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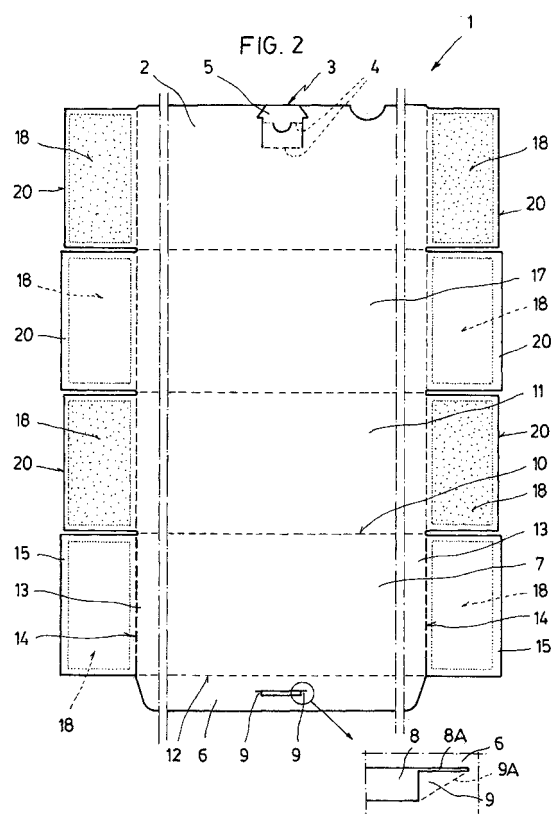
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(54) **Packaging box**

(57) Packaging box (1) made by holding and sticking a die-cut laminar material, that comprises a hinged lid (7) that closes in a releasable manner. The top part of front face (2) is provided with a die-cut tongue piece (3) that ends in an arrow shaped area (5) and which has folding lines (4) that give it its articulated nature. Hinged lid (7) extends along a longitudinal flange (6) that backs inwards onto front face (2) and which has a horizontal opening (8) the length of which is greater than the width of the body of tongue piece (3) and less than the maximum width of arrow shaped area (5). One of the two greater sides of horizontal opening (8) extends at its ends into cuts (8A) that determine triangular end areas (9) that are elastically deformable.



Description

Field of the invention

[0001] This invention relates to a packaging box, particularly an orthohedric shaped box with rectangular sides, of the type that is made by folding and sticking a die-cut laminar material such as cardboard, which is simultaneously suitable for shipping a group of units of manufactured articles, for storing them and for supplying them by removing each unit for it to be used at its destination.

[0002] It has been envisaged in this packaging case, to incorporate a closing device intended to ensure in a releasable manner the closure thereof once the hinged lid provided is open, whereby the lid has a longitudinal flange which, in the closed position, backs inwards against the back of the front face of the box and has a bolt eye arrangement in correspondence with the closing device.

[0003] Also it has been envisaged that said packaging box be provided with an arrangement, such as a safety seal, whereby an indication is provided if the box has been opened before the first time its contents is used.

State of the art

[0004] Packaging boxes are known, for example via Spanish Utility Model No. 200002399, *inter alia*, where the top of the front face forms a die-cut rectangular tongue piece, which has two folding lines which give it its articulated nature, and the longitudinal flange of the box's hinged lid has, on level with the inner face of said hinged lid, a bolt eye arrangement in the form of a narrow horizontal groove in which the free end of said articulated, rectangular tongue piece is inserted.

[0005] This bolt eye arrangement does not guarantee the stability of the lid when the position of the box is inverted, because the free end of the articulated rectangular tongue piece, which is inserted with a simple friction-based adjustment into the narrow horizontal groove, slides easily if a small opening force is applied to the hinged lid when the position of the box is inverted, and this can lead to the box opening and spilling its contents.

[0006] Moreover, in order to guarantee the contents of the packaging box warranty seals are usually used, in the form of adhesive stamps or labels. On many occasions, owing to the environment in the area where the box is located or other factors, these seals come unstuck from the packaging box thereby forfeiting their role as warranty seals. Packaging boxes are known, for example in Spanish Utility Model application No. 8702832, in which the lid, or another part of the packaging, has an arrangement that acts as a warranty seal and which is made up of an area delimited by a perforated line, so that when said area is scratched the packaging box opens and, at the same time, a hinged lid is formed. However, this type of hinged lid suffers from the drawback that it

lacks a closing device.

