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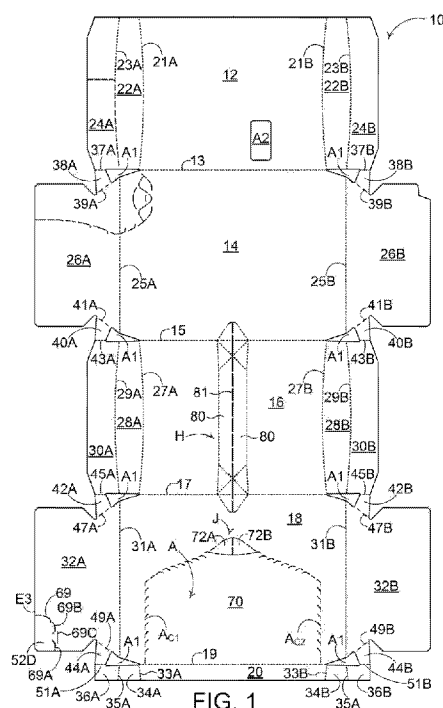
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(54) Title: CARTON AND CARTON BLANK



(57) Abstract: Aspects of the disclosure relate to a package, article carriers (90) for packaging one or more articles and a dispensing feature (D), and to blanks (10) for forming the same. The dispensing feature (D) comprises a dispenser panel (52) detachably connected to a carton wall (14), at least in part, along a severance line (63, 65). The severance line (63, 65) defines a tear initiation tab (54) joined to the dispenser panel (52). The dispensing feature (D) further comprises a pair of yieldable tabs (56, 58) disposed on the opposite sides of the tear initiation tab (54). The yieldable tabs (56, 58) are hingedly connected to the carton wall (14) along fold lines (61, 59) such that the yieldable tabs (56, 58), when folded, define a part of a dispensing opening, through which an article (B) exits the carton (90).

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CARTON AND CARTON BLANK

TECHNICAL FIELD

The present invention relates to a carton and blank for forming the same more specifically,
5 but not exclusively, to a carton comprising a dispenser for facilitating access to the contents of the carton.

BACKGROUND

In the field of packaging, it is often required to provide consumers with a package comprising
10 multiple primary product containers. Such multi-packs are desirable for shipping and distribution purposes and for the display of promotional information. For cost and environmental considerations, such cartons or carriers need to be formed from as little material as possible and cause as little wastage as possible in the materials from which they are formed. Another consideration is the strength of the packaging and its suitability for holding and transporting large
15 weights of articles.

It is desirable to provide a carton comprising a dispenser for facilitating access to the contents of the carton.

The present invention seeks to overcome or at least mitigate the problems of the prior art.

20 SUMMARY

According to a first aspect of the present disclosure there is provided a dispensing feature for a carton. The dispensing feature comprises a dispenser panel detachably connected to a carton wall, at least in part, along a severance line. The severance line defines a tear initiation tab joined to the dispenser panel. The dispensing feature further comprises a pair of yieldable tabs disposed on opposite sides of the tear initiation tab. The yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a part of a dispensing opening, through which an article exits the carton.

According to a second aspect of the present disclosure there is provided a dispensing feature for a carton. The dispensing feature comprises a dispenser panel detachably connected to a carton wall, at least in part, along a severance line. The severance line defines a tear initiation tab joined to the dispenser panel. The dispensing feature further comprises a pair of yieldable tabs disposed on opposite sides of the tear initiation tab. The yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a

dispensing opening in the carton wall and provide a flange along a perimeter of the dispensing opening for guiding exiting movement of an article.

Optionally, a portion of the fold line hinging each yieldable tab to the carton wall is continuously arranged with a portion of a severance line defining, at least in part, the dispenser panel.

Optionally, the dispenser panel comprises a panel portion defined in an end wall panel; the flange being arranged to fold in opposition to the end wall panel.

Optionally, the pair of yieldable tabs includes a first tab hingedly connected to the carton wall along a first fold line and a second tab hingedly connected to the carton wall along a second fold line, the second fold line is contiguously arranged with the first fold line.

Optionally, the dispenser panel extends a distance d_1 from an end edge of the carton wall, the article comprises a diameter d_A and the distance d_1 is less than the diameter d_A of the article B.

Optionally, the distance d_1 is greater than half of the diameter d_A of the article B.

According to a third aspect of the present disclosure there is provided a carton for packaging one or more articles. The carton comprising a plurality of panels defining an interior, and a dispensing feature comprising a dispenser panel detachably connected to a carton wall, at least in part, along a severance line. The severance line defines a tear initiation tab joined to the dispenser panel. The dispensing feature further comprises a pair of yieldable tabs disposed on opposite sides of the tear initiation tab. The yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a part of a dispensing opening, through which an article exits the carton.

According to a fourth aspect of the present disclosure there is provided a carton for packaging one or more articles. The carton comprising a plurality of panels defining an interior, and a dispensing feature comprising a dispenser panel detachably connected to a carton wall, at least in part, along a severance line. The severance line defines a tear initiation tab joined to the dispenser panel. The dispensing feature further comprises a pair of yieldable tabs disposed on opposite sides of the tear initiation tab. The yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a dispensing opening in the carton wall and provide a flange along a perimeter of the dispensing opening for guiding exiting movement of an article.

Optionally, a portion of the fold line hinging each yieldable tab to the carton wall is continuously arranged with a portion of a severance line defining, at least in part, the dispenser panel.

Optionally, the dispenser panel comprises a panel portion defined in an end wall panel; the flange being arranged to fold in opposition to the end wall panel.

Optionally, the pair of yieldable tabs includes a first tab hingedly connected to the carton wall along a first fold line and a second tab hingedly connected to the carton wall along a second fold line, the second fold line is contiguously arranged with the first fold line.

Optionally, the dispenser panel extends a distance d_1 from an end edge of the carton wall, the article comprises a diameter d_A and the distance d_1 is less than the diameter d_A of the article B.

Optionally, the distance d_1 is greater than half of the diameter d_A of the article B.

Optionally, the carton comprises a machine handling region disposed at a second distance d_2 from the end edge of the carton wall and wherein distance d_1 is less than the second distance d_2 .

Optionally, the second distance d_2 is less than the diameter d_A of the article B.

Optionally, the machine handling region is provided by an uninterrupted panel portion of the carton wall.

