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- (71) **Applicant** (*for all designated States except US*): **INTER IKEA SYSTEMS B.V.** [NL] [NL/NL]; Olof Palmestraat 1, NL-2616 Delft (NL).
- (72) **Inventor; and**
- (75) **Inventor/Applicant** (*for US only*): **MAXIMOWITZ, Ingrid** [SE/SE]; Danska vägen 10, S-343 31 Älmhult (SE).
- (74) **Agent:** **KARLSSON, Leif**; Ström & Gulliksson AB, P.O. Box. 4188, S-203 13 Malmö (SE).
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- (54) Title:** BLANK FOR FOLDING TO FORM A RECEPTACLE, AND SUCH RECEPTACLE

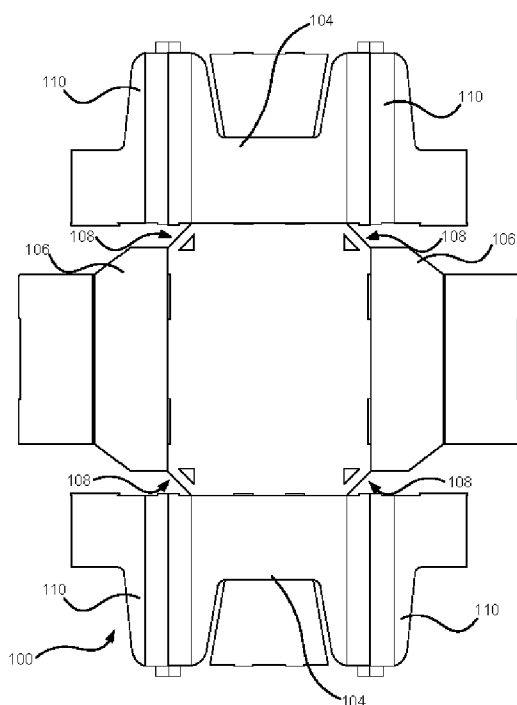


Fig. 1

- (57) Abstract:** A blank (100) for folding to form a receptacle (150) is disclosed. The blank (100) comprises a one-piece board having a base portion (102), at least one first side portion (104) protruding from the base portion (102), and at least one second side portion (106) protruding from the base portion (102). The first side portion (104) and the second side portion (106) are arranged to meet at a corner position when folded to essentially perpendicular direction from the base portion (102). The first side portion (104) comprises a protruding element (110) arranged to form three angular folds (112, 113, 114) at the corner position such that two outward edges and one inward edge is formed. The edges are extending essentially perpendicular to the base portion (102) and are essentially mutually parallel. The distal part (116) of the protruding element (110) extends along the second side portion (106) from the edge being closest to the second side portion (106) when the blank (100) is folded to form the receptacle (150). Folding of the blank (100) and a receptacle (150) formed of the blank (100) are also disclosed.

TITLE: BLANK FOR FOLDING TO FORM A RECEPTACLE, AND SUCH RECEPTACLE

5 Technical field

The present invention relates to a blank for folding to form a receptacle, and to such a receptacle.

Background

10 Receptacles, such as cardboard boxes, are widely used both for storing, shipping and exposing articles. There is a benefit if the receptacle is easy to produce, transport, and use. It is further an advantage if it consumes only a reasonable amount of material. It is often also desired that the receptacle not only is strong enough to carry the articles it is intended to carry, but also strong
15 enough to be able to be stacked.

 GB 2188036 A discloses a box that has reinforcement means to enable stacking of such boxes. The box is an open tray box formed from three preformed sheets of cardboard, wherein one sheet form a base and sides of the tray and the two other sheets act as reinforcing elements fitted inside the box to provide a
20 double-wall structure at opposite sides. The reinforcing elements are folded at its ends to provide a dihedral which has two walls adapted to fit in each corner of the box to provide brackets on which another box can be rested to form a stack.

 Although the box disclosed in GB 2188036 A provides reinforcing elements that enables stacking, there is a desire to provide an improved
25 receptacle in sense of any of ease of production, transport, and use.

Summary

 The present invention is based on the understanding that by making a receptacle of a single blank facilitates logistics connected to production,
30 distribution and use since all parts necessary to put the receptacle into a use state are available by the single blank. The invention is further based on the understanding that by providing three angular folds at each corner, stability of the receptacle is greatly improved, and edges of the folds will provide a bearing structure when receptacles are stacked.

According to a first aspect, there is provided a blank for folding to form a receptacle. The blank comprises a one-piece board having a base portion; at least one first side portion protruding from the base portion; and at least one second side portion protruding from the base portion. The first side portion and the second side portion are arranged to meet at a corner position when folded to essentially perpendicular direction from the base portion. The first side portion comprises a protruding element arranged to form three angular folds at the corner position such that two outward edges and one inward edge are formed. The edges are extending essentially perpendicular to the base portion and are essentially mutually parallel, and the distal part of the protruding element extends along the second side portion from the edge being closest to the second side portion, when folded to form the receptacle.

An advantage is that the corner folds provide improved stability, especially when receptacles are stacked. An advantage of the distal part of the protruding element extending along the second side portion from the edge being closest to the second side portion, when folded to form the receptacle, is that the one-piece board provides any forces at corner positions and the structure of the folds remain even under additional force, e.g. upon stacking.

The three angular folds may each be essentially L-shaped. An advantage is that the L-shape provides stability as the corner folds both forms an efficient bearing structure, and provides added lateral stability.

The base portion may comprise a first recess, and the protruding element, at its edge that meet the base portion when the blank is folded to form the receptacle, may comprise at least one first projecting element at a position between the most distal and the most proximal fold lines of the three angular folds such that the first recess is arranged to receive the at least one first projecting element when the blank is folded to form the receptacle. An advantage is that forming the receptacle is made easier. An advantage is that the corner structure is kept in the intended shape.

The base portion may comprise a second recess, and the protruding element, at its edge that meet the base portion when the blank is folded to form the receptacle, may comprise at least one second projecting element at a position distal to the most distal fold line of the three angular folds such that the second recess is arranged to receive the at least one second projecting element when the blank is folded to form the receptacle. An advantage is that forming the

receptacle is made easier. An advantage is that the wall structure is kept in the intended shape.

The base portion may comprise a first recess, and the protruding element, at its edge that is most distal to the base portion when the blank is folded to form the receptacle, may comprise at least one third projecting element at a position
5 between the most distal and the most proximal fold lines of the three angular folds such that the first recess of one receptacle is arranged to receive the at least one third projecting element from another receptacle when the blank is folded to form the receptacle, and such receptacles are being stacked. Alternatively, the
10 base portion may comprise a corner portion and the protruding element, at its part that is most distal to the base portion when the blank is folded to form the receptacle, may comprise at least one third element at a position between the most distal and the most proximal fold lines of the three angular folds such that the at least one third element of one receptacle is arranged to receive the corner
15 portion from another receptacle when the blank is folded to form the receptacle, and such receptacles are being stacked. The third element of one receptacle may be arranged to be folded to engage the corner portion of another receptacle when the receptacles are being stacked. An advantage of any of these is more rigid stacking.

20 The second side portion may comprise a first part proximal to the base portion to form a wall essentially perpendicular to the base portion when the blank is folded to form the receptacle. The second side portion may further comprise a second part distal to the base portion and arranged to be folded to clasp the distal part of the protruding element of the first side portion extending
25 along the second side portion when the blank is folded to form the receptacle. The base portion may comprise a second recess, and the second part of the second side portion may comprise a projecting element at its edge that meet the base portion when the blank is folded to form the receptacle, such that the second recess is arranged to receive the projecting element of the second part when the
30 blank is folded to form the receptacle. An advantage is that forming the receptacle is made easier. An advantage is that the wall structure is kept in the intended shape. An advantage is that joint between first and second side portions is improved. An advantage is that the sidewall strength is improved.