Disclosure of the invention

[0007] In order to overcome the drawbacks mentioned above, the solution has been adopted whereby in a packaging box with a hinged lid, the actual hinged lid forms the warranty seal element and includes a closing device of the articulated tongue piece type, with retention means being provided for said tongue piece, which secure the closing position of the hinged lid.

[0008] According to this solution, and taking into account the prior art considered, a packaging box has been developed, by folding and sticking a die-cut laminar material, which comprises a hinged lid that closes in a releasable manner, with said hinged lid being provided with a longitudinal flange which, in the closing position of said hinged lid, backs inwards against the front face of said packaging box, characterized in that the top of said front face of the packaging box is provided with a die-cut tongue piece, said tongue piece having folding lines that give it its articulated nature and ending in an arrow shaped area, and said longitudinal flange of the hinged lid having, complementarily to said tongue piece, a narrow horizontal rectangular opening that, as a continuation of one of its two larger sides, has end cuts that determine triangular end areas that are elastically deformable by the action of inserting and/or extracting, in a voluntary and forced manner, said arrow shaped area of the tongue piece, with the length of said narrow rectangular horizontal opening being greater than the width of the body of said tongue piece and smaller than the maximum width of said arrow shaped area of the tongue piece.

[0009] Preferably, said narrow rectangular horizontal opening provided on the longitudinal flange is separated from the folding line provided between said longitudinal flange and the rest of the hinged lid, and in a substantially centered position with respect to the width of said longitudinal flange.

[0010] Preferably, the two side ends of the top face of the packaging box according to the invention, which forms the hinged lid, extend in cantilever wings that are part of the side walls of said packaging box and which have perforated lines along the folding lines provided between said cantilever wings and the top face of the packaging box.

[0011] Preferably, the top face of the packaging box according to the invention, which forms the hinged lid, has: on its rear side, a hinged line related to the rear face of said packaging box; on its front side, a folding line from which said top face of the packaging box extends forming the longitudinal flange provided with the narrow rectangular horizontal opening; and, on its two side faces, which are adjacent to said rear and front sides, the cantilever wings through which there extend the two side ends of said top face of the packaging box; and the front face of said packaging box, on to which the longitudinal flange backs inwards, is provided with the articulated tongue

piece and ends in an arrow shaped area that fits into the narrow rectangular horizontal opening of said longitudinal flange.

[0012] Preferably, the side walls of the packaging box according to the invention are formed by the association of the cantilever wings, through which there extend the two side ends of the top face of said packaging box, with cantilever wings through which there extend the front and rear faces and the bottom wall of said packaging box, with said cantilever wings being in coplanar juxtaposition forming opposite pairs of two and two, and on the surfaces of each pair of said cantilever wings, which faces the equivalent pair in the assembly of said packaging box, is provided a layer of self-adhesive glue with mutual and exclusive affinity to the equivalent cantilever wings that they are facing when packaging box is assembled.

[0013] Preferably, the tongue piece has a handle consisting of a die-cut lug in the arrow shaped area of said tongue piece, with said handle being contained, in the closed position of the hinged lid, in the same plane that contains said arrow shaped area of the tongue piece.

[0014] Preferably, the front face of the packaging box according to the invention has, on its top edge, a notch that makes the longitudinal flange accessible to a finger on a user's hand.

Brief description of the drawings

[0015] To facilitate the understanding of the preceding ideas, a description is provided below of an embodiment of the packaging box that is the object of this invention, with reference to the accompanying illustrative drawings, in which:

Fig. 1 represents, in a top perspective view, a packaging box of a non-determined size which, being provided with the improvements that are the object of this invention, is in the closed position, before it is first opened.

Fig. 2 represents a flat development of a general embodiment of the packaging box that incorporates the object of the invention and corresponds to the illustration in Fig. 1.

Fig. 3 represents, in a perspective view, the closing means of the packaging box which, according to the invention, consists of an articulated tongue piece that acts as a bolt and which originates from the front face of the packaging box, and a narrow horizontal opening acting as elastic bolt eye means and which is located, complementarily to said articulated tongue piece, on a flange of the hinged lid of said packaging box.

Fig. 4, represents, in a perspective view, a similar view to Fig. 3, but with said closing means in an engaged position.

Fig. 5 represents, in a sectional view according to a plane contained in the arrow shaped area of the articulated tongue piece, a top view in the position in Fig. 4.

Fig. 6 represents, in a top perspective view, the packaging box of the invention indicating the position of the lateral perforated lines arranged on the engaged lid.

Figure 7 represents, in perspective, the arrangement of the cantilever wings, through which there extend the front and rear faces, the bottom wall and the engaged lid of the packaging box, with which side walls of said box are formed.

