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(71) Applicant: **SOCAMA ENGINEERING S.r.l.**
Via Piemonte 27
I-10071 Borgaro Torinese (Torino)(IT)

(72) Inventor: **Covi, Enzo**
C.so Peschiera 156
I-10100 Torino(IT)
Inventor: **Porcellana, Giacomo Luca**
C.so Regio Parco 24
I-10100 Torino(IT)

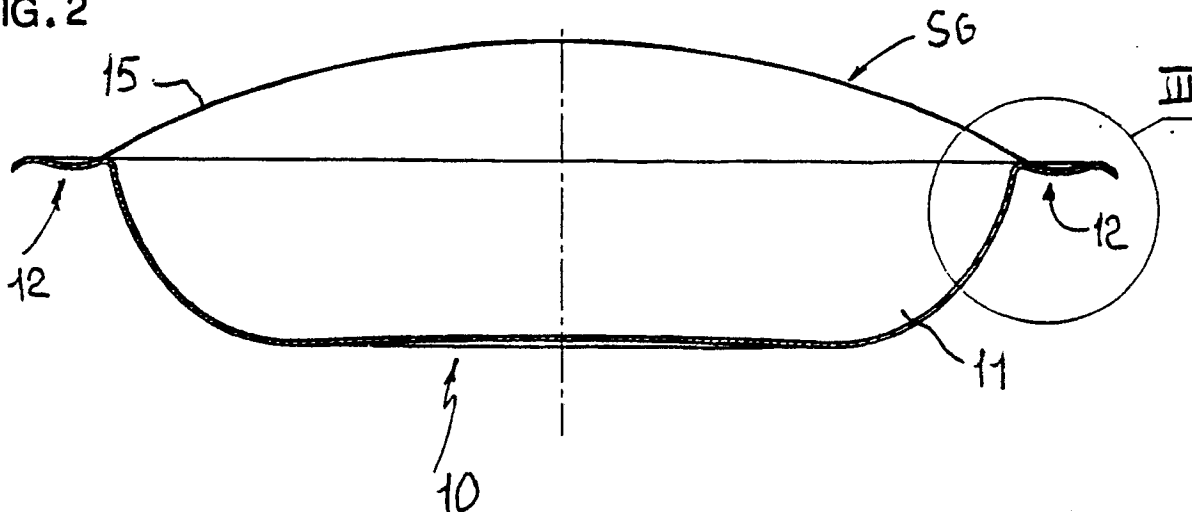
(74) Representative: **Modiano, Guido et al**
MODIANO, JOSIF, PISANTY & STAUB
Modiano & Associati Via Meravigli, 16
I-20123 Milano(IT)

(54) **Container for pre-cooked and/or ready-to-eat food.**

(57) This container for pre-cooked and/or ready-to-eat food comprises a tray-shaped base half-shell (10) adapted to act as a plate for eating the food, said half-shell having, in plan view, a pseudo-rectangular curvilinear profile with a concave protruding edge (12) defining a curved suture surface (14) for a protective film (15), said suture surface being tan-

gent, at least in the region of connection of the edge (15) to the tray (11), to the geometrical solid (SG) along which the protective film arranges itself when it is subjected to the steam pressure which is produced in the food thermal treatment steps.

FIG. 2



EP 0 419 764 A1

CONTAINER FOR PRE-COOKED AND/OR READY-TO-EAT FOOD

The present invention relates to a container for pre-cooked and/or ready-to-eat food.

In the technology of production and preservation of pre-cooked food intended to be eaten directly, after possible warming, it is fundamentally important that the food be packaged in appropriate containers adapted to allow its generic thermal treatment, ensure its correct preservation and allow to eat the food without requiring its transfer into individual plates or serving dishes.