35 The first side portion may comprise a first part proximal to the base portion to form a wall essentially perpendicular to the base portion when the

blank is folded to form the receptacle. The first side portion may further comprise a second part distal to the base portion and arranged to be folded to essentially adjoin the surface of the first part when the blank is folded to form the receptacle, the base portion may comprise a third recess, and the second part of the first side portion may comprise a projecting element at its edge that meet the base portion when the blank is folded to form the receptacle such that the third recess is arranged to receive the projecting element of the second part of the first side portion when the blank is folded to form the receptacle. An advantage is that forming the receptacle is made easier. An advantage is that the sidewall structure is kept in the intended shape. An advantage is that the sidewall strength is improved.

The base portion may comprise, at a corner of the base portion, an angled edge between a one end of a boundary line to the first side portion and one end of a boundary line to the second side portion such that the angled edge form an opposite side of a triangle to the inward edge when the blank is folded to form the receptacle. An advantage is that the blank can be provided with further protrusions at side portions as the blank is made in one piece. An advantage is that the corner portion of the base is stronger and more resistant to tearing and wearing.

The material of the blank may be any of a group comprising cardboard, corrugated cardboard, fiberboard, plastic material, corrugated plastic, extruded twin-wall plastic sheet, and polypropylene resin. An advantage is that the blank and receptacle is very versatile in view of choice of material, and can thus be made for storing and transporting a large variety of goods.

According to a second aspect, there is provided a receptacle arranged to be formed from a blank according to the first aspect.

Further variants and advantages are provided in the detailed description.

Brief description of drawings

Fig. 1 illustrates a blank according to an embodiment.

Fig. 2 illustrates a part of the blank illustrated in Fig. 1.

Fig. 3 illustrates folding a receptacle from a blank according to an embodiment.

Fig. 4 illustrates stacking of receptacles according to an embodiment.

Fig. 5 illustrates a part of a blank according to an embodiment.

Fig. 6 illustrates stacking of receptacles according to an embodiment.

Detailed description

The disclosure of the preferred embodiment is provided for ease of understanding, resulting in a receptacle having numerous features. However, as can be readily understood from the description below, most of the features are optional, such as any of the recesses, protrusions, etc. Essential features to make the blank, and thus the receptacle, are only the one-piece board with a base portion, at least one first side portion protruding from the base portion, at least one second side portion protruding from the base portion, and a corner structure comprising multiple folds.

Fig. 1 is a front view of a blank 100 according to an embodiment. The blank comprises a base portion 102, a first side portion 104 protruding from the base portion 102, and a second side portion 106 protruding from the base portion 102. As will be demonstrated below, the first side portion 104 and the second side portion 106 are arranged to meet at a corner position 108 when folded to an essentially perpendicular direction from the base portion 102. Thereby, a receptacle of an open tray type is formed with a base and sidewalls. Here, it should be noted that “essentially perpendicular” should be construed broadly, where the sidewalls may be straight upright from the base, or slightly angled from a straight upright position such that a receptacle still with the stability achieved by the features demonstrated below.

Fig. 2 illustrates a part of the blank 100 of Fig. 1 magnified. The first side portion 102 comprises a protruding element 110 arranged to form three angular folds 112, 113, 114 at the corner position such that two outward edges and one inward edge is formed, as illustrated in Fig. 3, where the blank 100 is folded to form the receptacle. The edges are extending essentially perpendicular to the base portion 102 and are essentially mutually parallel. The distal part 116 of the protruding element 110 extends along the second side portion 106 from the edge 114 being closest to the second side portion 106. According to the illustrated embodiment of Fig. 3, the three angular folds are each essentially L-shaped. The three L-shaped folds provide a rigid structure that both stabilizes the receptacle, and is able to carry further receptacles when they are stacked. In further embodiments, angles of the folds 112, 113, 114 can be different, as long as the folds together provide a rigid structure, which is provided by the three,

distributed in two dimensions along the plane of the base portion 102, supporting points where the folds 112, 113, 114 meet the base portion 102 when folded to form the receptacle. In still further embodiments, further folds, e.g. a fourth and a fifth fold, can be provided. The three folds and the further folds are still arranged to provide stability according to the principle demonstrated for the three folds above.

Returning to Fig. 2, the base portion 102 can comprise a first recess 118 and the protruding element 110, at its edge that meet the base portion when the blank is folded to form the receptacle, comprises at least one first projecting element 120 at a position between the most distal 114 and the most proximal 112 fold lines of the three angular folds such that the first recess 118 is arranged to receive the at least one first projecting element 120 when the blank is folded to form the receptacle. In Fig. 2, the recess 118 is a triangular cut-out in the blank 100, and the first projecting element 120 is a single protrusion that folds with the middle fold 113. As an alternative, the recess 118 can be two slots and the first projecting element 120 can be two protrusions, one between the most proximal fold 112 and the middle fold 113, and one between the middle fold 113 and the most distal fold 114, mating the slots.

The base portion can comprise a second recess 122 and the protruding element 110, at its edge that meet the base portion 102 when the blank 100 is folded to form the receptacle, can comprise a second projecting element 124 at a position distal to the most distal fold line 114 such that the second recess 122 is arranged to receive the second projecting element 124 when the blank 100 is folded to form the receptacle.

The protruding element 110, at its edge that is most distal to the base portion, can comprise a third projecting element 126 at a position between the most distal 114 and the most proximal fold 112 lines of the three angular folds such that the first recess 118 of one receptacle is arranged to receive the third projecting element 126 when the blank is folded to form the receptacle, and such receptacles are being stacked.

The second side portion 106 can comprise a first part 128 proximal to the base portion 102 to form the sidewall. The second side portion 106 can further comprise a second part 130 distal to the base portion 102 and arranged to be folded to clasp the distal part 116 of the protruding element 110 of the first side portion 104 extending along the second side portion 106 when the blank is folded

to form the receptacle. The second part 130 of the second side portion 106 can comprise a projecting element 132 at its edge that meet the base portion 102 when the blank 100 is folded to form the receptacle, such that the second recess 122 is arranged to receive the projecting element 132 of the second part 130 when the blank is folded to form the receptacle. The second part 130 improves stability of the sidewall.

The first side portion 104 can comprise a first part 134 proximal to the base portion 102 to form the sidewall when the blank 100 is folded to form the receptacle. The first side portion 104 can further comprise a second part 136 distal to the base portion 102 and arranged to be folded to essentially adjoin the surface of the first part 134 when the blank 100 is folded to form the receptacle. For proper positioning of the second part 136 along the first part 134, the base portion can comprise a third recess 138, and the second part 136 of the first side portion 104 can comprise a projecting element 140 at its edge that meet the base portion 102 when the blank 100 is folded to form the receptacle such that the third recess 138 is arranged to receive the projecting element 140 of the second part 136 of the first side portion 104 when the blank 100 is folded to form the receptacle.

The base portion 102 can comprise, at a corner 108 of the base portion 102, an angled edge 142 between a one end of a boundary line to the first side portion and one end of a boundary line to the second side portion such that the angled edge 142 form an opposite side of a triangle with to the inward edge when the blank is folded to form the receptacle. Making such an angled edge 142 serves several purposes. One purpose can be that the base portion 102 is given a corner that is less protruding, which can be advantageous when receptacles are stacked in several adjacent stacks. One purpose can be to make room for protrusions or slightly angled ends at side portions 104, 106 when making the blank.

The receptacle, and thus the blank, can be made of fiberboard, such as corrugated cardboard or paperboard, or plastic material, such as corrugated plastic, i.e. a wide range of extruded twin-wall plastic sheet products produced from e.g. high impact polypropylene resin with a similar mechanical structure as corrugated fiberboard.

