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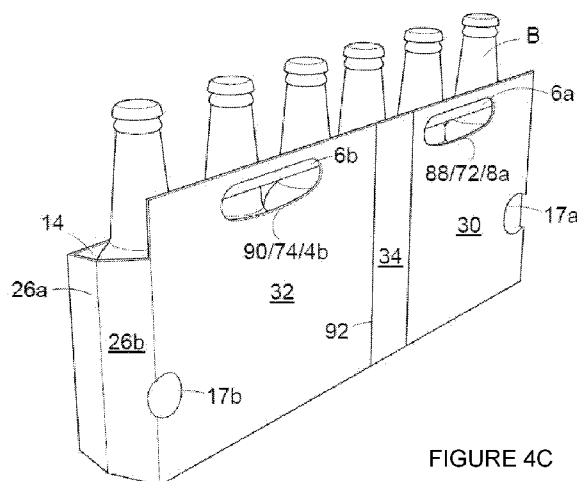


FIGURE 4C

(57) Abstract: A basket style carrier includes first and second carrier units connected together through a common medial handle structure (22a, 22b, 30, 32, 40, 42). Each of the first and second carrier units is collapsible into a substantially flat-form structure. The first carrier unit includes a first side wall (12), a first handle wall (22a, 30, 40), first and second opposed end walls (16a, 16b; 18a, 18b) each disposed between the first side wall and the first handle wall, and a first bottom wall (20a, 20b). The first bottom wall includes first (20a) and second (20b) bottom panels. The second carrier unit includes a second side wall (14), a second handle wall (22b, 32, 42), third and fourth opposed end walls (26a, 26b; 28a, 28b) each disposed between the second side wall and the second handle wall, and a second bottom wall (24a, 24b). The second bottom wall includes third (24a) and fourth (24b) bottom panels. The first and second handle walls are connected by at least one hinged connection (86) to form the common medial handle structure.

CONVERTIBLE BASKET-STYLE CARRIER AND BLANK THEREFOR

FIELD OF THE INVENTION

The present invention relates to basket-style carrier consumer packages comprising partitioned cells each for holding an individual item and more specifically, but not exclusively to a basket-style carrier that is convertible into two individual basket carriers each comprising partitioned cells for holding an individual item such as a bottle.

BACKGROUND OF THE INVENTION

In the field of packaging it is often required to provide consumers with a package comprising multiple primary product containers. Such multi-packs are desirable for shipping and distribution and for display of promotional information. Basket-style carriers are known in which a top loaded structure comprises a medial partition and handle panel. Further lateral partitions divide the carrier into cells, each holding an individual item. Such basket-style carriers are particularly popular for the packaging and display of premium products contained in bottles, where the tops of the bottles are well presented within the basket-style carrier for marketing purposes and where the partitioned cells help to protect the bottles and prevent, or at least mitigate against, adjacent bottles knocking against one another.

Typically, such basket-style carriers are collapsible into a flat-form and easily erected into a top loaded structure. For example, in US 5,645,162 to Harrelson, a basket-style carrier having an automatic bottom (also referred to as "crash bottom") and having lateral partition straps (36, 37, 38, 39) is shown. The basket carrier shown can hold six articles in two rows of three articles, each with the two rows being separated by a central partition and handle structure which provides an easy means by which the basket-style carrier can be held and carried. The blank can be assembled into a pre-glued and folded, flat-form, collapsed structure, from which the basket carrier of US '162 can be readily erected.

Such basket style carriers can be large and, for refrigeration and other purposes, it is sometimes desirable to provide a basket-style carrier that can be separated or otherwise converted into two or more (smaller) carriers after purchase.

It is desirable for a convertible carrier to be separated into two or more (smaller) carriers that are each structurally robust and sufficiently strong that they can hold multiple articles, such as glass bottles containing beer or other beverages. It is also desirable if the primary basket carrier can be erected from a flat-form collapsed structure in order to minimise shipping and transportation costs incurred by shipping empty and unloaded primary basket-style carriers.

It is also desirable if each smaller carrier continues to comprise structurally intact lateral partition structures so that the articles held by the smaller carriers continue to be held in individual cells.

It is also desirable if the basket-style carrier can be assembled on existing automatic machines such that no alteration, or no significant alteration, of existing automatic machines is required.

For cost and environmental considerations, it is preferable if such carriers are formed from as little material as possible and cause as little wastage in the materials from which they are formed as possible. Another consideration is the strength of the packaging and its suitability for holding and transporting large weights of articles.

The present invention seeks to overcome or at least mitigate the problems of the prior art by providing a blank that is formable into a pre-glued and folded collapsible structure, which collapsible structure can be opened out and erected into a basket-style carrier using existing automatic machinery. The basket-style carrier has a convertible structure comprising two separate and collapsible bottom walls and a plurality of collapsible lateral partition structures, such that the basket-style carrier can be collapsed flat, opened and loaded and then converted into two structurally distinct, smaller capacity, basket-style carriers.

SUMMARY OF INVENTION

According to a first aspect of the present invention there is provided a convertible basket-style carrier that is collapsible into a substantially flat-form structure and that is convertible into two carrier units, each of which is structurally independent and collapsible into a substantially flat-form structure. The basket-style carrier may comprise first and second side walls, end walls, a medial handle structure disposed between the first and second side walls and a composite bottom wall structure comprising: a first bottom wall having first and second hingedly connected bottom panels, the first bottom panel being hingedly connected to the first side wall and the second bottom panel being hingedly connected to the medial handle structure; and a second bottom wall having third and fourth hingedly connected bottom panels, the third bottom panel being hingedly connected to the second side wall and the fourth bottom panel being hingedly connected to the medial handle structure, and thereby when the basket-style carrier is converted into two carrier units, each carrier unit comprises its own intact bottom wall that can be moved between a folded form and an erect form.

Optionally, the basket-style carrier comprises a first partition structure that is hingedly connected to the first side panel by a first joint, that is hingedly connected to the medial handle structure by a second joint and the first partition structure comprises a third joint such that the first partition structure can be collapsed into a substantially flat-form.

Optionally, the first partition structure comprises a major partition flap, a minor partition flap and an attachment flap and wherein the first, second and third joints are arranged such that when the first partition structure is collapsed into a substantially flat-form, the major partition flap is overlaid at least partially onto the minor partition flap.

Optionally, the attachment flap is hingedly connected to the first side wall by the first joint, wherein the major partition flap is hingedly connected to the medial handle structure by the second joint and wherein the minor partition flap is hingedly connected to the major partition flap by the third joint.

Optionally, the major partition flap is hingedly connected to a securing panel affixed to the first side wall by the first joint, wherein the attachment flap is affixed to and hingedly connected to the medial handle structure by the second joint and wherein the minor partition flap is hingedly connected to the major partition flap by the third joint.

Optionally, the basket-style carrier comprises two of the first partition structures disposed adjacent to one another such that three cells are provided between the medial handle structure and the first side wall.

Optionally, the basket-style carrier comprises a second partition structure hingedly connected to the second side panel by a first joint, hingedly connected to the medial handle structure by a second joint and the second partition structure comprises a third joint such that the second partition structure can be collapsed into a substantially flat-form.

Optionally, the second partition structure comprises a major partition flap, a minor partition flap and an attachment flap and the first, second and third joints are arranged such that when the second partition structure is collapsed into a substantially flat-form, the major partition flap is overlaid at least partially onto the minor partition flap.

Optionally, the minor partition flap is hingedly connected to the second side wall by the first joint, the major partition flap is hingedly connected to the medial handle structure by the second joint and the minor partition flap is hingedly connected to the major partition flap by the third joint.

Optionally, the major partition flap is hingedly connected to a securing panel affixed to the second side wall by the first joint, the attachment flap is affixed to and hingedly connected to the medial handle structure by the second joint and the minor partition flap is hingedly connected to the major partition flap by the third joint.

Optionally, the end walls comprise: two hingedly connected first end wall forming panels; two hingedly connected second end wall forming panels; two hingedly connected third end wall forming panels; and two hingedly connected fourth end wall forming panels; the first end wall and the third end wall together form a first composite and collapsible end wall of the basket-style carrier, the second end wall and fourth end wall together form a second composite and collapsible end wall of the basket-style carrier and upon conversion of the basket-style carrier into first and second carrier units, the first end wall and the second end wall provide the end walls of the first carrier unit and the third and fourth end walls provide the end walls of the second carrier unit.

According to another aspect of the disclosure for which protection is sought, there is provided one or more blanks for forming the basket-style carrier according to any preceding paragraph of the summary section.

According to another aspect of the disclosure for which protection is sought, there is provided a blank for forming a convertible basket-style carrier that is collapsible into a substantially flat-form structure and that is convertible into two carrier units each of which is structurally independent and each of which is collapsible into a substantially flat-form structure, the blank comprising first and second side panels, end panels, panels for forming a medial handle structure and a composite bottom wall forming structure comprising: first and second hingedly connected bottom panels, the first bottom panel being hingedly connected to the first side panel and the second bottom panel being hingedly connected to one of the panels for forming the medial handle structure; and third and fourth hingedly connected bottom panels, the third bottom panel being hingedly connected to the second side panel and the fourth bottom panel being hingedly connected to one of the panels for forming the medial handle structure, and thereby when the blank is assembled into a basket-

style carrier that is converted into two carrier units, each carrier unit comprises its own intact bottom wall that can be moved between a folded form and an erect form.

Optionally, the blank comprises panels for forming a first partition structure including: a major partition flap, a minor partition flap and an attachment flap and wherein first, second and third joints are arranged therebetween such that the major partition flap can be overlaid at least partially onto the minor partition flap when the first partition structure is assembled and collapsed into a substantially flat-form.

Optionally, the attachment flap is hingedly connectable to the first side wall by the first joint, the major partition flap is hingedly connected to the medial handle structure by the second joint and the minor partition flap is hingedly connected to the major partition flap by the third joint.

Optionally, the blank comprises first and second blanks, the major partition flap is hingedly connected by the first joint to a securing panel of the second blank, which securing panel is affixable to the first side panel that is provided by the first blank, the attachment flap is affixable to and hingedly connectable to the medial handle structure by the second joint and the minor partition flap is hingedly connected to the major partition flap by the third joint.

Optionally, the blank or blanks comprise panels for forming two of the first partition structures which, in the set-up basket carrier formed therefrom are disposed adjacent to one another such that three cells are provided between the medial handle structure and a first or second side panel.

Optionally, the blank or blanks comprise: two hingedly connected first end wall forming panels; two hingedly connected second end wall forming panels; two hingedly connected third end wall forming panels; and two hingedly connected fourth end wall forming panels.

Within the scope of this application it is envisaged that the various aspects, embodiments, examples, features and alternatives set out in the preceding paragraphs, in the claims and/or in the following description and drawings may be taken independently or in any combination thereof. For example, features described in connection with one embodiment are applicable to all embodiments unless there is incompatibility of features.

BRIEF DESCRIPTION OF THE DRAWINGS

Exemplary embodiments of the invention will now be described with reference to the accompanying drawings, in which:

Figure 1 is a plan view from above of a blank for forming a collapsible and convertible basket-style carrier according to a first embodiment of the invention;

Figure 2A is a plan view from above of the blank of Figure 1 with an inside, non-printed, non-coated surface facing outward;

Figure 2B is a plan view of the blank of Figure 2 showing a step in the folding and gluing sequence used to assemble the blank into a collapsed basket-style carrier;

Figures 2C, 2D, and 2E show further steps in the folding and gluing sequence used to assemble the blank into a collapsed basket-style carrier;

Figure 2F is a view from the front of a substantially flat-form, collapsed basket-style carrier formed from the blanks of Figures 1 and 2A;

Figure 3A is a view from below of the flat-form collapsed basket-style carrier of Figure 3 being expanded and opened out. The collapsed carrier is shown partially open, illustrating how the bottom walls of each of two parts of the carrier are formed;

Figure 3B is a view from below of the flat-form collapsed basket-style carrier of Figure 3 being expanded and opened out. The collapsed carrier is shown in a fully opened position showing the bottom walls of each part of the carrier in a fully assembled state;

Figure 3C is a view from above of the flat-form collapsed basket-style carrier of Figure 3A being expanded and opened out. The collapsed carrier is shown partially open, illustrating how lateral partition structures of each of the two parts of the carrier are formed;

Figure 3D is a view from above of the flat-form collapsed basket-style carrier of Figure 3B being expanded and opened out. The collapsed carrier is shown in a fully opened position showing a lateral partition structure of part of the carrier in a fully assembled state;

Figure 4 is a perspective view from above of the basket-style carrier formed from the collapsed flat-form of Figure 2F loaded with bottles;

Figure 4B is a perspective view from the front-side of the basket-style carrier formed from the collapsed flat-form of Figure 2F loaded with bottles and wherein two frangible connectors have been broken such that the carrier is converted into a second state, wherein first and second parts of the carrier are pivotally connected together and are disposed in a side-by-side manner;

Figure 4C is a perspective view from the rear-side of the basket-style carrier of Figure 4B, wherein the first and second parts of the carrier are pivotally connected together and are disposed in a side-by-side manner such that the vanity panels form a large bill-board style advertising space within the carrier;

Figure 5A is a perspective view from above of a first end of the basket-style carrier of Figure 4 being separated into first and second carrier units;

Figure 5B is a perspective view from above of a second end of the basket-style carrier of Figure 4 being separated into first and second carrier units;

Figure 5C is a perspective view from above of the first and second carrier units;

Figure 6A is a plan view from above of a first blank for forming a collapsible and convertible basket-style carrier according to a second embodiment of the invention;

Figure 6B is a plan view from above of a second blank for forming a collapsible and convertible basket-style carrier according to a second embodiment of the invention;

Figure 7A is a plan view of the second blank of Figure 6B disposed on top of and affixed to the first blank of Figure 6A illustrating a first step in the folding and gluing sequence used to assemble the first and second blanks into a collapsed basket-style carrier;

Figures 7B, 7C, and 7D show further steps in the folding and gluing sequence used to assemble the first and second blanks into a collapsed basket-style carrier;

Figure 7E is a view from the front of a substantially flat-form, collapsed basket-style carrier formed from the blanks of Figures 6A and 6B;

Figure 7F is a view from above of the flat-form collapsed basket-style carrier of Figure 7E being expanded and opened out. The collapsed carrier is shown partially open, illustrating how lateral partition structures of each of the two parts of the carrier are formed;

Figures 7H, 7I and 7J are perspective views of the foldable lateral partition structures of the basket style-carrier according to the second embodiment of the disclosure;

Figure 8A is a perspective view from above of the basket-style carrier formed from the collapsed flat-form blanks of Figures 6A and 6B loaded with bottles;

Figure 8B is a perspective view from above of first and second carrier units that are created when the basket-style carrier of Figure 8A is separated;

Figure 9A is a plan view from above of a first-blank for forming a collapsible and convertible basket-style carrier according to a third embodiment of the invention;

Figure 9B is a plan view from above of a second blank for forming a collapsible and convertible basket-style carrier according to a third embodiment of the invention; and

Figure 10 is a plan view from above of a blank for forming a collapsible and convertible basket-style carrier according to a fourth embodiment of the invention.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS OF THE PRESENT INVENTION

Detailed descriptions of specific embodiments of the blanks, collapsed carriers, basket style carriers and separable carrier units are disclosed herein. It will be understood that the disclosed embodiments are merely examples of the way in which certain aspects of the invention can be implemented and do not represent an exhaustive list of all of the ways the invention may be embodied. As used herein, the word "exemplary" is used expansively to refer to embodiments that serve as illustrations, specimens, models, or patterns. Indeed, it will be understood that the blanks, collapsed carriers, basket style carriers and carrier units described herein may be embodied in various and alternative forms. The Figures are not necessarily to scale and some features may be exaggerated or minimised to show details of particular components. Well-known components, materials or methods are not necessarily described in great detail in order to avoid obscuring the present disclosure. Any specific structural and functional details disclosed herein are not to be interpreted as limiting, but

merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the invention.

Referring to Figure 1 there is shown a plan view of a blank 10 for forming a collapsed, substantially flat-form structure 31c (see Figure 2F) that is expandable into a basket style carrier 31 (see Figure 4) that is capable of accepting a group of primary products 'B', such as, but not limited to, bottles and cans and hereinafter referred to as articles 'B'.

In the embodiments detailed herein, the terms "carton" and "carrier" refer, for the non-limiting purpose of illustrating the various features of the invention, to a container for engaging, carrying, and/or dispensing articles, such as product containers. It is contemplated that the teachings of the invention can be applied to various product containers, which may or may not be tapered and/or cylindrical. Exemplary containers include bottles (for example metallic, glass or plastics bottles), cans (for example aluminium cans), tins, pouches, packets and the like.

The blank 10 is formed from a sheet of suitable substrate. It is to be understood that, as used herein, the term "suitable substrate" includes all manner of foldable sheet material such as paperboard, corrugated board, cardboard, plastic, combinations thereof, and the like. It should be recognized that one or other numbers of blanks may be employed, where suitable, for example, to provide the carrier structure described in more detail below.

In the exemplary embodiment, the blank 10 is configured to form a convertible basket-style carrier 31 that is suitable for packaging an arrangement of articles 'B'. In the first illustrated embodiment, the arrangement is a 2 x 3 matrix of bottles 'B', with each bottle 'B' being held or accommodated by a separate cell. The basket-style carrier 31, as shown in Figure 4, is convertible and as shown in Figures 4B, 4C, 5A, 5B and 5C, is convertible into first and second connected or separate, smaller carrier units 31b, 31a, herein referred to as first and second carrier units 31b, 31a. The blank 10 can be alternatively configured to form a convertible basket-style carrier 31 for packaging other types, number and size of article and/or for packaging articles in a different arrangement or configuration.

Referring again to Figure 1, it can be seen that the blank 10 is substantially symmetrical about a notional transverse axis extending coincidentally with fold lines 76a, 76b, 76c, 78 and 86. The panels above the transverse axis constitute a first section for forming the first carrier unit 31b and the panels below the transverse axis constitute a second section for forming the second carrier unit 31a.

The first section of the blank 10 includes a first handle and partition panel 40, first end wall forming panels 18b, 18a, a first side panel 12, second end wall panels 16a, 16b and a first vanity panel 30, hinged one to the next in series by longitudinally extending hinged connections such as fold lines 95, 80c, 98, 94, 80a and 23. In addition, a first reinforcing handle panel 22a is provided that is hinged by fold line 13a to the first handle and partition panel 40 and that is not connected to the adjacent first end wall panels 18b, 18a and first side panel 12, but rather is separated therefrom by cut line 93.

The second section of the blank 10 is in mirrored fashion to the first section and includes a second handle and partition panel 42, third end wall forming panels 28b, 28a, a second side panel 14, fourth end wall panels 26a, 26b and a second vanity panel 32, hinged one to the next in series by longitudinally extending hinged connections such as fold lines 97, 80d, 99, 96, 80b and 15. In addition, a second reinforcing handle panel 22b is provided that is hinged by fold line 13b to the second handle and partition panel 42 and that is not connected to the adjacent third end wall panels 28b, 28a and second side panel 14, but rather is separated therefrom by cut line 95.

The first and second handle and partition panels 40, 42 are connected by transversely extending fold lines 76a, 76b and 76c. These fold lines 76a, 76b, 76c are interrupted by apertures which help to reduce the total amount of paperboard along an upper connecting portion which is formed as described below. The first and second reinforcing handle panels 22a, 22b are connected by transversely extending fold line 78. The first and second vanity panels 30, 32 are connected by transversely extending fold line 86. Fold lines 78 and 86 may be provided by an alternating series of fold and full-depth cut lines to assist in the folding of overlaid, and hence thick, material and to provide a frangible connection between the first and second carrier units 31b, 31a when formed. The blank 10 is a one-piece construction.

