(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 1 992 564 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
09.01.2013 Bulletin 2013/02

(51) Int Cl.:
B65D 5/00 *(2006.01)* ***B65D 5/44*** *(2006.01)*
B65D 5/54 *(2006.01)*

(21) Application number: **07252022.4**

(22) Date of filing: **17.05.2007**

(54) **Container having reinforced corners**

Behälter mit verstärkten Ecken

Récipient doté de coins renforcés

(84) Designated Contracting States:
DE FR GB NL

(43) Date of publication of application:
19.11.2008 Bulletin 2008/47

(73) Proprietor: **SCA Packaging Limited**
Aylesford, Kent ME20 7TW (GB)

(72) Inventor: **Jeff, Catherine**
Darlington DL3 OPE (GB)

(74) Representative: **Chiva, Andrew Peter**
Dehns
St Bride's House
10 Salisbury Square
London
EC4Y 8JD (GB)

(56) References cited:
WO-A-02/22450
DE-U1- 20 301 211
FR-A- 2 676 991
GB-A- 2 268 470
JP-A- 8 244 755
US-A- 4 056 223

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

EP 1 992 564 B1

Description

[0001] The present invention relates to a container, such as a box or tray, which is structurally reinforced at its corners.

[0002] A container is generally formed from interconnecting side walls and at least a base wall. In order to strengthen the container, particularly for stacking purposes, it is known to reinforce each of the corners, typically by forming triangular posts at the corners. These triangular posts make the corners of the box more rigid and resistant to collapse under compression.

[0003] JP 08244755, FR 2676991, US 4056223 and DE 20301211 disclose containers having supporting elements arranged at the corners.

[0004] However, conventional methods of forming triangular posts at the inside corners of a container complicate the manufacturing and construction processes.

[0005] Therefore it is desired to provide an improved container, an improved blank for forming a container and an improved method of constructing a container.

[0006] From a first aspect the present invention provides a container as claimed in claim 1.

[0007] Thus the second flap portion is configured such that it automatically forms a corner support when the first flap portion is folded to form a part of the main body of the container. This avoids the need for a separate corner support forming operation, thereby greatly simplifying the manufacturing and construction of the container.

[0008] According to a preferred embodiment, the second flap portion is hingedly connected to the first flap portion about the second fold line such that when the first flap portion is arranged coplanar with the first wall (i.e. before the first flap portion is folded inwardly) the second flap portion extends beyond the first fold line.

[0009] According to the preferred embodiment, the first flap portion is configured to be folded to form at least part of a second wall of the container. The second flap portion then automatically forms a corner support on the inside corner between the first and second walls of the container.

[0010] According to the preferred embodiment the second hinge line, which connects the first and second flap portions, is outwardly displaced (i.e. in a direction away from the first wall) from the first fold line connecting the first flap portion and the first wall.

[0011] According to the preferred embodiment, the second flap portion has an inner free end that remains unattached such that as the first flap portion is folded inward, the inner free end of the second flap portion rides along the inner side of the first wall until the first flap portion has been folded to its desired position.

[0012] According to the present invention, the first and second flap portions are formed integrally, i.e. from the same continuous piece of material. Therefore, the first and second portions of the flap are formed from a single panel of material, suitably folded. The first and second portions of the flap are formed by folding the flap panel in on itself about a third fold line, which may form a distal end of the first flap portion, to form inwardly and outwardly extending portions of the flap. The inwardly extending portion is longer than the outwardly extending portion such that the second flap portion extends beyond the first fold line connecting the first flap portion and the first wall.

[0013] The inwardly extending portion of the flap panel is formed with the aforementioned second fold line so as to form the second portion of the flap between the second fold line and the inner free end of the inwardly extending portion.

[0014] The above mentioned second and/or third fold lines are preferably provided by intermittently cutting the flap panel.

[0015] The inwardly extending and outwardly extending portions of the flap panel are fixedly connected to each other between the second and third fold lines, preferably by an adhesive.

[0016] In the preferred embodiment, the container is configured to have at least one removable and/or incomplete, partial wall. For example, the container may have a removable lid formed from a removable portion of the top wall. In a preferred embodiment the removable lid is also formed from a removable portion in at least one of the side walls. Corner supports according to the present invention are particularly advantageous in these embodiments because if any of the walls are only partial walls, or once the removable portions of the wall(s) have been removed, a larger proportion of any forces exerted on the box must be supported at the corners.

[0017] Although only a single corner of the container has been described above, corner supports may be provided in more than one or in all of the corners of the container according to the present invention. Further, corner supports may be provided in corners between internal and/or external walls of the container. Corner supports may also be provided in the corners between side walls and the top and/or base walls.

[0018] The container of the present invention is preferably formed from cardboard, paperboard, plastic or any other foldable sheet material.

[0019] From another aspect the present invention provides a method of forming a container from a blank as claimed in claim 7.

[0020] A preferred embodiment of the present invention will now be described, by way of example only, and with reference to the accompanying drawings, in which:

Fig. 1 shows a prior art tray having reinforced corners;

Fig. 2A shows a box according to a preferred embodiment of the present invention, Figs. 2B and 2C show the box of Fig. 2A when partially constructed;

Figs. 3A-3C show views of an inside corner region of the box at different stages during construction of the box;

Figs. 4A-4E show a preferred embodiment of the blank for forming the box at different stages during

the construction of the box; and

Figs. 5A-5E show a preferred embodiment of the box at different stages as the lid is being removed.

[0021] Although the preferred embodiment is described herein in relation to a box it will be appreciated that the present invention is equally applicable to other types of containers, such as trays. The differences between a container according to the preferred embodiment and conventional containers will now be illustrated by referring to the conventional tray shown in Fig. 1.

[0022] Fig. 1 shows a prior art tray having reinforced corners 2. The tray has four side walls 3 and a base wall 4. In order to strengthen the corners 2 of the tray additional support panels 5 have been adhered to the pairs of interconnecting side walls 3 forming the corners 2 of the tray. It will be appreciated that the subsequent addition of support panels 5 to the main body of the tray complicates the construction process.

[0023] Figs. 2A-2C show a box according to a preferred embodiment of the present invention at various stages during construction. Fig. 2A shows the box when fully constructed. The box comprises a front wall 6, a back wall 7, left 8 and right 9 end walls, a base wall 4 and a top wall 10. The front wall 6 is provided with a cut out portion 12 and the front 6 and top 10 walls are provided with lines of weakness 14 forming a removable lid 15, as will be described in more detail below.

[0024] Fig. 2B shows a view of the box of Fig. 2A at the stage of construction before the end wall flaps 18 and end wall panels 8a,8b,9a,9b have been folded in to form the left 8 and right 9 end walls of the box.

