

ARTICLE CARRIER AND BLANK THEREFOR**CROSS REFERENCE TO RELATED APPLICATION**

- 5 This application claims the benefit of U.S. Provisional Patent Application No. 62/967,382
filed January 29, 2020, the disclosure of which is herein incorporated by reference in its
entirety.

TECHNICAL FIELD

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The present invention relates to article carriers and to blanks for forming the same. More specifically, but not exclusively, the invention relates to a carrier having one or more apertures for receiving an article such that the carrier is generally medially located between opposed ends of the article.

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BACKGROUND

- In the field of packaging it is known to provide cartons for carrying multiple articles. Cartons are well known in the art and are useful for enabling consumers to transport, store and access
20 a group of articles for consumption. For cost and environmental considerations, such cartons or carriers need to be formed from as little material as possible and cause as little wastage in the materials from which they are formed as possible. Further considerations are the strength of the carton and its suitability for holding and transporting large weights of articles. It is desirable that the contents of the carton are secure within the carton.

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It is an object of the present disclosure to provide an article carrier for substantially cylindrical articles having a minimalistic appearance and to retain or hold a group of those articles in a matrix or array arrangement.

- 30 The present invention seeks to provide an improvement in the field of cartons, typically formed from paperboard or the like.

SUMMARY

A first aspect of the invention provides an article carrier for packaging one or more articles.

- 5 The article carrier has an at least double-ply strap handle at one or both of the opposed ends thereof. The article carrier comprises an end bridging strap hingedly connected to a reinforcing strap along their respective upper edges. The reinforcing strap is secured at its opposite ends to side panels of the carrier.

- 10 Optionally, the article carrier is formed from a sheet material having a first finished surface and a second reverse surface opposing the first surface, the second reverse surface of the end bridging strap is arranged to face the second reverse surface of the reinforcing strap.

- Optionally, the first finished surface of the end bridging strap is arranged to face inwardly of
15 the interior of the carrier.

Optionally, the first finished surface of the reinforcing strap is arranged to face outwardly to provide an external face of the carrier.

- 20 Optionally, the article carrier comprises a main panel with openings for receiving at least one article and at least one keel structure for spacing apart or separating a pair of adjacent articles.

- Optionally, the keel structure comprises a pair of keel panels hingedly connected to each other by a keel fold line, a pair of strut panels hingedly connected to a respective one of the pair of
25 keel panels, and a brace panel coupling a first one of the pair of strut panels to the other one of the pair of strut panels.

- Optionally, an aperture is struck in part from each of the pair of keel panels, the pair of strut panels and the brace panel.

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Optionally, the reinforcing strap comprises a corner panel hingedly connected along a first fold line and an end flap hingedly connected to the corner panel along a second fold line.

Optionally, at least one of the end flap and the corner panel is secured to an adjacent side panel of the carrier.

5 Optionally, the corner panel is secured to the adjacent side panel to form a beveled or rounded corner of the carrier.

Optionally, the end flap is secured to the adjacent side panel to form a beveled or rounded corner of the carrier.

10 Optionally, glue is applied to the first finished surface of the end flap and the first finished surface of the end flap is secured to the second reverse surface of the adjacent side panel.

15 Optionally, glue is applied to the first finished surface of the corner panel and the first finished surface of the corner panel is secured to the second reverse surface of the adjacent side panel.

Optionally, an end portion of the adjacent side panel is secured to the corner panel to form the beveled or rounded corner of the carrier.

20 Optionally, the end portion is defined, at least in part, by a third fold line.

Optionally, the end bridging strap is hingedly connected to the adjacent side panel by a gusset panel and a web panel, the corner panel being interposed between the gusset panel and the web panel so as to provide a three-ply portion of the at least double-ply strap handle.

25 Optionally, the gusset panel is hingedly connected to the adjacent side panel by a fourth fold line, the fourth fold line and the first fold line defining an obtuse angle therebetween.

30 Optionally, a lower edge of the reinforcing strap is contoured or recessed to provide a non-linear or arcuate engaging edge of a carrying handle.

A second aspect of the invention provides a blank for forming an article carrier. The blank comprises panels forming an at least double-ply strap handle at one or both of the opposed ends of a setup carrier, opposed side panels, and an end bridging strap. The end bridging strap is

hingedly connected to a reinforcing strap along an inner edge thereof. The reinforcing strap is securable at its opposite ends to the opposed side panels in a setup carrier.

5 A third aspect of the invention provides a blank for forming an article carrier. The blank comprises a main panel and an adjacent side panel. The main panel comprises an end bridging strap and a keel structure. The keel structure comprises at least one keel panel. The blank comprises a gusset panel coupling the end bridging strap to the adjacent side panel. The gusset panel is hingedly connected to the end bridging strap by a fourth fold line. The keel panel is coupled to the adjacent side panel by a strut panel. The strut panel is hingedly connected to the
10 keel panel by a fifth fold line. The fourth fold line is offset from or non-collinear with the fifth fold line.

A fifth aspect of the invention provides an article carrier for packaging one or more articles. The article carrier has a rounded or beveled corner. The article carrier comprises an end
15 bridging strap having a corner panel hingedly connected thereto by a fourth fold line. The article carrier comprises a connector panel hingedly connected to the corner panel by a sixth fold line. The connector panel is hingedly connected to an adjacent side strap by a seventh fold line. The corner panel is secured to the adjacent side strap.

20 Optionally, the article carrier is formed a sheet material having a first finished surface and a second reverse surface opposing the first surface, and wherein the second reverse surface of the corner panel is secured to the second reverse surface of the adjacent side strap.

25 Optionally, a lower edge of the end bridging strap is contoured to provide a non-linear or arcuate engaging edge of a carrying handle.

Optionally, a lower edge of the end bridging strap is recessed to provide a non-linear or arcuate engaging edge of a carrying handle.

30 A sixth aspect of the invention provides a blank for forming an article carrier having a rounded or beveled corner. The blank comprises an end bridging strap having a corner panel hingedly connected thereto by a fourth fold line. The blank comprises a connector panel hingedly connected to the corner panel by a sixth fold line. The connector panel is hingedly connected

to an adjacent side strap by a seventh fold line. The corner panel is securable to the adjacent side strap in a setup carrier.

5 Within the scope of this application it is envisaged or intended 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 considered or taken independently or in any combination thereof.

10 Features or elements described in connection with, or relation to, one embodiment are applicable to all embodiments unless there is an incompatibility of features. One or more features or elements from one embodiment may be incorporated into, or combined with, any of the other embodiments disclosed herein, said features or elements extracted from said one embodiment may be included in addition to, or in replacement of one or more features or elements of said other embodiment.

15 A feature, or combination of features, of an embodiment disclosed herein may be extracted in isolation from other features of that embodiment. Alternatively, a feature, or combination of features, of an embodiment may be omitted from that embodiment.

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BRIEF DESCRIPTION OF THE DRAWINGS

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

5 Figure 1 is a plan view from above of a blank for forming a carrier according to a first embodiment;

 Figure 2 is a perspective view from above of a carrier formed from the blank of Figure 1;

 Figure 3 is another perspective view the carrier formed from the blank of Figure 1
10 showing a carrying handle in use;

 Figure 4 is a plan view from above of a blank for forming a carrier according to a second embodiment;

 Figure 5 is a plan view from above of a blank for forming a carrier according to a third embodiment

15 Figure 6 is a perspective view from above of a carrier formed from the blank of Figure 5;

 Figure 7 is a plan view from above of a blank for forming a carrier according to a fourth embodiment; and

 Figure 8 is a perspective view from above of a carrier formed from the blank of Figure
20 7.