Optionally, the blank 10 comprises frangible connecting means for temporarily attaching the first and second carrier units 31b, 31a together such that the overall basket-style carrier 31 has a robust structure prior to separation into the first and second carrier units 31b, 31a. In the present embodiment, the frangible connecting means is provided by frangible glue tabs 19 and 21; and a frangible glue panel 34. The frangible glue tabs 19 and 21 are each formed by a severance line 17a, 17b in the first and second vanity panels 30, 32, and are disposed adjacent to pull apertures 25a, 25b that are formed in the second end wall forming panel 16b and fourth end wall forming panel 26b respectively. The frangible glue panel 34 is

optionally provided adjacent to the second vanity panel 32 and is temporarily attached thereto by a hinged connection such as a frangible fold line 92. Optionally, the frangible fold line 92 and the severance lines 17a, 17b are provided by a series of alternating full-depth cuts and connecting nick portions.

To form a handle wall for the first carrier unit 31b, the first reinforcing handle panel 22a of the blank 10 is provided with a first handle aperture 8a and first handle flap 6a. The first handle flap 6a is hingeable about a hinged connection such as a fold line 4a. Formed in complementary shape, position and similar size, the upper part of the blank 10 comprises a second handle aperture 72 in the first handle and partition panel 40 and a third handle aperture 88 in the first vanity panel 30. As will be described more in details, the first reinforcing handle panel 22a, the first handle and partition panel 40 and the first vanity panel 30 are handle wall forming panels which are secured, or otherwise combined, together to form a first handle wall of the first carrier unit 31b.

To form a handle wall for the second carrier unit 31a, the second reinforcing handle panel 22b of the blank 10 is provided with a fourth handle aperture 8b and a second handle flap 6b. The second handle flap 6b is hingeable about a hinged connection such as a fold line 4b. Formed in complementary shape, position and similar size, the lower part of the blank 10 comprises a fifth handle aperture 74 in the second handle and partition panel 42 and a sixth handle aperture 90 in the second vanity panel 30. As will be described more in details, the second reinforcing handle panel 22b, the second handle and partition panel 42 and the second vanity panel 32 are handle wall forming panels which are secured, or otherwise combined, together to form a second handle wall of the first carrier unit 31a.

Once formed from the blank 10, the individual handle walls of the first and second carrier units 31b, 31a are combined to form a united 6-ply medial handle structure for the basket-style carrier 31. This is described in further detail below.

To form a first bottom wall for the first carrier unit 31b and part of the basket carrier 31, the blank 10 comprises a first bottom wall forming structure that comprises: a first bottom panel 20a, second bottom panel 20b and first glue panel 36. The first bottom panel 20a is hinged by a hinged connection such as a fold line 29 to the first side panel 12; the second bottom panel 20b is hinged to the first bottom panel 20a by a hinged connection such as a fold line 82a; and the first glue panel 36 is hinged to the first vanity panel 30 by fold line 84a. The first glue panel 36 is optionally sized so that it does not overlap the fold line 82a between the first

and second bottom panels 20a, 20b. This, and the provision of the fold line 82a, enables the first and second bottom panels 20a, 20b to be folded on top of one another so that the blank 10 can be folded, glued and assembled into a collapsed basket carrier 31c (see Figure 2F) that is substantially flat and that is openable into an erect basket-style carrier 31 by an automatic machine. In an alternative embodiment, the first bottom panel 20a may be hinged by a fold line to the first vanity panel 30 while the first glue panel 36 may be hinged to the first side panel 12 by a fold line.

To form a second bottom wall for the second carrier unit 31a and part of the basket carrier 31, the blank 10 comprises a second bottom wall forming structure that comprises: a third bottom panel 24a, a fourth bottom panel 24b and a second glue panel 38. The third bottom panel 24a is hinged by a hinged connection such as a fold line 27 to the second side panel 14; the fourth bottom panel 24b is hinged directly to the third bottom panel 24a by a hinged connection such as a fold line 82b; and the second glue panel 38 is hinged to the second vanity panel 32 by fold line 84b. The second glue panel 38 is optionally sized so that it does not overlap the fold line 82b between the third and fourth bottom panels 24a, 24b. This, and the provision of the fold line 82b, enables the third and fourth bottom panels 24a, 24b to be folded on top of one another so that the blank 10 can be folded, glued and assembled into a collapsed basket carrier 31c (see Figure 2F) that is substantially flat and that is openable into an erect basket-style carrier 31 by an automatic machine. In an alternative embodiment, the third bottom panel 24a may be hinged by a fold line to the second vanity panel 32 while the second glue panel 38 may be hinged to the second side panel 14 by a fold line.

In other embodiments, the glue flap 36, 38 is sized such that it does overlap the fold line 82a, 82b between the first and second, third and fourth bottom panels 20a, 20b, 24a, 24b and in such arrangements, the glue flap 36, 38 is provided with an additional fold line so that the first or second bottom wall formed by those panels can be folded into a substantially flat-collapsed carrier and can be articulated into an erect carrier by an automatic machine.

To form separate cells for each of the first and second carrier units 31b, 31a and for the basket carrier 31, the first and second handle and partition panels 40, 42 of the blank 10 are provided with first, second, third and fourth collapsible, lateral partition structures 44, 48, 50 and 46. Since the third and fourth lateral partition structures 50, 46 are the same as the first and second lateral partition structures 44, 48, only the first and second partition structures 44, 48 will be described in detail, it being understood that the third and fourth lateral partition structures 50, 46 are similarly configured, and arranged and assembled in the same manner.

The first partition structure 44 comprises: an attachment flap 56; a major partition flap 52; and a minor partition flap 54. The major partition flap 52 is hingedly connected via fold lines 60a and 60b to the first handle and partition panel 40 such that it can be folded through about 90° relative thereto. The minor partition flap 54 is hingedly connected to the major partition flap 52 via fold lines 58a, 58b such that it can fold through about 180° relative thereto. The attachment flap 56 is hinged directly to the minor partition flap 54 via fold lines 60c and 60d such that the attachment flap 56 can be folded through about 90° relative thereto. Upon assembly of the blank 10 into a collapsed, pre-glued and folded, substantially flat-form structure 31c (see Figure 2F), the attachment flap 56 is affixed to the first side panel 12 and the major and minor partition flaps 52, 54 are foldable on top of one another.

Turning to the construction of the collapsed, pre-glued and folded, substantially flat-form structure 31c and basket-style carrier 31, a sequence of gluing and folding steps is illustrated in Figures 2A to 2E. It is envisaged that the collapsed, pre-glued and folded, substantially flat-form structure 31c can be formed by a series of sequential folding operations in a straight line machine so that the collapsed structure 31c is not required to be rotated or inverted to complete its construction. The folding process is not limited to that described below and may be altered according to particular manufacturing requirements.

Where reference is made to “glue” and “gluing” it is to be understood that any suitable adhesive may be used and in any appropriate arrangement. For example, where it is stated that glue is applied to one panel for fixing to another panel this may also include, where appropriate, glue being applied to the another panel or to both the one panel and the another panel. The arrangement of glue may take the form of one or more spots or strips as is suitable and no limitation in the arrangement of glue is necessarily intended by the following description. Where reference is made to “glue” and “gluing” it is to be further understood that other suitable fixing means may be used in addition to, or in the alternative to, glue, for example mechanical fixing means (sticking tape, staples and the like), and other bonding agents including for example pressure and/or heat responsive agents.

Referring now to Figure 2A, the blank 10 shown therein is disposed with an uncoated and/or unprinted (inside) surface facing outwards. Adhesive is applied in the regions denoted by ‘G1’ and then the first and second reinforcing handle panels 22a, 22b together are folded through 180° about fold lines 13b, 13a and into overlapping and face contacting relationship with portions of the first and second handle and partition panels 42, 40. In this way, the inside surfaces of the first and second reinforcing handle panels 22a, 22b are affixed to portions of the inside surface of the first and second handle and partition panels 42, 40.

Referring to Figure 2B, glue is then applied in regions denoted by 'G2' on the first and second side panels 12, 14. The first and second handle and partition panels 42, 40, together with the first and second reinforcing handle panels 22a, 22b affixed thereto are folded through 180° about fold lines 80c and 80d (as indicated by the curved arrows on Figure 2B). This causes first end wall forming panel 18b to be overlaid onto first end wall forming panel 18a. Additionally this causes third end wall forming panel 28b to be overlaid onto third end wall forming panel 28a. The first and second handle and partition panels 40, 42 are overlaid onto parts of the first and second side panels 12, 14. This brings the attachment flaps 56, 66 of the first and second partition structures 44, 48, that are hinged to the first handle and partition panel 40, into face contacting relationship with the first side panel 12 in the region of glue 'G2' such that the attachment flaps 56, 66 are affixed thereto. Similarly, the attachment flaps 56, 66 of the third and fourth partition structures 50, 46, that are hinged to the second handle and partition panel 42, are brought into face contacting relationship with the second side panel 14, in the region of glue 'G2' such that the attachment flaps 56, 66 are affixed thereto.

Referring to Figure 2C, glue is applied to the (good side) outer surface of the first and second handle and partition panels 40, 42 as indicated by glue regions 'G3'. The blank 10 is then folded about fold lines 80b, 80a between the second end wall panels 16a, 16b and fourth end wall panels 26a, 26b respectively such that the first and second vanity panels 32, 30 overlay and become affixed to portions of the first and second handle and partition panels 40, 42 excluding the partition structures 44, 46, 48, 50 which are not attached to the first and second vanity panels 32, 30. By this means, the respective handle walls of the first and second carrier units 31b, 31a are provided wherein the first reinforcing handle panel 22b, the first handle and partition panel 40 and the first vanity panel 30 are secured together in a face-contacting arrangement while the second reinforcing handle panel 22b, the second handle and partition panel 42 and the second vanity panel 32 are secured together in a face-contacting arrangement.

As shown in Figure 2D, glue is applied in regions 'G4' to the first and second glue flaps 36, 38. The second bottom panel 20b is then folded about fold line 82a, to bring the second bottom panel 20b into face contacting and affixed relationship with the first glue flap 36. This forms a folded first bottom wall 20a/20b/36.

The fourth bottom panel 24b is then folded about fold line 82b, to bring the fourth bottom panel 24b into face contacting and affixed relationship with the second glue flap 38. This forms a folded second bottom wall 24a/24b/38.

The frangible glue panel 34 is then folded about frangible fold line 92 as illustrated by an arrow on Figure 2D.

Finally, and as shown in Figure 2E, adhesive is applied to frangible glue panel 34 in the region 'G5b'; and adhesive is applied in region 'G5a' to the glue tab 21. The blank 10 is then folded about the overlaid transverse fold lines 86, 78 and 76a, 76b, 76c until the first and second vanity panels 30, 32 are overlaid, with the frangible glue flap 34 sandwiched between them and affixed to the first vanity panel 30. The glue tabs 21 and 19 are affixed together and the resulting collapsed basket-style carrier structure 31c is shown in Figure 2F.

To assemble the collapsed basket-style carrier structure 31c into an open and erect basket style carrier 31, the first and second side panels 12, 14 are moved apart from one another. This may be achieved, for example, by a static guide of an automatic machine holding the first side panel 12 stationary whilst a vacuum suction tool of a moveable arm of the automatic machine attaches to the second side panel 14 and lifts it upwardly and away from the first side panel 12. It will be recognized that many and various techniques may be used to automate the erection of the collapsed basket-style carrier structure 31c and beneficially, the collapsed basket-style carrier structure 31c that is disclosed herein is compatible with, and can be erected by, existing machinery without any significant alteration of such machinery being necessary.

The collapsed basket-style carrier structure 31c advantageously comprises two bottom walls 24a/24b, 20a/20b that can each be folded (about fold lines 82b and 82a respectively) such that the overall bottom structure of the collapsed basket-style carrier structure 31c has a bottom wall structure that has an acutely "M"-shaped cross-section. In other words, in the collapsed structure 31c, the folded bottom panels 20a, 20b, 24b, 24a overlay one another in a zig-zagged layered manner. Also advantageously, collapsed basket-style carrier structure 31c comprises a layered arrangement of folded end walls 18a/18b/28b/28a and 16a/16b/26b/26a and folded partition structures 44, 46, 48, 50 that can be folded and collapsed on top of one another and opened in a manner similar to an accordion or concertina. This is illustrated in Figures 3A to 3D.

In Figure 3A, the collapsed basket-style carrier structure 31c, viewed from the bottom, is beginning to be opened. An angle between the third bottom panel 24a and fourth bottom panel 24b is becoming less acute. Similarly an angle between the second bottom panel 20b and the first bottom panel 20a is also becoming less acute. Likewise, an angle between first end wall forming panels 18a and 18b is becoming less acute; an angle between second end wall forming panels 16a and 16b is becoming less acute; an angle between third end wall forming panels 28a and 28b is becoming less acute; and an angle between fourth end wall forming panels 26a and 26b is becoming less acute. At the same time, and as shown by the internal view of Figure 3C, the first, second, third and fourth lateral partition structures 44, 46, 48, 50 are moving from a position wherein the major and minor partition flaps 62/64, 52/54 of each lateral partition structure 44, 46, 48, 50 are overlaid in a substantially flat state, to a position wherein the angle between the major and minor end flaps 62/64, 52/54 of each lateral partition structure 44, 46, 48, 50 are becoming less acute. The first lateral partition structure is articulated about the three joints provided by fold lines 60a/60b, 60c/60d, and 58a/58b. Similarly, the second lateral partition structure 48 is articulated about the three joints provided by fold lines 68a/68b, 68c/68d, and 70a/70b.

In Figure 3C only the third and fourth lateral partition structures 50, 46 are shown. As the collapsed basket-style carrier structure 31c is opened, the distance between the adjoined second handle and partition panel 42 and the second vanity panel 32 and the second side panel 14 is increased and the third and fourth lateral partition structures 46, 50 move towards an erect position.

In Figure 3B a further stage in the opening of the collapsed basket-style carrier structure 31c is shown, viewed from the bottom, wherein the angles between the bottom panels 24a/24b, 20b/20a and end wall forming panels 18a/18b, 28a/28b, 26a/26b, 16a/16b are becoming even less acute.

When the basket-style carrier 31 is completely erected, the angles of the bottom panels 24a/24b, 20b/20a and the end wall forming panels 18a/18b, 28a/28b, 26a/26b, 16a/16b respectively are all approaching 180°.

In Figure 3D the fourth lateral partition structure 50 is shown in an erect form wherein the minor partition flap 64 is hinged about its connection (70a, 70b) with the major partition flap 62 to such an extent that the major and minor partition flaps 62, 64 partially overlap and span the maximum distance between the adjoined second handle and partition panel 42 and second vanity panel 32 and the second side panel 14.

An erect and fully loaded basket-style carrier 31 formed from the blank 10 is shown in Figure 4. It will be appreciated that the weight of the articles B forces the bottom structure 20a/20b/24a/24b to adopt a fully planar form where the first, second, third and fourth bottom panels 20a, 20b, 24a, 24b lie in the same plane. The first, second, third and end walls 18a/18b, 16a/16b, 28a/28b, 26a/26b may adopt a planar form if the articles 'B' are sized sufficiently to force the first and second side walls 12, 14 to their maximum spaced positions. If the articles 'B' contained by the basket-style carrier 31 have a slightly smaller size (diameter), then the first, second, third and end walls 18a/18b, 16a/16b, 28a/28b, 26a/26b adopt a slightly angled form, as shown in Figure 4.

The basket-style carrier 31 is a unitary, robust structure although it comprises two separable carrier units that can be formed from it (31a, 31b), due to the provision of frangible connecting means provided by the frangible glue tabs 19 and 21, the frangible glue panel 34 as well as the transverse hinged connections 86, 78 and 76a, 76b, 76c.

Optionally, not all of the frangible connecting means are broken at the same time and the basket-style carrier 31 can be converted from the unitary form of Figure 4, by breaking the frangible glue tabs 19 and 21 and transverse frangible fold connections 86, 78 and 76a, 76b, 76c, into a second form (see Figures 4B and 4C) wherein the two carrier units 31a, 31b are pivotally connected by the frangible glue panel 34 and frangible fold line 92 such that they can be arranged in a side-by-side manner. This is shown in Figures 4B and 4C. It can be seen in Figure 4C, that the side-by-side vanity panels 30, 32 once converted in the manner described, provide a large-sized bill-board style advertising space that was previously hidden. Such a feature may be beneficially utilized at a point-of-sale in a retail outlet for enhanced shelf presentation and display whilst allowing for the transportation and storage of the unitary basket style carrier 31 as shown in Figure 4.

When a user requires the basket-style carrier 31 to be separated into the two carrier units 31a, 31b, as shown in Figures 5A and 5B, the user may first removes the frangible glue tabs 19 and 21 completely (which leaves a recess in each of the associated first and second vanity panels 30, 32). This may be done by inserting a thumb into the aperture 25a/25b and peeling the adjoined frangible glue tabs 19 and 21 away from the basket-style carrier 31 by breaking frangible lines 15, 17a and 17b. Then if required a user may break the frangible fold line 92 (see Figure 5B) such that the frangible glue panel 34 is only adhered to the first vanity panel 30 and is no longer hingedly connected to the second vanity panel 32. The two carrier units 31a, 31b are not formed until the frangible fold connections 86, 78 and 76a, 76b,

76c between the first and second medial, vanity and reinforcing handle panels 30/40/22a, 32/42/22b are broken. The basket-style carrier 31 is then fully separated into first and second carrier units 31b, 31a, as shown in Figure 5C. Each carrier unit 31b, 31a has its own intact and structurally robust bottom wall 20a/20b, 24a/24b. Each carrier unit 31b, 31a has its own intact and structurally robust three-ply carrying handle 90/74/8b/6b, 88/72/8a/6a, provided by the handle aperture 90, 88 in the first or second vanity panel 30, 32; the handle aperture 72, 74 provided in the first or second handle and partition panel 40, 42 and by the handle aperture 8a, 8b and associated cushioning flap 6a, 6b provided in the first or second reinforcing handle panel 22a, 22b.

Each carrier unit 31a, 31b is also collapsible and re-erectable. Once empty of bottles 'B', the first carrier unit 31b can be collapsed by bringing the first side panel 12 closer to the first handle and partition panel 40 and first vanity panel 30. The fold lines 82a, 80a and 80c enable the bottom wall 20a/20b/36; first end wall 18a/18b and second end wall 16a/16b to fold substantially in half. The fold lines 60a/60b, 60c/60d and 58a/58b and fold lines 68a/68b, 68c/68d, and 70a/70b of the first and second lateral partition structures 44, 48 respectively allow the lateral partition structures 44, 48 to fold substantially flat. Similarly, once empty of bottles 'B', the second carrier unit 31a can be collapsed by bringing the second side panel 14 closer to the second handle and partition panel 42 and second vanity panel 32. The fold lines 82b, 80d and 80b enable the bottom wall 24a/24b/38; third end wall 28a/28b and fourth end wall 26a/26b to fold substantially in half. The second and third lateral partition structures 48, 50 fold in the same manner as the first and second lateral partition structures 44, 46.

