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(54) **ARTICLE CARRIER AND BLANK THERFOR**

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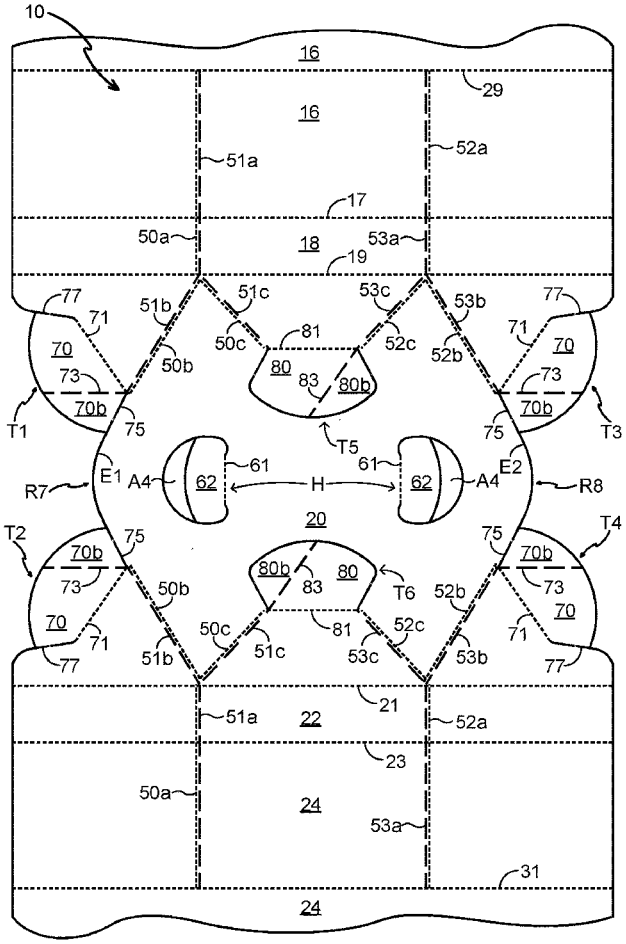
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(57) **ABSTRACT**

Aspects of the disclosure relate to a package, an article carrier for packaging a plurality of articles and to a blank for forming the article carrier. The article carrier comprises a plurality of panels forming a tubular structure for surrounding at least two articles each having a recess. The article carrier comprises a pair of article retention devices each comprising a flap (**80**) for engaging the recess of a respective one of said at least two articles to inhibit movement thereof. The flaps are hingedly connected by a respective hinged connection to one of the plurality of panels in opposition to each other. The article carrier comprises a pair of handle openings (**A4**) defined in said one of the plurality of panels. The handle openings and the flaps define a handle in said one of the plurality of panels.



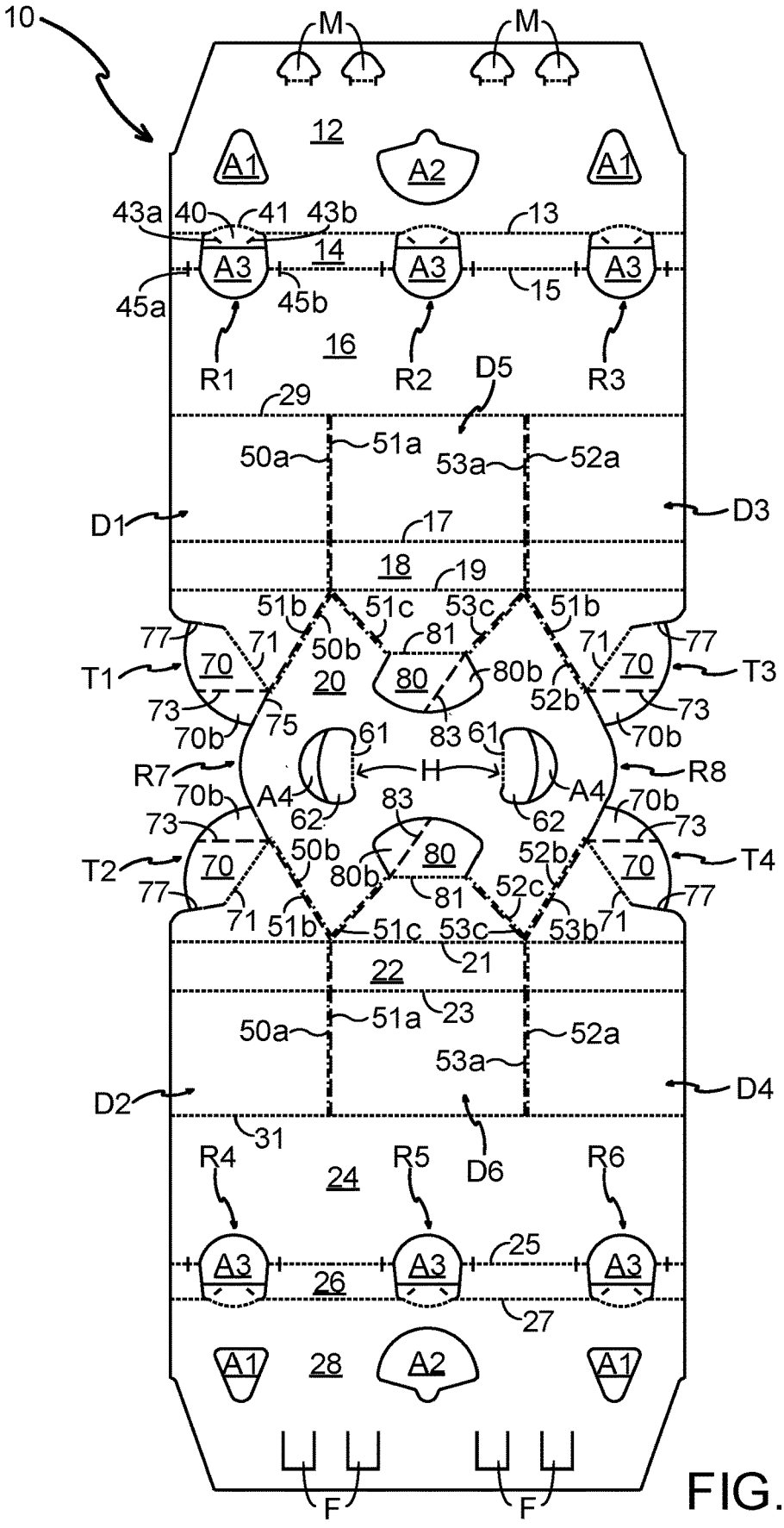

10
M
M
12
A1
A2
A1
43a
40
41
43b
13
A3
14
A3
A3
45a
45b
15
16
R1
R2
D5
R3
29
50a
51a
53a
52a
D1
D3
17
18
19
51b
51c
53c
51b
77
71
50b
81
71
77
T1
70
20
80
80b
70
T3
52b
73
73
70b
75
61
83
61
70b
R7
H
R8
70b
A4
A4
70b
62
83
62
73
73
T2
70
50b
80
52b
70
T4
77
80b
81
52c
77
71
51b
51c
53c
53b
71
22
21
23
50a
51a
52a
53a
D2
D4
31
R4
R5
D6
R6
24
A3
A3
A3
25
26
27
A1
28
A2
A1
F
F

FIG. 1

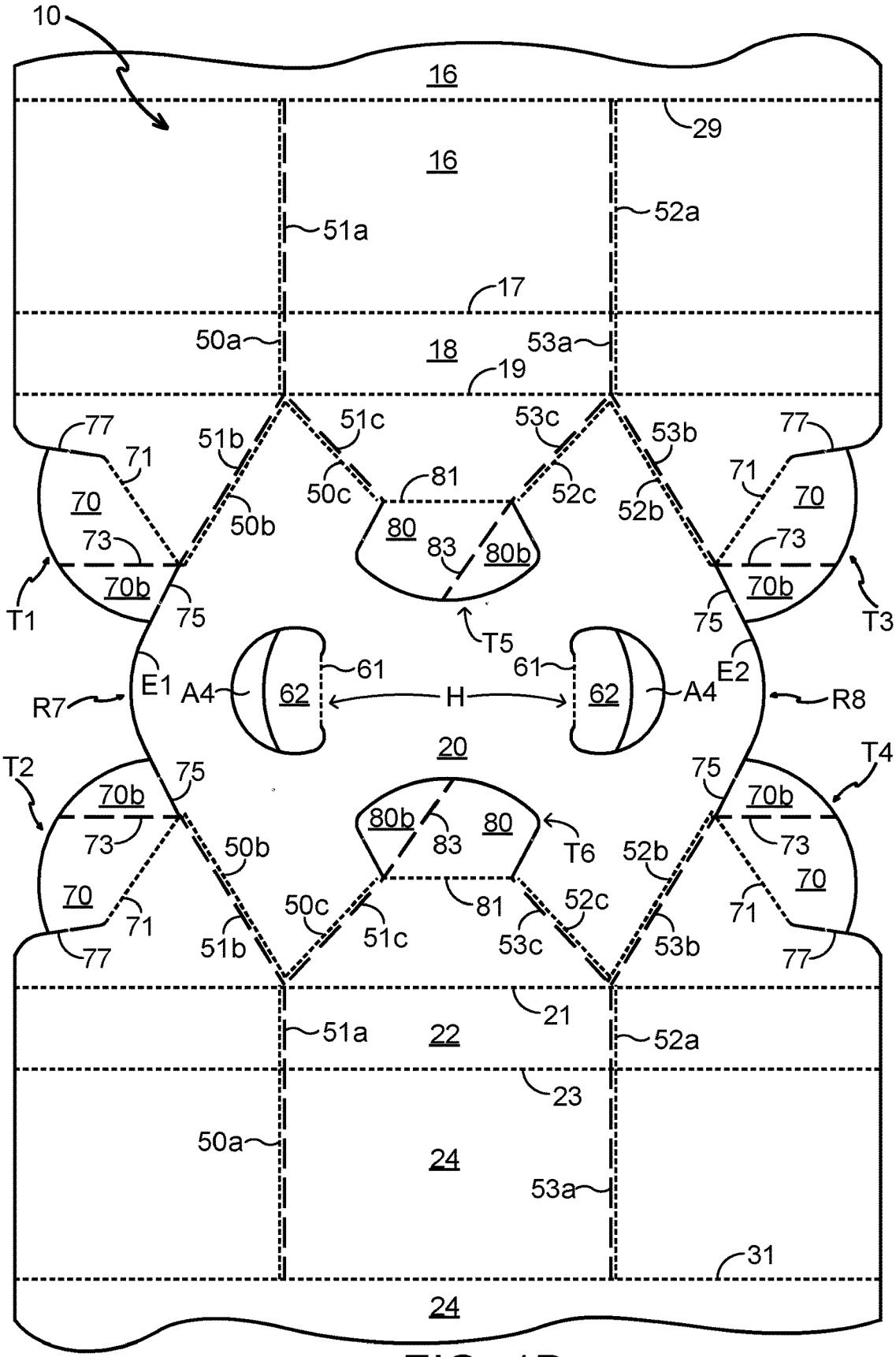

10
16
16
29
51a
52a
17
50a
18
53a
19
77
71
51b
51c
53c
53b
77
71
70
50b
50c
81
52c
52b
70
80
83
80b
73
73
70b
70b
T1
75
75
T3
T5
E1
61
61
E2
R7
A4
62
H
62
A4
R8
20
T2
75
75
T4
70b
70b
80b
83
80
T6
73
73
50b
52b
70
70
50c
81
52c
71
71
77
51b
51c
53c
53b
77
21
51a
22
52a
23
50a
24
53a
31
24