DETAILED DESCRIPTION OF EMBODIMENTS

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
5 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
10 necessarily to scale and some features may be exaggerated or minimized 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
15 variously employ the invention.

Referring to Figure 1, there is shown a plan view of a blank 10 which is capable of forming a carton or carrier 90, as shown in Figures 2 and 3, for containing and carrying a group of primary products such as, but not limited to, bottles or cans, hereinafter referred to as articles B. The
20 blank 10 forms a secondary package for packaging at least one primary product container or package. Alternative blanks 110, 210, 310 are shown in Figures 4, 5, and 7 for forming cartons or carriers 290; 390, as shown in Figures 6 and 8.

In the embodiments detailed herein, the terms “carton” and “carrier” refer, for the non-limiting
25 purpose of illustrating the various features of the invention, to a container for engaging and carrying articles, such as primary 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 aluminum cans), tins, pouches, packets and the like.

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The blanks 10, 110, 210, 310 are 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.

5 The packaging structures or cartons described herein may be formed from a sheet material such as paperboard, which may be made of or coated with materials to increase its strength. An example of such a sheet material is tear-resistant NATRALOCK® paperboard made by WestRock Company. It should be noted that the tear resistant materials may be provided by more than one layer, to help improve the tear-resistance of the package. Typically, one surface of the sheet material may have different characteristics to the other surface. For example, the
10 surface of the sheet material that faces outwardly from a finished package may be particularly smooth and may have a coating such as a clay coating or other surface treatment to provide good printability. The surface of the sheet material that faces inwardly may, on the other hand, be provided with a coating, a layer, a treatment or be otherwise prepared to provide properties such as one or more of tear-resistance, good glue-ability, heat sealability, or other desired
15 functional properties.

In the illustrated embodiments, the blanks 10; 110; 210; 310 are configured to form a carton or carrier 90; 290; 390 for packaging an exemplary arrangement of exemplary articles B. In the embodiments illustrated in Figures 1 to 8, the arrangement is a 3 x 2 matrix or array; in the
20 embodiments three rows of two articles are provided, and the articles B are beverage cans. Alternatively, the blanks 10; 110; 210; 310 can be configured to form a carrier for packaging other types, number and size of articles and/or for packaging articles in a different arrangement or configuration.

25 Figure 1 illustrates a first embodiment and shows a blank 10 for forming a carrier 90 shown in Figures 2 and 3. The carrier 90 takes the form of a medial band or clip; the carrier 90 comprises openings configured to receive the articles B, the openings are arranged to accommodate a neck and main body of the articles B. In this way the carrier 90 can be located at any height with respect to the articles B. In some embodiments the carrier 90 is medially located between upper
30 and lower ends of the articles B.

The blank 10 comprises a main panel 12; the main panel 12 comprises opposed marginal end portions 12a, 12b and keel panels 40a, 40b, 42a, 42b disposed therebetween.

The blank 10 comprises a first marginal end portion 12a struck from the main panel 12; the first marginal end portion 12a forms a first inner end wall of the carrier 90 in a setup condition. The first marginal end portion 12a is also referred to herein as an end bridging strap and may serve to provide a carrying handle at a first end of the carrier 90.

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The blank 10 comprises a second marginal end portion 12b struck from the main panel 12; the second marginal end portion 12b forms a second inner end wall of the carrier 90 in a setup condition. The second marginal end portion 12b is also referred to herein as an end bridging strap and may serve to provide a carrying handle at a second end of the carrier 90.

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The blank 10 comprises a first keel structure IS1 and a second keel structure IS2 each struck from the main panel 12.

The blank 10 comprises a first pair of keel panels 40a, 40b. The first pair of keel panels 40a, 40b are struck from the main panel 12 and hingedly connected to each other by a fold line 41. The first pair of keel panels 40a, 40b are disposed adjacent to the first marginal end portion 12a and are separated therefrom by a cutline or severable line.

The blank 10 comprises a second pair of keel panels 42a, 42b. The second pair of keel panels 42a, 42b are struck from the main panel 12 and hingedly connected to each other by a fold line 43. The second pair of keel panels 42a, 42b are disposed adjacent to the second marginal end portion 12b and are separated therefrom by a cutline or severable line. The second pair of keel panels 42a, 42b are disposed adjacent to the first pair of keel panels 40a, 40b and are separated therefrom by a cutline or severable line.

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The blank 10 comprises a first side panel 18 and a second side panel 20 disposed on opposing sides of the main panel 12.

The first marginal end portion 12a is hingedly connected to the first side panel 18 and to the second side panel 20.

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The first marginal end portion 12a is hingedly connected to a first gusset panel 22a by a hinged connection in the form of a fold line 21a. A first web panel 24a is hingedly connected to the first gusset panel 22a by a hinged connection in the form of a fold line 23a. The first web panel

24a is hingedly connected to the first side panel 18 by a hinged connection in the form of a fold line 17a.

5 The first marginal end portion 12a is hingedly connected to a second gusset panel 22b by a hinged connection in the form of a fold line 21b. A second web panel 24b is hingedly connected to the second gusset panel 22b by a hinged connection in the form of a fold line 23b. The second web panel 24b is hingedly connected to the second side panel 20 by a hinged connection in the form of a fold line 19a.

10 The second marginal end portion 12b is hingedly connected to the first side panel 18 and to the second side panel 20.

15 The second marginal end portion 12b is hingedly connected to a third gusset panel 34a by a hinged connection in the form of a fold line 33a. A third web panel 36a is hingedly connected to the third gusset panel 34a by a hinged connection in the form of a fold line 35a. The third web panel 36a is hingedly connected to the first side panel 18 by a hinged connection in the form of a fold line 17b.

20 The second marginal end portion 12b is hingedly connected to a fourth gusset panel 34b by a hinged connection in the form of a fold line 33b. A fourth web panel 36b is hingedly connected to the fourth gusset panel 34b by a hinged connection in the form of a fold line 35b. The fourth web panel 36b is hingedly connected to the second side panel 20 by a hinged connection in the form of a fold line 19b.

25 The first pair of keel panels 40a, 40b are hingedly connected to each of the first and second side panels 18, 20. A first strut panel 44a is hingedly connected to a first end of a first keel panel 40a by a hinged connection in the form of a fold line 45a. A second strut panel 46a is hingedly connected to a second end of the first keel panel 40a by a hinged connection in the form of a fold line 45b.

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The first strut panel 44a is hingedly connected to a first brace panel 48a by a hinged connection in the form of a fold line 47a. The second strut panel 46a is hingedly connected to a second brace panel 48b by a hinged connection in the form of a fold line 47b.

A third strut panel 44b is hingedly connected to a first end of a second keel panel 40b by a hinged connection in the form of a fold line 45c. A fourth strut panel 46b is hingedly connected to a second end of the second keel panel 40b by a hinged connection in the form of a fold line 45d.

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The third strut panel 44b is hingedly connected to the first brace panel 48a by a hinged connection in the form of a fold line 47c. The fold line 47c is divergently arranged with respect to the fold line 47a. The first brace panel 48a is hingedly connected to the first side panel 18 by a hinged connection in the form of a fold line 17c. The first brace panel 48a may be substantially triangular in shape. The first and second strut panels 44a, 46a may be substantially triangular in shape.