Optionally, the machine handling region is free from cutaways, severance lines, yieldable tabs or other interruptions.

According to a fifth aspect of the present disclosure there is provided a blank for forming a carton. The blank comprises a plurality of panels for forming a tubular structure defining an interior, and a dispensing feature comprising a dispenser panel detachably connected to a carton wall, at least in part, along a severance line. The severance line defines a tear initiation tab joined to the dispenser panel. The dispensing feature further comprises a pair of yieldable tabs disposed on opposite sides of the tear initiation tab. The yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a part of a dispensing opening, through which an article exits the carton.

According to a sixth aspect of the present disclosure there is provided a blank for forming a carton. The blank comprises a plurality of panels for forming a tubular structure defining an interior, and a dispensing feature comprising a dispenser panel detachably connected to a carton wall, at least in part, along a severance line. The severance line defines a tear initiation tab joined to the dispenser panel. The dispensing feature further comprises a pair of yieldable tabs disposed on opposite sides of the tear initiation tab. The yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a dispensing opening in the carton wall and provide a flange along a perimeter of the dispensing opening for guiding exiting movement of an article.

Further features and advantages of the present invention will be apparent from the specific embodiments illustrated in the drawings and discussed below.

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
5 claims and/or in the following description and drawings may be considered or taken independently or in any combination thereof.

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
10 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.

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
15 features, of an embodiment may be omitted from that embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

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

20 Figure 1 is a plan view from above of a blank for forming a carton according to an embodiment of the invention;

Figure 1B is an enlarged plan view from above of a portion of the blank of Figure 1;

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

Figure 3 is an alternative perspective view of a portion of the carton of Figure 2; and

25 Figures 4 to 6 are further perspective views of portions of the carton of Figure 2 showing a dispenser in operation.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

Detailed descriptions of specific embodiments of the package, blanks and cartons are
30 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. Indeed, it will be understood that the packages, blanks and cartons described herein may be embodied in various and alternative forms. The Figures are not necessarily to scale and some features may be exaggerated or

minimised to show details of particular components. Well-known components, materials or methods are not necessarily described in great detail in order to avoid obscuring the present disclosure. Any specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the invention.

Referring to Figures 1 and 1B there is shown a blank 10 for forming a carton 90 capable of accepting an input of primary products such as, but not limited to, bottles or cans, hereinafter referred to as articles B.

The blank 10 comprises a plurality of main panels 12, 14, 16, 18, 20, hinged one to the next in a linear series. A base panel 12 is hinged to a first side wall panel 14 by a hinged connection such as a fold line 13. A first side wall panel 14 is hinged to a top panel 16 by a hinged connection such as a fold line 15. A top panel 16 is hinged to second side wall panel 18 by a hinged connection in the form of a fold line 17. A second side wall panel 18 is hinged to a glue panel 20 by a hinged connection such as a fold line 19.

The plurality of main panels 12, 14, 16, 18, 20 of the blank 10 form walls of an open-ended tubular structure in a set-up condition. The tubular structure is at least partially closed by end closure structures. The tubular structure has a tubular axis defining a longitudinal direction of the carton 90.

Each of the ends of the tubular structure is at least partially closed by end closure panels which form end walls of the tubular structure. In the illustrated embodiment the ends of the tubular structure are fully closed by end closure panels 22A, 24A, 26A, 28A, 30A, 32A, 34A, 36A, 22B, 24B, 26B, 28B, 30B, 32B, 34B, 36B.

End closure panels 22A, 24A, 26A, 28A, 30A, 32A, 34A, 36A are configured to form a first end closure structure forming a first end wall to close, at least partially, a first end of the tubular structure and end closure panels 22B, 24B, 26B, 28B, 30B, 32B, 34B, 36B are configured to form a second end closure structure forming a second end wall to close, at least partially, a second end of the tubular structure.

The first end of the tubular structure is closed by a first end closure panel 22A, a second end closure panel 24A, a third end closure panel 26A, a fourth end closure panel 28A, a fifth end closure panel 30A, and a sixth end closure panel 32A. The first end closure panel 22A is hinged to a first end of the base panel 12 by a hinged connection such as a fold line 21A. The second end closure panel 24A is hinged to the first end closure panel 22A by a hinged connection such as a fold line 23A. The third end closure panel 26A is hinged to a first end of the first side wall panel 14 by a hinged connection such as a fold line 25A. The fourth end closure panel 28A is

hinged to a first end of the top panel 16 by a hinged connection such as a fold line 27A. The fifth end closure panel 30A is hinged to the fourth end closure panel 28A by a hinged connection such as a fold line 29A. The sixth end closure panel 32A is hinged to a first end of the second side wall panel 18 by a hinged connection such as a fold line 31A.

5 The second end of the tubular structure is closed by a seventh end closure panel 22B, an eighth end closure panel 24B, a ninth end closure panel 26B, a tenth end closure panel 28B, an eleventh end closure panel 30B, and a twelfth end closure panel 32B. The seventh end closure panel 22B is hinged to a first end of the base panel 12 by a hinged connection such as a fold line 21B. The eighth end closure panel 24B is hinged to the seventh end closure panel 22B by a
10 hinged connection such as a fold line 23B. The ninth end closure panel 26B is hinged to a first end of the first side wall panel 14 by a hinged connection such as a fold line 25B. The tenth end closure panel 28B is hinged to a first end of the top panel 16 by a hinged connection such as a fold line 27B. The eleventh end closure panel 30B is hinged to the tenth end closure panel 28B by a hinged connection such as a fold line 29B. The twelfth end closure panel 32B is hinged to a
15 first end of the second side wall panel 18 by a hinged connection such as a fold line 31B.

 The second end closure panel 24A and the eighth end closure panel 24B each form a minor lower end closure panel at opposing ends of the tubular structure. The fifth end closure panel 30A and the eleventh end closure panel 30B each form a minor upper end closure panel at opposing ends of the tubular structure.

20 The first end closure panel 22A and the seventh end closure panel 22B each form lower corner or bevel end closure panels at opposing ends of the tubular structure. The fourth end closure panel 28A and the tenth end closure panel 28B each form upper corner end closure panels at opposing ends of the tubular structure.

 The third end closure panel 26A and the sixth end closure panel 32A each form a major side
25 end closure panel at the first end of the tubular structure. The ninth end closure panel 26B and the twelfth end closure panel 32B each form a major side end closure panel at the second end of the tubular structure.