The first illustrated embodiment provides an optional one-piece blank for forming a collapsible basket-style carrier that is convertible into two carrier units 31a, 31b. In other arrangements, the basket style carrier may be formed from one or more blanks that are combined. In the first illustrated embodiment, the two carrier units 31a, 31b each have collapsible lateral partition structures, collapsible end walls and collapsible bottoms, which permit the carrier units to have independent and intact structures that can be collapsed and re-erected. Optionally, frangible connecting means (provided by the frangible glue tabs 19 and 21, the frangible glue panel 34 as well as the transverse frangible fold connections 86, 78 and 76a, 76b, 76c) is provided, but in other embodiments, frangible connecting means may not be included or may take a different form to that shown. Furthermore whereas, in the first embodiment, first and second vanity panels 30, 32 are provided so that the first and second carrier units 31a, 31a are aesthetically pleasing and have all outward facing panels having a substantially uninterrupted construction (only with the exception of apertures 25a, 25b), in other embodiments such vanity panels are omitted, or are differently sized such that

apertures formed in the handle and partition panels by the movement of the lateral partition structures are directly visible externally of the carton.

To illustrate further ways in which a collapsible and convertible basket-style carrier according to the disclosure may be formed from one or more blanks, further embodiments are now described. Referring now to Figures 6A to 10, there are shown further embodiments of the present invention. In the second, third and fourth illustrated embodiments, like numerals have, where possible, been used to denote like parts, albeit with the addition of the prefix "100", "200" and "300" to indicate that these features belong to the second, third and fourth embodiments respectively. The further embodiments share many common features with the first embodiment and therefore only the differences from the embodiment illustrated in Figures 1 to 5C will be described in any greater detail.

In the second illustrated embodiment two blanks 110a, 110b are provided. The first blank 110a forms the general structure of a collapsible, convertible basket-style carrier 131 shown in Figure 8A and the second blank 110b forms the collapsible lateral partition structures and handle reinforcement.

As can be seen in Figure 6A, the first blank 110a is again substantially symmetrical about a transverse axis, indicated by fold lines 178 and 186. The panels above the transverse axis form the first carrier unit 131b and the panels below the transverse axis form the second carrier unit 131a (see Figure 8B).

Above the transverse axis (178/186), there is provided: a first riser panel 173a, first end wall forming panels 118b, 118a, a first side panel 112, second end wall forming panels 116a, 116b and a first handle and partition panel 130, hinged one to the next in series by longitudinally extending fold lines 195, 180c, 198, 194, 180a and 123. In addition, a first reinforcing handle panel 122a is provided that is hinged by fold line 113a to the first riser panel 173a and that is not connected to the adjacent first end wall forming panels 118b, 118a and the first side panel 112.

Below the transverse axis 178/186 and in mirrored fashion to the panels above the transverse axis 178/186, there is provided: a second riser panel 173b, third end wall forming panels 128b, 128a, a second side panel 114, fourth end wall panels 126a, 126b and a second handle and partition panel 132, hinged one to the next in series by longitudinally extending fold lines 197, 180d, 199, 196, 180b and 115. In addition, a second reinforcing handle panel 122b is provided that is hinged by fold line 113b to the second riser panel 173b

and that is not connected to the adjacent third end wall panels 128b, 128a and second side panel 114.

The first and second handle and partition panels 130, 132 are connected by two short fold lines 186 that are spaced apart and interrupted by an aperture 187 which helps to reduce the total amount of paperboard along an upper connecting portion which is formed as described below. The first and second reinforcing handle panels 122a, 122b are connected by transversely extending fold line 178. Fold lines 178 and 186 may be provided by an alternating series of fold and full-depth cut lines to assist in the folding of overlaid, and hence thick, material and to provide a frangible connection between the first and second carrier units 131b, 131a when formed.

The first blank 110a comprises bottom panels 120a, 120b, 124a, 124b and glue panels 136, 138 which are formed substantially similarly to those of the first embodiment.

The first and second riser panels 173a, 173b provide a means by which the first and third end wall forming panels 118b, 128b can be affixed to the first and second handle and partition panels 130, 132 respectively. In the present embodiment the riser panels 173a, 173b are connected to one another by a transverse fold line, which optionally assists with the assembly of the blank 110a in an automatic machine, though this connection is breakable and is broken when the basket-style carrier 131 is divided into first and second carrier units 131b, 131a.

The first and second handle and partition panels 130, 132 each comprise a handle aperture 188, 190 and two minor partition flaps 154, 164 hingedly connected thereto by fold lines 151, 161. The two minor partition flaps 154, 164 in each of the first and second handle and partition panels 130, 132 respectively form first parts 144b, 146b, 148b, 150b of first, second, third and fourth lateral partition structures 144a/144b, 146a/146b, 148a/148b, 150a/150b that are formed in combination with the second blank 110b. In this arrangement, the first and second handle and partition panels 130, 132 replace the vanity panels 30, 32 of the first embodiment and result in a basket carrier 131 that can be formed from less material than in the first embodiment. However, the first and second carrier units 131a, 131b have substantial openings therein where the minor partition flaps 154, 164 have been folded about fold lines 151, 161 to form the lateral partition structures 144a/144b, 146a/146b, 148a/148b, 150a/150b as shown in Figure 8B.

The second blank 110b comprises first and second securing panels 140, 142 that are connected by an uninterrupted transversely extending fold line 176. The first and second securing panels 140, 142 each comprise a handle region 122c, 122d and a handle aperture 172, 174 shaped, positioned and arranged in a complementary manner to the handle apertures 188, 190, 108a, 108b respectively. The handle apertures 172, 174 are disposed within the handle regions 122c, 122d and an optionally "V"-shaped frangible line 163a, 163b is provided for separating the handle regions 122c, 122d from the remainders of the first and second securing panels 140, 142.

The first and second securing panels 140, 142 each comprise second parts 144a, 146a, 148a, 150a of first, second, third and fourth lateral partition structures 144a/144b, 146a/146b, 148a/148b, 150a/150b. The second parts 144a, 146a, 148a, 150a each comprise a major partition flap 162, 152, 152, 162 respectively, hingedly attached to a respective one of the first and second securing panels 140, 142 by a fold line 168, 160, 160, 168. Additionally attachment flaps 166, 156, 156, 166 are also provided and are each hinged to the major partition flaps by fold lines 170a, 170b, 158a, 158b, 158a, 158b, 170a, 170b.

Referring now to only the first partition structure 144a/144b (it being understood that the others are the same in form and structure), it will be understood that the first partition structure 144a/144b comprises: an attachment flap 166; a major partition flap 162; and a minor partition flap 164. The major partition flap 162 is hingedly connected via fold line 168 to the first securing panel 140 such that it can be folded through about 90° relative thereto. The minor partition flap 164 is hingedly connected to the first handle and partition panel 130 via fold line 161 such that it can fold through about 90° relative thereto. The attachment flap 166 is hinged directly to the major partition flap 162 via fold lines 170a and 170b such that the attachment flap 166 can be folded through about 180° relative thereto. Upon assembly of the blanks 110a, 110b into a collapsed, pre-glued and folded, substantially flat-form structure 131c (see Figure 7E), the attachment flap 166 is affixed to the minor partition flap 164 and the major and minor partition flaps 162, 164 are foldable on top of one another (see Figures 7F to 7J).

Turning to the construction of the collapsed, pre-glued and folded, substantially flat-form structure 131c and basket-style carrier 131, a sequence of gluing and folding steps is illustrated in Figures 7A to 7D. It is envisaged that the collapsed, pre-glued and folded, substantially flat-form structure 131c can be formed by a series of sequential folding operations in a straight line machine so that the collapsed structure 131c is not required to

be rotated or inverted to complete its construction. The folding process is not limited to that described below and may be altered according to particular manufacturing requirements.

Referring now to Figure 7A, the blank 110a is disposed with an uncoated and/or unprinted (inside) surface facing outwards. The first and second reinforcing handle panels 122a, 122b are folded about fold lines 113a, 113b. Adhesive is applied to the minor partition flaps 154, 164 and to the first and second handle and partition panels 130, 132 around the handle apertures 188, 190. Then the first and second securing panels 140, 142 (blank 110b) are placed on top thereof such that the transverse fold lines 176 overlays the aperture 187 and fold lines 186 and such that the attachment panels 166, 156 are affixed to the minor partition panels 154, 164 and such that handle regions 122c, 122d are affixed to the first and second handle and partition panels 130, 132.

Referring to Figure 7B, the first and second riser panels 173a, 173b, together with the handle reinforcing panels 122a, 122b and first and third end wall forming panels 118b, 128b are folded together about fold lines 180c, 180d. This causes first end wall forming panel 118b to be overlaid onto first end wall forming panel 118a. Additionally this causes third end wall forming panel 128b to be overlaid onto third end wall forming panel 128a.

Glue is then applied to the first and second riser panels 173a, 173b and to the first and second reinforcing handle panels 122a, 122b.

Referring to Figure 7C, the first and second handle and partition panels 130, 132, together with the first and second securing panels 140, 142 partially affixed thereto are folded through 180° about fold lines 180a and 180b (as indicated by the curved arrow on Figure 7C). This causes second end wall forming panel 116b to be overlaid onto second end wall forming panel 116a. Additionally this causes fourth end wall forming panel 126b to be overlaid onto fourth end wall forming panel 126a. Additionally, the reinforcing handle panels 122a, 122b are attached to handle regions 122c, 122d.

Referring to Figure 7D, glue is applied to the first and second glue flaps 136, 138. The second bottom panel 120b is then folded about fold line 182a to bring the second bottom panel 120b into face contacting and affixed relationship with the first glue flap 136. This forms a folded first bottom wall 120a/120b/136. The fourth bottom panel 124b is then folded about fold line 182b to bring the fourth bottom panel 124b into face contacting and affixed relationship with the second glue flap 138. This forms a folded second bottom wall 124a/124b/138.

Finally, and as shown in Figure 7D, the combined blanks 110a, 110b are folded about the overlaid transverse fold lines 186, 178 and 176 until the first and second handle and partition panels 130, 132 are overlaid.

The completed collapsed basket-style carrier 131c is shown in Figure 7E. It can be opened by breaking the "V"-shaped weakened line 163a, 163b and then erected and top-loaded with articles 'B' as previously described in association with the first illustrated embodiment. The formation of the two-part first, second, third and fourth lateral partition structures 144a/144b, 146a/146b, 148a/148b, 150a/150b is illustrated in Figure 7F, 7H, 7I and 7J. It can be seen that the partition structures are, as in the first embodiment, articulated about three joints which allows them to fold in the same accordion style and same folding direction as the end walls 116a/116b, 118a/118b, 126a/126b, 128a/128b and bottom walls 120a/120b, 124a/124b.

In this arrangement, the only frangible connecting means is provided by the transverse fold lines 176, 186. Upon breaking the transverse fold lines 176, 186 (which may be provided by an alternating series of full-depth cuts and fold lines) the basket carrier 131 can be separated into first and second carrier units 131b, 131a, as shown in Figure 8B.

Turning now to the third embodiment, this is again a two blank 210a, 210b embodiment. However, unlike the second embodiment, in this arrangement the first and second handle and partition panels 230, 232 are not interrupted by minor partition flaps and all elements of the lateral partition structures 244, 246, 248, 250 are provided by the second blank 210b. In this way the carrier units thereby formed look similar to those of the first embodiment and have a substantially uninterrupted handle panel. Additionally, and optionally, in this arrangement, frangible connecting means in the form of a frangible glue flap 234 and glue tabs 219, 221 are provided (see Figure 9A).

The second blank 110b comprises first and second securing panels 240, 242. In this arrangement, the region about the handle apertures 272, 274 is not severed or separated from the rest of the first and second securing panels 240, 242. During construction, with the exception of: the major partition flaps 262, 252; minor partition flaps 264, 254; and attachment flaps 266, 256; the remainder of the first and second securing panels 240, 242 is affixed (optionally by adhesive) to the first and second handle and partition panels 230, 232. Adhesive appropriately positioned to the first side panel 212 and second side panel 214 is used to affix the attachment panels 256, 266 to the first side panel 212 and second side

panel 214 when the first and second handle and partition panels 230, 232, together with the first and second securing panels 240, 242, are folded about fold lines 280a and 280b.

Again a collapsible and convertible basket-style carrier (not shown) is formed. Separation into the first and second carrier units is achieved by removing the glue tabs 219, 221 (by breaking frangible lines 217a, 217b), by breaking a hinged connection such as a frangible fold line 292 and by breaking the transverse fold connections 278, 286 and 276.

A fourth illustrated arrangement of a one-piece blank 310 which can be folded and glued to form a collapsible, basket-style carrier that is convertible into two independent, distinct and structurally intact basket-style carriers is shown in Figure 10. In this arrangement the handle and partition panels 30, 32 of the first embodiment are replaced by first and second handle and partition panels 340, 342. First and second riser panels 373a, 373b are used to connect the first end wall forming panel 316b and third end wall forming panel 326b to the first and second handle and partition panels 340, 342.

Optionally partial handle regions 322c, 322d comprising handle apertures 388, 390 are provided along with the reinforcing handle panels 322a, 322b and handle apertures 372, 374 in the first and second handle and partition panels 340, 342.

Optional, frangible connecting means in the form of first frangible glue tabs 345 (defined by severance lines 347) and second frangible glue tabs 343 are provided, which serve to hold the basket-style carrier formed from the blank 310 in an erect, set-up and unitary condition, and which can be broken to permit the basket-style carrier to be separated into two carrier units (not shown).

To form a basket-style carrier, the blank 310 is processed (optionally manually) by first folding the reinforcing handle panels 322a, 322b about fold lines 313a, 313b and affixing them to the first and second handle and partition panels 340, 342. The partial handle regions 322c, 322d are then folded about fold lines 313c, 313d and partially adhered to the riser panels 373a, 373b where they overlap.

The attachment flaps 366, 356 are folded through 180° about fold lines 368a, 368b and 358a, 358b respectively as the minor end flaps 364, 354 are folded through 180° about fold lines 370 and 358, such that the minor end flaps 364, 354 of each partition structure lie in substantially flat face overlapping relationship with the associated major partition flaps 354, 352, and such that a non-printed side of the attachment flaps 366, 356 faces outwards.

Adhesive may then be applied to areas of the first and second side walls 312, 314 where the attachment flaps 356, 366 will overlay. The first and second handle and partition panels 340, 342 are then folded, together with reinforcing handle panels 322a, 322b affixed thereto, the second end wall forming panel 318b and fourth end wall forming panel 328b, about fold lines 380c and 380d. In this way, the second end wall forming panel 318b and fourth end wall forming panel 328b overlap the second end wall forming panel 318a and fourth end wall forming panel 328a respectively and the attachment flaps 366, 356 are adhered to the inside surfaces of the first and second side panels 312, 314 respectively.

Adhesive may then be applied to appropriate areas of the first and second handle and partition panels 340, 342. The riser panels 373a, 373b, partial handle regions 322c, 322d, first end wall forming panel 316b and third end wall forming panel 326b are then folded together about fold lines 380a and 380b. In this way, the riser panels 373a, 373b and the partial handle regions 322c, 322d are affixed to the first and second handle and partition panels 340, 342.

The bottom walls 320a/320b/336, 324a/324b/338 are formed in the manner already described, and then second frangible glue flaps 343 are folded through 180° about fold lines 395 and 397. Adhesive may then be applied to two or all of the second frangible glue flaps 343 and the first frangible glue tabs 345 before the blank 310 is folded about transverse fold lines 378 to overlay and affix the two halves together.

Erection of the collapsed basket-style carrier is carried out by the same accordion style unfolding of the "zig-zag" folded end walls, bottom walls and partition structures.

To separate the basket carrier, the first and second glue tabs 345, 343 are broken and the transverse fold line 378 is broken. As before, two carrier units that are themselves structurally intact, collapsible and re-erectable are thereby formed.

It can be appreciated that various changes may be made within the scope of the present invention. For example, the size and shape of the panels and apertures may be adjusted to accommodate articles of differing size or shape.

It will be recognized that as used herein, directional references such as "top", "bottom", "front", "back", "end", "side", "inner", "outer", "upper" and "lower" do not necessarily limit the respective panels to such orientation, but may merely serve to distinguish these panels from one another.

The terms “convertible carrier” and “convertible carton” as used herein each refers to a transformable and/or divisible carrier or carton that includes at least two units that are connected together by at least one hinged connection by which the at least two units may be pivoted with respect to one another to transform the carrier or carton into a different form. For example, the carrier or carton may take a first form wherein the at least two units are arranged in a back-to-back or front-to-front contacting relationship while the carrier or carton may be transformed by pivoting the at least two units into a second form wherein the at least two units are arranged in an end-to-end or top-to-top contacting relationship. The at least one hinged connection may be provided by one or more frangible fold lines in which case, at least two units may be separable from one another by breaking the one or more frangible fold lines.

As used herein, the terms “hinged connection” and “fold line” each refers to all manner of lines that define hinge features in a substrate of sheet material, for facilitating folding portions of the substrate with respect to one another, or otherwise for indicating optimal folding locations in the substrate. For example, a hinged connection should not be construed as necessarily referring to a single fold line only: indeed a hinged connection can be formed from one or more fold lines.

As used herein, the term “fold line” may refer to a frangible fold line. The terms “fold line” and “frangible fold line” each may refer to one of the following: a scored line, an embossed line, a debossed line, a line of perforations, a line of short slits, a line of half-cuts, a single half-cut, an interrupted cut line, aligned slits, a line of scores and any combination of the aforesaid options.

As used herein, the term “severance line” may refer to all manner of lines formed in a substrate of sheet material that facilitate separating portions of the substrate from one another, or otherwise indicate optimal separation locations on the substrate. For example, a severance line in a substrate of sheet material is predisposed to allow a tear to propagate there along. A severance line may be one of the following: a single cut, a single half-cut, a single slit, an interrupted cut, a score line, an interrupted score line, a line of perforations, a line of short cuts, a line of short slits, a line of short half cuts, and any combination of the aforementioned options.

Those elements of a fold line or those of a severance line, such as cuts, perforations and scores, can be dimensioned and arranged to provide a desired functionality. For example, a line of perforations can be dimensioned or designed with degrees of weakness to define a

fold line, frangible fold line or a severance line. The line of perforations can be designed to facilitate folding and resist breaking to provide a fold line, to facilitate folding and facilitate breaking with more effort to provide a frangible fold line, or to facilitate breaking with little effort to provide a severance line. A frangible fold line may be weaker in terms of breaking resistance than other fold lines in the same blank, in order to facilitate later splitting apart of a finished carrier or carton into multiple separate units while it may be stronger in terms of breaking resistance than severance lines in the same blank, in order to facilitate folding there along before the finished carrier or carton is split apart.

CLAIMS

1. A basket style carrier that is collapsible into a substantially flat-form structure and comprises first and second carrier units connected together through a common medial handle structure, each of the first and second carrier units being collapsible into a substantially flat-form structure, the first carrier unit comprising a first side wall, a first handle wall, first and second opposed end walls each disposed between the first side wall and the first handle wall, and a first bottom wall, the first bottom wall comprising first and second bottom panels, the first bottom panel being hingedly connected to one of the first side wall and the first handle wall, the second bottom panel being hingedly connected to the first bottom panel, the second carrier unit comprising a second side wall, a second handle wall, third and fourth opposed end walls each disposed between the second side wall and the second handle wall, and a second bottom wall, the second bottom wall comprising third and fourth bottom panels, the third bottom panel being hingedly connected to one of the second side wall and the second handle wall, the fourth bottom panel being hingedly connected to the third bottom panel, the first and second handle walls being connected by at least one hinged connection to form the common medial handle structure such that the first and second carrier units are swingable with respect to each other about the at least one hinged connection to allow the carrier to take two or more different forms.
2. The basket style carrier according to claim 1 further comprising at least one first partition structure extending between the first side wall and the first handle wall, the at least one first partition structure including first, second and third joints such that the at least one first partition structure can be collapsed into a substantially flat-form.
3. The basket style carrier according to claim 2 wherein the at least one first partition structure comprises a major partition flap, a minor partition flap and an attachment flap and wherein the first, second and third joints are arranged such that when the at least one first partition structure is erected, the major partition flap is overlaid at least partially onto the minor partition flap.
4. The basket style carrier according to claim 3 wherein the attachment flap is affixed to the first side wall and hingedly connected to the minor partition flap by the first joint, wherein the major partition flap is hingedly connected to the first handle wall by the second joint and wherein the minor partition flap is hingedly connected to the major partition flap by the third joint.