The fourth strut panel 46b is hingedly connected to the second brace panel 48b by a hinged connection in the form of a fold line 47d. The fold line 47d is divergently arranged with respect to the fold line 47b. The second brace panel 48b is hingedly connected to the second side panel 18 by a hinged connection in the form of a fold line 19c. The second brace panel 48b may be substantially triangular in shape. The third and fourth strut panels 44b, 46b may be substantially triangular in shape.

The second pair of keel panels 42a, 42b are hingedly connected to each of the first and second side panels 18, 20. A fifth strut panel 50a is hingedly connected to a first end of a fourth keel panel 42a by a hinged connection in the form of a fold line 49a. A sixth strut panel 52a is hingedly connected to a second end of the fourth keel panel 42a by a hinged connection in the form of a fold line 49b.

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The fifth strut panel 50a is hingedly connected to a third brace panel 54a by a hinged connection in the form of a fold line 51a. The sixth strut panel 52a is hingedly connected to a fourth brace panel 54b by a hinged connection in the form of a fold line 49b.

A seventh strut panel 50b is hingedly connected to a first end of a third keel panel 42b by a hinged connection in the form of a fold line 49c. An eighth strut panel 52b is hingedly connected to a second end of the third keel panel 42b by a hinged connection in the form of a fold line 49d.

The seventh strut panel 50b is hingedly connected to the third brace panel 54a by a hinged connection in the form of a fold line 51c. The fold line 51c is divergently arranged with respect to the fold line 51a. The third brace panel 54a is hingedly connected to the first side panel 18 by a hinged connection in the form of a fold line 17d. The third brace panel 54a may be substantially triangular in shape. The fifth and sixth strut panels 50a, 52a may be substantially triangular in shape.

The eighth strut panel 52b is hingedly connected to the fourth brace panel 54b by a hinged connection in the form of a fold line 51d. The fold line 49d is divergently arranged with respect to the fold line 51b. The fourth brace panel 54b is hingedly connected to the second side panel 18 by a hinged connection in the form of a fold line 19d. The fourth brace panel 54b may be substantially triangular in shape. The seventh and eighth strut panels 50b, 52b may be substantially triangular in shape.

The blank 10 comprises a plurality of cutaways in the form of apertures A1, A2, A3, A4, A5, A6. A first aperture A1 separates the first gusset panel 22a and a portion of the first marginal end portion 12a from the first strut panel 44a. A second aperture A2 separates the second gusset panel 22b and a portion of the first marginal end portion 12a from the second strut panel 46a. A third aperture A3 separates the third strut panel 44b from the fifth strut panel 50a. A fourth aperture A4 separates the fourth strut panel 46b from the sixth strut panel 52a. A fifth aperture A5 separates the third gusset panel 34a and a portion of the second marginal end portion 12b from the seventh strut panel 50b. A sixth aperture A6 separates the fourth gusset panel 34b and a portion of the second marginal end portion 12b from the eighth strut panel 52b.

The first, third, and fifth apertures A1, A3, A5 separate portions of the first side panel 18 from the main panel 12. The second, fourth, and sixth apertures A2, A4, A6 separate portions of the second side panel 20 from the main panel 12.

The blank 10 comprises a first outer end panel 14 (also referred to herein as first reinforcing strap). The first outer end panel 14 is hingedly connected to the main panel 12, along a first end thereof, by a hinged connection in the form of a fold line 13. The first outer end panel 14 is hingedly connected to the first marginal end portion 12a.

A free edge E1 of the first outer end panel 14 may be shaped or contoured to provide a comfortable carrying handle. In the illustrated embodiment an arcuate recess R1 is defined in the free edge E1 opposing the edge hinged to the main panel 12.

5 The blank 10 comprises a second outer end panel 16 (also referred to herein as second reinforcing strap). The second outer end panel 16 is hingedly connected to the main panel 12, along a second end thereof, by a hinged connection in the form of a fold line 15. The second outer end panel 16 is hingedly connected to the second marginal end portion 12b.

10 A free edge E2 of the second outer end panel 16 may be shaped or contoured to provide a comfortable carrying handle. In the illustrated embodiment an arcuate recess R2 is defined in the free edge E2 opposing the edge hinged to the main panel 12.

A first corner panel 26a is hingedly connected to a first end of the first outer end panel 14 by a
15 hinged connection in the form of a fold line 25a. A first securing panel 28a is hingedly connected to the first corner panel 26a by a hinged connection in the form of a fold line 27a.

A second corner panel 26b is hingedly connected to a second end of the first outer end panel 14 by a hinged connection in the form of a fold line 25b. A second securing panel 28b is
20 hingedly connected to the second corner panel 26b by a hinged connection in the form of a fold line 27b.

A third corner panel 30a is hingedly connected to a first end of the second outer end panel 16 by a hinged connection in the form of a fold line 29a. A third securing panel 32a is hingedly
25 connected to the third corner panel 30a by a hinged connection in the form of a fold line 31a.

A fourth corner panel 30b is hingedly connected to a second end of the second outer end panel 16 by a hinged connection in the form of a fold line 29b. A fourth securing panel 32b is hingedly connected to the fourth corner panel 30b by a hinged connection in the form of a fold line 31b.

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A cutaway or recess separates the first corner panel 26a from the first web panel 24a, the cutaway separates the first securing panel 28a from the first side panel 18.

A cutaway or recess separates the second corner panel 26b from the second web panel 24b, the cutaway separates the second securing panel 28b from the second side panel 20.

- 5 A cutaway or recess separates the third corner panel 30a from the third web panel 36a, the cutaway separates the third securing panel 32a from the first side panel 18.

A cutaway or recess separates the fourth corner panel 30b from the fourth web panel 36b, the cutaway separates the fourth securing panel 32b from the second side panel 20.

- 10 The fold line 25a is collinear with the fold line 21a. The fold line 33a is collinear with the fold line 29a. The fold lines 25a, 21a are collinear with the fold lines 33a, 29a.

The fold line 45a is collinear with the fold line 45c, the fold line 49a and the fold line 49c.

- 15 The fold lines 45a, 45c, 49a and the fold line 49c are offset, and parallel, with respect to the fold lines 25a, 21a and the fold lines 33a, 29a.

The fold line 25b is collinear with the fold line 21b. The fold line 33b is collinear with the fold line 29b. The fold lines 25b, 21b are collinear with the fold lines 33b, 29b.

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The fold line 45b is collinear with the fold line 45d, the fold line 49b and the fold line 49d.

The fold lines 45b, 45d, 49b and the fold line 49d are offset, and parallel, with respect to the fold lines 25b, 21b and the fold lines 33b, 29b.

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In this way the keel panels 40a, 40b, 42a, 42b are shorter in length in the transverse direction than the first and second inner end panels 12a, 12b and the first and second outer end panels 14, 16.

- 30 Optionally, the first side panel 18 may comprise a first fold line F1 extending transversely thereacross. The first fold line F1 extends from an inner end of the fold line 17a, at the point it meets the first aperture A1 and extends perpendicularly therefrom.

