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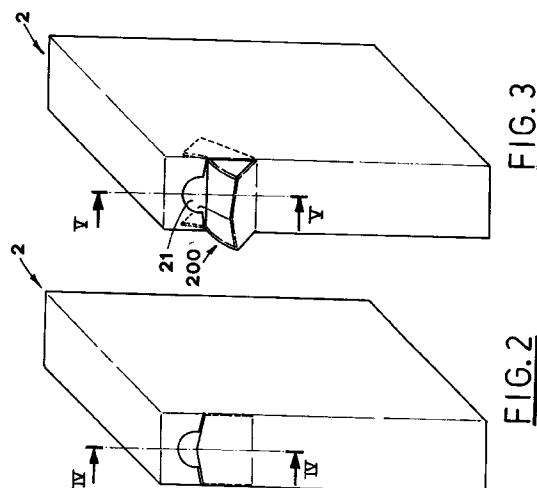
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(54) **Method and blank for the production of a package, and a package obtained through this method.**

(57) A method for the production of a package (2) from a blank (1) of sheet material, in which suitable folding and cutting lines define the front and back wall panels (3,4) and the side wall panels (5,6), provides for detaching from the blank (1) a shaped flap (16) joint to lid-forming flaps (8a,9a) extending from the ends of the front and back wall panels (3,4). The shaped flap (16) forms a kind of bridge between the lid-forming panels (8a,9a).

The flap (16) is then attached to the surface designed to be turned towards the inside of the package (2) of a tear flap (12) delimited by a cutting line (14) and by perforated lines (15) on a side wall panel (5), so that the flap (16) extends with a couple of wings (20) beside the front and back panels (3,4). The front and back panels (3,4) and the side wall panels (5,6) of are folded to obtain a tubular element (100), thus folding also the wings (20) with respect to a central part (18) of the flap (16) attached to the side wall panel (5).

The wings (20) extending beside the front and back panels (3,4), form the side walls of an outwardly tipping spout (200) that is formed in its front part by the tear flap (12).



The present invention relates to the technical field concerning the production of packages from blanks of sheet material, such as cardboard and the like.

It is known that packages are obtained from blanks of cardboard for packaging various types of products, in particular bulk products, such as food stuff, detergents and the like.

Each blank is obtained from a sheet of cardboard in which suitable folding and cutting lines delimit rectangular front and back panels and side wall panels that form opposite package walls.

In order to open the package, to take out the product contained therein, there are provided special breaking lines, usually on one of the side walls, in the upper part of the package.

Such breaking lines extend e.g. along an arc of circumference adjacent to a folding line, often coincidental with the upper corner of the package side.

By pressing the part delimited by the breaking line in a suitable way, the cardboard is cut along the breaking line and, consequently, a mouth is opened on the side of the package, through which the goods can be poured out.

Such a method for obtaining the opening of the package is often unsatisfactory, since it does not allow for a precise good drawing without spreading it out, for instance while pouring it into smaller packages, batchers and the like.

Another disadvantage lies in the fact that it is impossible to suitably close the open package, so the product can accidentally be poured out. Also hygiene and integrity problems for the same product are not to be neglected.

In order to facilitate the drawing of the product, there is sometime provided a kind of spout, obtained in correspondence with the opening mouth, defined by the above mentioned breaking line, by folding the cardboard along a creasing, e.g. median, line on the side of the package.

Anyway, there still remains the problem of closing the package after having opened the mouth for the product withdrawal.

A more elaborate solution provides a kind of a chute made of aluminium, joined to the package in correspondence with a tipping part defined by a suitable breaking line.

In this case when the above mentioned breaking line is cut a mouth can be opened on the side of the package and, in correspondence with it, the folding part that carries the chute attached thereto is released.

Such a chute is tipped outwards, by folding the above mentioned part of the package along a suitable creasing line, in order to pour out the product; when the product is to be kept, the chute is returned to the closure position.

Such a solution is rather expensive, considering

the field in which it is used, and it also presents various functional disadvantages.

In fact, besides the chute cost, it is necessary to provide suitable devices for the application of the same chute inside the package.

