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(54) **CARRIER AND BLANK**

(57) An article carrier (90) includes an outer shell defining an interior of the carrier and a reinforced handle. The reinforced handle includes a first handle panel (18a) and a reinforcing member (31) struck from the first handle panel such that a first handle opening is defined at least in part by the reinforcing member. The first handle panel has an upper edge disposed above the first handle opening. The reinforcing member includes first (34) and second (36) hinged panels. The first hinged panel is hingedly connected to the first handle panel, and the second hinged panel is hingedly connected to the first hinged panel. The reinforcing member folds over the first handle panel's upper edge such that the first hinged panel forms at least part of a first gripping surface and the second hinged panel forms at least part of a second gripping surface.

ond (36) hinged panels. The first hinged panel is hingedly connected to the first handle panel, and the second hinged panel is hingedly connected to the first hinged panel. The reinforcing member folds over the first handle panel's upper edge such that the first hinged panel forms at least part of a first gripping surface and the second hinged panel forms at least part of a second gripping surface.

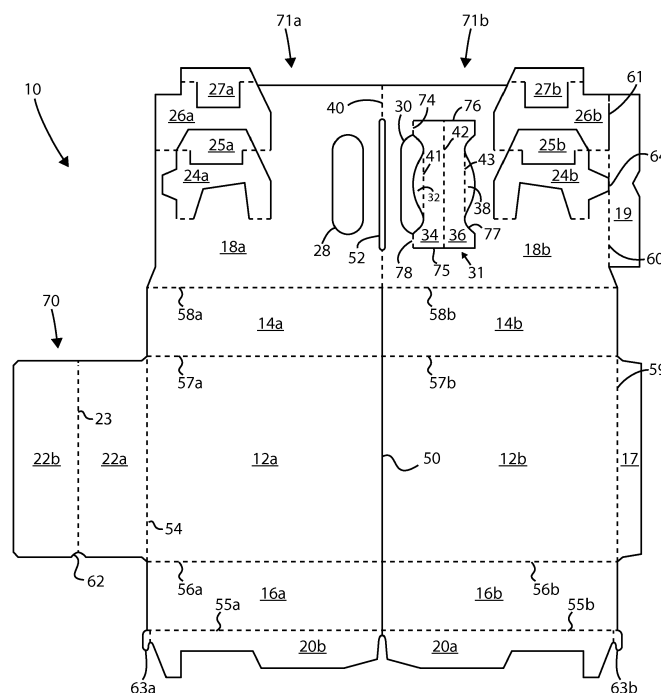


FIG. 1

Description

TECHNICAL FIELD

[0001] The present invention relates to a carrier, to a blank for forming the carrier, and more particularly to a basket-style carrier with a reinforced handle.

BACKGROUND

[0002] In the field of packaging, basket-style carriers for articles such as bottles are known. Typically, a basket-style carrier for bottles includes a primary medial partition structure which incorporates a handle structure by which the carrier can be lifted and carried, and the bottles are arranged on either side of this central partition structure. Individual cells of the carrier can be further defined by transverse partition straps or panels extending from each side of the primary medial partition structure to the adjacent side wall of the carrier. It can be desirable to provide a carrier having a reinforced handle. It would be desirable to provide a reinforced handle while minimizing the size of the blank and allowing for a lighter material thickness in the handle area. It would be desirable to provide a reinforced handle in which both sides of the handle's gripping surfaces are formed from a printed or treated side of the carrier blank.

SUMMARY

[0003] According to a first aspect of the invention, there is provided an article carrier adapted to accommodate one or more articles. The carrier includes an outer shell defining an interior of the carrier for receiving one or more articles and a reinforced handle connected to the outer shell. The reinforced handle includes a first handle panel and a reinforcing member struck from the first handle panel such that a first handle opening is defined at least in part by the reinforcing member in the first handle panel. The first handle panel has an upper edge disposed above the first handle opening. The reinforcing member includes at least first and second hinged panels. The first hinged panel is hingedly connected to the first handle panel. The second hinged panel is hingedly connected to the first hinged panel. The reinforcing member folds over the upper edge of the first handle panel such that the first hinged panel forms at least part of a first gripping surface disposed on a first side of the reinforced handle and the second hinged panel forms at least part of a second gripping surface disposed on a second opposite side of the reinforced handle.

[0004] Optionally, the first and second hinged panels are hingedly connected together along a handle fold line, and the handle fold line extends along the upper edge of the first handle panel.

[0005] Optionally, the first handle panel includes a first grip section extending between the first handle opening and the upper edge of the first handle panel, and the first

hinged panel is disposed in a face-contacting relationship with the first grip section such that the first grip section is disposed between the first and second hinged panels.

[0006] Optionally, the reinforced handle further includes a second handle panel disposed in a face-contacting relationship with the first handle panel. The second handle panel includes a second handle opening substantially aligned with the first handle opening and a second grip section extending between the second handle opening and an upper edge of the second handle panel and being in a face-contacting relationship with the first grip section. The second hinged panel is disposed in face-contacting relationship with the second grip section such that the first and second grip sections are disposed between the first and second hinged panels.

[0007] Optionally, the outer shell includes a bottom wall, opposed first and second side walls, and opposed front and rear end walls. The reinforced handle extends between the first and second end walls.

[0008] Optionally, the article carrier further includes a primary partition wall extending between the first and second end walls, the reinforced handle being provided by an upper portion of the primary partition wall.

[0009] Optionally, the first and second gripping surfaces are printed or treated surfaces of a carrier blank used to form the article carrier.

[0010] Optionally, an elongated cutout is defined along a portion of the upper edge of the first handle panel. The reinforcing member folds over the elongated cutout. The elongated cutout thereby allows the reinforcing member to fold more evenly over a remaining portion of the reinforced handle.

[0011] Optionally, the reinforcing member further includes first and second hand cushioning flaps. The first hand cushioning flap forms at least part of the first gripping surface and the second hand cushioning flap forms at least part of the second gripping surface.

[0012] Optionally, the reinforcing member is generally symmetrical about the handle fold line with the first hinged panel generally mirroring the second hinged panel.

[0013] Optionally, the article carrier further includes at least one transverse partition panel extending between the primary partition wall and one of the first and second side walls.

[0014] According to a second aspect of the invention, there is provided a blank for forming an article carrier adapted to accommodate one or more articles. The blank includes a plurality of main panels for forming an outer shell for receiving one or more articles and a reinforced handle connected to the outer shell in a set-up carrier. The main panels include a first handle panel and a reinforcing member for forming the reinforced handle. The reinforcing member is struck from the first handle panel such that a first handle opening is defined at least in part by the reinforcing member in the first handle panel. The first handle panel, when in the set-up carrier, has an upper edge disposed above the first handle opening. The reinforcing member includes at least first and second

hinged panels. The first hinged panel is hingedly connected to the first handle panel. The second hinged panel is hingedly connected to the first hinged panel. The reinforcing member, when in the set-up carrier, folds over the upper edge of the first handle panel such that the first hinged panel forms at least part of a first gripping surface disposed on a first side of the reinforced handle and the second hinged panel forms at least part of a second gripping surface disposed on a second opposite side of the reinforced handle.

[0015] Optionally, the first and second hinged panels are hingedly connected together along a handle fold line, and the handle fold line extends along the upper edge of the first handle panel in the set-up carrier.

[0016] Optionally, the first handle panel includes a first grip section extending between the first handle opening and the upper edge of the first handle panel. The first hinged panel, when in the set-up carrier, is disposed in a face-contacting relationship with the first grip section such that the first grip section is disposed between the first and second hinged panels.

[0017] Optionally, the main panels further include a second handle panel for positioning in a face-contacting relationship with the first handle panel when in the set-up carrier. The second handle panel includes a second handle opening and a second grip section extending between the second handle opening and an upper edge of the second handle panel. The second hinged panel, when in the set-up carrier, is disposed in face-contacting relationship with the second grip section such that the first and second grip sections are disposed between the first and second hinged panels.