FIG. 1B

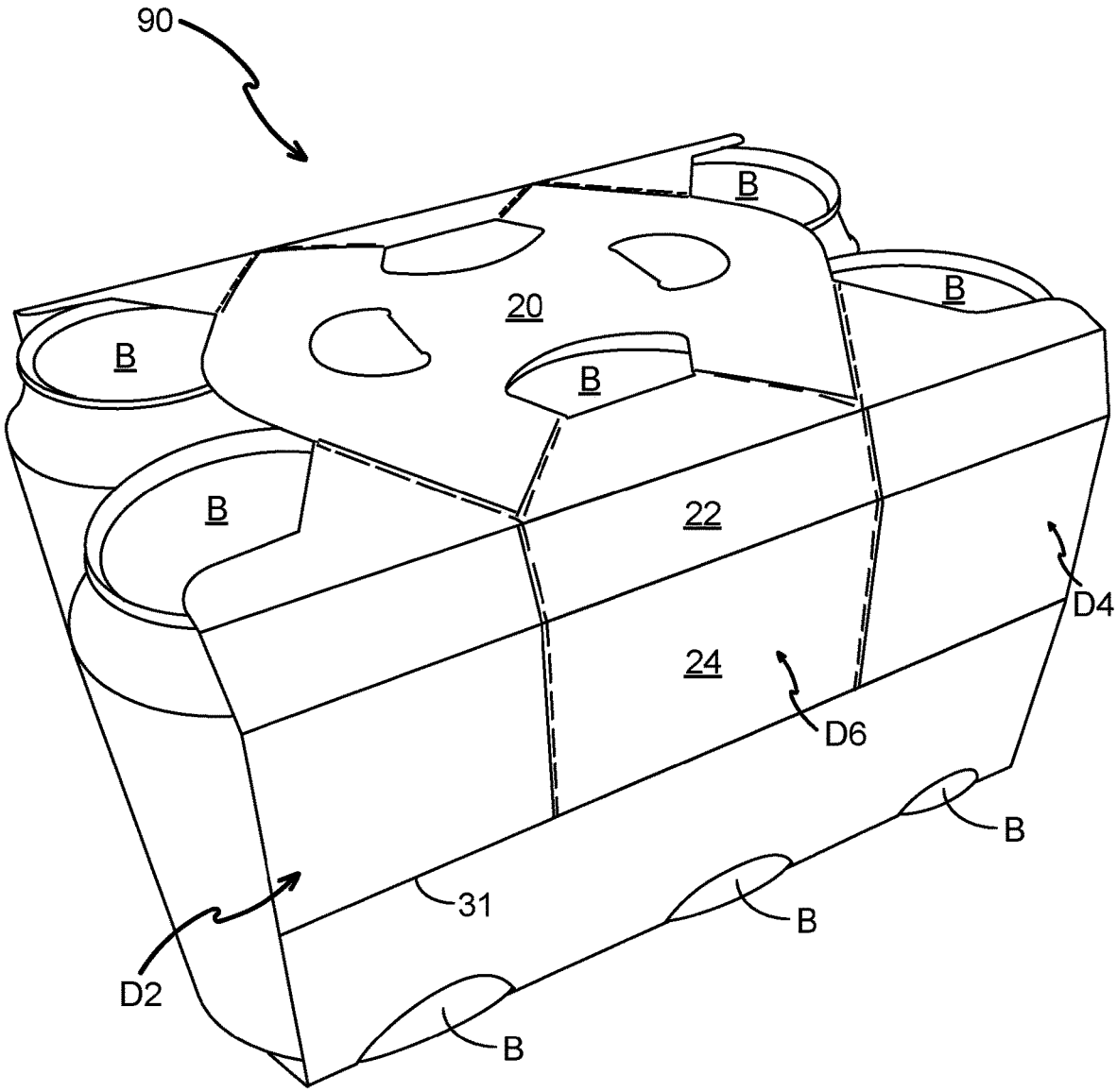


FIG. 2

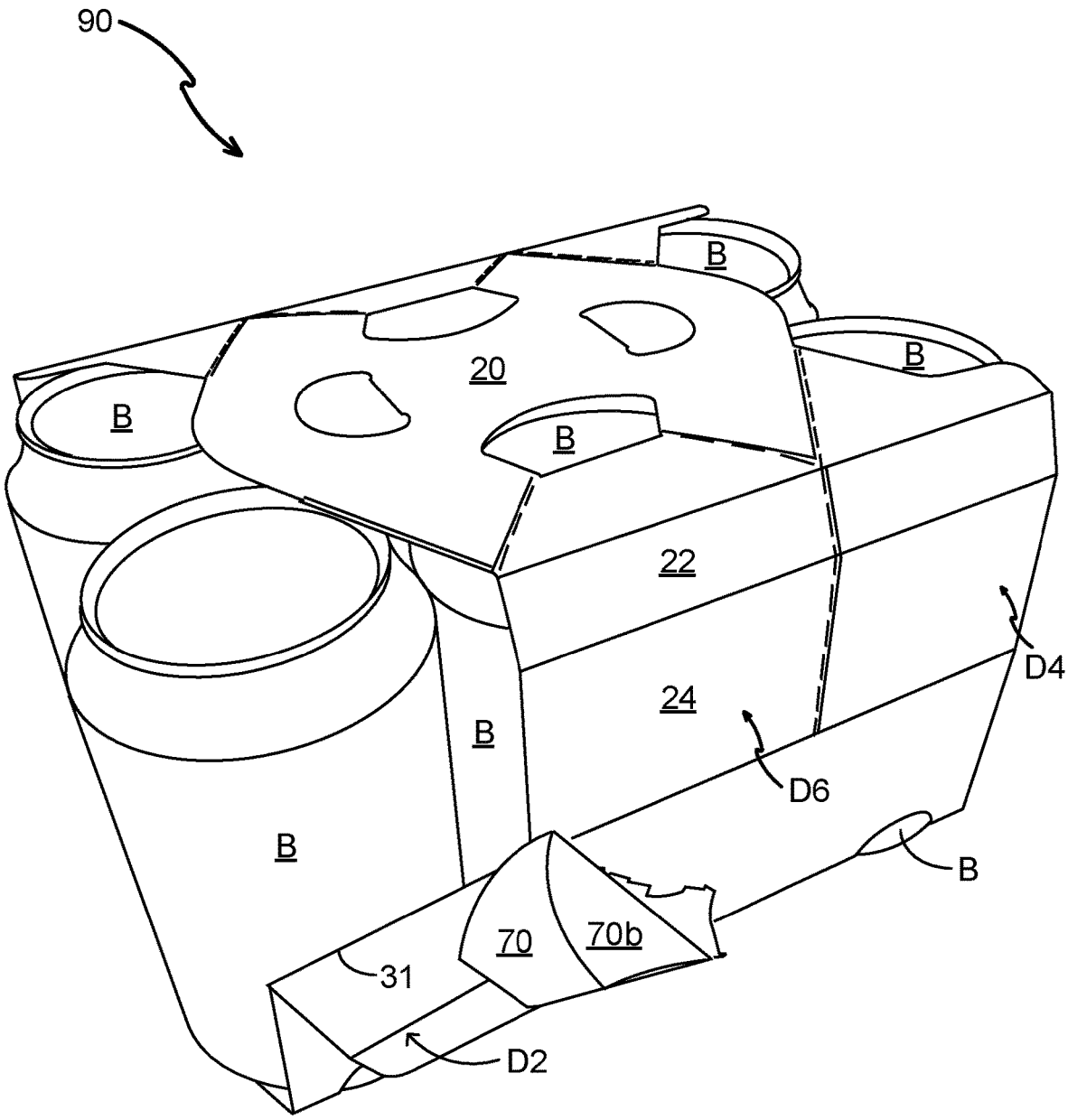


FIG. 3

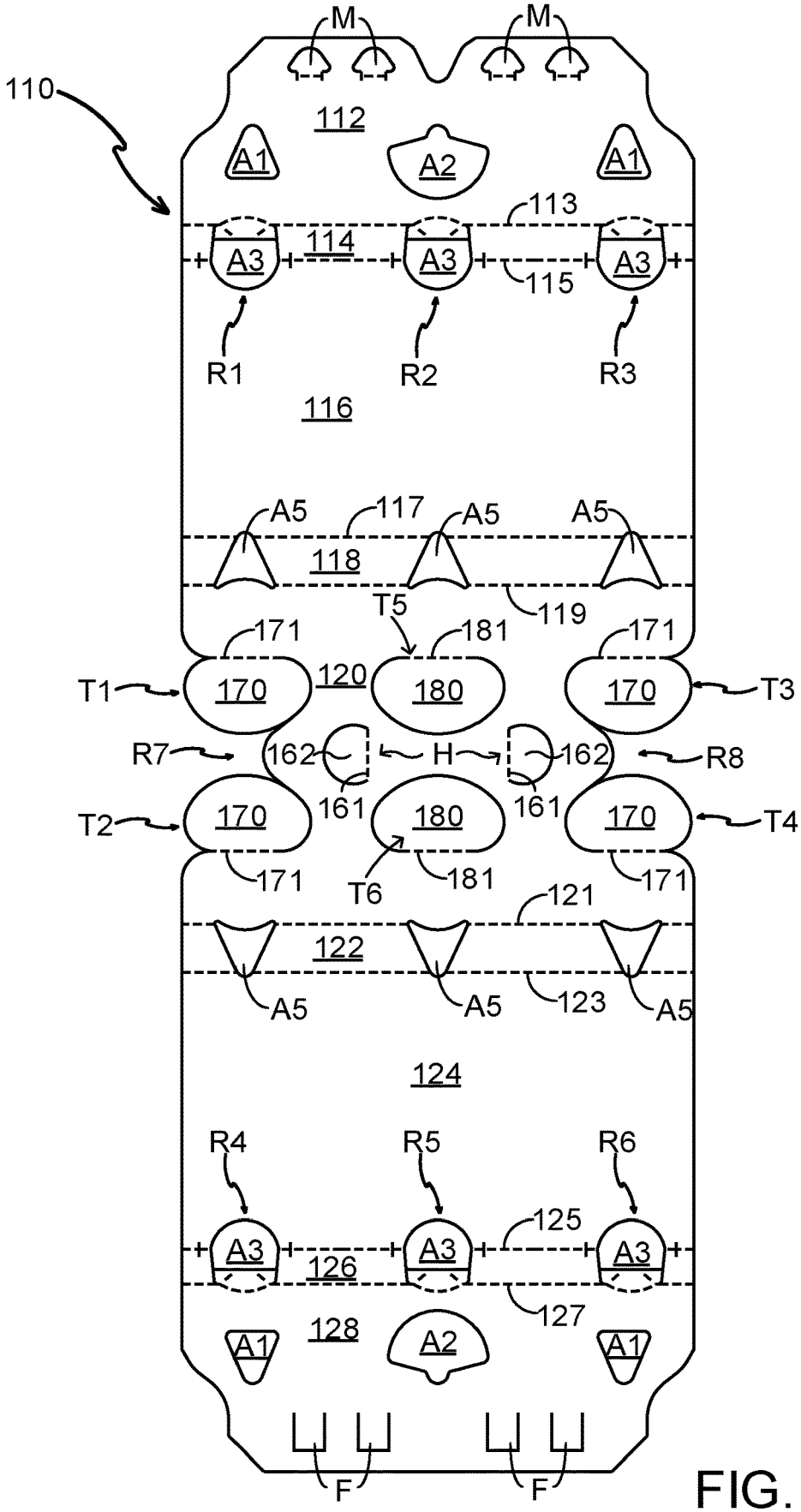

M
M
110
112
A1
A2
A1
113
A3
114
A3
A3
115
R1
R2
R3
116
A5
117
A5
A5
118
T5
119
171
181
171
T1
170
120
180
170
T3
R7
162
H
162
R8
T2
170
161
180
161
170
T4
171
T6
181
171
121
122
A5
A5
123
A5
124
R4
R5
R6
125
A3
A3
A3
126
127
128
A1
A2
A1
F
F

FIG. 4

ARTICLE CARRIER AND BLANK THERFOR

TECHNICAL FIELD

[0001] The present invention relates to article carriers and to blanks for forming the same. More specifically, but not exclusively, the invention relates to a wraparound carrier having a carrying handle. Aspects of the invention relate to an article retention structure including an engagement device for securing an upper end of an article. Additionally or alternatively the invention relates to a wraparound carrier having a dispenser feature for gaining access to the contents of the carrier.

BACKGROUND

[0002] In the field of packaging it is known to provide cartons or article carriers for carrying multiple articles. Cartons are well known in the art and are useful for enabling consumers to transport, store and access 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 carton comprises a carrying handle sufficiently strong enough to bear the load of the carton and its contents.

[0003] It is desirable that the articles held within a carton are securely held and protected during transportation. It is also desirable that the articles within a carton can be readily accessed.

[0004] The present invention seeks to provide an improvement in the field of cartons, typically formed from paperboard or the like.

SUMMARY

[0005] A first aspect of the invention provides an article carrier for packaging at least two articles each having a recess. The article carrier comprises a plurality of panels forming a tubular structure for surrounding the at least two articles and a pair of article retention devices each comprising a flap for engaging a recess of a respective one of said at least two articles to inhibit movement of the articles within the tubular structure. The flaps are hingedly connected by a respective hinged connection to one of the plurality of panels in opposition to each other. The article carrier comprises a pair of handle openings defined in said one of the plurality of panels. The handle openings and the flaps define a handle in said one of the plurality of panels. The handle is coupled or connected to said one of the plurality of panels by four arms. Each arm is provided by a region of said one of the plurality of panels disposed or defined between one of the handle openings and one of the flaps.

[0006] Optionally, the tubular structure is at least partially open at each end and a tubular axis is defined between said ends and wherein the hinged connection between the flaps and the one of the plurality of panels is parallel to the tubular axis.

[0007] Optionally, the tubular structure is at least partially open at each end and a tubular axis is defined between said ends and wherein the hinged connection between the flaps and the one of the plurality of panels is oblique to the tubular axis.

[0008] Optionally, said one of the plurality of panels is a top panel.

[0009] Optionally, the flaps are hingedly connected to said one of the plurality of panels by a hinged connection in the form of a first fold line.

[0010] Optionally, the plurality of panels include a pair of opposed side walls and the flaps fold towards a respective one of the opposed side walls.

[0011] A second aspect of the invention provides an article carrier for packaging one or more articles each having a recess, the article carrier comprising a plurality of panels forming a tubular structure for surrounding the one or more articles and an article retention device for engaging a recess of one of the one or more articles to inhibit movement of said article within the tubular structure, wherein the article retention device comprises a flap hingedly connected to one of the plurality of panels, the article carrier further comprises a dispenser feature having an access panel, and wherein the flap is hingedly connected to the access panel so as to provide a tear initiation device for the dispenser.

[0012] Optionally, the access panel is defined at an end of the article carrier, the access panel is defined in part by a free end edge of the article carrier and in part by a severable line extending from the flap.

[0013] Optionally, the access panel is defined in an intermediate portion of the article carrier, the access panel is defined at least in part by a pair of severable lines extending from the flap, the pair of severable lines are spaced apart from each end of the article carrier.