The chute is applied after the package has been erected, that brings about further realisation problems. Moreover, the application of the chute, by stapling or the like, can lacerate the package either in packaging phase or while it is used.

Another disadvantage results from the fact that the breaking line makes the package liable to leak, in particular for fine products, so that it is necessary either to wrap the package in plastic material or to apply a removable label in the region with the breaking line.

Still further disadvantage of such solution derives from the fact that the chute is usually of a limited width, since it must be narrower than the package side wall and consequently, the opening dimensions are limited and the possibility of jamming is bigger.

The object of the present invention is to provide a method allowing for production, in a simple and cheap way, of a cardboard package equipped with a reclosable opening designed to pour out the packaged product in an optimal manner.

Another object of the present invention is to provide a blank, from which, in a simple and cheap way, a cardboard package is made, equipped with a reclosable opening designed to pour out the packaged product in an optimal manner.

Yet another object of the present invention is to provide a package provided with a reclosable opening designed to pour out the packaged product in an optimal manner, this package being obtained from the above mentioned blank.

The above mentioned objects are achieved by the method, blank and package as defined in the claims 1, 2 and 8.

Preferred embodiments of the invention are characterised in the dependent claims.

The characteristics of the invention are pointed out in the following description, with reference to the appended drawings, in which:

- Fig. 1 shows a plan view of a blank from which the subject package is to be obtained;
- Fig. 1a shows a part of such blank in a different embodiment;
- Fig. 2 shows a perspective view of the package obtained from the above mentioned blank;
- Fig. 3 shows the same view of such package open for delivery of the products;
- Figs. 4 and 5 show detailed cross-section views of the package taken along the lines IV-IV and V-V of Figs. 2 and 3, respectively;
- Fig. 7 shows a detailed view, from inside, of a part of the package in a production phase.

With reference to the above mentioned figures,

the reference number 1 indicates the cardboard blank for the production of a package 2, substantially of parallelepiped form, destined to contain, in particular, bulk products.

The blank 1 is obtained from a cardboard sheet in which suitable folding and cutting lines define rectangular front and back panels 3, 4 that are aimed at forming the front and back opposite walls of the package 2.

The side wall panels 5, 6 are adjacent to the front and back panels 3, 4 along longitudinal sides thereof. The external side wall panel 6 has, along the longitudinal free side, an edge 7 that is to be attached to the margin of the front panel 3 when the package is made.

Flaps 8a, 8b and 9a, 9b extend from the front and back panels 3, 4, respectively, at opposite sides thereof, these flaps being destined to be overlapped and joined to each other in order to close the package at top and bottom.

Folds 10a, 10b and 11a, 11b extend instead from the side wall panels 5, 6 respectively, at opposite sides thereof, and these folds are designed to be joined with the flaps 8a, 8b and 9a, 9b in order to close the package hermetically.

Near one of its ends, the side wall panel 5, situated between the front and back panels 3 and 4 of the blank, defines a tear flap 12 which can be folded outwardly along the creasing line 13, transversal to the same side wall panel 5, after severing it from the side wall panel 5.

More precisely, the tear flap 12 is delimited at the top by a cutting line 14, slightly cuspidal, transverse to the side wall panel 5.

Between the creasing line 13 and the cutting line 14, along the folding lines of the side wall panel 5, there are made respective perforated lines 15, which facilitate partial cutting off of the same side wall panel 5, thus allowing tipping of the tear flap 12 outwards.

For a bigger tightness of the packaged product, such cutting off can be done along breaking lines with notches that do not completely pass through the cardboard material.

In correspondence with the tip of the tear flap 12, on the side wall panel 5, the cutting line 14 forms a kind of semi-circular cut-out 14a.

As seen in Fig. 1a, in another way, it is possible to shape the tear flap 12 with a rounded part 12a, following the profile of the semi-circular cut-out.

The lid-forming flaps 8a, 9a are connected, at an outer edge, to a shaped flap 16, forming a kind of a bridge between the same lid-forming flaps 8a, 9a, astride of the side wall panel 5.

As specified in the following, the shaped flap 16 is to be separated from the blank 1, when the package 2 is being erected.

To this end, the said shaped flap 16 is joined to lid-forming flaps 8a, 9a by means of perforated lines 17 that are aimed at facilitating the subsequent sep-

aration of such flap 16.