[0018] Optionally, the main panels further include panels for forming a bottom wall, opposed first and second side walls, and opposed front and rear end walls such that the reinforced handle extends between the first and second end walls in the set-up carrier.

[0019] Optionally, the main panels further include panels for forming a primary partition wall that extends between the first and second end walls in the set-up carrier, and the reinforced handle is provided by an upper portion of the primary partition wall.

[0020] Optionally, the first and second gripping surfaces are printed or treated surfaces.

[0021] Optionally, an elongated cutout is disposed along a portion of the upper edge of the first handle panel, and the reinforcing member is configured to fold over the elongated cutout in the set-up carrier. The elongated cutout thereby allows the reinforcing member to fold more evenly over the reinforced handle in the set-up carrier.

[0022] Optionally, the reinforcing member further includes first and second hand cushioning flaps. The first hand cushioning flap forms at least part of the first gripping surface and the second hand cushioning flap forms at least part of the second gripping surface.

[0023] Optionally, the reinforcing member is generally symmetrical about the handle fold line with the first hinged panel generally mirroring the second hinged panel.

[0024] Optionally, the blank further includes at least one transverse partition panel configured to extend between the primary partition wall and one of the first and second side walls in the set-up carrier.

[0025] 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

[0026] Exemplary embodiments of the invention will now be described with reference to the accompanying drawings, in which:

FIGURE 1 is a plan view of a blank for forming a carrier according to a first embodiment of the invention;

FIGURE 2A is a perspective first side view of a carrier formed from the blank of Figure 1;

FIGURE 2B is a perspective second side view of the carrier of Figure 2A;

FIGURE 3A-3E show various steps in the construction of the carrier of Figure 2A;

FIGURE 4 is a plan view of a blank for forming a carrier according to a second embodiment of the invention.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0027] Detailed descriptions of specific embodiments of the package, blanks and carriers 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 packages, blanks and carriers 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.

[0028] In the embodiments detailed herein, the terms "carrier" and "carton" 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 cans and bottles. However, it is contemplated that the teachings of the invention can be applied to various containers, which may or may not be tapered and/or cylindrical. Other exemplary articles include bottles (for example metallic, glass or plastics bottles), cans (for example aluminium cans), tins, pouches, packets and the like.

[0029] Referring to FIG. 1, there is shown a first blank 10 for forming a basket-style carrier 90 (see FIGS. 2A-2B). 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, for example, to provide the carriers described in more detail below.

[0030] In the exemplary embodiment, the blank 10 is configured to form a basket-embodiment carrier 90 for packaging an exemplary arrangement of articles such as bottles (not shown). In this example, the arrangement is a 2 x 3 matrix or array. The blank 10 can be alternatively configured to form a carrier for packaging other articles and/or different arrangements of articles and articles of different sizes.

[0031] Referring to FIG. 1, blank 10 is generally rectangular in shape and cut and creased as shown. Blank 10 is divided into a bottom wall forming section 70, two generally symmetrical first and second elongate sections 71 a, 71 b for forming side walls, end walls, and partition and handle panels. The second elongate section additionally includes a bottom glue flap panel 17, and a bottom central support panel 19.

[0032] In the first embodiment, first elongate section 71 a and second elongate section 71 b are generally symmetrical about an axis defined by fold line 40 and severance line 50 that extend transversely across the blank 10. More specifically, each panel or element represented by a numeral followed by the suffix "a" is functionally symmetric with the corresponding panel or element represented by a like reference numeral followed by the suffix "b". For example, an "a" element is complementary to and may cooperate, in a functional way, with a corresponding "b" element. It should be noted that the scope of the invention is not limited to a blank that is physically symmetric in the manner described herein. Rather, the "a" elements may differ in size, shape, or contour from the corresponding "b" elements and still cooperate in a functional way. Corresponding elements may differ in size to, for example, accommodate graphics.

[0033] Fold line 40 hingedly connects between first and second handle panels 18a and 18b which herein after will be referred to as "first and second primary partition and handle panels". Severance line 50 defines a boundary between first and second front end wall panels 14a, 14b, first and second side panels 12a, 12b, first and second back end wall panels 16a, 16b, and first and second

back end post panels 20a, 20b.

[0034] Bottom wall forming section 70 is disposed at a first outer edge of the blank 10 and consists of a first bottom panel 22a and a second bottom panel 22b hingedly connected via a transverse fold line 23. A notch 62, centered about fold line 23, is formed between the two panels 22a, 22b at one of their ends as shown. Bottom wall forming section 70 is configured to form a bottom wall of the set-up carrier 90. Bottom wall forming section 70 of the blank 10 is hingedly attached to first elongate section 71 a via a transverse fold line 54 which connects between first bottom panel 22a and first side panel 12a.

[0035] First elongate section 71 a includes a first primary partition and handle panel 18a, a first front end wall panel 14a, a first side panel 12a, a first back end wall panel 16a, a first back end post panel 20a, a first side first transverse partition panel 24a, a first side second transverse partition panel 26a, a first side first glue flap panel 25a, and a first side second glue flap panel 27a. First primary partition and handle panel 18a is hingedly connected at its lower end to first front end wall panel 14a via a longitudinal fold line 58a. First front end wall panel 14a is hingedly connected at its lower end to first side panel 12a via a longitudinal fold line 57a. First side panel 12a is hingedly connected at its lower end to first back end wall panel 16a via longitudinal fold line 56a. First back end wall panel 16a is hingedly connected at its lower end to first back end post panel 20a. First side first transverse partition panel 24a and first side second transverse partition panel 26a are formed from an upper outermost corner of first primary partition and handle panel 18a and defined by severance lines and fold lines as shown. First side first transverse partition panel 24a is hingedly connected at its upper end to first side first glue flap panel 25a. First side second transverse partition panel 26a is hingedly connected at its upper end to first side second glue flap panel 27a.

[0036] The first and second front end wall panels 14a and 14b, the first and second side panels 12a and 12b, the first and second back end wall panels 16a and 16b and the first and second bottom panels 22a and 22b together provide an outer shell of the carrier for receiving articles such as bottles or cans. The first and second primary partition and handle panels 18a and 18b and the first and second back end post panels 20a and 20b together provide a primary partition structure which will be described later in more detail. A reinforced handle useful with the carrier or blank of the present invention is provided by an upper portion of the primary handle structure.

[0037] Second elongate section 71 b generally mirrors first elongate section 71 a and thus includes a second primary partition and handle panel 18b, a second front end wall panel 14b, a second side panel 12b, a second back end wall panel 16b, a second back end post panel 20b, second side first transverse partition panel 24b, second side second transverse partition panel 26b, second side first glue flap panel 25b, and second side second glue flap panel 27b.

[0038] Bottom glue flap panel 17 is hingedly connected to second side panel 12b along a second outer edge of blank 10 via transverse fold line 59. Bottom central support panel 19 is hingedly connected to second primary partition and handle panel 18b along the second outer edge of blank 10 via transverse fold line 60. Transverse severance line 64 separates bottom central support panel 19 from second side first transverse partition panel 24b, and transverse severance line 61 separates bottom central support panel 19 from second side second transverse partition panel 26b as shown.