Detailed description of an embodiment of the invention

[0016] The invention applies particularly to an orthohedric shaped packaging box with rectangular faces, which is made by folding and sticking a die-cut laminar material that preferably consists of a type of cardboard, and which is suitable for the packaging and guaranteed shipment of a group of units of manufactured articles, for storing them and for supplying them by removing each units for it to be used at its destination.

[0017] According to the invention, this packaging box has warranty seal means and closing means, the latter being intended to re-close the packaging box in a releasable manner after its seal has been removed, via the hinged lid that is part of the packaging box. Therefore, said hinged lid has a longitudinal flange which, in the closed position, backs inwards against the back of the front face of the packaging box and which, in such a position, provides means that behave like a bolt eye device for means acting as a bolt.

[0018] Fig. 1 shows a material embodiment of a packaging box 1 according to the invention, without defining either the length of said packaging box 1, which can vary according to the longitudinal length of the articles to be packaged, or its height or depth, even though these sizes are indicated in the drawings as if they were defined. Moreover, the number of closing means provided on the front of said packaging box 1 might also vary, depending on the length of packaging box 1.

[0019] As shown in Figs. 1 and 2, and detailed in Figs. 3, 4 and 5, packaging box 1 has, on the top of its front face 2, a die-cut tongue piece 3 that has two folding lines 4, which give it its articulated nature, and ends in an arrow shaped area 5. Hinged lid 7 of packaging box 1 has a longitudinal flange 6, which has bolt eye means consisting of a narrow rectangular horizontal opening 8 that has two end cuts 8A, arranged as a continuation of one of the two larger sides of said narrow rectangular horizontal opening 8. Said end cuts 8A determine, in said narrow rectangular horizontal opening 8, triangular end areas 9 that are elastically deformable around a line 9A by the action of inserting and /or extracting, in a voluntary and

forced manner, the arrow shaped area 5 of tongue piece 3. The length of narrow horizontal opening 8 is greater than the width of the body of tongue piece 3 and smaller than the maximum width of the arrow shaped area 5 at the end of said tongue piece 3.

[0020] As can be seen in the cited figures, the bolt eye means, in the form of narrow rectangular horizontal opening 8, are separated from the folding line provided between said longitudinal flange 6 and hinged lid 7 and are arranged in a substantially centered position with respect to the width of said longitudinal flange 6.

[0021] As shown in said figures, one of the faces of packaging box 1, in particular the one that must form hinged lid 7, has: on its rear side, a hinge line 10 related to rear face 11 of packaging box 1; on its front side, a folding line 12 that is shared with an extension of hinged lid 7 that forms longitudinal flange 6 that has at least some elastic bolt eye means in the form of narrow rectangular horizontal opening 8; and, on its two lateral sides 13, which are adjacent to the two sides considered above, perforated lines 14, as warranty seal means, which are shared with two cantilever wings 15 which, as shown in Figures 6 and 7, are part of the side walls of packaging box 1.

[0022] The face of packaging box 1 that forms front face 2 thereof, onto which said longitudinal flange 6 backs inwards, has an articulated tongue piece 3, which ends in an arrow shaped area 5 designed to fit, like a bolt, into said elastic bolt eye means consisting of narrow rectangular horizontal opening 8 arranged on longitudinal flange 6.

[0023] As can be seen in said figures, tongue piece 3 has a handle consisting of a die-cut lug 16 in arrow shaped area 5 of tongue piece 3. In the closed position of hinged lid 7, said handle is contained in the same plane as that which contains said arrow shaped area 5 of tongue piece 3.

[0024] Fig. 7 illustrates the fact that the side walls of packaging box 1 are formed by the association of cantilever wings 15, through which there extend the side ends of the face of packaging box 1 that corresponds to hinged lid 7, with cantilever wings 20 through which there extend front 2 and rear 11 faces and bottom wall 17 of said packaging box 1. In order to form said side walls, cantilever wings 15, 20, are in coplanar juxtaposition opposite one another in pairs of two. The surfaces of each pair of said cantilever wings 15, 20 are provided with a layer of self-adhesive glue 18 with mutual and exclusive affinity to the equivalent cantilever wings that they are facing when packaging box 1 is assembled.

[0025] The figures show that front face 2 of packaging box 1 has on its top edge a notch 19, corresponding to tongue piece 3, which allows a finger on a user's hand to access longitudinal flange 6 so as to facilitate the opening of said packaging box 1.

