



(51) International Patent Classification:
B65D 5/54 (2006.01)

(21) International Application Number:
PCT/US2018/026483

(22) International Filing Date:
06 April 2018 (06.04.2018)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
15/491,015 19 April 2017 (19.04.2017) US

(71) Applicant: INTERNATIONAL PAPER COMPANY
[US/US]; 6400 Poplar Avenue, Memphis, TN 38197 (US).

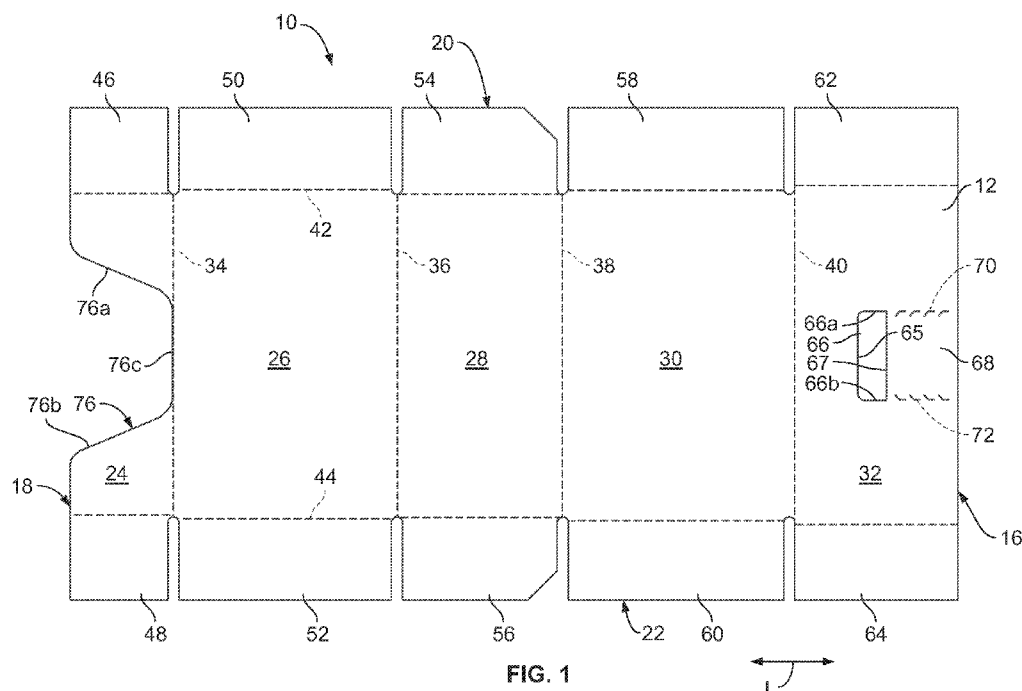
(72) Inventor: KEEFE, Jr., Walter, D.; 446 Indianwood Drive,
Carol Stream, IL 60188 (US).

(74) Agent: RYAN, Thomas, W. et al.; 6400 Poplar Avenue,
Memphis, TN 38197 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,

(54) Title: WRAPAROUND CLAMSHELL DISPLAY



(57) Abstract: A shipping container convertible to a display container formed from a one-piece blank of sheet material. The container comprises an inner front panel, a bottom panel, a back panel, a top panel, and an outer front panel connected in series at respective first, second, third, and fourth fold lines. Inner front side flaps joined to the inner front panel and back side flaps joined to the back panel extend along lateral sides of the container. Bottom side flaps joined to the bottom panel overlap an inner surface of at least the back side flaps and the back side flaps. Top side flaps joined to the top panel overlap an outer surface of at least the back side flaps. Outer front side flaps joined to the outer front panel overlap outer surfaces of the top side flaps and the bottom side flaps.

EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *with international search report (Art. 21(3))*

WRAPAROUND CLAMSHELL DISPLAY

FIELD OF THE INVENTION

This invention relates generally to containers for shipping products to points of sale. More particularly, the invention is a shipping container that is convertible to a display container at the point of sale.

BACKGROUND OF THE INVENTION

It is common practice to load a quantity of individual packages of consumer products into corrugated paperboard shipping containers for bulk shipment of the packages to a point of sale. At the point of sale, the individual packages may be removed from the shipping container and placed on a shelf for display and sale to the consumer.

In some instances, the product packages may be left in the shipping container which then also serves to support and display the packages for sale. If the shipping container is a conventional box, then the retailer must cut away a portion of the box in order to expose the product packages and provide access to them by the consumers. In order to provide a more attractive display and facilitate ease of use by the retailer, combination of shipping and display containers have been developed which have one or more sections that may be removed along weakened lines to expose the product packages and provide access to them.

SUMMARY OF THE INVENTION

In accordance with an aspect of the invention, a shipping container convertible to a display container formed from a one-piece blank of sheet material is provided. The container comprises an inner front panel, a bottom panel, a back panel, a top panel, and an outer front panel connected in series at respective first, second, third, and fourth fold lines. Inner front side flaps are foldably joined to the inner front panel and back side flaps are foldably joined to the back panel. The inner front side flaps and back side flaps extend along lateral sides of the container. Bottom side flaps are foldably joined to the bottom panel and overlap outer surfaces of the inner front side flaps and the back side flaps. Top side flaps are foldably joined to the top panel and overlap an outer surface of at least the back side flaps. Outer front side flaps are foldably joined to the outer front panel and overlap outer surfaces of the top side flaps and the bottom side flaps.

A joint may be formed adhering at least one of the bottom side flaps to at least one of the back side flaps wherein the top side flaps are not adhered to the back side flaps.

A joint may be formed adhering at least one of the outer front side flaps to at least one of the top side flaps wherein the outer front side flaps are not adhered to the bottom side flaps.

5 The third fold line between the top panel and the back panel may comprise a separation line.

At least one of the inner front panel and the outer front panel may include a separable panel portion defined by a pair of spaced separation lines extending from a lower front edge of the container.

10 One of the inner and outer front panels may include an opening having opposed lateral ends and the separation lines may extend from the opposed lateral ends of the opening.

A belly band may extend between the separation lines across a portion the inner front panel and may include a joint adhering the outer front panel to the belly band.

15 In accordance with another aspect of the invention, a one-piece blank of sheet material for forming a shipping container convertible to a display container is provided. The blank comprises an inner front panel, a bottom panel, a back panel, a top panel, and an outer front panel connected in series at respective first, second, third, and fourth fold lines. Inner front side flaps are foldably joined to the inner front panel, back side flaps are foldably joined to the back panel, bottom side flaps are foldably joined to the bottom panel, top side flaps are foldably joined to the top panel, and outer front side flaps are foldably joined to the outer front panel. A first one of the inner and outer front panels define a first longitudinal end of the blank and includes an opening having opposed lateral ends, and a second one of the inner and outer front panels includes a recess cut into the second one of the inner and outer panels from a second longitudinal end of the blank.

25 A pair of laterally spaced separation lines may extend from the lateral ends of the opening toward the first longitudinal end of the blank.