Optionally, the first side panel 18 may comprise a second fold line F2 extending transversely thereacross. The second fold line F2 extends from an inner end of the fold line 17b, at the point it meets the fifth aperture A5 and extends perpendicularly therefrom.

- 5 The first and second fold lines F1, F2 each define, at least in part, side end portions 18a, 18b which may fold about the respective one of the first and second fold lines F1, F2 to tighten the carrier 90 about the corner or endmost articles B.

- 10 Optionally, the second side panel 20 may comprise a third fold line F3 extending transversely thereacross. The third fold line F3 extends from an inner end of the fold line 19a, at the point it meets the second aperture A2 and extends perpendicularly therefrom.

- 15 Optionally, the second side panel 20 may comprise a fourth fold line F4 extending transversely thereacross. The fourth fold line F4 extends from an inner end of the fold line 19b, at the point it meets the sixth aperture A6 and extends perpendicularly therefrom.

The third and fourth fold lines F3, F4 each define, at least in part, side end portions 20a, 20b which may fold about the respective one of the third and fourth fold lines F3, F4 to tighten the carrier 90 about the corner or endmost articles B.

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In a setup condition, the first side panel 18 is folded with respect the main panel 12 about fold lines 17a, 17b, 17c, 17d such that a first, printed, or finished surface thereof is disposed outermost and the second side panel 20 is folded with respect the main panel 12 about fold lines 19a, 19b, 19c, 19 such that a first, printed, or finished surface thereof is disposed

25 outermost.

- 30 The first inner end panel 12a is folded about fold lines 23a, 23b such that a second, reverse, or unfinished surface thereof is disposed outermost. The second inner end panel 12b is folded about fold lines 35a, 35b such that a second, reverse, or unfinished surface thereof is disposed outermost.

The first and second keel panels 40a, 40b are folded, about fold line 41, with respect to each other to be substantially in face to face relationship. The third and fourth keel panels 42b, 42a

are folded, about fold line 43, with respect to each other to be substantially in face to face relationship.

5 The first and third brace panels 48a, 54a are folded at an oblique angle to the first side panel 18.

The second and fourth brace panels 48b, 54b are folded at an oblique angle to the second side panel 20.

10 The first and third strut panels 44a, 44b extend divergently from the first and second keel panels 40a, 40b to the first brace panel 48a. The second and fourth strut panels 46a, 46b extend divergently from the first and second keel panels 40a, 40b to the second brace panel 48b.

15 The fifth and seventh strut panels 50a, 50b extend divergently from the third and fourth keel panels 42a, 42b to the third brace panel 54a. The sixth and eighth strut panels 52a, 52b extend divergently from the third and fourth keel panels 42b, 42a to the fourth brace panel 54b.

The first outer end panel 14 is folded with respect to the first inner end panel 12a, about fold line 13 to be disposed in face to face relationship therewith.

20 The second outer end panel 16 is folded with respect to the second inner end panel 12b, about fold line 15 to be disposed in face to face relationship therewith.

25 Glue G or other adhesive treatment, for example, but not limited to hot melt glue, is applied to an inner surface of the first side panel 18 or alternatively to outer surfaces of the first and third securing panels 28a, 32a. The first and third securing panels 28a, 32a are secured to the first side panel 18.

30 Glue G or other adhesive treatment, for example, but not limited to hot melt glue, is applied to an inner surface of the second side panel 20 or alternatively to outer surfaces of the second and fourth securing panels 28b, 32b. The second and fourth securing panels 28b, 32b are secured to the second side panel 18.

A fugitive glue G2 may be employed to secure the first and second side panels directly to the articles B. An example of a specific glue is Swift 7044 manufactured by HB Fuller. Use of a

fugitive glue is optional, an advantage of a fugitive glue is its tendency to remain attached to the carrier 90 when the articles B are disengaged from the carrier 90 (this may be more desirable than having the glue G2 remain attached to the articles B). In alternative embodiments other adhesives maybe employed such as, but not limited to, hot-melt glue.

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The carrier 90 is shown in Figures 2 and 3; the carrier 90 is mounted to the articles B so as to be disposed about the main body M of the article B, below the neck N. The carrier 90 may be mounted to the articles B at any position along the cylindrical axis of the articles B, such that when the carrier 90 and articles B are at rest as shown in Figure 2, with their cylindrical axes generally upright, the carrier 90 may be disposed at any height between upper and lower ends of the articles B. In the illustrated embodiment the carrier 90 is medially located.

Figure 3 illustrates the carrier 90 being transported by a user U. The inner and outer end walls 12b, 16 are shown being employed as carrying handle and may bow upwardly or outwardly. A user may engage the inner and outer end wall panels 12b, 16 by inserting at least one finger into a void between a pair of adjacent endmost articles B and the carrier 90.

Referring now to Figure 4, 5, and 6, there are shown additional embodiments of the present disclosure. In the second and third illustrated embodiments like numerals have, where possible, been used to denote like parts, albeit with the addition of the prefix "100"; "200" to indicate that these features belong to the second and third embodiments respectively. The additional embodiments share many common features with the first embodiment and therefore only the differences from the embodiment illustrated in Figures 1 to 3 will be described in detail.

Figure 4 illustrates a second embodiment and shows a blank 110 for forming a carrier (not shown). Figure 5 illustrates a third embodiment and shows a blank 210 for forming a carrier 290 as shown in Figure 6. The carrier 290 takes the form of medial band or clip; the carrier 290 comprises openings configured to receive the articles B, the openings are arranged to accommodate a neck N and main body M of the articles B.

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The blanks 110; 210 comprise a main panel 112; 212; the main panel 112; 212 comprises opposed marginal end portions 112a, 112b; 212a, 212b and keel panels 140a, 140b, 142a, 142b; 240a, 240b, 242a, 242b disposed therebetween.

The blanks 110; 210 comprise a first marginal end portion 112a; 212a struck from the main panel 112; 212; the first marginal end portion 112a; 212a forms a first inner end wall of the carrier 290 in a setup condition. The first marginal end portion 112a; 212a is also referred to herein as an end bridging strap and may serve to provide a carrying handle at a first end of the carrier 290.

The blanks 110; 210 comprise a second marginal end portion 112b; 212b struck from the main panel 112; 212; the second marginal end portion 112b; 212b forms a second inner end wall of the carrier 290 in a setup condition. The second marginal end portion 112b; 212b is also referred to herein as an end bridging strap and may serve to provide a carrying handle at a second end of the carrier 290.

The blanks 110; 210 comprise a first keel structure IS1 and a second keel structure IS2 each struck from the main panel 112; 212.

The blanks 110; 210 comprise a first pair of keel panels 140a, 140b; 240a, 240b. The first pair of keel panels 140a, 140b; 240a, 240b are struck from the main panel 112; 212 and hingedly connected to each other by a fold line 141; 241. The first pair of keel panels 140a, 140b; 240a, 240b are disposed adjacent to the first marginal end portion 112a; 212a and are separated therefrom by a cutline or severable line.

The blanks 110; 210 comprise a second pair of keel panels 142a, 142b; 242a, 242b. The second pair of keel panels 142a, 142b; 242a, 242b are struck from the main panel 112; 212 and hingedly connected to each other by a fold line 143; 243. The second pair of keel panels 142a, 142b; 242a, 242b are disposed adjacent to the second marginal end portion 112b; 212b and are separated therefrom by a cutline or severable line. The second pair of keel panels 142a, 142b; 242a, 242b are disposed adjacent to the first pair of keel panels 140a, 140b; 240a, 240b and are separated therefrom by a cutline or severable line.