Claims

1. - Packaging box (1), made by folding and sticking a die-cut laminar material, comprising a hinged lid (7) that closes in a releasable manner, said hinged (7) being provided with a longitudinal flange (6) which, in the closed position of said hinged lid (7), backs inwards against the back of front face (2) of said packaging box (1), **characterized in that** the top part of said front face (2) of packaging box (1) is provided with a die-cut tongue piece (3), with said tongue piece (3) having folding lines (4) which give it an articulated nature, and which ends in an arrow shaped area (5), and said longitudinal flange (6) of hinged lid (7) has, complementarily to said tongue piece (3), a narrow rectangular horizontal opening (8) that has, as a continuation of one of its two larger sides, end cuts (8A) that determine triangular end areas (9) that can be elastically deformed by the action of inserting and/or removing in a voluntary and forced manner said arrow shaped area (5) of tongue piece (3), with the length of said narrow rectangular horizontal opening (8) being greater than the width of the body of said tongue piece (3) and smaller than the maximum width of said arrow shaped area (5) of tongue piece (3).
2. - Packaging box (1) according to claim 1, **characterized in that** said narrow rectangular horizontal opening (8) provided with longitudinal flange (6) is separated from folding line (12) provided between said longitudinal flange (6) and the remainder of said hinged lid (7), and in a substantially centered position with respect to the width of said longitudinal flange (6).
3. - Packaging box (1) according to claims 1 or 2, **characterized in that** the two side ends of the top face of said packaging box (1), which forms said hinged lid (7), extend in cantilever wings (15) that form part of the side walls of said packaging box (1) and which have perforated lines (14) along folding lines provided between said cantilever wings (15) and said top face of packaging box (1).
4. - Packaging box (1) according to claim 3, **characterized in that** the top face of said packaging box (1), which forms said hinged lid (7), has: on its rear side, a hinge line (10) related to rear face (11) of said packaging box (1); on its front side, a folding line (12) from which there extends said top face of said packaging box (1) forming said longitudinal flange (6) provided with said narrow rectangular horizontal opening (8); and, on its two lateral sides, which are adjacent to said rear and front sides, said cantilever wings (15) through which there extend the two side ends of said top face of packaging box (1); and front face (2) of said packaging box (1), on which said longitu-

dinal flange (6) backs inwardly, is provided with said articulated tongue piece (3) that ends in an arrow shaped area (5) that fits into said narrow rectangular horizontal opening (8) of said longitudinal flange (6).

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5. - Packaging box (1) according to claim 4, **characterized in that** the side walls of said packaging box (1) are formed by the association of said cantilever wings (15), through which there extend the two side ends of said packaging box (1), with cantilever wings (20) through which there extend front (2) and rear (11) faces and bottom wall (17) of said packaging box (1), said cantilever wings (15, 20) being in a coplanar juxtaposition forming opposite pairs of two and two, and on the surfaces of each pair of said cantilever wings (15, 20), which is opposite the equivalent pair during the assembly of said packaging box (1), is provided a layer of self-adhesive glue with exclusively and mutual affinity to the equivalent cantilever wings that they are facing when packaging box (1) is assembled.
6. - Packaging box (1) according to any of the claims 1 to 5, **characterized in that** said tongue piece (3) has a handle formed by a die-cut lug (16) in said arrow shaped area (5) of tongue piece (3), said handle being contained, in the closing position of said hinged lid (7), in the same plane that contains said arrow shaped area (5) of tongue piece (3).
7. - Packaging box according to any of the claims 1 to 6, **characterized in that** front face (2) of said packaging box (1) has on its top edge a notch (19) that makes said longitudinal flange (6) accessible to the finger on a user's hand.