The third fold line between the top panel and the back panel may comprise a separation line.

A longitudinal length of the outer front panel may be substantially equal to a longitudinal length of the back panel.

30 A longitudinal length of the inner front panel may be less than the longitudinal length of the outer front panel.

In accordance with a further aspect of the invention, a method of forming a shipping container convertible to a display container from a one-piece blank of sheet material is provided. The blank comprises an inner front panel, a bottom panel, a back panel, a top panel, and an outer front panel connected in series at respective first, second, third, and fourth fold lines. The method comprises folding the inner front panel upward from the bottom panel to a generally vertical position; folding the back, top and outer front panels about the second, third and fourth fold lines; folding inner front side flaps joined to the inner front panel to extend along lateral sides of the container; folding back side flaps joined to the back panel to extend along the lateral sides of the container; folding bottom side flaps joined to the bottom panel to overlap a lower portion of the inner front side flaps and the back side flaps; folding top side flaps joined to the top panel to overlap an upper portion of at least the back side flaps; and folding outer front side flaps joined to the outer front panel to overlap front portions of the top side flaps and bottom side flaps.

A joint may be formed adhering at least one of the bottom side flaps to at least one of the back side flaps, and wherein the top side flaps are not adhered to the back side flaps.

A joint may be formed adhering at least one of the bottom side flaps to at least one of the inner front side flaps.

A joint may be formed adhering at least one of the outer front side flaps to at least one of the top side flaps, and wherein the outer front side flaps are not adhered to the bottom side flaps.

A joint may be formed adhering the outer front panel to at least one of the inner front panel and the bottom panel.

A pair of laterally spaced separation lines may be provided on at least one of the inner front panel and the outer front panel, and the container may be converted to a display container by separating a portion of the at least one panel along the separation lines.

The portion of the at least one panel may comprise a portion of the inner front panel that is adhered to an inner surface of the outer front panel, and wherein the portion of the inner panel may remain adhered to the outer front panel when the portion of the inner front panel is separated along the separation lines.

The third fold line between the top panel and the back panel may comprise a separation line, and converting the container to a display container may include separating the top panel from the back panel along the third fold line.

BRIEF DESCRIPTION OF THE DRAWINGS

5 While the specification concludes with claims particularly pointing out and distinctly claiming the present invention, it is believed that the present invention will be better understood from the following description in conjunction with the accompanying Drawing Figures, in which like reference numerals identify like elements, and wherein:

Fig. 1 is a plan view of a blank for forming a container;

10 Fig. 2 is a perspective view of a product placed on the blank of Fig. 1 prior to a wraparound folding operation;

Fig. 3 is a perspective view illustrating partial completion of the wraparound folding operation following formation of a base portion of the container;

15 Fig. 4 is a perspective view of a step in the wraparound folding operation prior to a final flap folding operation;

Fig. 5 is a perspective view illustrating completion of the wraparound folding operation to form a shipping container;

Fig. 6 is a perspective view illustrating reconfiguration of the container of Fig. 5 to form a display container;

20 Fig. 7 is a plan view of an alternative configuration of a blank for forming a container;

Fig. 8 is a perspective view illustrating partial completion of the wraparound folding operation following formation of a base portion of the container, using the blank of Fig. 7;

Fig. 9 is a perspective view illustrating completion of the wraparound folding operation to form a shipping container, using the blank of Fig. 7; and

25 Fig. 10 is a perspective view illustrating reconfiguration of the container of Fig. 9 to form a display container.

DETAILED DESCRIPTION OF THE INVENTION

In the following detailed description of the preferred embodiments, reference is made to the accompanying drawings that form a part hereof, and in which is shown by way of 30 illustration, and not by way of limitation, specific preferred embodiments in which the invention may be practiced. It is to be understood that other embodiments may be utilized

and that changes may be made without departing from the spirit and scope of the present invention.

The present description is directed to a container construction comprising a one-piece wraparound blank that is folded around a product to form a clamshell container having a lid
5 comprising a tear-away element that can be removed to form a display case for the product. The described container can be formed from a blank processed either with equipment designed for this purpose or by hand. For example, the blank may be folded using currently available case forming equipment to form the clamshell container enclosing the product for shipping the product to a point of sale, or the container can be formed around the product
10 through manually executed steps, or through a combination of machine implemented and manual steps.

Referring to Fig. 1, a die cut blank 10 is shown for illustrating one or more aspects of the container described herein. In a use of the blank to form a one-piece container 8, see Fig. 5, the blank 10 may be formed of a corrugated cardboard material and may be die cut to the
15 shape shown herein, although other materials and variations of the illustrated shape may be provided within the scope of the container described and claimed herein. The blank 10 illustrated in Fig. 1 is a planar piece of material in which an inner side 12 is shown facing out of the page and an outer side 14, see Fig. 5, is facing an opposite direction from the inner side 12.

As seen in Fig. 1, the blank 10 extends in a longitudinal direction L between first and
20 second longitudinal ends, generally designated 16 and 18, respectively, and further extends in a lateral direction between first and second lateral edges, generally designated 20 and 22, respectively. The blank 10 comprises an inner front panel 24, a bottom panel 26, a back panel 28, a top panel 30, and an outer front panel 32 connected in series. The inner front
25 panel 24 is connected to the bottom panel 26 at a first lateral fold line 34, the bottom panel 26 is connected to the back panel 28 at a second lateral fold line 36, the back panel 28 is connected to the top panel 30 at a third lateral fold line 38, and the top panel 30 is connected to the outer front panel 32 at a fourth lateral fold line 40. A longitudinal length of the outer front panel 32, extending in the longitudinal direction L, is substantially equal to a
30 longitudinal length of the back panel 28, and a longitudinal length of the inner front panel 24 is less than the longitudinal length of the outer front panel 32.

The third fold line 38 comprises a separation line that may be defined, for example, by a partial cut through at least one layer of the corrugated material or a cut line interrupted by short sections of bridging (uncut) material. As will be further understood from the description below, the separation line defined at the third fold line 38 forms a structurally weakened line that can permit separation of the top panel 30 from the back panel 28.

The outer front panel 32 includes an elongated opening 66 located intermediate the fourth fold line 40 and the first longitudinal end 16. The opening 66 is defined by longitudinally spaced edges 65, 67 connected by opposed laterally spaced edges or ends 66a, 66b. A separable panel portion 68 is defined between two laterally spaced separation lines 70, 72 that extend from the lateral ends 66a, 66b of the opening 66 toward the first longitudinal end 16 of the blank 10. The separation lines 70, 72 may be defined, for example, by a partial cut through at least one layer of the corrugated material or a cut line interrupted by short sections of bridging (uncut) material. The separation lines 70, 72 permit separation of the separable panel portion 68 from the outer front panel 32, as described further below.

The second longitudinal end 18 of the blank comprises a recess 76 cut into the inner front panel 24 from the second longitudinal end 18 of the blank 18. In particular, the recess 76 is defined by lateral edges 76a, 76b that angle inward toward each other from the second longitudinal end 18 toward an inner recess edge 76c that is generally aligned with, e.g., collinear with, the first fold line 34.