5. The basket style carrier according to claim 3 wherein the major partition flap is hingedly connected by the first joint to a securing panel affixed to the first side wall, wherein the attachment flap is hingedly connected to the major partition flap by the third joint and affixed to the minor partition flap, and wherein the minor partition flap is hingedly connected to the first handle wall by the second joint.
6. The basket style carrier according to claim 4 wherein the major partition flap is connected to the first handle wall through a securing panel, the securing pane being affixed to the first handle wall and hingedly connected to the major partition flap by the second joint.
7. The basket style carrier according to any of claims 2 to 6 wherein the at least one first partition structure comprises two or more first partition structures each extending between the first handle wall and the first side wall such that three or more cells are provided between the first handle wall and the first side wall.
8. The basket style carrier according to claim 1 further comprising at least one second partition structure extending between the second side wall and the second handle wall, the at least one second partition structure including first, second and third joints such that the at least one second partition structure can be collapsed into a substantially flat-form.
9. The basket style carrier according to claim 8 wherein the at least one second partition structure comprises a major partition flap, a minor partition flap and an attachment flap and wherein the first, second and third joints are arranged such that when the at least one second partition structure is erected, the major partition flap is overlaid at least partially onto the minor partition flap.
10. The basket style carrier according to claim 8 or 9 wherein the at least one second partition structure comprises two or more second partition structures each extending between the second handle wall and the second side wall such that three or more cells are provided between the second handle wall and the second side wall.
11. The basket style carrier according to any preceding claim wherein the first end wall comprises two hingedly connected first end wall forming panels, the second end wall comprises two hingedly connected second end wall forming panels, the third end wall comprises two hingedly connected third end wall forming panels, and the fourth end wall comprises two hingedly connected fourth end wall forming panels; wherein the

first end wall and the third end wall together form a first composite and collapsible end wall of the basket-style carrier, wherein the second end wall and fourth end wall together form a second composite and collapsible end wall of the basket-style carrier.

12. A blank for forming a basket-style carrier that is collapsible into a substantially flat-form structure and that comprises first and second carrier units connected through a common medial handle structure, each of the first and second carrier units being collapsible into a substantially flat-form structure, the blank comprising first and second sections for forming the first and second carrier units respectively, the first section includes a first side wall forming panel, first handle wall forming panels, first end wall forming panels, second end wall forming panels, and first and second bottom panels, the first bottom panel being hingedly connected to the first side wall forming panel or to one of the first handle wall forming panels, the second bottom panel being hingedly connected to the first bottom panel, the second section includes a second side wall forming panel, second handle wall forming panels, third end wall forming panels, fourth end wall forming panels, and third and fourth bottom panels, the third bottom panel being hingedly connected to the second side wall forming panel or to one of the second handle wall forming panels, the fourth bottom panel being hingedly connected to the third bottom panel, the first handle wall forming panels are connected to the second handle wall forming panels by at least one hinged connection to form the common medial handle structure such that when the blank is assembled into a basket-style carrier, the first and second carrier units are swingable with respect to each other about the at least one hinged connection to allow the carrier to take two or more different forms.
13. The blank according to claim 12 wherein the blank comprises first partition structure forming panels for forming at least one first partition structure, the first partition structure forming panels including: a major partition flap, a minor partition flap and an attachment flap and wherein the major and minor flaps and the attachment flap are hingedly connected together when the at least one first partition structure is assembled such that the major partition flap can be overlaid at least partially onto the minor partition flap when the at least one first partition structure is assembled and erected.
14. The blank according to claim 13 wherein the attachment flap is hingedly connected to the minor partition flap by a first joint, wherein the major partition flap is hingedly connected to one of the first handle wall forming panels by a second joint and

wherein the minor partition flap is hingedly connected to the major partition flap by a third joint.

15. The blank according to claim 13 comprising first and second blanks, wherein the major partition flap is provided by the second blank and hingedly connected by a first joint to a securing panel of the second blank, the securing panel being securable to the first side wall forming panel that is provided by the first blank, wherein the minor partition flap is provided by the first blank and hingedly connected to one of the first handle wall forming panels by a second joint, and wherein the attachment flap provided by the second blank and is securable to the minor partition flap and hingedly connectable to the major partition flap by a third joint.
16. The blank or blanks according to any of claims 13 to 15 wherein the first partition structure forming panels comprise panels for forming two or more first partition structures, and wherein the two or more first partition structure in the set-up basket carrier are disposed adjacent to one another such that three or more cells are provided between the first wall forming panel and the first handle wall forming panels.
17. The blank or blanks according to any preceding claim 12 to 16 wherein the first end wall forming panels are hingedly connected together to form a first end wall of the first carrier unit, the second end wall forming panels are hingedly connected together to form a second end wall of the first carrier unit, the third end wall forming panels are hingedly connected together to form a third end wall of the second carrier unit, and the fourth end wall forming panels are hingedly connected together to form a fourth end wall of the second carrier unit.

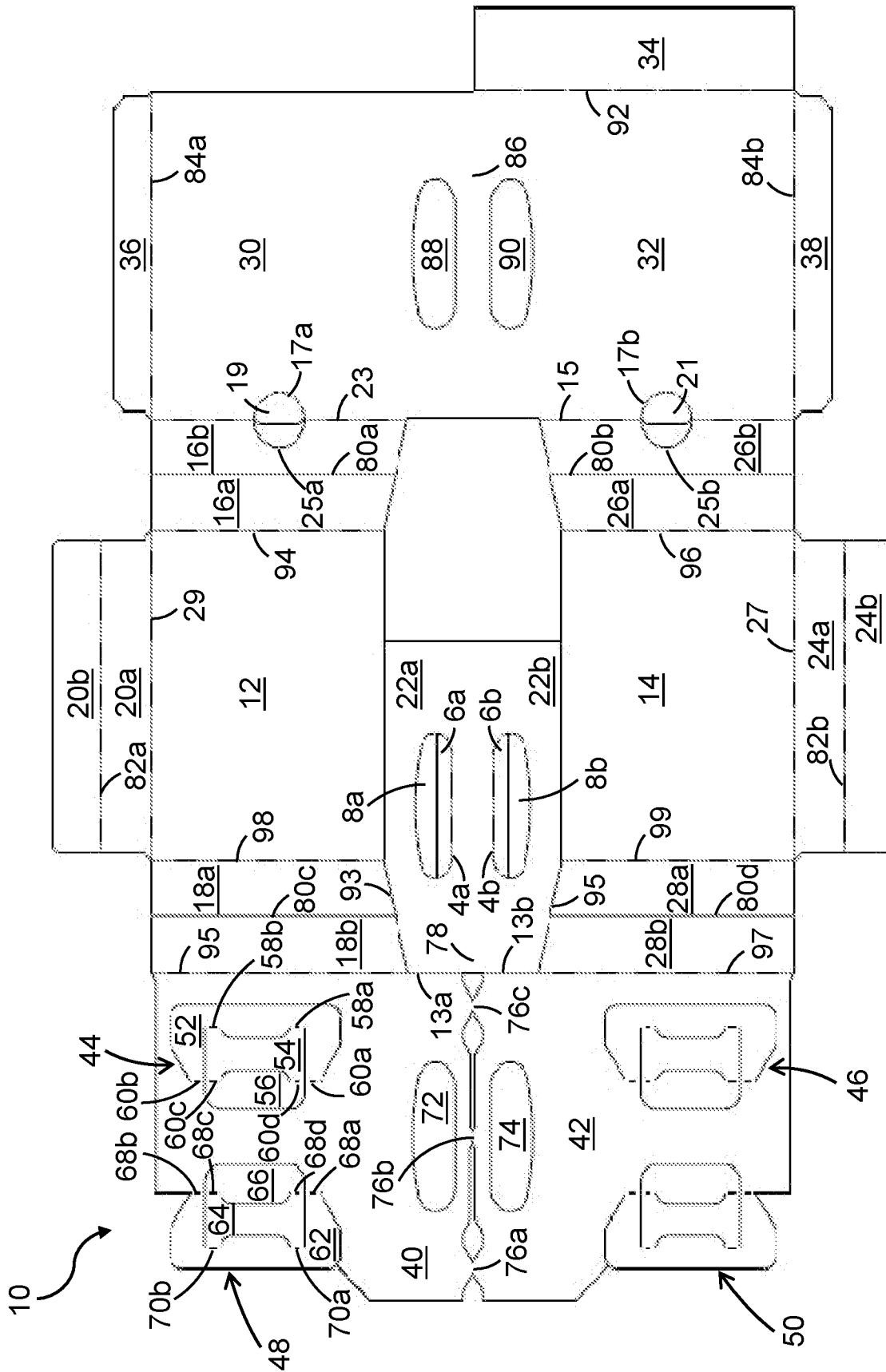
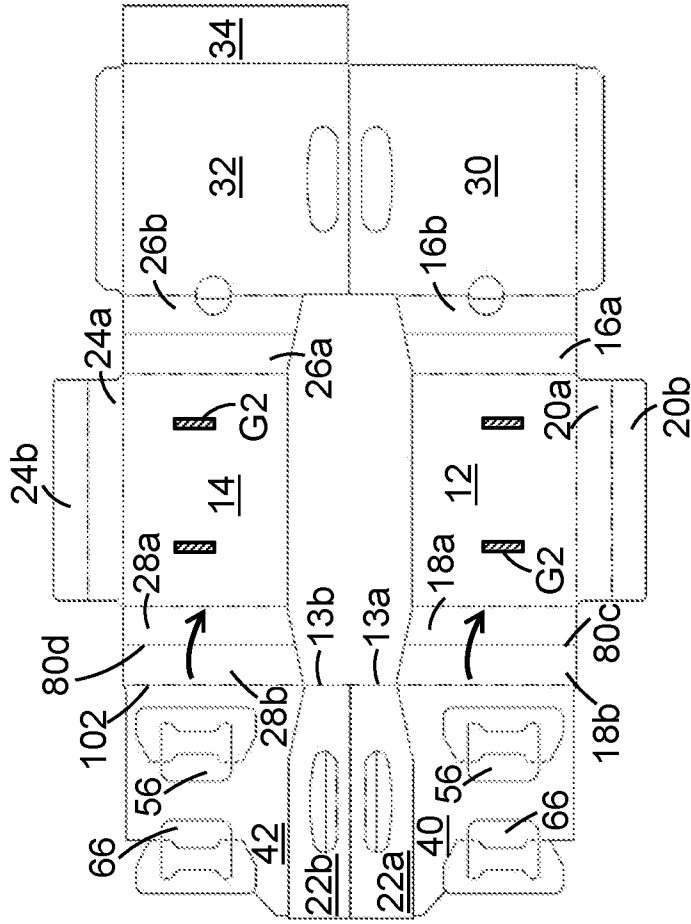
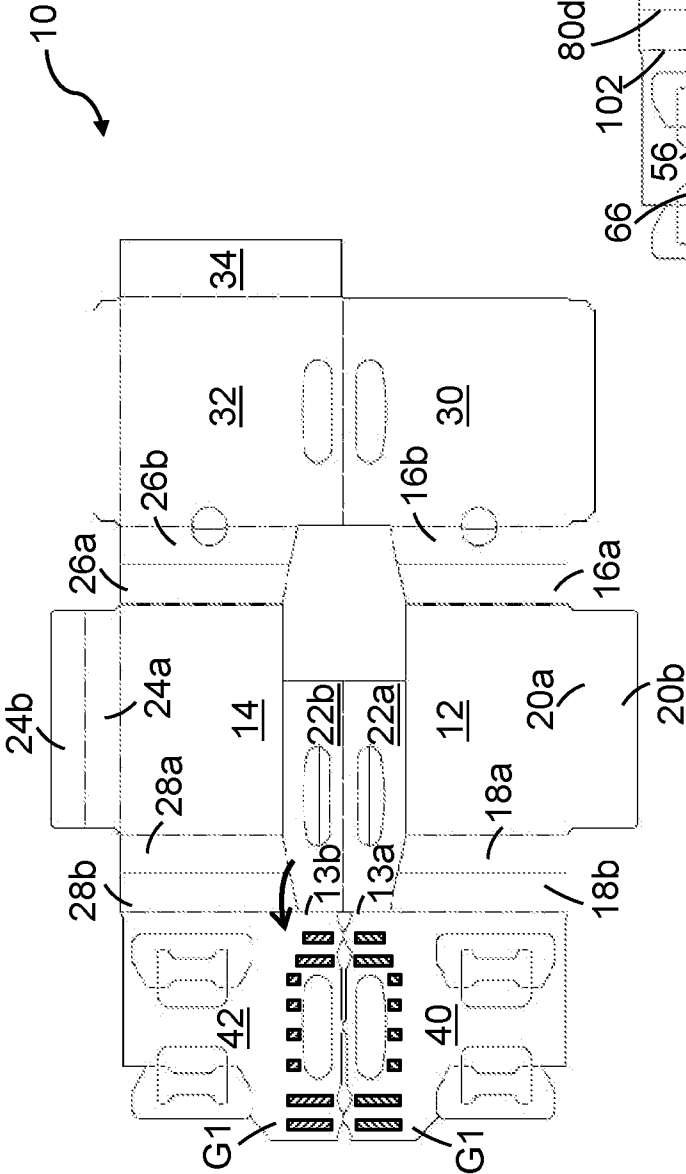


FIGURE 1



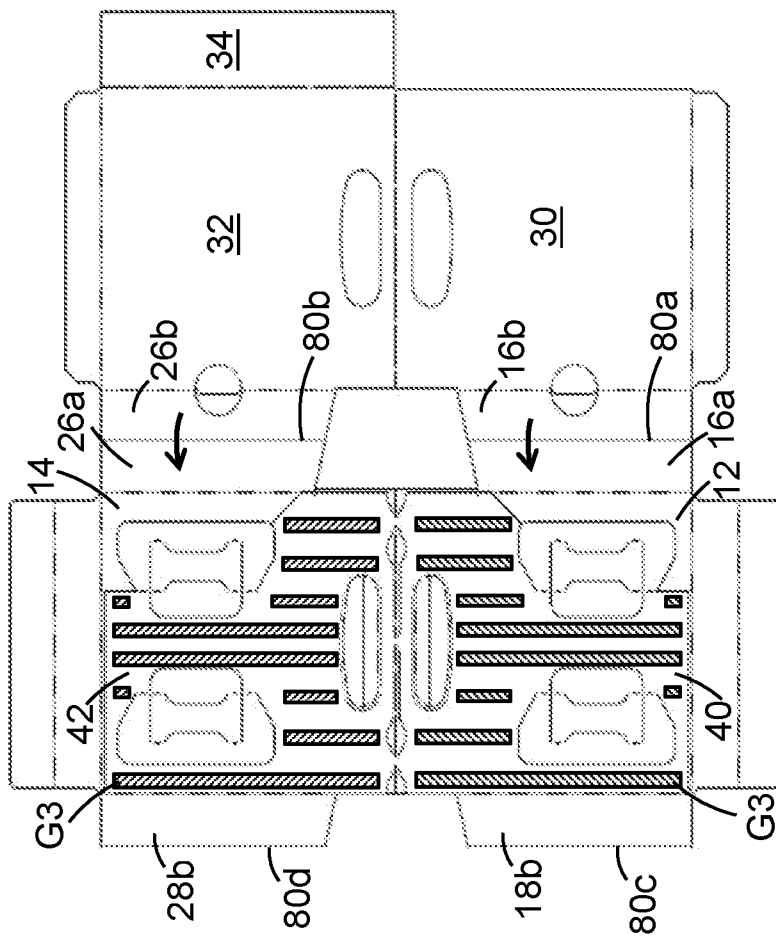


FIGURE 2C

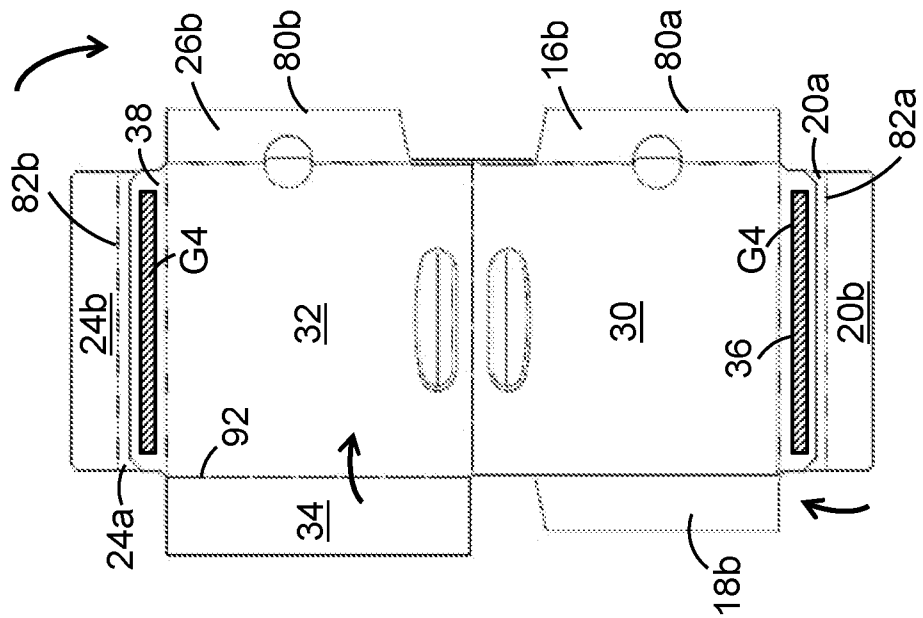


FIGURE 2D

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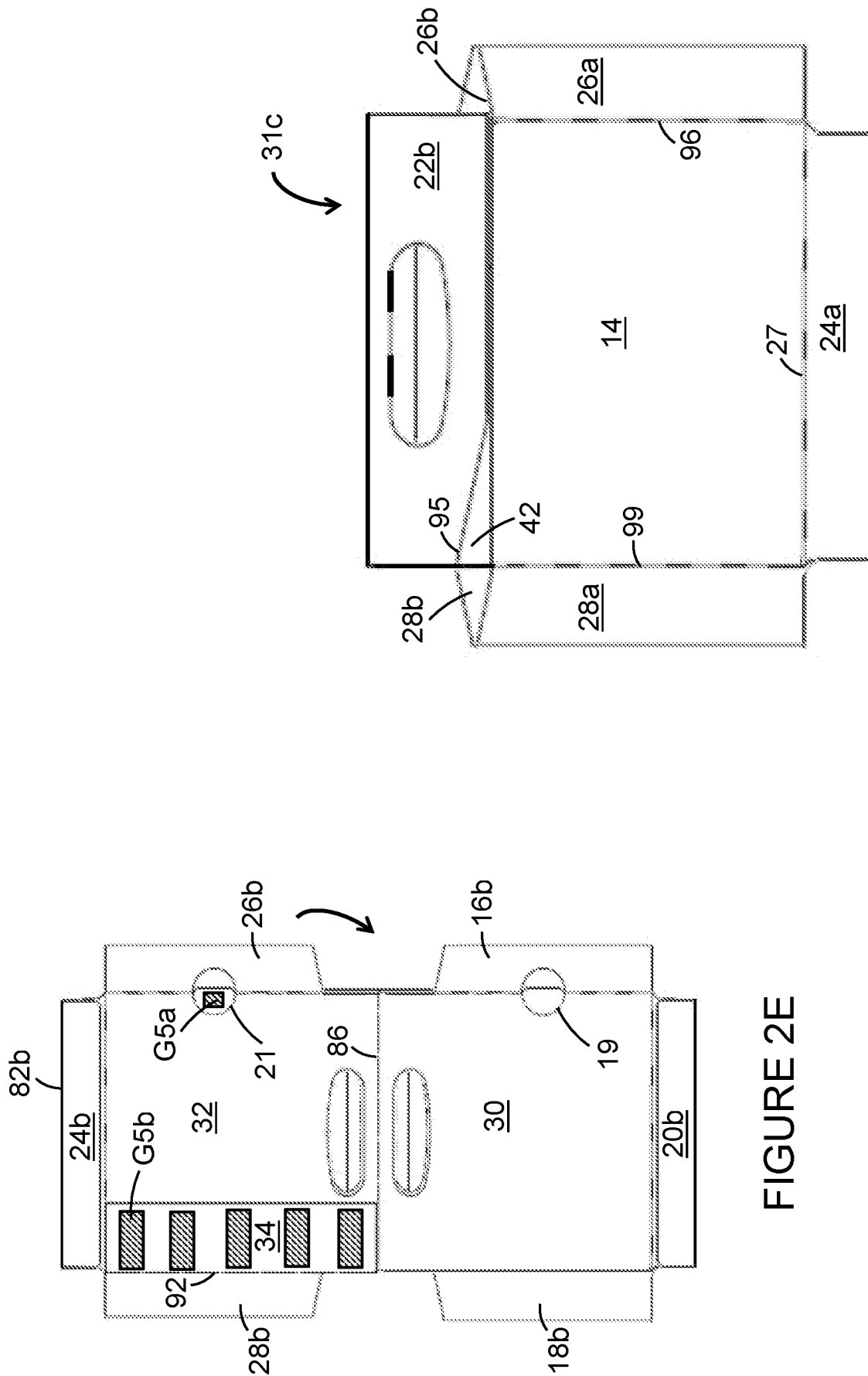


