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(72) Inventor: **Fossi, Marcello**
I-50058 Signa, Firenze (IT)

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(74) Representative: **Mannucci, Gianfranco, Dott.-Ing.**
et al
Ufficio Tecnico Ing. A. Mannucci
Via della Scala 4
I-50123 Firenze (IT)

(71) Applicant: **Fossi, Marcello**
I-50058 Signa, Firenze (IT)

(54) Arrangement for temporary reclosure of containers in particular for foodstuff

(57) The arrangement comprises a closure cover, originally sealed circumferentially on the external perimetrical flange of the container itself, and comprising two flexible annular lips (5, 7) shaped with complementary profiles which interpenetrate under pressure. The lips

are fixed one (5) to the flange (1A) of the container and the other (7) to the cover (3), respectively, and developed along an arc greater than 180°.

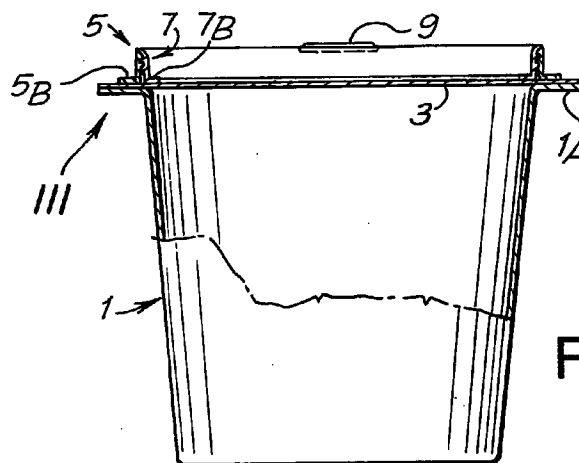


Fig.1

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Description

The arrangement forming the subject of the invention relates for the most part to disposable containers made of plastic or of card with films of aluminum and plastic or made of films of plastic and aluminum under vacuum, for foods or other products.

Containers made of plastic in general are formed under vacuum and have a shape which is generally frustoconical, but may also be different, ending in an opening delimited by a plane flange.

Containers of this type are in general closed for distribution by means of a thin lamina made of heat-sealing material, said lamina being equipped with a tongue or with a non-welded part outside the heat-sealed zone to allow gripping and tearing off of the lamina to open the container.

There may be provided together with the lamina a plane lid having a raised edge for reclosing the container temporarily in the event that the contents are not consumed in one go, which lid is in general snap-connected around the flange of the container, either in the presence of the heat-sealed lamina or after removal, even partial, of the same. This lid can, however, be lost as it is not connected to the container, and does not ensure a leak-proof closure, capable of allowing handling without losses, of a container which has been reclosed after partial consumption of the contents. One aim of the invention is to bring about an arrangement for the extemporaneous reclosure of a similar recipient which is of simple and economical construction, of limited size, convenient for use and which guarantees a practically leakproof seal of the temporary reclosure.

The arrangement according to the invention can also be applied to containers made of paper with the internal surface provided with a film of aluminum and/or polyethylene or similar, with the aim of obtaining an access opening which is initially sealed, but which after the first opening can be closed and opened a number of times for convenient removal of the contents.

Yet the arrangement according to the invention can also be applied to containers which are impermeable to air and flexible and which are used for packaging under vacuum loose products in powder form or granules such as ground coffee or other products.

The arrangement according to the present invention relates to a closure cover which is originally sealed around the access opening of the container and which comprises two flexible annular lips shaped with complementary profiles which interpenetrate under pressure; the profiles have respective fixing rims which are fixed respectively to the periphery of said access opening and to the cover and which are developed along an arc greater than 180°. In this manner, by separating said two lips from one another, the opening and access to the container are obtained while, by pressing one lip against the other, an extemporaneous closure to protect the contents is brought about.

In the case where said cover is a lamina welded to the perimetrical flange of a cup container, said fixing rims are welded to said lamina, one in the portion of lamina corresponding to the flange of the container to be fixed to said flange, and the other to the portion of lamina comprised within the perimeter of the opening of the container or to at least part of said perimeter, respectively.

Advantageously, the external and internal lips have said complementary profiles adjacent to said flange and immediately inside this to avoid pulling on the internal lip for the reopening of the container subjecting to shear and bending stress the part of said film to which the external lip is applied, and to obtain convenient access.

In another embodiment, the cover is integral with said internal fixing rim and is welded to the flange of the container in the region of a surface, inside the complementary profiles, which is developed in length over the entire internal perimeter of said flange and which is of limited width along at least a part of said perimeter to define a zone of easy opening of the cover.

Said lips can be developed over a length which is smaller than the perimeter of the opening of the container; in this case, to improve the seal of the temporary closure, these are preferably welded to one another in the region of the ends of the associated development arc.

Otherwise, said lips can be developed along an arc of 360°, preferably being welded to one another at at least one point of their development.

In one embodiment of the invention, said lips are shaped with an L-shaped cross section, the horizontal side of the L constituting the fixing rims, said complementary profiles being developed in the side orthogonal to the fixing rims, and the coupling being obtained by pressure in the radial direction.