 The second end closure panel 24A is coupled to the third end closure panel 26A by a web panel 38A. The web panel 38A is hingedly connected to the second end closure panel 24A by a
30 hinged connection such as a fold line 37A. The web panel 38A is hingedly connected to the third end closure panel 26A by a hinged connection such as a fold line 39A.

 The third end closure panel 26A is coupled to the fifth end closure panel 30A by a web panel 40A. The web panel 40A is hingedly connected to the third end closure panel 26A by a hinged

connection such as a fold line 41A. The web panel 40A is hingedly connected to the fifth end closure panel 30A by a hinged connection such as a fold line 43A.

The fifth end closure panel 30A is coupled to the sixth end closure panel 32A by a web panel 42A. The web panel 42A is hingedly connected to the fifth end closure panel 30A by a hinged
5 connection such as a fold line 45A. The web panel 42A is hingedly connected to the sixth end closure panel 32A by a hinged connection such as a fold line 47A.

The sixth end closure panel 32A is coupled to a first end securing flap 36A by a web panel 44A. The web panel 44A is hingedly connected to the sixth end closure panel 32A by a hinged
10 connection such as a fold line 49A. The web panel 44A is hingedly connected to the first end securing flap 36A by a hinged connection such as a fold line 51A.

The first end securing flap 36A is coupled to the glue panel 20 by a first end corner securing flap 34A. The first end securing flap 36A is hingedly connected to the first end corner securing flap 34A by a hinged connection such as a fold line 35A. The first end corner securing flap 34A is
hingedly connected to the glue panel 20 by a hinged connection such as a fold line 33A.

15 The eighth end closure panel 24B is coupled to the ninth end closure panel 26B by a web panel 38B. The web panel 38B is hingedly connected to the eighth end closure panel 24B by a hinged connection such as a fold line 37B. The web panel 38B is hingedly connected to the ninth end closure panel 26B by a hinged connection such as a fold line 39B.

The ninth end closure panel 26B is coupled to the eleventh end closure panel 30B by a web
20 panel 40B. The web panel 40B is hingedly connected to the ninth end closure panel 26B by a hinged connection such as a fold line 41B. The web panel 40B is hingedly connected to the eleventh end closure panel 30B by a hinged connection such as a fold line 43B.

The eleventh end closure panel 30B is coupled to the twelfth end closure panel 32B by a web
25 panel 42B. The web panel 42B is hingedly connected to the eleventh end closure panel 30B by a hinged connection such as a fold line 45B. The web panel 42B is hingedly connected to the twelfth end closure panel 32B by a hinged connection such as a fold line 47B.

The twelfth end closure panel 32B is coupled to a second end securing flap 36B by a web
30 panel 44B. The web panel 44B is hingedly connected to the twelfth end closure panel 32B by a hinged connection such as a fold line 49B. The web panel 44B is hingedly connected to the second end securing flap 36B by a hinged connection such as a fold line 51B.

The second end securing flap 36B is coupled to the glue panel 20 by a second end corner securing flap 34B. The second end securing flap 36B is hingedly connected to the second end corner securing flap 34B by a hinged connection such as a fold line 35B. The second end corner

securing flap 34B is hingedly connected to the glue panel 20 by a hinged connection such as a fold line 33B.

The web panels 38A, 38B, 40A, 40B, 42A, 42B, 44A, 44B are spaced apart from respective ones of the main panels 12, 14, 16, 18, 20 by apertures A1, said apertures may be struck in part,
5 or defined in the first and second side panels 14, 18.

Optionally, the blank 10 comprises a carrying handle H defined at least in part in the top panel 16, the carrying handle H comprises a pair of elongate tabs 80 which are defined in part by a severance line 81. The severance line 81 extends transversely across the top wall panel 16 and into each of the first and second side wall panels 14, 18. A first elongate tab 80 is defined in part
10 by a first fold line, which is disposed in a spaced apart parallel relationship to the severance line 81. A second elongate tab 80 is defined in part by a second fold line which is disposed in a spaced apart parallel relationship to the severance line 81. The first and second fold lines are disposed on opposing sides of the severance line 81. A first arcuate cutline defines the first ends of each of the first and second elongate tabs 80. The first arcuate cutline extends between a first end of
15 the first fold line and a first end of the second fold line, across the severance line 81. A second arcuate cutline defines second ends of each of the first and second elongate tabs 80. The second arcuate cutline extends between a second end of the first fold line and a second end of the second fold line, across the severance line 81.

The handle structure H comprises a pair of fold or crease lines extending across the pair of
20 elongate tabs 80, the pair of fold lines are disposed in the top panel 16 adjacent the hinged connection 15 to the first side panel 14. The pair of fold lines are arranged in an "X" shape. The first end of the severance line 81 is disposed in the first side wall panel 14 and terminates in a "V" or "U" shaped cutline, wherein the "V" or "U" shaped cutline is bisected by the severance line 81.

The handle structure H comprises a second pair of fold or crease lines extending across the
25 pair of elongate tabs 80, the pair of fold lines are disposed in the top panel 16 adjacent the hinged connection 17 to the second side panel 18. The pair of fold lines are arranged in an "X" shape. The second end of the severance line 81 is disposed in the second side wall panel 18 and terminates in a "V" or "U" shaped cutline, wherein the "V" or "U" shaped cutline is bisected by the severance line 81.

30 In alternative embodiments, the handle structure H may be omitted or alternative handle structures may be employed.

Optionally, the blank 10 comprises an access device A. The access device A is defined or provided in at least the second side panel 18 and comprises an access flap 70 defined by severance lines A_{C1}, A_{C2}. The severance lines A_{C1}, A_{C2} comprise first portions extending from the

hinged connection 19 to the glue panel 20. The first portions extend generally perpendicularly from the hinged connection 19 to the glue panel 20, and are parallel to each other. Second portions of the severance lines A_{C1} , A_{C2} extend from the first portions and are arranged convergently with respect to each other. The second portions converge at a tear initiation feature J. The tear initiation feature J comprises a pair or tabs 72A, 72B defined in part by a weakened line portion having a lower tear resistance than the severance lines A_{C1} , A_{C2} . The pair or tabs 72A, 72B are hinged to the second side wall panel 18 and are separated from each other by a cut line or frangible line.