Plate-shaped or tray-shaped containers made of heat-resistant polymeric material are generally used for this purpose, their content being protected with a thin film of plastic material which adheres to the planar edge of the container and can be removed by the consumer by so-called "peeling", which consists in exerting, on said film, a traction directed at an appropriate angle with respect to the adhesion plane defined by the container edge, which is briefly termed "suture plane" hereafter.

The film generally separates by initially applying a traction force having a certain inclination -- equal to approximately 45° -- with respect to the suture plane and this, though on one hand it constitutes a positive circumstance in terms of the correct and easy removal of the film, on the other hand it constitutes a hardly negligible disadvantage in terms of the protection of the product.

During the various thermal treatments, such as reviving, pasteurization and the like, due to the forming of steam, the protective film in fact inflates, assuming a substantially lens-like convex shape, so that stresses are generated at the regions of suture to the edge of the container, and their orientation can reach and exceed said limit inclination, consequently producing the progressive and spontaneous separation of said film and therefore compromising the correct seal of the package.

The aim of the present invention is to eliminate the above described disadvantage without however compromising ease in opening the package.

An object of the present invention is to improve the protection of the packaged food, preventing incidental tearings of the film, by means of a lid which can be easily applied by machines suitable for continuous production processes and is just as easily removable by the consumer without compromising the integrity of the container.

This aim and these objects, and others which will become apparent from the following detailed description are achieved by a container for pre-cooked and/or ready-to-eat food, as defined in the appended claims.

The features and advantages of the present invention will become apparent from the following

detailed description of an embodiment of the container and with reference to the accompanying exemplifying drawings, wherein:

figure 1 is a top plan view of the base half-shell of the container,

figure 2 is a transverse sectional view taken along the line II-II of figure 1,

figure 3 is an enlarged-scale detail view of figure 1,

figure 4 is a bottom plan view of the lid,

figure 5 is a sectional view taken along the line V-V of figure 4,

figure 6 is an enlarged-scale detail view of figure 5,

figure 7 is a transverse sectional view of the container, complete with base shell and lid,

figure 8 is an enlarged-scale detail view of figure 7,

figure 9 is a bottom view of the container with the lid, taken in the direction of the arrows IX-IX of figure 8,

figure 10 is a view, similar to figure 9, illustrating the method for disengaging the lid from the base shell.

With reference to figures 1 to 3, 10 generally indicates the base half-shell, which comprises a cup-like tray 11 surrounded by a protruding edge 12, said half-shell, which is preferably made of heat-resistant polymeric material, being suitable to act as a plate for eating the food packaged therein.

As is clearly shown in figure 1, the plan profile of the shell 10 is curvilinear and pseudo-rectangular, and is defined by pairs of opposite homologous sides L, L' constituted by arcs of a circle which have respective differentiated radii. The edge 12 substantially has the same profile as the half-shell, from which it differs due to the presence of widened grip portions 12a which surround the larger sides L . The edge 12 is furthermore concave, at least at the grip portions 12a, and ends with a slightly undercut lip 12b.

The concavity of the edge 12 defines a curved suture surface 14 for a protective film 15 made of plastic material, of a per se known kind, which can be removed by so-called "peeling".

The concavity of the surface 14 is chosen so that it is, at least in the region of connection of the edge 12 to the tray 11, tangent or approximately tangent to the geometrical solid SG along which the film 15 arranges itself when it is stressed by the pressure of the steam produced by any thermal treatment of the food packaged in the container. Therefore, in the presence of steam, the film is subjected to a traction which is parallel to the suture surface at the specified region, and this, in

accordance with the aim and objects of the invention, prevents the progressive and spontaneous separation of said film from the edge 12. Advantageously, the curvature of the suture surface 14 is such that the tangent to said surface, in said region of connection to the tray 11, is approximately 30° with respect to the plane P which is tangent to the edges of the container.

A removable lid 20 (figure 4) co-operates, for food protection, with the base half-shell 10, is likewise made of polymeric material and can be snap connected to the underlying base half-shell. For this purpose, the lid, which is also cup-shaped, has an edge 21 the plan profile whereof coincides with the plan profile of the edge 12 of the base half-shell on which said lid can be superimposed.