A central, rectangular, part of the shaped flap 16 is located lined up with the side wall panel 5 and is delimited on the sides by a couple of crease lines 19 from which two opposite wings 20 extend.

The wings 20 are joined respectively to the lid-forming flaps 8a, 9a of the blank along the above mentioned cutting lines 17.

The wings 20 are shaped so as to present a kind of indentation. In particular, beginning from the point of connection with the part 18, said wings have a dovetail shape formed by an arcuate convergent section 20a followed by a rectilinear divergent section 20b.

The central section 18 of the flap 16 forms externally a strip 21 delimited by a breaking line 22 with notches which do not completely pass through the cardboard.

The method for the production of the package 2, beginning from the blank, makes use of some technical teachings of the US Patent N. 5.031.815, that is owned by the same Applicant.

According to such method, first the shaped flap 16 is separated from the flaps 8a, 9a of the blank, to which it is joined in correspondence with the cutting lines 17 (see Fig. 6).

The shaped flap, in Fig. 6 indicated with a hatched line 116 for bigger clearness, is then moved perpendicularly to the blank 1 plane, then moved towards the same blank, and finally attached thereto, as indicated successively with the arrows A, B and C.

The flap is attached to the surface which is to be turned inside the package 2. In particular, as it is more precisely seen in Fig. 7, the shaped flap 16 is attached by glue points to the side wall panel 5 of the blank, in correspondence with the tear flap 12, so as to make its central part edge to superimpose the creasing line 13 of the tear flap 12.

Since the central portion 18 of the flap 16 is narrower than the side wall panel 5 (see Fig. 1), the lateral creasing lines 19 result in being internal in respect of the edges of same side wall panel 5, and therefore, internal in respect of the perforated line 15 of the tear flap 12.

The wings 20 extend beside the panels 3, 4 of the blank. It is to be noticed that the creasing lines 19 of the flap 16 are substantially as long as the cutting lines 15 of the tear flap 12.

The strip 21 of the flap 16 covers the part of the side wall panel 5 that has a cutting line 14 with the semi-circular cut-out 14a.

After the flap 16 has been attached, the side wall panels 5, 6 are folded orthogonally to the front panel 4 lying plane (see again Fig. 6).

Then, the front panel 3 of the blank is folded orthogonally, its margin is glued to the edge 7 of the side wall panel 6, folded before, so as to obtain a tubular element 100.

Obviously, such operations provoke also folding of the wings 20 in respect to the central part 18 of the flap 16; in fact the wings 20 follow the front panels 3, 4 of the blank against which they are leaning.

The package is closed by subsequent folding of the folds 10a, 10b and 11a, 11b and the bottom- and lid-forming flaps 8a, 8b and 9a, 9b which overlap each other and are glued to the facing surfaces.

Obviously, the package is filled with the product in a proper phase.

It is to be observed that the closed package is perfectly tight, since the flap 16 covers completely the cutting line 14 and the perforated lines 15 of the tab 12 (see also Fig. 4).

Therefore, it is not necessary to reline the inside of the package, what would be advisable if the perforated lines 15 had passing notches.

In order to open the package 2, the tear flap 12 is pressed so as to be detached along the perforated lines 15. The same action provokes also the detachment of the central part 18 of the flap 16 from the strip 21 along the breaking line 22.

The strip 21 remains attached to the part of the side wall panel 5 that is over the tear flap 12.

The tear flap 12, that has the folded flap 16 attached thereto, can be turned outwards in correspondence with the creasing line 13.

In this way, a pouring spout 200 is obtained, delimited laterally by the wings 20 (Fig. 3).

It is to be noticed that the arcuate part 20a of the wings serves as the spout 200 opening guide, while the following divergent part 20b defines a shoulder that, striking against the strip 21, acts as a stop to the spout opening rotation (Fig. 5).

The part 20b, in an embodiment different from the one illustrated in Fig. 5, can be so shaped as to match the strip 21 when the pouring spout is opened.

As a result of such strip 21 shape, the mechanical stress exerted by the part 20b acts on a surface bigger than the surface stressed in the example of the Fig. 5, therefore the possibility of breaking and/or tearing of the relative wing is reduced.

