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(54) **A packaging blank for a container**

(57) A blank (11) for a prismoidal shaped package (40), said blank comprising three rectangular panel (12,19,21) and two substantially congruent triangular panels (13,14), and a one rectangular panel (12) has the two triangular panels (13,14) connected through fold lines to opposite sides thereof, at least one of said trian-

gular panels (14) being connected through a fold line (17 or 18) on at least one of its other two sides to a second rectangular panel (19 or 21). The invention also provides a method of machine assembly of the blank around a sandwich to provide a packaged sandwich.

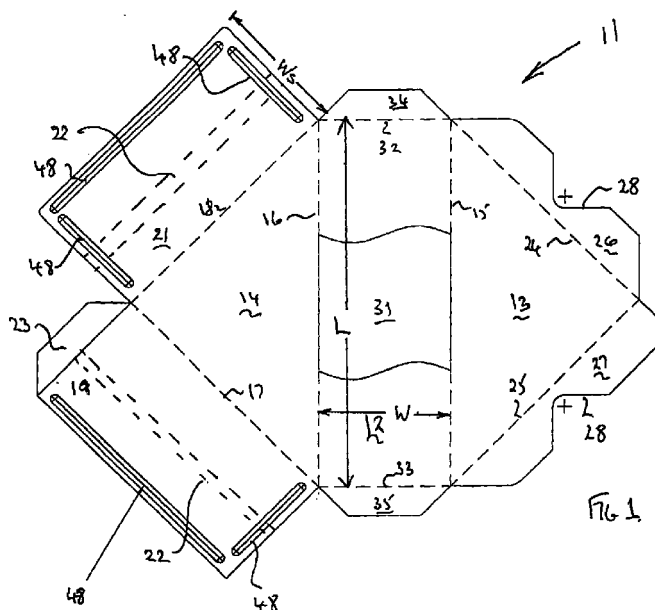


Fig 1

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Description

Field

[0001] This invention relates to a packaging blank for assembly into a container, particularly for sandwiches, and to a method of packaging sandwiches.

Background of the Invention

[0002] Most commercially prepared sandwiches of the type sold in supermarkets are triangular in shape and are sold in packs of two or three sandwiches per pack with the triangular sandwiches arranged side-by-side. These packs are therefore prismatoid in shape and are typically formed from plastic material which is moulded or formed to the correct shape container.

[0003] Impending legislation requires that packaging for all goods should be easily recyclable. Since cardboard packaging is more readily recyclable than the plastic packaging it is desirable for sandwiches to be sold in cardboard packaging.

[0004] The present invention provides a blank which is suitable for use in commercial packaging machines for packaging sandwiches, and to a method of packaging sandwiches.

Statements of Invention

[0005] According to the present invention there is provided a blank for a prismoidal shaped package, preferably for machine packaging of sandwiches, said blank comprising three rectangular panel and two substantially congruent triangular panels wherein one rectangular panel has the two triangular panels each connected through a first fold line to opposite sides thereof, and at least one of said triangular panels is connected through a second fold line on at least one of its other two sides to a second rectangular panel.

[0006] The blank is preferably made from carton board, typically cardboard.

[0007] A sandwich pack typically contains two or three sandwiches which may be previously wrapped in thin film. If the sandwiches are not wrapped in film the carton board must be coated in a non absorbent coating.

[0008] Preferably the third rectangular panel is foldably connected to said one rectangular panel, and is preferably connected through a fold line at the third side of said one triangular panel.

[0009] Preferably, the other triangular panel has a flap foldably connected thereto on at least one side thereof.

[0010] Conveniently said other triangular panel has a second flap foldably connected to its other side thereof, and the two flaps are in use each wrapped around a respective edge of a sandwich pack. Preferably, each flap extends substantially the full length of its

respective side and is formed with a cut-out allowing the flap to be folded around an edge of a sandwich pack with any support means being accommodated within the cut-out.

[0011] An aperture may be provided in at least one rectangular panel for viewing the sandwich. If the sandwich is not wrapped in transparent film, the aperture must be provided with a transparent window material, for example cellulose acetate, which is adhered to the inner surface of the assembled package.

[0012] Preferably, at least one rectangular panel is provided with a longitudinal tear line running the length of the side wall substantially parallel to or in alignment with the adjacent fold line.

[0013] The invention also applies to a method of commercial packaging of triangular sandwich packs containing at least one sandwich having three edges and two triangular faces. In said method a blank according to the present invention is machine wrapped around the pack to form a prismoidal package enclosing the pack whilst said pack is supported on two of its edges, and the blank is placed against the third exposed edge of the pack and is folded around the faces, the blank having portions which can be folded around at least one the supported edges without removal of the support means.