Optionally, the blank 10 comprises a cutaway A2 in the form of an aperture, the cutaway A2 is struck from, or defined in, the base panel 12 and may provide a window for viewing the carton contents or for ventilation.

The blank 10 comprises a dispenser D (see Figure 3) for facilitating access to the contents of the carton 90. The dispenser D comprises a removable or partially detachable corner portion 52/52B/52C/54/38A of the carton 90. The dispenser D comprises a plurality of severance lines 53, 55, 59, 61, 63, 69, best shown in Figure 1B. The plurality of severance lines 53, 55, 59, 61, 63, 69 define a continuous loop in a setup carton 90 and define a removeable or at least partially detachable gate or door also referred to herein as a dispenser panel.

The third end closure panel 26A comprises a first severance line 67 extending from a free end edge E2 of the third end closure panel 26A across the third end closure panel 26A to the fold line 25A. A second severance line 65 is defined in the first side panel 14 and extends from a distal end of the first severance line 67 to be contiguous therewith.

The first severance line 67 defines, at least in part, a door or gate in the end wall of the carton 90 which when opened provides access to the contents of the carton 90.

The gate comprises a part 52B of the third end closure panel 26A. The gate comprises a second part 52 provided by a portion of the first side wall panel 14. The second part 52 is defined, at least in part, by the second severance line 65 and by a third severance line 63 extending contiguously from the second severance line 65. The second part 52 is hingedly connected to the first part 52B by a portion of the fold line 25A hinging the third end closure panel 26A to the first side wall panel 14. The third severance line 63 may be generally "W" shaped. The third severance line 63 defines a finger tab 54 integral with the second part 52 of the gate. The finger tab 54 may be hingedly connected to the second part 52 of the gate and is defined in part by a hinged connection 57.

A severance line portion extends between the third severance line 63 and the aperture A1 separating the web panel 38A from the first side wall panel 14.

The gate comprises a portion 52C of the second end closure panel 24A. The portion 52C of the second end closure panel 24A is disposed in face contacting relationship with the part 52B of the third end closure panel 26A and is secured thereto in a setup carton 90.

5 The portion 52C of the second end closure panel 24A is defined, at least in part, by a fourth severance line 53 and a fifth severance line 55. The fifth severance line 55 extends from a free end edge E1 of the second end closure panel 24A to the hinged connection 23A between the second end closure panel 24A and the base panel 12. The fourth severance line 53 extends to the aperture A1 separating the web panel 38A from the first side wall panel 14. The fourth severance line 53 provides a portion of the hinged connection between the second end closure
10 panel 24A and the first end closure panel 22A. The fourth severance line 53 is coincident or contiguous with the fold line 23A defining the hinged connection between the second end closure panel 24A and the first end closure panel 22A. The fourth severance line 53 is contiguous with the fifth severance line 55.

In this way, the blank 10 comprises a removable or detachable portion comprising a portion
15 of the second end closure panel 24A, a portion of the third end closure panel 26A, a portion of the first side wall panel 14 and the web panel 38A. The web panel 38A couples the detachable portion of the second end closure panel 24A to the detachable portion of the third end closure panel 26A.

The gate comprises a section 52D of the sixth end closure panel 32A. The section 52D of the
20 sixth end closure panel 32A, or at least a portion thereof is in overlapping relationship with the part 52B of the third end closure panel 26A and is secured thereto in a setup carton 90.

The section 52D of the sixth end closure panel 32A is defined by a sixth severance line 69, the sixth severance line 69 extends from a free end edge E3 of the sixth end closure panel 32A to a free lower, or side, end edge of the sixth end closure panel 32A. The sixth severance line 69
25 defines a removable or detachable corner portion of the sixth end closure panel 32A. The sixth severance line 69 may be generally "L" shaped.

The sixth severance line 69 may comprise first and second "V" shaped cutlines 69A, 69B. A first "V" shaped cutline 69A extends from the free lower, or side, end edge of the sixth end closure panel 32A. The second "V" shaped cutline 69B is spaced apart from the first "V" shaped cutline
30 69A such that portions of each are arranged convergently with each other. The sixth severance line 69 may comprise a cutline 69C disposed in overlapping relationship with the convergent portions of the first and second "V" shaped cutlines 69A, 69B, albeit laterally spaced apart therefrom.

The dispenser D comprises at least one displaceable or foldable tab 56, 58 hingedly connected to the first side wall panel 14 by hinged connections 59, 61. The illustrated embodiment comprises a pair of displaceable or foldable tabs 56, 58. The third severance line 63 defines edges of the foldable tabs 56, 58 generally opposing their hinged connections 59, 61 to the first side wall panel 14.

The hinged connection 57, coupling the finger tab 54 to the second part 52, may extend between a first portion of third severance line 63 defining a first one of the pair of tabs 56, 58 and a second portion of third severance line 63 defining a second one of the pair of tabs 56, 58.

The tabs 56, 58 are yieldable and provide or define a flange 56/58 that partially surrounds a dispensing opening, see Figure 6. The flange 56/58 may be resiliently biased, due to the inherent resilience of the substrate material and/or shape of the hinged connection between the flange 56/58 and the first side wall panel 14. The flange 56/58 may guide or direct movement of the articles B when they exit the carton 90, and may encourage the articles B to move through the dispensing opening. The flange 56/58 may encourage a degree of rotation of the articles B as they are removed from the carton 90. The tabs 56, 58 may serve to retain the articles B within the carton 90 when the gate of the dispenser D is opened until they are displaced outwardly.

The tabs 56, 58 define a portion of the perimeter of the dispensing opening in the first side wall panel 14, said portion of the perimeter of the dispensing opening may be disposed furthest from the end edge of the first side wall panel 14. The end edge of the first side wall panel 14 is defined by the hinged connection 25A between the first side wall panel 14 and the third end closure panel 26A. The portion of the perimeter of the dispensing opening may be defined at least in part by hinged connection in the form of fold lines 59, 61.

A maximum distance d1 is defined between the end edge of the first side wall panel 14 and the perimeter of the dispensing opening.

A portion of the cut line 63 defines, at least in part, the finger tab 54, the finger tab 54 interrupts or spaces apart the tabs 56, 58. The finger tab 54 may define comprise a distal edge disposed at or proximate to the maximum distance d1 of the dispensing opening from the end edge of the first side wall panel 14.