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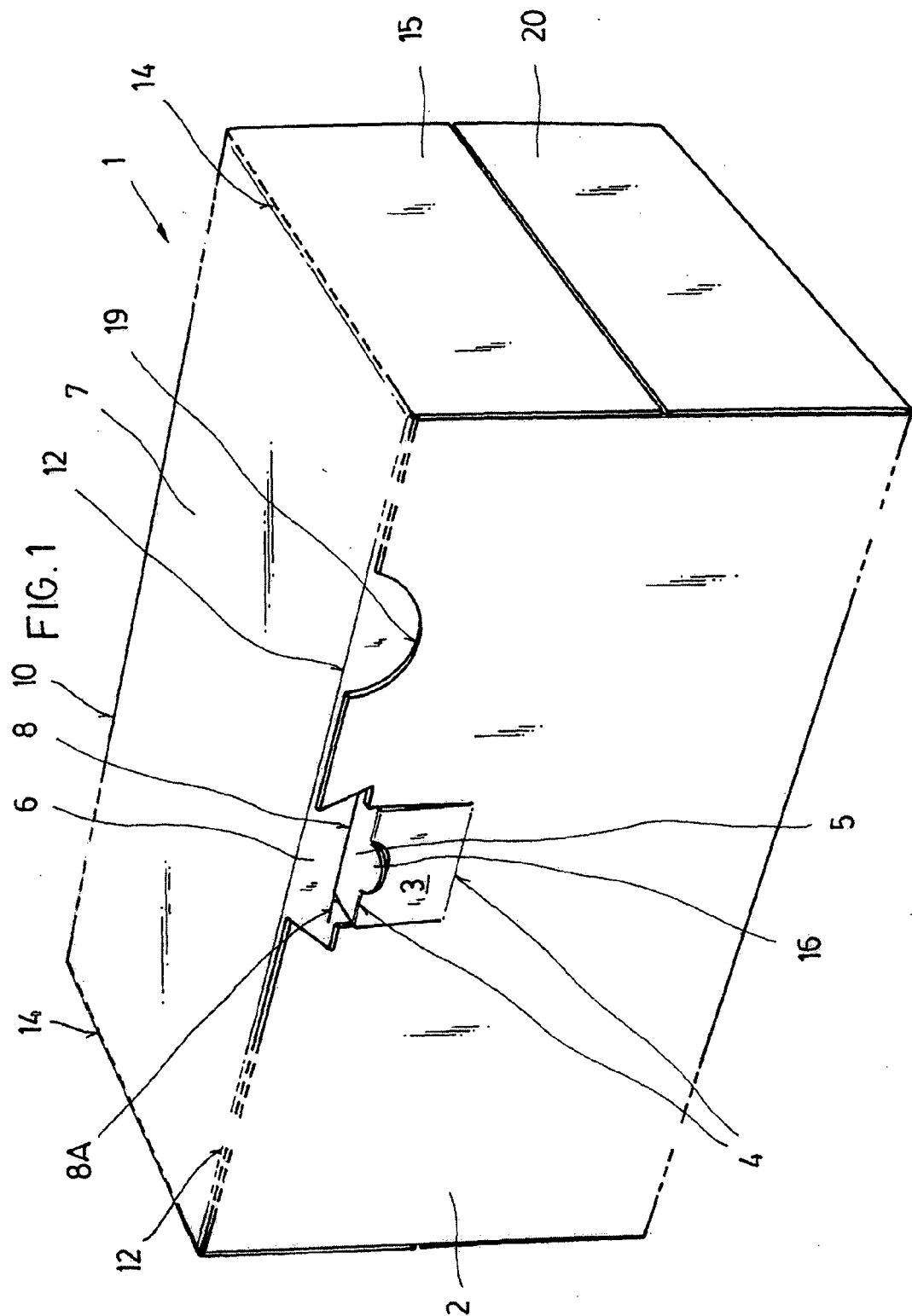
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