[0039] First side panel 12a is configured to form a first side wall of the set-up carrier 90. Second side panel 12b is configured to form a second side wall of the set-up carrier 90. First and second front end wall panels 14a, 14b are configured to form a front end wall of the setup carrier 90. First and second back end wall panels 16a, 16b are configured to form a back end wall of the set-up carrier 90. First and second back end post panels 20a, 20b are configured to form a vertical support post at the back end of the set-up carrier 90. First and second primary partition and handle panels 18a, 18b are configured to form a primary partition structure that spans the length of the carrier 90 between the carrier's front and back end walls, and a handle structure disposed at an upper end of the primary partition structure for grasping and carrying the carrier 90. First side first transverse partition panel 24a and first side second transverse partition panel 26a are configured to extend transversely across an interior of the set-up carrier 90 between the primary partition structure and the first side wall. Second side first transverse partition panel 24b and second side second transverse partition panel 26b are configured to extend transversely across an interior of the set-up carrier 90 between the primary partition structure and the second side wall. The primary partition structure together with transverse partition panels 24a, 24b, 26a, 26b define a total of six cells arranged in a 2x3 array. Each cell can be configured to receive an individual article such as, e.g., a single bottle or can.

[0040] First primary partition and handle panel 18a includes a first handle opening 28 disposed adjacent to the panel's interior edge (i.e., adjacent to what is the upper edge of the panel 18a in the set-up carrier 90). Second primary partition and handle panel 18b includes a second handle opening 30 that generally mirrors a portion of first handle opening 28. A reinforcing handle panel 31 is struck from second primary partition and handle panel 18b and defined by fold lines 78, 74 that extend transversely from opposite upper and lower ends of second handle opening 30, and by longitudinal severance lines 75, 76 and generally transverse severance line 77. The overall shape of reinforcing handle panel 31 can be generally rectangular. Reinforcing handle panel 31 includes a first hand cushioning flap 32, a second hand cushioning flap 38, a first generally rectangular panel segment 34, and a second generally rectangular panel segment 36. Reinforcing handle panel 31 is generally symmetric about

transverse fold line 42. First hand cushioning flap 32 has a curved edge that projects into the interior of second handle opening 30. First hand cushioning flap 32 is hingedly connected to first generally rectangular panel segment 34 via transverse fold line 41. First generally rectangular panel segment 34 is hingedly connected at its upper and lower ends to the remainder of second primary partition and handle panel 18b via fold lines 73, 74. First generally rectangular panel segment 34 is hingedly connected to second generally rectangular panel segment 36 via transverse fold line 42. Second generally rectangular panel segment 36 is hingedly connected to second hand cushioning flap 38 via transverse fold line 43. A cutout 52 extends along a central length of, and interrupts, fold line 40 such that the cutout 52 extends slightly into both first and second primary partition and handle panels 18a, 18b. Cutout 52 has a thin, generally elongated rectangular shape and is generally aligned with reinforcing handle panel 31. Cutout 52 has a length that is generally equal to a length of reinforcing handle panel 31.

[0041] In the set-up carrier 90, reinforcing handle panel 31 is folded over the upper edge of the primary partition structure to create a 4-ply handle. The gripping (outer) surface of the handle is defined by, on a first side of the primary partition structure, the outer blank surfaces of second generally rectangular panel segment 36 and second hand cushioning flap 38, and, on a second side of the primary partition structure, the outer blank surfaces of first generally rectangular panel segment 34 and first hand cushioning flap 32. The "outer" surface of blank 10 refers to the side of blank 10 that forms the exterior surfaces of, e.g., the set-up carrier's bottom, side, and end walls. The outer surface of blank 10 can be, but is not required to be, a treated or printed surface. The inclusion of cutout 52 along fold line 40 advantageously allows for the handle plies to fold evenly with the primary partition structure's upper edge, providing a smoother, more continuous crease across the top of the assembled handle.

[0042] Also advantageously, the design of blank 10 and carrier 90 allows for the creation of a reinforced 4-ply handle while minimizing the size of the blank 10 and allowing for a lighter material thickness in the handle area. Another advantage of this design is that both of the exterior gripping surfaces of the constructed handle are formed from the outer (e.g., treated and/or printed) surface of the blank 10.

[0043] Turning to the construction of the carrier 90 as shown in FIG. 2A, the carrier 90 can be formed by a series of sequential folding operations. The folding process is not limited to that described below and may be altered according to particular manufacturing requirements.

[0044] Blank 10 is positioned with its interior surface facing up as shown in FIG. 1. Glue or other adhesive treatment can be applied to the interior surfaces of first and second generally rectangular panel segments 34, 36 or, alternatively, to the interior surfaces of corresponding portions of first and second primary partition and han-

dle panels 18a, 18b. Reinforcing handle panel 31 is folded inwardly about fold lines 73, 74 bringing the interior surfaces of first and second generally rectangular panel segments 34, 36 into face-contacting relationship with corresponding upper edge portions of respective second and first primary partition and handle panels 18b, 18a and securing them thereto. This results in the blank 10 having a configuration as shown in FIG. 3A.

[0045] Glue or other adhesive treatment is applied to the interior surfaces of first side first glue flap panel 25a, first side second glue flap panel 27a, second side first glue flap panel 25b, and second side second glue flap panel 27b. Blank 10 is then folded inwardly about fold lines 58a, 58b, bringing the interior surfaces of first side glue flap panels 25a, 27a and second side glue flap panels 25b, 27b into face-contacting relationship with respective interior surfaces of first and second side panels 12a, 12b and securing them thereto. This results in the blank 10 having a configuration as shown in FIG. 3B.

[0046] Glue or other adhesive treatment is applied to the interior surfaces of first and second back end post panels 20a, 20b or, alternatively, to the exterior surfaces of corresponding portions of first and second primary partition and handle panels 18a, 18b. Blank 10 is then folded inwardly about fold lines 56a, 56b, bringing the interior surfaces of first and second back end post panels 20a, 20b into face-contacting relationship with the exterior surfaces of respective first and second primary partition and handle panels 18a, 18b and securing them thereto. This results in the blank 10 having a configuration as shown in FIG. 3C.

[0047] Glue or other adhesive treatment is applied to the exterior surfaces of first back end post panel 20a, first back end wall panel 16a, first primary partition and handle panel 18a or, alternatively, to the exterior surfaces of second back end post panel 20b, second back end wall panel 16b, second primary partition and handle panel 18b. Blank 10 is then folded inwardly about fold line 40 and severance line 50, bringing the exterior surfaces of first back end post panel 20a, first back end wall panel 16a, and first primary partition and handle panel 18a into face-contacting relationship with the exterior surfaces of respective second back end post panel 20b, second back end wall panel 16b, and second primary partition and handle panel 18b and securing them thereto. This results in the blank 10 having a configuration as shown in FIG. 3D.

[0048] Glue or other adhesive treatment is applied to the exterior surface of bottom glue flap panel 17 or, alternatively, to a corresponding portion of the interior surface of second bottom panel 22b. Second bottom panel 22b is folded inwardly about fold line 23, bringing the exterior surface of bottom glue flap panel 17 into face-contacting relationship with a corresponding portion of the interior surface of second bottom panel 22b and securing it thereto. This results in the collapsed carrier shown in FIG. 3E. In this configuration, the collapsed carrier can be substantially flattened as shown so that it can be transported or shipped in a compact format for

loading elsewhere. Advantageously, the collapsed carrier shown in FIG. 3E allows for quick hand or machine loading without requiring further gluing.

[0049] The collapsed carrier shown in FIG. 3E can be fully erected by simply opening up the tubular structure. Notches 63a, 63b on first and second back end post panels 20a, 20b can then be mated with notch 62 on the carrier's bottom wall to help maintain the carrier 90 in its erect configuration. Articles can be loaded into the open top of the erected carton 90 by hand or machine.