After the product has been poured out, the package 2 can be reclosed by pressing the spout 200 inwards. In the closing position, the tear flap 12 top leans against the strip 21, so that the packaged product is not wasted and its maintenance is guaranteed.

Therefore, the described method allows also for the production of a cardboard package with a reclosable opening provided with spout that is aimed at pouring out the packaged product in optimal way.

The production of such a package is simple and economically convenient, since it is obtained from a blank of cardboard without the use of special devices.

This derives from the fact that the shaped flap, that is to form the spout, is attached to the blank when it is still spread. Likewise, such a spout is made of cardboard, therefore, besides reduced cost, it does

not cause tearing of the package.

It is also to be pointed out that the width of the spout is equal with the width of the package whole side. This feature facilitates the pouring out of the packaged product, especially in case of goods of big dimensions, as pasta and the like.

Claims

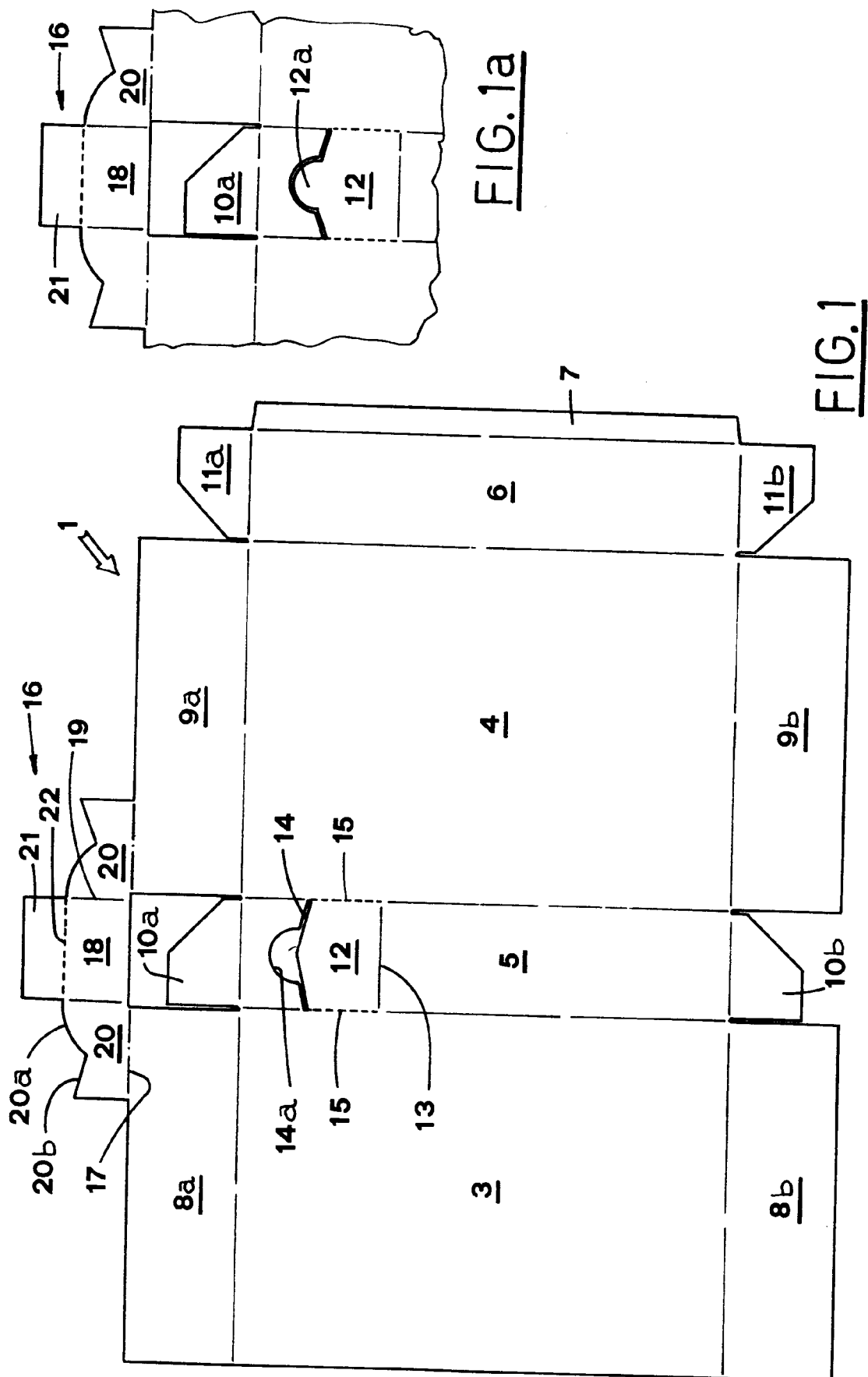
1. Method for the production of packages from blanks of sheet material, in which special folding and cutting lines define front and back panels (3,4) and side wall panels (5,6) that form the opposite walls of a package (2), and lid- and bottom-forming flaps (8a,8b;9a,9b) that extend from the opposite ends of said front and back panels (3,4) for the closure of the same package (2), characterised in that it includes:
detaching a shaped flap (16) joined to said lid-forming flaps (8a,9a) by perforated lines (17) and forming a kind of a bridge between the same flaps (8a,9a), astride of one of said side wall panels (5); attaching said flap (16) to the surface of said blank (1) that is designed to be turned inside the said package (2), in correspondence with a tear flap (12) defined by a cutting line (14) and by perforated lines (15) on said side wall panel (5), so that the same flap (16) has a couple of wings (20) spread very close to said front and back panels (3,4) of the blank (1);
folding said front and back panels (3,4) and said side walls panels (5,6) of the blank on planes reciprocally orthogonal, in order to obtain a tubular element (100), causing also folding of said wings (20) with respect of a central part (18) of said flap (16) connected with said side wall panel (5), said wings (20) extending besides said front and back panels (3,4) so as to form side walls of a spout (200) that can be tipped outwards and that is frontally defined by said tear flap (12).
2. Package obtained from a blank of sheet material, in which folding and cutting lines define front and back panels (3,4) and side wall panels (5,6) forming the opposite walls, and lid- and bottom-forming flaps (8a,8b;9a,9b) that extend from the opposite ends of said front and back panels (3,4) in order to close the same package, the said package being characterised in that it provides, on one of said side wall panels (5), a spout (200) that can be tipped outwards, formed by a tear flap (12) defined by a cutting line (14) and by perforated lines (15), said tear flap (12) being delimited by a creasing line (13) transversal to the same side wall panel (5) and having attached at the back a shaped flap (16) provided with a couple of lateral wings (20), spread besides said front and back