[0014] A third aspect of the invention provides an article carrier for packaging one or more articles each having a recess, the article carrier comprising a plurality of panels forming a tubular structure for surrounding the one or more articles and an article retention device for engaging a recess of one of the one or more articles to inhibit movement of said article within the tubular structure, the article retention device comprising a flap hingedly connected by a hinged connection to one of the plurality of panels, the flap comprising a hinged edge defined by the hinged connection and a free edge, wherein the free edge extends from a first end of the hinged connection to a second end of the hinged connection, and wherein the free edge is arcuate or curved across or along its entire extent.

[0015] Optionally, the hinged edge of the flap is disposed closer to one of a pair of opposed side walls than the free edge in an unfolded condition.

[0016] Optionally, the flap, in an operative condition, is reverse folded into face to face relationship with an inner surface of the panel to which it is hinged, when the flap is in the operative position the free edge of the flap is disposed closer to one of a pair of opposed side walls than the hinged edge.

[0017] Optionally, the hinged connection is oriented non-parallel to an open end of the tubular structure.

[0018] Optionally, the hinged connection is obliquely oriented to an open end of the tubular structure.

[0019] Optionally, the hinged connection is perpendicularly oriented with respect to an open end of the tubular structure.

[0020] Optionally, the article retention device is located in a recess defined in an end of said one of the plurality of panels.

[0021] Optionally, the top panel comprises at least one recessed end edge to which article retention device is hingedly connected.

[0022] Optionally, the flap partially defines the at least one recessed end edge of the top panel in an unfolded condition.

[0023] Optionally, the article carrier comprises a pair of article retention devices at an end of said one of the plurality of panels, and wherein the pair of article retention devices are spaced apart from each other by a recess struck from or defined in an end edge of the top panel.

[0024] Optionally, the pair of article retention devices are hingedly connected to the top panel by a respective fold line, said fold lines being divergently arranged with respect to each other.

[0025] Optionally, the flap is folded inwardly about a hinged connection to said one of the plurality of panels more than 90 degrees so as to be substantially in face to face relationship with the panel to which it is hinged.

[0026] Optionally, the article retention device comprises a fold line defined in the flap and forming a keel for increasing the security of the article within the article carrier.

[0027] Optionally, the fold line defines in part a wing tab, the wing tab coupled to the said one of the plurality of panels only through its hinged connection to the flap.

[0028] Optionally, the fold line is arranged to converge at an end of the hinged connection to form a vertex, and wherein a cutaway separates the wing tab from the said one of the plurality of panels, the cutaway intersects with the vertex between the hinged connection and fold line.

[0029] Optionally, the article carrier is of the wrap-around type, comprising a composite wall formed from two panels secured together.

[0030] Optionally, the composite wall is a bottom wall of the tubular structure.

[0031] Optionally, the flap of the article retention device is contained entirely within the footprint of said one of the plurality of panels.

[0032] Optionally, the flaps of the pair of article retention devices are contained entirely within the footprint of the top panel.

[0033] A fourth aspect of the invention provides a blank for forming an article carrier, the blank comprising a plurality of panels for forming a tubular structure for surrounding at least two articles each having a recess, the blank comprising a pair of article retention devices each comprising a flap for engaging a recess of a respective one of said at least two articles to inhibit movement of the articles within the tubular structure, wherein the flaps are hingedly connected by a respective hinged connection to one of the plurality of panels in opposition to each other, the blank comprising a pair of handle openings defined in said one of the plurality of panels, the handle openings and the flaps define a handle in said one of the plurality of panels, the handle is coupled or connected to said one of the plurality of panels by four arms, each arm is provided by a region of said one of the plurality of panels disposed or defined between one of the handle openings and one of the flaps.

[0034] Optionally, the tubular structure, in a setup condition, is at least partially open at each end and a tubular axis is defined between said ends and wherein the hinged connection between the flaps and the one of the plurality of panels is parallel to the tubular axis.

[0035] Optionally, the tubular structure, in a setup condition, is at least partially open at each end and a tubular axis is defined between said ends and wherein the hinged connection between the flaps and the one of the plurality of panels is oblique to the tubular axis.

[0036] Optionally, the flaps are hingedly connected to said one of the plurality of panels by a hinged connection in the form of a first fold line.

[0037] Optionally, the plurality of panels include a pair of opposed side walls hingedly connected to a top panel along hinged edges thereof and the flaps fold towards a respective one of the hinged edges.

[0038] A fifth aspect of the invention provides a blank for forming an article carrier, the blank comprising a plurality of panels forming a tubular structure for surrounding one or more articles having a recess and an article retention device for engaging the recess of one of the one or more articles to inhibit movement of said article within the tubular structure, wherein the article retention device comprises a flap hingedly connected to one of the plurality of panels, the blank further comprises a dispenser feature having an access panel, and wherein the flap is hingedly connected to the access panel so as to provide a tear initiation device for the dispenser.

[0039] A sixth aspect of the invention provides a blank for forming an article carrier, the blank comprising a plurality of panels forming a tubular structure for surrounding one or more articles having a recess and an article retention device for engaging the recess of the one of one or more articles to inhibit movement of said article within the tubular structure, the article retention device comprising a flap hingedly connected by a hinged connection to one of the plurality of panels, the flap comprising a hinged edge defined by the hinged connection and a free edge, wherein the free edge extends from a first end of the hinged connection to a second end of the hinged connection, and wherein the free edge is arcuate or curved across or along its entire extent.

[0040] 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.

[0041] 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.

[0042] 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.

BRIEF DESCRIPTION OF THE DRAWINGS

[0043] Embodiments of the invention will now be described with reference to the accompanying drawings, in which:

[0044] FIG. **1** is a plan view from above of a blank for forming an article carrier according to embodiments of the disclosure;

[0045] FIG. **1**B is an enlarged view of a portion of the blank of FIG. **1**;

[0046] FIG. **2** is a perspective view of an article carrier formed from the blank of FIG. **1**;

[0047] FIG. **3** is a perspective view of the article carrier of FIG. **2** showing a dispenser in a deployed condition; and

[0048] FIG. **4** is a plan view from above of a blank for forming an article carrier according to further embodiments of the disclosure.

DETAILED DESCRIPTION OF EMBODIMENTS

[0049] Detailed descriptions of specific embodiments of the package, blanks and article 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 article 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.

[0050] Referring to FIG. **1**, there is shown a plan view of a blank **10** capable of forming a carton or carrier **90**, as shown in FIG. **2**, for containing and carrying a group of primary products such as, but not limited to, beverage cans, hereinafter referred to as articles B, as shown in FIG. **2**. The blank **10** can be assembled to form a secondary package for packaging at least one primary product container or package.

[0051] Referring to FIG. **4**, there is shown a plan view of another blank **110** capable of forming a carton or carrier (not shown) for containing and carrying a group of primary products such as, but not limited to, beverage cans. The blank **110** can be assembled to form a secondary package for packaging at least one primary product container or package.

[0052] In the embodiments detailed herein, the terms "carton" and "carrier" refer, for the non-limiting purpose of illustrating the various features of the invention, to a container **90** for engaging and carrying articles B, such as primary product containers B. It is contemplated that the teachings of the invention can be applied to various product containers B, which may or may not be tapered and/or cylindrical. Other exemplary containers include bottles (for example metallic, glass or plastics bottles), cans (for example aluminium cans), tins, cups, pots, pouches, packets and the like.

[0053] The blanks **10**, **110** 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 recognised that one or other numbers of blanks may be employed, where suitable, for example, to provide the carrier structure described in more detail below.

[0054] The packaging structures or carton **90** described herein may be formed from a sheet material such as paperboard. Typically, one surface of the sheet material may have different characteristics to the other surface. For example, the 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 no coating or a coating. If coated, the coating layer or treatment may provide properties such as one or more of tear-resistance, good glue-ability, heat sealability, or other desired functional properties.

[0055] In the embodiments illustrated in FIGS. **1** and **4**, the blanks **10**, **110** are configured to form a carton or carrier **90** for packaging an exemplary arrangement of exemplary articles B. In the illustrated embodiments the arrangement is an m×n matrix or array, having two rows (m=2) and three columns (n=3); in the illustrated embodiments two rows of three articles B are provided, and the articles B are 330 ml beverage cans.

[0056] Alternatively, the blanks **10**, **110** can be configured to form a carrier for packaging other types, number and size of articles B and/or for packaging articles B in a different arrangement or configuration for example, but not limited to, fully enclosed cartons or basket carriers, the articles B may be bottles or cans.

[0057] Turning to FIG. **1**, there is illustrated a blank **10** for forming an article carrier **90** (see FIG. **2**) according to an embodiment of the disclosure. The blank **10** comprises a plurality of main panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28** for forming a tubular structure. The plurality of main panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28** comprises: a first base panel **12**, a first corner or bevel panel **14**, a first side panel **16**, a second corner or bevel panel **18**, a top panel **20**, a third corner or bevel panel **22**, a second side panel **24**, a fourth corner or bevel panel **26** and a second base panel **28**. The plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28** may be arranged in a linear series hinged one to the next by corresponding fold lines **13**, **15**, **17**, **19**, **21**, **23**, **25**, **27**.

[0058] In alternative embodiments, the first, second, third and fourth corner panels **14**, **18**, **22**, **26** may be omitted.

[0059] Fold line **13** and fold line **27** optionally comprise cut lines or severance lines (not shown) which are collinear with the respective one of fold line **13** and fold line **27** so as to interrupt said fold line **13**, **27** or be coincident therewith. Severance lines may provide shock absorbing or damping devices proximate the base of the carton **90**.

[0060] The first and fourth corner panels **14**, **26** may be considered to form lower portions of the respective one of the first or second side panels **16**, **24**, or alternatively form part of the first or second base panels **12**, **28**, to which they are hingedly connected.

[0061] The second and third corner panels **18**, **22** may be considered to form upper portions of the respective one of the first or second side panels **16**, **24**, or alternatively form part of the top panel **20**.

[0062] The blank **10** is foldable to form a package **90** as illustrated in FIGS. **3** and **4**. The first and second base panels **12**, **28** are engageable with one another in an overlapping relationship to form a composite base wall **12**/**28** of the carton **90**. The blank **10** may comprise a complementary

locking mechanism for securing the second base panel **28** to the first base panel **12**. The second base panel **28** may comprise at least one first part F of the complementary locking mechanism. The first base panel **12** may comprise at least one second part M of the complementary locking mechanism. In the illustrated embodiment, the second base panel **28** comprises a plurality of female tabs F defining openings in the second base panel **28**. The first base panel **12** comprises a plurality of male tabs M; and the openings in the second base panel **28** are configured to receive a respective one of the male tabs M. The female tabs F are arranged to be displaced out of the second base panel **28** to form the opening and to bear against the male tabs M when received therein. In some embodiments the complementary locking mechanism M/F may be omitted; and the first and second base panels **12**, **28** may be secured to each other by other means such as but not limited to adhesive or staples.

[0063] The complementary locking mechanism illustrated and described is entirely optional.

[0064] Optionally, the first and second base panels **12**, **28** may comprise at least one first aperture A**1**. In the illustrated embodiment, each of the first and second base panels **12**, **28** comprises two first apertures A**1**. Optionally, the first and second base panels **12**, **28** may comprise at least one second aperture A**2**. In the illustrated embodiment, each of the first and second base panels **12**, **28** comprises one second aperture A**2**. The first and second apertures A**1**, A**2** may be employed to facilitate construction of the carton **90**. A packaging machine component may engage with the first and second apertures A**1**, A**2** to enable the plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28** to be tightened about a group of articles B. The first and second apertures A**1**, A**2** may also be employed to facilitate alignment of the first and second base panels **12**, **28** with respect to each other or to align the first part F of the complementary locking mechanism with the second part M of the complementary locking mechanism.

[0065] The blank **10** comprises at least one first article retention device or article engagement structure (also referred to herein as end article retention devices or article engagement structures) T**1**, T**2**, T**3**, T**4** for engaging an upper end of the articles B. The blank **10** illustrated in FIGS. **1** and **1**B comprises four first article engagement structures T**1**, T**2**, T**3**, T**4**.

[0066] Each of the first article engagement structures T**1**, T**2**, T**3**, T**4** comprises a flap **70** hingedly connected to the top panel **20**. A first and a second one of the first article engagement structures T**1**, T**2** each comprise a flap **70** hingedly connected to the top panel **20** to a first end of the top panel **20**. A third and a fourth one of the first article engagement structures T**3**, T**4** each comprise a flap **70** hingedly connected to the top panel **20** to a second end of the top panel **20**.

[0067] The flaps **70** of the first and second first article engagement structures T**1**, T**2** are inset from a first outer edge of the blank **10**.

[0068] The first and second first article engagement structures T**1**, T**2** may be inset with respect to a first end edge of the first or second side panels **14**, **24**.

[0069] The first and second first article engagement structures T**1**, T**2** may be inset with respect to marginal edge portions of the top panel **20**.

[0070] The flaps **70** of the first and second first article engagement structures T**1**, T**2** may be inset from a first free end edge of the top panel **20**.

[0071] The flaps **70** of the third and fourth first article engagement structures T**3**, T**4** are inset from a second outer edge of the blank **10**.