Pairs of raised portions or opposite teeth 22 are formed on the edge 21 of the lid, are arranged substantially at the regions of connection between the curvilinear sides of the edge and are adapted to engage in a snap fashion, by virtue of the elastic deformability of the material of the container, the undercut lip 12b provided on the edge 12 of the base half-shell 10.

The engagement of the lid 20 onto the half-shell 10 therefore occurs by superimposing the former on the latter (figure 7) and exerting thereon a slight pressure, this operation being easily and rapidly executable by means of machines adapted for continuous packaging.

The removal of the lid is performed just as easily by virtue of the particular plan profile of the container.

For this purpose it is in fact sufficient to rotate the lid relative to the base half-shell by such an angle as to disengage the raised portions 22 from the lip 12b, as clearly shown in figure 10 of the accompanying drawings, the angle of the disengagement rotation R being comprised between 15 and 20°.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.

Claims

1. A container for pre-cooked and/or ready-to-eat food, comprising a tray-shaped base half-shell (10) adapted to act as a plate for eating the food and a protective film (15) to be welded thereto, characterized in that said half-shell (10) has, in plan view, a pseudo-rectangular curvilinear profile and a con-

cave protruding edge (12) which defines a curved suture surface (14) for the protective film (15), said suture surface being at least approximately tangent, at least in the region of connection of the edge (12) to the tray (11), to the geometrical solid (SG) along which the protective film arranges itself when it is subjected to the steam pressure which is produced in the food thermal treatment steps.

2. A container according to claim 1, characterized by a film protection lid (20) provided with pairs of opposite raised portions (22) adapted to co-operate with an undercut lip (12b) of the edge (12) of the base half-shell (10) to allow a snap-together coupling of said lid and said base half-shell, the disengagement of the lid being obtainable, by virtue of the plan profile of the container, by means of a reduced rotation thereof relative to the base half-shell.

3. A container according to claim 1, characterized in that the plan profile of the half-shell (10) is defined by pairs of opposite homologous sides (L, L') constituted by arcs of circles which have respective differentiated radii.

4. A container according to claim 1, characterized in that the edge (12) of the base half-shell (10) has widened grip (14) portions which surround the longer curvilinear sides (L') and in that the concave suture surface (14) of the film (15) is provided at least on said widened portions (14) of the edge (12).

5. A container according to claim 1, characterized in that the curvature of the concave suture surface (14) provided on the edge of the base half-shell (10) is directed with an angle of approximately 30° with respect to the plane (P) which is tangent to the edges (12) of the container.

6. A container according to claim 2, characterized in that said pairs of opposite raised portions (22) are provided on the edge (21) of the lid (20) and are arranged substantially at the region of connection of the curvilinear sides (L, L') of the edge (12).