[0014] The first rectangular panel is placed against said exposed edge and the triangular panels are folded to lie against the triangular faces of the sandwich pack, and flaps on the other triangular panel are wrapped around at least a portion of one edge whilst said edge is supported. The two side wall panels may be folded around the respective edges of the pack as the support means is withdrawn or removed, and are secured to said other side face.

[0015] Also according to another aspect of the invention there is provided a prismoidal package, preferably made from carton board and which is intended for packaging a triangular sandwich pack, wherein the package has a first elongate rectangular panel with a pair of substantially congruent triangular panels connected by fold lines one on each opposite side of the first rectangular panel, one of said triangular panels being connected through a second fold line on each of its other two sides to a respective further rectangular panel, the five panels being secured together through flaps as desired.

Description of Drawings

[0016] The invention will be described by way of example and with reference to the accompanying drawings in which :

- Fig. 1 is a cardboard blank according to the invention,
Fig. 2 is an isometric drawing showing a sandwich package formed from the blank of

- Fig. 1, shows a sandwich pack as supported during the packaging process,
- Figs. 4 a-d are schematic drawings showing an end view of the folding process for the blank around a sandwich pack,
- Fig. 5 is an isometric view of apparatus for folding the blank around a sandwich pack.
- Fig. 6 is a cardboard blank according to a second embodiment of the Invention, and
- Fig. 7 is a further blank according to yet another aspect of the Invention.

Detailed Description of the Invention

[0017] With reference to Figure 1 there is shown a blank 11 for a five sided prismoidal container 40 (shown in Fig.2) which is particularly used for sandwiches. The blank is preferably made from carton board, in particular cardboard, typically 150-700 micron board, and more typically about 450 micron board, and may be coated on the inner surface if desired.

[0018] The blank 11 has a rectangular base panel 12 having a length L and width W to suit the dimensions of the sandwich pack to be enclosed in the container. A typical commercially made sandwich is in the form of an isosceles triangle made by diagonally cutting substantially square slices of bread with the bread crust forming two sides of substantially the same length and the cut edge forming the hypotenuse. In use the base panel 12 will sit against the cut edge of the sandwich and the length L of the panel will be standardised and its width W will vary depending upon the thickness of the bread slice, and the number of sandwiches to be packaged.

[0019] The base panel 12 has a pair of triangular face panels 13 and 14 located one on each opposite longer side of the base panel 12 and which are connected thereto by respective first fold lines 15 and 16. The face panels 13,14 have the form of identical right angle isosceles triangles, with the respective hypotenuse being formed by the respective fold lines 15 and 16. In use the face panels lie next to the triangular faces of the sandwich pack.

[0020] One of the triangular face panels 14 has its other two sides bounded by second fold lines 17 and 18 which intersect normally at the apex of the triangle. A pair of rectangular side wall panels 19,21 are each connected to said one face panel 14 through a respective fold line 17 or 18. The width Ws of each side panel 19 and 21 will be substantially equal to the width W of the base panel 12. Both side panels have a longitudinal tear strip 22 running the length of the panel at about their mid width so that the strips align in the assembled package. One of the sidewalls 19 has a foldable flap 23 at its end adjacent the other sidewall to provide a connection between the sidewalls 19 and 21 on assembly.

[0021] The other triangular face panel 13 is also

bounded by fold lines 24,25 which intersect normally at the apex of the triangle. A pair of flaps 26,27 are each connected to the face panel 13 through a respective fold line 24,25. Each flap 26,27 extends along the length of the respective side of the triangle, preferably for substantially the full length and at its approximate mid-length has a cut-out 28 which is shaped to accommodate a support for the sandwich pack during mechanical packing as will be explained later.

[0022] The base panel 12 may include an aperture 31 for viewing any sandwiches in the package. The aperture 31 may be covered in a transparent window film if required. The aperture may be any desired size or shape. The aperture 31 may fill the full width of the base panel 12 if desired and may vary in length upto a maximum of about 90mm. The ends of the base panel 12 are connected at each end through fold lines 32,33 to an end flap 34, 35. The end flaps 34,35 in use connect the base panel 12 to the side wall panels 19,21.

[0023] With reference to Figure 2 there is shown a prismoidal package 40 which is formed from the assembled blank 11 as is described below.

[0024] Now with reference to Figures 3 and 5, during the packaging process a sandwich pack 41 which has been previously wrapped in transparent thin film, is supported in a packaging machine 50 on a pair of spaced supports 42 which in this case are rods but can be any desired shape, with the cut edges 43 of the sandwiches directed upwards and the crusts resting against the rods 42.