Fig. 3 illustrates folding of the blank 100 to form a receptacle according to an embodiment of the invention. Fig. 3a illustrates the first side portions 104

being folded to be essentially perpendicular to the base portion 102. Fig. 3a also indicates the folding lines for folding the protruding element 110 to form a first angular fold 112, as is illustrated in Fig. 3b. Here, it can be seen that the first projecting element 120 mates the first recess 118 to position the part of the protruding element 110 between the first angular fold 112 and a second angular fold 113. Fig. 3b also indicates the folding lines for folding the protruding element 110 to form the second angular fold 113, as is illustrated in Fig. 3c. Here, it can be seen that the first projecting element 120 mates the first recess 118 to position the part of the protruding element 110 between the second angular fold 113 and a third angular fold 114. Fig. 3c also indicates the folding lines for folding the protruding element 110 to form the third angular fold 114, as is illustrated in Fig. 3d. Here, it can be seen that the second projecting element 124 mates the second recess 122 to position the part of the protruding element 110 distal to the third angular fold 114, i.e. distal part 116. Fig. 3e illustrates the second side portions 106 being folded to be essentially perpendicular to the base portion 102. The second part 130 of the second side portion 106 distal to the base portion 102 is folded from the first part 128 to clasp the distal part 116 of the protruding element 110 of the first side portion 104 extending along the second side portion 106 between the first and second parts 128, 130 as illustrated in Fig. 3f. The projecting element 132 of the second part 130 of the second side portion 106, at its edge that meet the base portion 102, mates the second recess 122. Thus, the side portions 104, 106 are locked in their positions. Finally, as illustrated in Fig. 3g, the second part 136 of the first side portion 104 distal to the base portion 102 is folded to essentially adjoin the surface of the first part 134 of the first side portion 104. The projecting elements 140 of the second part 136 mates the third recesses 138 of the base portions for proper positioning of the second part 136 along the first part 134. Thus, a resulting receptacle 150 that is easy to produce, transport, and use is provided. Here, the third projecting element 126 of the protruding element 110 at each corner can be seen.

Fig. 4 illustrates two such resulting receptacles 150a, 150b stacked, where the third projecting element 126, as depicted in Fig. 3g, of the protruding element 110 of one receptacle 150a mates the first recess 118 of the another receptacle 150b when the receptacles are being stacked such that a more rigid stack is achieved.

Fig. 5 illustrates a part of a blank according to an alternative embodiment. Similar to the embodiment illustrated in Fig. 2, a protruding element 110 is arranged to form three angular folds 112, 113, 114 at the corner position such that two outward edges and one inward edge is formed, similar to what is illustrated in Fig. 3. The difference from the embodiment illustrated in Fig 2 is that the protruding element 110, at its edge that is most distal to the base portion, can comprise a third element 126' at a position between the most distal 114 and the most proximal fold 112 lines of the three angular folds by a recess 125 separating the third element from the protruding element between the most distal 114 and the most proximal fold 112 lines of the three angular folds such that when one receptacle is stacked upon another, the third element 126' is folded differently from the rest of the protruding element 110. When stacked, the third element 126' can optionally be folded according to the folding of the protruding element 110 and will then lock the stacked receptacles to each other by engaging the corner portion 108 of the other receptacle.

Fig. 6 illustrates two resulting receptacles 150a, 150b from blanks at the one illustrated in Fig. 5 being stacked, where the third element 126' of the protruding element 110 of one receptacle 150a receives the corner portion 108 of the another receptacle 150b when the receptacles are being stacked. The third element 126' can be folded to engage the corner portion 108 such that an even more rigid stack is achieved.

CLAIMS

1. A blank (100) for folding to form a receptacle (150), the blank (100) comprising a one-piece board having
- 5 a base portion (102);
- at least one first side portion (104) protruding from the base portion (102);
- at least one second side portion (106) protruding from the base portion (102),
- 10 wherein the first side portion (104) and the second side portion (106) are arranged to meet at a corner position when folded to essentially perpendicular direction from the base portion (102),
- characterized by
- the first side portion (104) comprises a protruding element (110)
- 15 arranged to form three angular folds (112, 113, 114) at the corner position such that two outward edges and one inward edge are formed, wherein the edges are extending essentially perpendicular to the base portion (102) and are essentially mutually parallel, and the distal part (116) of the protruding element (110) extends along the second side portion (106) from the edge being closest to the
- 20 second side portion (106), when folded to form the receptacle (150).
2. The blank (100) according to claim 1, wherein the three angular folds (112, 113, 114) are each essentially L-shaped.
- 25 3. The blank (100) according to claim 1 or 2, wherein the base portion (102) comprises a first recess (118) and the protruding element (110), at its edge that meet the base portion when the blank is folded to form the receptacle (150), comprises at least one first projecting element (120) at a position between the most distal (114) and the most proximal (112) fold lines of the three angular folds
- 30 (112, 113, 114) such that the first recess (118) is arranged to receive the at least one first projecting element (120) when the blank (100) is folded to form the receptacle (150).
4. The blank (100) according to any of claims 1 to 3, wherein the base
- 35 portion (102) comprises a second recess (122) and the protruding element (110),

at its edge that meet the base portion (102) when the blank (100) is folded to form the receptacle (150), comprises at least one second projecting element (124) at a position distal to the most distal fold line (114) of the three angular folds (112, 113, 114) such that the second recess (122) is arranged to receive the at
5 least one second projecting element (124) when the blank (100) is folded to form the receptacle (150).

5. The blank (100) according to any of claims 1 to 4, wherein the base portion (102) comprises a first recess (118) and the protruding element (110), at
10 its edge that is most distal to the base portion (102) when the blank (100) is folded to form the receptacle (150), comprises at least one third projecting element (126) at a position between the most distal (114) and the most proximal (112) fold lines of the three angular folds (112, 113, 114) such that the first recess (118) of one receptacle (150b) is arranged to receive the at least one third
15 projecting element (126) from another receptacle (150a) when the blank (100) is folded to form the receptacle (150, 150a, 150b), and such receptacles (150a, 150b) are being stacked.

6. The blank (100) according to any of claims 1 to 4, wherein the base
20 portion (102) comprises a corner portion (108) and the protruding element (110), at its part that is most distal to the base portion (102) when the blank (100) is folded to form the receptacle (150), comprises at least one third element (126') at a position between the most distal (114) and the most proximal (112) fold lines of the three angular folds (112, 113, 114) such that the at least one third element
25 (126') of one receptacle (150a) is arranged to receive the corner portion (108) from another receptacle (150b) when the blank (100) is folded to form the receptacle (150, 150a, 150b), and such receptacles (150a, 150b) are being stacked.

30 7. The blank (100) according to claim 6, wherein the third element (126') of one receptacle (150a) is arranged to be folded to engage the corner portion (108) of another receptacle (150b) when the receptacles (150a, 150b) are being stacked.

8. The blank (100) according to any of claims 1 to 7, wherein the second side portion (106) comprises a first part (128) proximal to the base portion (102) to form a wall essentially perpendicular to the base portion (102) when the blank (100) is folded to form the receptacle (150).

5

9. The blank (100) according to claim 8, wherein the second side portion (106) further comprises a second part (130) distal to the base portion (102) and arranged to be folded to clasp the distal part (116) of the protruding element (110) of the first side portion (104) extending along the second side portion (106) when the blank (100) is folded to form the receptacle (150).

10

10. The blank (100) according to claim 9, wherein the base portion (102) comprises a second recess (122) and the second part (130) of the second side portion (106) comprises a projecting element (132) at its edge that meet the base portion (102) when the blank (100) is folded to form the receptacle (150), such that the second recess (122) is arranged to receive the projecting element (132) of the second part (130) when the blank (100) is folded to form the receptacle (150).

15

11. The blank (100) according to any of claims 1 to 10, wherein the first side portion (104) comprises a first part (134) proximal to the base portion (102) to form a wall essentially perpendicular to the base portion (102) when the blank is folded to form the receptacle (150).

20

12. The blank (100) according to claim 11, wherein the first side portion (104) further comprises a second part (136) distal to the base portion (102) and arranged to be folded to essentially adjoin the surface of the first part (134) when the blank (100) is folded to form the receptacle (150), the base portion (102) comprises a third recess (138), and the second part (136) of the first side portion (104) comprises a projecting element (140) at its edge that meet the base portion (102) when the blank (100) is folded to form the receptacle (150) such that the third recess (138) is arranged to receive the projecting element (140) of the second part (136) of the first side portion (104) when the blank (100) is folded to form the receptacle (150).