To have a limited size in the direction perpendicular to the flange itself, in another embodiment of the invention, said lips are plane and parallel to the flange of the container, the coupling of the complementary profiles being obtained by pressure in the direction orthogonal to the flange.

To facilitate opening, at least the internal lip can have, externally and in the intermediate zone of its development arc, a tear-off tongue.

Another embodiment envisages application on a different type of container made of paper material; one of the lips is applied to the wall of a paper container - with film, made of aluminum and/or synthetic resin, on the internal surface - around the access opening, while the other lip is applied to the cover.

The cover can be made from the same material as the container and delimited by a partial incision which keeps said film complete and allows its tearing with the lifting of the internal lip. Alternatively, the cover can be formed with an element which is applied in a limitedly resistant manner perimetrically around the opening on the external surface of the container; it is expedient to provide a sealing film along the line of cutting of said opening. Said element can be formed from the same

material as the container or from aluminum film with polyethylene or other product.

The drawing shows possible and non-limiting embodiments. In particular,

Figs 1 and 2 show a container with a closure arrangement according to the invention, in lateral view, with the container sectioned along an axial plane, and in plan view respectively;

Fig. 3 shows an enlarged view of the zone III in Fig. 1;

Fig. 4 shows a partial lateral view of the container in Fig. 1 open and sectioned axially;

Figs 5 and 6 show views similar to Figs 1 and 2 of a container according to another embodiment of the invention;

Fig. 7 shows an enlarged view of the zone VII in Fig. 5;

Figs 8 and 9 show views similar to Figs 2 and 3 of another embodiment of the invention;

Fig. 10 shows a plan view of an open container according to another embodiment variant;

Figs 11 and 12 show views similar to those in Figs 2 and 3 for a container according to another variant; Figs 13 to 16 show in perspective and in partial section three embodiment variants to be adopted in a container made of paper material.

The arrangement according to the invention relates to a container 1 (Fig. 1) of frustoconical shape connected to a flange 1A arranged around the mouth of the container, which can be obtained by molding under vacuum or better in injection.

This container with its contents, for example milk, yogurt or other product, can be closed for distribution by means of a lamina 3 heat-sealed to said flange. In this case, an arrangement according to the invention comprises two flexible annular lips 5, 7, (see also Figs 2, 3, 4) preferably made of thermoplastic material, which have profiles 5A, 7A (Fig. 3) married together by snap-coupling by means of a pressure applied to the lips themselves. Said lips 5, 7 are developed above the flange 3 of the container and along an arc which subtends an angle (α) advantageously greater than 180° , and have rims 5B, 7B respectively for fixing to said flange.

The rims 5B, 7B are developed on opposite sides of the lips 5, 7 and lie in the upper plane of the lamina 3 while the lips 5, 7 are developed for the most part orthogonally to said lamina. The facing surfaces of the lips - on which said complementary profiles are developed - are arranged in the region of the internal end edge of the flange 3. Moreover, the lips 5, 7 are welded to one another in the region of two end lengths 11A, 11B of their development arc, and a tongue 9, integral with the internal lip 7, projects above the container to offer a grip for opening.

Expedient pulling on the tongue 9 causes shear stress with tearing of the lamina 3 along the internal edge of the opening of the container and lifting, together with the internal lip 7, of the portion of lamina comprised

within said arc. After any partial consumption of the contents, the container can be reclosed by lowering the lip 7 again with said portion of lamina until it is inserted again within the lip 5; by then exerting a pressure to bring said lips close to one another along their entire development, the complementary profiles 5A, 7B can be made to snap to interpenetrate and bring about a sealed closure of the container.

In a second embodiment, in the case where the container is closed by a thermoplastic lamina 3 (Figs 5, 6 and 7), lips 105, 107 are developed parallel to the lamina 3 along an arc extended around the opening of the container, and have complementary profiles like those previously described, but developed on horizontal faces of said lips facing one another. The lip 105 is welded to the lamina 3 in the region of the flange 1A, the welding being carried out adjacently to the profile 105A over the entire length of the flange. The lip 107 has towards the axis of the container a rim 107B with a surface parallel to the lamina 3, welded to this in a zone located adjacently to the inside of the opening of the container; the lip 107 also has, towards the outside, a tongue 109.

With this arrangement, opening of the container takes place as in the preceding case while, for its reclosure, the pressure to be exerted on the lip 107 for the snapping of the complementary profiles takes place in the axial direction, conveniently resisted by the flange 3 of the container. This arrangement also has the advantage of having a smaller vertical dimension.

Conveniently, in a zone 111 opposite the tongue 109, the lips 105, 107 can be welded to one another to avoid the detachment of the cover once the container has been opened.

In Figs 8 and 9, a container like that described above is shown, but closed by a lid 203 instead of a heat-sealed lamina, the lid being welded to the flange 1A of the container and the weld developing along a closed trace line 203A (Fig. 9), located close to the internal edge of said flange, and over a reduced width to offer facilitated breaking. The cover 203 is plane and has an edge 207 provided at the bottom with a profile 207A similar to that of the profile 107A of the variant described previously, an edge which carries out the same function as the lip 107 of said variant, in association with a lip 205 having a snap profile 205A complementary to the profile 207A; said lip 205 is integral with the flange 1A and made by molding with it and has a function similar to the lip 105 of the preceding case.