[0025] Fig. 2C shows a view of the box of Fig. 2B at the stage where the left end wall flaps 18 and end wall panels 8a,8b have been folded in to form the left end wall 8 and the right end wall flaps 18 are being folded in. As will be described below with reference to Figs. 3A-3C the step of folding in the end wall flaps 18 automatically creates corner supports inside the corners between the end walls 8,9 and the front and back walls 6,7.

[0026] Figs. 3A-3C show views of the inside of the back, bottom left hand corner region of the box at three different stages during folding in of the left end wall flaps 18 and end wall panels 8a,8b to form the left end wall 8.

[0027] Fig. 3A shows a view of the box at the stage where the back, left end wall flap 18 is just being folded in. It can be seen from this view that the end wall flap 18 is hingedly connected to the back wall 7 along a first fold line 22. The end wall flap 18 comprises a first portion 18a extending outwardly away from the fold line 22 between the end wall flap 18 and the back wall 7 and a second portion 18b which is hingedly connected to the first portion 18a along a second fold line 28. The second fold line 28 is provided parallel to and outwardly displaced from the first fold line 22, i.e. displaced in a direction away from the end of the back wall 7 and towards the free end of the end wall flap 18. The second flap portion 18b extends inwardly beyond the first fold line 22 and terminates at a free, unattached end 23.

[0028] Fig. 3B shows a view of the box corresponding to that of Fig. 3A except wherein the end wall flap 18 has been partially folded inwards during construction of the left end wall 8 of the box. As the second flap portion 18b extends inwardly beyond the first fold line 22 (connecting the end wall flap 18 and the back wall 7), when the end wall flap 18 is folded in the free end 23 of the second flap portion 18b rides along the inside surface of the back wall 7. Also, because the second flap portion 18b is hingedly connected to the first flap portion 18a along the second fold line 28 (that is outwardly displaced from the first fold line 22) the attached end of the second flap portion 18b is pulled away from the back wall 7 in a direction perpendicular to the back wall 7 as the flap 18 is folded in. In other words, due to the configuration of the end wall flap 18, as the flap 18 is folded in the second flap portion 18b is drawn at an angle to the back wall 7 and the first flap portion 18a.

[0029] As shown in Fig. 3C, when the end wall flap 18 is folded in to form part of the left end wall 8 the second flap portion 18b extends across the inside corner of the box to form a corner support 30. This corner support 30 increases the weight bearing capacity of the corners of the box. All four end wall flaps 18 are folded in to form corner supports 30 at each corner. Fig. 3C also shows the box at the stage where the left end wall inner panel 8a has been folded upwards to form part of the left end wall 8.

[0030] Figs. 4A-4C show an embodiment of a blank used to construct the box at three different stages during formation of the end wall flaps 18. The blank comprises a front outer wall panel 6a, a top wall panel 10a, a back wall panel 7a, a base wall panel 4a and a front inner wall panel 6b. The blank also comprises left and right outer wall panels 8b,9b, left and right inner wall panels 8a,9a and flap panels 18c for forming the left and right end wall flaps 18. Fold lines are provided between each of the above-mentioned panels so as to enable the blank to be folded into a box. The top wall panel 10a, front outer wall panel 6a and front inner wall panel 6b comprise intermittently cut lines 14 for forming removable portions 16a, 16b,16c which will be described in more detail below. The front outer 6a and inner 6b wall panels also comprise cut out portions 12 for assisting the removal of the removable portions 16a,16b,16c.

[0031] Fig. 4A shows the blank prior to the formation of the end wall flaps 18. The panels 18c for forming the end wall flaps 18 are connected to the back wall panel 7a and the front inner wall panel 6b along first fold lines 22. Each flap panel 18c is provided with a second fold line 28 and a third fold line 38, which are parallel to the first fold line 22. The second 28 and third 38 fold lines may be weakened by intermittently cutting the flap panel 18c so as to make it easier to fold. The third fold line 38 is provided closer to the back wall panel 7a (or front inner wall panel 6b) than the free end of the flap panel 18c.

[0032] As shown in Figs. 4B and 4C the flap panel 18c

is folded about the third fold line 38 so as to provide an outwardly extending portion between the first 22 and third 38 fold lines and an inwardly extending portion between the third fold line 38 and the free end of the flap panel 18c. The outwardly and inwardly extending portions are arranged to be on the outside and inside of the box respectively. The inwardly extending portion is longer than the outwardly extending portion and includes the second fold line 28. The second fold line 28 hingedly connects the second flap portion 18b to the first flap portion 18a and allows the free end of the second flap portion 18b to pivot relative to the rest of the flap 18. The second flap portion 18b extends inwardly beyond the first fold line 22 connecting the flap panel 18c and the back wall panel 7a (or the front inner wall panel 6b). The second fold line 28 is arranged such that when the blank is laid flat, as in Fig. 4C, it is parallel to and outwardly displaced from the first fold line 22. The inwardly extending portion of the flap panel 18c is adhered to the outwardly extending portion of the flap panel 18c between the first 22 and third 38 fold lines.

[0033] Fig. 4D shows the blank of Fig. 4C at the next stage of construction of the box. At this stage the front inner wall panel 6b is folded onto the base panel wall 4a and then the top wall panel 10a and front outer wall panel 6a are folded in over the front inner wall panel 6b, base wall panel 4a and back wall panel 7a to the position shown in Fig. 4E. The removable portions 16a,16b,16c and the cut out portions 12 in the front inner wall panel 6b and the front outer wall panel 6a are arranged to coincide with each other. However, the removable portion 16b in the front outer wall panel 6a is arranged to extend to a lower point in the front wall 6 than the removable portion 16c in the front inner wall panel 6b for reasons which will be discussed further below. The front inner wall panel 6b is adhered to the front outer wall panel 6a at least in regions outside of the removable portions 16b,16c.

[0034] The folded blank is then erected into the partially enclosed box as shown in Fig. 2B. The end wall flaps 18 are then folded in so as to automatically form the corner supports 30 as has been described above with reference to Figs. 3A-3C.

[0035] The end wall inner panels 8a,9a are then folded in. The end wall inner panels 8a,9a are connected to the base wall panel 4a by a fold line. The sides of the end wall inner panels 8a,9a taper inwardly towards a rectangular portion arranged at their free ends. The rectangular portions are sized and shaped so as to fit in between the top wall panel 10a of the box and the end wall flaps 18 once they have been folded in. The rectangular portion may be provided with a fold line 40 parallel to the free end of the panel 8a,9a. This enables the free end of the end wall inner panel 8a,9a to fold in between and be flush with the end wall flaps 18. This configuration enables the end wall outer panels 8b,9b to be folded in over the end wall inner panels 8a,9a more easily. The end wall outer panels 8b,9b are then adhered to the end wall inner panels 8a,9a so as to complete the end walls 8,9 of the box.