[0025] The pack 41 is moved through the apparatus 50 by a conveyor 44 and a flat blank 11 is placed onto the pack 41 with the base panel 12 resting on the cut edge 43 (see Fig. 4a). The sandwich pack 41 and blank 11 are passed onto a support cradle 46 and lifted up through folding rods 45, or a tunnel, to fold the face panels 13, 14 and flaps 34,35 downward around the pack 41 (see Fig.4b).

[0026] The flaps 26,27 are then folded around the pack 11 with the support cradle 46 in situ, the cut-outs 28 allowing the flaps to be folded around the rods of the cradle 46 (see Fig.4c).

[0027] The sidewalls 19,21 are then folded around the pack 41 as the sandwich pack is pushed onto a V-shaped cradle 47. The sidewall flap 23 is located internally of the sidewalls 19 and 21 in the assembled package (Fig.4d). The assembled package exits the folding machine via conveyor belt 49.

[0028] Any adhesive 48 may be applied to the blank 11 where required before the folding process begins.

[0029] Now with reference to FIG 6, there is shown a blank 61 which is substantially similar to the blank shown in Fig. 1 and only the differences will be described. The base panel 62 has a rectangular aperture 71 and the fold lines 65,66 are also formed as tear lines to facilitate opening the package. Further tear lines 72 pass from adjacent corners of the aperture 71 across the triangular side panels 63,64 at a bias to the

fold lines 65,66 again facilitating the opening of the package.

[0030] The other two side wall panels 69 and 73 although substantially rectangular taper in width being narrower at the mutually adjacent ends 75 by about 5mm over a length of about 120mm. The taper is effected by inclining both longitudinal sides 76 77 of the panels inwardly towards each other at an angle of about 1.25 degrees. Other degrees of inclination may be chosen as is desired to achieve other tapers. The slight taper to these panels produces a package 40 which is slightly narrower at its right angle apex. This helps to grip any sandwich placed in the pack.

[0031] Yet another blank 101 according to the present invention is shown in Fig.7. The blank has a substantially rectangular base panel 102 having triangular panels 103 104 connected to opposite sides thereof through fold lines 105 106 respectively. A flap 108 is located at one end of the base panel and triangular panels 103, 104 are arranged with the right angle apices at the other end of the base panel 102 and the fold lines 105,106 form one of the equal sides of the isosceles triangle.

[0032] One of the triangular panels 104 is connected at its hypotenuse to a second rectangular panel 121 through fold line 108. A flap 122 is connected to the opposite side of the second rectangular panel through a fold line 123. The flap 122 may have a locking tab 124 formed on its edge. An aperture 124 is provided in the panel 121, and the fold lines 108, 123, may be formed also as tear lines as previously described with reference to Fig. 6

[0033] The third rectangular panel 109 is directly connected through a fold line 107 to one end of the base panel 102 so that the fold line 107 aligns with two sides of the triangular panels 103,104. Flaps 111,112,113 are connected to the third panel through fold lines 114-116. The rectangular panels 102,109 may be tapered as previously described with the narrow ends interconnecting through the fold line 107.

[0034] The blank 101 is assembled by folding the flaps 111 & around the rectangular panel 109 and simultaneously folding the base panel 102 at the fold line 107 and the triangular side panels 103 104 around the base panel 102 allowing the flaps 111 & 112 to be glued to the sides of the panels 103,104.

[0035] A sandwich pack can now be placed in the prismoidal cavity and the rectangular panel 121 closed across the rectangular mouth of the cavity to form the prismoidal package. The flaps 113 and 102 are folded about their respective fold lines and the panel 121 is folded about fold line 108 to close the package. The flap 122 is folded about the line 123 and the tab 124 is inserted into the aperture 125 to hold the panel 121 in place.

[0036] Adhesive is applied to the flaps 111-113, & 122 as required and the package is opened by means of the tear facility provided on the rectangular panel 121

adjacent the aperture 124.

