, en étant protégée du contenu à l'intérieur du conteneur.

4. Fermeture de boîtes de conserves selon l'une des revendications précédentes,
caractérisée en ce que
la lèvre (3) est réalisée sous la forme d'une pièce physiquement indépendante du corps (1) du conteneur et fixée à l'ouverture de celui-ci par un sertissage.

5. Fermeture de boîtes de conserves selon l'une des revendications précédentes,
caractérisée en ce que
la lèvre périphérique (3') est réalisée en une seule pièce avec le corps de la boîte de conserves (1).

6. Fermeture de boîtes de conserves selon l'une des revendications 1 à 5,
caractérisée en ce que
le film (4) qui sert de couvercle, a un prolongement par une poignée (5).

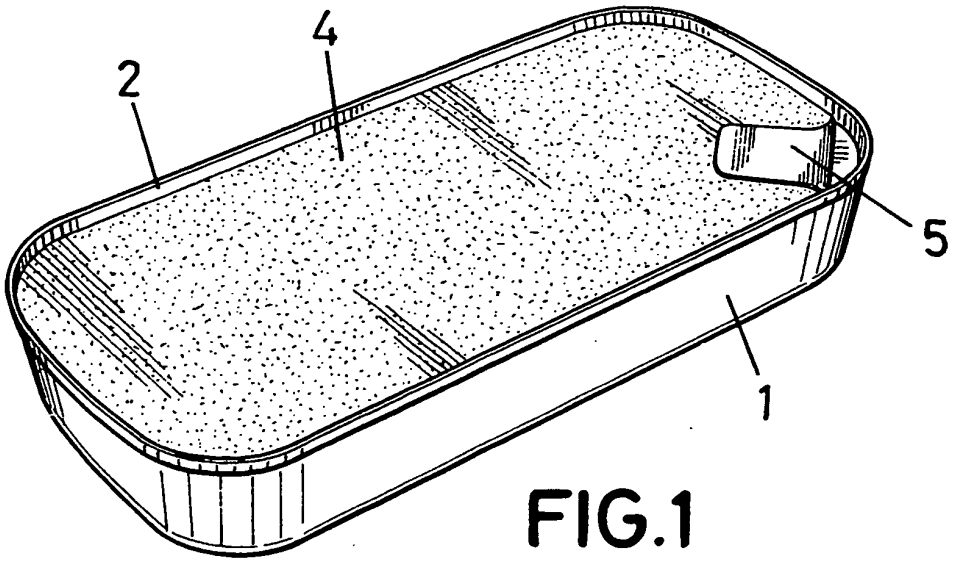


FIG.1

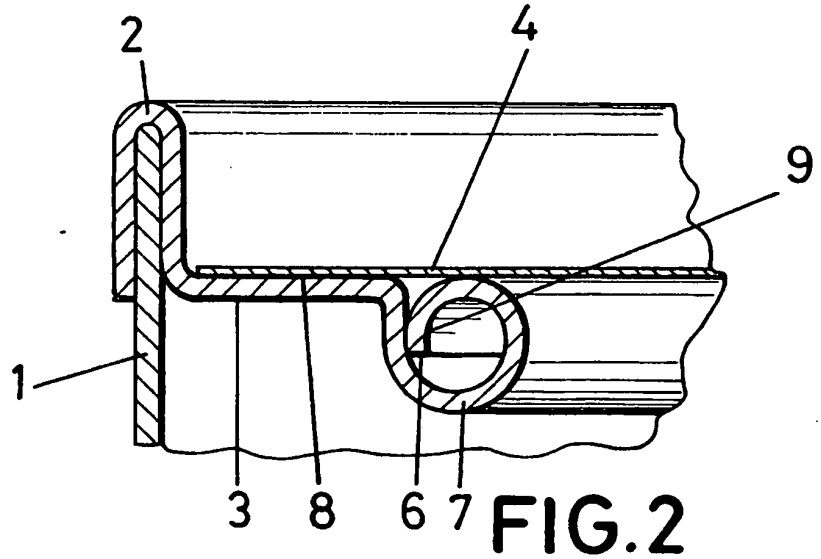


FIG.2

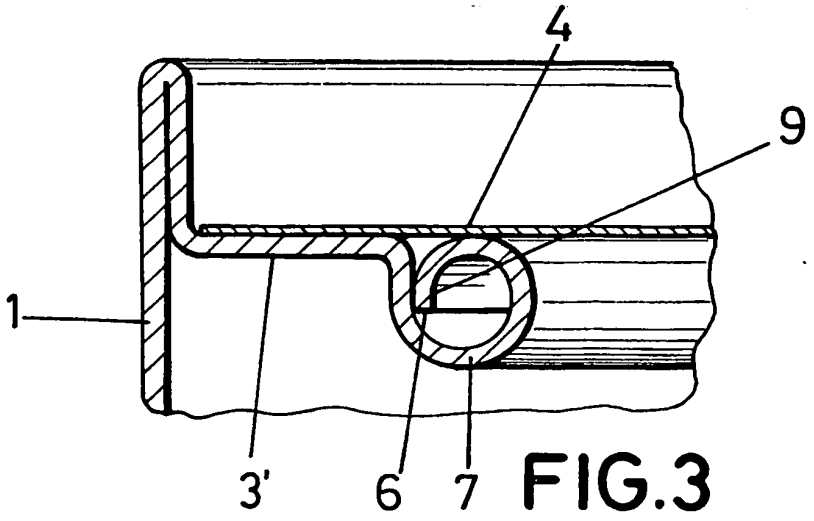


FIG.3

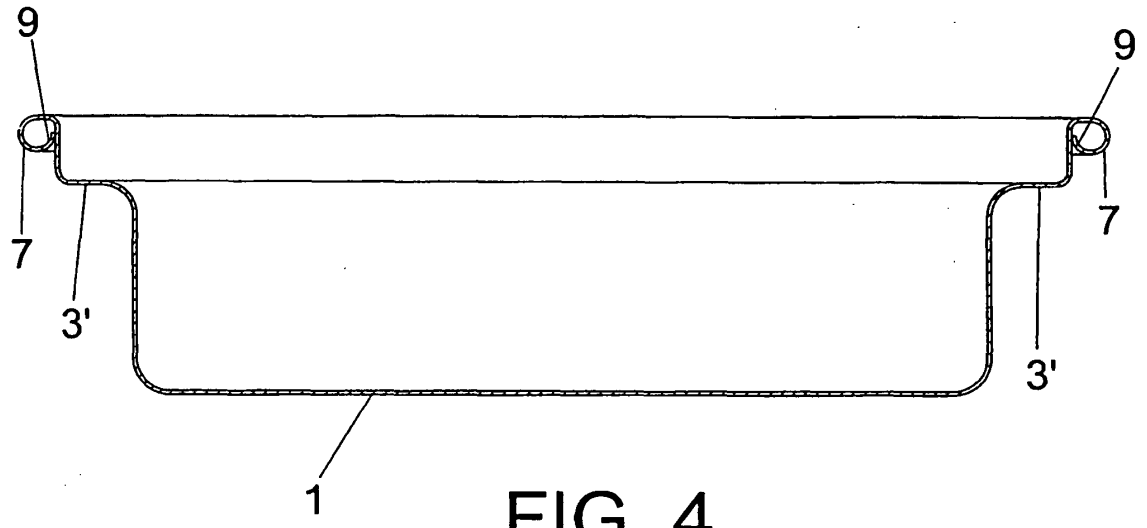


FIG. 4

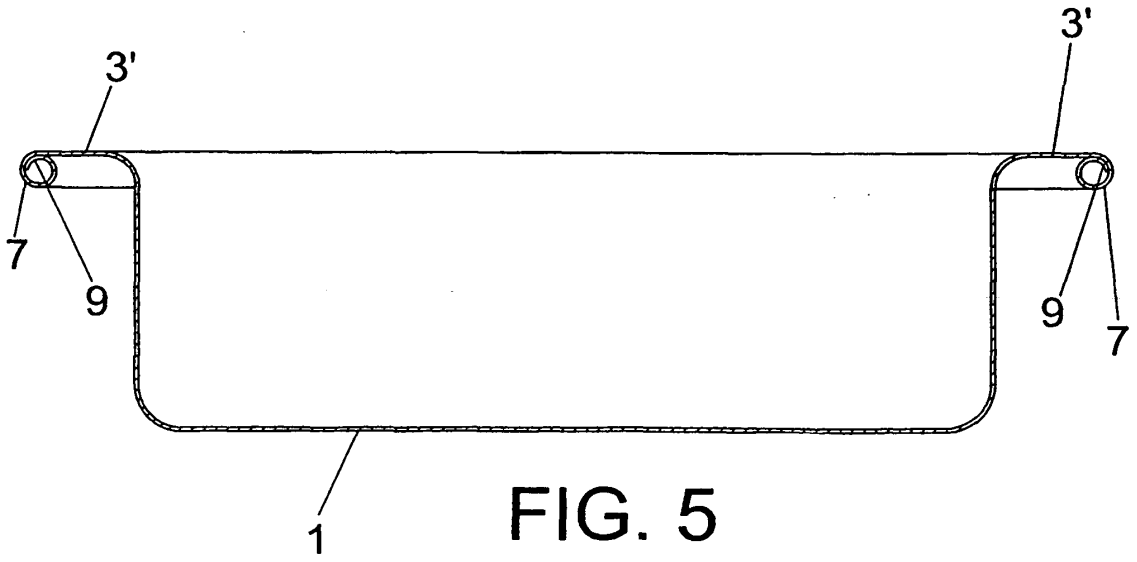


FIG. 5

REFERENCES CITED IN THE DESCRIPTION

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