The fold line 61 hinging the tab 56 to the first side wall panel 14 is contiguous or continuous with the second severance line 65, so as to define a smooth curve or transition therebetween.

The fold lines 61, 59 hinging the tabs 56, 58 to the first side wall panel 14 are shaped and dimension such that they define a portion of the dispensing opening capable of receiving a portion of the article B therein.

The fold line 61 hinging the tab 56 to the first side wall panel 14 is contiguous or continuous with the fold line 59 hinging the tab 58 to the first side wall panel 14. The fold line 61, 59 may be interrupted or separated by a portion of the severance line 63 defining the finger tab 54. The severance line 63 may be considered to be in touching contact with the fold line 61, 59. In the
5 illustrated embodiment, the fold lines 61, 59 are defined by or comprise cut lines, the cutlines may be non-linear or curvilinear.

The fold lines 61, 59 hinging the tabs 56, 58 to the first side wall panel 14 generally oppose the first end wall of the carton formed by the first end closure structure.

The carton 90 can be formed by a series of sequential folding operations in a straight-line
10 machine so that the carton 90 may not be 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. During loading and assembly of the carton 90, the carton 90 may be orientated such that one of the first and second side panels 14, 18 forms a loading surface. The bases of one or more articles B may be in sliding contact with the loading
15 surface when being inserted into the carton 90. The articles B may be substantially cylindrical in shape and have a cylindrical axis. The cylindrical axis is orientated perpendicularly to the first side panel 14 and may also be orientated substantially vertically.

The main panel 16 forms the top panel (top wall) 16 when the handle structure H is in use as a carrying handle by a user and this top wall 16 is optionally, disposed adjacent to the sides of
20 the articles. In this orientation the top wall 16 is not disposed substantially planar to the tops or bottoms of the articles held within the carton 90. In other words, the cylindrical axis of the articles is substantially parallel with the plane of the top wall 16 of the carton 90.

The main panel 12 forms the base panel 12 when the handle structure H is in use as a carrying handle by a user. The main panel 12 may also form the base panel 12 when the articles are being
25 dispensed from the carton 90 or when the carton 90 is at rest upon a surface such as a shelf. As such, it will be understood that descriptive terms "top", "base", and "side" do not necessarily limit the carton 90 to adopting a particular orientation but serve to distinguish those panels from one another. In other embodiments the cylindrical axis of the articles may be orientated differently with respect to the top wall 16 of the carton 90. For example, but not limited to, the cylindrical axis of
30 the articles be may orientated substantially perpendicularly to the plane of the top wall 16 of the carton 90.

Turning to the construction of the carton 90 as illustrated in Figure 2, the blank 10 is folded about the fold line 17 such that the second side panel 18 is disposed in overlying relationship with

the top panel 16 and such that the securing panel 20 is disposed in face contacting relationship with the first side panel 14.

Glue G or other adhesive treatment is applied to an outer surface of the securing panel 20, to the first and second end securing flaps 36A, 36B, and to the first and second end corner
5 securing flap 34A, 34B. Alternatively, glue G or other adhesive treatment may be applied to a corresponding edge portion of an inner surface of the base panel 12, to the first and seventh end closure panels 22A, 22B, and to the second and eighth end closure panels 24A, 24B.

The blank 10 is folded about the fold line 13 such that the base panel 12 is disposed in overlying relationship with the securing panel 20 and part of the first side panel 14. The base
10 panel 12 is thereby secured to the securing panel 20.

The first end securing flap 36A is secured to the second end closure panels 24A. The first end corner securing flap 34A is secured to the first end closure panel 22A. The second end securing flap 36B is secured to the eighth end closure panels 24B. The second end corner securing flap 34B is secured to the seventh end closure panel 22B.

15 The blank 10 is thus formed into a flat collapsed tubular structure which can be readily shipped or distributed to a convertor plant, at which the flat collapsed tubular structure may be erected into an open-ended tubular structure and loaded with articles.

The flat collapsed tubular structure may be erected to form an open-ended tubular structure by unfolding the first side panel 14 with respect to the base panel 12 such that the first side panel
20 14 is disposed substantially perpendicularly with respect to the base panel 12.

The carton 90, in its open-ended tubular form, may be loaded with articles B through one or both open ends thereof. It will be appreciated that in some embodiments one of the open ends of the carton 90 may be closed before loading the interior with articles B through the remaining open end. In one embodiment, the carton 90 is loaded with twelve articles B arranged in a 3 × 4 matrix
25 or array, the articles B may be 350ml beverage cans.

Once the carton 90 has been loaded with articles B the open ends of the carton 90 are closed.

A first end of the tubular structure is closed by folding the first end closure panel 22A about fold line 21A and by folding the fourth end closure panel 28A about fold line 27A. The second end closure panel 24A is folded about fold line 23A and the fifth end closure panel 30A is folded about
30 fold line 29A.

Glue or other adhesive treatment may be applied to an outer surface of the second end closure panel 24A. In alternative embodiments, glue or other adhesive treatment may be applied to a corresponding portion of an inner surface of third end closure panel 26A and/or sixth end closure panel 32A.

Glue or other adhesive treatment may be applied to an outer surface of the fifth end closure panel 30A. In alternative embodiments, glue or other adhesive treatment may be applied to a corresponding portion of an inner surface of third end closure panel 26A and/or sixth end closure panel 32A.

5 The third end closure panel 26A is then folded about the fold line 25a to be brought into contact with the second and fifth end closure panels 24A, 30A. The third end closure panel 26A may be secured to each of the second and fifth end closure panels 24A, 30A.

Glue or other adhesive treatment is applied to a portion of an outer surface of the third end closure panel 26A. In alternative embodiments, glue or other adhesive treatment may be applied
10 to a portion of an inner surface of the sixth end closure panel 32A.

The sixth end closure panel 32A is then folded about the fold line 31A to be brought into contact with the third end closure panel 26A and optionally into contact with the second and fifth end closure panels 24A, 30A.

The sixth end closure panel 32A is secured to the third end closure panel 26A. The sixth end
15 closure panel 32A may be secured to the second and fifth end closure panels 24A, 30A, for example by glue or other adhesive treatment.

In alternative embodiments the third end closure panel 26A may be folded about fold line 25a after folding the sixth end closure panel 32A about fold line 31A. It will be appreciated that in such embodiments the third end closure panel 26A is disposed outermost.