The blanks 110; 210 comprise a first side panel 118; 218 and a second side panel 120; 220 disposed on opposing sides of the main panel 112; 212.

The first marginal end portion 112a; 212a is hingedly connected to the first side panel 118; 218 and to the second side panel 120; 220.

The blanks 110; 210 comprise additional cutaways in the form of apertures A7, A8, A9, A10. The blanks 110; 210 comprise a seventh aperture A7 struck from the main panel 112; 212. The seventh aperture A7 is struck from the first keel panel 140a; 240a, the second keel panel 140b; 240b, the first strut panel 144a; 244a, the first brace panel 148a; 248a and the third strut panel 144b; 244b.

The blanks 110; 210 comprise an eighth aperture A8 struck from the main panel 112; 212. The eighth aperture A8 is struck from the first keel panel 140a; 240a, the second keel panel 140b; 240b, the second strut panel 146a; 246a, the second brace panel 148b; 248b and the fourth strut panel 146b; 246b.

The blanks 110; 210 comprise a ninth aperture A9 struck from the main panel 112; 212. The ninth aperture A9 is struck from the third keel panel 142a; 242a, the fourth keel panel 142b; 242b, the fifth strut panel 150a; 250a, the third brace panel 154a; 254a and the seventh strut panel 150b; 250b.

The blanks 110; 210 comprise a tenth aperture A10 struck from the main panel 112; 212. The tenth aperture A10 is struck from the third keel panel 142a; 242a, the fourth keel panel 142b; 242b, the sixth strut panel 152a; 250a, the fourth brace panel 154b; 254b and the eighth strut panel 152b; 252b.

The apertures A7, A8, A9, A10 may be generally pentagonal in shape. One of the edges of the apertures A7, A8, A9, A10 may be curvilinear or arcuate so as to be convex. The curved edge of the apertures A7, A8, A9, A10 defines a upper edge of the first, second, third, and fourth brace panels 148a; 248a, 148b; 248b, 154a; 254a, 154b; 254b, such that the upper edge is arched between the adjacent pairs of strut panels 144a/144b; 244a/244b, 146a/146b; 246a/246b, 150a/150b; 250a/250b, 152a/152b; 252a/252b.

The apertures A7, A8, A9, A10 struck from the main panel 112 are larger in dimension than the apertures A7, A8, A9, A10 struck from the main panel 212, such that the apertures A7, A8, A9, A10 struck from the main panel 212 extend further into the keel panels 140a, 140b, 142a, 142b; 240a, 240b, 242a, 242b than the apertures A7, A8, A9, A10 struck from the main panel 112. Fold lines 141, 143 are shorter in length than fold lines 241, 243.

The blanks 110; 210 comprise a first outer end panel 114; 214 (also referred to herein as first reinforcing strap). The first outer end panel 114; 214 is hingedly connected to the main panel 112; 212, along a first end thereof, by a hinged connection in the form of a fold line 113; 213.

5 The first outer end panel 114; 214 is hingedly connected to the first marginal end portion 112a; 212a.

The blanks 110; 210 comprise a second outer end panel 116; 216 (also referred to herein as second reinforcing strap). The second outer end panel 116; 216 is hingedly connected to the

10 main panel 112; 212, along a second end thereof, by a hinged connection in the form of a fold line 115; 215. The second outer end panel 116; 216 is hingedly connected to the second marginal end portion 112b; 212b.

A first corner panel 126a; 226a is hingedly connected to a first end of the first outer end panel

15 114; 214 by a hinged connection in the form of a fold line 125a; 225a. A first securing panel 128a; 228a is hingedly connected to the first corner panel 126a; 226a by a hinged connection in the form of a fold line 127a; 227a.

A second corner panel 126b; 226b is hingedly connected to a second end of the first outer end

20 panel 114; 214 by a hinged connection in the form of a fold line 125b; 225b. A second securing panel 128b; 228b is hingedly connected to the second corner panel 126b; 226b by a hinged connection in the form of a fold line 127b; 227b.

A third corner panel 130a; 230a is hingedly connected to a first end of the second outer end

25 panel 116; 216 by a hinged connection in the form of a fold line 129a; 229a. A third securing panel 132; 232a is hingedly connected to the third corner panel 130a; 230a by a hinged connection in the form of a fold line 131a; 231a.

A fourth corner panel 130b; 230b is hingedly connected to a second end of the second outer

30 end panel 116; 216 by a hinged connection in the form of a fold line 129b; 229b. A fourth securing panel 132b; 232b is hingedly connected to the fourth corner panel 130b; 230b by a hinged connection in the form of a fold line 131b; 231b.

A cutaway or recess separates the first corner panel 126a; 226a from the first web panel 124a; 224a. The cutaway separates the first securing panel 128a; 228a from the first side panel 118; 218. The cutaway or recess is struck in part from material which would otherwise form part of the first web panel 124a; 224a and first gusset panel 122a; 222a, so as to form an undercut.

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A cutaway or recess separates the second corner panel 126b; 226b from the second web panel 124b; 224b. The cutaway separates the second securing panel 128b; 228b from the second side panel 120; 220. The cutaway or recess is struck in part from material which would otherwise form part of the second web panel 124b; 224b and second gusset panel 122b; 222b, so as to form an undercut.

10

A cutaway or recess separates the third corner panel 130a; 230a from the third web panel 136a; 236a. The cutaway separates the third securing panel 132a; 232a from the first side panel 118; 218. The cutaway or recess is struck in part from material which would otherwise form part of the third web panel 136a; 236a and third gusset panel 134a; 234a, so as to form an undercut.

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A cutaway or recess separates the fourth corner panel 130b; 230b from the fourth web panel 136b; 236b. The cutaway separates the fourth securing panel 132b; 232b from the second side panel 120; 220. The cutaway or recess is struck in part from material which would otherwise form part of the fourth web panel 136a; 236a and fourth gusset panel 134a; 234a, so as to form an undercut.

20

The undercuts in the blank 110 of Figure 4 are larger than the undercuts in the blank 210 of Figure 5.

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In the blank 210, the fold line 225a is divergently arranged with respect to the fold line 221a. The fold line 225b is divergently arranged with respect to the fold line 221b, The fold line 225a is divergently arranged with respect to the fold line 225b, and is arranged to diverge towards the free edge of the first outer end panel 214.

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In the blank 210, the fold line 229a is divergently arranged with respect to the fold line 233a. The fold line 229 is divergently arranged with respect to the fold line 233b, The fold line 229a is divergently arranged with respect to the fold line 229b, and is arranged to diverge towards the free edge of the second outer end panel 216.

A free edge of the first outer end panel 114; 214 and each of the first and second corner panels 126a, 126b; 226a, 226b may be shaped or contoured to provide a comfortable carrying handle. In the illustrated embodiment an arcuate recess is struck from, or defined in, the first outer end panel 14; 214 and the first and second corner panels 126a, 126b; 226a, 226b.

A free edge of the second outer end panel 116; 216 and each of the third and fourth corner panels 130a, 130b; 230a, 230b may be shaped or contoured to provide a comfortable carrying handle. In the illustrated embodiment an arcuate recess is struck from, or defined in, the second outer end panel 116; 216 and the third and fourth corner panels 130a, 130b; 230a, 230b.