Inner front side flaps 46, 48 are foldably joined to laterally opposed sides of the inner front panel 24 along respective first and second longitudinal fold lines 42, 44. Bottom side flaps 50, 52 are foldably joined to the bottom panel 26 at the respective longitudinal fold lines 42, 44. Back side flaps 54, 56 are foldably joined to the back panel 28 at the respective longitudinal fold lines 42, 44. Top side flaps 58, 60 are foldably joined to the top panel 30 at the respective longitudinal fold lines 42, 44. Outer front side flaps 62, 64 are foldably joined to the outer front panel 32 at the respective longitudinal fold lines 42, 44.

Referring to Figs. 2-5, a series of folding steps for performing a wraparound folding operation using the blank 10 of Fig. 1 is described for forming a shipping container 8, see Fig. 5. Although the preferred embodiments presented herein describe applying an “adhesive” forming a joint between adjacent flaps and panels, or forming a “joint adhering” adjacent flaps and panels, it should be understood that such a joint or connection between the

flaps and panels can be formed by gluing or can be equivalently formed through other attachment mechanisms for connecting the flaps and panels together, and may alternatively encompass, without limitation, gluing, taping, stapling or stitching.

As illustrated in Fig. 2, a product 78 to be packaged in the container 8 is initially
5 placed on the bottom panel 26 of the blank 10. The product 78 is of a size having an outer perimeter equal to or less than the outer perimeter of the bottom panel 26. As illustrated in Fig. 3, the inner front panel 24 and back panel 28 are folded upward from the bottom panel 26 about the respective first and second fold lines 34, 36 to a generally vertical position, and the inner front side flaps 46, 48 and the back side flaps 54, 56 are folded relative to the inner
10 front panel 24 and back panel 28, respectively, to extend along the lateral sides of the container. Subsequently, the bottom side flaps 50, 52 are folded upward to overlap outer surfaces of the inner front side flaps 46, 48 and back side flaps 54, 56 at a lower portion of the container. Adhesive may be applied between the overlapping flaps 46, 48, 50, 52, 54 and 56 to form joints adhering the flaps 46, 48, 50, 52, 54 and 56 to one another at the locations
15 that the bottom side flaps 50, 52 overlap the inner front side flaps 46, 48 and the back side flaps 54, 56 to form a bottom portion 86 of the container 8, see Fig. 3.

As illustrated in Fig. 4, the top flap 30 is folded about the third fold line 38 to extend across the top of the product 78, and the outer front panel 32 is folded about the fourth fold line 40 to extend down in overlapping relationship across the inner front panel 24, placing the
20 opening 66 in alignment with the recess 76. The outer front side flaps 62, 64 are folded to overlap front portions of the respective top side flaps 58, 60 and bottom side flaps 50, 52, see Fig. 5, and a joint, e.g., adhesive joint, is formed adhering the outer front side flaps 62, 64 to outer surfaces of the top side flaps 58, 60. It should be noted that the overlapped area between the outer front side flaps 62, 64 and outer surfaces of the bottom side flaps 50, 52 is
25 without a joint adhering the respective flaps 62, 64 and 50, 52 together. That is, the outer front side flaps 62, 64 remain movable without attachment to the bottom side flaps 50, 52 in the completed container 8 for shipping the product 78. The completed container 8 is retained closed by a clip of tape 79, see Fig. 5, such as packaging tape, extending across a portion of the separable panel portion 68 and a portion of the bottom panel 26.

30 The assembled container 8 comprises a box that can be opened as a clamshell, including a lid portion 84 that is pivotally connected to the base portion 86 at the third fold

line 38. The base portion 86 is defined by the inner front panel 24 and inner front side flaps 46, 48, the bottom panel 26 and bottom side flaps 50, 52, and the back panel 28 and back side flaps 54, 56, see Fig. 6. The inner front side flaps 46, 48 and back side flaps 54, 56 are located inward of the bottom side flaps 50, 52, and are preferably attached to the bottom side
5 flaps 50, 52 with an adhesive, such as glue, to define the base portion 86.

The lid portion 84 is defined by the top panel 30 and top side flaps 58, 60, and by the outer front panel 32 and outer front side flaps 62, 64, see Fig. 6. Further, as a result in part of the unique folding sequence described above, the outer front side flaps 62, 64 are located outward of the top side flaps 58, 60, and are preferably attached to the top side flaps 58, 60
10 with an adhesive, such as glue, to define the lid portion 84. The lid portion 84 is unattached, e.g., without glue or other adhesive, to the lateral sides of the base portion 86 and is free to pivot relative to the base portion 86 when the joint adhering the outer front panel 32 to the bottom panel 26 is released, as described below.

The container 8 can be converted to a display case comprising the base portion 86 and enclosed product 78 by removing the lid portion 84. For example, at the point of sale, the
15 separable panel portion 68 can be grasped through the opening 66 and pulled down to separate the separable panel portion 68 from the outer front panel 32 along the separation lines 70, 72, thereby releasing the outer front panel 32 from the taped connection to the bottom panel 26, see Fig. 6. The lid portion 84 can then be pivoted up without releasing any
20 further connection between the lid portion 84 and the base portion 86, such that the exposed surfaces of the base portion 86 are not disrupted or marred by separation from the lid portion 84. Further, the recess 76 exposed by removal of the lid portion 84 forms a display opening 81 on the front of the base portion 86. Subsequently, the lid portion 84 can be separated from the base portion 86 along the separation line defined at the third fold line 38, and the base
25 portion 86 with product 78 may be used as a display at the point of sale.

It should be understood that, although the present description references use of the container 8 at a point of sale, use of the container 8 is not limited to this particular application and may be implemented for other shipping operations.

Referring to Fig. 7, an alternative configuration of a die cut blank 110 is shown for
30 illustrating one or more aspects of the container described herein. In a use of the blank to form a one-piece container 108, see Fig. 9, the blank 110 may be formed of a corrugated

cardboard material and may be die cut to the shape shown herein, although other materials and variations of the illustrated shape may be provided within the scope of the container described and claimed herein. The blank 110 illustrated in Fig. 7 is a planar piece of material in which an inner side 112 is shown facing out of the page and an outer side 114, see Fig. 9, is facing an opposite direction from the inner side 112.

As seen in Fig. 7, the blank 110 extends in a longitudinal direction between first and second longitudinal ends, generally designated 116 and 118, respectively, and further extends in a lateral direction between first and second lateral edges, generally designated 120 and 122, respectively. The blank 110 comprises an inner front panel 124, a bottom panel 126, a back panel 128, a top panel 130, and an outer front panel 132 connected in series. The inner front panel 124 is connected to the bottom panel 126 at a first lateral fold line 134, the bottom panel 126 is connected to the back panel 128 at a second lateral fold line 136, the back panel 128 is connected to the top panel 130 at a third lateral fold line 138, and the top panel 130 is connected to the outer front panel 132 at a fourth lateral fold line 140. A longitudinal length of the outer front panel 132, extending in the longitudinal direction L, is substantially equal to a longitudinal length of the back panel 128, and a longitudinal length of the inner front panel 124 is less than the longitudinal length of the outer front panel 132.