panels (3,4) so as to form the side walls of said spout (200).

3. Package according to claim 2, characterised in that said shaped flap (16) has a central part (18) that extends onto the said side wall panel (5) and projects upwardly in a strip (21), delimited by a breaking line (22), said strip being attached to the part of said side wall panel (5) over said tear flap (12), so as to form a support for the top of the same tear flap (12), in the closing position of said spout (200). 5
4. Package according to claim 2 characterised in that said wings (20) are shaped outside so as to have, beginning from a region connected to a central part (18) of said flap (16), an arcuate convergent part (20a) followed by a rectilinear divergent part (20b), thus forming dovetail-like wings. 10 15
5. Package according to claim 2, characterised in that said cutting line (14) is made transversally to said side wall panel (5) according to a profile defining a kind of cusp of said tear flap (12), the same cutting line (14) having a kind of a semi-circular cut-out (14a) on the said side wall panel (5) in correspondence with said cusp of the tear flap (12). 20 25
6. Package according to claim 5, characterised in that in correspondence with said cusp, said tear flap (12) follows the profile of the said semi-circular cut-out (14a) with a rounded part (12a). 30
7. Package according to claim 2, characterised in that said perforated lines (15) extend from said creasing line (13), transversal to said side wall panel (5), and match with the lateral corners of the same side wall panel (5), until they join said cutting line (14). 35 40
8. Blank for the production of packages made from sheet material, in which special folding and cutting lines define the front and back panels (3,4) and the side wall panels (5,6) that form the opposite walls of a package (2), and the lid- and bottom-forming flaps (8a,8b;9a,9b) that extend from the opposite ends of said front and back panels (3,4) for the closure of the same package (2), the said blank being characterised in that it includes a shaped flap (16) joined to a pair of lid-forming flaps (8a,9a), in correspondence with perforated lines (17), so as to form a kind of a bridge between the same flaps (8a,9a); said flap (16) being destined to be separated from the same lid-forming flaps (8a,9a) and to be attached to the surface of the blank that is to be turned inside said package (2), in correspon- 45 50 55