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FIG. 1

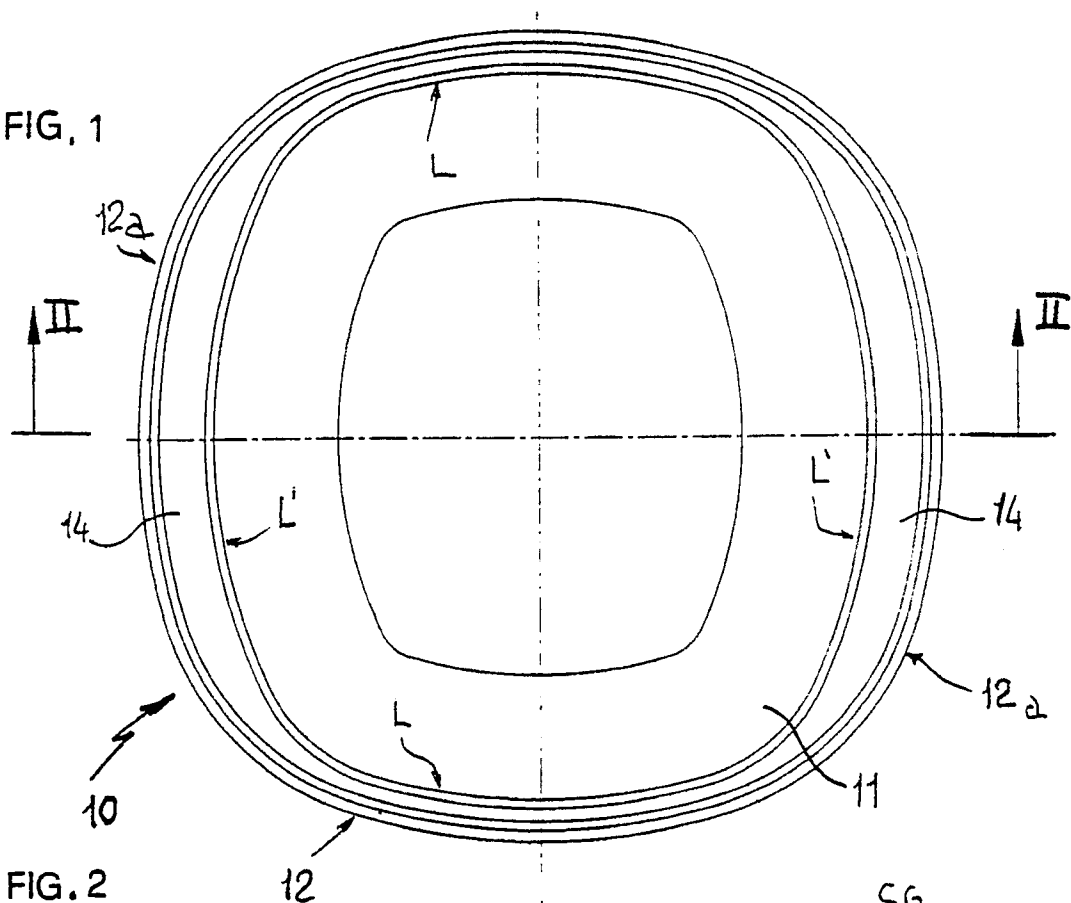