The third fold line 138 comprises a separation line that may be defined, for example, by a partial cut through at least one layer of the corrugated material or a cut line interrupted by short sections of bridging (uncut) material. As will be further understood from the description below, the separation line defined at the third fold line 138 forms a structurally weakened line that can permit separation of the top panel 130 from the back panel 128.

The inner front panel 124 includes an elongated opening 166 defined by longitudinally spaced edges 165, 167. The edge 165 coincides with a longitudinal side of the bottom panel 126 and is generally aligned with, e.g., collinear with, the first fold line 134. The edge 167 comprises an inner edge of a separable panel portion 168. The separable panel portion 168 comprises a belly band defined between two laterally spaced separation lines 170, 172 that extend from opposed lateral ends 166a, 166b of the opening 166 toward the first longitudinal end 116 of the blank 110. The separation lines 170, 172 may be defined, for example, by a partial cut through at least one layer of the corrugated material or a cut line interrupted by short sections of bridging (uncut) material. The separation lines 170, 172

permit separation of the separable panel portion 168 from the inner front panel 124, as described further below.

A first recessed area 174 of the first longitudinal end 116 of blank 110 is defined by an outer edge 169 of the separable panel portion 168. A second recessed area 176 is cut into
5 the outer front panel 132 from the second longitudinal end 118 of the blank 110.

Inner front side flaps 146, 148 are foldably joined to laterally opposed sides of the inner front panel 124 along respective first and second longitudinal fold lines 142, 144. Bottom side flaps 150, 152 are foldably joined to the bottom panel 126 at the respective longitudinal fold lines 142, 144. Back side flaps 154, 156 are foldably joined to the back
10 panel 128 at the respective longitudinal fold lines 142, 144. Top side flaps 158, 160 are foldably joined to the top panel 130 at the respective longitudinal fold lines 142, 144. Outer front side flaps 162, 164 are foldably joined to the outer front panel 132 at the respective longitudinal fold lines 142, 144.

A wraparound folding operation using the blank of Fig. 7, may be performed
15 generally following the steps described with reference to Figs. 2-5 of the previous embodiment, and differing from the previous embodiment in that the lid portion 184, see Fig. 9, of the presently described embodiment is held in place by an adhesive, e.g., glue, rather than the tape clip 79 described for the previous embodiment. Specifically, a product 178 to be packaged in the container 108 of the present embodiment is initially placed on the bottom
20 panel 126 of the blank 110. The product 178 is of a size having an outer perimeter equal to or less than the outer perimeter of the bottom panel 126. The inner front panel 124 and back panel 128 are folded upward from the bottom panel 126 about the respective first and second fold lines 134, 136 to a generally vertical position, and the inner front side flaps 146, 148 and the back side flaps 154, 156 are folded relative to the inner front panel 124 and back panel
25 128, respectively, to extend along the lateral sides of the container. Subsequently, the bottom side flaps 150, 152 are folded upward to overlap outer surfaces of the inner front side flaps 146, 148 and back side flaps 154, 156 at a lower portion of the container. Adhesive may be applied between the overlapping flaps 146, 148, 150, 152, 154 and 156 to form joints adhering the flaps 146, 148, 150, 152, 154 and 156 to one another at the locations that the
30 bottom side flaps 150, 152 overlap the inner front side flaps 146, 148 and the back side flaps 154, 156 to form a bottom portion 186 of the container 108, see Fig. 8.

The top flap 130 is folded about the third fold line 138 to extend across the top of the product 178, and the outer front panel 132 is folded about the fourth fold line 140 to extend down in overlapping relationship across the inner front panel 124. Prior to positioning the outer front panel 132 over the inner front panel 124, adhesive is preferably applied on an outward facing surface of the separable panel portion 168 laterally inward from the separation lines 170, 172 to form a joint adhering an inner surface of the outer front side panel 132 to an outer surface of the separable panel portion 168. Alternatively, the adhesive may be applied to the inner surface of the outer front side panel 132 for engaging and forming a connection with the separable panel portion 168.

The outer front side flaps 162, 164 are folded to overlap front portions of the respective top side flaps 158, 160 and bottom side flaps 150, 152, see Fig. 9, and a joint, e.g., adhesive joint, is formed adhering the outer front side flaps 162, 164 to outer surfaces of the top side flaps 158, 160. It should be noted that the overlapped area between the outer front side flaps 162, 164 and outer surfaces of the bottom side flaps 150, 152 is without a joint adhering the respective flaps 162, 164 and 150, 152 together. That is, the outer front side flaps 162, 164 remain movable without attachment to the bottom side flaps 150, 152 in the completed container 108 for shipping the product 178.

The assembled container 108, see Fig. 9, comprises a box that can be opened as a clamshell, including a lid portion 184 that is pivotally connected to the base portion 186 at the third fold line 138. The base portion 186 is defined by the inner front panel 124 and inner front side flaps 146, 148, the bottom panel 126 and bottom side flaps 150, 152, and the back panel 128 and back side flaps 154, 156. The inner front side flaps 146, 148 and back side flaps 154, 156 are located inward of the bottom side flaps 150, 152, and are preferably attached to the bottom side flaps 150, 152 with an adhesive, such as glue, to define the base portion 186.

The lid portion 184 is defined by the top panel 130 and top side flaps 158, 160, and by the outer front panel 132 and outer front side flaps 162, 164. Further, as a result in part of the unique folding sequence described above, the outer front side flaps 162, 164 are located outward of the top side flaps 158, 160, and are preferably attached to the top side flaps 158, 160 with an adhesive, such as glue, to define the lid portion 184. The lid portion 184 is unattached, e.g., without glue or other adhesive, to the lateral sides of the base portion 186

and is free to pivot relative to the base portion 186 when the joint adhering the outer front panel 132 to the inner front panel 124 is released, as described below.

The container 108 can be converted to a display case comprising the base portion 186 and enclosed product 178 by removing the lid portion 184. For example, at the point of sale, 5 the second recessed area 176 in the outer front panel 132 permits access to a lower edge of the separable panel portion 168, i.e., at the inner edge 167 of the separable panel portion 168, such that the separable panel portion 168 can be pulled upwardly with the lid portion 184, see Fig. 10. The separable panel portion 168 remains attached to the interior surface of the outer front panel 132 and separates from the inner front panel 124 along the separation lines 170, 10 172, thereby releasing the outer front panel 132 from the inner front panel 124. The lid portion 184 can then be pivoted up without releasing any further connection between the lid portion 184 and the base portion 186, such that the exposed surfaces of the base portion 186 are not disrupted or marred by separation from the lid portion 184. Further, separation of the separable panel portion 168 from the inner front panel 124 during removal of the lid portion 15 184 forms a display opening 181 on the front of the base portion 186. Subsequently, the lid portion 184 can be separated from the base portion 186 along the separation line defined at the third fold line 138, and the base portion 186 with product 178 may be used as a display at the point of sale.