[0036] Figs. 5A-5E show the box at various stages during the removable and storage of its lid 15. As described above, the removable lid 15 is formed by the removable portions 16a,16b,16c in the top wall panel 10a and the front inner 6b and outer 6a wall panels. The user may firstly put their finger through the cut out portions 12 in the front inner 6a and outer 6b wall panels. The user is then able to pull the removable portions 16b, 16c of the front inner 6b and outer 6a wall panels outwards breaking those panels along the lines of weakness 14. As seen in Figs. 5A-5E the removable portion 16c in the front inner wall panel 6b does not extend as far down the front wall 6 as the removable portion 16b in the front outer wall panel 6a. This is advantageous in that if the front wall 6 is subjected to external forces, e.g. during transport, then the front inner wall panel 6b prevents the removable portion 16b of the front outer wall panel 6a from being pushed inwards and accidentally opening the box.

[0037] Once the front wall portion of the lid 15 has been removed this portion can then be used as a tab to pull up and remove the removable portion 16a in the top wall 10 of the box as shown in Figs. 5B-5D. The removable portion 16a in the top wall 10 may be configured so that regions of the top wall 10 remain at the corners of the box above the corner supports 30.

[0038] As shown in Figs. 5D and 5E the removable portion 16a of the top wall 10 remains attached to the box along a portion of the back wall 7. The removable portion 16a may have a fold line 44 arranged parallel to and between the front wall 6 and back 7 wall (i.e. before the lid 15 has been removed) so as to allow the lid 15 to fold as shown in Fig. 5E to form a header 48 for the box. The removable portion 16a is configured such that recesses 46 are provided in the remaining portions of the top wall 10 adjacent to the hinge which connects the removable portion 16a and the back wall 7. These recesses 46 are configured to receive a portion of the lid 15 so as to maintain the box in an open position as shown in Fig. 5E.

Claims

1. A container comprising a flap (18) having a first flap portion (18a) having a first end hingedly connected to an end of a first wall (7) of the container about a first fold line (22), and a second flap portion (18b) hingedly connected to said first flap portion (18a) about a second fold line (28), such that when said first flap portion (18a) is folded inwardly with respect to said first wall (7), said second flap portion (18b) rotates about said second hinge line (28) to form a corner support across the corner of the container;
wherein the first and second flap portions (18a, 18b) are formed integrally by folding the flap in on itself about a third fold line (38) to form inwardly and outwardly extending portions of the flap, wherein the inwardly extending portion of the flap panel includes

said second fold line (28) so as to form the second flap portion (18b) between the second fold line (22) and an inner free end (23) of the inwardly extending portion, wherein the inwardly extending and outwardly extending portions of the flap panel are fixedly connected to each other between the second and third fold lines (28, 38), and wherein the inwardly extending portion of the flap panel is longer than the outwardly extending portion of the flap panel such that the second flap portion (18b) extends beyond the first fold line (22).

2. A container as claimed in claim 1, wherein the first flap portion (18a) is configured to be folded to form at least part of a second wall (9) of the container.

3. A container as claimed in claim 2, wherein the second flap portion (18b) automatically forms a corner support on the inside corner between the first and second walls (7, 9) of the container when said first flap portion (18a) is folded inwardly.

4. A container as claimed in claim 1, 2 or 3, wherein the second fold line (28) is outwardly displaced from the first fold line (22).

5. A container as claimed in any preceding claim, wherein the second flap portion (18b) has an inner free end (23) that remains unattached such that as the first flap portion (18a) is folded inward, the inner free end of the second flap portion rides along the inner side of the first wall (7).

6. A container as claimed in any preceding claim, comprising at least one removable and/or incomplete wall portion (16a).

7. A method of forming a container as claimed in any preceding claim from a blank, said blank comprising a flap having a first flap portion (18a) having a first end hingedly connected to an end of a first wall panel (7a) about a first fold line (22), and a second flap portion (18b) hingedly connected to said first flap portion (18a) about a second fold line (28);
wherein the first and second flap portions (18a, 18b) are formed integrally by folding the flap in on itself about a third fold line (38) to form inwardly and outwardly extending portions of the flap, wherein the inwardly extending portion of the flap panel includes said second fold line (28) so as to form the second flap portion (18b) between the second fold line (22) and an inner free end (23) of the inwardly extending portion, wherein the inwardly extending and outwardly extending portions of the flap panel are fixedly connected to each other between the second and third fold lines (28, 38), and wherein the inwardly extending portion of the flap panel is longer than the outwardly extending portion of the flap panel such that the second flap portion (18b) extends beyond the first fold line (22);
said method comprising folding said first flap portion (18a) inwardly with respect to said first wall panel (7a) so that said second flap portion (18b) rotates about said second fold line (28) to form a corner support across the corner of the container.

Patentansprüche

1. Behälter mit einer Klappe (18) mit einem ersten Klappenabschnitt (18a), dessen erstes Ende um eine erste Faltlinie (22) scharniermäßig mit einem Ende einer ersten Wand (7) des Behälters verbunden ist, und einem zweiten Klappenabschnitt (18b), der um eine zweite Faltlinie (28) scharniermäßig mit dem ersten Klappenabschnitt (18a) verbunden ist, so dass sich der zweite Klappenabschnitt (18b) um die zweite Faltlinie (28) dreht, um eine Eckstütze über die Ecke des Behälters zu bilden, wenn der erste Klappenabschnitt (18a) bezüglich der ersten Wand (7) nach innen gefaltet ist,
wobei der erste und der zweite Klappenabschnitt (18a, 18b) integral gebildet sind, indem die Klappe um eine dritte Faltlinie (38) eingefaltet wird, um sich nach innen und nach außen erstreckende Abschnitte der Klappe zu bilden, wobei der sich nach innen erstreckende Abschnitt des Klappenfelds die zweite Faltlinie (28) aufweist, um den zweiten Klappenabschnitt (18b) zwischen der zweiten Faltlinie (22) und einem inneren freien Ende (23) des sich nach innen erstreckenden Abschnitts zu bilden, wobei der sich nach innen erstreckende und der sich nach außen erstreckende Abschnitt des Klappenfelds zwischen der zweiten und der dritten Faltlinie (28, 38) fest miteinander verbunden sind und wobei der sich nach innen erstreckende Abschnitt des Klappenfelds länger als der sich nach außen erstreckende Abschnitt des Klappenfelds ist, so dass sich der zweite Klappenabschnitt (18b) über die erste Faltlinie (22) hinaus erstreckt.

2. Behälter nach Anspruch 1, wobei der erste Klappenabschnitt (18a) zum Falten konfiguriert ist, um mindestens einen Teil einer zweiten Wand (9) des Behälters zu bilden.