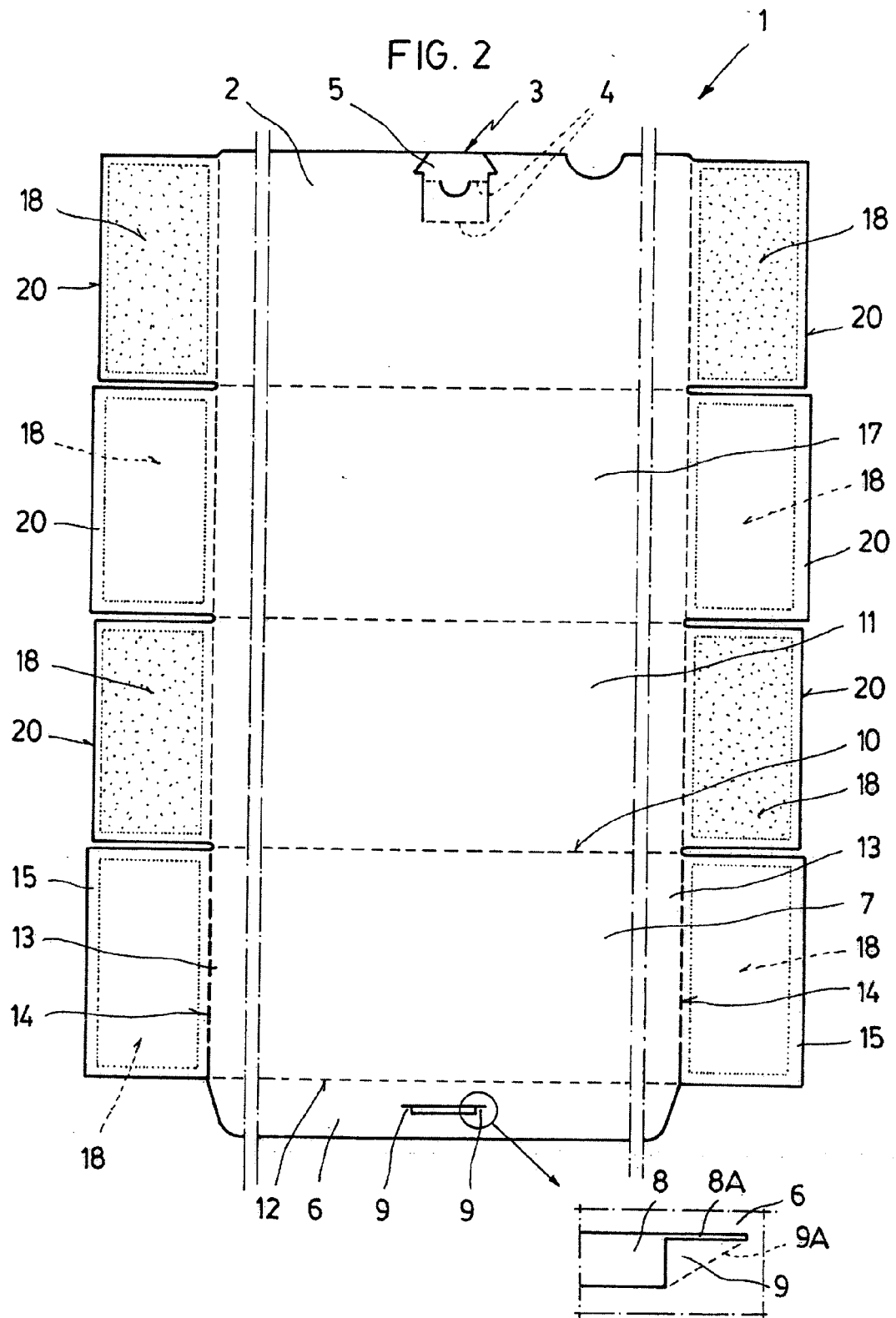
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