FIG. 2

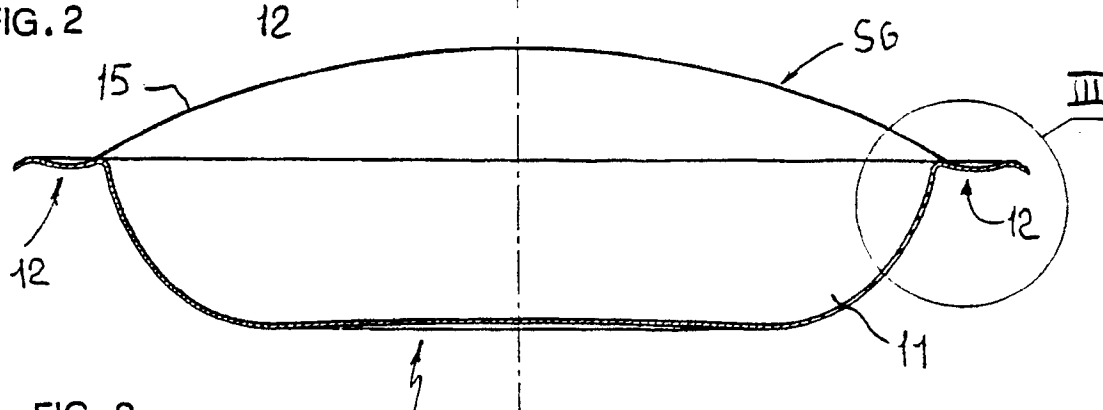
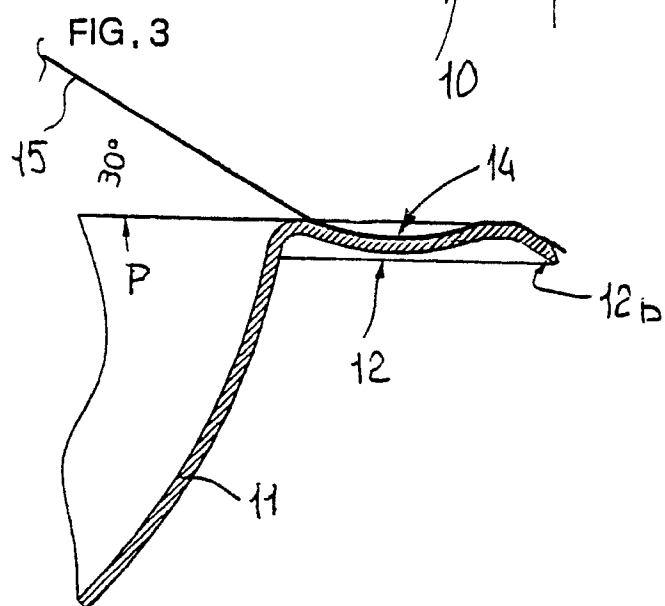