dence with a tear flap (12), defined by cutting line (14) and by perforated lines (15) made on said side wall panel (5), so that the same flap (16) has a couple of wings (20) spread beside said panels (3,4).

9. Blank, according to claim 1, characterised in that said shaped flap (16) has a central rectangular part (18) that extends in correspondence with said side wall panel (5) and is laterally delimited by a couple of creasing lines (19) with respect to said opposite wings (20), said wings (20) being respectively connected with said lid-forming flaps (8a,9a) along said perforated lines (17).
10. Blank, according to claim 1, characterised in that said wings (20) are shaped outside so as to have, starting from the region connected to a central part (18) of said flap (16), an arcuate convergent part (20a) followed by a rectilinear divergent part (20b), thus forming dovetail-like wings.
11. Blank, according to claim 1, characterised in that said shaped flap (16) has a central part (18) that extends in correspondence with said side wall panel (5) and projects upwardly in a strip (21), delimited by a breaking line (22), said strip being destined to be attached to the part of said side wall panel (5) over said tear flap (12).
12. Blank, according to claim 1, characterised in that said cutting line (14) is made transversally to the said side wall panel (5) according to a profile defining a kind of cusp of said tear flap (12), the same cutting line (14) forming a semi-circular cut-out (14a) on the said side wall panel (5) in correspondence of said cusp of the tear flap (12).
13. Blank, according to claim 5, characterised in that in correspondence with said cusp, said tear flap (12) follows the profile of the said semi-circular cut-out (14a) with a rounded part (12a).
14. Blank, according to claim 1, characterised in that said perforated lines (15) extend from a creasing line (13), transversal to said side wall panel (5), and match with the lateral corners of the same side wall panel (5), until they join said cutting line (14).