3. Behälter nach Anspruch 2, wobei der zweite Klappenabschnitt (18b) automatisch eine Eckstütze an der inneren Ecke zwischen der ersten und der zweiten Wand (7, 9) des Behälters bildet, wenn der erste Klappenabschnitt (18a) nach innen gefaltet ist.

4. Behälter nach Anspruch 1, 2 oder 3, wobei die zweite Faltlinie (28) von der ersten Faltlinie (22) nach außen verschoben ist.

5. Behälter nach einem der vorhergehenden Ansprüche, wobei der zweite Klappenabschnitt (18b) ein inneres freies Ende (23) hat, das unverbunden bleibt, so dass das innere freie Ende des zweiten Klappenabschnitts an der inneren Seite der ersten Wand (7) entlang fährt, wenn der erste Klappenabschnitt (18a) nach innen gefaltet wird.

6. Behälter nach einem der vorhergehenden Ansprüche, mit mindestens einem entfernbaren und/oder unvollständigen Wandabschnitt (16a).

7. Verfahren zum Bilden eines Behälters nach einem der vorhergehenden Ansprüche aus einem zuschnitt, der eine Klappe mit einem ersten Klappenabschnitt (18a), dessen erstes Ende um eine erste Faltlinie (22) scharniermäßig mit einem Ende eines ersten Wandfelds (7a) verbunden ist, und einem zweiten Klappenabschnitt (18b), der um eine zweite Faltlinie (28) scharniermäßig mit dem ersten Klappenabschnitt (18a) verbunden ist, umfasst,
wobei der erste und der zweite Klappenabschnitt (18a, 18b) integral gebildet werden, indem die Klappe um eine dritte Faltlinie (38) eingefaltet wird, um sich nach innen und nach außen erstreckende Abschnitte der Klappe zu bilden, wobei der sich nach innen erstreckende Abschnitt des Klappenfelds die zweite Faltlinie (28) aufweist, um den zweiten Klappenabschnitt (18b) zwischen der zweiten Faltlinie (22) und einem inneren freien Ende (23) des sich nach innen erstreckenden Abschnitts zu bilden, wobei der sich nach innen erstreckende und der sich nach außen erstreckende Abschnitt des Klappenfelds zwischen der zweiten und der dritten Faltlinie (28, 38) fest miteinander verbunden sind und wobei der sich nach innen erstreckende Abschnitt des Klappenfelds länger als der sich nach außen erstrekkende Abschnitt des Klappenfelds ist, so dass sich der zweite Klappenabschnitt (18b) über die erste Faltlinie (22) hinaus erstreckt,
wobei das Verfahren das Falten des ersten Klappenabschnitts (18a) nach innen bezüglich des ersten Wandfelds (7a) umfasst, so dass sich der zweite Klappenabschnitt (18b) um die zweite Faltlinie (28) dreht, um eine Eckstütze über die Ecke des Behälters zu bilden.

Revendications

1. Récipient comprenant un rabat (18) ayant une première portion de rabat (18a) ayant une première extrémité reliée de manière articulée à une extrémité d'une première paroi (7) du récipient autour d'une première ligne de pliage (22), et une deuxième portion de rabat (18b) reliée de manière articulée à ladite première portion de rabat (18a) autour d'une deuxième ligne de pliage (28), de telle sorte que lorsque ladite première portion de rabat (18a) est pliée vers l'intérieur par rapport à ladite première paroi (7), ladite deuxième portion de rabat (18b) tourne autour de ladite deuxième ligne d'articulation (28) pour former un support de coin en travers du coin du récipient ; dans lequel les première et deuxième portions de rabat (18a, 18b) sont formées d'un seul tenant en repliant le rabat sur lui-même autour d'une troisième ligne de pliage (38) pour former des portions, s'étendant vers l'intérieur et vers l'extérieur, du rabat, dans lequel la portion s'étendant vers l'intérieur du panneau de rabat comporte ladite deuxième ligne de pliage (28) afin de former la deuxième portion de rabat (18b) entre la deuxième ligne de pliage (22) et une extrémité libre intérieure (23) de la portion s'étendant vers l'intérieur, dans lequel les portions s'étendant vers l'intérieur et s'étendant vers l'extérieur du panneau de rabat sont reliées fixement l'une à l'autre entre les deuxième et troisième lignes de pliage (28, 38), et dans lequel la portion s'étendant vers l'intérieur du panneau de rabat est plus longue que la portion s'étendant vers l'extérieur du panneau de rabat, de telle sorte que la deuxième portion de rabat (18b) s'étende au-delà de la première ligne de pliage (22).

2. Récipient selon la revendication 1, dans lequel la première portion de rabat (18a) est configurée pour être pliée pour former au moins une partie d'une deuxième paroi (9) du récipient.

3. Récipient selon la revendication 2, dans lequel la deuxième portion de rabat (18b) forme automatiquement un support de coin sur le coin intérieur entre les première et deuxième parois (7, 9) du récipient lorsque ladite première portion de rabat (18a) est pliée vers l'intérieur.

4. Récipient selon la revendication 1, 2 ou 3, dans lequel la deuxième ligne de pliage (28) est déplacée vers l'extérieur à partir de la première ligne de pliage (22).

5. Récipient selon l'une quelconque des revendications précédentes, dans lequel la deuxième portion de rabat (18b) a une extrémité libre intérieure (23) qui reste non attachée, de telle sorte que lorsque la première portion de rabat (18a) est pliée vers l'intérieur, l'extrémité libre intérieure de la deuxième portion de rabat longe le côté intérieur de la première paroi (7).

6. Récipient selon l'une quelconque des revendications précédentes, comprenant au moins une portion de paroi (16a) amovible et/ou incomplète.

7. Procédé de formation d'un récipient selon l'une quelconque des revendications précédentes à partir

d'une découpe, ladite découpe comprenant un rabat ayant une première portion de rabat (18a) ayant une première extrémité reliée de manière articulée à une extrémité d'un premier panneau de paroi (7a) autour d'une première ligne de pliage (22), et une deuxième portion de rabat (18b) reliée de manière articulée à ladite première portion de rabat (18a) autour d'une deuxième ligne de pliage (28) ;
dans lequel les première et deuxième portions de rabat (18a, 18b) sont formées d'un seul tenant en repliant le rabat sur lui-même autour d'une troisième ligne de pliage (38) pour former des portions, s'étendant vers l'intérieur et vers l'extérieur, du rabat, dans lequel la portion s'étendant vers l'intérieur du panneau de rabat comporte ladite deuxième ligne de pliage (28) afin de former la deuxième portion de rabat (18b) entre la deuxième ligne de pliage (22) et une extrémité libre intérieure (23) de la portion s'étendant vers l'intérieur, dans lequel les portions s'étendant vers l'intérieur et s'étendant vers l'extérieur du panneau de rabat sont reliées fixement l'une à l'autre entre les deuxième et troisième lignes de pliage (28, 38), et dans lequel la portion s'étendant vers l'intérieur du panneau de rabat est plus longue que la portion s'étendant vers l'extérieur du panneau de rabat, de telle sorte que la deuxième portion de rabat (18b) s'étende au-delà de la première ligne de pliage (22) ;
ledit procédé comprenant le pliage de ladite première portion de rabat (18a) vers l'intérieur par rapport audit premier panneau de paroi (7a) de telle sorte que ladite deuxième portion de rabat (18b) tourne autour de ladite deuxième ligne de pliage (28) pour former un support de coin en travers du coin du récipient.