While particular embodiments of the present invention have been illustrated and 20 described, it would be obvious to those skilled in the art that various other changes and modifications can be made without departing from the spirit and scope of the invention. It is therefore intended to cover in the appended claims all such changes and modifications that are within the scope of this invention.

CLAIMS

What is claimed is:

1. A shipping container convertible to a display container, formed from a one-piece blank of sheet material, the container comprising:
 - 5 an inner front panel, a bottom panel, a back panel, a top panel, and an outer front panel connected in series at respective first, second, third, and fourth fold lines;
inner front side flaps foldably joined to the inner front panel and back side flaps foldably joined to the back panel, the inner front side flaps and back side flaps extending along lateral sides of the container;
 - 10 bottom side flaps foldably joined to the bottom panel and overlapping outer surfaces of the inner front side flaps and the back side flaps;
top side flaps foldably joined to the top panel and overlapping an outer surface of at least the back side flaps; and
outer front side flaps foldably joined to the outer front panel and overlapping outer
15 surfaces of the top side flaps and the bottom side flaps.
2. The shipping container as set forth in claim 1, including a joint adhering at least one of the bottom side flaps to at least one of the back side flaps and wherein the top side flaps are not adhered to the back side flaps.
3. The shipping container as set forth in claim 1, including a joint adhering at least one
20 of the outer front side flaps to at least one of the top side flaps and wherein the outer front side flaps are not adhered to the bottom side flaps.
4. The shipping container as set forth in claim 1, wherein the third fold line between the top panel and the back panel comprises a separation line.
5. The shipping container as set forth in claim 1, wherein at least one of the inner front
25 panel and the outer front panel includes a separable panel portion defined by a pair of spaced separation lines extending from a lower front edge of the container.
6. The shipping container as set forth in claim 3, wherein one of the inner and outer front panels has an opening having opposed lateral ends and the separation lines extend from the opposed lateral ends of the opening.

30

7. The shipping container as set forth in claim 6, further including a belly band extending between the separation lines across a portion the inner front panel and including a joint adhering the outer front panel to the belly band.

8. A one-piece blank of sheet material for forming a shipping container convertible to a display container, the blank comprising:

an inner front panel, a bottom panel, a back panel, a top panel, and an outer front panel connected in series at respective first, second, third, and fourth fold lines;

inner front side flaps foldably joined to the inner front panel;

back side flaps foldably joined to the back panel;

10 bottom side flaps foldably joined to the bottom panel;

top side flaps foldably joined to the top panel;

outer front side flaps foldably joined to the outer front panel; and

a first one of the inner and outer front panels defining a first longitudinal end of the blank and including an opening having opposed lateral ends, and a second one of the inner and outer front panels including a recess cut into the second one of the inner and outer panels from a second longitudinal end of the blank.

9. The blank as set forth in claim 8, including a pair of laterally spaced separation lines extending from the lateral ends of the opening toward the first longitudinal end of the blank.

10. The blank as set forth in claim 8, wherein the third fold line between the top panel and the back panel comprises a separation line.

11. The blank as set forth in claim 8, wherein a longitudinal length of the outer front panel is substantially equal to a longitudinal length of the back panel.

12. The blank as set forth in claim 11, wherein a longitudinal length of the inner front panel is less than the longitudinal length of the outer front panel.

13. A method of forming a shipping container convertible to a display container from a one-piece blank of sheet material, the blank comprising an inner front panel, a bottom panel, a back panel, a top panel, and an outer front panel connected in series at respective first, second, third, and fourth fold lines, the method comprising:

30 folding the inner front panel upward from the bottom panel to a generally vertical position;

folding the back, top and outer front panels about the second, third and fourth fold lines;

folding inner front side flaps joined to the inner front panel to extend along lateral sides of the container;

5 folding back side flaps joined to the back panel to extend along the lateral sides of the container;

folding bottom side flaps joined to the bottom panel to overlap a lower portion of the inner front side flaps and the back side flaps;

10 folding top side flaps joined to the top panel to overlap an upper portion of at least the back side flaps; and

folding outer front side flaps joined to the outer front panel to overlap front portions of the top side flaps and bottom side flaps.

14. The method as set forth in claim 13, including forming a joint adhering at least one of the bottom side flaps to at least one of the back side flaps, and wherein the top side flaps are not adhered to the back side flaps.

15. The method as set forth in claim 14, including forming a joint adhering at least one of the bottom side flaps to at least one of the inner front side flaps.

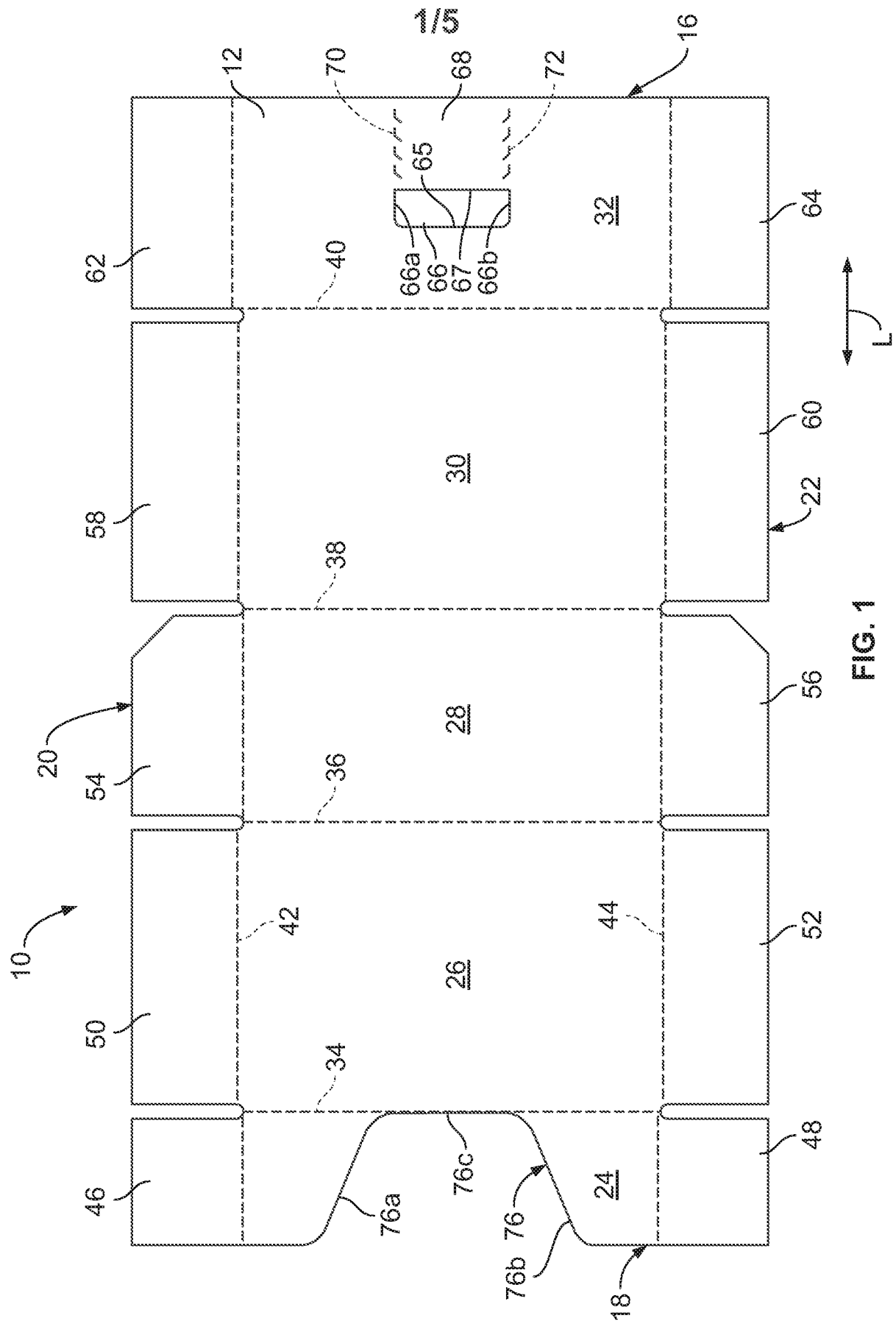
16. The method as set forth in claim 13, including a joint adhering at least one of the outer front side flaps to at least one of the top side flaps, and wherein the outer front side flaps are not adhered to the bottom side flaps.