[0050] FIG. 4 is a plan view of a blank 210 used to form a carrier (not shown) according to a second embodiment of the invention. Blank 210 and the corresponding carrier can be generally similar to the blank 10 and carrier 90 discussed above, and like or similar reference numbers in the figures indicate like or similar elements. The primary difference between the first and second embodiments relates to the arrangement of the two embodiments' reinforced handles. First primary and partition handle 218a of blank 210 includes a first handle opening 228. First handle opening 228 may have a generally rounded elongate shape. Second primary and partition handle panel 218b includes a second handle opening 230 that may generally mirror first handle opening 228. A reinforcing handle panel 231 is struck from second partition and handle panel 218b and positioned adjacent to second handle opening 230. Reinforcing handle panel 231 is generally rectangular in shape and defined by a transverse fold line 273, first and second longitudinal severance lines 275, 276 and transverse severance line 277. Reinforcing handle panel 231 includes a third handle opening 233 that may be substantially similar to first handle opening 228. The construction of the second carrier is generally similar to the construction of carrier 90 described above. Thus, during construction of the carrier, reinforcing handle panel 231 is folded inwardly along fold line 273, bringing the interior surface of reinforcing handle panel 231 into face-contacting relationship with the interior surface of the upper edge portion of second partition and handle panel 218b and securing it thereto. First handle opening 228, second handle opening 230, and third handle opening 233 are configured to align and overlap with one another in the constructed carrier to create a reinforced 3-ply handle.

[0051] 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 may be adjusted to accommodate articles of differing size or shape. As a further example, it can be appreciated that a reinforced handle within the scope of the present invention may be used with a variety of carrier types other than basket-style carriers, such as, e.g., a wraparound carrier with an upright handle and a tubular carton having a slot handle in its end closure wall.

[0052] It will be recognized that as used herein, directional references such as "top", "bottom", "base", "front", "back", "rear", "end", "side", "inner", "outer", "upper" and "lower" do not limit the respective panels to such orien-

tation, but merely serve to distinguish these panels from one another. Any reference to "hinged connection" should not be construed as necessarily referring to a single fold line only; indeed it is envisaged that a hinged connection can be formed from one or more of the following: a short slit, a frangible line or a fold line, without departing from the scope of the invention. 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.

[0053] As used herein, the terms "hinged connection" and "fold line" each refers to all manner of lines that define hinge features of the blank or substrate of sheet material, facilitate folding portions of the blank or substrate of sheet material with respect to one another, or otherwise indicate optimal panel folding locations for the blank or substrate of sheet material. Any reference to "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.

[0054] As used herein, the term "fold line" 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 short scores and any combination of the aforesaid options, without departing from the scope of the invention.

[0055] As used herein, the term "severance line" may refer to all manner of lines formed in the blank or substrate of sheet material that facilitate separating portions of the blank or substrate of sheet material from one another, or otherwise that indicate optimal separation locations on the blank or substrate. As used herein, the terms "severance line" may refer to one of the following: a single cut line, a single partial-depth cut line (e.g., a single half-cut line), an interrupted cut line, 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 partial-depth cuts (e.g., a line of short half cuts), and any combination of the aforementioned options.

[0056] It should be understood that hinged connections, fold lines and severance lines can each includes elements that are formed in the blank or substrate of sheet material, including perforations, a line of perforations, a line of short slits, a line of half-cuts, a single half-cut, a cut line, an interrupted cut line, slits, scores, any combination thereof, and the like. The elements can be dimensioned and arranged to provide the desired functionality. For example, a line of perforations can be dimensioned or designed with degrees of weakness to define a fold line and/or a frangible 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 frangible line.

Claims

1. An article carrier adapted to accommodate one or more articles, the carrier comprising:

an outer shell defining an interior of the carrier for receiving one or more articles; and
a reinforced handle connected to the outer shell, the reinforced handle comprising a first handle panel and a reinforcing member struck from the first handle panel such that a first handle opening is defined at least in part by the reinforcing member in the first handle panel, the first handle panel having an upper edge disposed above the first handle opening, the reinforcing member comprising at least first and second hinged panels, the first hinged panel being hingedly connected to the first handle panel, the second hinged panel being hingedly connected to the first hinged panel, the reinforcing member folding over the upper edge of the first handle panel such that the first hinged panel forms at least part of a first gripping surface disposed on a first side of said reinforced handle and said second hinged panel forms at least part of a second gripping surface disposed on a second opposite side of said reinforced handle.

2. The article carrier of claim 1, wherein the first and second hinged panels are hingedly connected together along a handle fold line, and wherein the handle fold line extends along the upper edge of the first handle panel.

3. The article carrier of claim 1, wherein the first handle panel includes a first grip section extending between the first handle opening and the upper edge of the first handle panel, and wherein the first hinged panel is disposed in a face-contacting relationship with the first grip section such that the first grip section is disposed between the first and second hinged panels.

4. The article carrier of claim 3, wherein the reinforced handle further comprises a second handle panel disposed in a face-contacting relationship with the first handle panel, wherein the second handle panel includes a second handle opening substantially aligned with said first handle opening and a second grip section extending between the second handle opening and an upper edge of the second handle panel and being in a face-contacting relationship with the first grip section, and wherein the second hinged panel is disposed in face-contacting relationship with the second grip section such that the first and second grip sections are disposed between the first and second hinged panels.

5. The article carrier of Claim 1, wherein the outer shell

comprises a bottom wall, opposed first and second side walls, and opposed front and rear end walls, wherein the reinforced handle extends between said first and second end walls.

6. The article carrier of claim 5, further comprising a primary partition wall extending between the first and second end walls, the reinforced handle being provided by an upper portion of the primary partition wall.
7. The article carrier of claim 1, wherein said first and second gripping surfaces comprise printed or treated surfaces of a carrier blank used to form the article carrier.
8. The article carrier of Claim 1, wherein an elongated cutout is defined along a portion of said upper edge of the first handle panel, said reinforcing member folding over said elongated cutout, said elongated cutout thereby allowing said reinforcing member to fold more evenly over a remaining portion of the reinforced handle.
9. The article carrier of Claim 1, wherein said reinforcing member further comprises first and second hand cushioning flaps, wherein said first hand cushioning flap forms at least part of said first gripping surface and said second hand cushioning flap forms at least part of said second gripping surface.
10. The article carrier of Claim 2, wherein said reinforcing member is generally symmetrical about the handle fold line with said first hinged panel generally mirroring said second hinged panel.
11. The article carrier of Claim 6, further comprising at least one transverse partition panel extending between said primary partition wall and one of said first and second side walls.
12. A blank for forming an article carrier adapted to accommodate one or more articles, the blank comprising:

a plurality of main panels for forming an outer shell for receiving one or more articles and a reinforced handle connected to the outer shell in a set-up carrier, wherein the main panels include a first handle panel and a reinforcing member for forming the reinforced handle, the reinforcing member being struck from the first handle panel such that a first handle opening is defined at least in part by the reinforcing member in the first handle panel, the first handle panel, when in the set-up carrier, having an upper edge disposed above the first handle opening, the reinforcing member comprising at least first and second hinged panels, the first hinged panel be-

ing hingedly connected to the first handle panel, the second hinged panel being hingedly connected to the first hinged panel, the reinforcing member, when in the set-up carrier, folding over the upper edge of the first handle panel such that the first hinged panel forms at least part of a first gripping surface disposed on a first side of said reinforced handle and said second hinged panel forms at least part of a second gripping surface disposed on a second opposite side of said reinforced handle.

13. The blank of claim 12, wherein the first and second hinged panels are hingedly connected together along a handle fold line, and wherein the handle fold line extends along the upper edge of the first handle panel in the set-up carrier.
14. The blank of claim 12, wherein the first handle panel includes a first grip section extending between the first handle opening and the upper edge of the first handle panel, and wherein the first hinged panel, when in the set-up carrier, is disposed in a face-contacting relationship with the first grip section such that the first grip section is disposed between the first and second hinged panels.
15. The blank of claim 14, wherein the main panels further include a second handle panel for positioning in a face-contacting relationship with the first handle panel when in the set-up carrier, wherein the second handle panel includes a second handle opening and a second grip section extending between the second handle opening and an upper edge of the second handle panel, and wherein the second hinged panel, when in the set-up carrier, is disposed in face-contacting relationship with the second grip section such that the first and second grip sections are disposed between the first and second hinged panels.