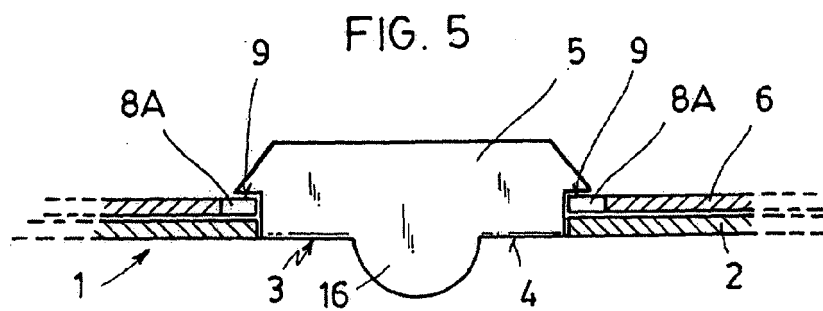
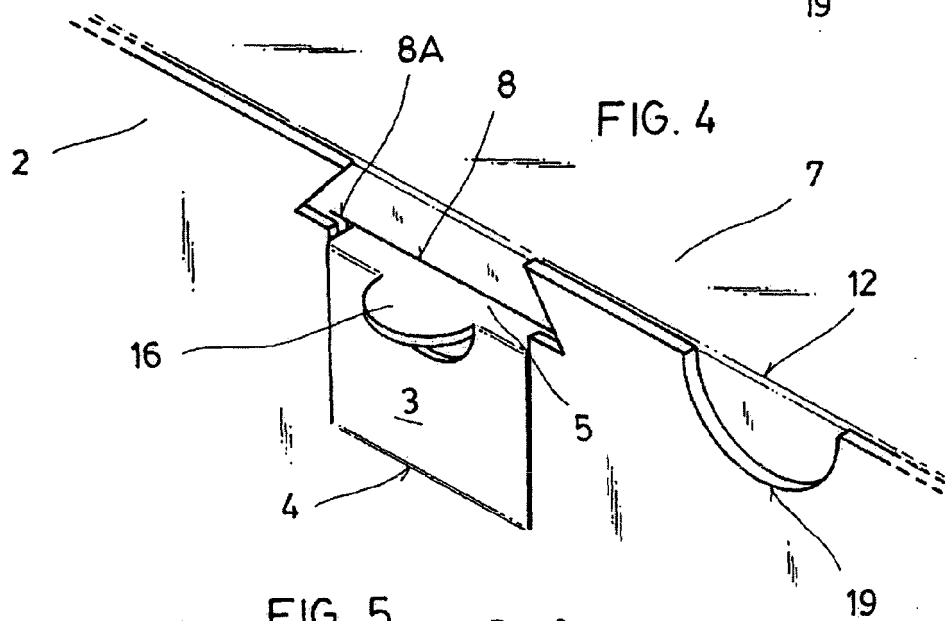
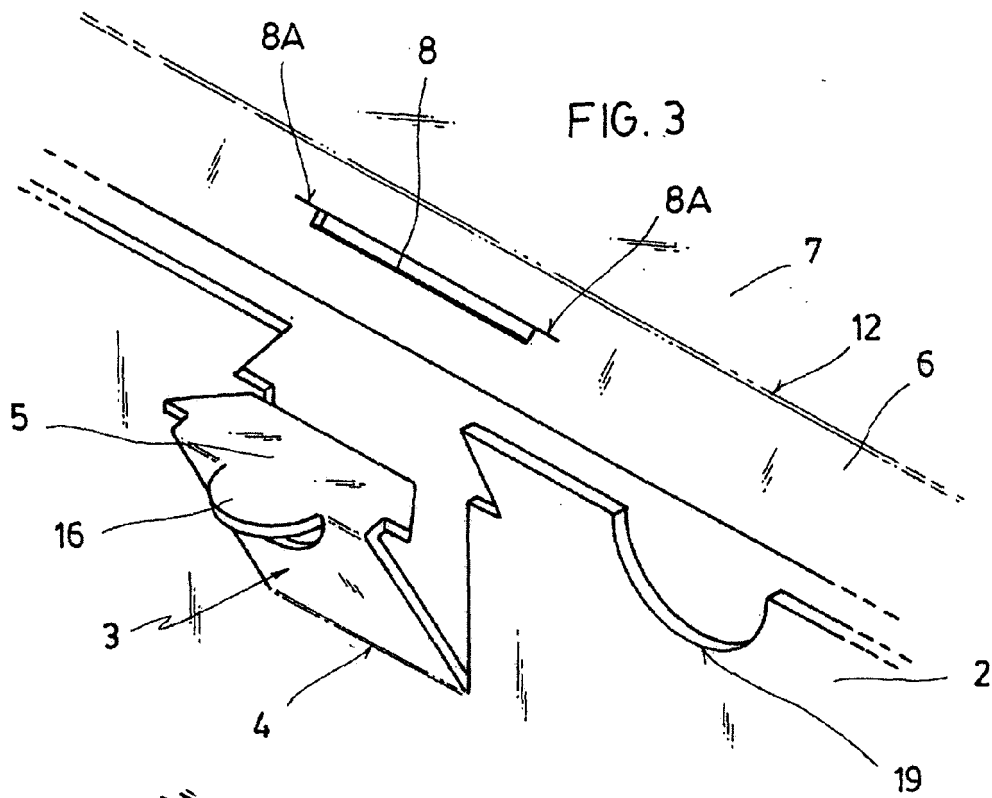