17. The method as set forth in claim 13, including a joint adhering the outer front panel to at least one of the inner front panel and the bottom panel.

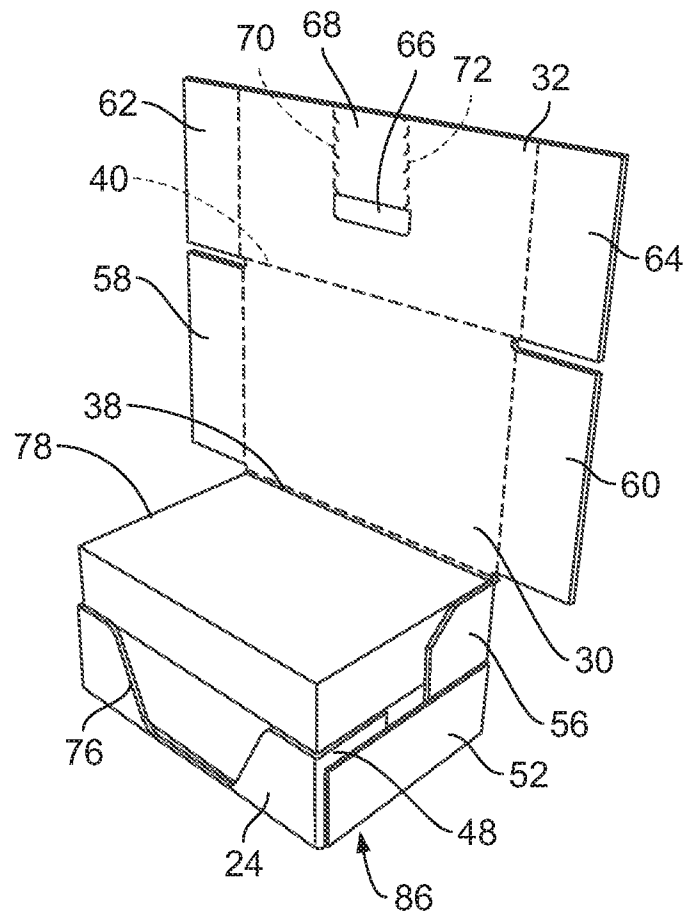
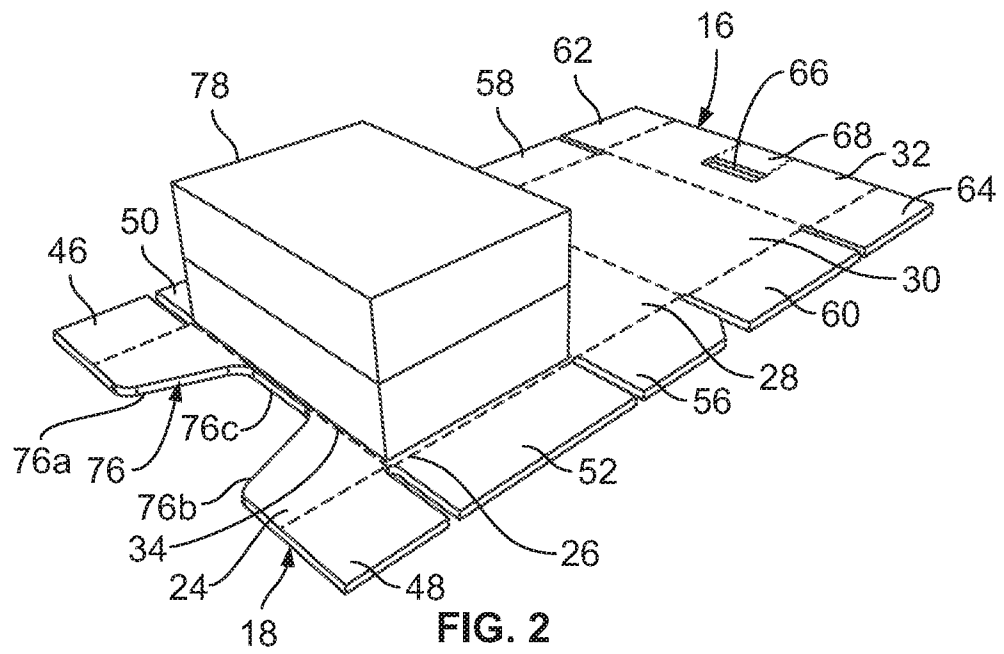
18. The method as set forth in claim 13, including a pair of laterally spaced separation lines on at least one of the inner front panel and the outer front panel, and including
25 converting the container to a display container by separating a portion of the at least one panel along the separation lines.

19. The method as set forth in claim 18, wherein the portion of the at least one panel comprises a portion of the inner front panel that is adhered to an inner surface of the outer front panel, and wherein the portion of the inner panel remains adhered to the outer front
30 panel when the portion of the inner front panel is separated along the separation lines.

20. The method as set forth in claim 18, wherein the third fold line between the top panel and the back panel comprises a separation line, and converting the container to a display container includes separating the top panel from the back panel along the third fold line.