The cover 203 is welded to the flange 1A by means of a facilitated-breaking weld 203A, which is developed along the flange 1A over an arc which subtends an angle (β) greater than 180° , and by means of a weld which extends in the zone 203B of the flange 1A comprised within the complementary angle of β to 360° and between the profiles 205A and the internal edge of the opening of the container. Opening the lid takes place by pulling of a tongue 209 located on the periphery of the lip 207 so as to break the connection between lid and container by tearing off said facilitated-breaking weld

203A, the lid remaining joined to the container by means of the weld of the zone 203B.

In one variant of the embodiment of the invention described above, the complementary profiles of the lips 205, 207 are developed over 360° and said lips can be made by molding in a single piece, being joined together by a strip of material 211 (Fig. 10) integral with the lips themselves, in such a manner that the cover, once lifted, cannot be lost. In this case, the facilitated-breaking weld 203A extends over 360° without the need for a further weld such as 203B.

In another variant, a container 300 (Figs 11 and 12) has a polygonal, in particular rectangular, plan, with rounded corners, and is closed by a cover 303. Said cover is welded to the flange 303A of the container over the entire extent of the surface of the flange except for a limited length around one corner 301 of the cover, a length where the weld is reduced to a line 303A in order to be easier to detach. It is also possible to provide a longer detachment. In the first case, there is a spout opening, and in the other, wider access to the inside. Also present on the cover 303 and on the flange 300A, outside said welding line, are complementary profiles 305A, 307A for local extemporaneous snap-closure of the container after tearing off of the facilitated-breaking weld.

In Fig. 13, a disposable container 400 is indicated, of the type made with paper material combined with impermeable surface films made of aluminum and polyethylene or other resins, of prismatic shape. In this case, the arrangement forming the subject can be made in a plane wall of the container so as to have convenient accessibility for removing the contents. In Figs 14 to 16, some possible embodiments are shown in section along XIV-XVI in Fig. 13.

In Fig. 14, 402 indicates a wall of the container, having on the inside an impermeable film 402A made of aluminum and/or polyethylene or other material; in the wall 402, a partial incision 404 defines a part 402X to be detached for the initial opening of the sealed container; the partial incision 404 leaves the film 402A complete. The annular lip 405 provided with the profile 405A is applied around the incision 404 on the external surface of the wall 402; the fixing rim 407B of the annular lip 407 is applied along the periphery of the external surface of the part 402X, which lip 407 is provided with the profile 407A which is complementary in relation to the profile 405A. To make the opening, the annular lip 407 is lifted and thus the part 402X is detached from the wall 402 along the partial incision 404. The opening thus formed can be reclosed extemporaneously by applying the cover formed by the components 407 and 402X, with the aid of the complementary profiles 405A and 407A. The cover thus formed can be connected to the annular lip 405 by a flexible hinge 409, which makes it possible to keep the cover 407, 402X fixed to the annular lip 405 firmly glued or welded to the wall 402, and also makes it possible to facilitate the positioning of the cover 407, 402X when the opening has to be reclosed.

According to the variant in Fig. 15, in which the same reference numbers used in Fig. 14 indicate corresponding members, an opening 414 is formed by total cutting of the wall 402 and removal of the portion inside the cut. Anchored firmly to the fixing rim 407B is a discoid or similar element 412X made of a material identical or similar to that of the wall 402, with a film 412A made of aluminum and/or polyethylene or other material; the element 412X is applied perimetrically around the edge of the opening 414, with a limitedly resistant gluing or heat-seal 416, as a result of which hermetic sealing is ensured but the detachment of the element 412X is possible by lifting the annular lip 407. A thin tearable sealing film 418 can be applied by way of covering of the connection between the film 402A and the film 412A along the cutting line 414.

In Fig. 16, a variant in relation to Fig. 15 is illustrated, for which the same reference numbers already used in Fig. 15 are used; this variant is particularly suitable for packagings under vacuum, for example powdered coffee. Said variant consists in using - instead of the element 412X - an element 422X made of lamina or aluminum film with polyethylene or other material, which is firmly applied to the fixing rim 407B and around the opening 414 in the annular zone indicated by 426, said lamina 422X not being connected to the fixing rim 407B in the perimetrical zone corresponding to the zone 426 of application to the wall 402. By releasing and lifting the lip 407, the film 422X is detached from the annular zone 426, or the film 422X tears along the line of the opening 414 respectively. In this case also, the sealing film 418 can be provided.