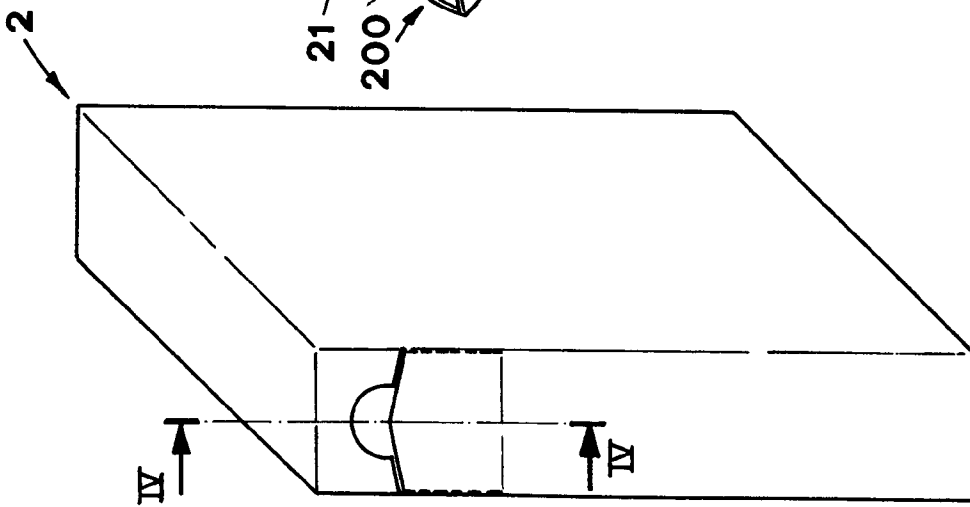
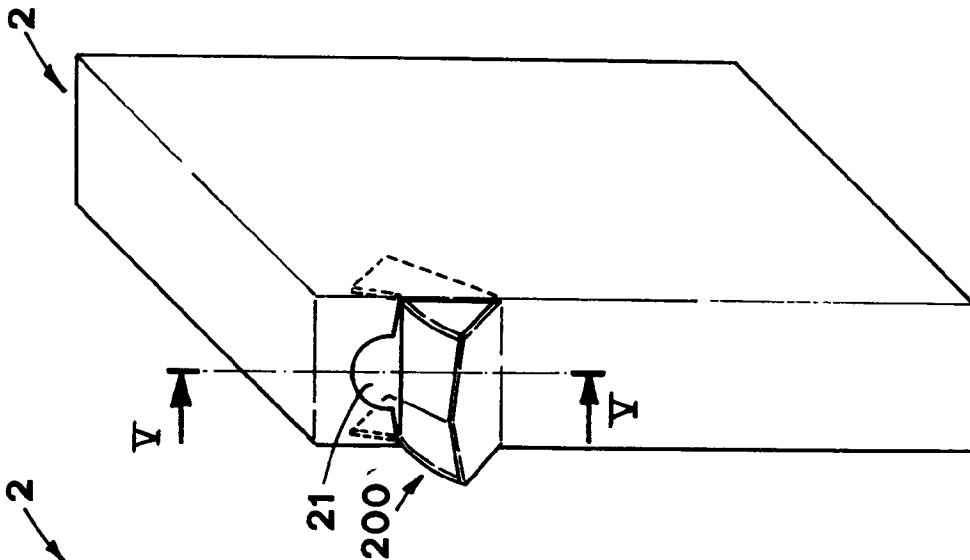
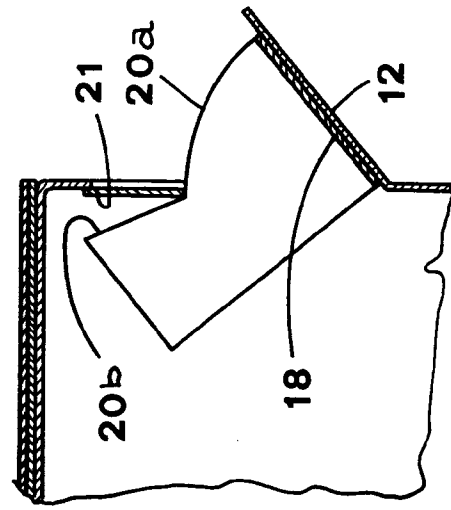
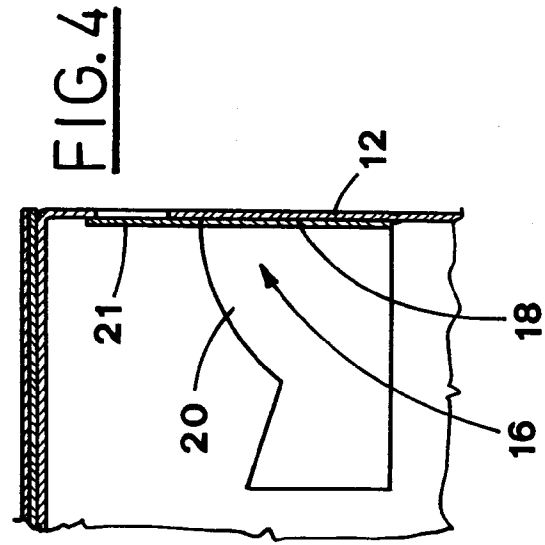