Claims

1. A blank for a prismoidal shaped package, said blank comprising three rectangular panel and two substantially congruent triangular panels wherein one rectangular panel has the two triangular panels each connected through a first fold line to opposite sides thereof, and at least one of said triangular panels is connected through a second fold line on at least one of its other two sides to a second rectangular panel.
2. A blank as claimed in Claim 1, wherein said one triangular panel is connected through a fold line on its third side to the third rectangular panel.
3. A blank as claimed in Claim 2, wherein the first rectangular panel has a flap at each end thereof connected thereto through a respective fold line.
4. A blank as claimed in Claim 1, wherein the third rectangular panel is foldably connected to said one rectangular panel.
5. A blank as claimed in any one of Claims 1 to 4, wherein an aperture is provided in at least one of the rectangular panels.
6. A blank as claimed in any one of Claims 1 to 5, wherein at least one rectangular panel is provided with at least one line of tear perforations running longitudinally of the side wall substantially parallel to or aligned with the respective fold lines.
7. A blank as claimed in Claim 2, Claim 3, or Claim 5 or Claim 6 when dependant upon Claim 2, wherein the other triangular panel is connected through a fold line on at least one of its other two sides to a respective flap which extends along its respective side and has a cut out therein which in use accommodates a support for the sandwich pack used during a machine packaging process.
8. A blank as claimed in any one of Claims 1 to 7, wherein two of the rectangular panels have slightly tapering widths with the narrower ends adjacent each other and being located at the right angle corner of said one triangular panel.
9. A prismoidal package formed from a blank as claimed in any one of claims 1 to 8.
10. A method of packaging by packaging machine a triangular sandwich pack containing at least one sandwich having three edges and two triangular faces, wherein in said method a blank according to

any one of claims 1 to 8, is wrapped around the pack to form a prismoidal package enclosing the pack whilst said pack is supported on two of its edges, the blank being placed against the third exposed edge of the pack and folded around the faces, and the blank having portions which can be folded around at least one the supported edges without removal of the support means.

11. A method as claimed in Claim 10, using a blank has according to Claim 7, wherein said first rectangular panel is placed against said exposed edge and the triangular panels are folded to lie against the triangular faces of the sandwich pack, and said flap is wrapped around at least a portion of one edge whilst said edge is supported.
12. A method as claimed in Claim 11 wherein the other triangular panel has two flaps each foldably connected to a respective side thereof, and each flap is wrapped around a respective edge of the sandwich pack.
13. A method as claimed in Claim 11 or Claim 12, wherein the flap is folded around the edges with support means being accommodated within the cut-out.
14. A method as claimed in any one of Claims 10 to 13 for use with a blank according to Claim 3, wherein the two triangular panels are folded around the two edges of the pack as the support means is withdrawn or removed, and secured to said one side face.