20 In other embodiments alternative securing means may be employed to secure the End closure panels 22A, 24A, 26A, 28A, 30A, 32A, 34A, 36A for example, but not limited to, mechanical locking devices such as staples or punch locks integrally formed within the end closure panels 22A, 24A, 26A, 28A, 30A, 32A, 34A, 36A.

A second end of the tubular structure is closed by folding the second end closure structure in
25 a manner similar to that described in the foregoing paragraphs in relation to the first end closure structure.

Figure 1B illustrates the position of an article B (indicated by dot-dash line) with respect to the dispenser D and the severance lines 63, 65 in the first side wall panel 14 and the fold lines 61, 59, 57. The article B has a diameter d_A . The dispenser D extends a distance d_1 , in the first side
30 wall panel 14, from the fold line 25A. Distance d_1 is less than the diameter of the article B. Distance d_1 may be greater than half the diameter of the article B.

$$d_A/2 \leq d_1 \leq d_A$$

Figure 1B also illustrates the position, indicated by dot-dash line SC, that a handling tool of a packaging machine engages the carton 90; the handling tool may take the form of a suction or

vacuum cup. The carton 90 provides a machine handling region for engagement with the handling tool. The position of engagement between the handling tool and the first side wall panel 14 overlaps with the position of the article B. The dispenser structure, the severance lines 63, 65 and the fold lines 61, 59, 57 in the first side wall panel 14, is configured to avoid overlap with position of engagement between the handling tool and the first side wall panel 14. In this way, the likelihood of inadvertent disengagement of the handling tool from the first side wall and/or the likelihood of inadvertent opening, folding or tearing of the dispenser structure is reduced.

The handling tool or machine handling region is disposed at a second distance d_2 from the fold line 25A. More specifically, the handling tool or machine handling region may be disposed covering the side wall panel excluding the area along the fold line 25A between the fold line 25A and a notional line parallel to the fold line 25A, the notional line being disposed at the distance d_2 from the fold line 25A. The distance d_1 is less than the second distance d_2 .

$$d_A/2 \leq d_1 \leq d_2$$

The handling tool and article B may define a region of overlap, in the first side wall panel 14, having a distance O_v .

$$d_A/2 \leq d_1 \leq (d_A - O_v)$$

The distance O_v may be less than or equal to the diameter d_T (or footprint) of the handling tool.

In some embodiments, the distance O_v may be up to half the diameter d_T (or footprint) of the handling tool. The distance d_1 may be less than the difference between the article diameter and half the handling tool diameter d_T .

$$0 \leq O_v \leq d_T/2$$

The article B may comprise a recessed or sunken end wall, the finger tab 54 is disposed in alignment with a void between the first side wall panel 14 and the end wall of the article B such that a gap exists for inward displacement of the finger tab 54 when initiating opening of the dispenser D.

The embodiments of the present disclosure provide a carton 90 for packaging one or more articles. The carton 90 comprises a tubular structure and an end wall closing an end of the tubular structure. The end wall is formed from at least a first end closure panel 26A. The end wall may comprise a second end closure panel 32A disposed at least in part in overlapping relationship with each other so as to define an overlapping region. The carton 90 comprises a dispenser D for facilitating access to the carton contents. The dispenser D comprises a plurality of frangible lines 63, 65, 67, 69. The plurality of frangible lines 63, 65, 67, 69 include a first frangible line 67 in the

first end closure panel 26A and at least one frangible line 65, 63 defined in a first side panel 14 of the carton 90. The first side panel 14 may comprise a second frangible line 65 contiguously arranged with the first frangible line 67. The first side panel 14 may comprise a third frangible line 63 contiguously arranged with the second frangible line 65. The second and third frangible lines 65, 63 define, at least in part, a removable portion of the first side panel 14. The first, second, and third frangible lines 67, 65, 63 define, at least in part, a removable corner portion 52, 52B of the carton 90.

The second end closure panel 32A may comprise a fourth frangible line 69 contiguously arranged with the first frangible line 67.

A third end closure panel 24 secured to least the first end closure panel 26A in face contacting relationship therewith may comprise at least one further frangible line 55, 53 to define a removable portion 52B, 52C of the end wall.

The dispenser D comprises at least one yieldable tab 56, 58 hingedly connected to the first side panel 14 and defined at least in part by a frangible line 63 in the first side panel 14.

The present disclosure also provides a dispensing feature D comprising a dispenser panel 52 detachably connected to a carton wall 14, at least in part, along a severance line 63, 65. The severance line 63, 65 defines a tear initiation tab 54 joined to the dispenser panel 52. The dispensing feature D further comprises a pair of yieldable tabs 56, 58 disposed on opposite sides of the tear initiation tab 54. The yieldable tabs 56, 58 are hingedly connected to the carton wall 14 along fold lines 61, 59 such that the yieldable tabs 56, 58, when folded, define a part of a dispensing opening, through which an article B exits the carton 90.

The present disclosure also provides a dispensing feature D comprising a dispenser panel 52 detachably connected to a carton wall 14, at least in part, along a severance line 63, 65. The severance line 63, 65 defines a tear initiation tab 54 joined to the dispenser panel 52. The dispensing feature D further comprises a pair of yieldable tabs 56, 58 disposed on opposite sides of the tear initiation tab 54. The yieldable tabs 56, 58 are hingedly connected to the carton wall 14 along fold lines 61, 59 such that the yieldable tabs 56, 58, when folded, define a dispensing opening in the carton wall 14 and provide a flange 56/58 along a perimeter of the dispensing opening for guiding exiting movement of an article B.

A portion of the fold line 61, 59 hinging each yieldable tab 56, 58 to the carton wall 14 is continuously arranged with a portion of a severance line 65 defining, at least in part, the dispenser panel 52.

The dispenser panel 52 may comprise a panel portion 52B defined in an end wall panel 26A, the flange 56/58 may be arranged to fold in opposition to the end wall panel 26A.

The pair of yieldable tabs 56, 58 includes a first tab 56 hingedly connected to the carton wall 14 along a first fold line 61 and a second tab 58 hingedly connected to the carton wall 14 along a second fold line 69, the second fold line 69 is contiguously arranged with the first fold line 61.

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.

Whilst the foregoing embodiments have been described with reference to a fully enclosed carton it is envisaged that the dispenser may be employed in cartons of alternative design such as, but not limited to, wraparound style cartons, basket carries and top gripping clips.