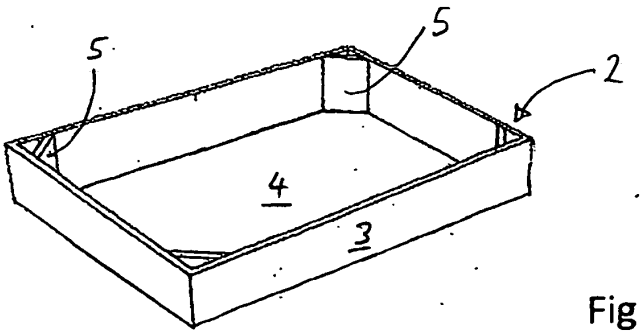


Fig 1

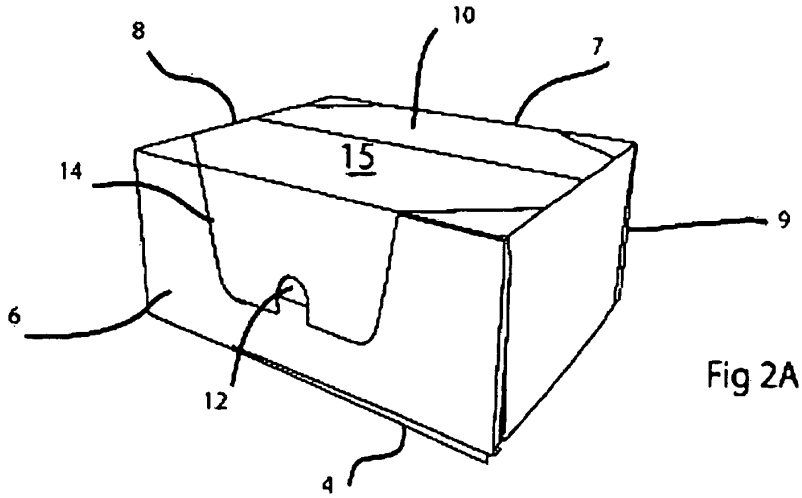


Fig 2A

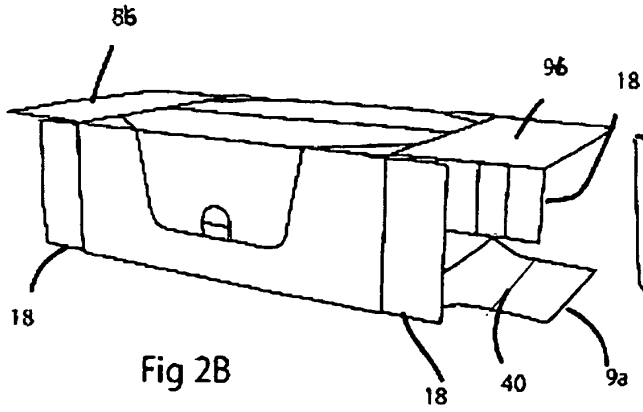


Fig 2B

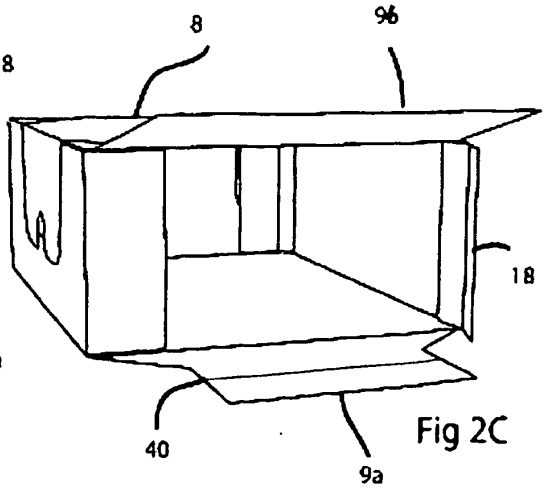


Fig 2C

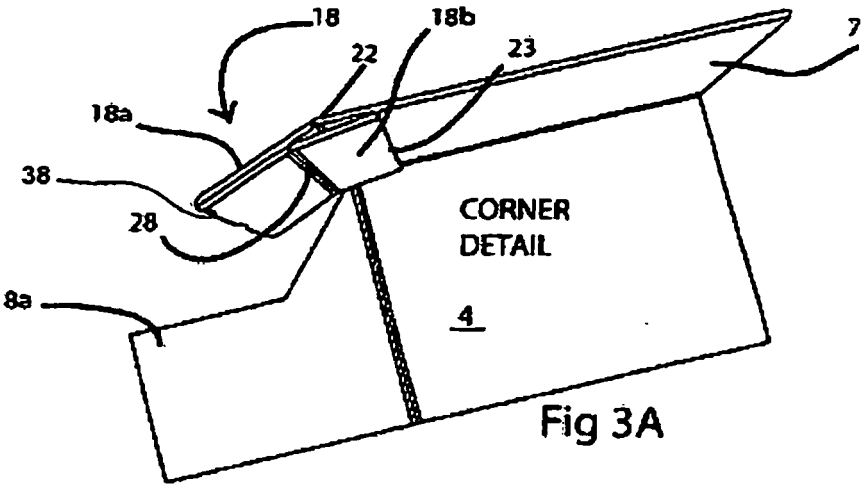


Fig 3A