[0072] The third and fourth article first engagement structures T**3**, T**4** may be inset with respect to a second end edge of the first or second side panels **14**, **24**.

[0073] The third and fourth first article engagement structures T**3**, T**4** may be inset with respect to marginal edge portions of the top panel **20**.

[0074] The flaps **70** of the third and fourth first article engagement structures T**3**, T**4** may be inset from a second free end edge of the top panel **20**.

[0075] The flaps **70** of the first article engagement structures T**1**, T**2**, T**3**, T**4** do not extend beyond the footprint of the top panel **20**. The flaps **70** of the first article engagement structures T**1**, T**2**, T**3**, T**4** are contained entirely within the footprint of the top panel **20**.

[0076] The flaps **70** do not extend beyond the ends of the top panel **20**.

[0077] The flaps **70** of the first article engagement structures T**1**, T**2**, T**3**, T**4** do not extend beyond edges of the blank **10** defined, at least in part, by the first and second side panels **16**, **24**.

[0078] Marginal portions of the top panel **20** hingedly connected to each of the first and second side panels **16**, **24**, or second and third bevel panels **18**, **22** when present, are equal in length to the first and second side panel **16**, **24** (or second and third bevel panels **18**, **22**) and to the bottom panels **12**, **28** or at least portions of the bottom panels **12**, **28**; said at least portions of the bottom panels **12**, **28** may be marginal portions each being hingedly to one of the first and second side panels **16**, **24**, or first and fourth bevel panels **14**, **26** when present.

[0079] A first recess R**7** is provided in the first end of the top panel **20**, the flaps **70** of the first and second first article engagement structures T**1**, T**2** can be considered to be located in the first recess R**7**. The flaps **70** of the first and second first article engagement structures T**1**, T**2** define in part the first recess R**7** and when folded out of the plane of the top panel **20** increase the size of the first recess R**7**.

[0080] The first recess R**7** is arranged to accommodate the entirety of the flaps **70** and wing tabs **70***b* when present.

[0081] The first recess R**7** is defined only in the top panel **20** and does not extend into the first and second side panel **16**, **24** or second and third bevel panels **18**, **22**.

[0082] The flap **70** of the first one of the first article engagement structures T**1** is hingedly connected to the top panel **20** by a hinged connection in the form of a fold line **71** which is obliquely oriented with respect to the fold line **19** hinging the top panel **20** to the second corner panel **18**. The fold line **71** is spaced apart from a first end edge of one of the marginal portions of the top panel **20**.

[0083] The flap **70** of the second one of the first article engagement structures T**2** is hingedly connected to the top panel **20** by a hinged connection in the form of a fold line **71** which is obliquely oriented with respect to the fold line **21** hinging the top panel **20** to the third corner panel **22**. The fold line **71** is spaced apart from a first end edge of the other one of the marginal portions of the top panel **20**.

[0084] The fold line **71** hinging the flap **70** of the first one of the first article engagement structures T**1** to the top panel

20 is divergently arranged with respect to the fold line **71** hinging the flap **70** of the second one of the first article engagement structures T**2** to the top panel **20**. The fold line **71** hinging the flap **70** of the first one of the first article engagement structures T**1** to the top panel **20** and the fold line **71** hinging the flap **70** of the second one of the first article engagement structures T**2** to the top panel **20** define an angle therebetween the angle may be less than 120° and in some embodiments may be around 110°. The angle may be greater than 80° and may be greater than 90°.

[0085] The fold line **71** hinging the flap **70** of the first one of the first article engagement structures T**1** to the top panel **20** and the fold line **71** hinging the flap **70** of the second one of the first article engagement structures T**2** to the top panel **20** are arranged to diverge towards the first end of the top panel **20**.

[0086] The fold line **71** hinging the flap **70** of the first one of the first article engagement structures T**1** to the top panel **20** and the fold line **71** hinging the flap **70** of the second one of the first article engagement structures T**2** to the top panel **20** are arranged to converge towards the centre or middle of the top panel **20**.

[0087] In this way the flap **70** of the first one of the first article engagement structures T**1** and the flap **70** of the second one of the first article engagement structures T**2** fold away from each other.

[0088] A second recess R**8** is provided in the second end of the top panel **20**, the flaps **70** of the third and fourth first article engagement structures T**3**, T**4** can be considered to be located in the second recess R**8**. The flaps **70** of the third and fourth first article engagement structures T**3**, T**4** define in part the second recess R**8** and when folded out of the plane of the top panel **20** increase the size of the second recess R**8**.

[0089] The second recess R**8** is defined only in the top panel **20** and does not extend into the first and second side panel **16**, **24** or second and third bevel panels **18**, **22**.

[0090] The second recess R**8** is arranged to accommodate the entirety of the flaps **70** and wing tabs **70***b* when present.

[0091] The flap **70** of the third one of the first article engagement structures T**3** is hingedly connected to the top panel **20** by a hinged connection in the form of a fold line **71** which is obliquely oriented with respect to the fold line **19** hinging the top panel **20** to the second corner panel **18**. The fold line **71** is spaced apart from a second end edge of said one of the marginal portions of the top panel **20**.

[0092] The flap **70** of the fourth one of the first article engagement structures T**4** is hingedly connected to the top panel **20** by a hinged connection in the form of a fold line **71** which is obliquely oriented with respect to the fold line **21** hinging the top panel **20** to the third corner panel **22**. The fold line **71** is spaced apart from a second end edge of said other one of the marginal portions of the top panel **20**.

[0093] The fold line **71** hinging the flap **70** of the third one of the first article engagement structures T**3** to the top panel **20** is divergently arranged with respect to the fold line **71** hinging the flap **70** of the fourth one of the first article engagement structures T**4** to the top panel **20**.

[0094] The fold line **71** hinging the flap **70** of the third one of the first article engagement structures T**3** to the top panel **20** and the fold line **71** hinging the flap **70** of the fourth one of the first article engagement structures T**4** to the top panel **20** are arranged to diverge towards the first end of the top panel **20**.

[0095] The fold line **71** hinging the flap **70** of the third one of the first article engagement structures T**3** to the top panel **20** and the fold line **71** hinging the flap **70** of the fourth one of the first article engagement structures T**4** to the top panel **20** are arranged to converge towards the centre or middle of the top panel **20**.

[0096] In the blank form the flaps **70** define in part free end edges of the top panel **20**. The edge portions of the top panel **20** defined by the flaps **70** are arcuate or curvilinear in shape.

[0097] The flap **70** of each of the first, second, third and fourth first article engagement structures T**1**, T**2**, T**3**, T**4** is partially defined by at least one cut **75**, **77** which separates that flap **70** from the top panel **20**.

[0098] A first cut **75** extends from a first or inner end of the fold line **71** to the respective one of the first and second recesses R**7**, R**8**.

[0099] A second cut **77** is disposed between the flap **70** and a respective one of the adjacently disposed fold lines **19**, **21** hinging the top panel **20** to the first or second side panel **16**, **24** (or second or third bevel panel **18**, **22** when present).

[0100] The first and second cut lines **75**, **77** are divergently arranged with respect to each other.

[0101] A first end edge E**1**/**75** of the top panel **20** which extends between the fold lines **71** of the flaps **70** of the first and second first article engagement structures T**1**, T**2** is non-linear. It may be arcuate or curvilinear. The end edge E**1**/**75** is convex such that it can be considered to define a portion of the top panel **20** protruding into the first recess R**7**.

[0102] At least part of the first end edge E**1** of the top panel **20** extending between the flaps **70** of the first and second first article engagement structures T**1**, T**2** is disposed at a position further from the centre or middle of the top panel **20** than the inner ends **71***a* of the fold lines **71** of those flaps **70**.

[0103] A second end edge E**2**/**75** of the top panel **20** which extends between the fold lines **71** of the flaps **70** of the third and fourth first article engagement structures T**3**, T**4** is non-linear. It may be arcuate or curvilinear. The end edge E**2**/**75** is convex such that it can be considered to define a portion of the top panel **20** protruding into the second recess R**8**.

[0104] At least part of the second end edge E**2** of the top panel **20** extending between the flaps **70** of the third and fourth first article engagement structures T**3**, T**4** is disposed at a position further from the centre or middle of the top panel **20** than the inner ends **71***a* of the fold lines **71** of those flaps **70**.

[0105] Each of the first article engagement structures T**1**, T**2**, T**3**, T**4** comprises a wing tab **70***b* hingedly connected to the flap **70** by a hinged connection in the form of a fold line **73**.

[0106] The fold line **73** may form a keel when the first article engagement structures T**1**, T**2**, T**3**, T**4** are in use engaging an article B. The keel may form a ridge to increase stability or rigidity of the first article engagement structures T**1**, T**2**, T**3**, T**4**. The flap **70** and the wing tab **70***b* may adopt a non-coplanar arrangement, for example, but not limited to, when an article moves outwardly through the open end of the tubular structure forming the article carrier B. The wing tab **70***b* may fold with respect to the flap **70**.

[0107] The fold line **73** may be obliquely oriented with respect to the fold line **71** and may define an acute angle therebetween.

[0108] The wing tabs **70***b* are connected only to the flaps **70** and are free from connection to the top panel **20** other

than the indirect connection by virtue of being coupled to the flaps **70**, that is to say there is no direct connection of the wing tabs **70***b* to the top panel **20**. The flaps **70** interconnect the wing tabs **70***b* and the top panel **20**.

[0109] In the unfolded condition in the blank **10** the fold lines **73** are oriented substantially parallel with the fold lines **19**, **21** hinging the side or upper corner panels **14**, **24**; **18**, **22** to the top panel **20**.

[0110] When the flaps **70** are folded about their respective fold line **71** into face to face relationship with the top panel **20** the fold lines **73** may be obliquely oriented with respect to the fold lines **19**, **21**.

[0111] The blank **10** may comprise at least one second article retention device or article engagement structure (also referred to herein as intermediate article retention devices or article engagement structures) T**5**, T**6** for engaging an upper end of the articles B. The blank **10** illustrated in FIGS. **1** and **1**B comprises two second article engagement structures T**5**, T**6**.

[0112] Each of the second article engagement structures T**5**, T**6** comprises a flap **80** hingedly connected to the top panel **20**.

[0113] The flap **80** of the first one of the second article engagement structures T**5** is hingedly connected to the top panel **20** by a hinged connection in the form of a fold line **81** which is oriented parallel with respect to the fold line **19** hinging the top panel **20** to the second corner panel **18**.

[0114] The fold line **81** of the first one of the second article engagement structures T**5** defines a hinged edge of the flap **80**, in the unfolded condition the hinged edge is disposed closer to the fold line **19** than a free edge defined by a cut or severance line. In the folded, operable, condition the free edge of the flap **80** is disposed closer to the first side panel **16** than the hinged edge defined by the fold line **81**.

[0115] The flap **80** of the second one of the second article engagement structures T**6** is hingedly connected to the top panel **20** by a hinged connection in the form of a fold line **81** which is oriented parallel with respect to the fold line **21** hinging the top panel **20** to the third corner panel **22**.

[0116] The fold line **81** of the second one of the second article engagement structures T**6** defines a hinged edge of the flap **80**, in the unfolded condition the hinged edge is disposed closer to the fold line **21** than a free edge defined by a cut or severance line. In the folded, operable, condition the free edge of the flap **80** is disposed closer to the second side panel **16** than the hinged edge defined by the fold line **81**.

[0117] The fold line **81** hinging the flap **80** of the first one of the second article engagement structures T**5** to the top panel **20** is arranged parallel with respect to the fold line **81** hinging the flap **80** of the second one of the second article engagement structures T**6** to the top panel **20**.

[0118] Each of the second article engagement structures T**5**, T**6** comprises a wing tab **80***b* hingedly connected to the flap **80** by a hinged connection in the form of a fold line **83**.

[0119] The fold line **83** may form a keel when the second article engagement structures T**5**, T**6** are in use engaging an article B. The keel may form a ridge to increase stability or rigidity of the second article engagement structures T**5**, T**6**. The flap **80** and the wing tab **80***b* may adopt a non-coplanar arrangement, for example, but not limited to, when an article moves outwardly through the open end of the tubular structure forming the article carrier B. The wing tab **80***b* may fold with respect to the flap **80**.

[0120] The fold line **83** may be obliquely oriented with respect to the fold line **81** and may define an acute angle therebetween.

[0121] The wing tabs **80***b* are connected only to the flaps **80** and are free from connection to the top panel **20** other than the indirect connection by virtue of being coupled to the flaps **80**, that is to say there is no direct connection of the wing tabs **80***b* to the top panel **20**. The flaps **80** interconnect the wing tabs **80***b* and the top panel **20**.

[0122] In the illustrated embodiment the wing tab **80***b* of the first one of the second article engagement structures T**5** is hingedly connected to an end of the flap **80** proximate the second end of the top panel **20**. The wing tab **80***b* of the second one of the second article engagement structures T**6** is hingedly connected to an end of the flap **80** proximate the first end of the top panel **20**. In this way the wing tab **80***b* are diagonally opposed. In other embodiments the wing tabs **80***b* may be arranged differently for example they may be disposed proximate the same end of the top panel **20**.