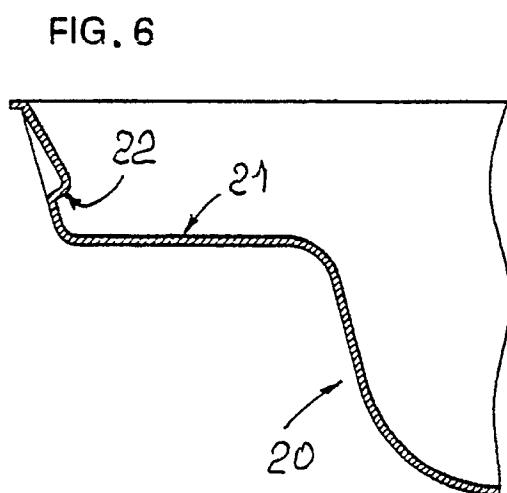
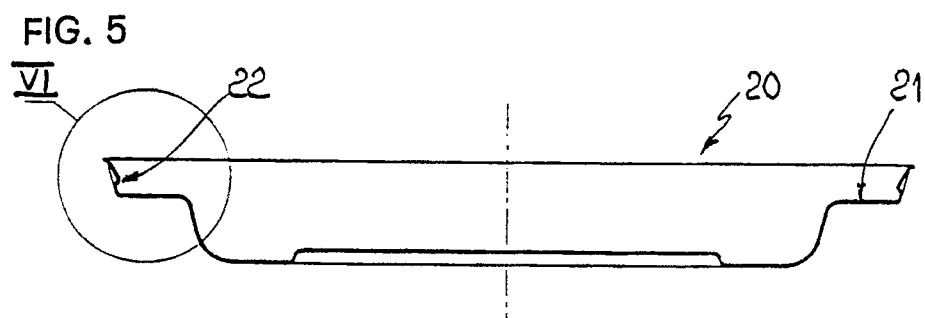
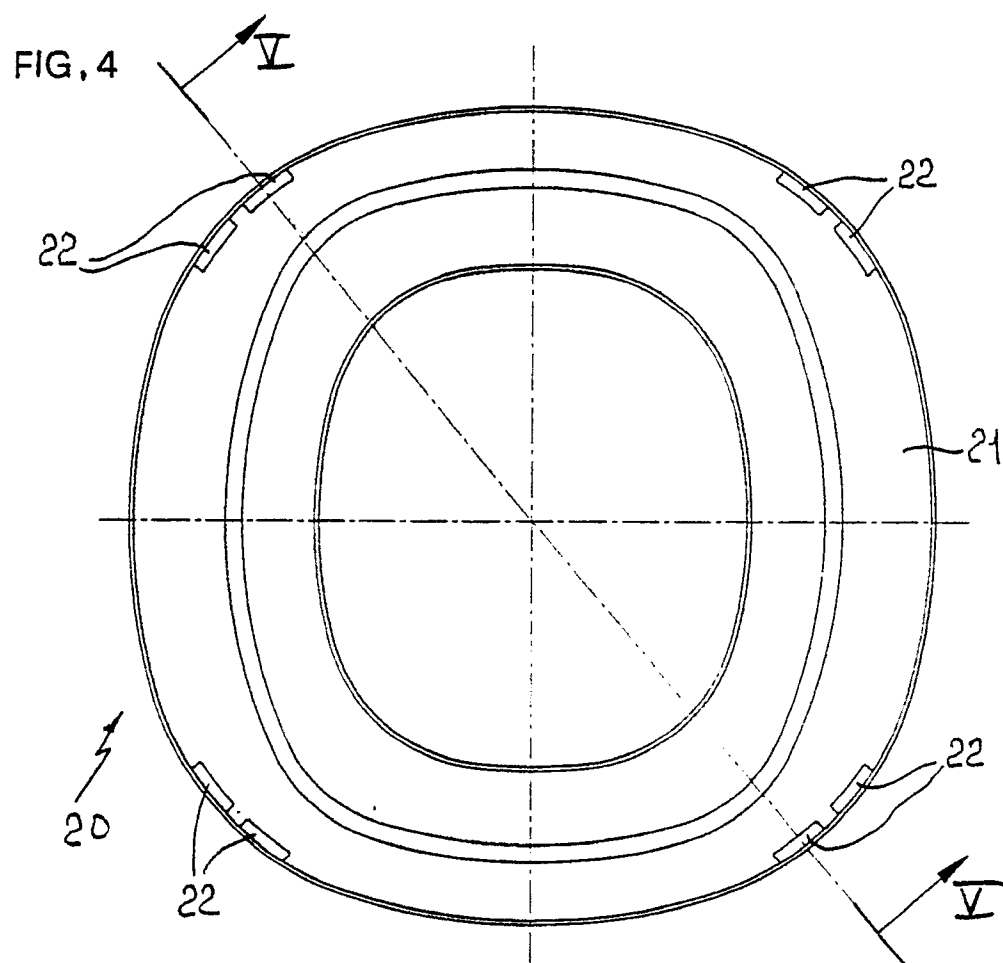