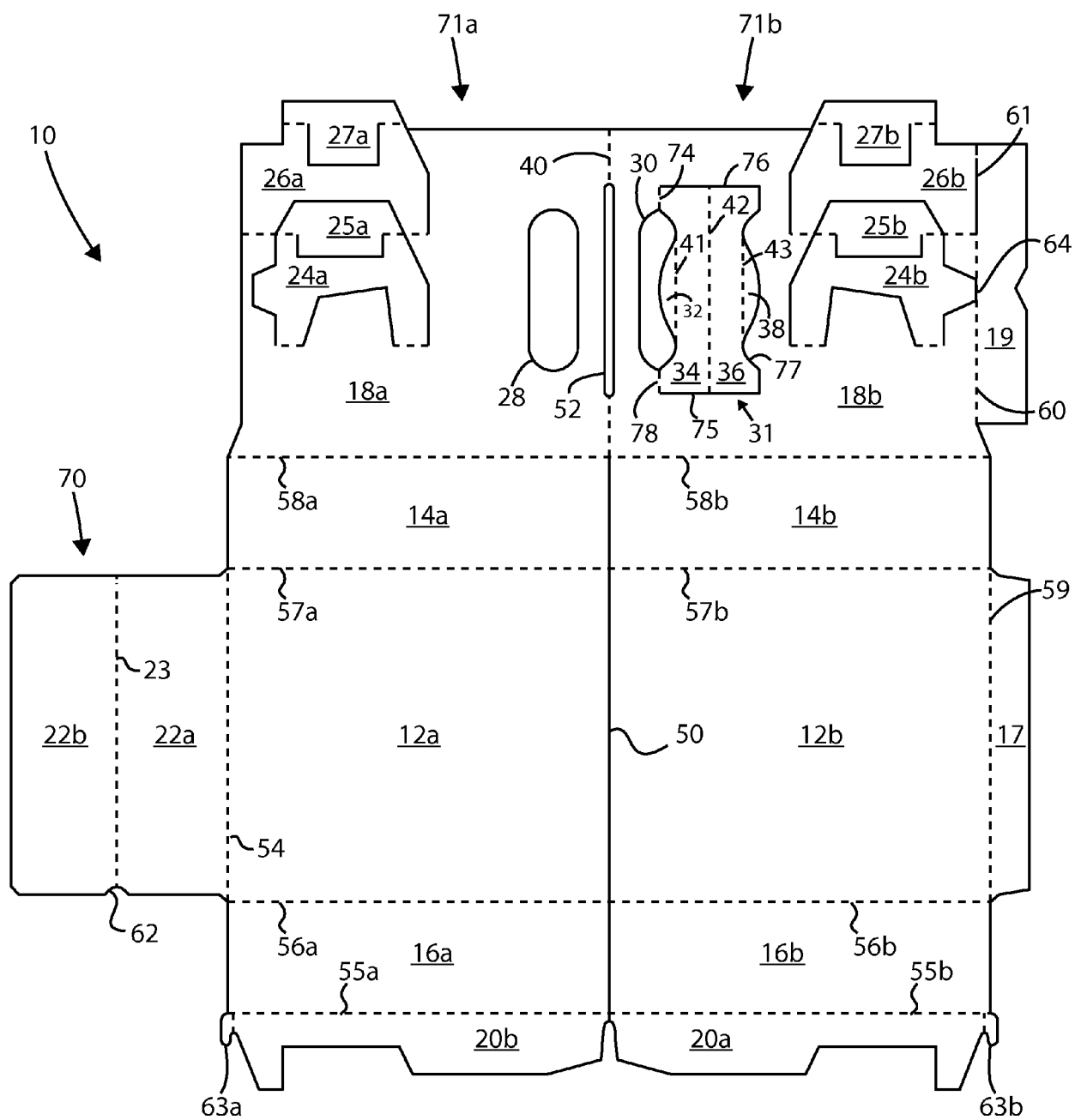


FIG. 1

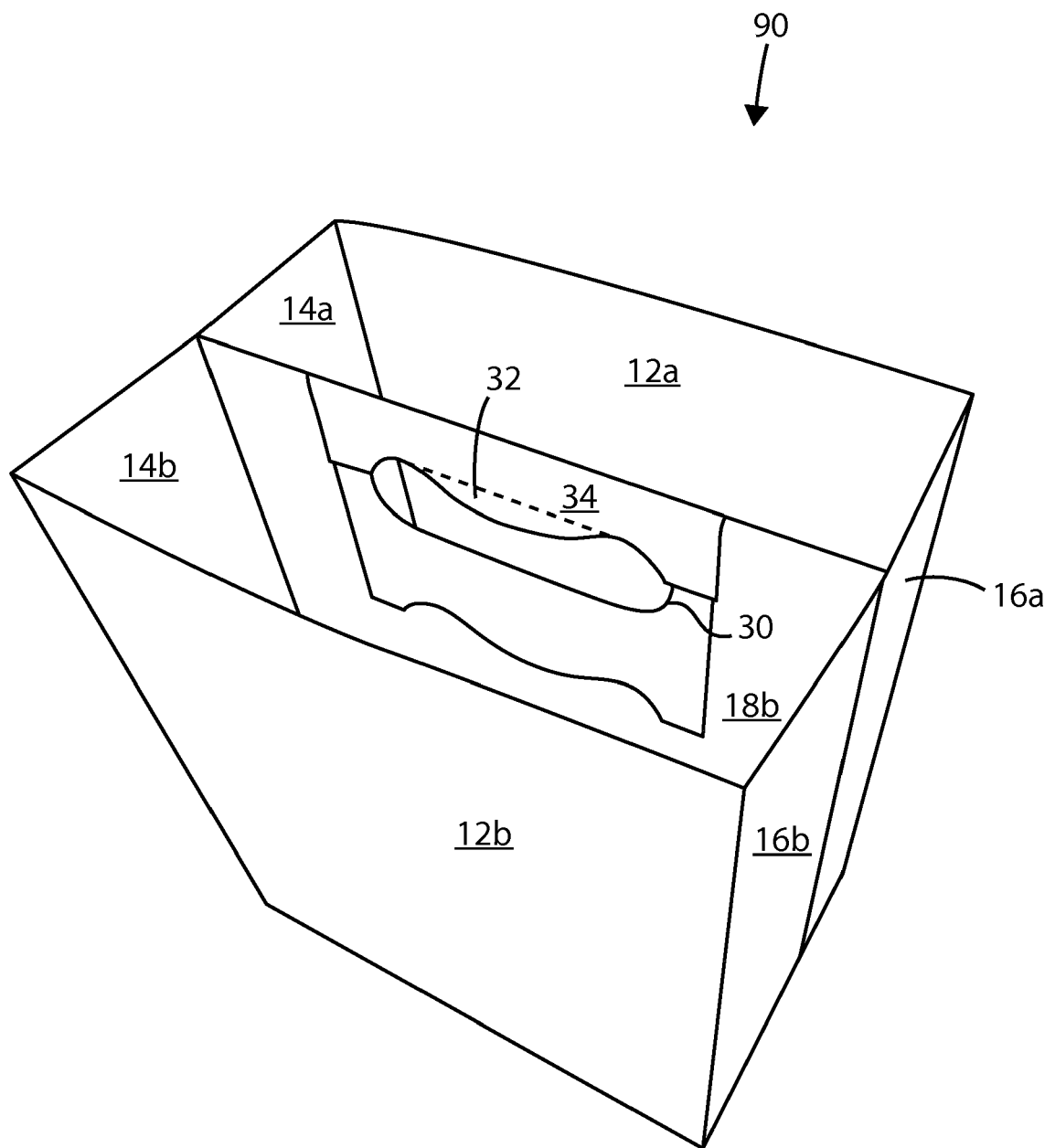


FIG. 2A

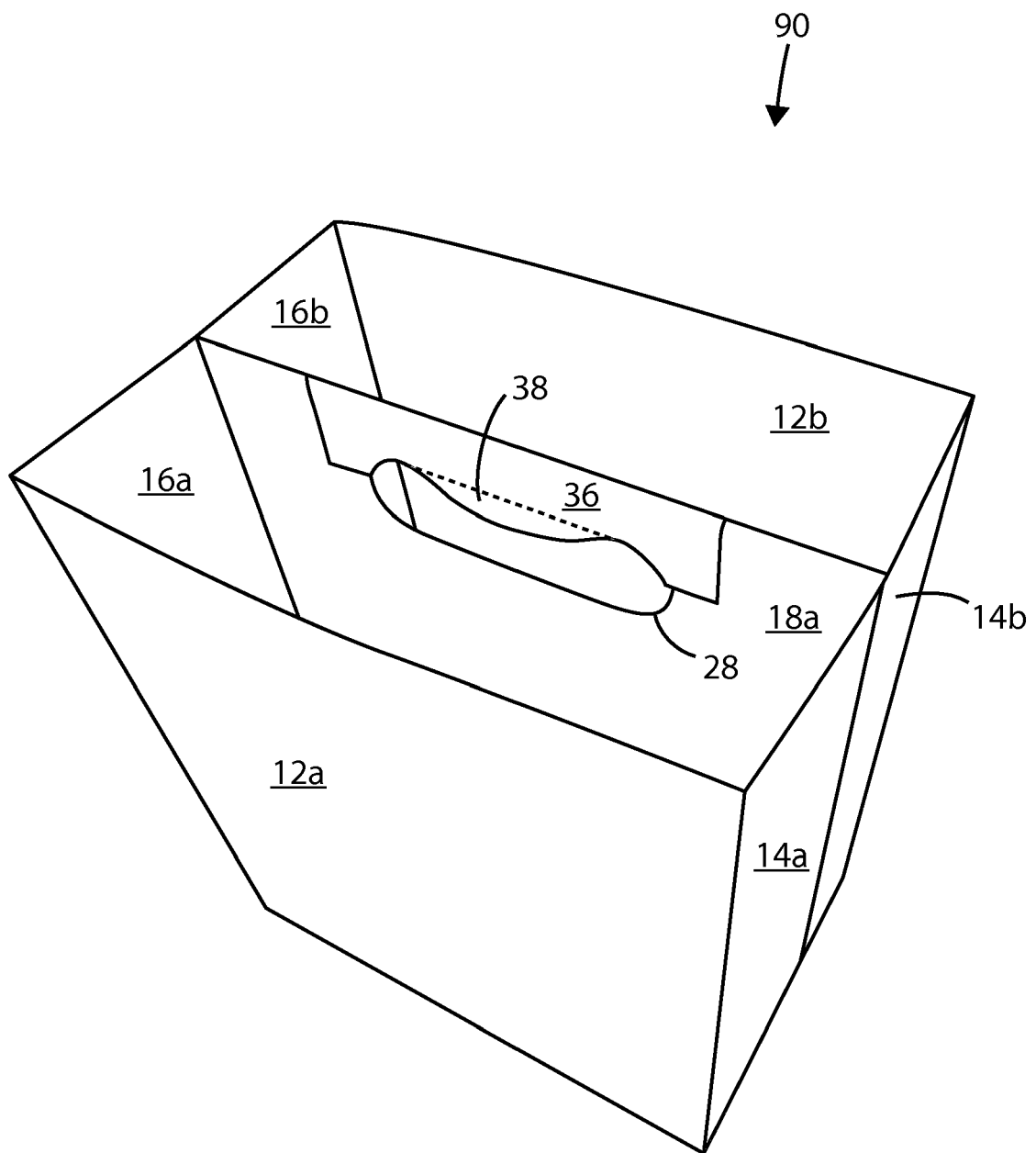


FIG. 2B