FIGURE 2F

FIGURE 2E

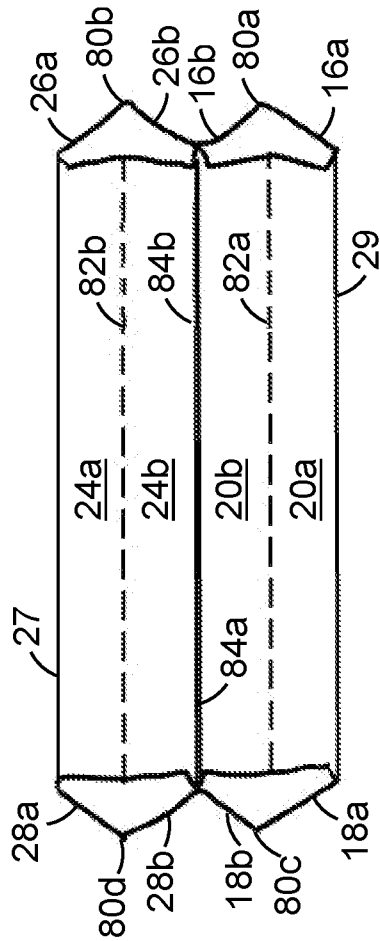


FIGURE 3A

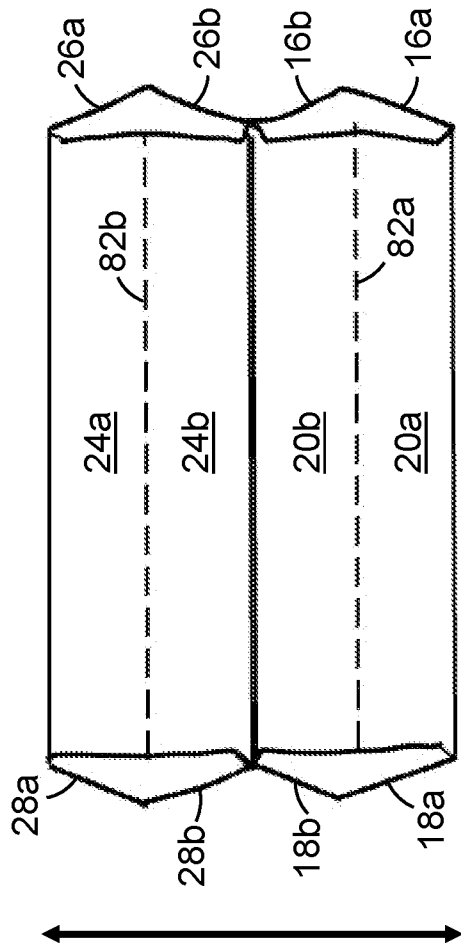


FIGURE 3B

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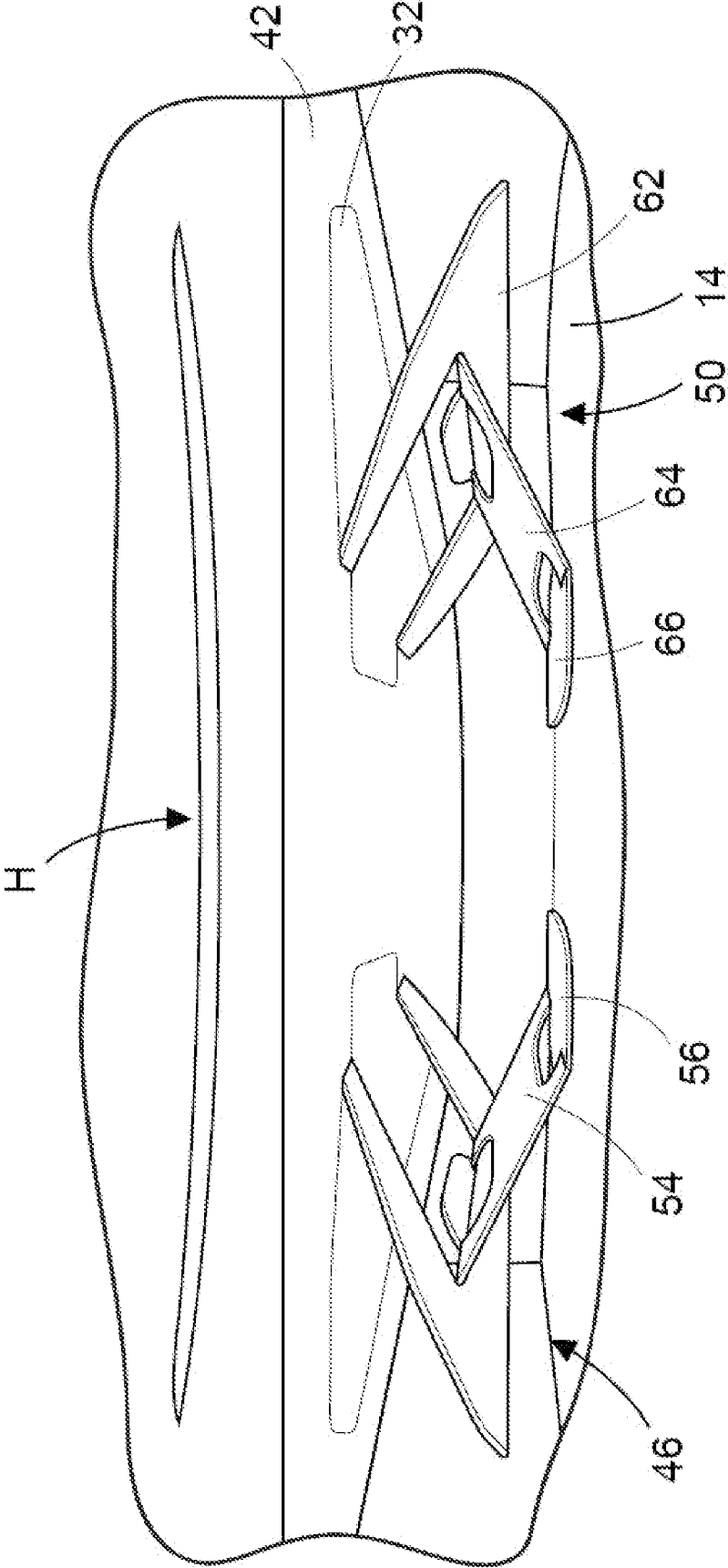


FIGURE 3C

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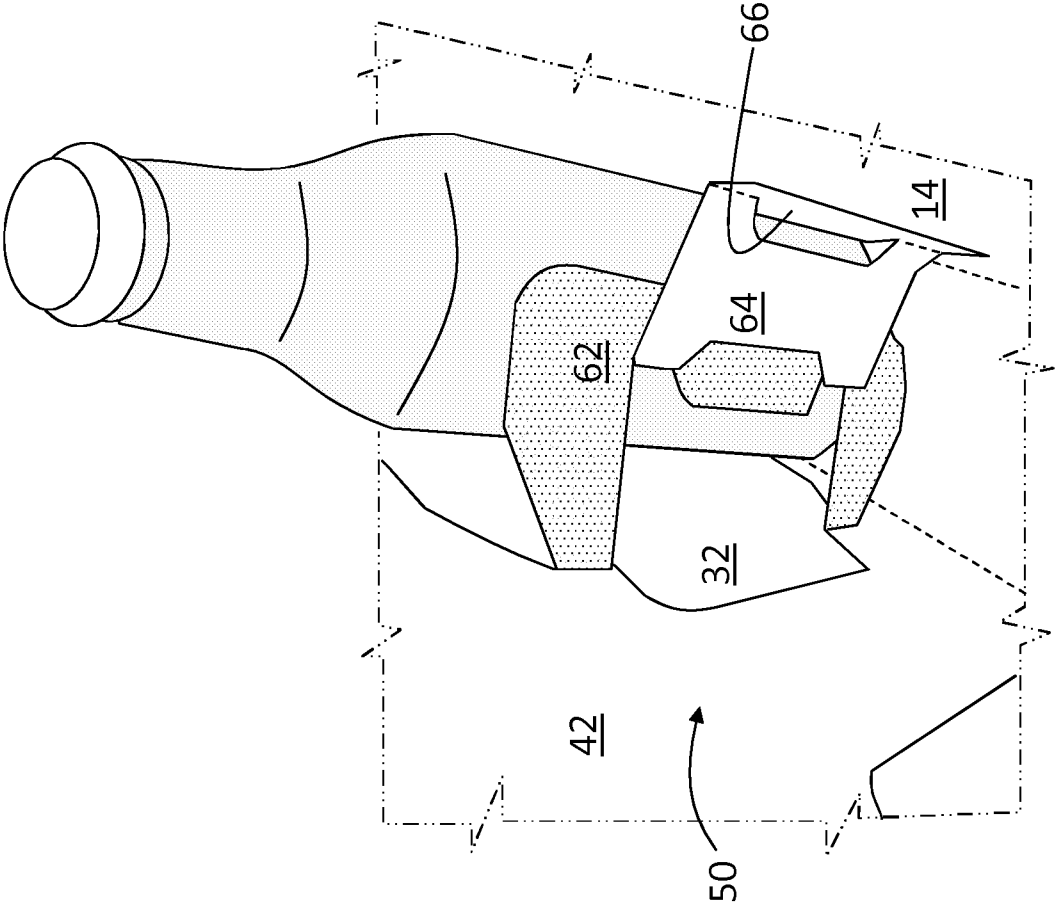


FIGURE 3D

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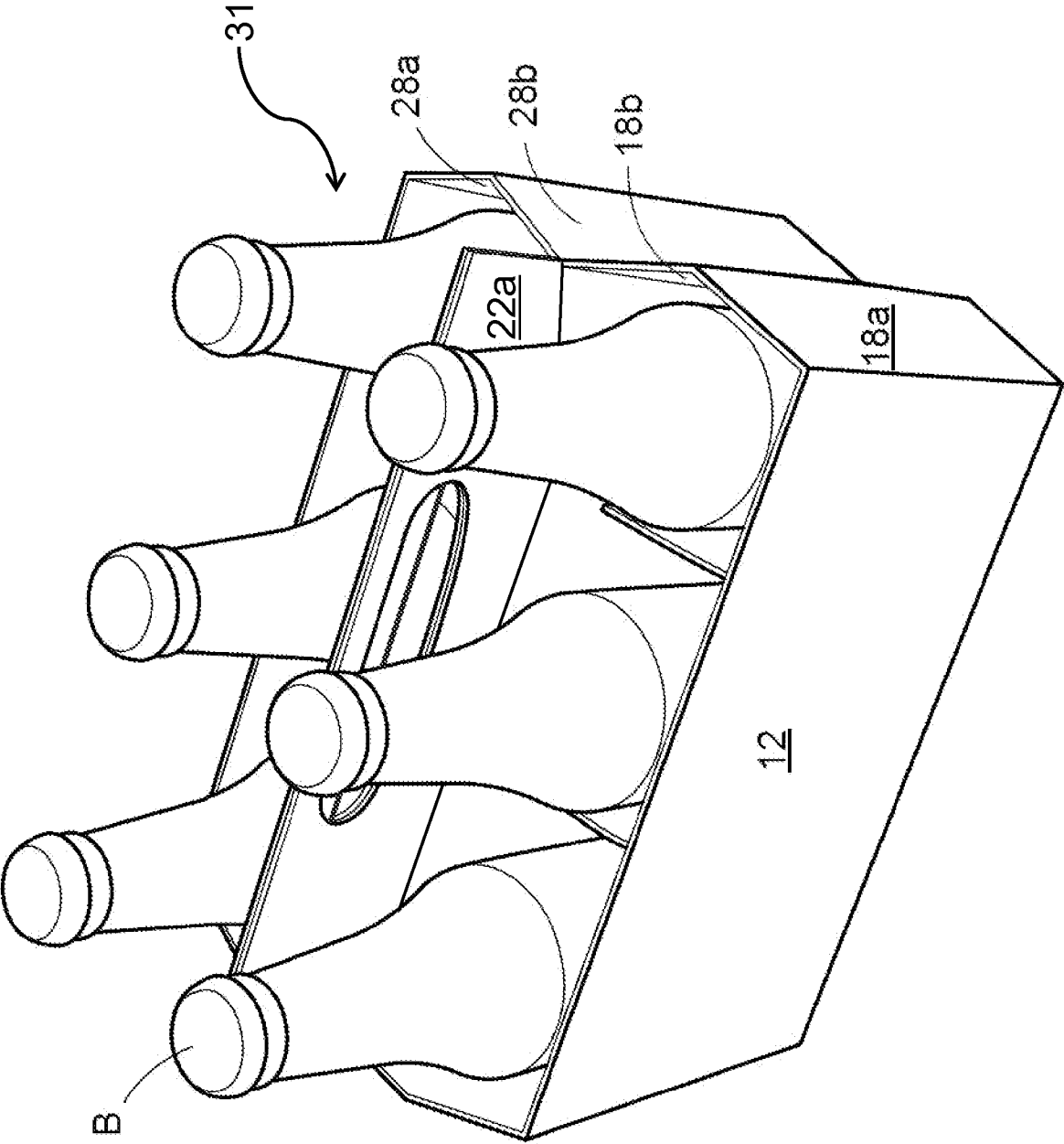


FIGURE 4

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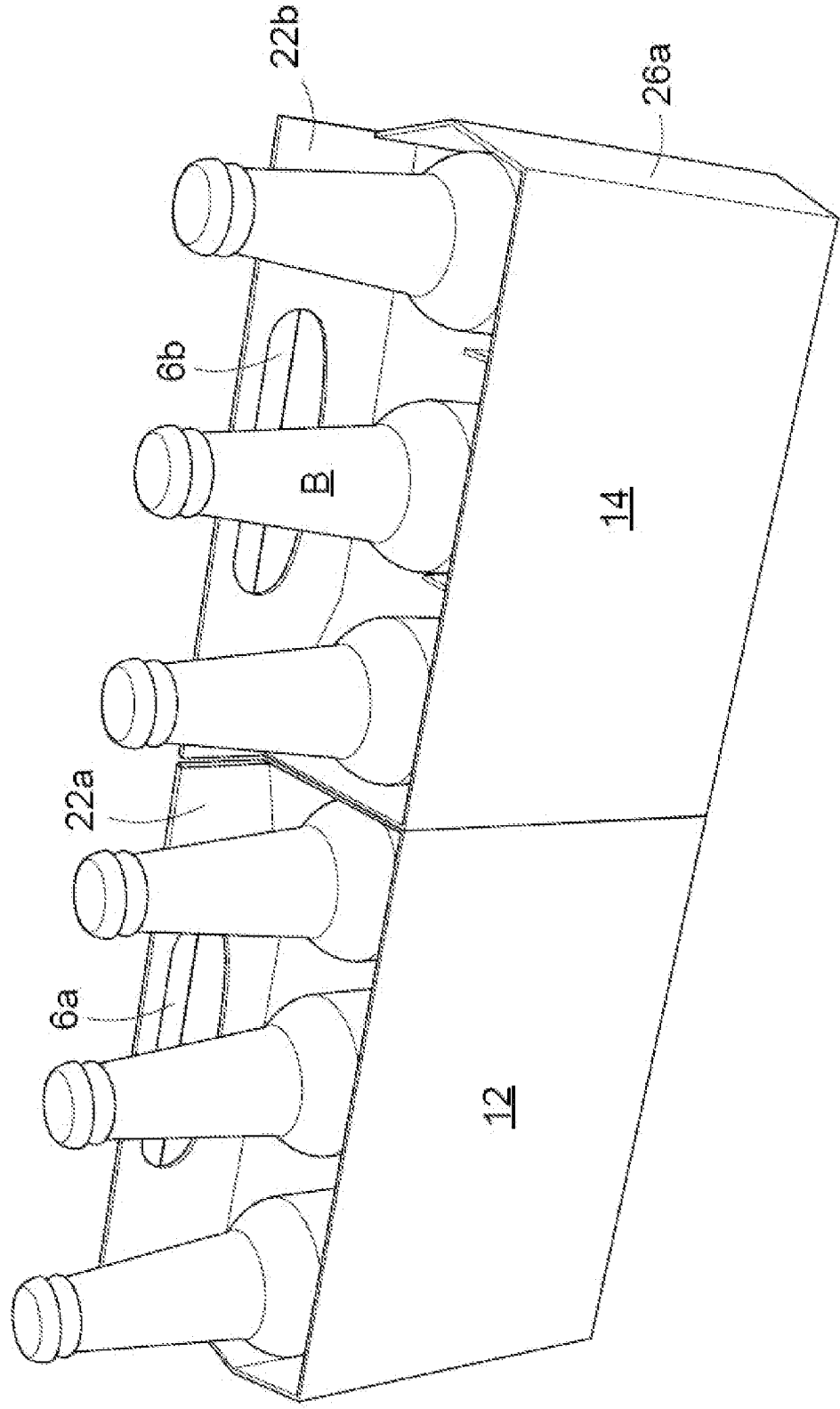