FIG. 6

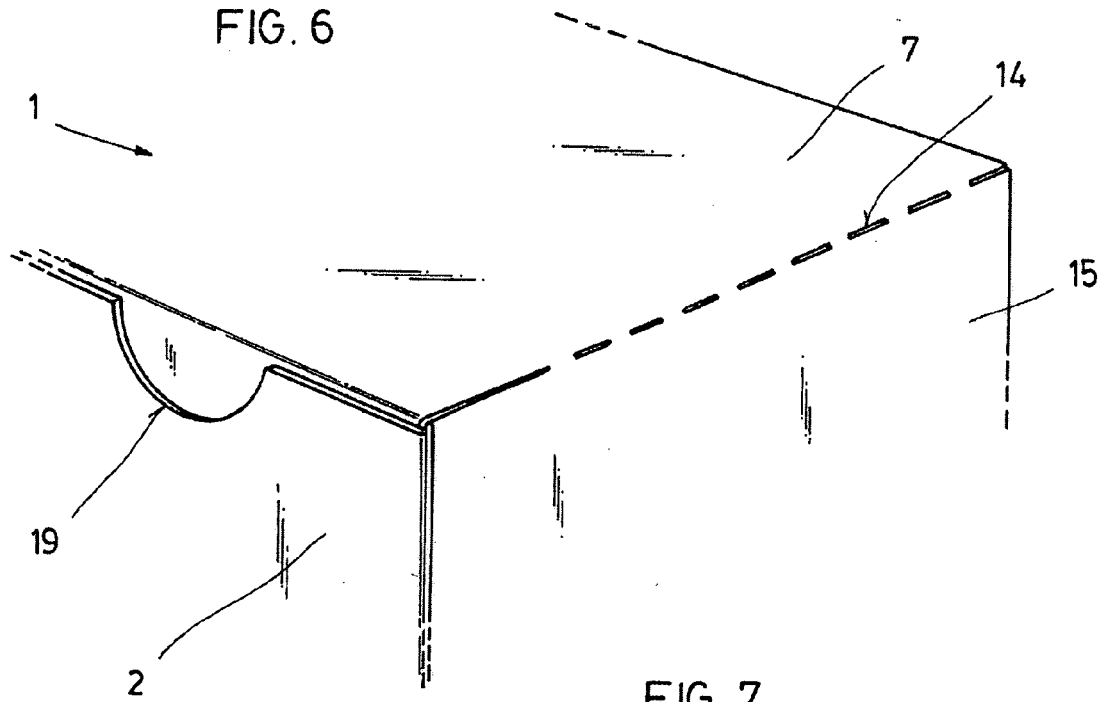
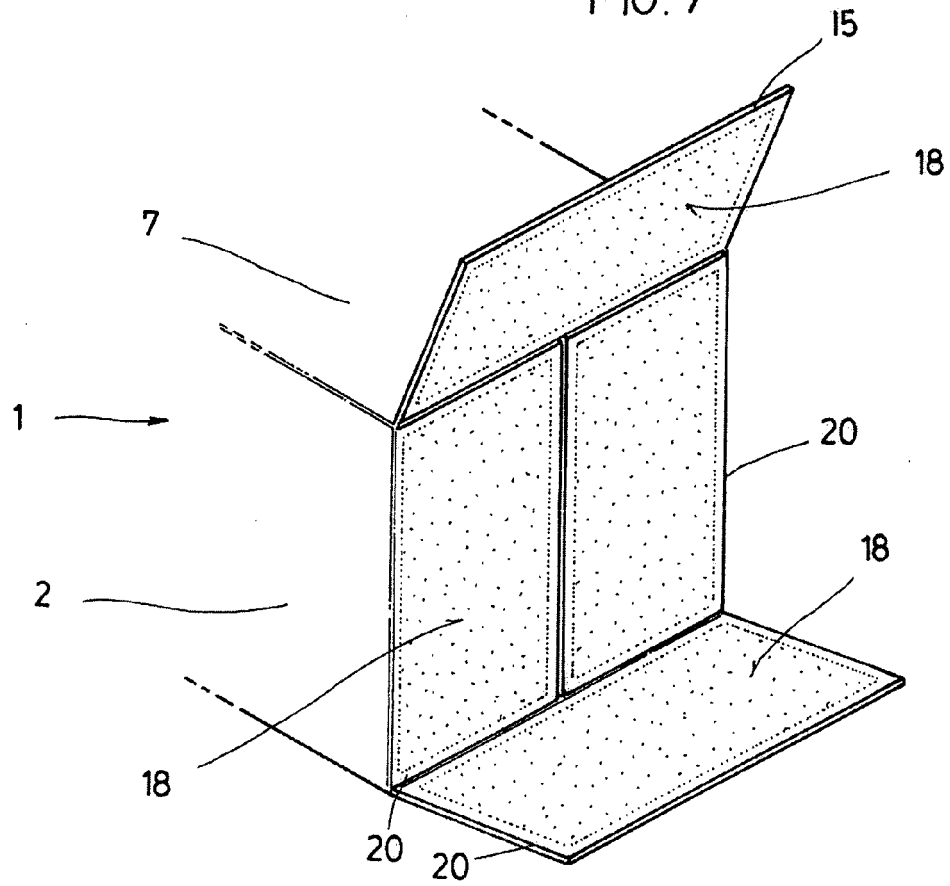


FIG. 7





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 38 0367

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	EP 0 058 640 A (ISLER ERNST) 25 August 1982 (1982-08-25) * claim 5; figures 1,2 *	1-7	
			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 10 April 2008	Examiner Vesterholm, Mika
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EPO FORM 1503.03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 38 0367

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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