In the embodiment of Figure 5 glue or other adhesive treatment is applied to both sides of the securing panels 228a, 228b, 232a, 232b.

A first adhesive element G is applied to a first, printed, or finished surface of the securing panels 228a, 228b, 232a, 232b; the first adhesive element G may extend onto the adjacent one of the corner panels 226a, 226b, 230a, 230b. The first adhesive element G secures the securing panels 228a, 228b, 232a, 232b (and the corner panels 226a, 226b, 230a, 230b) to a respective one of the first and second side panels 218, 220.

A second adhesive element G2 is applied to a second, reverse, or unfinished surface of the securing panels 228a, 228b, 232a, 232b. The second adhesive element G2 secures the securing panels 228a, 228b, 232a, 232b to an adjacently disposed one of the articles B packaged by the carrier 290.

In the embodiments of Figure 5 the arrangement of the first adhesive element G results in the side end portions 218a, 218b forming rounded or beveled corners at opposed ends of the carrier 290. Similarly, the side end portions 220a, 220b form rounded or beveled corners at opposed ends of the carrier 290.

In the embodiments of Figures 1 to 4, the side end portions 18a, 18b; 118a, 118b may be unsecured or free from the securing panels 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b and the corner panels 26a, 26b, 30a, 30b; 126a, 126b, 130a, 130b.

In the embodiments of Figures 1 to 5, each securing panel 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b, 228a, 228b, 232a, 232b may be bonded or otherwise secured at its inside surface to the respective outward-facing side of article B by the respective second adhesive element G2. The same securing panel 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b, 228a, 228b, 232a, 232b may be bonded or secured at its outside surface to the inside surface of the adjacent side panel 18, 118, 218, 20, 120, 220 by the respective first adhesive element G. This results in creation of a bonded double-ply structure at a location at or near each corner of the carrier wherein a first or outer layer of material, e.g., side panel 18, 118, 218, 20, 120, 220, is bonded to a second or inner layer of material, e.g., securing panel 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b, 228a, 228b, 232a, 232b, via a first adhesive element G and wherein the second or inner layer of material, e.g., securing panel 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b, 228a, 228b, 232a, 232b, is bonded to a packaged article B such as a can, bottle or brick pack B via a second adhesive element G2. In certain embodiments, the adhesive element G2 on each securing panel 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b, 228a, 228b, 232a, 232b and at least one of the adhesive element G on each side panel 18, 118, 218, 20, 120, 220 are positioned so that all or a portion of adhesive element G2 overlaps with at least a portion of adhesive element G when the blank is constructed in its carrier form.

Referring now to Figures 7 and 8, there is shown an additional embodiment of the present disclosure. In the fourth illustrated embodiment like numerals have, where possible, been used to denote like parts, albeit with the addition of the prefix “300” to indicate that these features belong to the fourth embodiment. The additional embodiment shares many common features with the first, second, and third embodiments and therefore only the differences from the embodiments illustrated in Figures 1 to 6 will be described in detail.

The blank 310 comprises a main panel 312; the main panel 312 comprises opposed marginal end portions 312a, 312b and keel panels 340a, 340b, 342a, 342b disposed therebetween.

The blank 310 comprises a first marginal end portion 312a struck from the main panel 312; the first marginal end portion 312a forms a first inner end wall of the carrier 390 in a setup condition. The first marginal end portion 312a is also referred to herein as an end bridging strap and may serve to provide a carrying handle at a first end of the carrier 390.

The blank 310 comprises a second marginal end portion 312b struck from the main panel 312; the second marginal end portion 312b forms a second inner end wall of the carrier 390 in a setup condition. The second marginal end portion 312b is also referred to herein as an end bridging strap and may serve to provide a carrying handle at a second end of the carrier 390.

5

The blank 310 comprises a first keel structure IS1 and a second keel structure IS2 each struck from the main panel 312.

The blank 310 comprises a first pair of keel panels 340a, 340b. The first pair of keel panels 340a, 340b are struck from the main panel 312 and hingedly connected to each other by a fold line 341. The first pair of keel panels 340a, 340b are disposed adjacent to the first marginal end portion 312a and are separated therefrom by a cutline or severable line.

The blank 310 comprises a second pair of keel panels 342a, 342b. The second pair of keel panels 342a, 342b are struck from the main panel 312 and hingedly connected to each other by a fold line 343. The second pair of keel panels 342a, 342b are disposed adjacent to the second marginal end portion 312b and are separated therefrom by a cutline or severable line. The second pair of keel panels 342a, 342b are disposed adjacent to the first pair of keel panels 340a, 340b and are separated therefrom by a cutline or severable line.

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The blank 310 comprises a first side panel 318 and a second side panel 320 disposed on opposing sides of the main panel 312.

The first marginal end portion 312a is hingedly connected to the first side panel 318 and to the second side panel 320.

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In the embodiment of Figure 7 and 8 the first and second outer panels 14, 16; 114, 116; 214, 216 of the previous embodiments have been omitted. The corner panels 26a, 26b, 30a, 30b; 126a, 126b, 130a, 130b; 226a, 226b, 230a, 230b and the securing panels 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b; 228a, 228b, 232a, 232b have also been omitted.

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In the embodiment of Figures 7 and 8 the first gusset panel 322a has been increased in size compared to the other disclosed embodiments; this has been achieved by reducing the dimensions of the first aperture A1 compared to the other disclosed embodiments. The second,

third and fourth gusset panels 322b, 334a, 334b have been similarly increased in size compared to the other disclosed embodiments; this has been achieved by reducing the dimensions of the second, fifth, and sixth apertures A2, A5, A6 compared to the other disclosed embodiments.

- 5 This provides a larger area for securing the gusset panels 322a, 322b, 334a, 334b to the first and second side panels 318, 320. Glue or adhesive treatment G is applied to the first and second side panels 318, 320 or to the gusset panels 322a, 322b, 334a, 334b.

10 The blank 310 may comprise a first, printed, or finished surface and a second, reverse, or unfinished surface.

The second, reverse, surface of the gusset panels 322a, 322b, 334a, 334b is secured to second, reverse, surface of the first or second side panels 318, 320.

- 15 The first and third gusset panels 322a, 334a are separated from the first side panel 318 by a cutaway in the form of a cutline, severable line or slot. The second and fourth gusset panels 322b, 334b are separated from the second side panel 320 by a cutaway in the form of a cutline, severable line or slot.

- 20 Inner edges of the first and second marginal portions 312a, 312b are shaped or contoured to be complementary to the adjacent one of the keel panels 340a, 342a. The contoured edge provides a lower edge of the first and second end walls 312a, 312b of the carrier 390 in a setup condition.

25 The first and second marginal portions 312a, 312b flare outward at each end thereof so as to be similar in height to the gusset panels 322a, 322b, 334a, 334b.

The present disclosure provides a carrier 90; 190; 290 having a main panel 12; 112; 212; 312 with openings for receiving at least one article B and at least one keel structure IS1, IS2 for spacing apart or separating a pair of adjacent articles B.