25

30

13. The blank (100) according to any of claims 1 to 12, wherein the base portion (102) comprises, at a corner (108) of the base portion (102), an angled edge (142) between a one end of a boundary line to the first side portion (104) and one end of a boundary line to the second side portion (106) such that the angled edge (142) form an opposite side of a triangle to the inward edge when the blank (100) is folded to form the receptacle (150).

14. The blank (100) according to any of claims 1 to 13, wherein the material of the blank (100) is any of a group comprising cardboard, corrugated cardboard, fiberboard, plastic material, corrugated plastic, extruded twin-wall plastic sheet, and polypropylene resin.

15. A receptacle (150) formed from a blank (100) according to any of claims 1 to 14.

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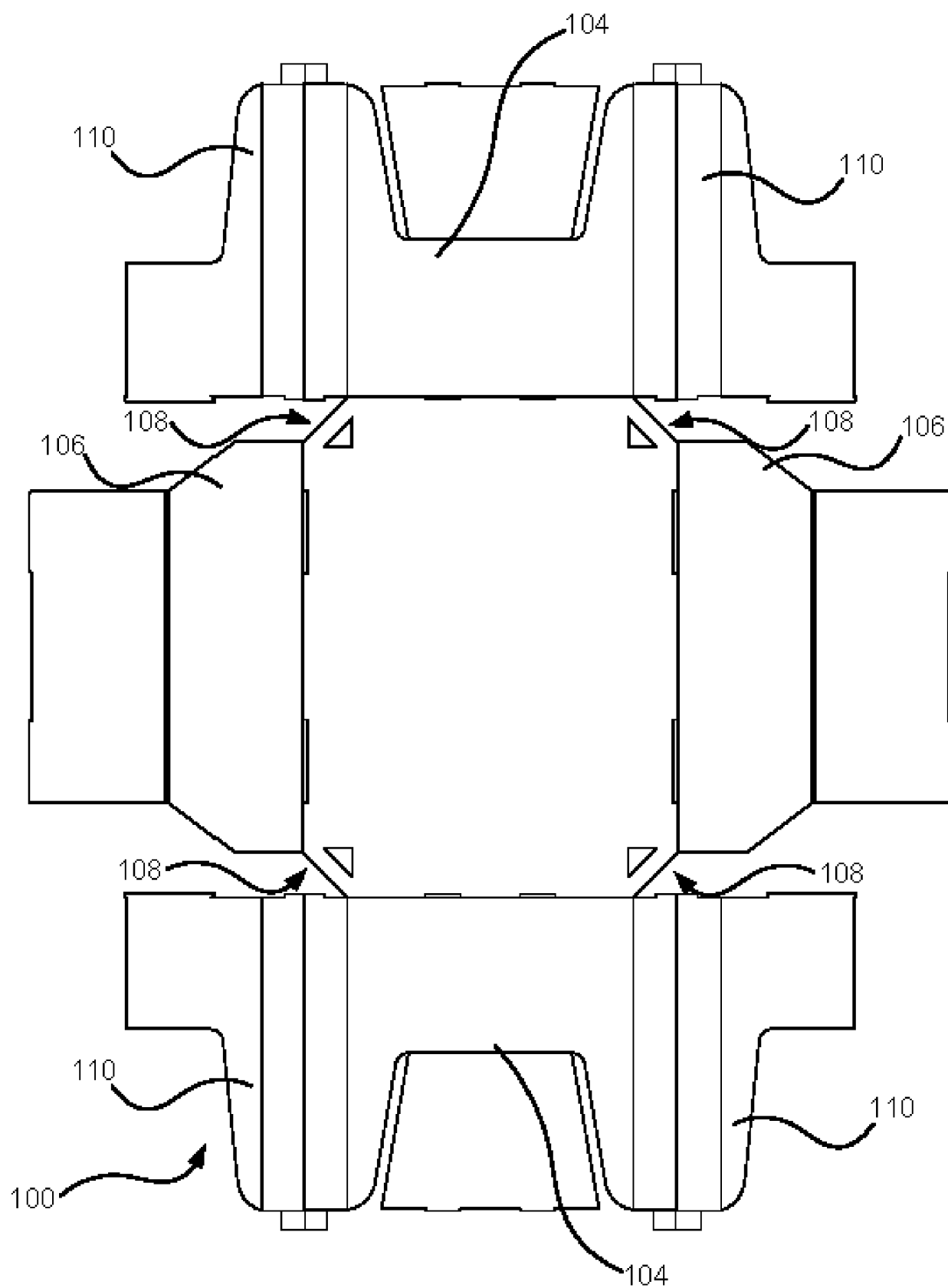