Claims

1. An arrangement for bringing about the temporary reclosure of a disposable container (1, 300, 400), in general to be used for the packaging of foods (such as cream, powdered coffee, drinks or other products), comprising a closure cover which is originally sealed around the access opening of the container itself, which comprises two flexible annular lips (5, 7; 105, 107; 205, 207; 405, 407) shaped with complementary profiles (5A, 7A; 105A, 107A; 205A, 207A; 405A, 407A) which interpenetrate under pressure, lips which are integral one (5, 105, 205, 405) with the periphery of the access opening to the container and the other (7, 107, 207, 407) with the cover (3, 203, 303, 402X, 412X, 422X), respectively, and developed along an arc greater than 180° in such a manner that, by separating said two lips from one another, the opening and access to the container are obtained while, by pressing the two lips one against the other, an extemporaneous closure to protect the contents is brought about.
2. The arrangement as claimed in claim 1, wherein, in a case where said cover is a lamina (3) welded to the flange (1A) of the container, said lips comprise fixing rims (5B, 105B; 7B, 107B) welded to said lam-

ina, one (5B, 105B) in the portion of lamina corresponding to the flange (1A) of the container to be fixed to said flange, and the other (7B, 107B) to the portion of lamina comprised within the perimeter of the opening of the container or to at least part of said perimeter, respectively.

3. The arrangement as claimed in claim 1 or 2, wherein the lips (5, 7; 105, 107) have their complementary profiles adjacent to said flange (1A) and immediately inside this to facilitate shear breaking of the lamina, avoiding pulling on the internal lip for the reopening of the container subjecting to bending stress also the part of said lamina (3) to which the external lip is applied, and to obtain convenient access.
4. The arrangement as claimed in claim 1, wherein said cover (203) is integral with one (207) of said lips and is welded to the flange of the container, in the part of said flange inside the complementary profiles, in the region of a surface (203A, 203B; 303A, 303B) which is developed in length over the entire internal perimeter of said flange and which is of limited width along at least a part (203A, 303A) of said perimeter to define a zone of easy opening of the cover.
5. The arrangement as claimed in claim 4, wherein the other (205) of said lips is an integral part of the flange (1A), being made by molding.
6. The arrangement as claimed in claim 1, wherein said lips are welded to one another in the region of the ends of the associated development arc.
7. The arrangement as claimed in one of the preceding claims, wherein said lips are developed along an arc of 360°.
8. The arrangement as claimed in claim 7, wherein said lips are welded to one another at at least one point of their development, or connected by hinge (211) respectively.
9. The arrangement as claimed in one or more of the preceding claims, wherein said lips (5, 7) are shaped with an L-shaped cross section, the horizontal side of the L constituting the fixing rims (5B, 7B), said complementary profiles (5A, 7A) being developed in the side orthogonal to the fixing rims, and the coupling being obtained by pressure in the radial direction.
10. The arrangement as claimed in one or more of claims 1 to 7, wherein said lips (105, 107) are plane and parallel to the flange of the container to have a limited size in the direction perpendicular to the flange itself.

11. The arrangement as claimed in any one of the preceding claims, wherein at least one lip (7, 107, 207) has, externally and in the intermediate zone of its development arc, a tear-off tongue (9, 109, 209) to facilitate opening of the container.

12. The arrangement as claimed in claim 1, wherein the container (300) has a polygonal plan with rounded corners and is closed by a cover (303) welded to the flange (300A) of the container in a zone (303B), said zone being for the most part as wide as said flange and developed along this except for at least one zone close to one corner (301) of the cover, the weld there being along a facilitated-breaking line (303A) and, outside this facilitated-breaking weld, there being developed in the lid and in the flange complementary snap-profiles for extemporaneous closure of this zone.

13. The arrangement as claimed at least in claim 1, wherein one (405) of the lips (405, 407) is applied to the wall (402, 402A) of a paper container (400) with film (402A) - made of aluminum and/or synthetic resin - on the internal surface, around the access opening (404, 414) and the other lip (407) is applied to the cover (402X, 412X, 422X).

14. The arrangement as claimed in claim 13, wherein the cover (402X) is made of the same material (402, 402A) as the container (400) and delimited by a partial incision (404) which keeps said film complete (402A) and allows its tearing with the lifting of the internal lip (407).

15. The arrangement as claimed in claim 13, wherein the cover is formed with an element (412X, 422X) which is applied (at 416, 426) in a limitedly resistant manner perimetrically around the opening (414) on the external surface of the container, a sealing film (418) being provided along the line of cutting of said opening (414).

16. The arrangement as claimed in claim 15, wherein said element (412X) is formed from the same material as the container (400).

17. The arrangement as claimed in claim 15, wherein said element (422X) is formed from aluminum film with polyethylene or other product.