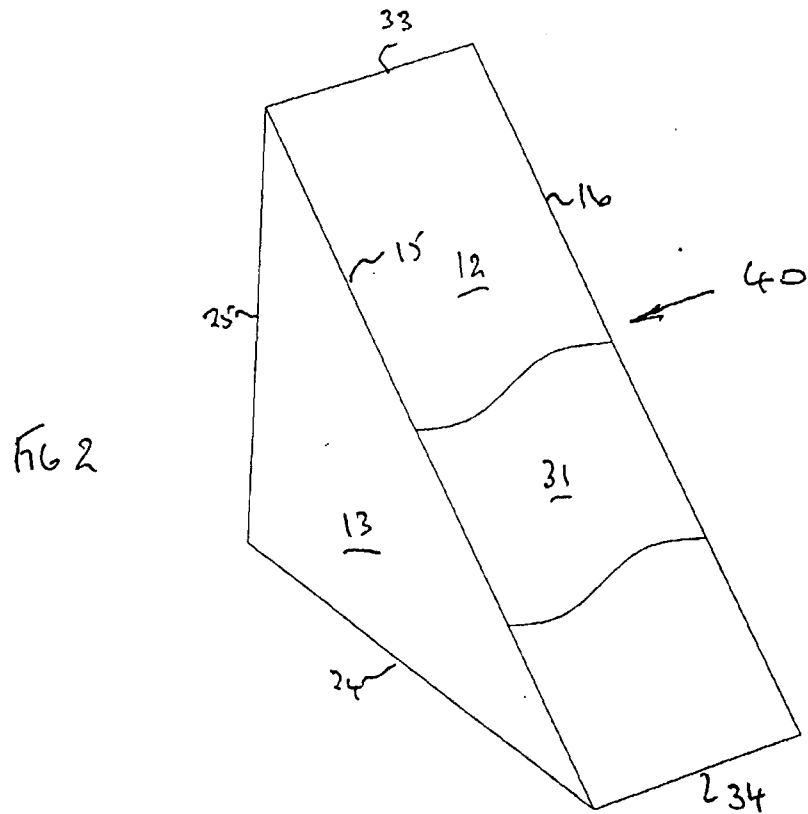
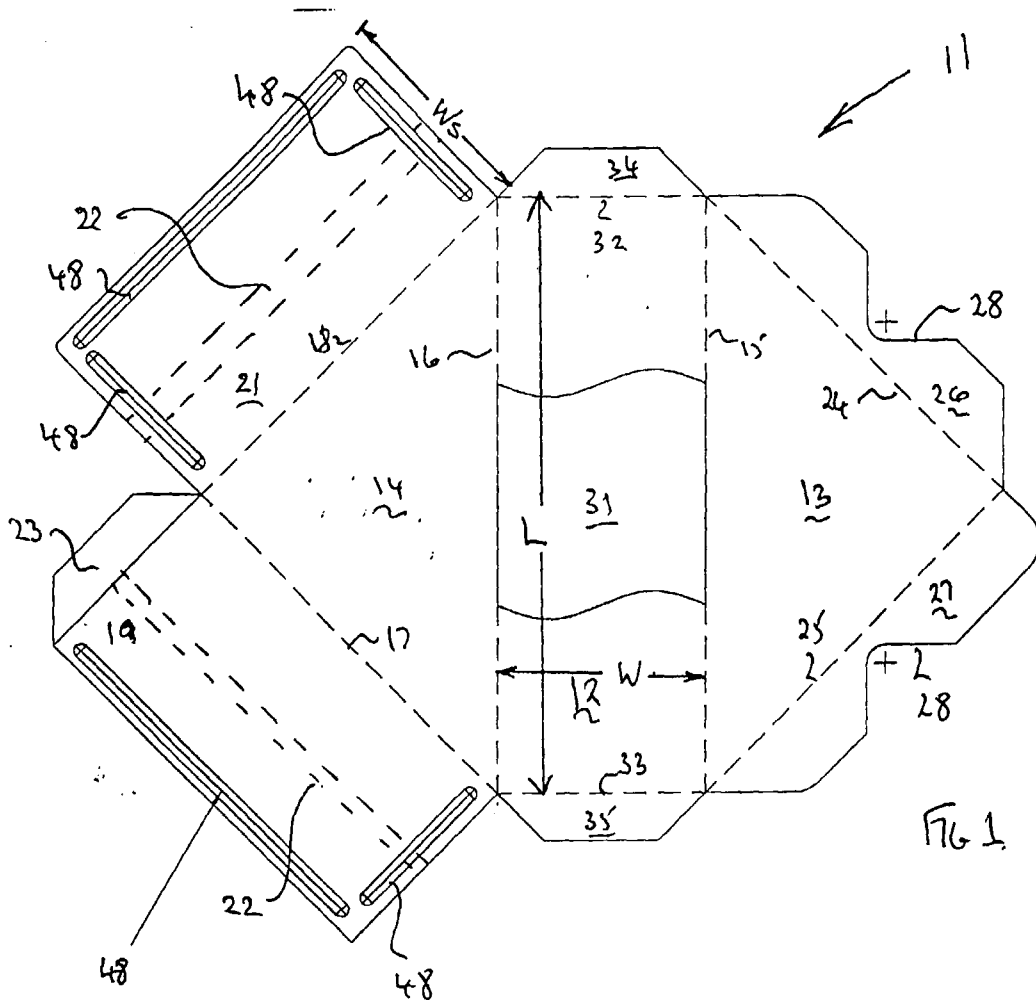


Fig 3

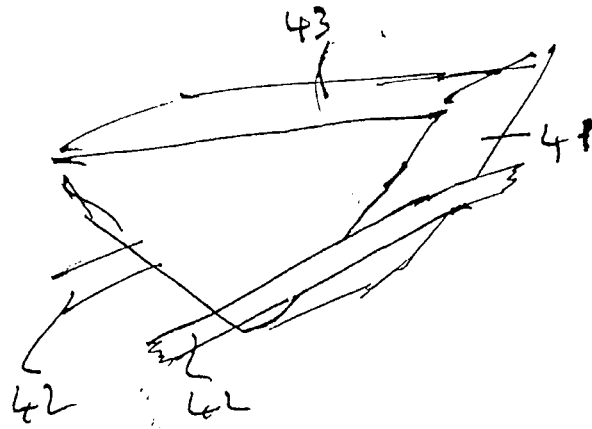


Fig 4(a)