Fig. 1

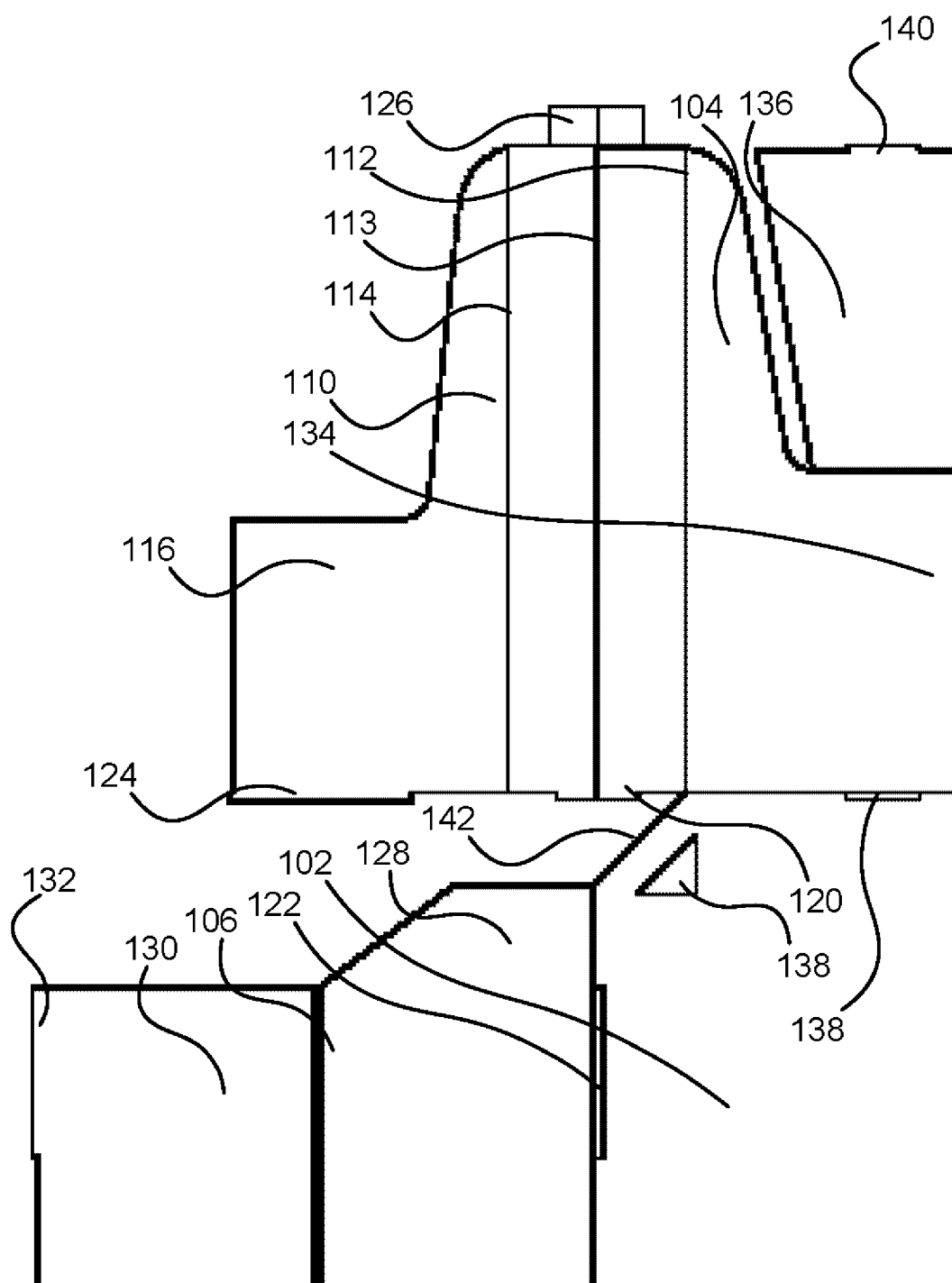


Fig. 2

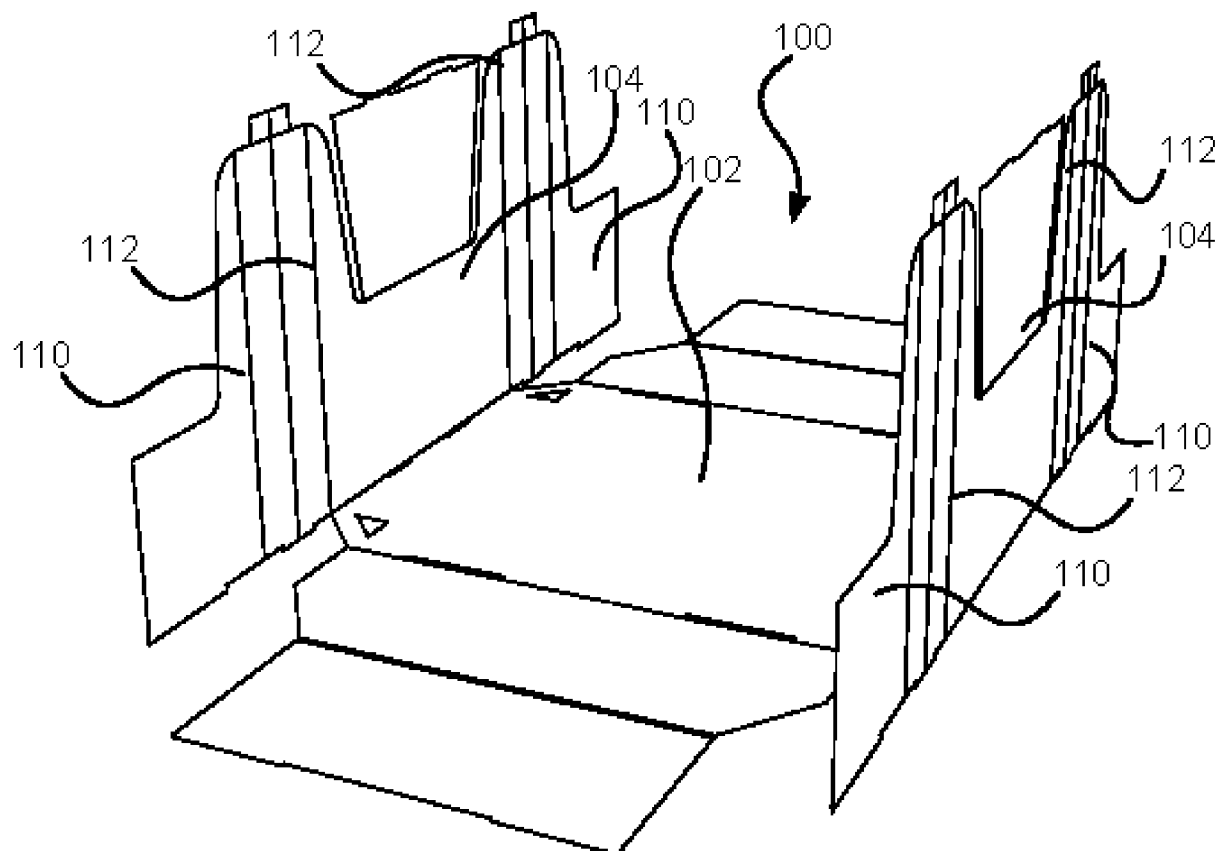


Fig. 3a

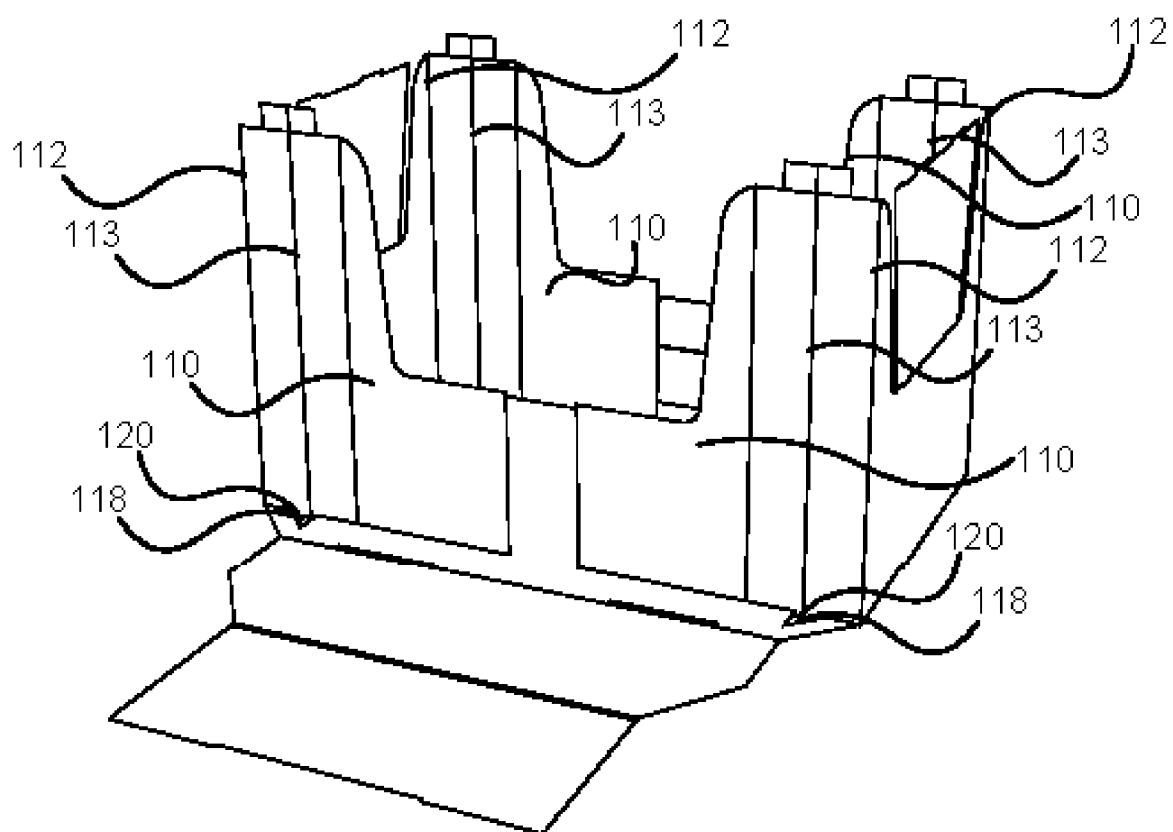