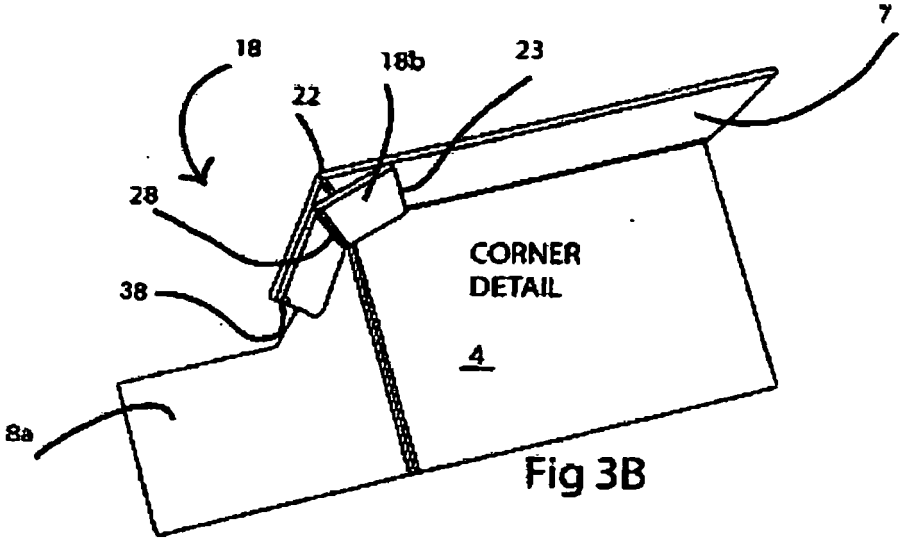


Fig 3B

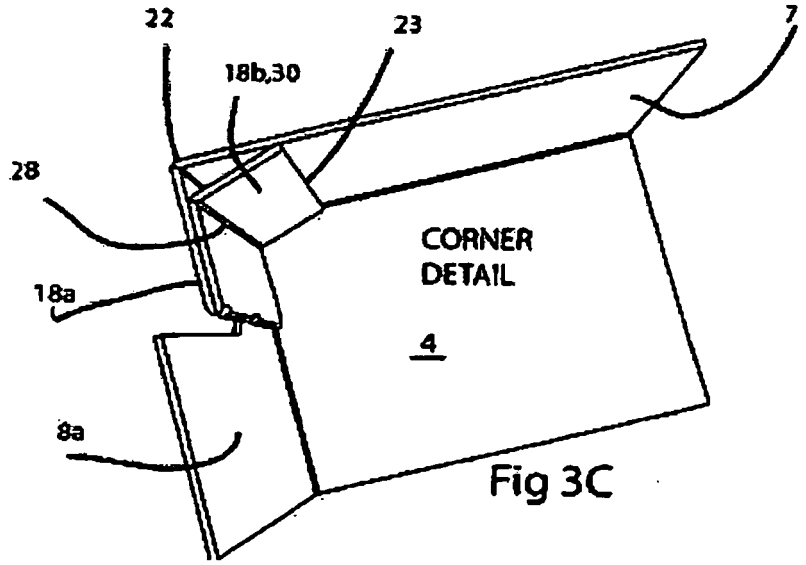
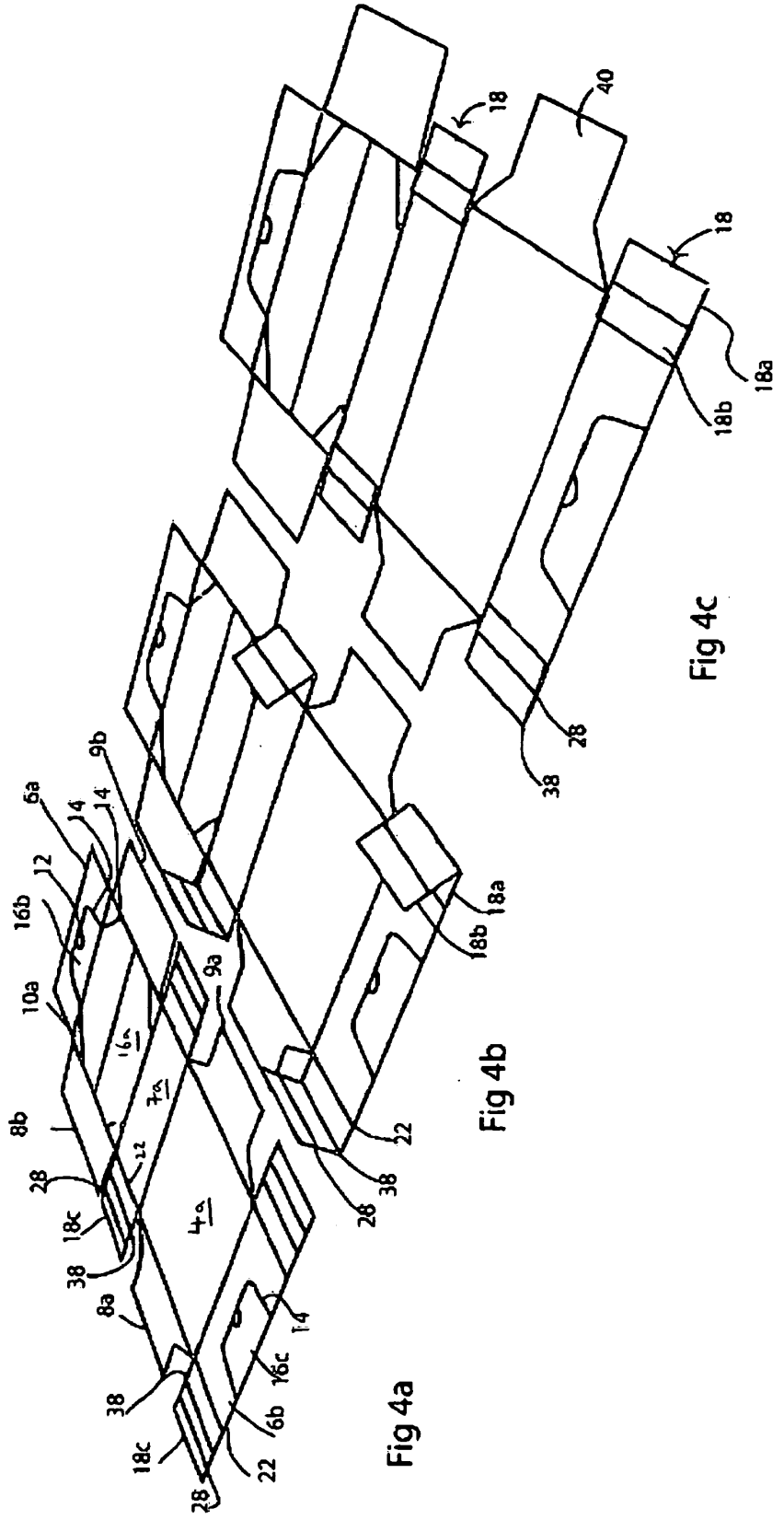


Fig 3C


18
40
18
18a
18b
28
38
Fig 4c
6a
14
9b
12
16b
10a
9a
8b
28
18c
38
8a
38
18c
28
22
6b
16c
14
18a
18b
38
28
22
Fig 4b
Fig 4a