FIG. 6

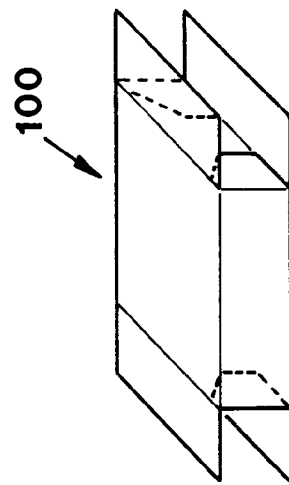
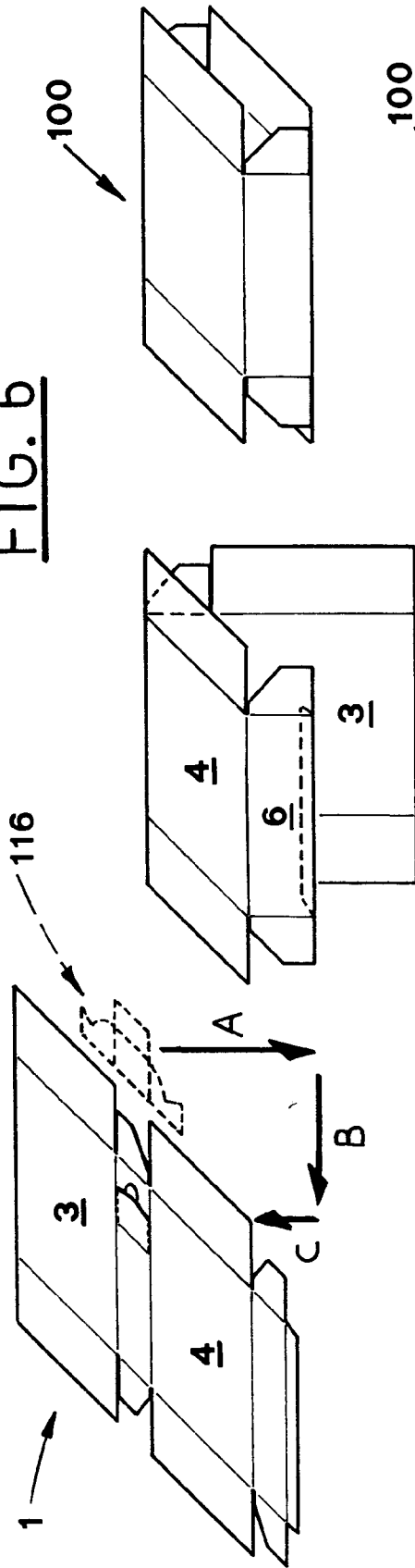
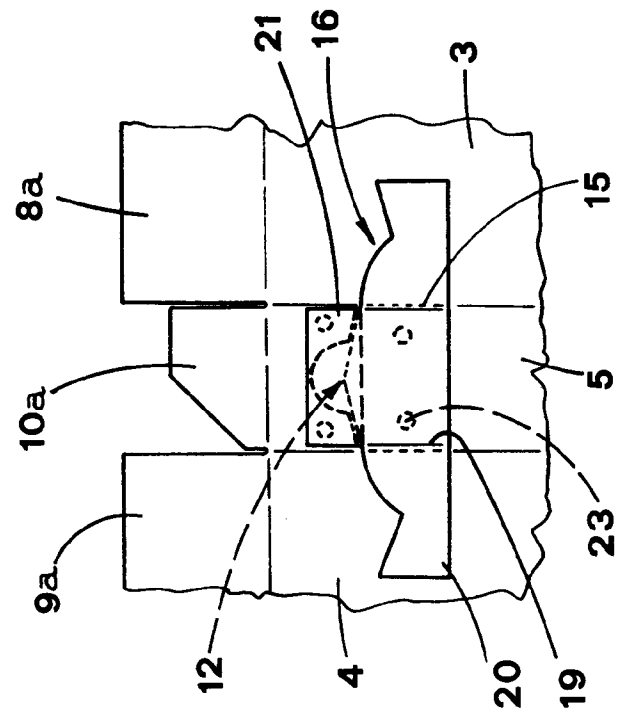


FIG. 7





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 94 83 0192

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CLS)
X	EP-A-0 200 018 (CP SCHMIDT VERPACKUNGS-WERK GMBH & CO. KG) * column 14, line 22 - column 15, line 31; figures 49-52 * ---	1,2,4,5, 7,8,10, 12	B65D5/74
X	WO-A-90 09324 (PROFESSIONAL PACKAGING LIMITED) * page 16, line 19 - page 17, line 14; figures 1,10 * ---	1-3,8	
A		4,5,9,11	
X	DE-U-88 12 107 (EFKADRUCK GMBH) * page 7, paragraph 2 * ---	2 8	
A	EP-A-0 295 503 (EFKADRUCK GMBH) * column 7, line 36 - line 49; figures 1,2 * -----	1-5,8	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			B65D
Place of search BERLIN		Date of completion of the search 14 July 1994	Examiner Deprun, M
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