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The keel structure IS1, IS2 may comprise a pair of keel panels 40a/40b, 42a/42b; 140a/140b, 142a/142b; 240a/240b, 242a/242b; 340a/340b, 342a/342b hingedly connected to each other by a fold line 41, 43; 142, 143; 241, 243; 341, 343. The keel structure IS1, IS2 may comprise a pair of strut panels 44a, 44b, 46a, 46b, 50a, 50b, 52a, 52b; 144a, 144b, 146a, 146b, 150a, 150b,

152a, 152b; 244a, 244b, 246a, 246b, 250a, 250b, 252a, 252b; 344a, 344b, 346a, 346b, 350a, 350b, 352a, 352b hingedly connected to a respective one of the pair of keel panels 40a/40b, 42a/42b; 140a/140b, 142a/142b; 240a/240b, 242a/242b; 340a/340b, 342a/342b. A brace panel 48a, 48b, 54a, 54b; 148a, 148b, 154a, 154b; 248a, 248b, 254a, 254b; 348a, 348b, 354a, 354b

5 couples a first one of the pair of strut panels 44a, 44b, 46a, 46b, 50a, 50b, 52a, 52b; 144a, 144b, 146a, 146b, 150a, 150b, 152a, 152b; 244a, 244b, 246a, 246b, 250a, 250b, 252a, 252b; 344a, 344b, 346a, 346b, 350a, 350b, 352a, 352b to the other one of the pair of strut panels 44a, 44b, 46a, 46b, 50a, 50b, 52a, 52b; 144a, 144b, 146a, 146b, 150a, 150b, 152a, 152b; 244a, 244b, 246a, 246b, 250a, 250b, 252a, 252b; 344a, 344b, 346a, 346b, 350a, 350b, 352a, 352b. An

10 aperture may be struck in part from each of the pair of keel panels 40a/40b, 42a/42b; 140a/140b, 142a/142b; 240a/240b, 242a/242b; 340a/340b, 342a/342b, the pair of strut panels 44a, 44b, 46a, 46b, 50a, 50b, 52a, 52b; 144a, 144b, 146a, 146b, 150a, 150b, 152a, 152b; 244a, 244b, 246a, 246b, 250a, 250b, 252a, 252b; 344a, 344b, 346a, 346b, 350a, 350b, 352a, 352b and the brace panel 48a, 48b, 54a, 54b; 148a, 148b, 154a, 154b; 248a, 248b, 254a, 254b; 348a, 348b,

15 354a, 354b.

The present disclosure provides an article carrier 90; 290 having an at least double-ply strap handle at one or both of the opposed ends of the carrier 90; 290. An end bridging strap 12a, 12b; 112a, 112b; 212a, 212b is hingedly connected to a reinforcing strap 14, 16; 114, 116; 214,

20 216 along their respective upper edges. The reinforcing strap 14, 16; 114, 116; 214, 216 is secured at its opposite ends to side panels or straps 18, 20; 118, 120; 218, 220 of the carrier 90; 290.

The article carrier 90; 290 may be formed from material having a first, printed, or finished

25 surface and a second, reverse, or unfinished surface opposing the first surface. The second, reverse, surface of the end bridging strap 12a, 12b; 112a, 112b; 212a, 212b is arranged to face the second, reverse, surface of the reinforcing strap 14, 16; 114, 116; 214, 216. The first, printed, or finished surface of the end bridging strap 12a, 12b; 112a, 112b; 212a, 212b is arranged to face inwardly of the interior of the carrier 90; 290. The first, printed, or finished

30 surface of the reinforcing strap 14, 16; 114, 116; 214, 216 is arranged to face outwardly to provide an external face of the carrier 90; 290.

The reinforcing strap 14, 16; 114, 116; 214, 216 may comprise or be connected to a corner panel 26a, 26b, 30a, 30b; 126a, 126b, 130a, 130b; 226a, 226b, 230a, 230b hingedly connected

along a fold line 25a, 25b, 29a, 29b; 125a, 125b, 129a, 129b; 225a, 225b, 229a, 229b and an end flap 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b; 228a, 228b, 232a, 232b hingedly connected to the corner panel 26a, 26b, 30a, 30b; 126a, 126b, 130a, 130b; 226a, 226b, 230a, 230b along a fold line 27a, 27b, 31a, 31b; 127a, 127b, 131a, 131b; 227a, 227b, 231a, 231b.

5

At least one of the end flap 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b; 228a, 228b, 232a, 232b and the corner panel 26a, 26b, 30a, 30b; 126a, 126b, 130a, 130b; 226a, 226b, 230a, 230b is secured to the adjacent side panel or strap 18, 20; 118, 120; 218, 220 of the carrier 90; 290.

- 10 The corner panel 26a, 26b, 30a, 30b; 126a, 126b, 130a, 130b; 226a, 226b, 230a, 230b may be secured to the adjacent side panel or strap 18, 20; 118, 120; 218, 220 to form a beveled or rounded corner of the carrier 90; 290.

- 15 The end flap 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b; 228a, 228b, 232a, 232b may be secured to the adjacent side panel or strap 18, 20; 118, 120; 218, 220 to form a beveled or rounded corner of the carrier 90; 290.

- 20 Glue or adhesive treatment (such as hot-melt glue) may be applied to the first, printed, or finished surface of the end flap 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b; 228a, 228b, 232a, 232b. The first, printed, or finished surface of the end flap 28a, 28b, 32a, 32b; 128a, 128b, 132a, 132b; 228a, 228b, 232a, 232b may be secured to the second, reverse, surface of the adjacent side panel or strap 18, 20; 118, 120; 218, 220.

- 25 Glue or adhesive treatment (such as hot-melt glue) may be applied to the first, printed, or finished surface of the corner panel 26a, 26b, 30a, 30b; 126a, 126b, 130a, 130b; 226a, 226b, 230a, 230b. The first, printed, or finished surface of the corner panel 26a, 26b, 30a, 30b; 126a, 126b, 130a, 130b; 226a, 226b, 230a, 230b may be secured to the second, reverse, surface of the adjacent side panel or strap 18, 20; 118, 120; 218, 220.

- 30 An end portion 18a, 18b, 20a, 20b; 118a, 118b, 120a, 120b; 218a, 218b, 220a, 220b may be secured (glue or adhesive treatment -such as, but not limited to, hot-melt glue- may be employed) to the corner panel 26a, 26b, 30a, 30b; 126a, 126b, 130a, 130b; 226a, 226b, 230a, 230b to form the beveled or rounded corner of the carrier 90; 290.

The end portion 18a, 18b, 20a, 20b; 118a, 118b, 120a, 120b; 218a, 218b, 220a, 220b may be defined, at least in part by a fold line F1, F2, F3, F4.

5 The end bridging strap 12a, 12b; 112a, 112b; 212a, 212b may be hingedly connect to the adjacent side panel or strap 18, 20; 118, 120; 218, 220 by a gusset panel 22a, 22b, 34a, 34b; 122a, 122b, 134a, 134b; 222a, 222b, 234a, 234b and a web panel 24a, 24b, 36a, 36b; 124a, 124b, 136a, 136b; 224a, 224b, 236a, 236b. The corner panel 26a, 26b, 30a, 30b; 126a, 126b, 130a, 130b; 226a, 226b, 230a, 230b may be interposed between the gusset panel 22a, 22b, 34a, 34b; 122a, 122b, 134a, 134b; 222a, 222b, 234a, 234b and the web panel 24a, 24b, 36a, 36b; 124a, 124b, 136a, 136b; 224a, 224b, 236a, 236b so as to provide a three-ply portion of the double-ply strap handle.