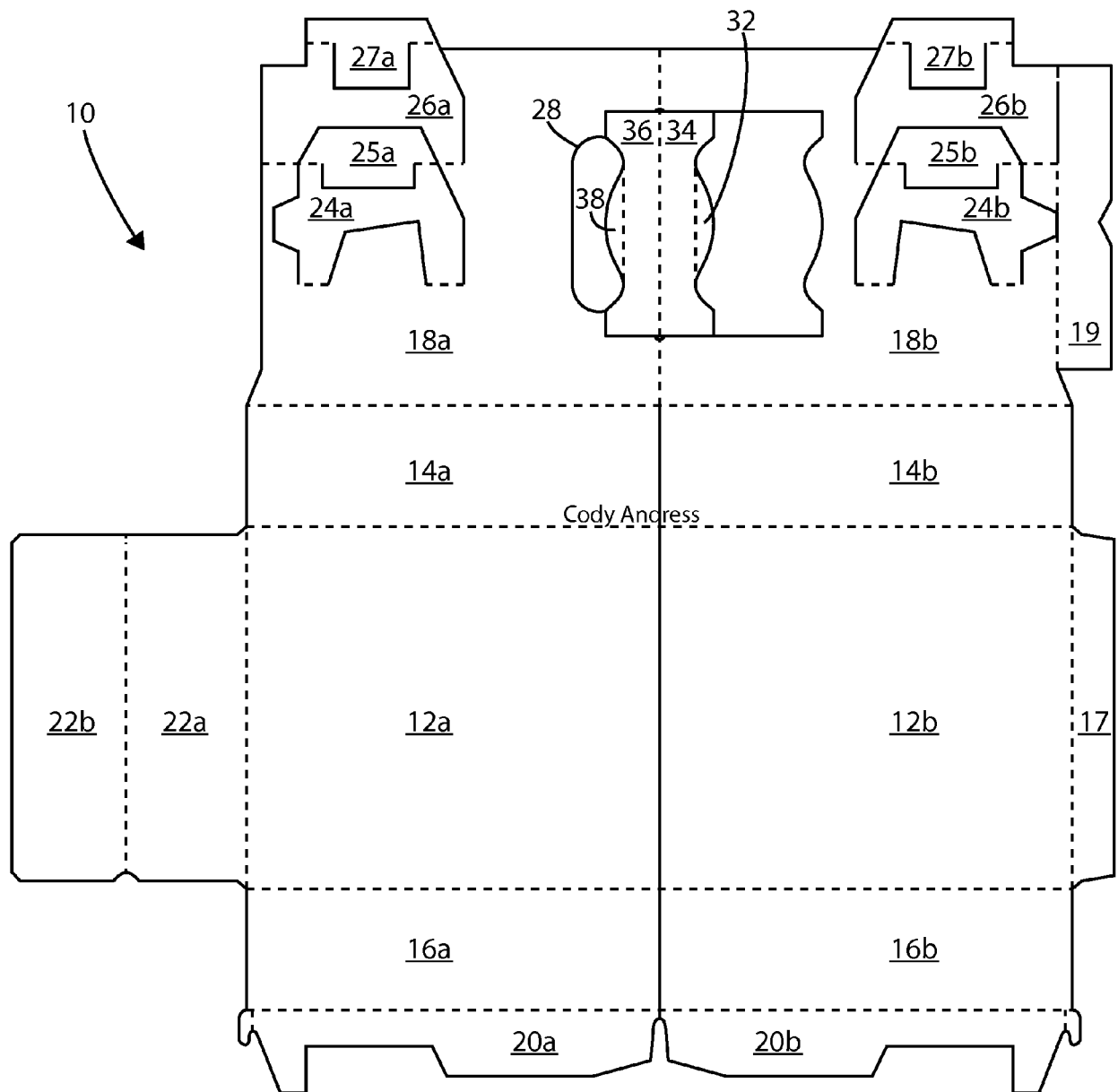


FIG. 3A

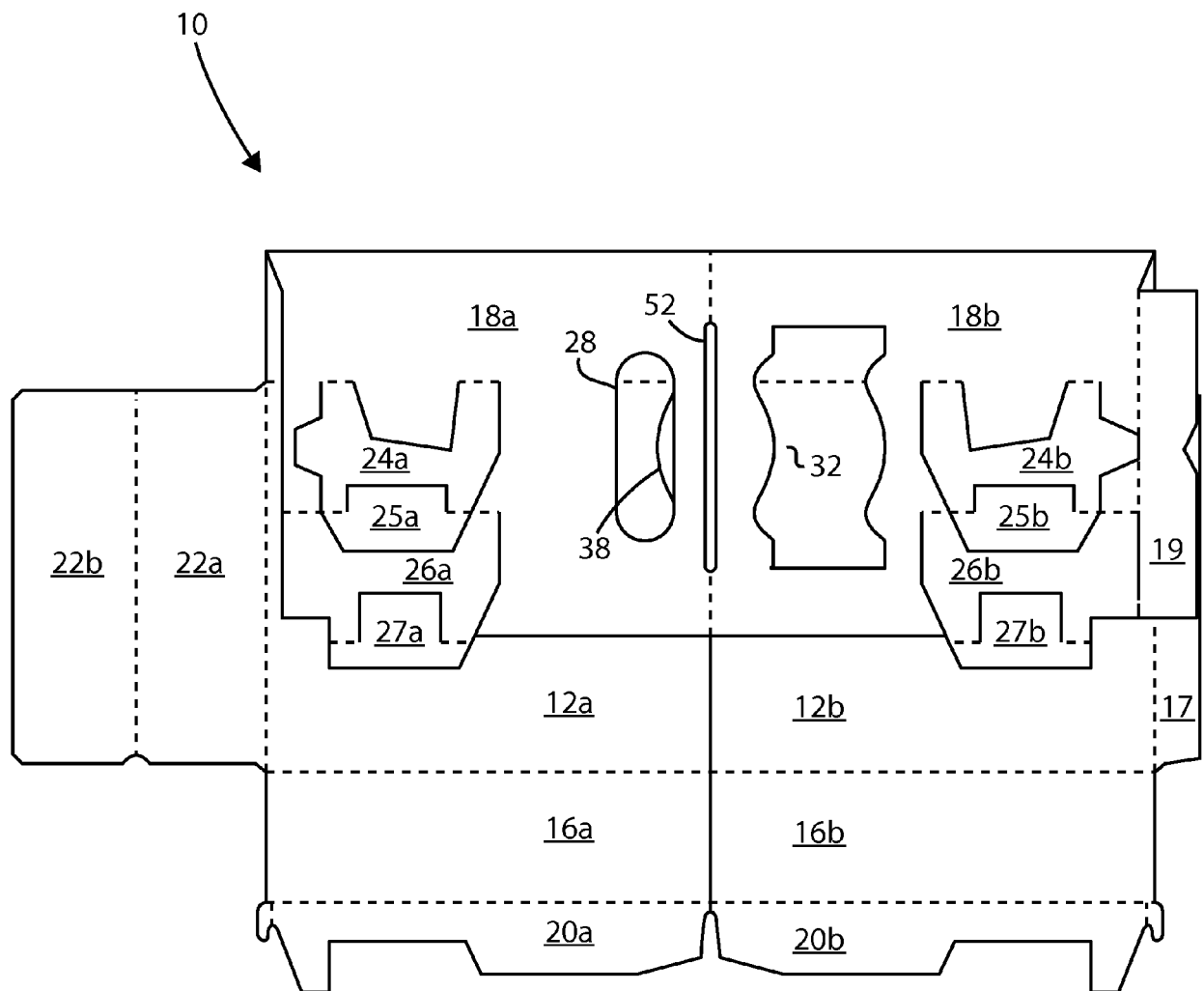


FIG. 3B

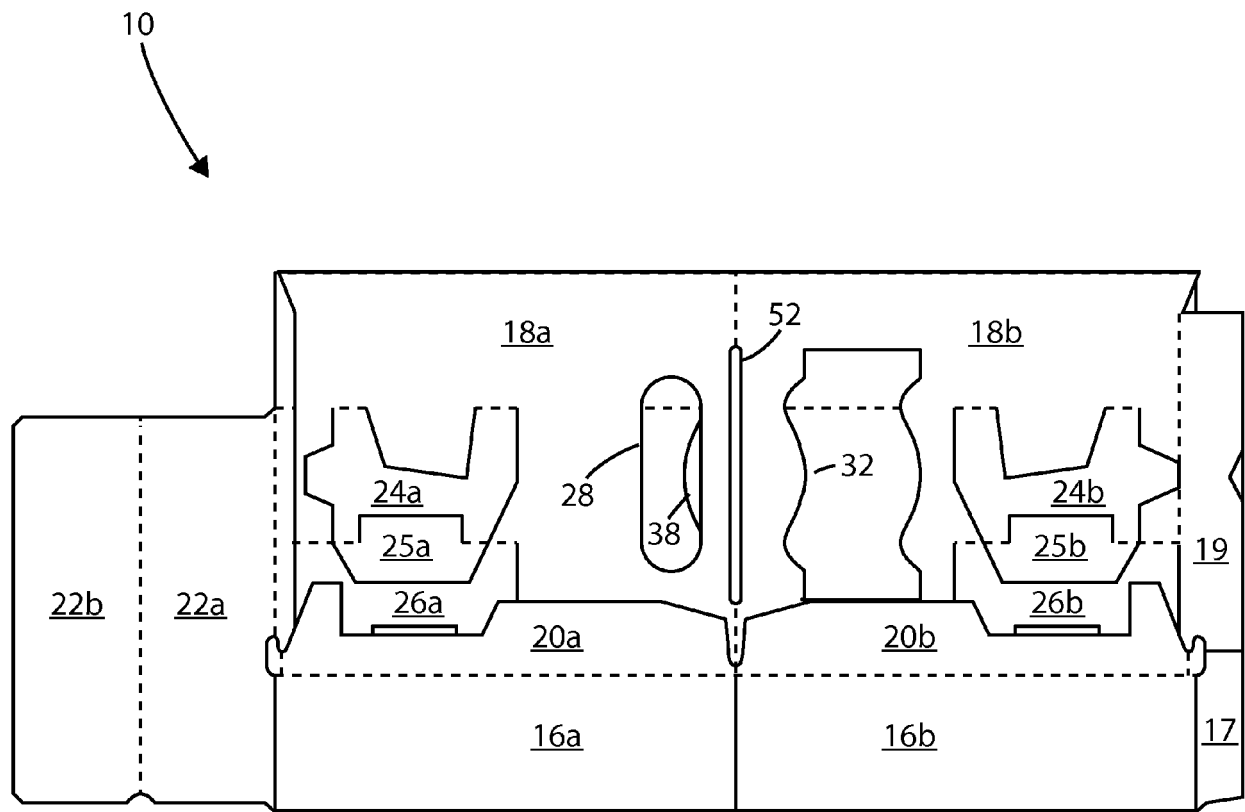