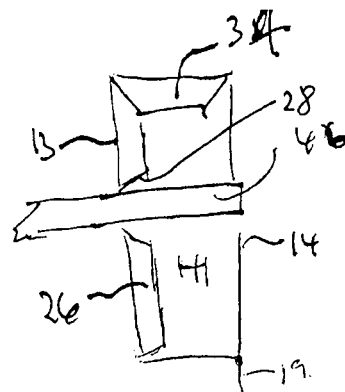
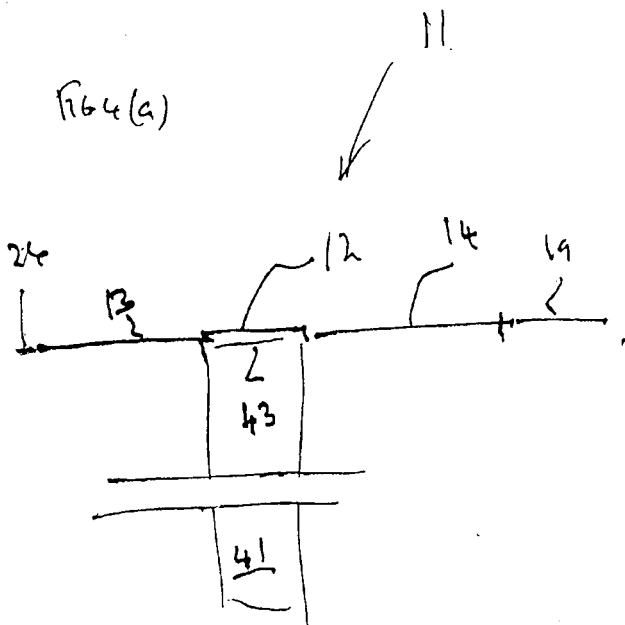


Fig 4(c)

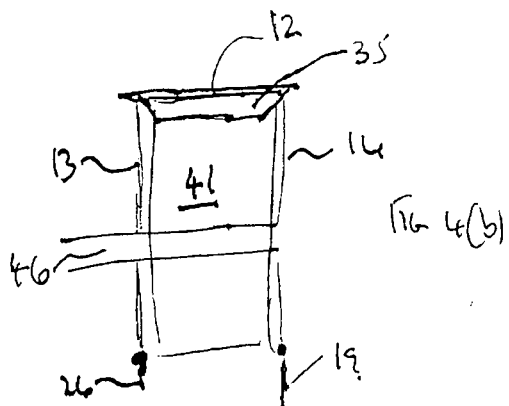


Fig 4(b)

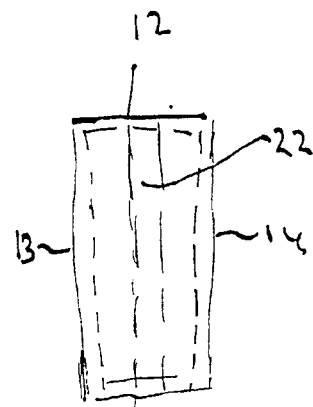
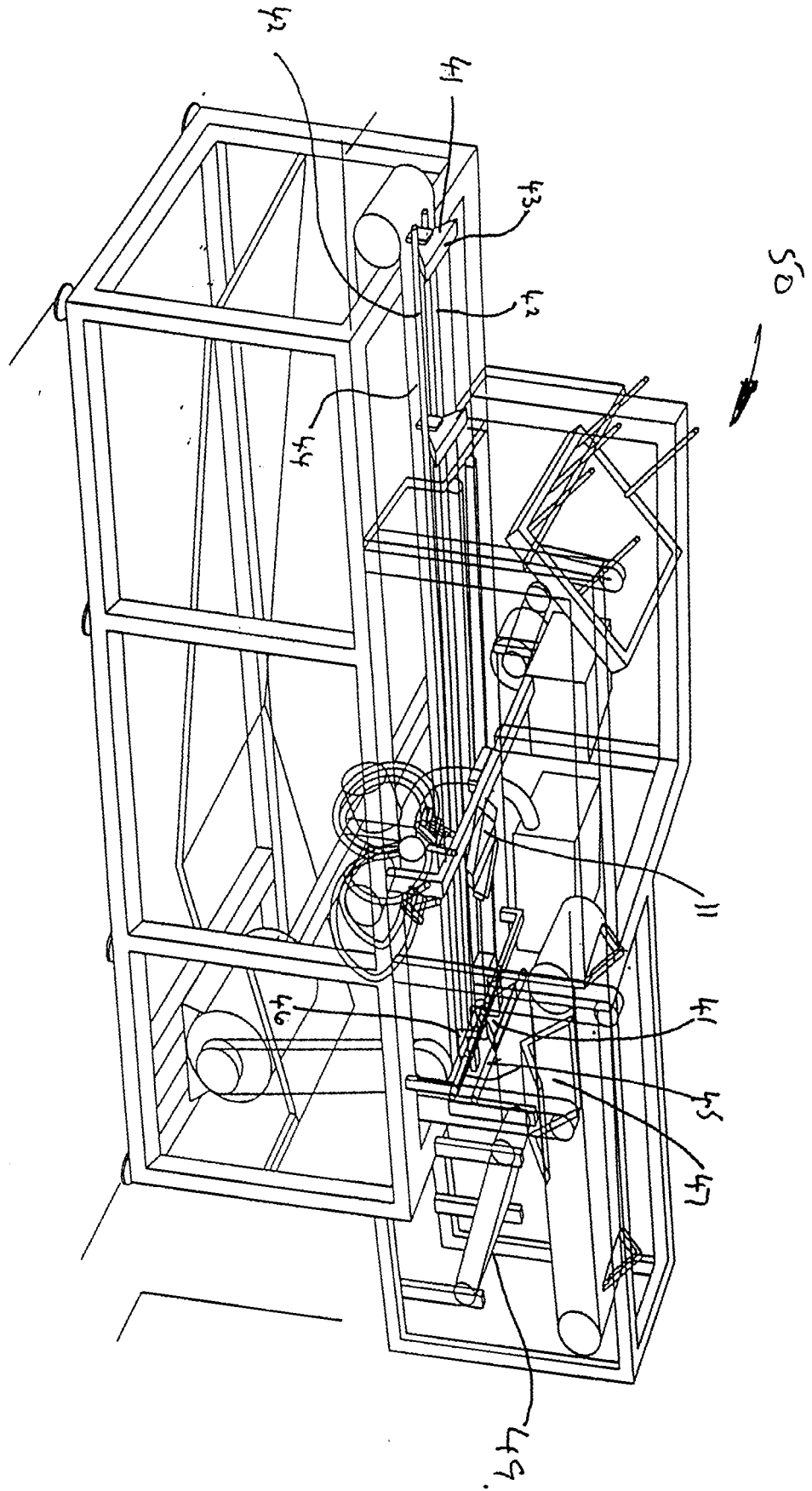