FIGURE 4B

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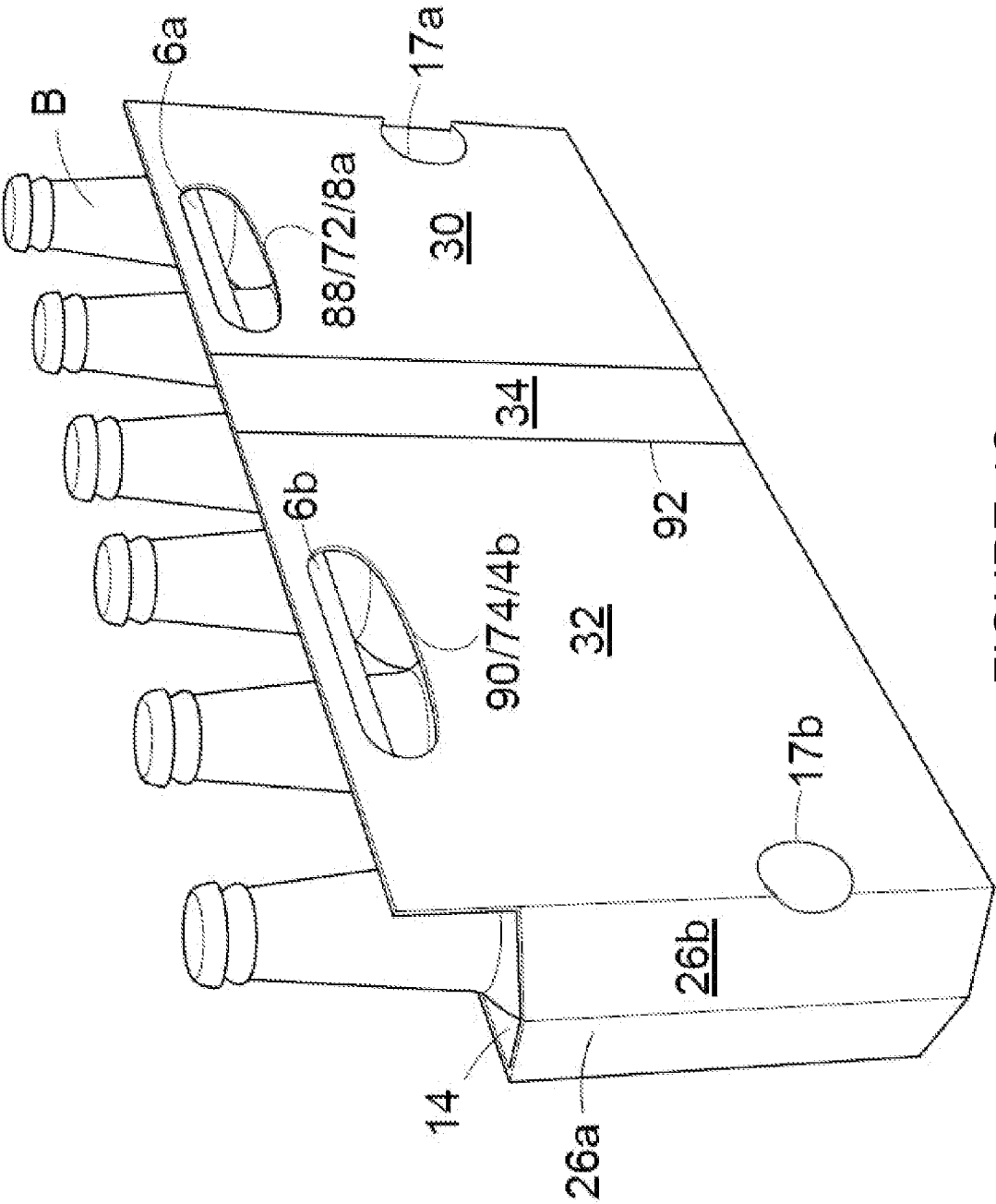


FIGURE 4C

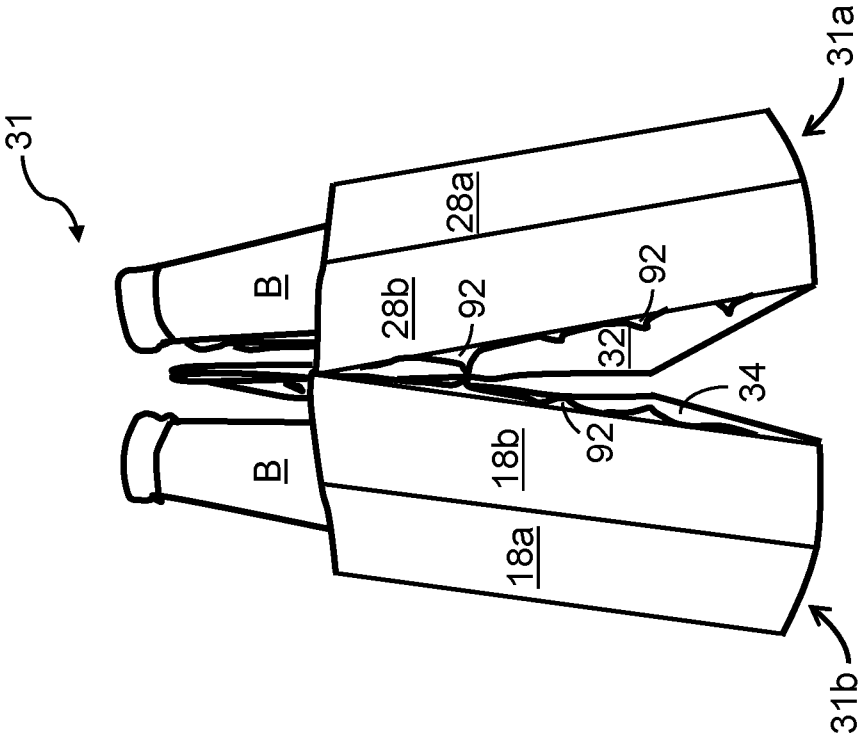


FIGURE 5B

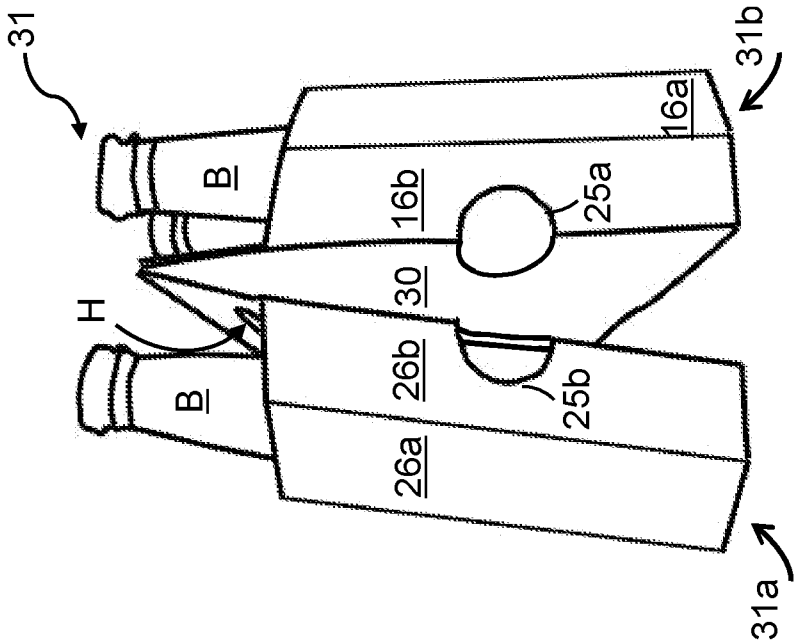


FIGURE 5A

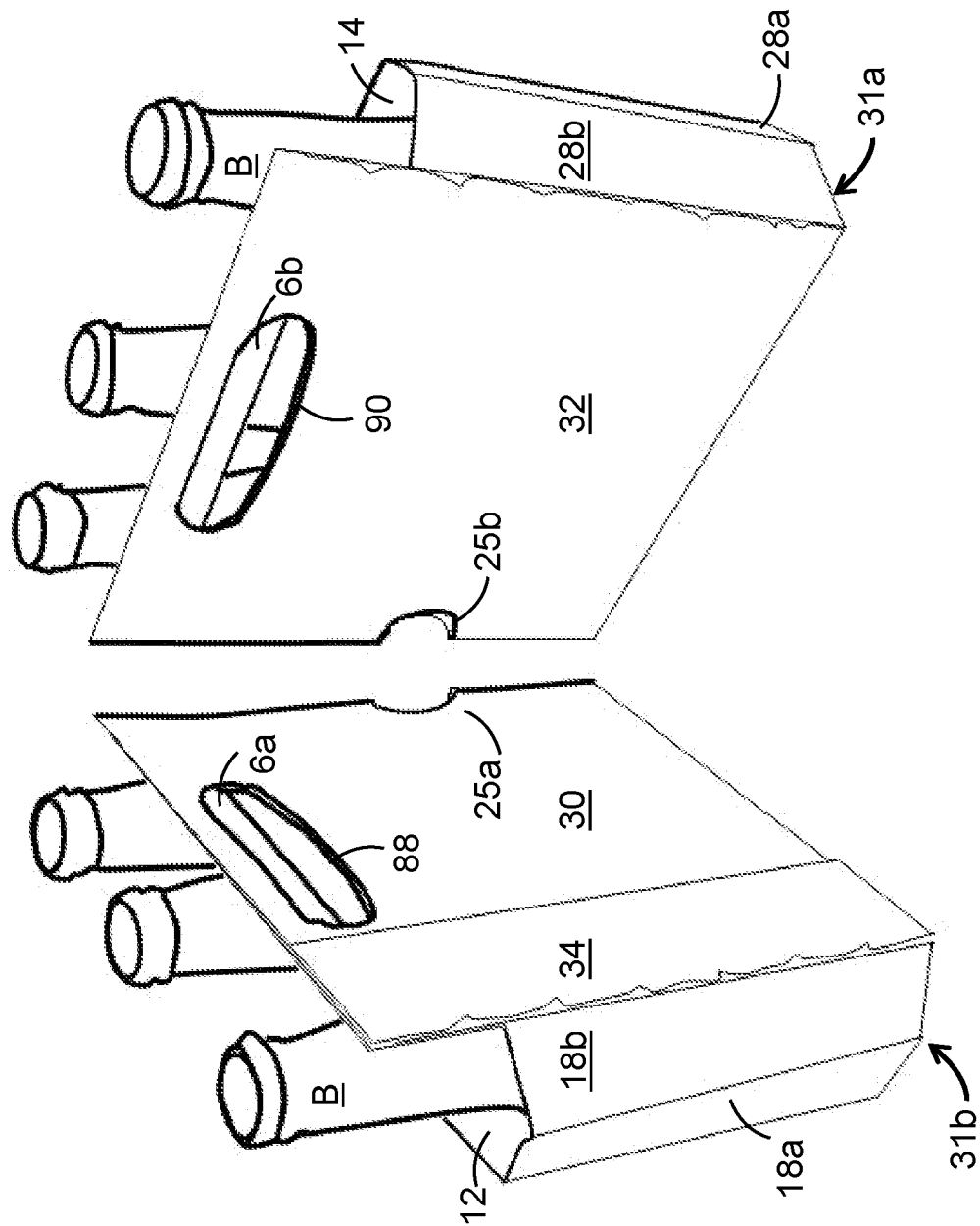
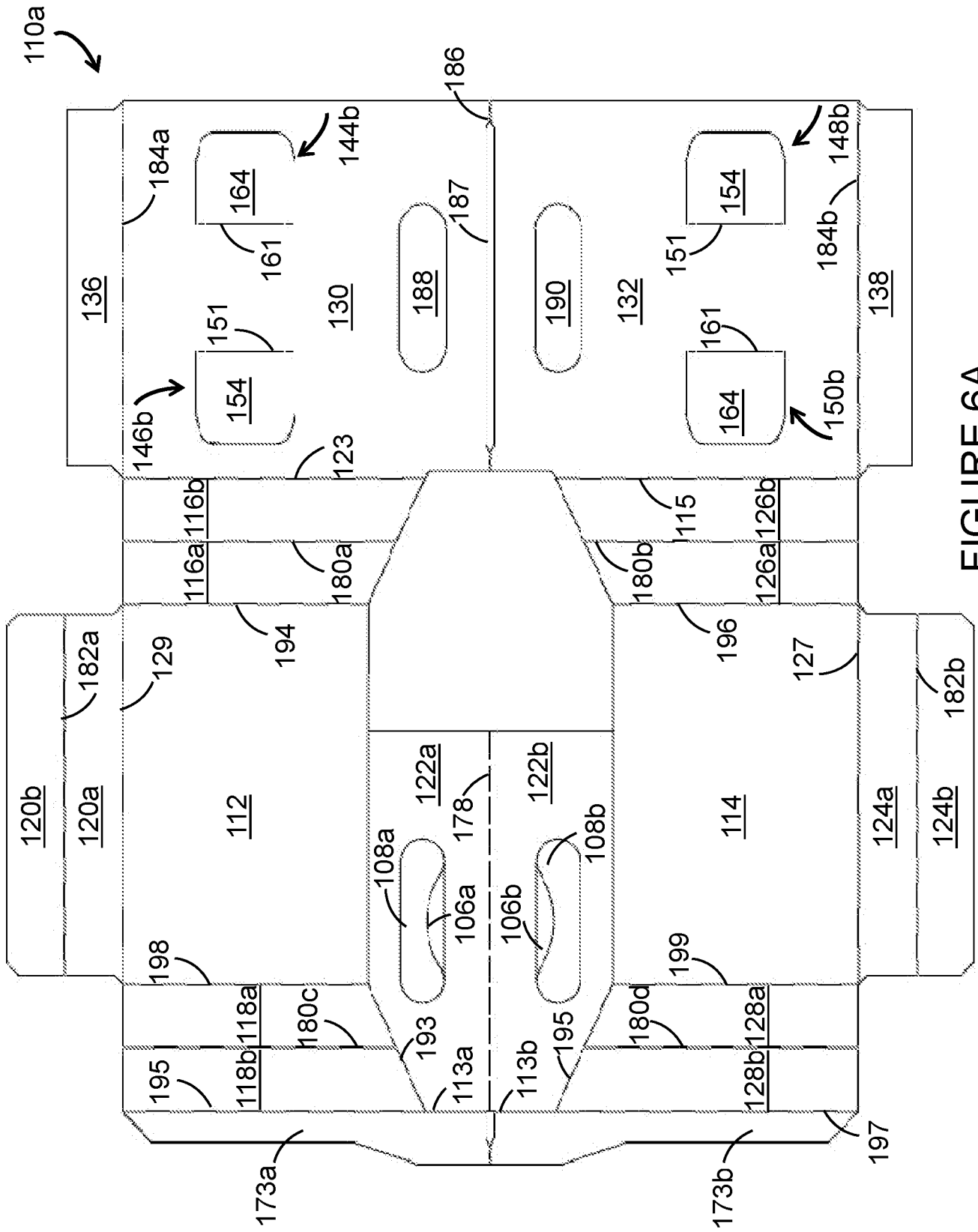