[0123] The blank **10** may comprise at least one heel engagement structure R**1**, R**2**, R**3**, R**4**, R**5**, R**6** for engaging with a heel or lower portion of an article B. The blank **10** illustrated in FIG. **1** comprises six heel engagement structures R**1**, R**2**, R**3**, R**4**, R**5**, R**6** each for engaging a respective article B. Each of the heel engagement structures R**1**, R**2**, R**3**, R**4**, R**5**, R**6** is substantially similar in construction and will be described only by reference to a first heel engagement structure R**1** provided in part in the first side panel **16** as shown in FIG. **1**.

[0124] The first heel engagement structure R**1** may comprise an opening. The opening is defined in part by a heel aperture A**3** and in part by a heel tab **40**. The heel tab **40** is hingedly connected to the first base panel **12** by fold line **41**. The heel tab **40** is struck, at least in part, from the first corner panel **14**.

[0125] The fold line **41** interrupts the fold line **13** hingedly connecting the first base panel **12** to the first corner panel **14**. The fold line **41** may be non-linear, in the illustrated embodiment the fold line **41** is curved or arcuate in shape, in other embodiments it may be formed from at least two linear fold lines divergently arranged with respect to each other and contiguous with each other.

[0126] The heel tab **40** may comprise a pair of divergently arranged fold lines **43***a*, **43***b* which may define foldable corner portions of the heel tab **40**.

[0127] The first heel engagement structure R**1** may comprise a pair of cut lines **45***a*, **45***a* disposed on opposing sides of the heel aperture A**3**. Each of the cut lines **45***a*, **45***a* is spaced apart from the heel aperture A**3**. The cut lines **45***a*, **45***a* may be oriented perpendicularly with respect the fold line **15**. The cut lines **45***a*, **45***a* may cross or intersect with the fold line **15**. The cut lines **45***a*, **45***a* may be bisected by the fold line **15**.

[0128] During the erection and packaging of articles B, the blank **10** is manipulated so that each heel aperture A**3** receives the bottom of a respective article B to retain said article B within the carton **90**. The heel tabs **40** are also folded to assist in retaining the articles B. This may be achieved by folding the first and second base panels **12**, **28** outwardly such that the heel tabs **40** extend inwardly, the heel tabs **40** being disposed below a respective article B as the first and second side panels **16**, **24** are folded about an article group. The first and second base panels **12**, **28** are then subsequently folded about the base of the article group,

and in doing so the heel tabs **40** engage with said respective article B and are folded with respect to the respective one of the first and second base panels **12**, **28** to which they are hingedly connected by fold line **41**.

[0129] The heel tabs **40** facilitate securing or locking the heel or base of an article B in position.

[0130] The top panel **20** may comprise an optional handle structure H. The handle structure H comprises a pair of openings. The openings may be defined at least in part by a tab **62**. In the illustrated embodiment the opening is defined in part by a handle aperture A**4** and in part by a tab **62**. The illustrated embodiment comprises a pair of tabs **62** spaced apart from each other. The tabs **62** are hingedly connected to the top panel **20** by fold lines **61** and are defined in part by a cut line or severance line. A first one of the tabs **62** is hingedly connected to the top panel **20** in opposition to a second one of the tabs **62**.

[0131] The first one of the tabs **62** is arranged to be disposed above a void or gap between a first group of four adjacently disposed articles B. The second one of the tabs **62** is arranged to be disposed above a void or gap between a second group of four adjacently disposed articles B.

[0132] The first and second groups may comprise a pair of common articles B disposed adjacent to each other.

[0133] The first one of the second article engagement structures T**5** may be arranged to be disposed above a first one of the pair of common articles B. The second one of the second article engagement structures T**6** may be arranged to be disposed above a second one of the pair of common articles B.

[0134] The tabs **62** and the flaps **80** of the second article engagement structures T**5**, T**6** define a handle or grip region in the top panel **20**. The grip region is coupled to a surrounding region by a plurality of arms or bridging regions. The illustrated embodiment comprises four arms or bridging regions. Each arm or bridging region is defined between one of the tabs **62** and an adjacent one of the flaps **80**.

[0135] The grip region may be coupled to the outer or end portions of the top panel **20** by the arms or bridging regions. In this way the handle is connected to the top panel through the arms.

[0136] The handle is defined by a pair of spaced apart handle openings and by a pair of spaced apart article engaging flaps **80**.

[0137] The blank **10** may comprise a dispenser, the dispenser may comprise one or more access panels D**1**, D**2**, D**3**, D**4**, D**5**, D**6**. The embodiment shown in FIGS. **1** and **1**B comprises six access panels D**1**, D**2**, D**3**, D**4**, D**5**, D**6**. Each access panel D**1**, D**2**, D**3**, D**4**, D**5**, D**6** comprises a portion of the first or second side panel **16**, **24**, a portion of the second or third corner panel **18**, **22** and a portion of the top panel **20**.

[0138] Each access panel D**1**, D**2**, D**3**, D**4**, D**5**, D**6** is defined in part by a severable line. Each access panel D**1**, D**2**, D**3**, D**4**, D**5**, D**6** may be defined in part by a hinged connection in the form of a fold line **29**, **31**. Optionally, the first side panel **16** comprises a first access panel fold line **29** extending transversely across the blank **10**, in a setup condition the first access panel fold line **29** extends longitudinally of the carton **90**, that is to say in a direction parallel with a tubular axis of the tubular structure formed by the plurality of main panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**. Optionally, the second side panel **24** comprises a second access panel fold line **31** extending transversely across the blank **10**, in a setup condition the second access panel fold line **31** extends longitudinally of the carton **90**, that is to say in a direction parallel with a tubular axis of the tubular structure formed by the plurality of main panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**.

[0139] A first access panel D**1** (also referred to herein as an end access panel) is arranged to disposed at a first end of the carton **90** on a first side thereof and is defined by a first severance line **51***a* provided in the first side panel **16**. The first severance line **51***a* extends from the first access panel fold line **29** (when present) into the second corner panel **18** to the fold line **19** between second corner panel **18** and the top panel **20**. A second severance line **51***b* provided in the top panel **20** is continuously arranged with the first severance line **51***a*. The second severance line **51***b* may be divergently arranged with respect to the first severance line **51***a*. The second severance line **51***b* extends from the point of intersection between the first severance line **51***a* and the fold line **19** to the first end edge E**1** of the top panel **20**. The second severance line **51***b* may extend from the point of intersection between the first severance line **51***a* and the fold line **19** to an innermost end of the fold line **71** of the flap **70** of the first one of the first article engagement structures T**1**. In this way the flap **70** of the first one of the first article engagement structures T**1** is coupled to the first access panel D**1** and is at least partially removable or detachable.

[0140] The first access panel D**1** may be defined in part by a first partial depth cut **50***a*. The first partial depth cut **50***a* is arranged in parallel to the first severance line **51***a* and extends from the first access panel fold line **29** (when present) into the second corner panel **18** to the fold line **19** between second corner panel **18** and the top panel **20**. The first partial depth cut **50***a* is disposed on a first side of the first severance line **51***a* and may be closer to the first end of the first side panel **16** than the first severance line **51***a*. The first access panel D**1** may be defined in part by a second partial depth cut **50***b*. The second partial depth cut **50***b* is arranged in parallel to the second severance line **51***b* and may extend substantially from the point of intersection between the first severance line **51***a* and the fold line **19** to an innermost end of the fold line **71** of the flap **70** of the first one of the first article engagement structures T**1**. The second partial depth cut **50***b* is disposed on a second side of the second severance line **51***b* and may be closer to the second end of the top panel **20** than the second severance line **51***b*. In this way the first and second partial depth cuts **50***a*, **50***b* are disposed on opposing sides of the severable line comprising the first and second severance lines **51***a*, **51***b*.

[0141] A second access panel D**2** (also referred to herein as an end access panel) is arranged to disposed at a first end of the carton **90** on a second side thereof and is defined by a first severance line **51***a* provided in the second side panel **24**. The first severance line **51***a* extends from the second access panel fold line **31** (when present) into the third corner panel **22** to the fold line **21** between third corner panel **22** and the top panel **20**. A second severance line **51***b* provided in the top panel **20** is continuously arranged with the first severance line **51***a*. The second severance line **51***b* may be divergently arranged with respect to the first severance line **51***a*. The second severance line **51***b* extends from the point of intersection between the first severance line **51***a* and the fold line **21** to the first end edge E**1** of the top panel **20**. The second severance line **51***b* may extend from the point of

intersection between the first severance line **51***a* and the fold line **21** to an innermost end of the fold line **71** of the flap **70** of the second one of the first article engagement structures T**2**. In this way the flap **70** of the second one of the first article engagement structures T**2** is coupled to the second access panel D**2** and is at least partially removable or detachable.

[0142] The second access panel D**2** may be defined in part by a first partial depth cut **50***a*. The first partial depth cut **50***a* is arranged in parallel to the first severance line **51***a* and extends from the second access panel fold line **31** (when present) into the third corner panel **22** to the fold line **21** between third corner panel **22** and the top panel **20**. The first partial depth cut **50***a* is disposed on a first side of the first severance line **51***a* and may be closer to the first end of the second side panel **24** than the first severance line **51***a*. The second access panel D**2** may be defined in part by a second partial depth cut **50***b*. The second partial depth cut **50***b* is arranged in parallel to the second severance line **51***b* and may extend substantially from the point of intersection between the first severance line **51***a* and the fold line **21** to an innermost end of the fold line **71** of the flap **70** of the second one of the first article engagement structures T**2**. The second partial depth cut **50***b* is disposed on a second side of the second severance line **51***b* and may be closer to the second end of the top panel **20** than the second severance line **51***b*. In this way the first and second partial depth cuts **50***a*, **50***b* are disposed on opposing sides of the severable line comprising the first and second severance lines **51***a*, **51***b*.

[0143] A third access panel D**3** (also referred to herein as an end access panel) is arranged to disposed at a second end of the carton **90** on a first side thereof and is defined by a third severance line **53***a* provided in the first side panel **16**. The third severance line **53***a* extends from the first access panel fold line **29** (when present) into the second corner panel **18** to the fold line **19** between second corner panel **18** and the top panel **20**. A fourth severance line **53***b* provided in the top panel **20** is continuously arranged with the third severance line **53***a*. The fourth severance line **53***b* may be divergently arranged with respect to the third severance line **53***a*. The fourth severance line **53***b* extends from the point of intersection between the third severance line **53***a* and the fold line **19** to the second end edge E**2** of the top panel **20**. The fourth severance line **53***b* may extend from the point of intersection between the third severance line **53***a* and the fold line **19** to an innermost end of the fold line **71** of the flap **70** of the third one of the first article engagement structures T**3**. In this way the flap **70** of the third one of the first article engagement structures T**3** is coupled to the third access panel D**3** and is at least partially removable or detachable.

[0144] The third access panel D**3** may be defined in part by a third partial depth cut **52***a*. The third partial depth cut **52***a* is arranged in parallel to the third severance line **53***a* and extends from the first access panel fold line **29** (when present) into the second corner panel **18** to the fold line **19** between second corner panel **18** and the top panel **20**. The third partial depth cut **52***a* is disposed on a first side of the third severance line **53***a* and may be closer to the second end of the first side panel **16** than the third severance line **53***a*. The third access panel D**3** may be defined in part by a fourth partial depth cut **52***b*. The fourth partial depth cut **52***b* is arranged in parallel to the fourth severance line **53***b* and may extend substantially from the point of intersection between the third severance line **53***a* and the fold line **19** to an innermost end of the fold line **71** of the flap **70** of the third one of the first article engagement structures T**3**. The fourth partial depth cut **52***b* is disposed on a second side of the fourth severance line **53***b* and may be closer to the first end of the top panel **20** than the fourth severance line **53***b*. In this way the third and fourth partial depth cuts **52***a*, **52***b* are disposed on opposing sides of the severable line comprising the third and fourth severance lines **53***a*, **53***b*.

[0145] A fourth access panel D**4** (also referred to herein as an end access panel) is arranged to disposed at a second end of the carton **90** on a second side thereof and is defined by a third severance line **53***a* provided in the second side panel **24**. The third severance line **53***a* extends from the second access panel fold line **31** (when present) into the third corner panel **22** to the fold line **21** between third corner panel **22** and the top panel **20**. A fourth severance line **53***b* provided in the top panel **20** is continuously arranged with the third severance line **53***a*. The fourth severance line **53***b* may be divergently arranged with respect to the third severance line **53***a*. The fourth severance line **53***b* extends from the point of intersection between the third severance line **53***a* and the fold line **21** to the second end edge E**2** of the top panel **20**. The fourth severance line **53***b* may extend from the point of intersection between the third severance line **53***a* and the fold line **21** to an innermost end of the fold line **71** of the flap **70** of the fourth one of the first article engagement structures T**4**. In this way the flap **70** of the fourth one of the first article engagement structures T**4** is coupled to the fourth access panel D**4** and is at least partially removable or detachable.

[0146] The fourth access panel D**4** may be defined in part by a third partial depth cut **52***a*. The third partial depth cut **52***a* is arranged in parallel to the third severance line **53***a* and extends from the second access panel fold line **31** (when present) into the third corner panel **22** to the fold line **21** between third corner panel **22** and the top panel **20**. The third partial depth cut **52***a* is disposed on a first side of the third severance line **53***a* and may be closer to the second end of the second side panel **24** than the third severance line **53***a*. The fourth access panel D**4** may be defined in part by a fourth partial depth cut **52***b*. The fourth partial depth cut **52***b* is arranged in parallel to the fourth severance line **53***b* and may extend substantially from the point of intersection between the third severance line **53***a* and the fold line **21** to an innermost end of the fold line **71** of the flap **70** of the fourth one of the first article engagement structures T**4**. The fourth partial depth cut **52***b* is disposed on a second side of the fourth severance line **53***b* and may be closer to the first end of the top panel **20** than the fourth severance line **53***b*. In this way the third and fourth partial depth cuts **52***a*, **52***b* are disposed on opposing sides of the severable line comprising the third and fourth severance lines **53***a*, **53***b*.