Fig 4(d)

Fig 5



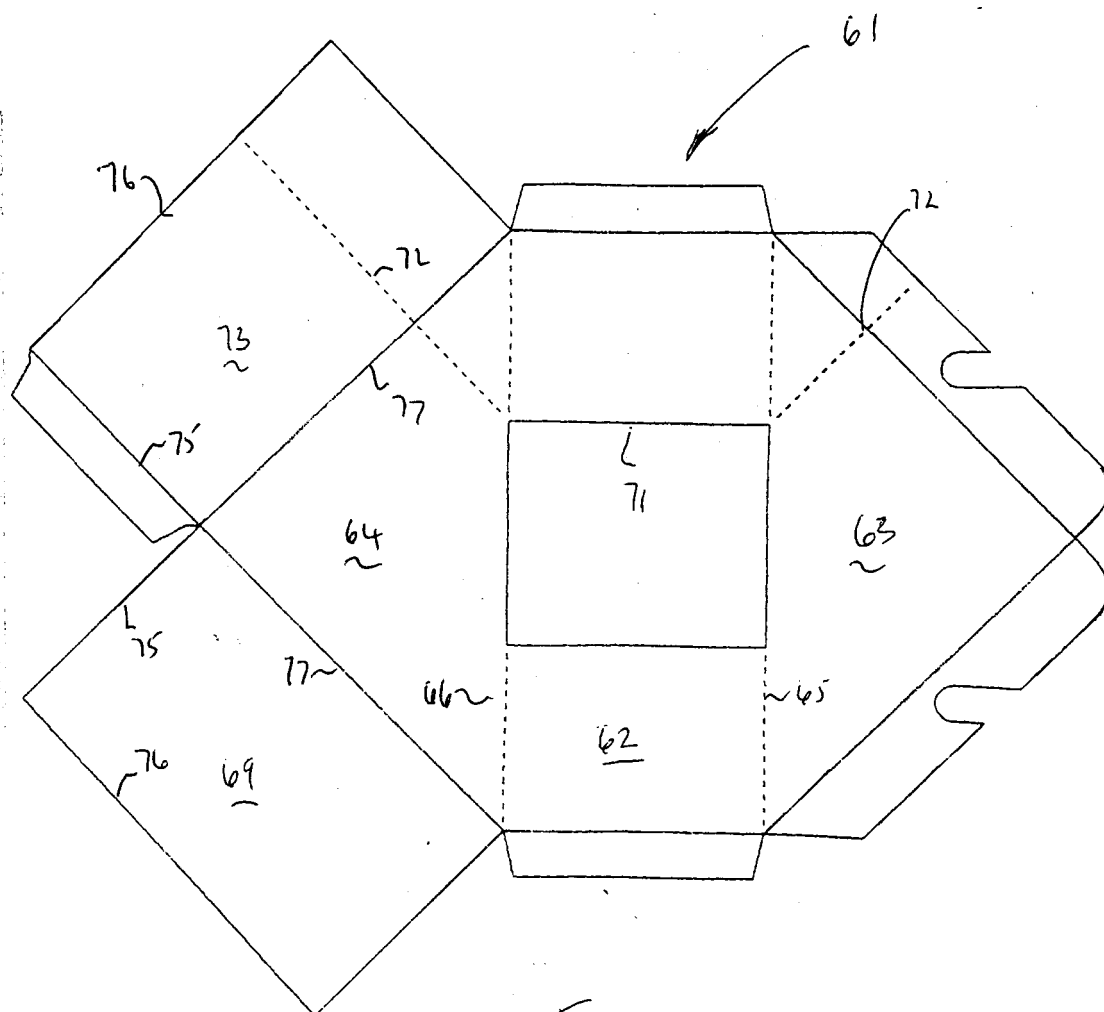
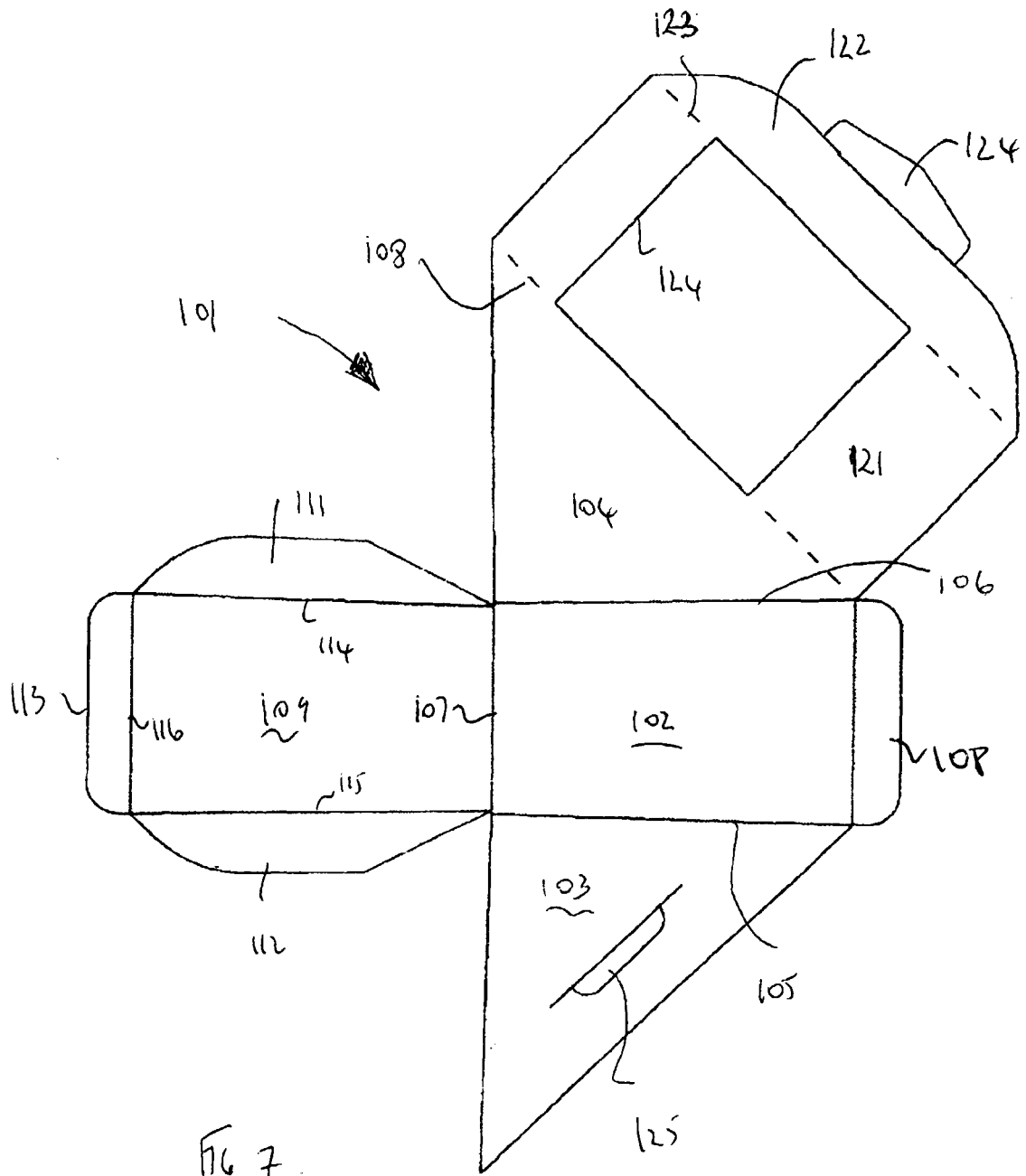


FIG. 6





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EUROPEAN SEARCH REPORT

Application Number
EP 00 30 0482

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Place of search THE HAGUE		Date of completion of the search 13 April 2000	Examiner Mr Luca del Monte
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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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