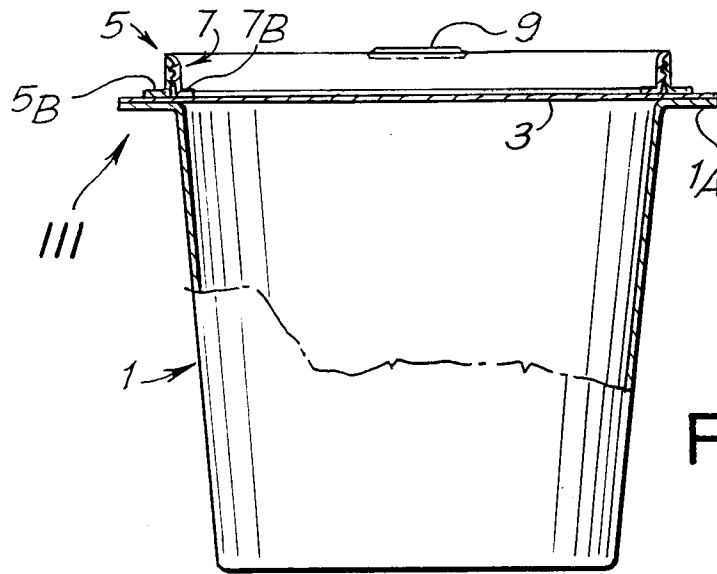


Fig.1

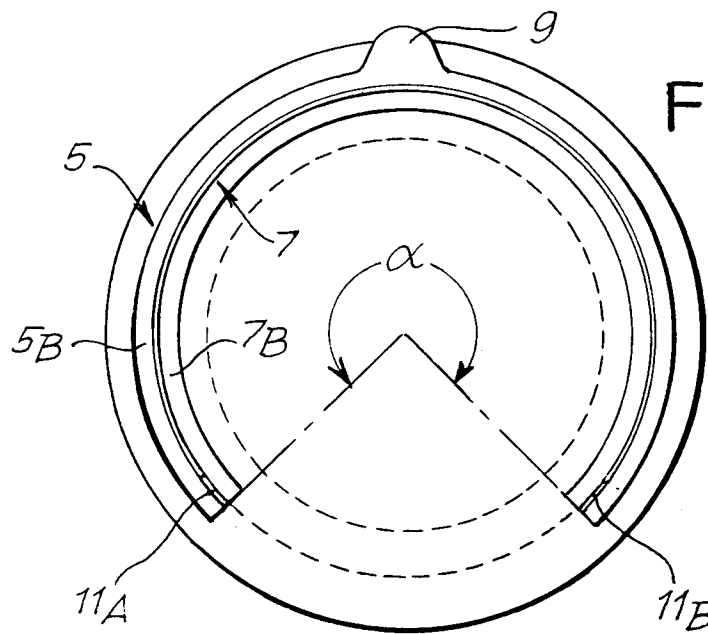


Fig.2

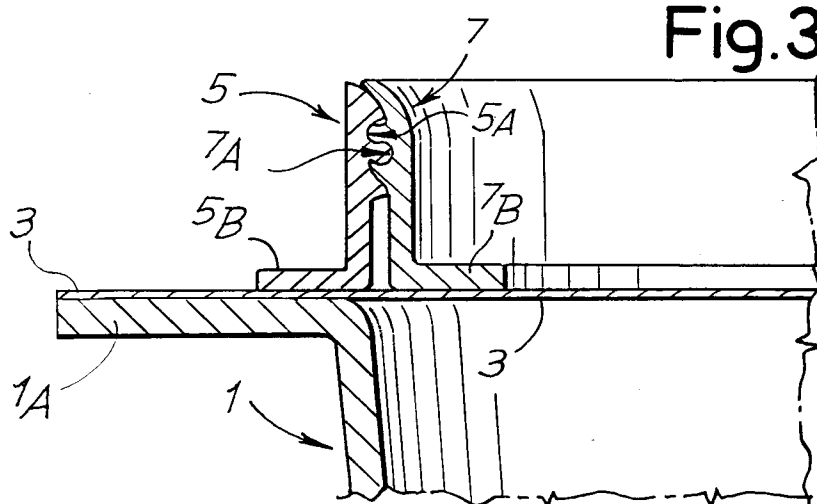


Fig.3

Fig. 4

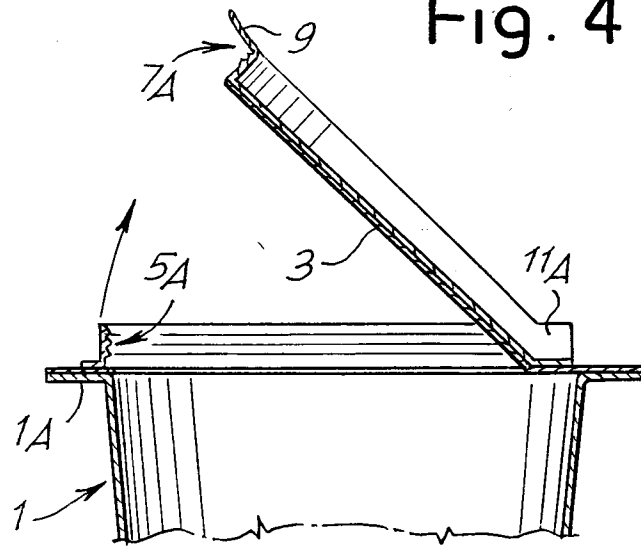


Fig. 5