[0147] The blank **10** may comprise a fifth access panel D**5** (also referred to herein as an intermediate access panel) is arranged to disposed at intermediate the opposed ends of the carton **90** on a first side thereof. The fifth access panel D**5** may be disposed medially between the opposed ends of the carton **90**.

[0148] The fifth access panel D**5** is defined in part by the first severance line **51***a* provided in the first side panel **16**. The fifth access panel D**5** is defined in part by the third severance line **53***a* provided in the first side panel **16**.

[0149] The first severance line **51***a* extends from the first access panel fold line **29** (when present) into the second

corner panel **18** to the fold line **19** between second corner panel **18** and the top panel **20**.

[0150] The third severance line **53***a* extends from the first access panel fold line **29** (when present) into the second corner panel **18** to the fold line **19** between second corner panel **18** and the top panel **20**.

[0151] A fifth severance line **51***c* provided in the top panel **20** is continuously arranged with the first severance line **51***a*. The fifth severance line **51***c* may be divergently arranged with respect to the first severance line **51***a*. The fifth severance line **51***c* may be divergently arranged with respect to the second severance line **51***b*. The fifth severance line **51***c* extends from the point of intersection between the first severance line **51***a* and the fold line **19** to a first end of the fold line **81** of the flap **80** of the first one of the second article engagement structures T**5**.

[0152] A sixth severance line **53***c* provided in the top panel **20** is continuously arranged with the third severance line **53***a*. The sixth severance line **53***c* may be divergently arranged with respect to the third severance line **53***a*. The sixth severance line **53***c* may be divergently arranged with respect to the fourth severance line **53***b*. The sixth severance line **53***c* extends from the point of intersection between the third severance line **53***a* and the fold line **19** to a second end of the fold line **81** of the flap **80** of the first one of the second article engagement structures T**5**.

[0153] In this way the flap **80** of the first one of the second article engagement structures T**5** is coupled to the fifth access panel D**5** and is at least partially removable or detachable therewith.

[0154] The flap **80** of the first one of the second article engagement structures T**5** or the opening created upon folding of the flap **80** may serve as a tear initiation device facilitating deployment of the fifth access panel D**5**. A user may readily engage the hinged edge of the flap **80** defined by the fold line **81**. The hinged edge of the flap **80** may be disposed above a recess in the upper end of the article B with which the flap **80** is in engagement.

[0155] The fifth access panel D**5** may be defined in part by the first partial depth cut **50***a*. The fifth access panel D**5** may be defined in part by the third partial depth cut **52***a*.

[0156] The fifth access panel D**5** may be defined in part by a fifth partial depth cut **50***c*. The fifth partial depth cut **50***c* is arranged in parallel to the fifth severance line **51***c* and may extend substantially from the point of intersection between the first severance line **51***a* and the fold line **19** to a first end of the fold line **81** of the flap **80** of the first one of the second article engagement structures T**5**.

[0157] The fifth access panel D**5** may be defined in part by a sixth partial depth cut **52***c*. The sixth partial depth cut **52***c* is arranged in parallel to the sixth severance line **53***c* and may extend substantially from the point of intersection between the third severance line **53***a* and the fold line **19** to a second end of the fold line **81** of the flap **80** of the first one of the second article engagement structures T**5**.

[0158] The fifth partial depth cut **50***c* is disposed on a first side of the fifth severance line **51***c* and may be closer to the first end of the top panel **20** than the fifth severance line **51***c*. In this way the first and fifth partial depth cuts **50***a*, **50***c* are disposed the same side of a severable line comprising the first and fifth severance lines **51***a*, **51***c*.

[0159] The second and fifth partial depth cuts **50***b*, **50***c* may intersect proximate the fold line **19**. The second and fifth partial depth cuts **50***b*, **50***c* may define a "V" shape. The second and fifth partial depth cuts **50***b*, **50***c* may be divergently arranged with respect each other.

[0160] The sixth partial depth cut **52***c* is disposed on a first side of the fifth severance line **51***c* and may be closer to the second end of the top panel **20** than the fifth severance line **51***c*. In this way the third and sixth partial depth cuts **52***a*, **52***c* are disposed the same side of a severable line comprising the third and sixth severance lines **53***a*, **53***c*.

[0161] The fourth and sixth partial depth cuts **52***b*, **52***c* may intersect proximate the fold line **19**. The fourth and sixth partial depth cuts **52***b*, **52***c* may define a "V" shape. The fourth and sixth partial depth cuts **52***b*, **52***c* may be divergently arranged with respect each other.

[0162] The blank **10** may comprise a sixth access panel D**6** (also referred to herein as an intermediate access panel) is arranged to disposed at intermediate the opposed ends of the carton **90** on a second side thereof. The sixth access panel D**6** may be disposed medially between the opposed ends of the carton **90**.

[0163] The sixth access panel D**6** is defined in part by the first severance line **51***a* provided in the second side panel **24**. The sixth access panel D**6** is defined in part by the third severance line **53***a* provided in the second side panel **24**.

[0164] The first severance line **51***a* extends from the second access panel fold line **31** (when present) into the third corner panel **22** to the fold line **21** between third corner panel **22** and the top panel **20**.

[0165] The third severance line **53***a* extends from the second access panel fold line **31** (when present) into the third corner panel **22** to the fold line **21** between third corner panel **22** and the top panel **20**.

[0166] A fifth severance line **51***c* provided in the top panel **20** is continuously arranged with the first severance line **51***a*. The fifth severance line **51***c* may be divergently arranged with respect to the first severance line **51***a*. The fifth severance line **51***c* may be divergently arranged with respect to the second severance line **51***b*. The fifth severance line **51***c* extends from the point of intersection between the first severance line **51***a* and the fold line **21** to a first end of the fold line **81** of the flap **80** of the second one of the second article engagement structures T**6**.

[0167] A sixth severance line **53***c* provided in the top panel **20** is continuously arranged with the third severance line **53***a*. The sixth severance line **53***c* may be divergently arranged with respect to the third severance line **53***a*. The sixth severance line **53***c* may be divergently arranged with respect to the fourth severance line **53***b*. The sixth severance line **53***c* extends from the point of intersection between the third severance line **53***a* and the fold line **21** to a second end of the fold line **81** of the flap **80** of the second one of the second article engagement structures T**6**.

[0168] In this way the flap **80** of the second one of the second article engagement structures T**6** is coupled to the sixth access panel D**6** and is at least partially removable or detachable therewith.

[0169] The flap **80** of the second one of the second article engagement structures T**6** or the opening created upon folding of the flap **80** may serve as a tear initiation device facilitating deployment of the sixth access panel D**6**. A user may readily engage the hinged edge of the flap **80** defined by the fold line **81**. The hinged edge of the flap **80** may be disposed above a recess in the upper end of the article B with which the flap **80** is in engagement.

[0170] Similarly, the flaps **70** of the first article engagement structures T**1**, T**2**, T**3**, T**4** or the recesses R**7**, R**8** may serve as a tear initiation devices facilitating deployment of the access panels D**1**, D**1**, D**3**, D**4**. A user may readily engage the hinged edge of the flap **70** defined by the fold line **71**. The hinged edge of the flap **70** may be disposed above a recess in the upper end of the article B with which the flap **70** is in engagement.

[0171] The sixth access panel D**6** may be defined in part by the first partial depth cut **50***a*. The sixth access panel D**6** may be defined in part by the third partial depth cut **52***a*.

[0172] The sixth access panel D**6** may be defined in part by a fifth partial depth cut **50***c*. The fifth partial depth cut **50***c* is arranged in parallel to the fifth severance line **51***c* and may extend substantially from the point of intersection between the first severance line **51***a* and the fold line **21** to a first end of the fold line **81** of the flap **80** of the second one of the second article engagement structures T**6**.

[0173] The sixth access panel D**6** may be defined in part by a sixth partial depth cut **52***c*. The sixth partial depth cut **52***c* is arranged in parallel to the sixth severance line **53***c* and may extend substantially from the point of intersection between the third severance line **53***a* and the fold line **21** to a second end of the fold line **81** of the flap **80** of the second one of the second article engagement structures T**6**.

[0174] The fifth partial depth cut **50***c* is disposed on a first side of the fifth severance line **51***c* and may be closer to the first end of the top panel **20** than the fifth severance line **51***c*. In this way the first and fifth partial depth cuts **50***a*, **50***c* are disposed the same side of a severable line comprising the first and fifth severance lines **51***a*, **51***c*.

[0175] The second and fifth partial depth cuts **50***b*, **50***c* may intersect proximate the fold line **21**. The second and fifth partial depth cuts **50***b*, **50***c* may define a "V" shape. The second and fifth partial depth cuts **50***b*, **50***c* may be divergently arranged with respect each other.

[0176] The sixth partial depth cut **52***c* is disposed on a first side of the fifth severance line **51***c* and may be closer to the second end of the top panel **20** than the fifth severance line **51***c*. In this way the third and sixth partial depth cuts **52***a*, **52***c* are disposed the same side of a severable line comprising the third and sixth severance lines **53***a*, **53***c*.

[0177] The fourth and sixth partial depth cuts **52***b*, **52***c* may intersect proximate the fold line **21**. The fourth and sixth partial depth cuts **52***b*, **52***c* may define a "V" shape. The fourth and sixth partial depth cuts **52***b*, **52***c* may be divergently arranged with respect each other.

[0178] Turning to the construction of the carton **90** as illustrated in FIG. **2**, the carton **90** can be formed by a series of sequential folding operations in a straight line machine so that the carton **90** is not required to be rotated or inverted to complete its construction. The folding process is not limited to that described below and may be altered according to particular manufacturing requirements.

[0179] A group of articles B is assembled; in the embodiment illustrated in FIG. **2** six articles B are arranged in a 2×3 array. The top panel **20** of the blank **10** is disposed above the group of articles B to provide a top wall **20** of the carton **90**.

[0180] The flaps **70** of the first article engagement structures T**1**, T**2**, T**3**, T**4** are folded into face to face relationship with the top panel **20**. A first pair of flaps **70** at a first one of the first and second ends of the top panel **20** may be folded prior to folding a second pair of flaps **70** at the other one of the first and second ends of the top panel **20**.

[0181] The flaps **80** of the second article engagement structures T**5**, T**6** are folded into face to face relationship with the top panel **20**.

[0182] The flaps **70**, **80** may be folded by a part of a packaging machine such as but not limited to a passive device such as a static guide or an active device such as a folding wheel or by a combination of active and passive devices.

[0183] In one example the blank **10** is oriented transversely with respect to a conveyor, such that the flaps **70** of the first and second article engagement structures T**1**, T**2** lead (are downstream of) the flaps **70** of the third and fourth article engagement structures T**3**, T**4**.

[0184] The leading flaps **70** may be folded by a static guide which retards movement of the flaps **70** with respect to the blank **10** to effect folding of the flaps **70**.

[0185] The trailing (upstream) flaps **70** may be folded by an active device which accelerates movement of the flaps **70** with respect to the blank **10** to effect folding of the flaps **70**.

[0186] The flaps **80** may be folded by a combination of an active device and a static guide initial folding out of the plane of the top panel **20** may be executed by an active device, subsequent folding into face to face relationship with an inner surface of the top panel **20** may be completed by a static guide.

[0187] Once the flaps **70** of the first article engagement structures T**1**, T**2**, T**3**, T**4** and the flaps **80** of the second article engagement structures T**5**, T**6** are folded into face to face relationship with the top panel **20** the blank **10** is moved relative to the group of articles B so as to be disposed over upper ends of the articles B.

[0188] The flaps **70**, **80** may be received in a recess or void in the upper end of the articles B.

[0189] The flaps **70**, **80** may be arranged to abut a portion of the articles B providing an abutment face or be located in close proximity to the abutment face so as to inhibit movement of the articles B with respect to the article carrier **90**.

[0190] The second and third bevel panels **18**, **22** (when present) are folded, with respect to the top panel **20** about fold lines **19**, **21** respectively, about shoulders of the group of articles B.

[0191] The first and second side panels **16**, **24** are folded, with respect to the second and third bevel panels **18**, **22** to which they are hinged about fold lines **17**, **23** respectively, about opposing sides of the group of articles B so as to be disposed about the opposing sides of the group of articles B to form first and second side walls **16**, **24** of the carton **90**.

[0192] The first and fourth corner panels **14**, **26** (when present) are folded, with respect to the respective one of the first and second side panels **16**, **24** about fold lines **15**, **25** respectively, about the heels or lower portions of adjacently disposed articles B.

[0193] The heel tabs **40** may folded out of the plane of the first and fourth corner panels **14**, **26**, about fold lines **41**, prior to folding the first and fourth corner panels **14**, **26** the respective one of the first and second side panels **16**, **24**.

[0194] In some embodiments this is achieved by folding the first and second base panels **12**, **28** outwardly such that the heel tabs **40** extend inwardly below the article group to engage one of the articles B, the first and second base panels **12**, **28** are then folded in the opposite direction below the base of the article group.