FIG. 3C

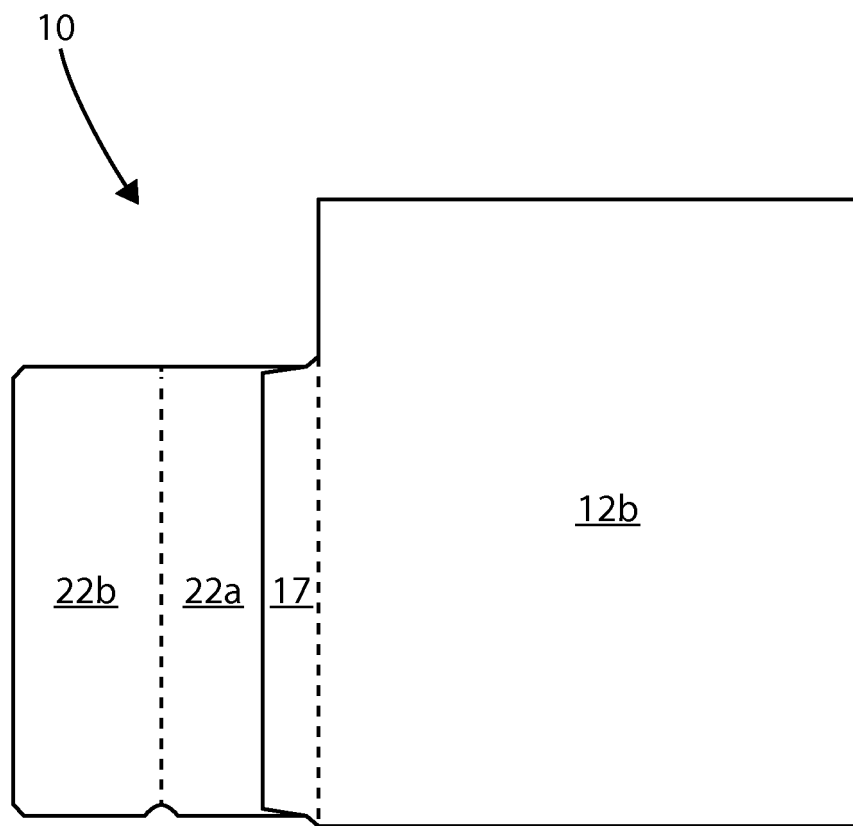


FIG. 3D

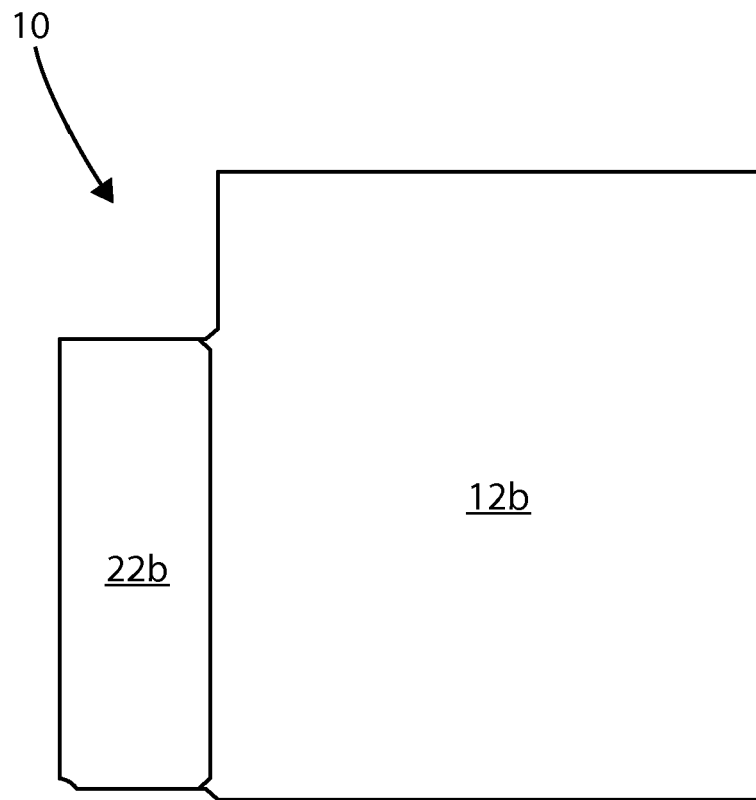


FIG. 3E

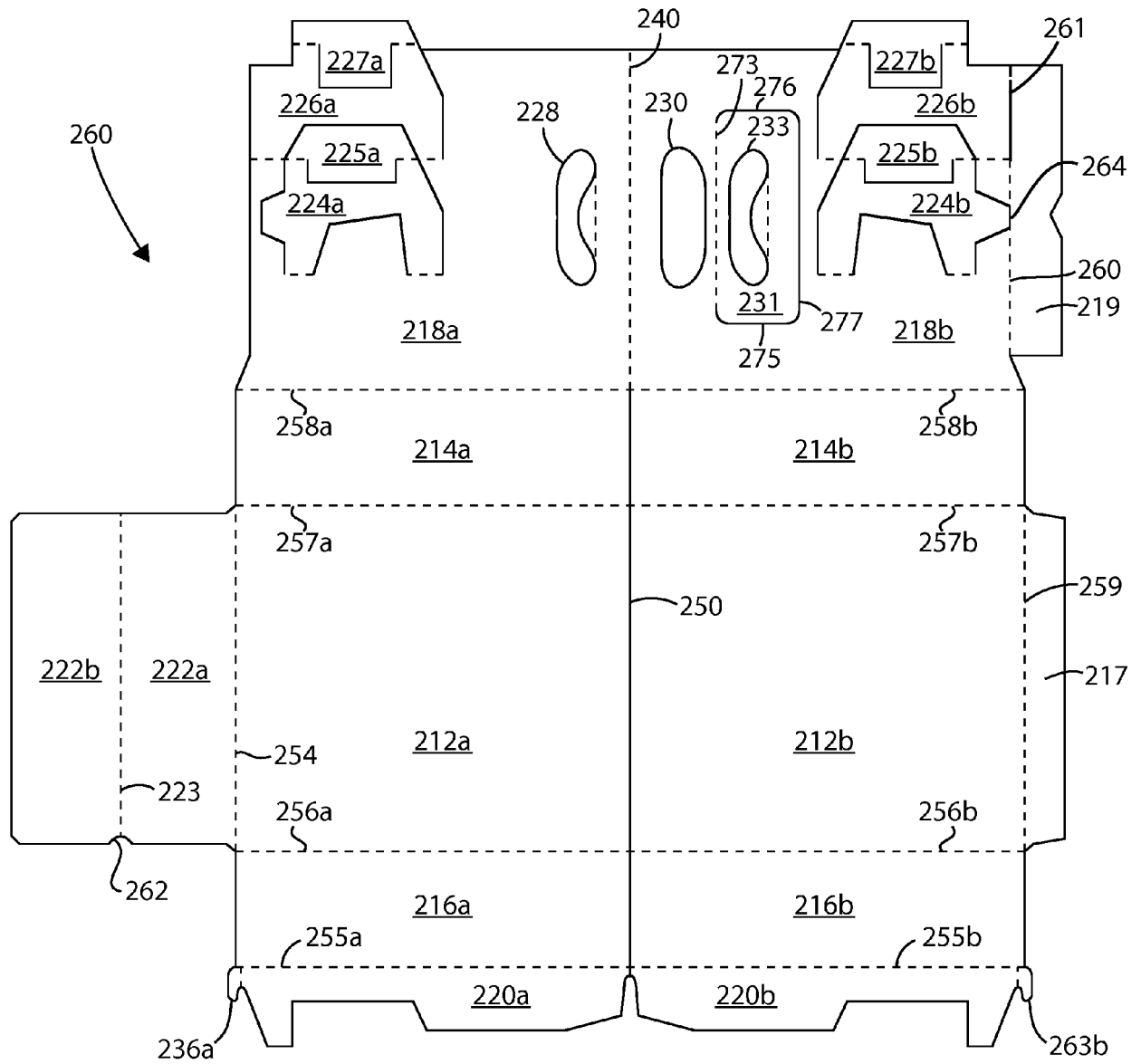


FIG. 4



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The Hague		13 July 2017	Pernice, Ciro
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