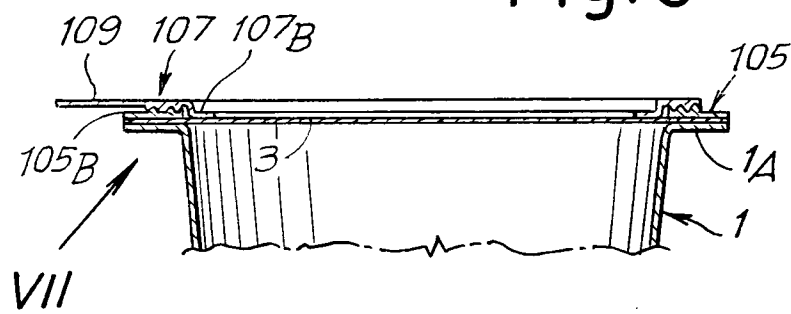


Fig. 6

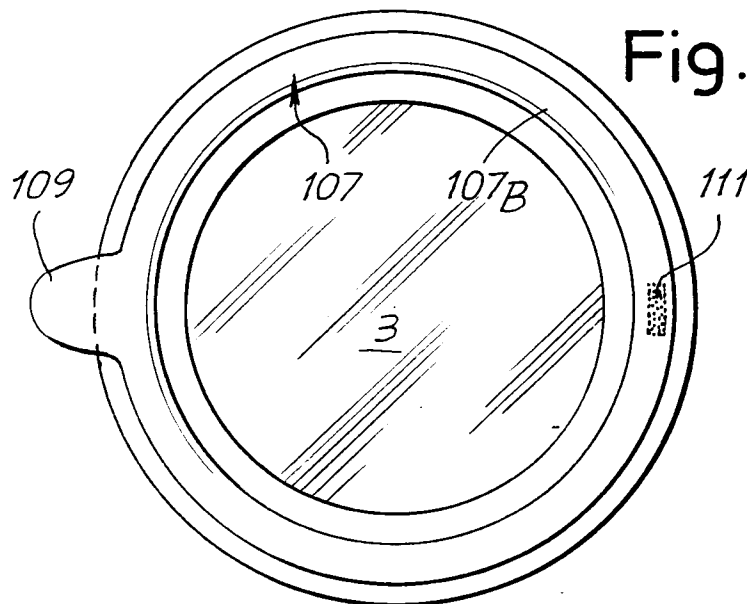


Fig. 7

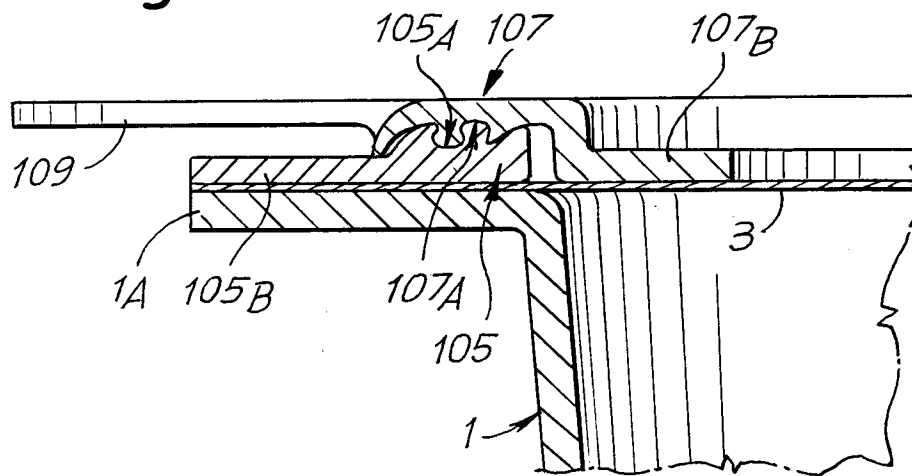


Fig.9

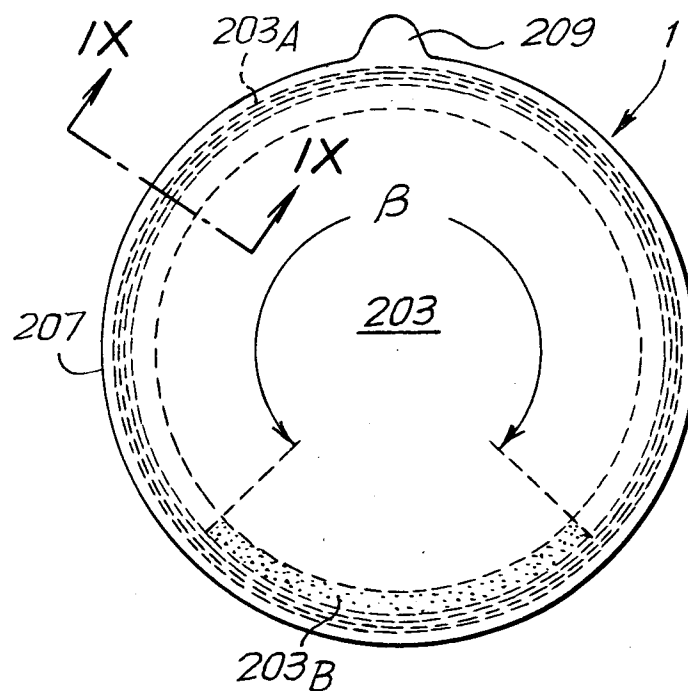
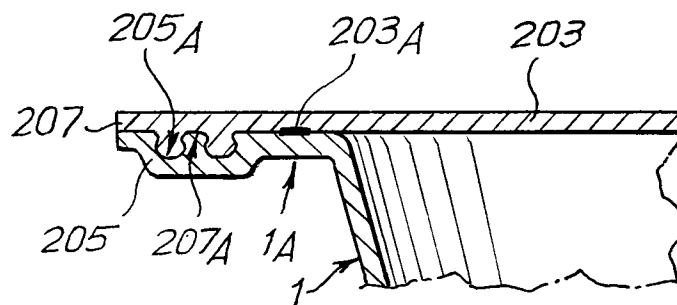