Fig. 3b

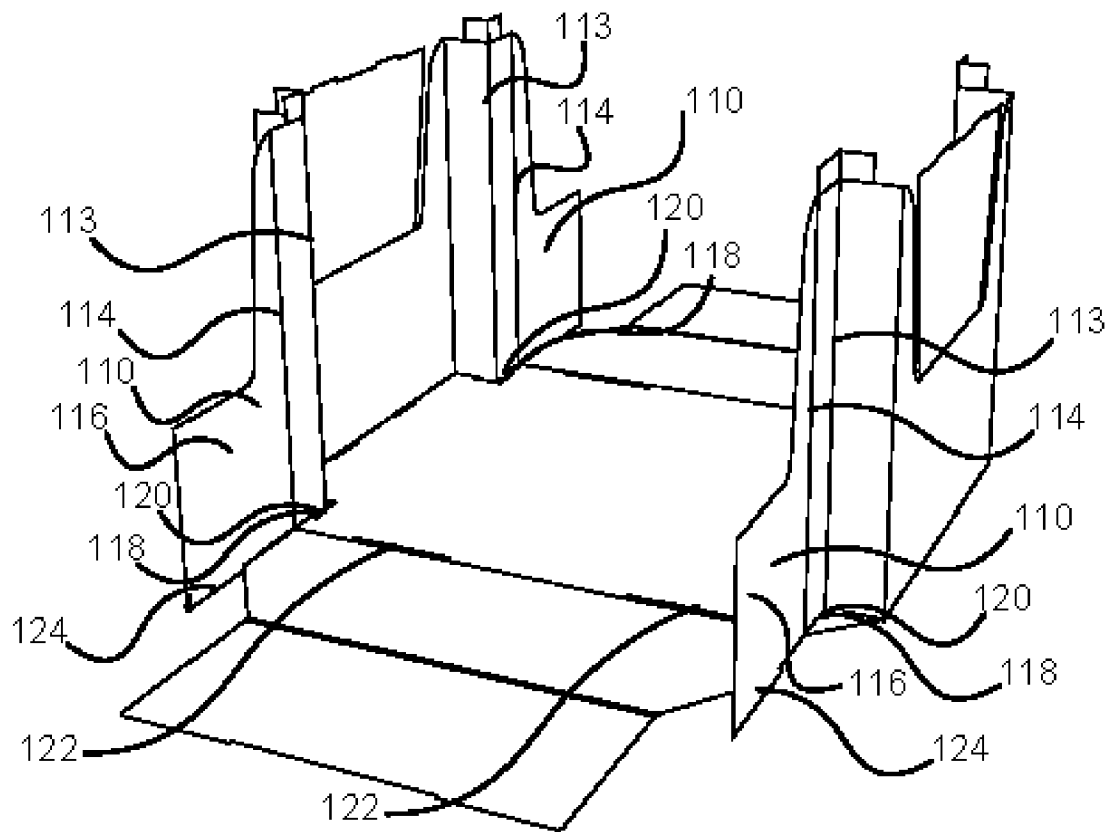


Fig. 3c

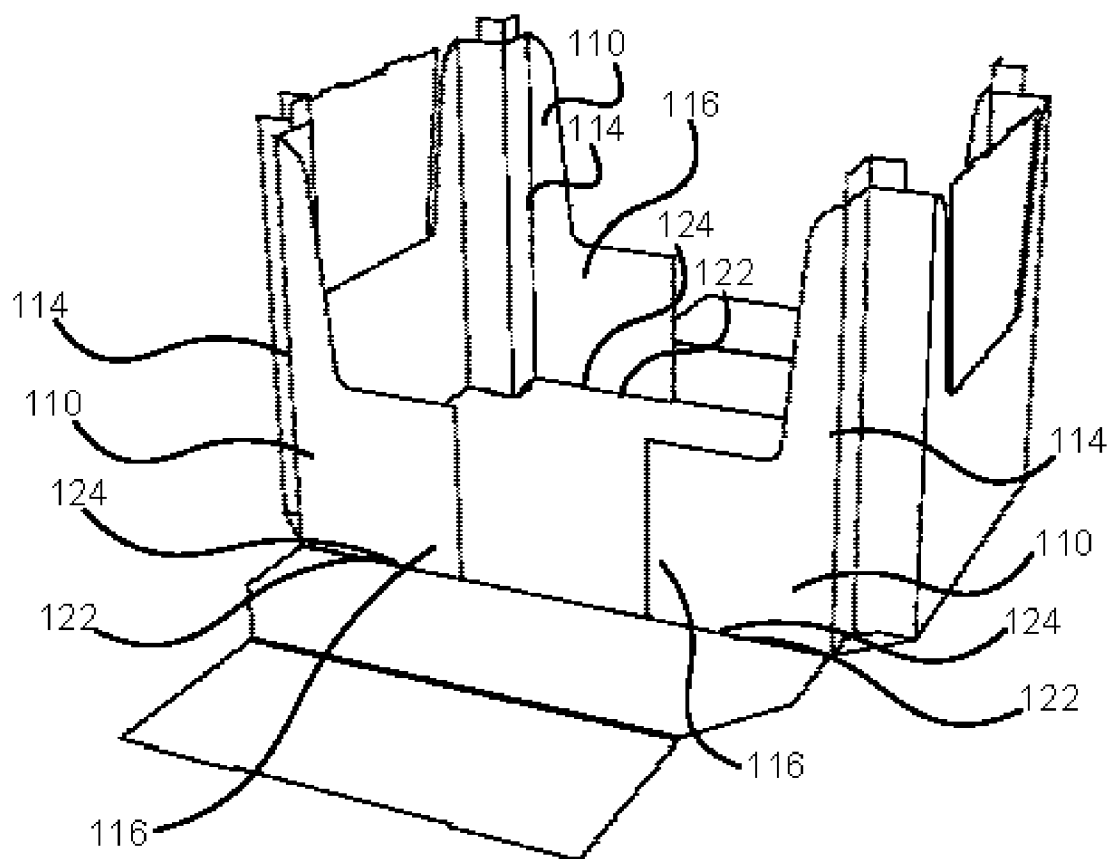


Fig. 3d

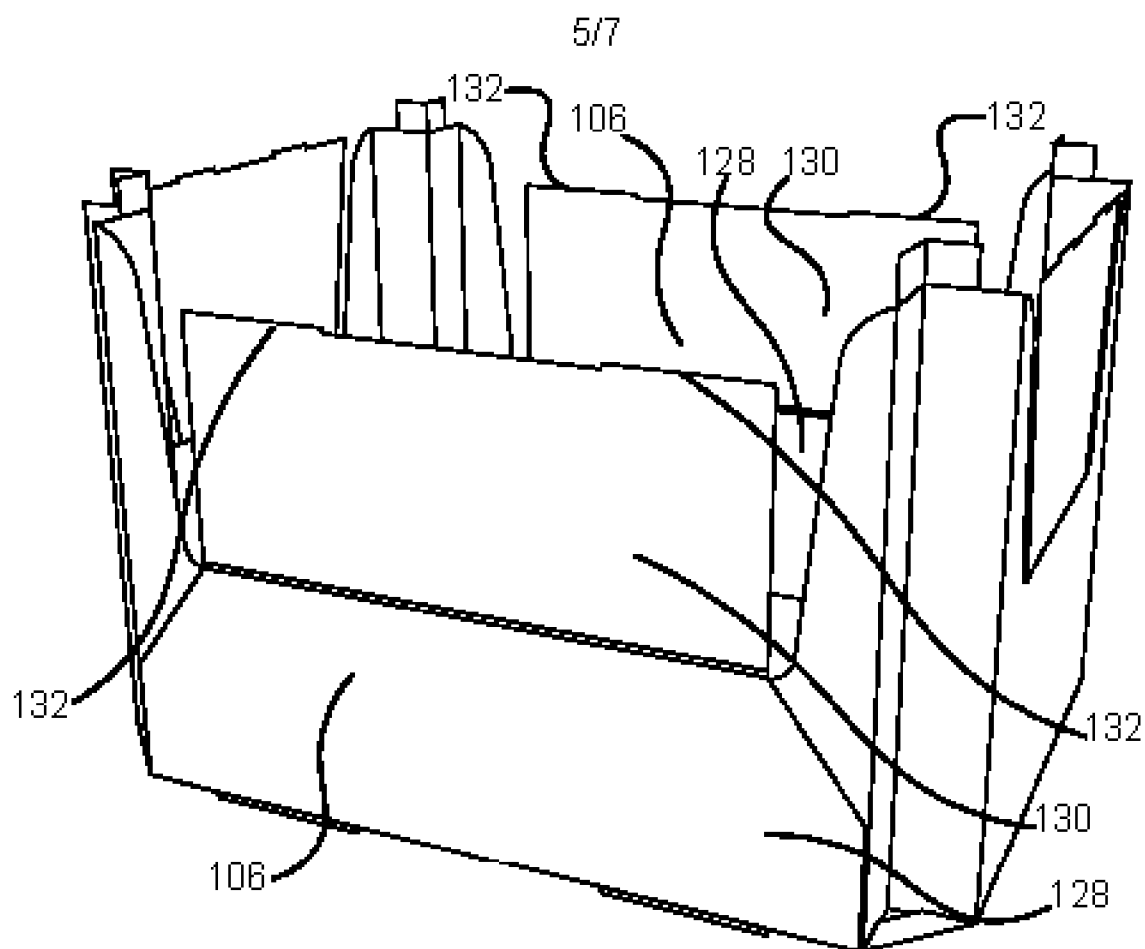