FIGURE 5C



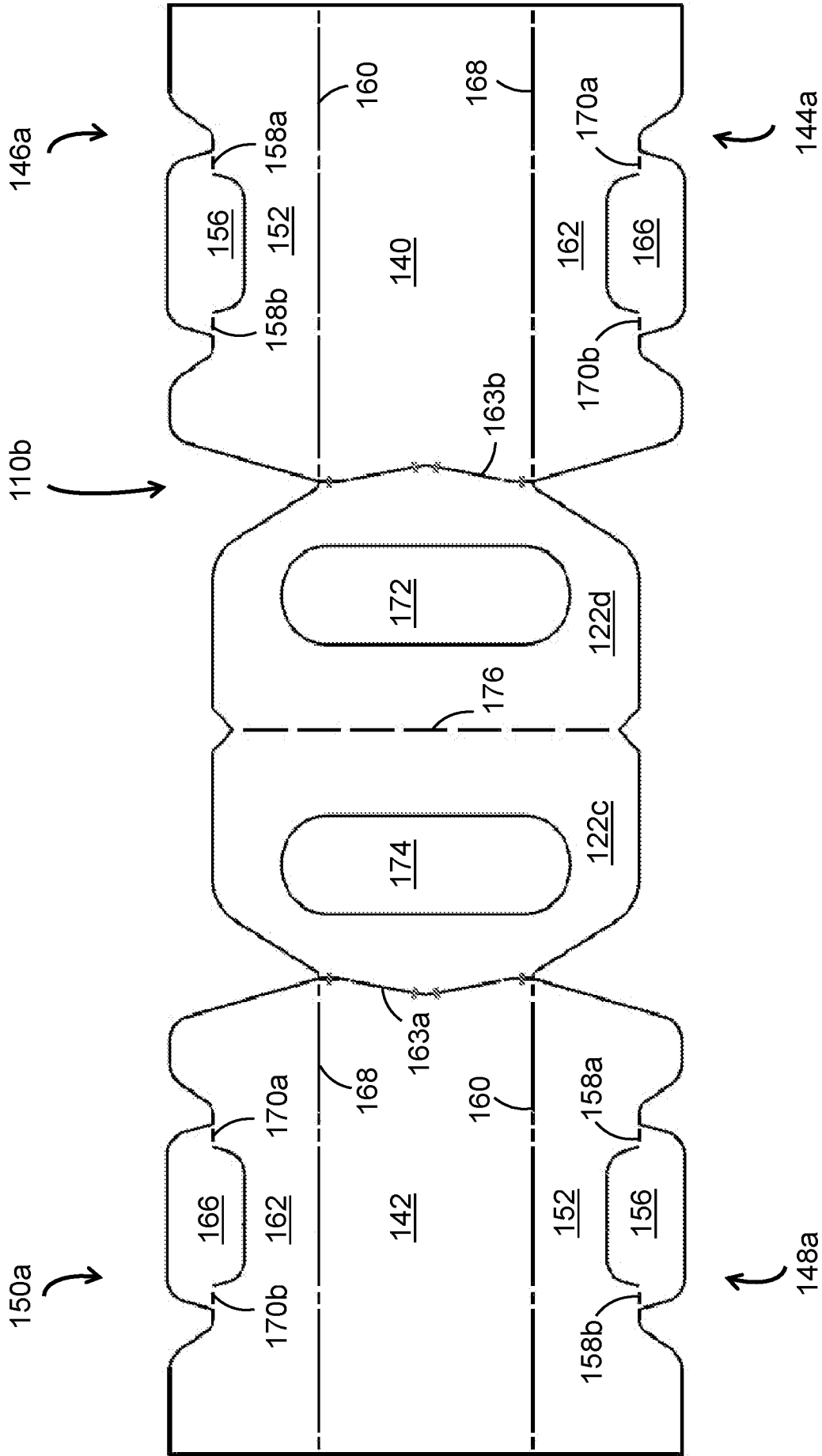


FIGURE 6B

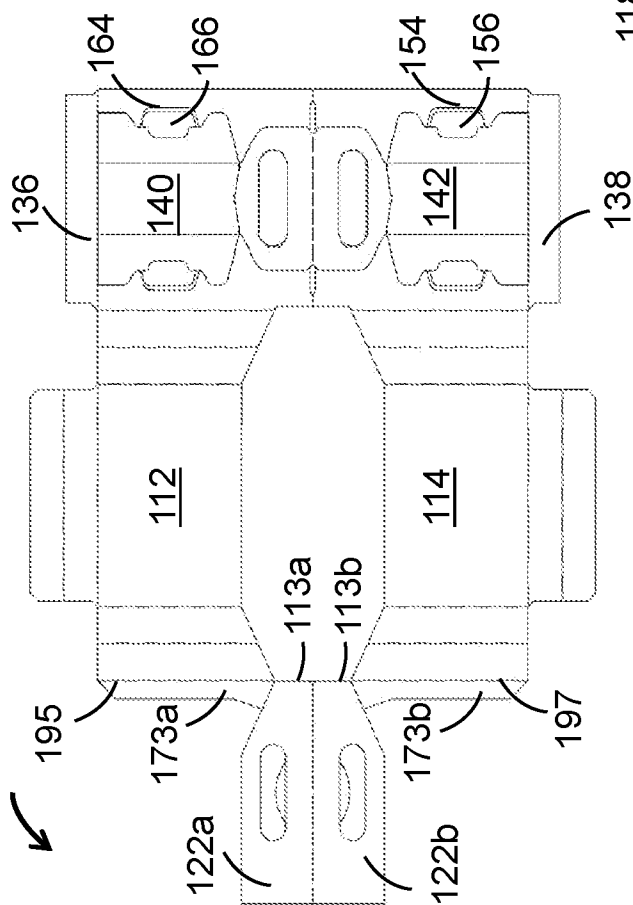


FIGURE 7A

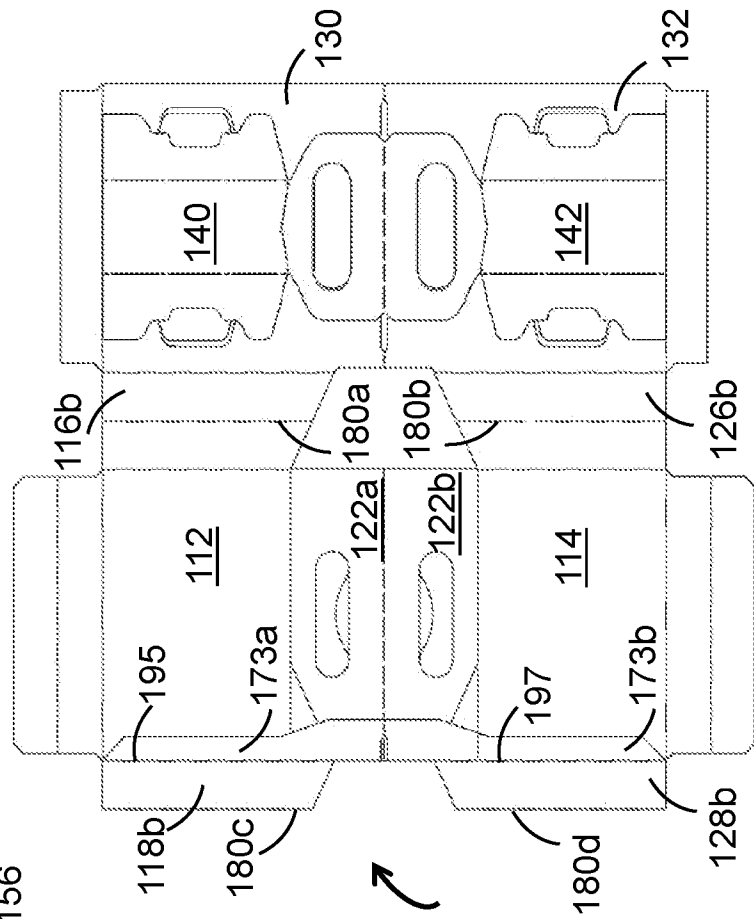
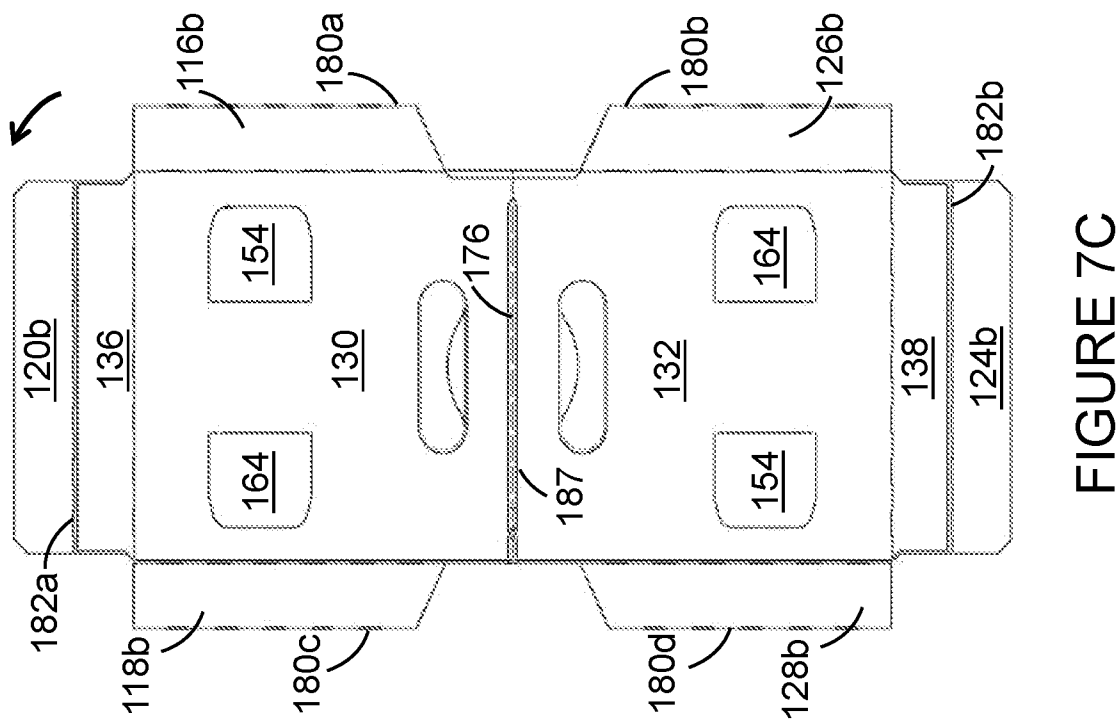
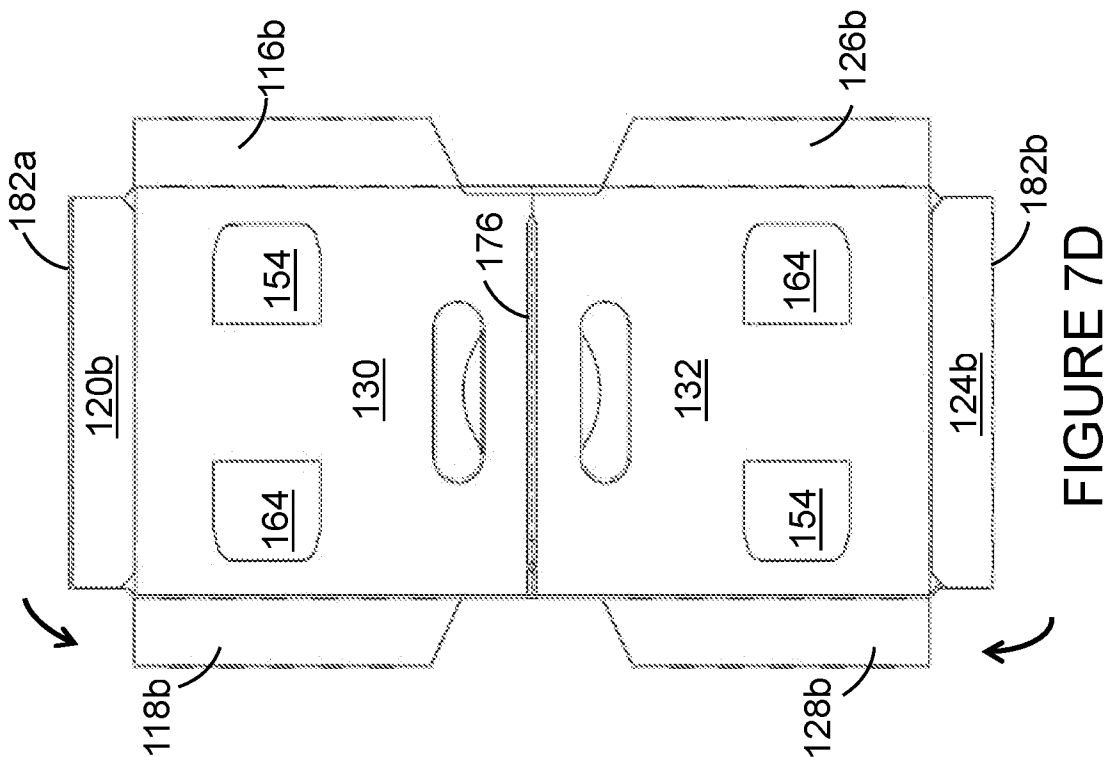
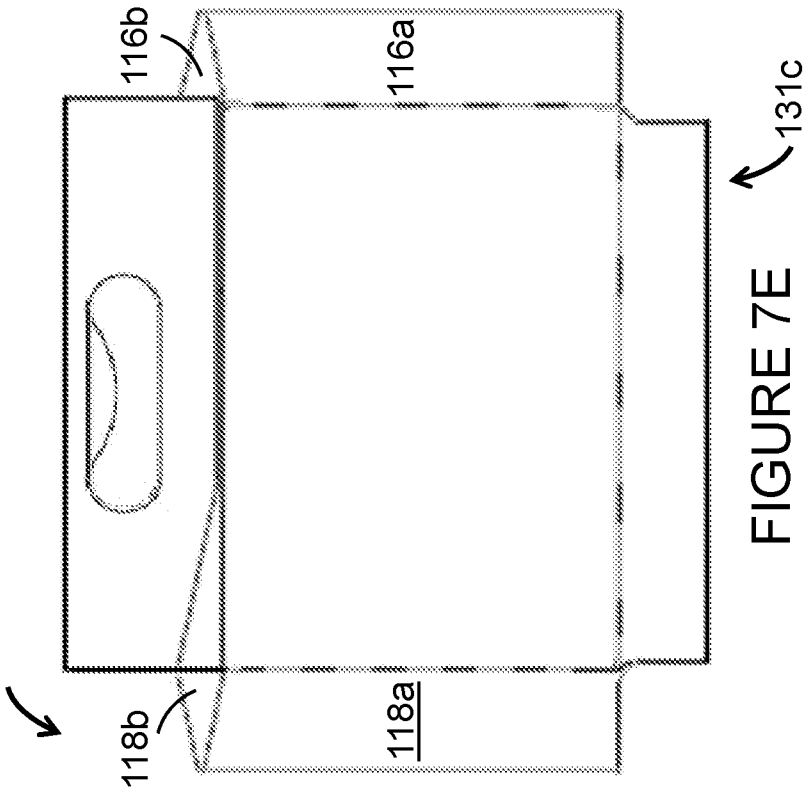