Fig.8

Fig.10

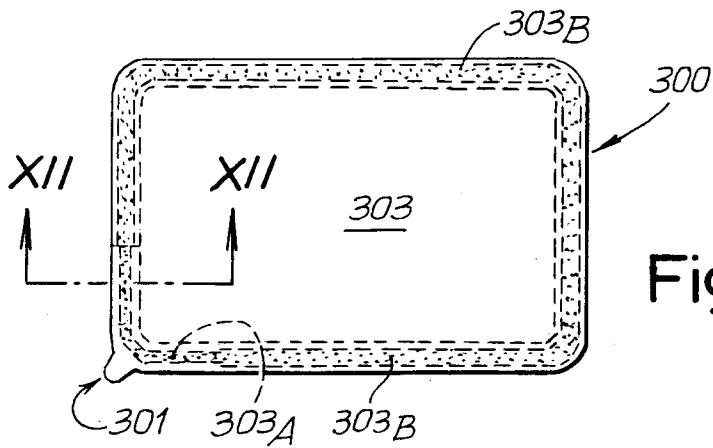
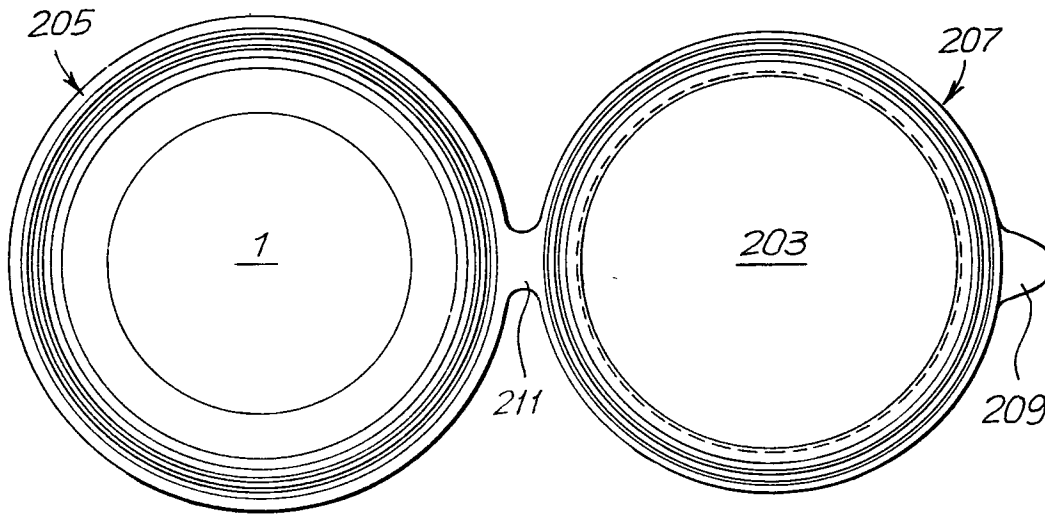