Fig. 3e

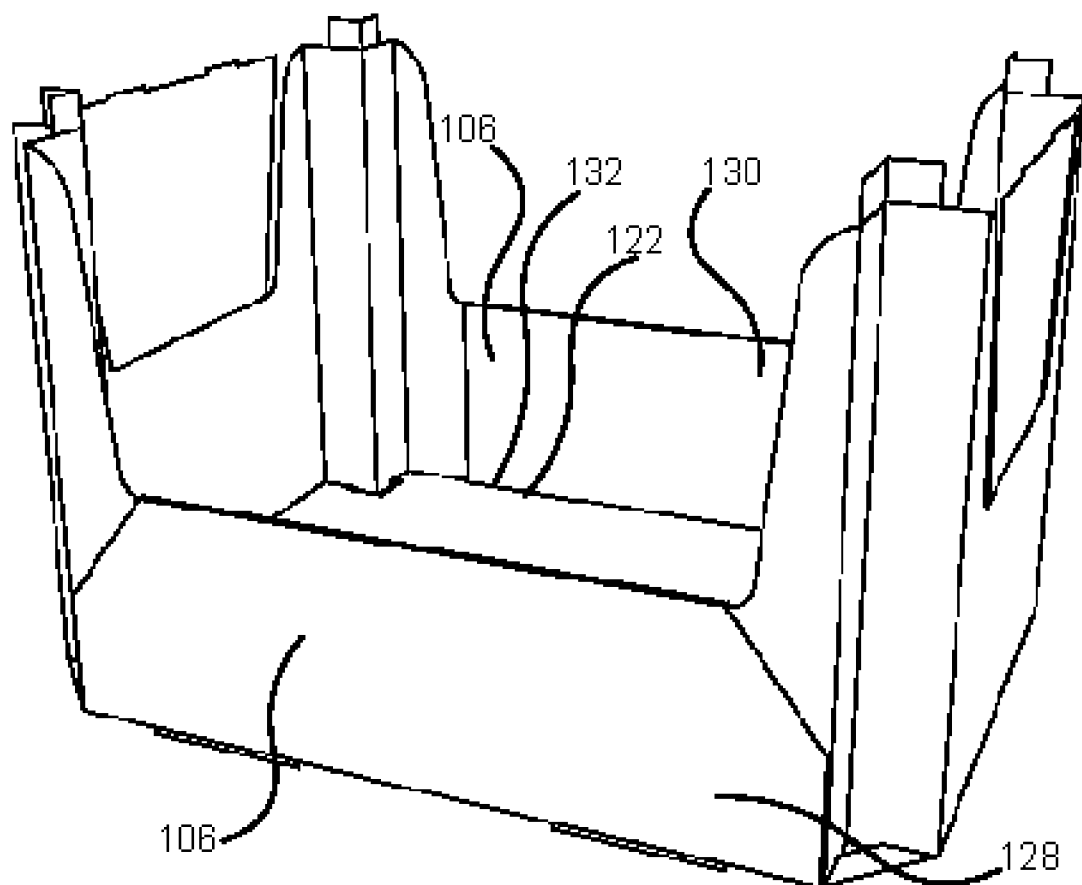


Fig. 3f

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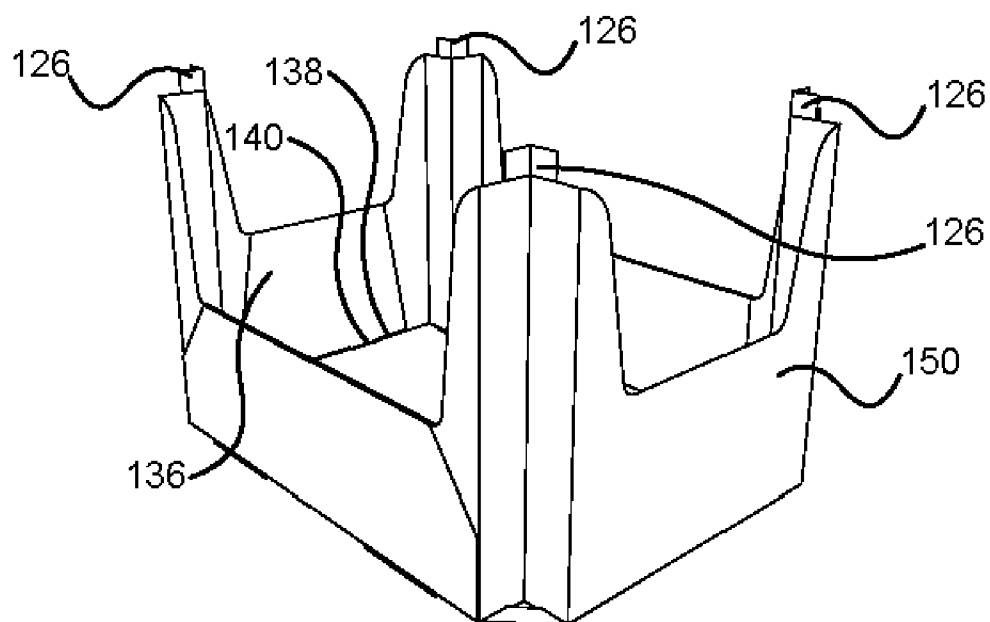