2/5



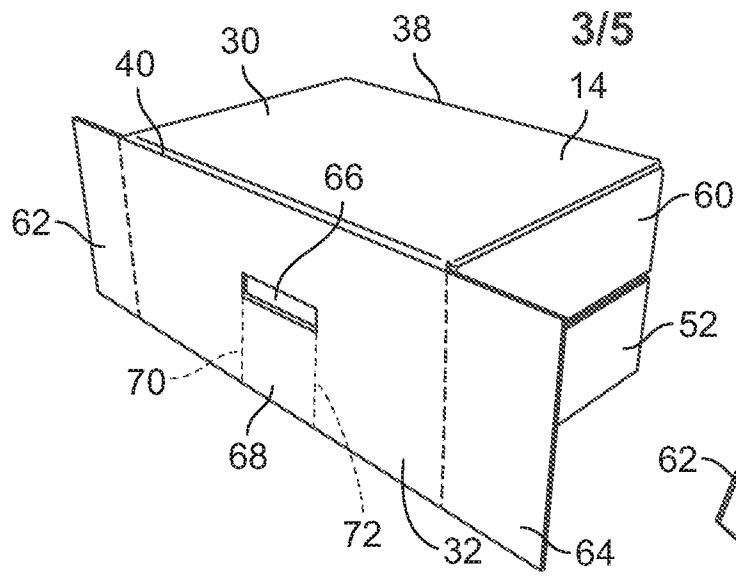


FIG. 4

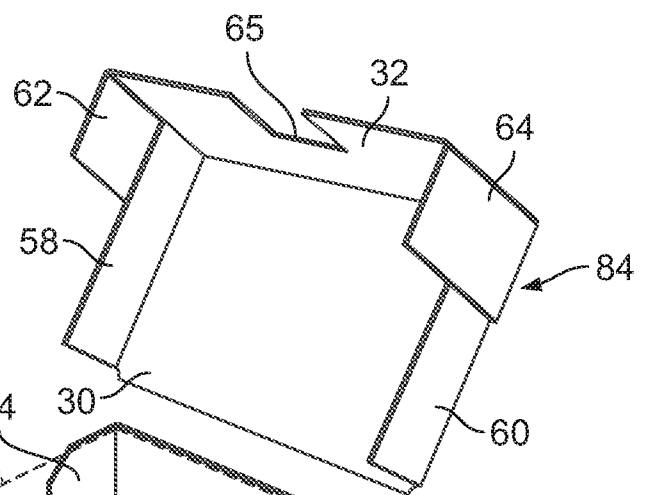


FIG. 5

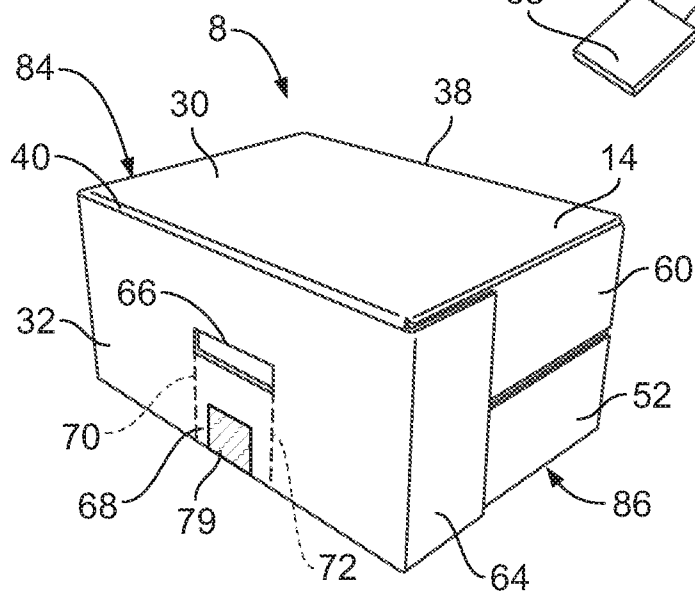


FIG. 6

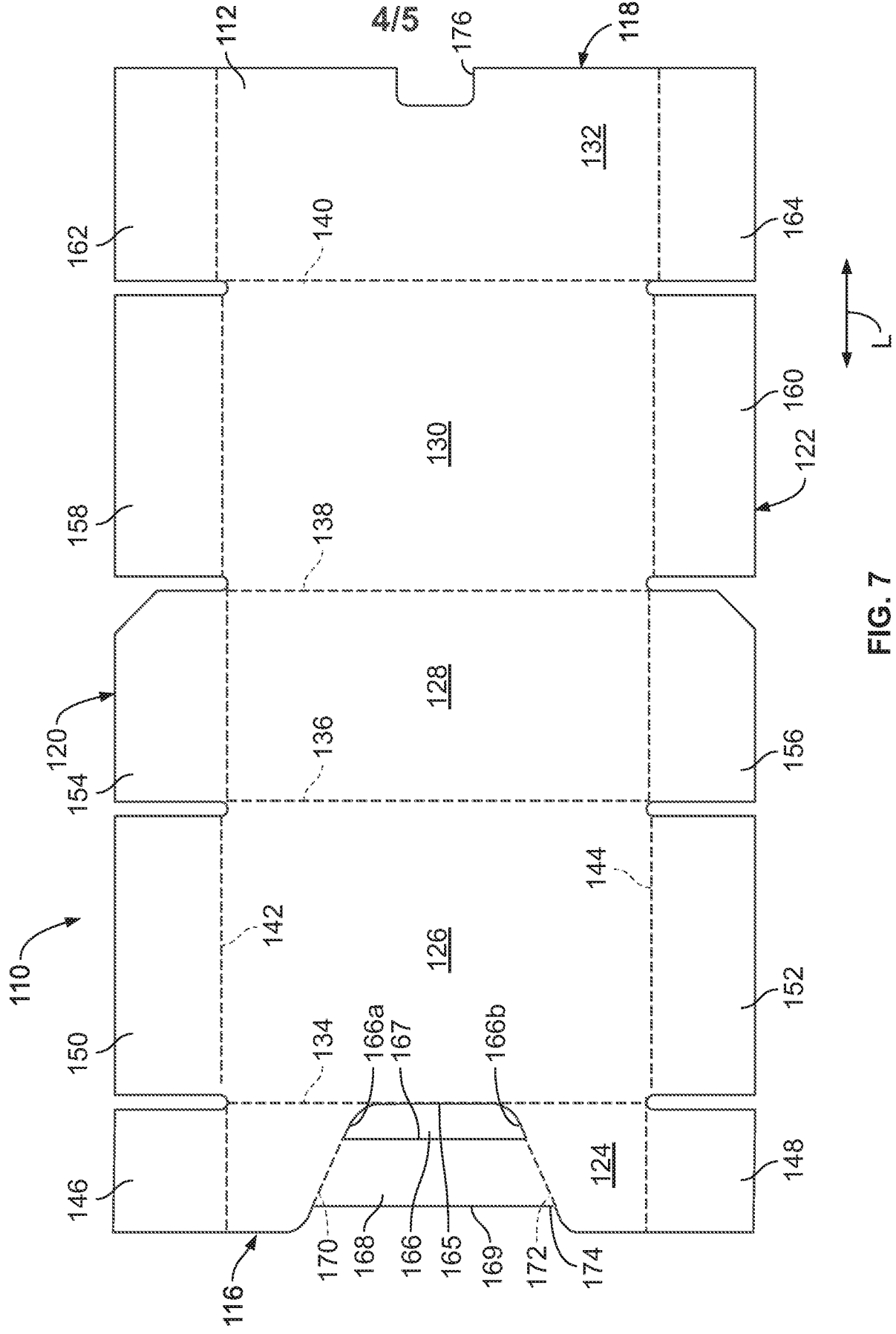


FIG. 7

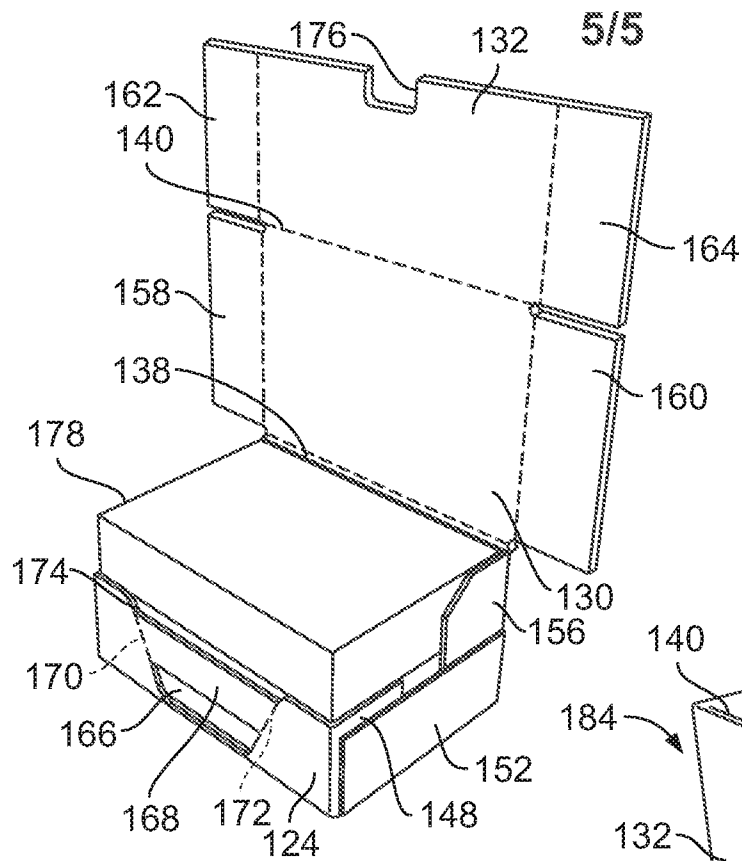


FIG. 8

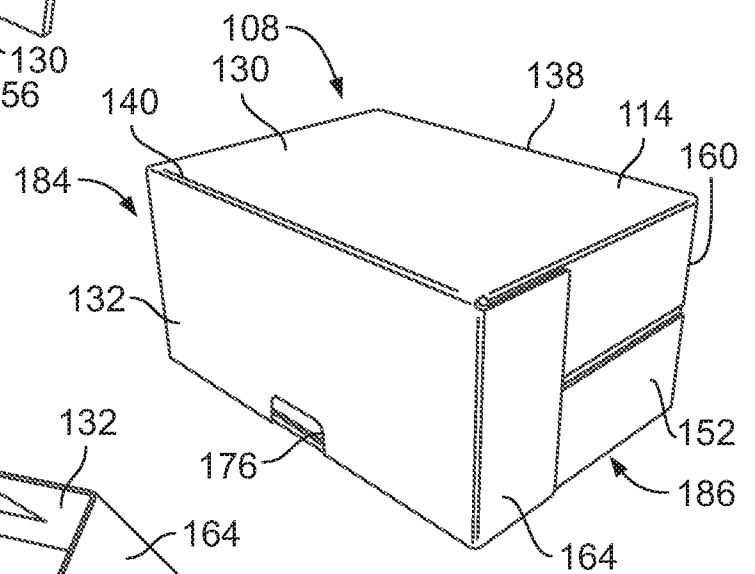


FIG. 9

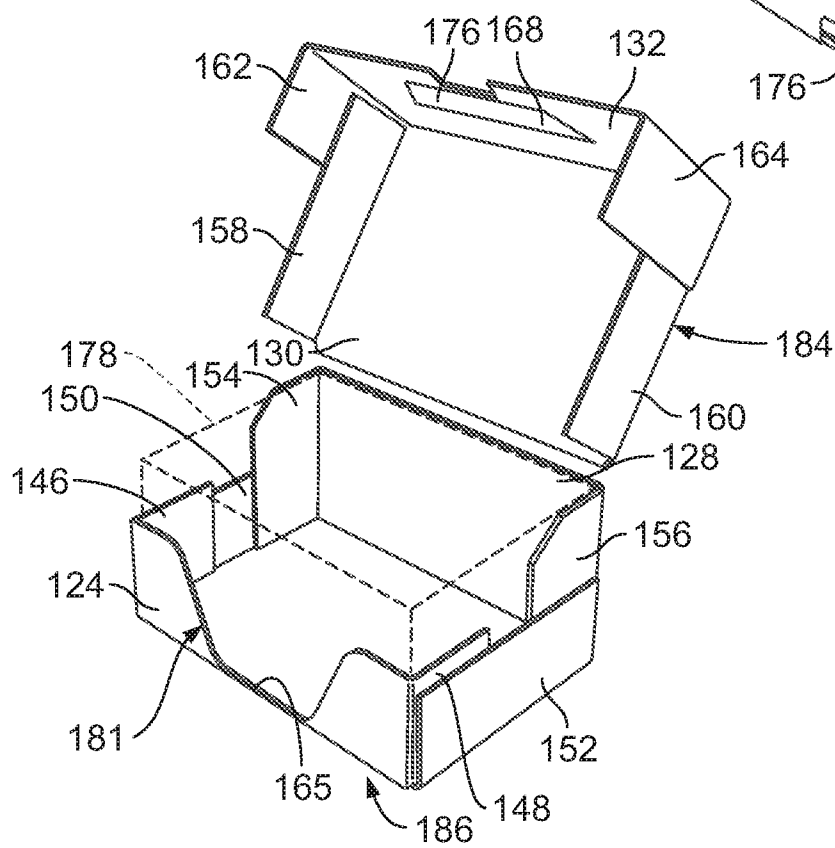


FIG. 10

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2018/026483

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D5/54
ADD.

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 practicable, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 372 794 A (KOHLHAAS FRANK A) 12 March 1968 (1968-03-12) column 2, line 39 - column 4, line 65; figures 1-11 -----	1-20
A	US 2004/163994 A1 (GARDNER JEFFREY M [US] ET AL) 26 August 2004 (2004-08-26) paragraph [0013] - paragraph [0025]; figures 1-7 -----	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

12 July 2018

Date of mailing of the international search report

20/07/2018

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

Derrien, Yannick

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2018/026483

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 3372794	A	12-03-1968	NONE	

US 2004163994	A1	26-08-2004	CA 2457377 A1	25-08-2004
			MX PA04001715 A	02-12-2004
			US 2004163994 A1	26-08-2004