[0195] The second base panel **28** is folded about the fold line **27** so as to be disposed adjacent to the base of the group

of articles B. The first base panel **12** is then folded about the fold line **13** so as to be in at least partial overlapping relationship with the second base panel **28**; in doing so each of the heel tabs **42** may be brought into engagement with a base of a respective article B.

[0196] The first and second base panels **12**, **28** are secured together. Each of the male tabs M is displaced inwardly out of the plane of the second base panel **28**. In so doing, each of the female tabs F is displaced inwardly creating a corresponding opening in the first base panel **12**. The male tabs M are received in respective ones of the openings so as to lock the first and second base panels **12**, **28** together. In this way a tubular structure is formed about the group of articles B.

[0197] The assembled carton **90** is shown in FIGS. **2** and **3**.

[0198] The flaps **70**, **80** engage a rim, chime or upstanding wall or other projection of the article B. When the articles B are cans the top wall of the can may be countersunk, disposed below the upper end of the side wall or end seam of the article B. The top wall of the can is connected to the side walls by a can chime or end seam.

[0199] The flaps **70**, **80** engage an internal surface or abutment face of the rim. The flaps **70**, **80** may be disposed in the recess or void provided by a countersunk top wall of the article B.

[0200] The flaps **70**, **80** remain in engagement with the articles B when the carrying handle H is in use, the flaps **70**. **80** may unfold, due to the inherent resilience or elasticity of the carrier substrate, upon upward displacement of the top panel **20** with respect to the group of articles B.

[0201] The flaps **70**, **80** are folded inwardly about a hinged connection **71**, **81** to the top panel **20** more than 90 degrees so as to be substantially in face to face relationship with the top panel **20**. In this way the flaps **70**, **80** are held in the folded condition by the respective article B which they engage. Due to the close proximity of the top panel **20** to the upper ends of the articles B there is insufficient space to allow the flap **70**, **80** to unfold.

[0202] Referring now to FIG. **4**, there is shown an additional embodiment of the present disclosure. In the second illustrated embodiment like numerals have, where possible, been used to denote like parts, albeit with the addition of the prefix "100" to indicate that these features belong to the second embodiment. The additional embodiment shares many common features with the first embodiment and therefore only the differences from the embodiment illustrated in FIGS. **1** to **3** will be described in detail.

[0203] FIG. **4** illustrates a blank **110** for forming an article carrier (not shown) according to another embodiment of the disclosure. The blank **110** comprises a plurality of main panels **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128** for forming a tubular structure. The plurality of main panels **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128** comprises: a first base panel **112**, an optional first corner or bevel panel **114**, a first side panel **116**, an optional second corner or bevel panel **118**, a top panel **120**, an optional third corner or bevel panel **122**, a second side panel **124**, an optional fourth corner or bevel panel **126** and a second base panel **128**. The plurality of panels **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128** may be arranged in a linear series hinged one to the next by corresponding fold lines **113**, **115**, **117**, **119**, **121**, **123**, **125**, **127**.

[0204] The blank **110** comprise upper article receiving apertures A**5** defined in at least the second or third corner panel **118**, **122**. The blank **110** comprises six upper article receiving apertures A**5**; three provided in the second corner panel **118** and three provided in the third corner panel **122**. Each of the upper article receiving apertures A**5** may be defined in the top panel **120** and may be defined in a respective one of the first and second side panel **116**, **124**.

[0205] The upper article receiving apertures A**5** are shown in a substantially triangular form, however in other embodiments other shapes may be employed.

[0206] It will be appreciated that the blank **10** of the embodiment of FIG. **1** may be modified to incorporate the upper receiving apertures A**5** shown in FIG. **4**.

[0207] The blank **110** comprises at least one article retention device or article engagement structure T**1**, T**2**, T**3**, T**4**, T**5**, T**6** for engaging an upper end of the articles B. The blank **110** illustrated in FIG. **4** comprises six article engagement structures T**1**, T**2**, T**3**, T**4**, T**5**, T**6**.

[0208] The blank **110** comprises four end article engagement structures T**1**, T**2**, T**3**, T**4** and two intermediate article engagement structures T**5**, T**6** disposed between pairs of end article engagement structures T**1**, T**2**, T**3**, T**4**.

[0209] Each of the end article engagement structures T**1**, T**2**, T**3**, T**4** comprises a flap **170** hingedly connected to the top panel **120** by a fold line **171**. First and second end article engagement structures T**1**, T**2** each comprise a flap **170** hingedly connected to the top panel **120** to a first end thereof. Third and fourth end article engagement structures T**3**, T**4** each comprise a flap **170** hingedly connected to the top panel **120** to a second end thereof.

[0210] Each of the intermediate article engagement structures T**5**, T**6** comprises a flap **180** hingedly connected to the top panel **120** by a fold line **181**.

[0211] The flaps **170** of the end article engagement structures T**1**, T**2**, T**3**, T**4** do not extend beyond the footprint of the top panel **120**. The flaps **170** of the end article engagement structures T**1**, T**2**, T**3**, T**4** are contained entirely within the footprint of the top panel **120**.

[0212] The flaps **170** do not extend beyond the ends of the top panel **120**.

[0213] The flaps **170** of the end article engagement structures T**1**, T**2**, T**3**, T**4** do not extend beyond edges of the blank **110** defined, at least in part, by the first and second side panels **116**, **124**.

[0214] Marginal portions of the top panel **120** hingedly connected to each of the first and second side panels **116**, **124**, or second and third bevel panels **118**, **122** when present, are equal in length to the first and second side panel **116**, **124** (or second and third bevel panels **118**, **122**) and to the bottom panels **112**, **128** or at least portions of the bottom panels **112**, **128**; said at least portions of the bottom panels **112**, **128** may be marginal portions each being hingedly to one of the first and second side panels **116**, **124**, or first and fourth bevel panels **114**, **126** when present.

[0215] A first recess R**7** is provided in the first end of the top panel **120**, the flaps **170** of first and second end article engagement structures T**1**, T**2** can be considered to be located in the first recess R**7**. The flaps **170** of the first and second end article engagement structures T**1**, T**2** define in part the first recess R**7** and when folded out of the plane of the top panel **120** increase the size of the first recess R**7**.

[0216] The first recess R**7** is arranged to accommodate the entirety of the flaps **170**.

[0217] The first recess R7 is defined only in the top panel **120** and does not extend into the first and second side panel **116**, **124** or second and third bevel panels **118**, **122**.

[0218] The flap **170** of the first end article engagement structure T**1** is hingedly connected to the top panel **120** by a hinged connection in the form of a fold line **171** which is oriented parallel with respect to the fold line **119** hinging the top panel **120** to the second corner panel **118**. The fold line **171** is spaced apart from the fold line **119**.

[0219] The flap **170** of the second end article engagement structure T**2** is hingedly connected to the top panel **120** by a hinged connection in the form of a fold line **171** which is oriented parallel with respect to the fold line **121** hinging the top panel **120** to the third corner panel **122**. The fold line **171** is spaced apart from the fold line **121**.

[0220] The flap **170** of the first end article engagement structure T**1** and the flap **170** of the second end article engagement structures T**2** fold away from each other, they are hinged in opposition to each other. The flap **170** of the first end article engagement structure T**1** folds towards the first side panel **116**. The flap **170** of the second end article engagement structure T**2** folds towards the second side panel **124**. A hinged edge of the flap **170** of the first end article engagement structure T**1** defined by the fold line **171** is disposed in closer proximity to the fold line **119** than a free edge of the flap **170**. A hinged edge of the flap **170** of the second end article engagement structure T**2** defined by the fold line **171** is disposed in closer proximity to the fold line **121** than a free edge of the flap **170**.

[0221] A second recess R**8** is provided in the second end of the top panel **120**, the flaps **170** of third and fourth end article engagement structures T**3**, T**4** can be considered to be located in the second recess R**8**. The flaps **170** of the third and fourth first article engagement structures T**3**, T**4** define in part the second recess R**8** and when folded out of the plane of the top panel **120** increase the size of the second recess R**8**.

[0222] The second recess R**8** is defined only in the top panel **120** and does not extend into the first and second side panel **116**, **124** or second and third bevel panels **118**, **122**.

[0223] The second recess R**8** is arranged to accommodate the entirety of the flaps **170**.

[0224] The flap **170** of the third end article engagement structure T**3** is hingedly connected to the top panel **120** by a hinged connection in the form of a fold line **171** which is oriented parallel with respect to the fold line **119** hinging the top panel **120** to the second corner panel **118**. The fold line **171** is spaced apart from the fold line **119**.

[0225] The flap **170** of the fourth end first article engagement structure T**4** is hingedly connected to the top panel **120** by a hinged connection in the form of a fold line **171** which is oriented parallel with respect to the fold line **121** hinging the top panel **120** to the third corner panel **122**. The fold line **171** is spaced apart the fold line **121**.

[0226] The flap **170** of the third end article engagement structure T**3** and the flap **170** of the fourth end first article engagement structure T**4** fold away from each other, they are hinged in opposition to each other. The flap **170** of the third end article engagement structure T**3** folds towards the first side panel **116**. The flap **170** of the fourth end first article engagement structure T**4** folds towards the second side panel **124**. A hinged edge of the flap **170** of the third end article engagement structure T**3** defined by the fold line **171** is disposed in closer proximity to the fold line **119** than a free edge of the flap **170**. A hinged edge of the flap **170** of the fourth end first article engagement structure T**4** defined by the fold line **171** is disposed in closer proximity to the fold line **121** than a free edge of the flap **170**.

[0227] In the blank form the flaps **170** define in part free end edges of the top panel **120**. The edge portions of the top panel **120** defined by the flaps **170** are arcuate or curvilinear in shape.

[0228] The flap **180** of a first intermediate article engagement structure T**5** is hingedly connected to the top panel **120** by a hinged connection in the form of the fold line **181** which is oriented parallel with respect to the fold line **119** hinging the top panel **120** to the second corner panel **118**. The fold line **181** is spaced apart from the fold line **119**.

[0229] The flap **180** of a second intermediate article engagement structure T**6** is hingedly connected to the top panel **120** by a hinged connection in the form of a fold line **181** which is oriented parallel with respect to the fold line **121** hinging the top panel **120** to the third corner panel **122**. The fold line **181** is spaced apart the fold line **121**.

[0230] The flap **180** of the first intermediate article engagement structure T**5** and the flap **180** of the second intermediate article engagement structure T**6** fold away from each other, they are hinged in opposition to each other. The flap **180** of the first intermediate article engagement structure T**5** folds towards the first side panel **116**. The flap **180** of the second intermediate article engagement structure T**6** folds towards the second side panel **124**. A hinged edge of the flap **180** of the first intermediate article engagement structure T**5** defined by the fold line **181** is disposed in closer proximity to the fold line **119** than a free edge of the flap **180**. A hinged edge of the flap **180** of the second intermediate article engagement structure T**6** defined by the fold line **181** is disposed in closer proximity to the fold line **121** than a free edge of the flap **180**.

[0231] The fold lines **171**, **181** are oriented substantially perpendicular to open ends of the tubular structure formed by the plurality of panels **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128**.

[0232] The flap **170**, **180** of each of the article engagement structures T**1**, T**2**, T**3**, T**4**, T**5**, T**6** is defined in part by a cut and/or by a cutline which separates that flap **170**, **180** from the top panel **120**.

[0233] The flap **170**, **180** of each of the article engagement structures T**1**, T**2**, T**3**, T**4**, T**5**, T**6** comprises a hinged edge defined by the fold line **171**, **181** and free edge defined by the cut or cutline. The free edge extends from a first end of the hinged edge to a second end of the hinged edge. The free edge is arcuate or curved across its entire extent.

[0234] It will be appreciated that features of the embodiment of FIG. **1** may be incorporated in the embodiment of FIG. **4**, for example but not limited to the blank **110** may be modified to include the dispenser access panels D**1**, D**2**, D**3**, D**4**, D**5**, D**6**, handle apertures A**4** or the wing tabs **70***b*, **80***b* of the embodiment of FIG. **1**.

[0235] The present disclosure provides an article carrier **90** for packaging at least one article B each having a recess. The article carrier **90** comprises a plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28** forming a tubular structure for surrounding at least one article B and an article retention device T**1**, T**2**, T**3**, T**4**, T**5**, T**6** for engaging a recess of one of said at least one article B to prevent or inhibit dislodgement or unintentional egress of the article B from at least one of opposite open ends of the tubular structure. The article

retention device T1, T2, T3, T4, T5, T6 comprises a flap **70**, **80** hingedly connected to one of the plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**, said one of the plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28** may be a top panel **20**. The article carrier **90** further comprises a dispenser feature having an access panel D1, D2, D3, D4, D5, D6. The flap **70**, **80** is hingedly connected to the access panel D1, D2, D3, D4, D5, D6 so as to provide a tear initiation device for the dispenser.

[0236] The access panel D1, D2, D3, D4 is defined at an end of the article carrier **90**. The access panel D1, D2, D3, D4 is defined in part by a free end edge of the article carrier **90** and in part by a severable line extending from the flap **70**, **80**.

[0237] The access panel D5, D6 is defined in an intermediate portion of the article carrier **90**. The access panel D5, D6 is defined at least in part by a pair of severable lines extending from the flap **70**, **80**. The pair of severable lines are spaced apart from each end of the article carrier **90**.