Fig. 3g

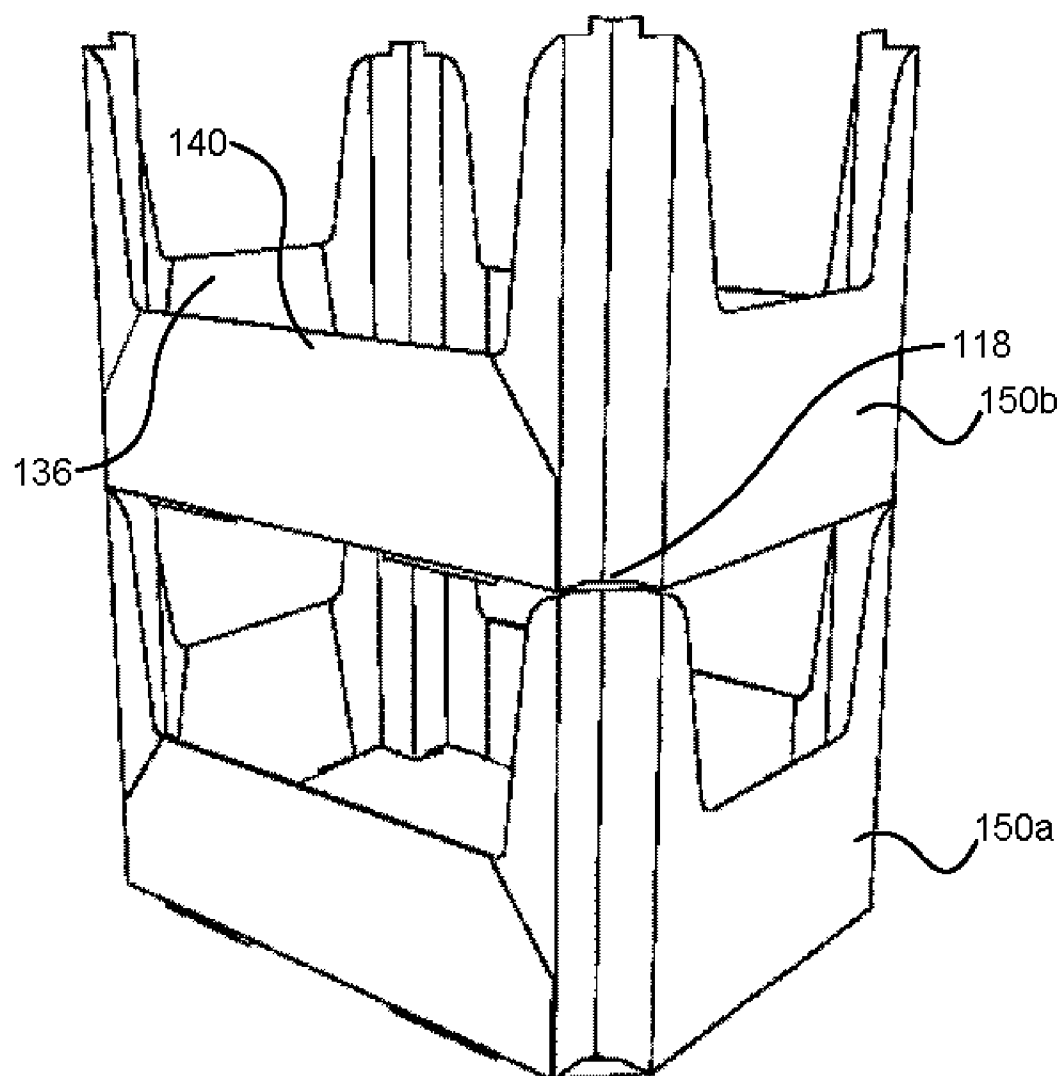
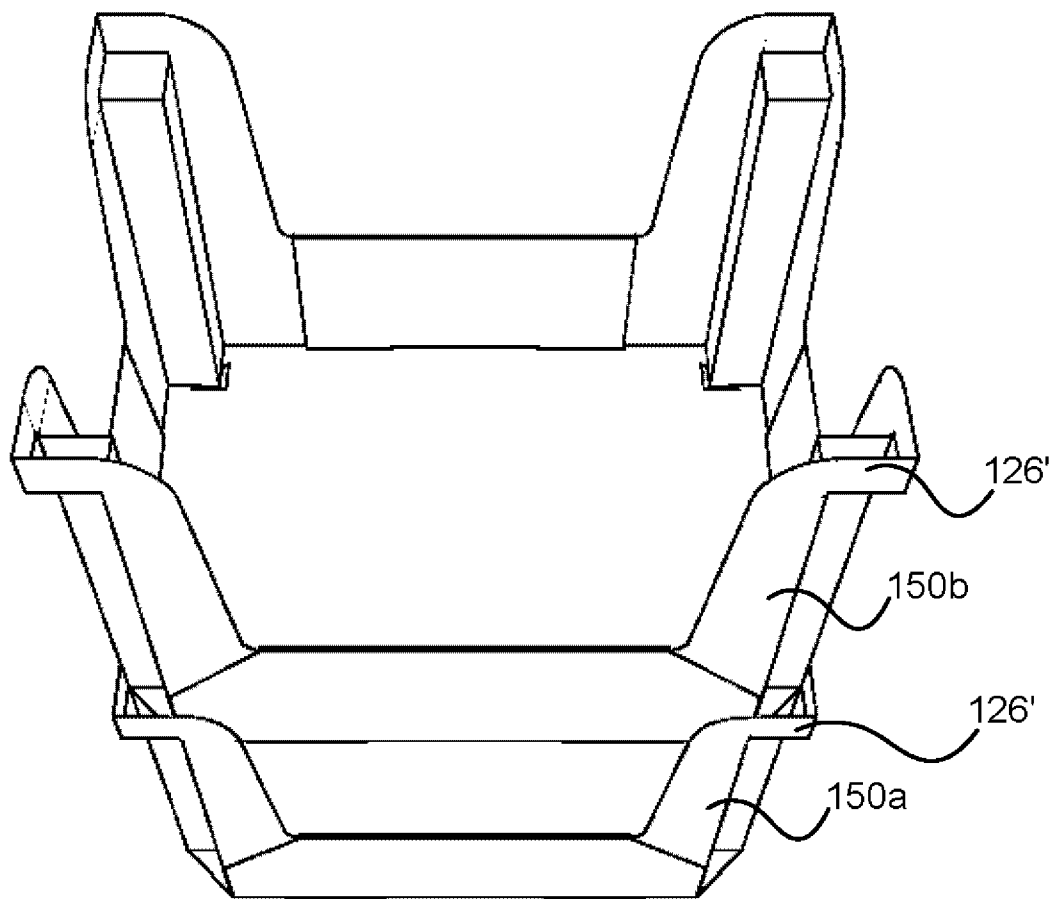
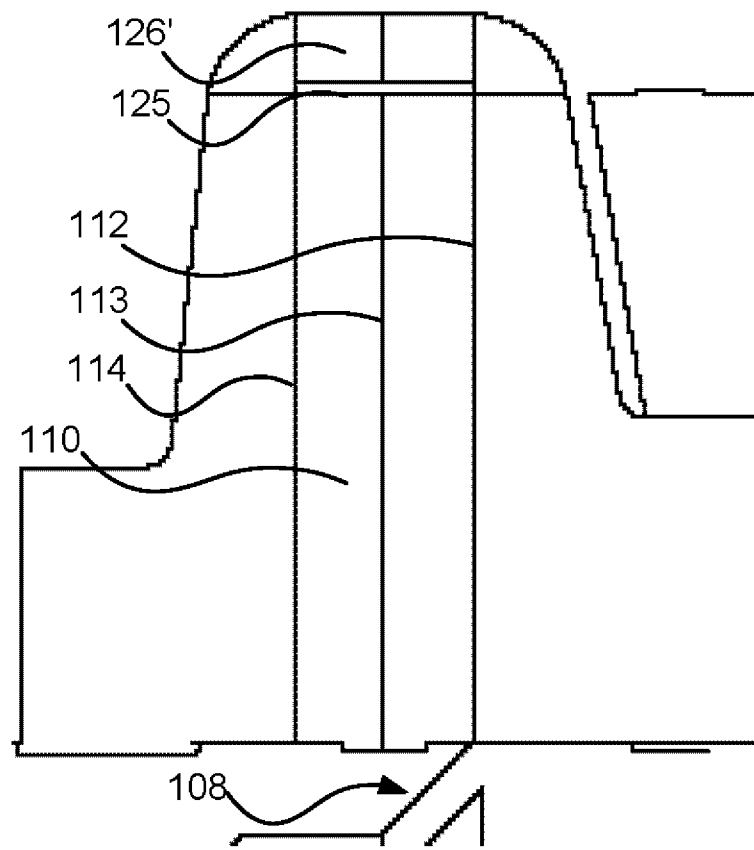


Fig. 4

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2009/058437

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D5/00 B65D5/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 415 925 A1 (MERRYLAND PRODUCTS INC [US]) 6 May 2004 (2004-05-06)	1-2, 8,
Y	paragraph [0001]	11, 14-15
	paragraph [0017] - paragraph [0019];	3-7,
	figures 1, 2	9-10,
		12-13
Y	US 6 029 885 A (MUELLER CHARLES J [US]) 29 February 2000 (2000-02-29)	3-7,
	column 3, line 6 - line 50; figure 1	9-10, 12
Y	US 2007/017843 A1 (KEEL DONALD W [US] ET AL KEEL DONALD WAYNE [US] ET AL) 25 January 2007 (2007-01-25)	13
	figure 2A	
X	GB 2 196 608 A (REED PACKAGING LTD) 5 May 1988 (1988-05-05)	1-2, 8,
	page 1, line 5 - line 86; figures 1, 2	11, 14-15



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

12 March 2010

Date of mailing of the international search report

31/03/2010

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Vesterholm, Mika

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/EP2009/058437

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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GB 2196608	A	05-05-1988	NONE	