Fig.11

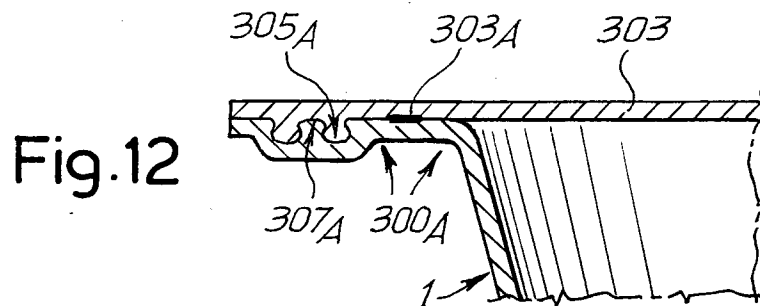
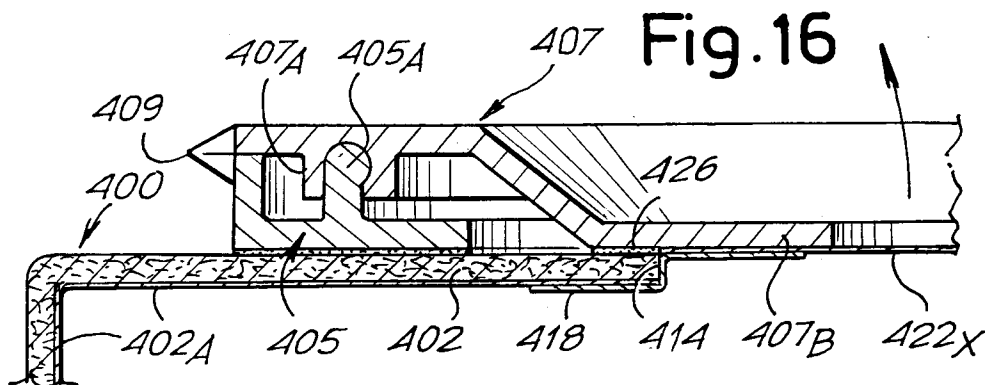
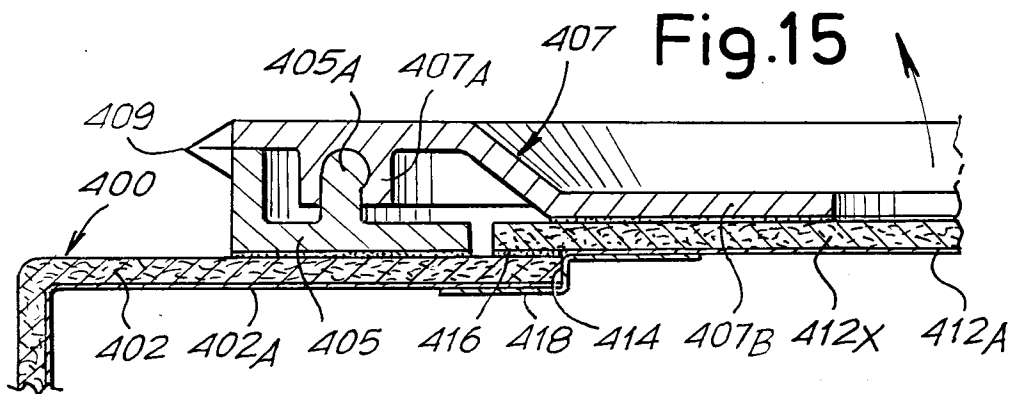
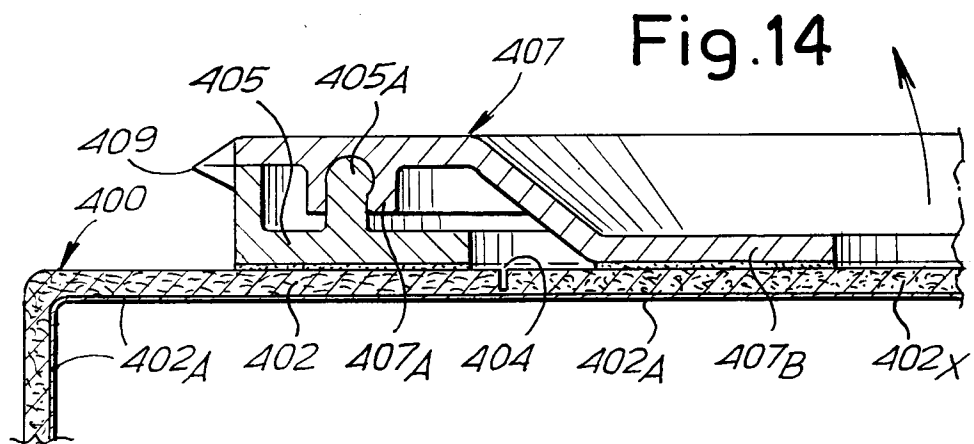
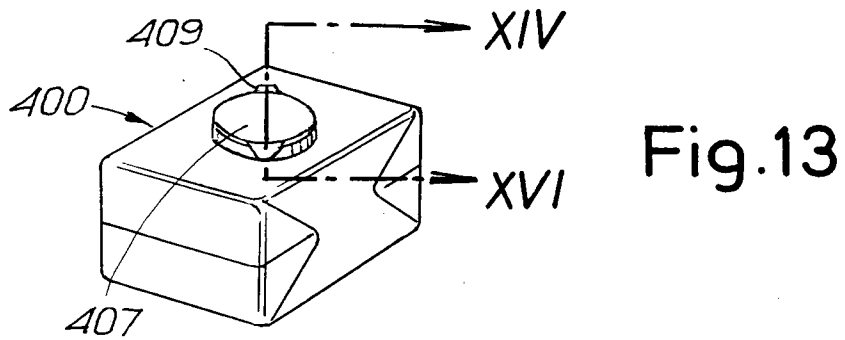


Fig.12





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EUROPEAN SEARCH REPORT

Application Number
EP 95 83 0513

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP-A-0 033 266 (SOC.D'EXP. DES ETABS. VULLIEZ) * page 2, line 25 - page 3, line 34; figures 1,2 *	1,4,5,7,10	B65D77/20 B65D43/02 B65D5/70
X	EP-A-0 368 053 (TETRA PAK HOLDINGS) * column 5, line 33 - column 6, line 50; figures 1-3 *	1,13	
X,P	EP-A-0 658 480 (TETRA LAVAL HOLDINGS) * figures 9-12 *	1,13	
A	FR-A-1 274 073 (PLASTOMATIC CORP.) * figures 2-8 *	1	
A	EP-A-0 524 359 (OSCAR MAYER FOODS) * figures 1-6 *	1	
A	US-A-3 701 453 (PLATT) * figures 1,5-7 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 20 March 1996	Examiner Berrington, N
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