FIG. 3





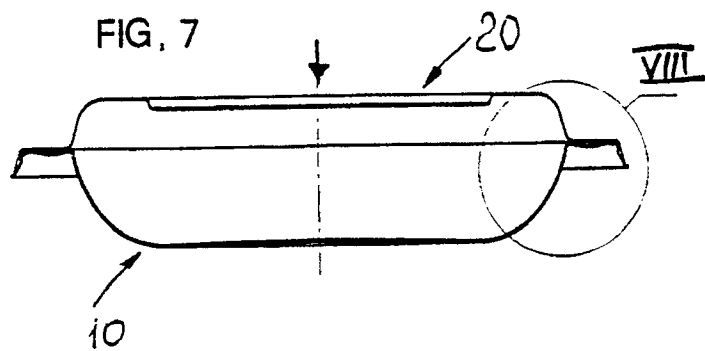


FIG. 8

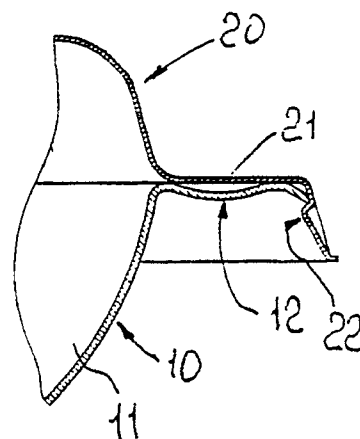


FIG. 9

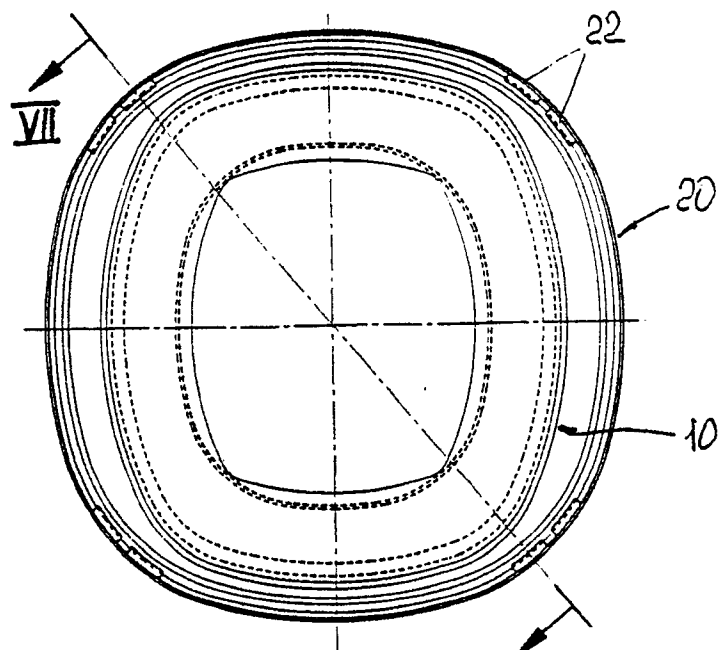
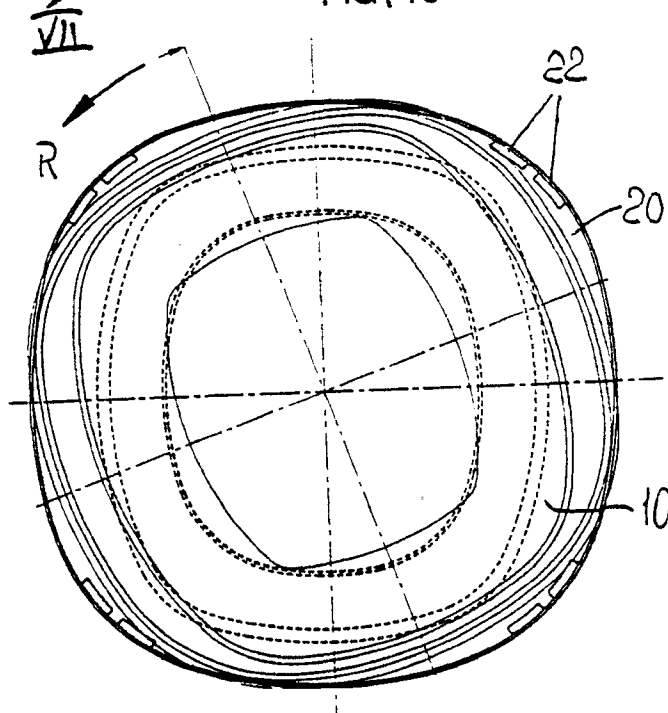


FIG. 10





EUROPEAN SEARCH REPORT

EP 90 11 0193

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.5)
A	EP-A-0 248 601 (METAL BOX) * Page 1, lines 1-20; figure 5 * -- --	1	B 65 D 81/34
A	DE-A-3 919 120 (W. MILLER) * Claim 1; column 2, lines 29-59; figure 1 * -- --	1	
A	FR-A-2 085 368 (STALAVEN) * Page 3, lines 6-37 * -- --	1,2	
A	GB-A-2 216 864 (PLASTONA) * Page 4, lines 3-6; figure 2 * -- -- --	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B 65 D
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of search 10 December 90	Examiner ZANGHI A.
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons ----- &: member of the same patent family, corresponding document			