15 The gusset panel 22a, 22b, 34a, 34b; 122a, 122b, 134a, 134b; 222a, 222b, 234a, 234b is hingedly connected to the adjacent side panel or strap 18, 20; 118, 120; 218, 220 by a fold line 21a, 21b, 33a, 33b; 121a, 121b, 133a, 133b; 221a, 221b, 233a, 233b. The fold line 21a, 21b, 33a, 33b; 121a, 121b, 133a, 133b; 221a, 221b, 233a, 233b and the fold line 25a, 25b, 29a, 29b; 125a, 125b, 129a, 129b; 225a, 225b, 229a, 229b may define an obtuse angle therebetween.

20 The present disclosure provides a blank 10; 110; 210; 310 for forming an article carrier 90; 290; 390. The blank 10; 110; 210; 310 comprises a main panel 12; 112; 212; 312 and an adjacent side panel 18, 20; 118, 120; 218, 220; 318, 320. The main panel 12; 112; 212; 312 comprises an end bridging strap 12a, 12b; 112a, 112b; 212a, 212b; 312a, 312b and a keel structure IS1, IS2. The keel structure IS1, IS2 comprises at least one keel panel 40a, 40b, 42a, 42b; 140a, 140b, 142a, 142b; 240a, 240b, 242a, 242b; 340a, 430b, 342a, 342b. The blank 25 comprises a gusset panel 22a, 22b, 34a, 34b; 122a, 122b, 134a, 134b; 222a, 222b, 234a, 234b; 322a, 322b, 334a, 334b coupling the end bridging strap 12a, 12b; 112a, 112b; 212a, 212b; 312a, 312b to the adjacent side panel 18, 20; 118, 120; 218, 220; 318, 320. The gusset panel 22a, 22b, 34a, 34b; 122a, 122b, 134a, 134b; 222a, 222b, 234a, 234b; 322a, 322b, 334a, 334b is hingedly connected to the end bridging strap 12a, 12b; 112a, 112b; 212a, 212b; 312a, 312b 30 by a fold line 21a, 21b, 33a, 33b; 121a, 121b, 133a, 133b; 221a, 221b, 233a, 233b; 321a, 321b, 333a, 333b. The keel panel 40a, 40b, 42a, 42b; 140a, 140b, 142a, 142b; 240a, 240b, 242a, 242b; 340a, 430b, 342a, 342b is coupled to the adjacent side panel 18, 20; 118, 120; 218, 220; 318, 320 by a strut panel 44a, 44b, 46a, 46b, 50a, 50b, 52a, 52b; 144a, 144b, 146a, 146b, 150a, 150b, 152a, 152b; 244a, 244b, 246a, 246b, 250a, 250b, 252a, 252b; 344a, 344b, 346a, 346b,

350a, 350b, 352a, 352b. The strut panel 44a, 44b, 46a, 46b, 50a, 50b, 52a, 52b; 144a, 144b, 146a, 146b, 150a, 150b, 152a, 152b; 244a, 244b, 246a, 246b, 250a, 250b, 252a, 252b; 344a, 344b, 346a, 346b, 350a, 350b, 352a, 352b is hingedly connected to the keel panel 40a, 40b, 42a, 42b; 140a, 140b, 142a, 142b; 240a, 240b, 242a, 242b; 340a, 430b, 342a, 342b by a fold line 45a, 45b, 45c, 45d, 49a, 49b, 49c, 49d; 145a, 145b, 145c, 145d, 149a, 149b, 149c, 149d; 245a, 245b, 245c, 245d, 249a, 249b, 249c, 249d; 345a, 345b, 345c, 345d, 349a, 349b, 349c, 349d. The fold line 21a, 21b, 33a, 33b; 121a, 121b, 133a, 133b; 221a, 221b, 233a, 233b; 321a, 321b, 333a, 333b is offset from or non-collinear with fold line 45a, 45b, 45c, 45d, 49a, 49b, 49c, 49d; 145a, 145b, 145c, 145d, 149a, 149b, 149c, 149d; 245a, 245b, 245c, 245d, 249a, 249b, 249c, 249d; 345a, 345b, 345c, 345d, 349a, 349b, 349c, 349d.

The present disclosure provides a blank 310 and an article carrier 390 having a rounded or beveled corner. The article carrier 390 comprises an end bridging strap 312a, 312b having a corner or gusset panel 322a, 322b, 334a, 334b hingedly connected thereto by a fold line 321a, 321b, 333a, 333b. The article carrier 390 comprises a connector or web panel 324a, 324b, 336a, 336b hingedly connected to the corner or gusset panel 322a, 322b, 334a, 334b by a fold line 323a, 323b, 335a, 335b. The connector or web panel 324a, 324b, 336a, 336b is hingedly connected to an adjacent side strap 318; 320 by a fold line 317a, 317b, 319a, 319b. The corner or gusset panel 322a, 322b, 334a, 334b is secured (at a second, reverse, or unfinished surface by hot-melt glue G) to the adjacent side strap 318; 320.

A lower edge of the reinforcing strap 14, 16; 114, 116; 214, 216 may be contoured or recessed to provide a non-linear or arcuate engaging edge of a carrying handle.

A lower edge of the end bridging strap 312a, 312b may be contoured or recessed to provide a non-linear or arcuate engaging edge of a carrying handle.

It will be recognized that as used herein, directional references such as "top", "bottom", "base", "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.

As used herein, the terms "hinged connection" and "fold line" refer to all manner of lines that define hinge features of the blank, facilitate folding portions of the blank with respect to one

- another, or otherwise indicate optimal panel folding locations for the blank. 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 two or more fold lines wherein each of the two or more fold lines may be either straight/linear or curved/curvilinear in shape. When linear fold lines form a hinged connection, they may be disposed parallel with each other or be slightly angled with respect to each other. When curvilinear fold lines form a hinged connection, they may intersect each other to define a shaped panel within the area surrounded by the curvilinear fold lines. A typical example of such a hinged connection may comprise a pair of arched or arcuate fold lines intersecting at two points such that they define an elliptical panel therebetween. A hinged connection may be formed from one or more linear fold lines and one or more curvilinear fold lines. A typical example of such a hinged connection may comprise a combination of a linear fold line and an arched or arcuate fold line which intersect at two points such that they define a half moon-shaped panel therebetween.
- 15 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 cutline, a line of aligned slits, a line of scores and any combination of the aforesaid options.
- 20 It should be understood that hinged connections and fold lines can each include elements that are formed in the substrate of the blank including perforations, a line of perforations, a line of short slits, a line of half-cuts, a single half-cut, a cutline, an interrupted cutline, slits, scores, embossed lines, debossed lines, 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 severance line. The line of perforations can be designed to facilitate folding and resist breaking, to facilitate folding and facilitate breaking with more effort, or to facilitate breaking with little effort.
- 25 30 The phrase “in registry with” as used herein refers to the alignment of two or more elements in an erected carton, such as an aperture formed in a first of two overlapping panels and a second aperture formed in a second of two overlapping panels. Those elements in registry with each other may be aligned with each other in the direction of the thickness of the overlapping panels. For example, when an aperture in a first panel is “in registry with” a second aperture in a second

panel that is placed in an overlapping arrangement with the first panel, an edge of the aperture may extend along at least a portion of an edge of the second aperture and may be aligned, in the direction of the thickness of the first and second panels, with the second aperture.