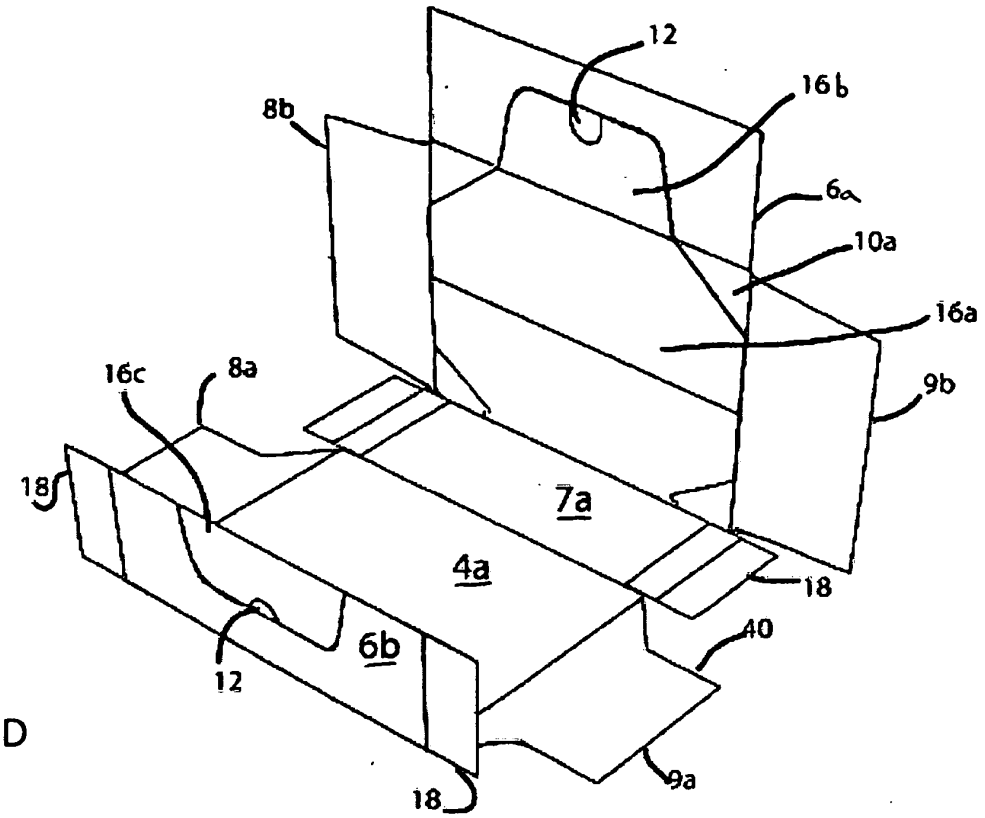

12
16b
8b
6a
10a
16a
16c
8a
9b
18
7a
4a
18
6b
40
12
9a
18

Fig 4D

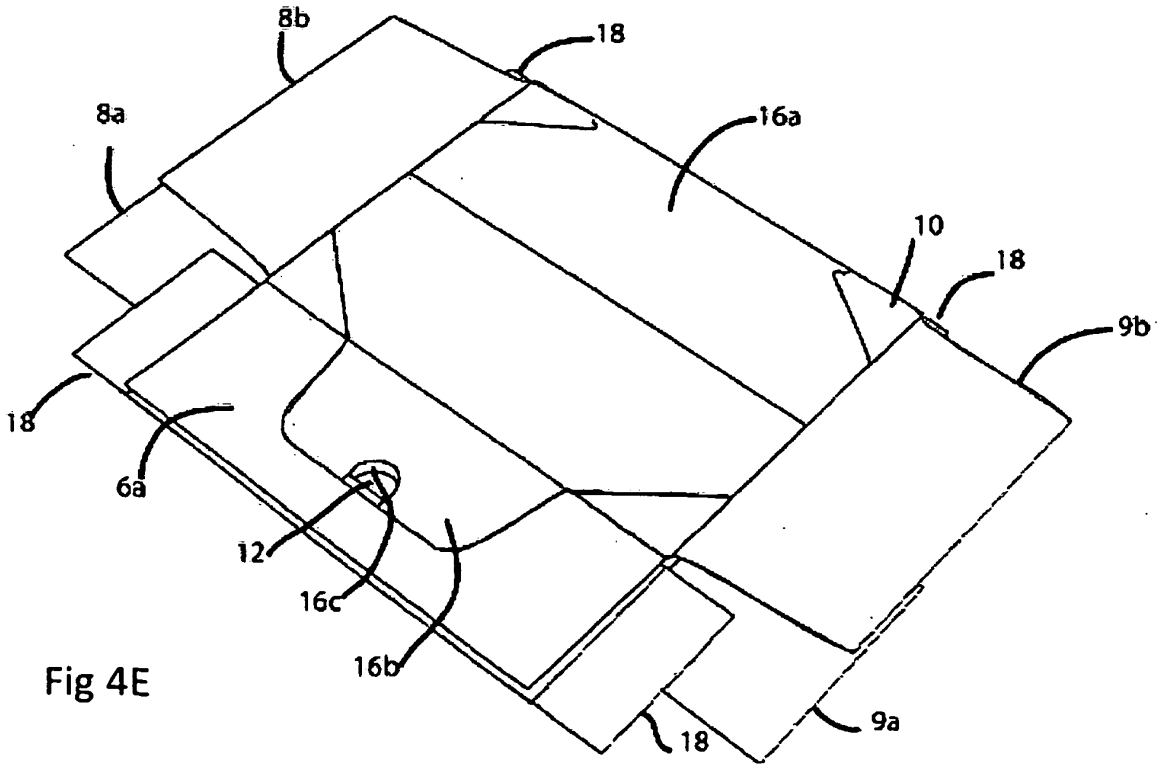

8b
18
8a
16a
10
18
9b
18
6a
12
16c
16b
9a
18

Fig 4E

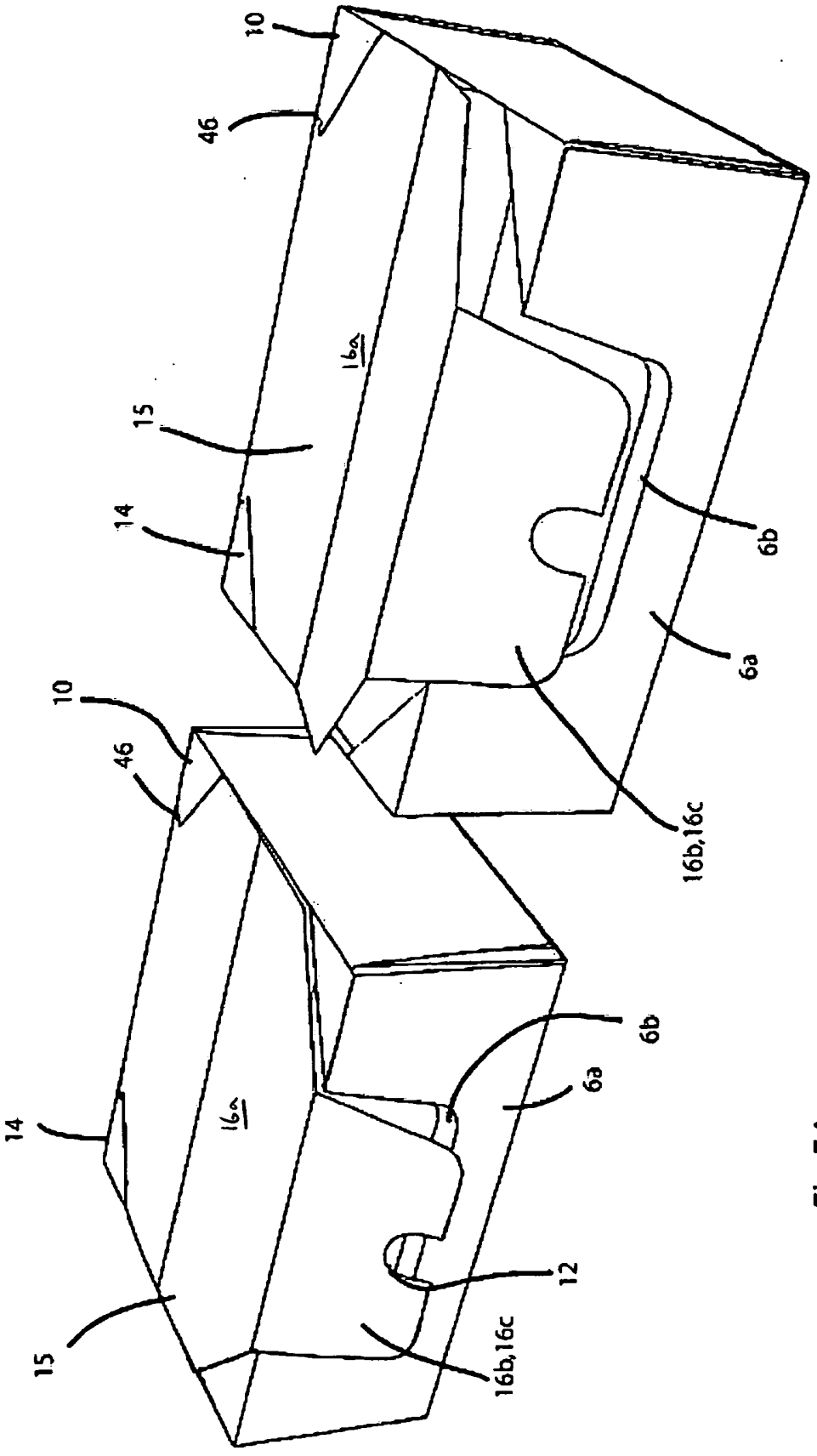