[0238] The present disclosure also provides an article carrier for packaging at least one article B each having a recess. The article carrier comprises a plurality of panels **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128** forming a tubular structure for surrounding at least one article B and an article retention device T1, T2, T3, T4, T5, T6 for engaging a recess of one of said at least one article B to prevent or inhibit dislodgement or unintentional egress of the article B from at least one of opposite open ends of the tubular structure. The article retention device T1, T2, T3, T4, T5, T6 comprises a flap **170**, **180** hingedly connected by a hinged connection to one of the plurality of panels **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128**, said one of the plurality of panels **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **1288** may be a top panel **120**. The flap **170**, **180** comprises a hinged edge defined by the hinged connection and a free edge, the free edge extending from a first end of the hinged connection to a second end of the hinged connection, the free edge being arcuate or curved across or along its entire extent.

[0239] The hinged edge of the flap **70**, **80**; **170**, **180** is disposed closer to one of a pair of opposed side walls than the free edge in an unfolded condition. The flap **70**, **80**; **170**, **180** in an operative condition folded reverse folded into face to face relationship with an inner surface of the panel to which it is hinged. In the operative position the free edge of the flap **70**, **80**; **170**, **180** is disposed closer to one of a pair of opposed side walls than the hinged edge. The hinged connection **71**, **81**, **171**, **181** is oriented non-parallel to an open end of the tubular structure. The hinged connection **71**, **81**, **171**, **181** may be obliquely oriented to an open end of the tubular structure. The hinged connection **71**, **81**, **171**, **181** is perpendicularly oriented with respect to an open end of the tubular structure.

[0240] The present disclosure also provides an article carrier **90** for packaging at least two articles B each having a recess. The article carrier **90** comprises a plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**; **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128** forming a tubular structure for surrounding the at least two articles B and a pair of article retention devices T5, T6 each comprising a flap **80**, **180** for engaging a recess in of a respective one of said at least two articles B to prevent or inhibit movement of the articles B within the tubular structure. Each flap **80**; **180** is hingedly connected by a hinged connection to one of the plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**; **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128** in opposition to each other, said one of the plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**; **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128** may be a top panel **20**; **120**. The article carrier **90** comprises a pair of handle openings defined in said one of the plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**; **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128**. Each handle opening may be defined at least in part by a tab **62**. The tabs **62** may be hingedly connected in opposition to each other. The tabs **62** and the flaps **80** defined a handle H said one of the plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**; **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128**. The handle H is coupled or connected to the top panel **20**; **120** by a plurality of arms, the plurality of arms may comprise four arms. Each arm is defined by a region of the top panel **20**; **120** disposed between one of the tabs **62** and one of the flaps **80**.

[0241] Endmost article retention devices T1, T2, T3, T4 may be located in a recess defined in, or struck from, an end of one of the plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**; **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128**. In this way the article retention device T1, T2, T3, T4 does not increase the footprint of the top panel **20**; **120** or blank **10**; **110**.

[0242] The top panel **20**; **120** comprises at least one recessed end edge to which each endmost article retention device T1, T2, T3, T4 is hingedly connected.

[0243] In some embodiments the flap **70**; **170** partially defines the at least one recessed end edge of the top panel **20**; **120**. That is to say the flap **70**; **170** does not fill or complete the recessed end edge in an unfolded condition.

[0244] In some embodiments the article carrier **90** comprises a pair of article retention devices T1, T2, T3, T4 at each end of the one of the plurality of panels **12**, **14**, **16**, **18**, **20**, **22**, **24**, **26**, **28**; **112**, **114**, **116**, **118**, **120**, **122**, **124**, **126**, **128** or top panel **20**; **120**. The pair of article retention devices T1, T2, T3, T4 are spaced apart from each other by a recess R7, R8 struck from or defined in an end edge of the top panel **20**; **120**.

[0245] The pair of article retention device T1, T2, T3, T4 may be hingedly connected to the top panel **20** by a respective fold line **71**, said fold lines **71** being divergently arranged with respect to each other.

[0246] The flap **70**; **170** is folded inwardly about a hinged connection to the top panel **20**; **120** more than 90 degrees so as to be substantially in face to face relationship with the panel to which it is hinged.

[0247] The article retention device T1, T2, T3, T4 may comprises a second fold line **73** defined in the flap **70** and forming a keel for increasing the security of the article B within the article carrier **90**.

[0248] The second fold line **73** may define in part a wing tab **70***b*, the wing tab **70***b* coupled to the top panel **20** only through its hinged connection to the flap **70**.

[0249] The second fold line **73** may be arranged to converge at an end of the first fold line **71** to form a vertex. A cutaway **75** in the form of a cut line or severance line may separate the wing tab **70***b* from the article carrier **90**. The cut line intersects with the vertex between the first and second fold lines **71**, **73**. It will be appreciated that in other embodiments the cutaway **75** may be a slot or slit or other recess spacing the wing tab **70***b* from the top panel **20** of article carrier **90**.

[0250] The article carrier **90** may be of the wrap-around type, comprising a composite wall formed from two panels secured together. The composite wall may be a bottom wall of the tubular structure.

[0251] 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. The illustrated embodiments show cartons or blanks for forming an article carrier of the wraparound style; in other embodiments, the article carrier may take an alternative format or styles and may employ one or more of the features of the present disclosure.

[0252] It will be recognised 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.

[0253] 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.

[0254] 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.

[0255] 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, 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.

[0256] 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.

1. An article carrier for packaging at least two articles each having a recess, the article carrier comprising a plurality of panels forming a tubular structure for surrounding the at least two article and a pair of article retention devices each comprising a flap for engaging a recess of a respective one of said at least two articles to inhibit movement of the articles within the tubular structure, wherein the flaps are hingedly connected by a respective hinged connection to one of the plurality of panels in opposition to each other, the article carrier comprises a pair of handle openings defined in said one of the plurality of panels, the handle openings and the flaps define a handle in said one of the plurality of panels, the handle is coupled or connected to said one of the plurality of panels by four arms, each arm is defined by a region of said one of the plurality of panels disposed between one of the handle openings and one of the flaps.

2. An article carrier according to claim **1** wherein the tubular structure is at least partially open at each end and a tubular axis is defined between said ends and wherein the hinged connection between the flaps and the one of the plurality of panels is parallel to the tubular axis.

3. An article carrier according to claim **1** wherein the tubular structure is at least partially open at each end and a tubular axis is defined between said ends and wherein the hinged connection between the flaps and the one of the plurality of panels is oblique to the tubular axis.

4. An article carrier according to claim **1** wherein said one of the plurality of panels is a top panel.

5. An article carrier according to claim **1** wherein the flaps are hingedly connected to said one of the plurality of panels by a hinged connection in the form of a first fold line.

6. An article carrier according to claim **5** wherein the plurality of panels include a pair of opposed side walls and the flaps fold towards a respective one of the opposed side walls.

7. An article carrier for packaging one or more articles each having a recess, the article carrier comprising a plurality of panels forming a tubular structure for surrounding the one or more articles and an article retention device for engaging a recess of one of the one or more articles to inhibit movement of said article within the tubular structure, wherein the article retention device comprises a flap hingedly connected to one of the plurality of panels, the article carrier further comprises a dispenser feature having an access panel, and wherein the flap is hingedly connected to the access panel so as to provide a tear initiation device for the dispenser.

8. An article carrier according to claim **7** wherein the access panel is defined at an end of the article carrier, the access panel is defined in part by a free end edge of the article carrier and in part by a severable line extending from the flap.

9. An article carrier according to claim 7 wherein the access panel is defined in an intermediate portion of the article carrier, the access panel is defined at least in part by a pair of severable lines extending from the flap, the pair of severable lines are spaced apart from each end of the article carrier.

10. An article carrier for packaging one or more articles each having a recess, the article carrier comprising a plurality of panels forming a tubular structure for surrounding the one or more articles and an article retention device for engaging a recess of one of the one or more articles to inhibit movement of said article within the tubular structure, the article retention device comprising a flap hingedly connected by a hinged connection to one of the plurality of panels, the flap comprising a hinged edge defined by the hinged connection and a free edge, wherein the free edge extends from a first end of the hinged connection to a second end of the hinged connection, and wherein the free edge is arcuate or curved across or along its entire extent.

11. An article carrier according to claim 10 wherein the hinged edge of the flap is disposed closer to one of a pair of opposed side walls than the free edge in an unfolded condition.

12. An article carrier according to claim 10 wherein the flap in an operative condition is reverse folded into face to face relationship with an inner surface of the panel to which it is hinged, in the operative position the free edge of the flap is disposed closer to one of a pair of opposed side walls than the hinged edge.

13. An article carrier according to claim 10 wherein the hinged connection is oriented non-parallel to an open end of the tubular structure.

14. An article carrier according to claim 10 wherein the hinged connection is obliquely oriented to an open end of the tubular structure.

15. An article carrier according to claim 10 wherein the hinged connection is perpendicularly oriented with respect to an open end of the tubular structure.

16. An article carrier according to claim 10 wherein the article retention device is located in a recess defined in an end of said one of the plurality of panels.

17. An article carrier according to claim 16 wherein the top panel comprises at least one recessed end edge to which article retention device is hingedly connected.

18. An article carrier according to claim 17 wherein the flap partially defines the at least one recessed end edge of the top panel in an unfolded condition.

19. An article carrier according to claim 16 wherein the article carrier comprises a pair of article retention devices at an end of said one of the plurality of panels, and wherein the pair of article retention devices are spaced apart from each other by a recess struck from or defined in an end edge of the top panel.

20. An article carrier according to claim 19 wherein the pair of article retention devices are hingedly connected to the top panel by a respective fold line, said fold lines being divergently arranged with respect to each other.

21. An article carrier according to claim 10 wherein the flap is folded inwardly about a hinged connection to said one of the plurality of panels more than 90 degrees so as to be substantially in face to face relationship with the panel to which it is hinged.

22. An article carrier according to claim 10 wherein the article retention device comprises a fold line defined in the flap and forming a keel for increasing the security of the article within the article carrier.

23. An article carrier according to claim 22 wherein the fold line defines in part a wing tab, the wing tab coupled to the said one of the plurality of panels only through its hinged connection to the flap.

24. An article carrier according to claim 22 wherein the fold line is arranged to converge at an end of the hinged connection to form a vertex, and wherein a cutaway separates the wing tab from the said one of the plurality of panels, the cutaway intersects with the vertex between the hinged connection and fold line.

25. An article carrier according to claim 10 wherein the article carrier is of the wrap-around type, comprising a composite wall formed from two panels secured together.

26. An article carrier according to claim 25 wherein the composite wall is a bottom wall of the tubular structure.

27. An article carrier according to claim 10 wherein the flap of the article retention device is contained entirely within the footprint of said one of the plurality of panels.

28. An article carrier according to claim 19 wherein the flaps of the pair of article retention devices are contained entirely within the footprint of the top panel.

29. A blank for forming an article carrier, the blank comprising a plurality of panels for forming a tubular structure for surrounding at least two articles each having a recess, the blank comprising a pair of article retention devices each comprising a flap for engaging a recess of a respective one of said at least two articles to inhibit movement of the articles within the tubular structure, wherein the flaps are hingedly connected by a respective hinged connection to one of the plurality of panels in opposition to each other, the blank comprising a pair of handle openings defined in said one of the plurality of panels, the handle openings and the flaps define a handle in said one of the plurality of panels, the handle is coupled or connected to said one of the plurality of panels by four arms, each arm is defined by a region of said one of the plurality of panels disposed between one of the handle openings and one of the flaps.

30. A blank according to claim 29 wherein in a setup condition the tubular structure is at least partially open at each end and a tubular axis is defined between said ends and wherein the hinged connection between the flaps and the one of the plurality of panels is parallel to the tubular axis.

31. A blank according to claim 29 wherein in a setup condition the tubular structure is at least partially open at each end and a tubular axis is defined between said ends and wherein the hinged connection between the flaps and the one of the plurality of panels is oblique to the tubular axis.

32. A blank according to claim 29 wherein the flaps are hingedly connected to said one of the plurality of panels by a hinged connection in the form of a first fold line.

33. A blank according to claim 32 wherein the plurality of panels include a pair of opposed side walls hingedly connected to a top panel along hinged edges thereof and the flaps fold towards a respective one of the hinged edges.

34. A blank for forming an article carrier, the blank comprising a plurality of panels forming a tubular structure for surrounding one or more articles having a recess and an article retention device for engaging the recess of one of the one or more articles to inhibit movement of said article within the tubular structure, wherein the article retention device comprises a flap hingedly connected to one of the

plurality of panels, the blank further comprises a dispenser feature having an access panel, and wherein the flap is hingedly connected to the access panel so as to provide a tear initiation device for the dispenser.

35. A blank for forming an article carrier, the blank comprising a plurality of panels forming a tubular structure for surrounding the one or more articles having a recess and an article retention device for engaging the recess of one of the one or more articles to inhibit movement of said article within the tubular structure, the article retention device comprising a flap hingedly connected by a hinged connection to one of the plurality of panels, the flap comprising a hinged edge defined by the hinged connection and a free edge, wherein the free edge extends from a first end of the hinged connection to a second end of the hinged connection, and wherein the free edge is arcuate or curved across or along its entire extent.

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