FIGURE 7B





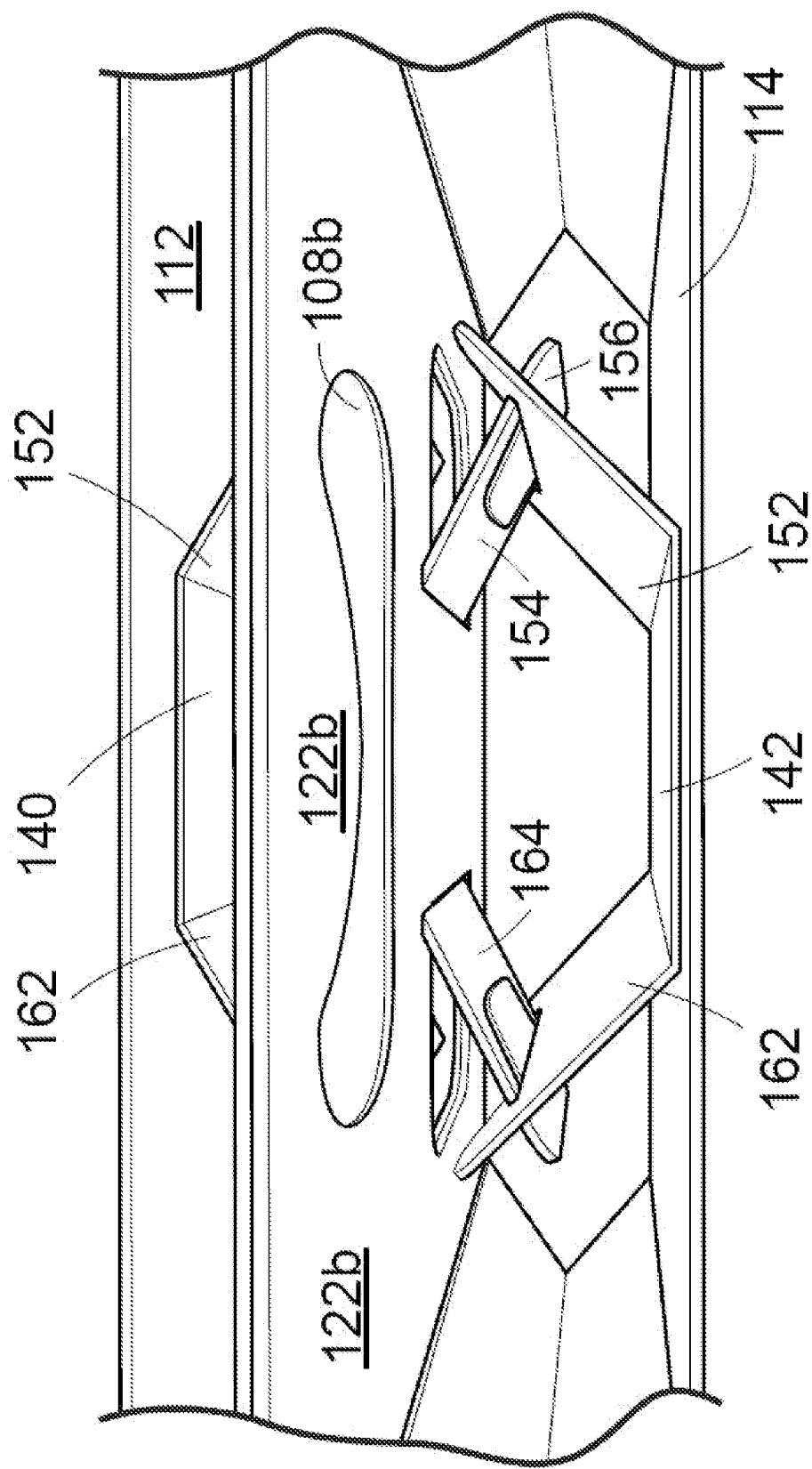


FIGURE 7F

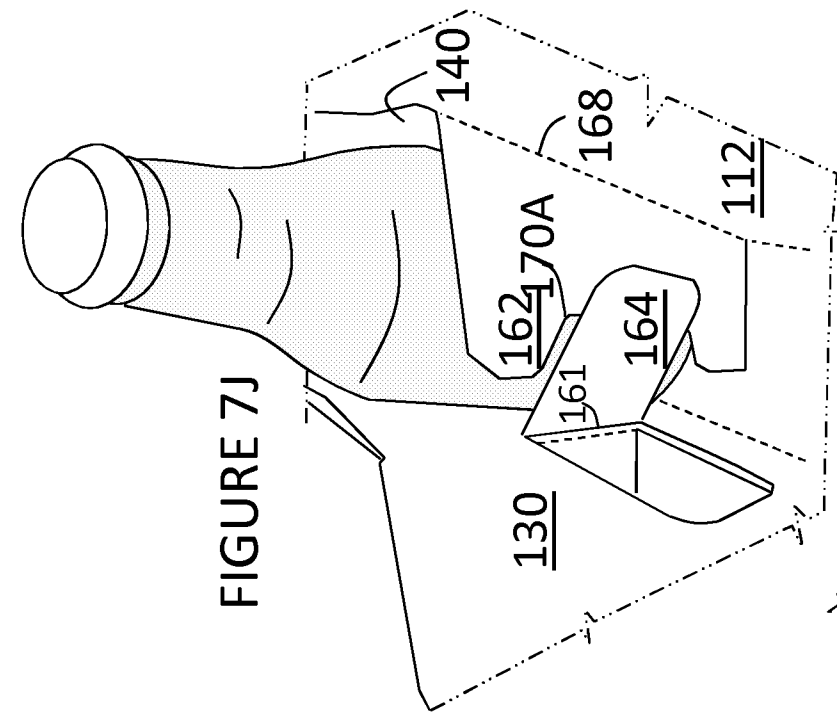


FIGURE 7J

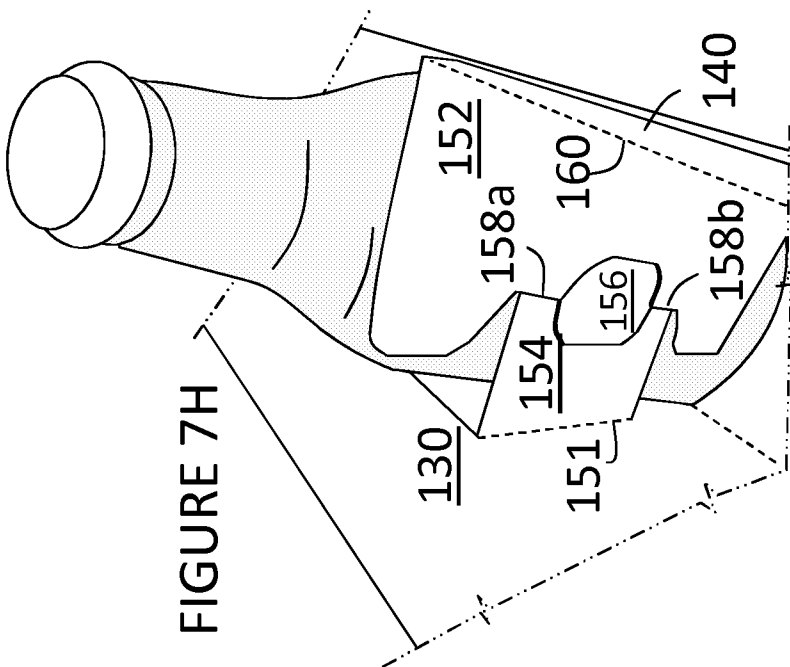


FIGURE 7H

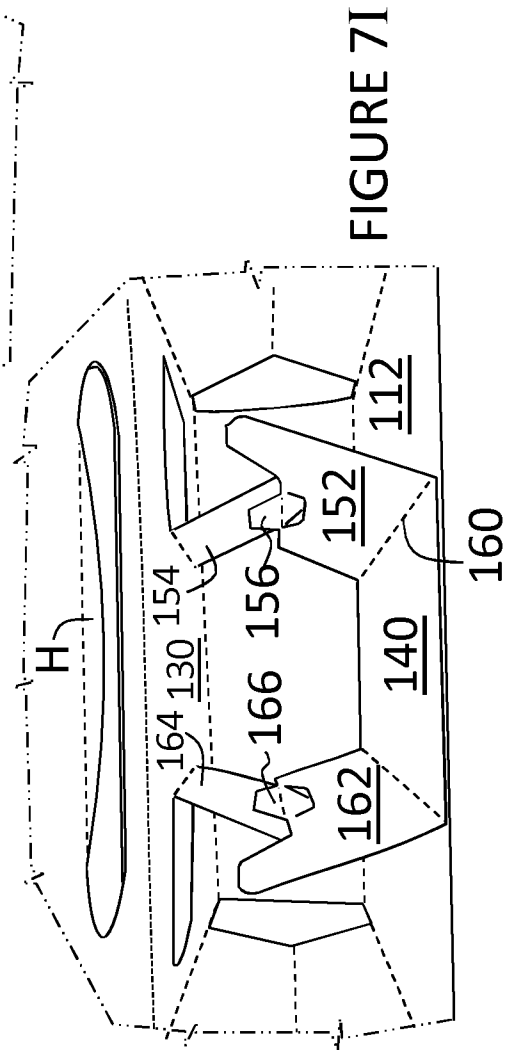


FIGURE 7I

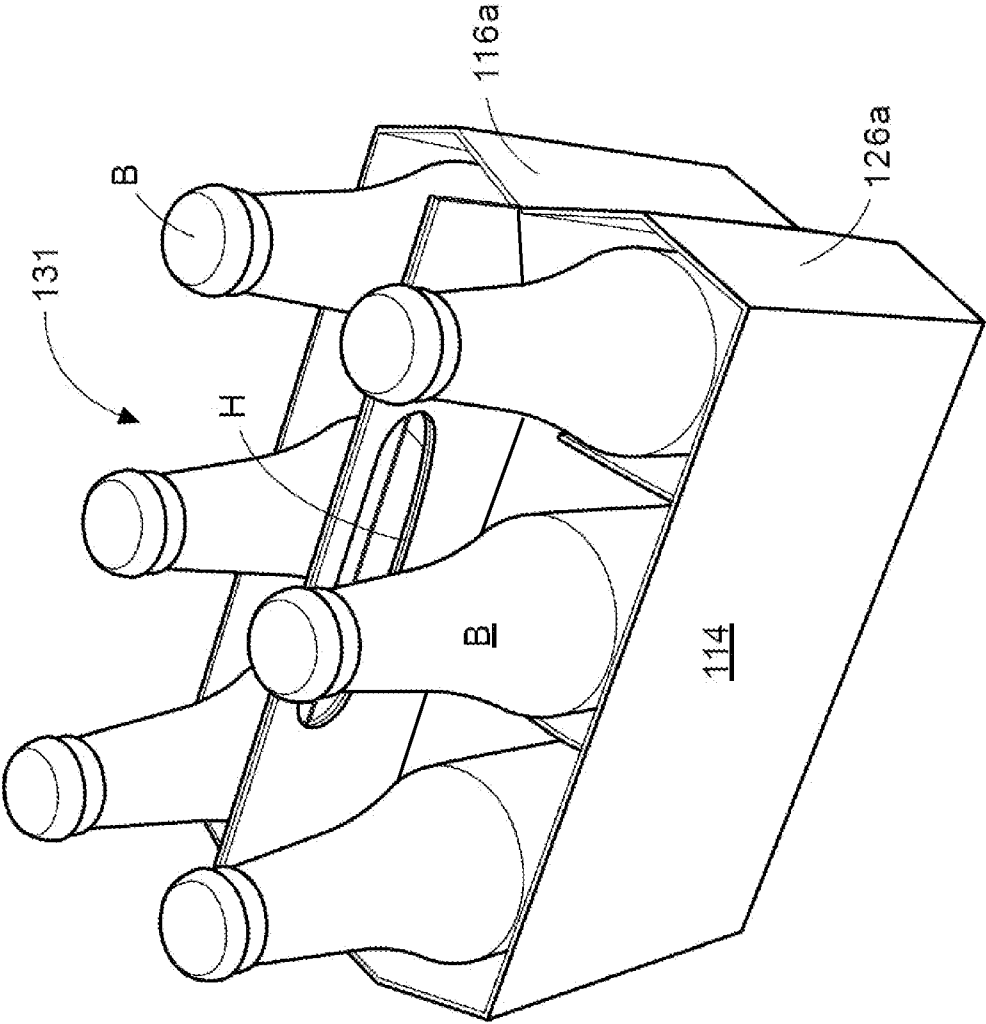
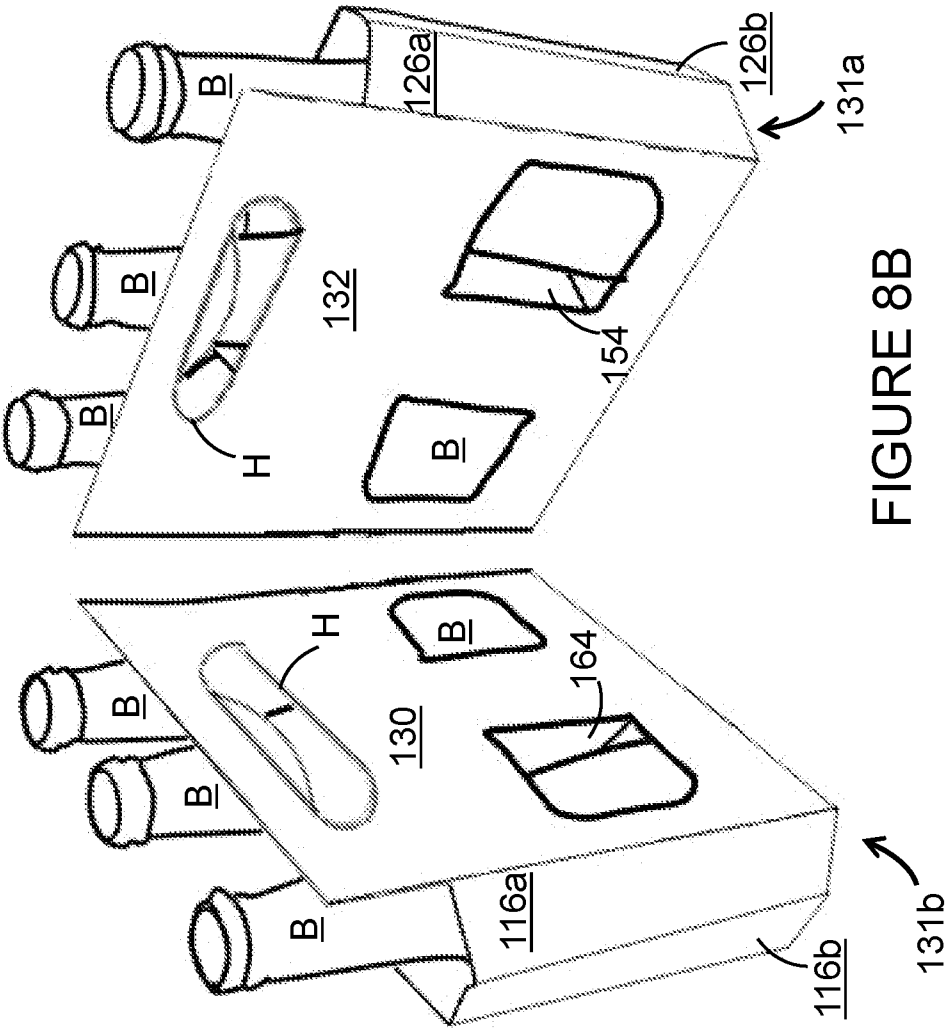


FIGURE 8A



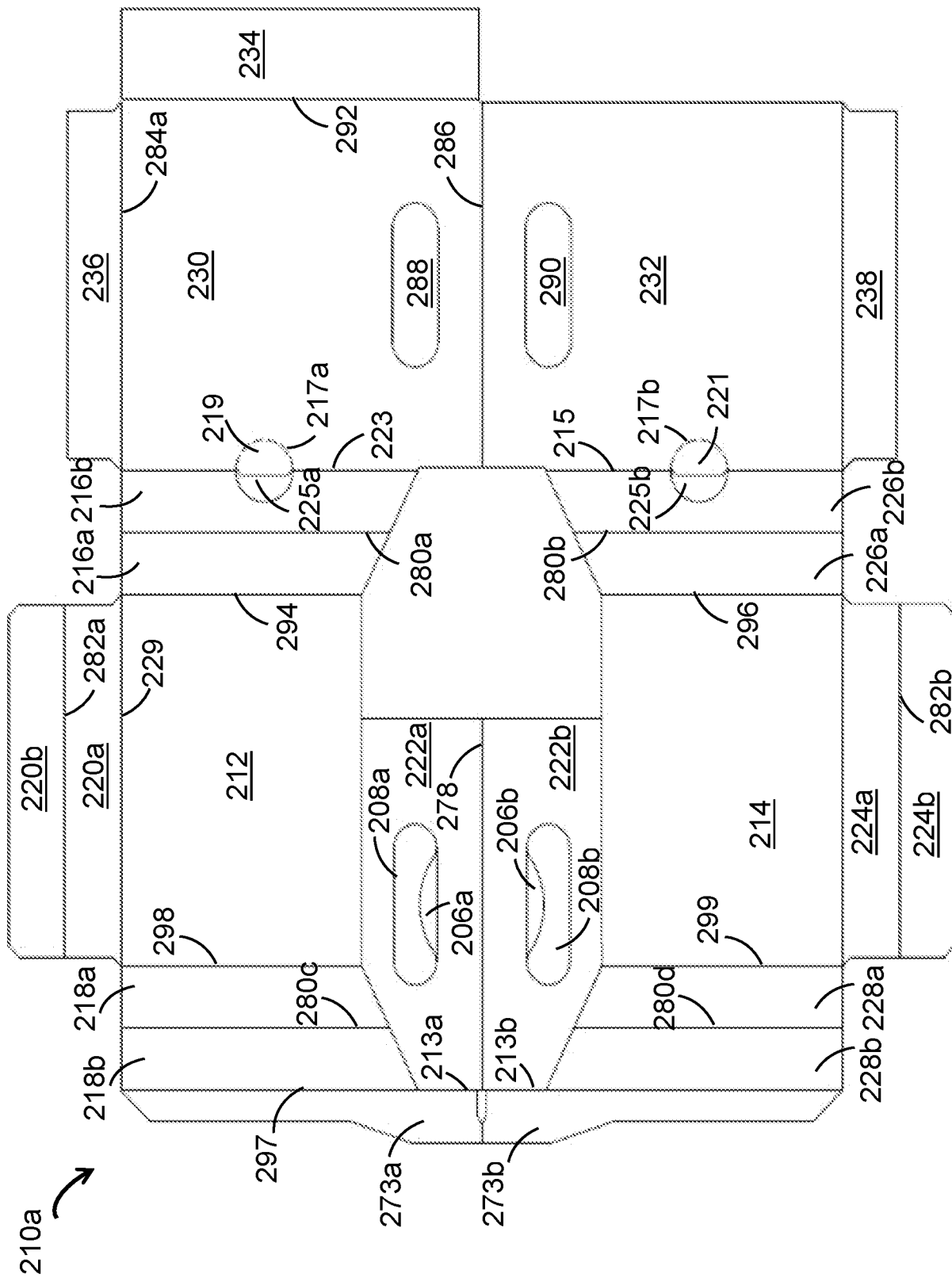


FIGURE 9A

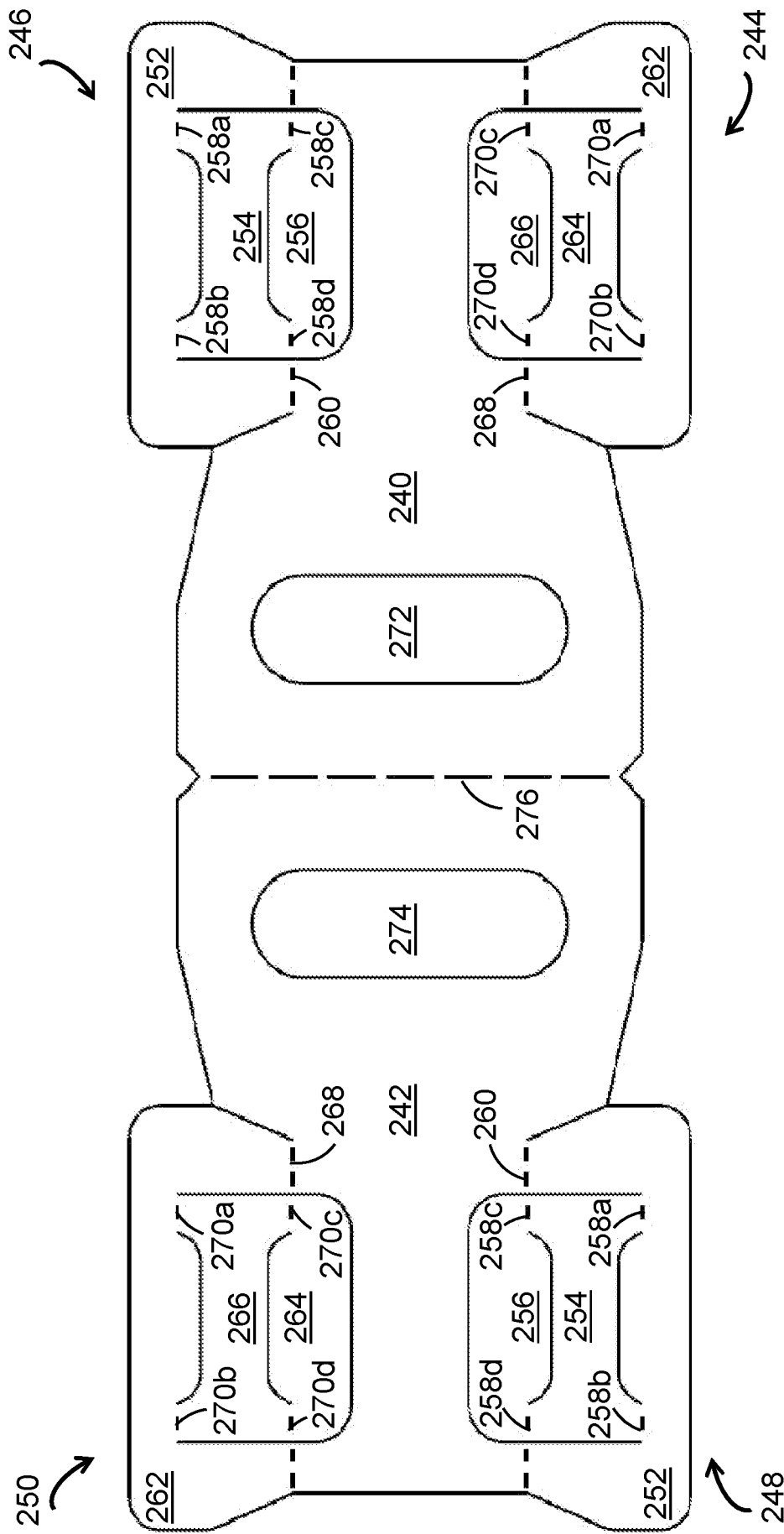


FIGURE 9B

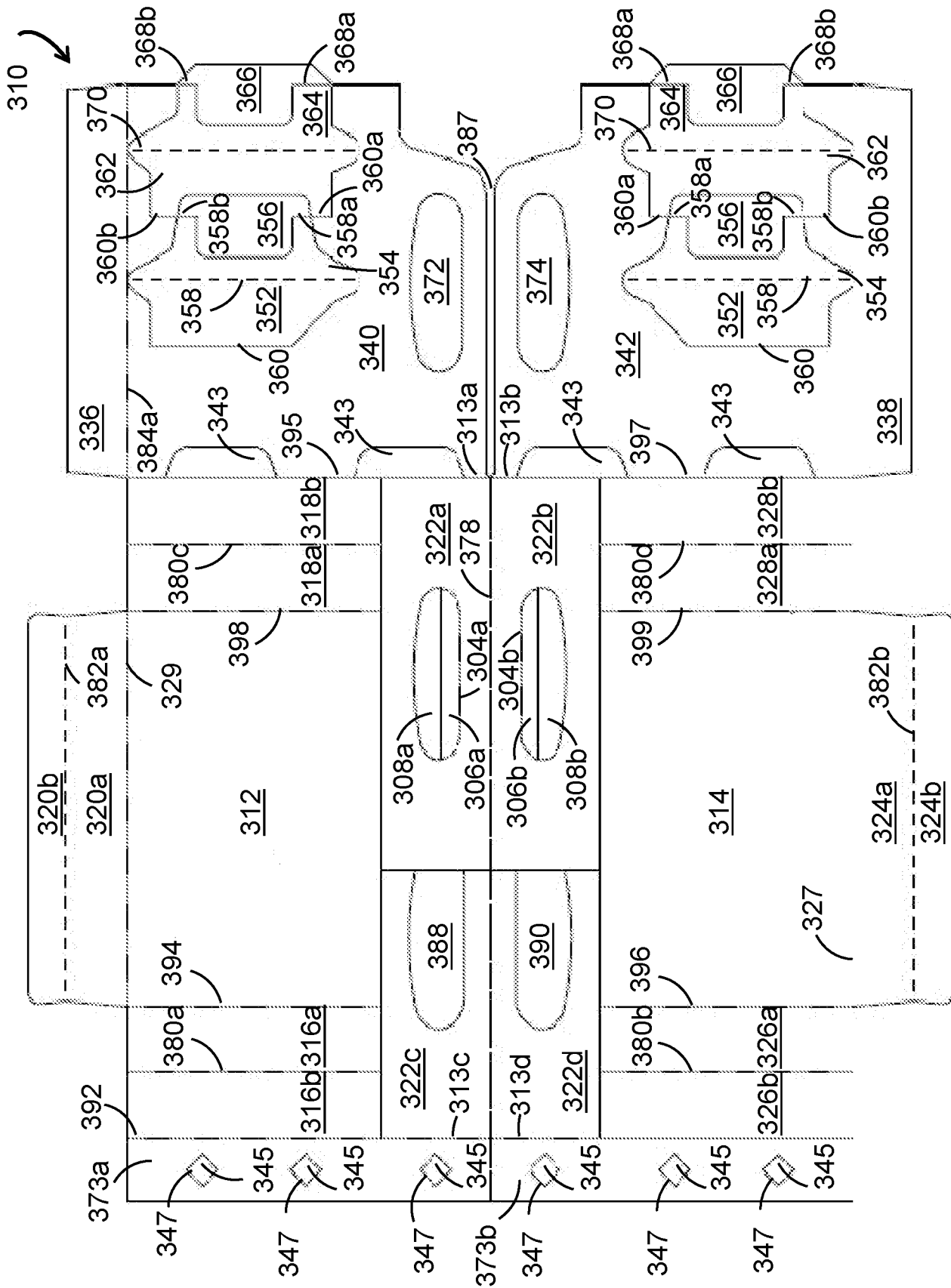


FIGURE 10

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2015/048847

A. CLASSIFICATION OF SUBJECT MATTER
INV. B65D71/58 B65D71/68
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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006/091024 A1 (CUOMO ANGELO V [US]) 4 May 2006 (2006-05-04) abstract; figures paragraphs [0019] - [0025] -----	1-17
A	US 4 256 223 A (PAWLOWSKI THOMAS D) 17 March 1981 (1981-03-17) column 2, lines 14-31; figures -----	1-17
A	US 2012/000913 A1 (SMALLEY BRIAN [GB] ET AL) 5 January 2012 (2012-01-05) abstract; figures 1,7 -----	1-17
A	GB 2 105 686 A (FEDERAL PAPER BOARD CO INC [US]) 30 March 1983 (1983-03-30) abstract; figures 1,2,6 ----- -/-	1-17



Further documents are listed in the continuation of Box C.



See patent family annex.

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"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

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"&" document member of the same patent family

Date of the actual completion of the international search

23 October 2015

Date of mailing of the international search report

02/11/2015

Name and mailing address of the ISA/

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Fax: (+31-70) 340-3016

Authorized officer

Serrano Galarraga, J

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2015/048847

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2003/213263 A1 (WOOG GUNTER [US]) 20 November 2003 (2003-11-20) abstract; figures -----	1,12

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2015/048847

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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