Fig 5B

Fig 5A

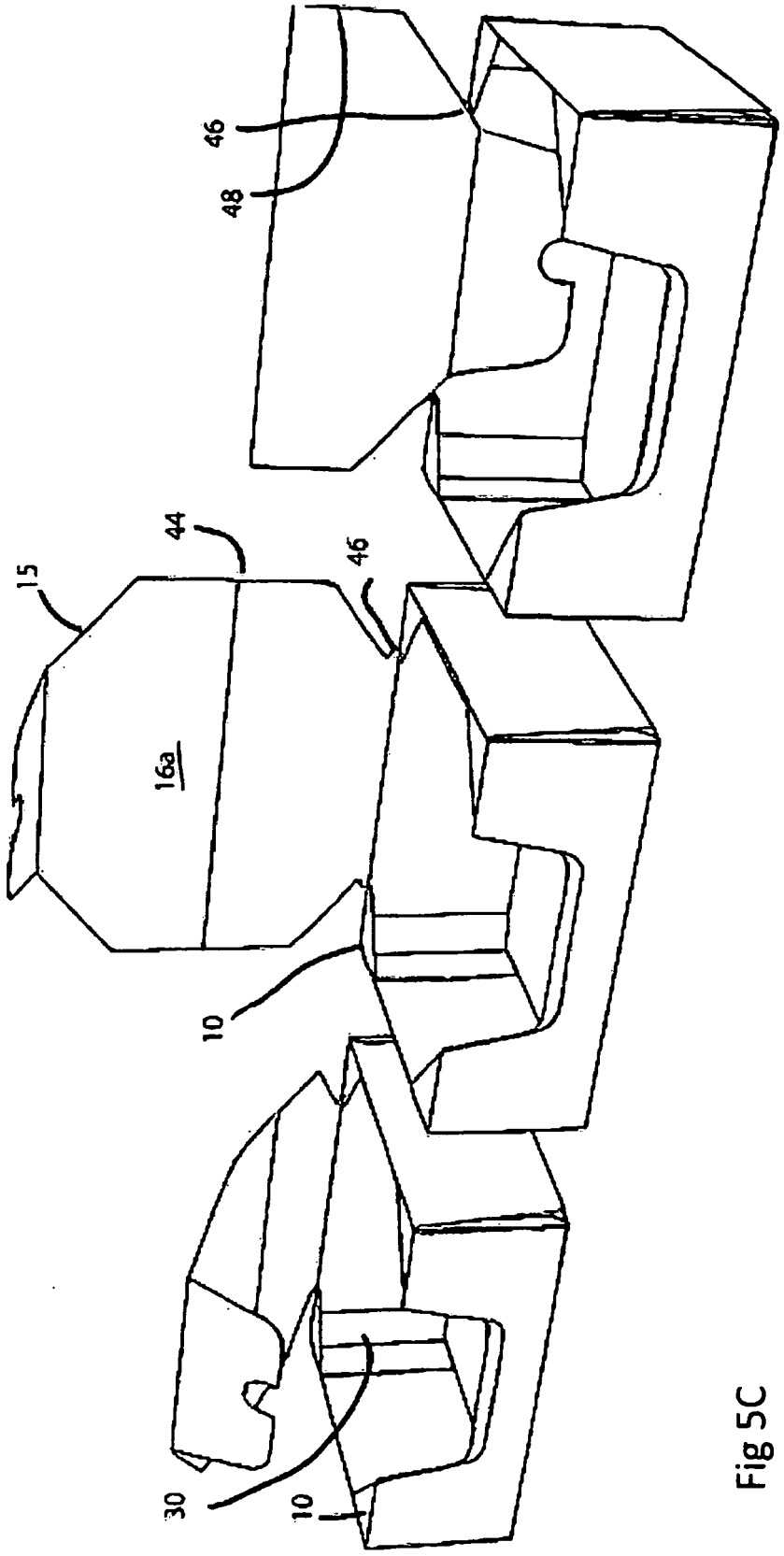


Fig 5C

Fig 5D

Fig 5E

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- JP 08244755 B **[0003]**
- FR 2676991 **[0003]**
- US 4056223 A **[0003]**
- DE 20301211 **[0003]**