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.

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.

As used herein, the term "cutaway" may refer to one of the following: a recess, a notch, a slot, an opening, a cutline, a line of perforations, a line of short slits, a line of half-cuts, a single half-cut, an interrupted cut line, aligned slits, a line of short scores and any combination of the aforesaid options, without departing from the scope of the invention.

As used herein, the term "severance line" may refer to all manner of lines formed in the blank or substrate of sheet material that facilitate separating portions of the blank or substrate of sheet

material from one another, or otherwise that indicate optimal separation locations on the blank or substrate. As used herein, the term "severance line" may refer to one of the following: a single cut line, a single partial-depth cut line (e.g., a single half-cut line), an interrupted cut line, a score line, an interrupted score line, a line of perforations, a line of short cuts, a line of short slits, a line of short partial-depth cuts (e.g., a line of short half cuts), and any combination of the aforementioned options.

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

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.

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.

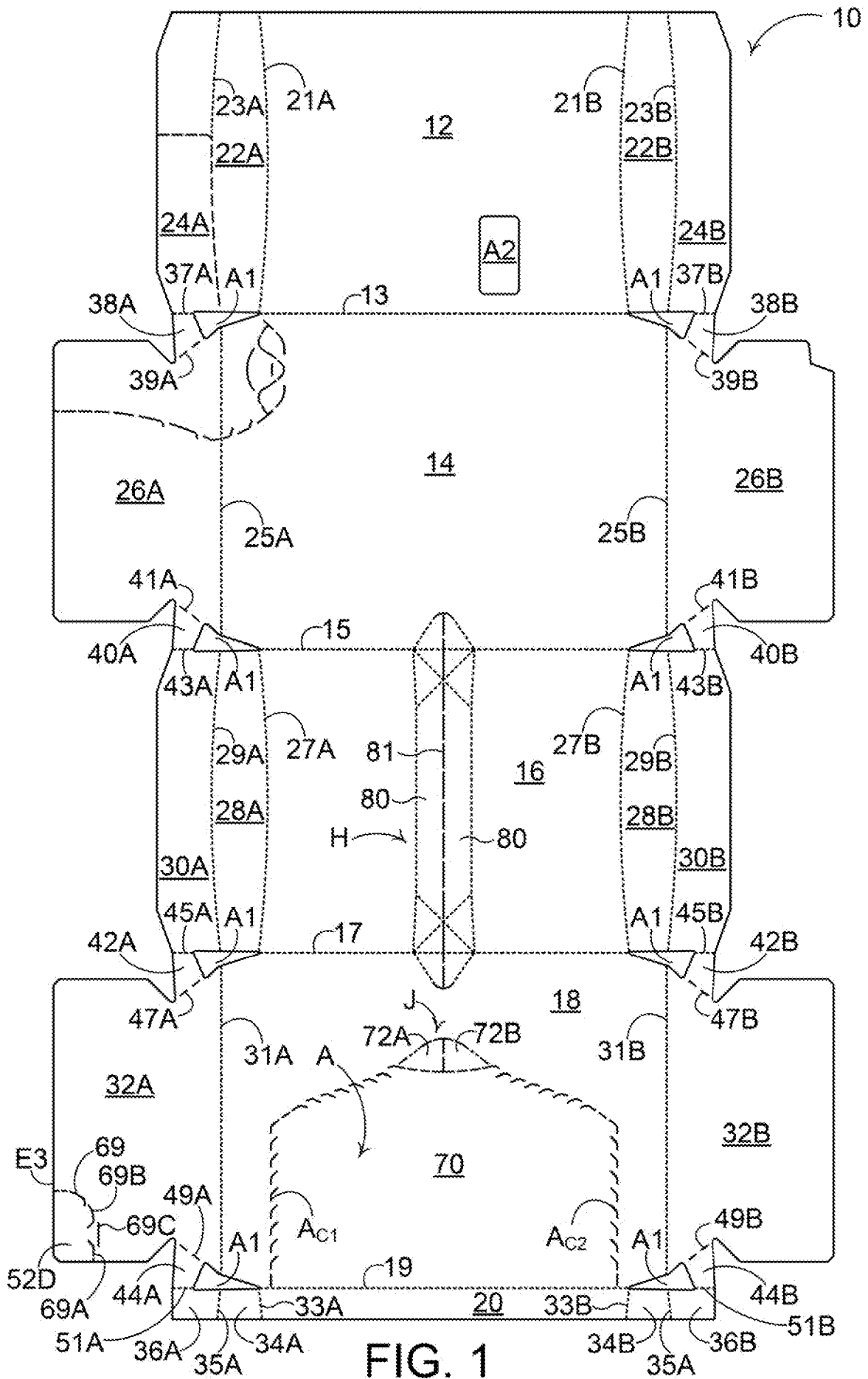
CLAIMS

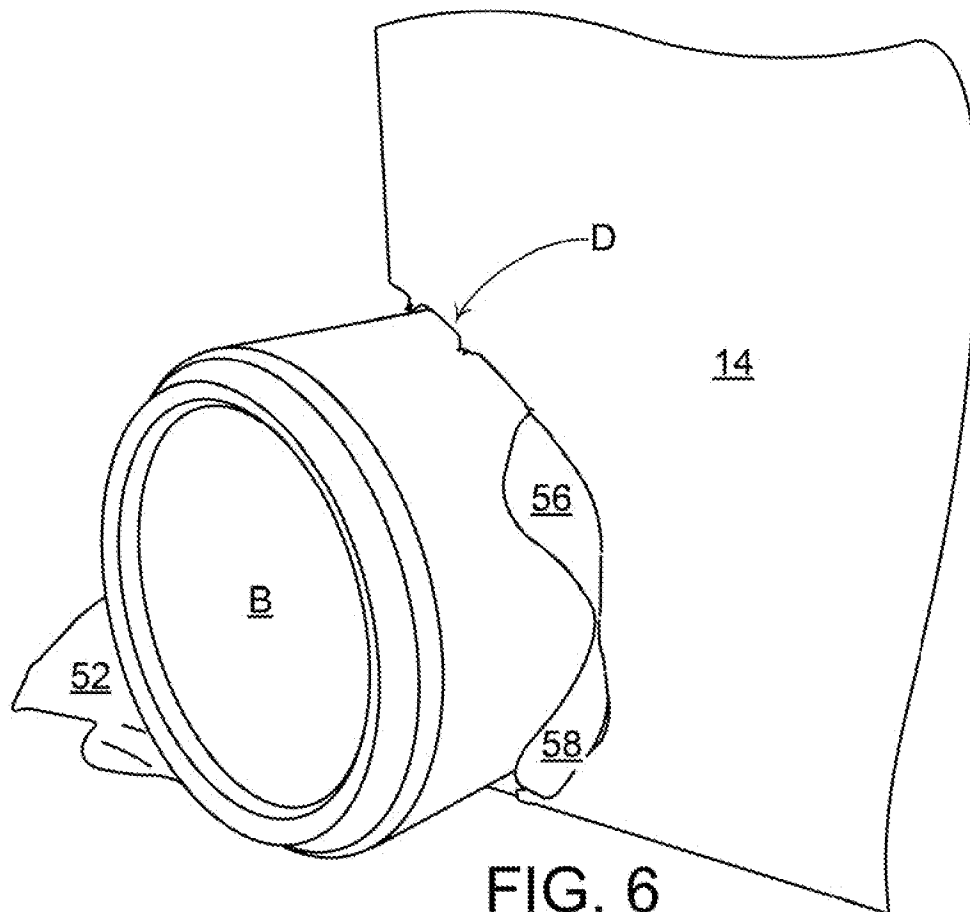
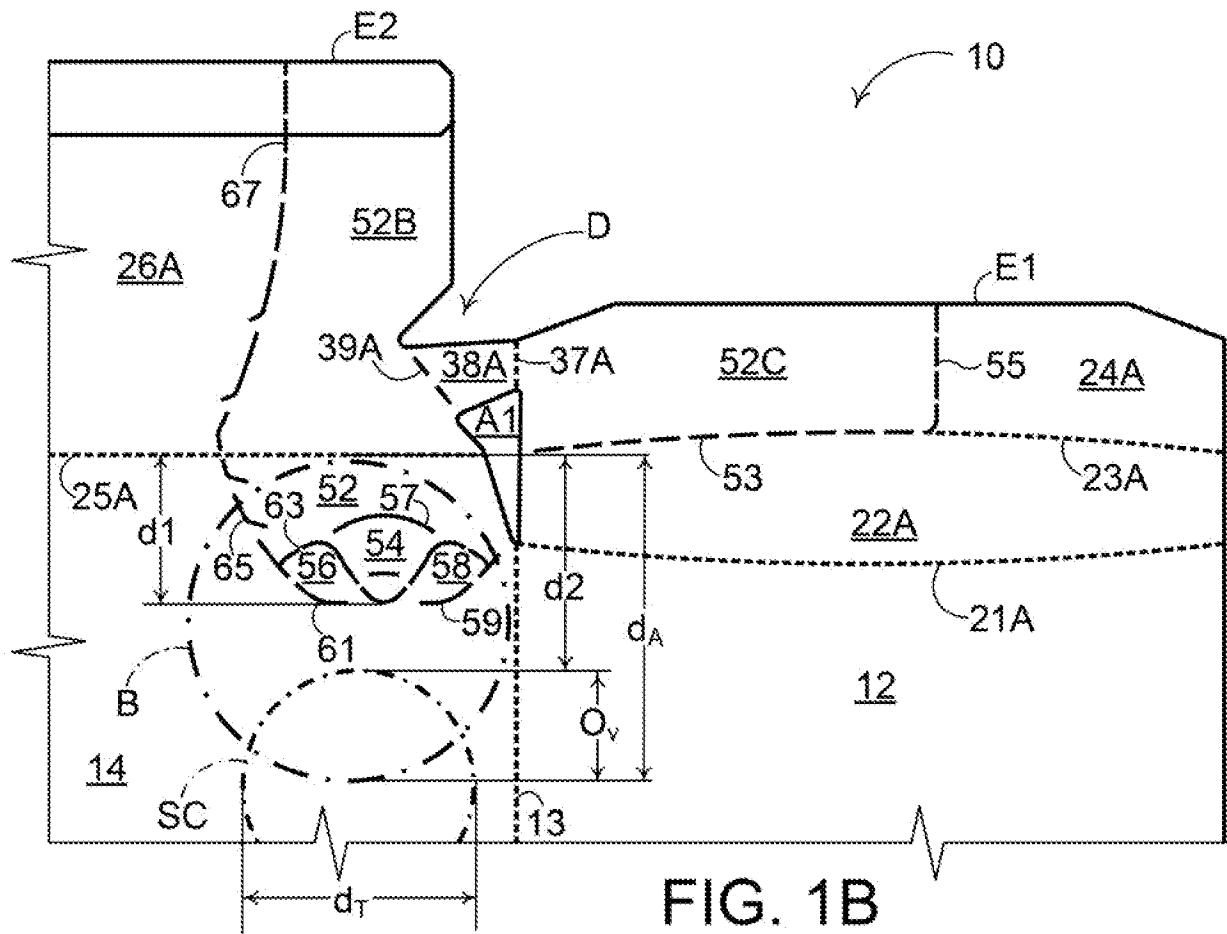
1. A dispensing feature for a carton comprising a dispenser panel connected to a carton wall detachably at least in part along a severance line, the severance line defining a tear initiation tab joined to the dispenser panel, the dispensing feature further comprising a pair of yieldable tabs disposed on the opposite sides of the tear initiation tab, wherein the yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a part of a dispensing opening, through which an article exits the carton.
2. A dispensing feature comprising a dispenser panel detachably connected to a carton wall, at least in part, along a severance line, the severance line defining a tear initiation tab joined to the dispenser panel, the dispensing feature further comprising a pair of yieldable tabs disposed on the opposite sides of the tear initiation tab, wherein the yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a dispensing opening in the carton wall and provide a flange along a perimeter of the dispensing opening for guiding exiting movement of an article.
3. A dispensing feature according to claim 1 or 2, wherein a portion of the fold line hinging each yieldable tab to the carton wall is continuously arranged with a portion of a severance line defining, at least in part, the dispenser panel.
4. A dispensing feature according to claim 2, wherein the dispenser panel comprises a panel portion defined in an end wall panel, the flange being arranged to fold in opposition to the end wall panel.
5. A dispensing feature according to claim 1 or 2, wherein the pair of yieldable tabs includes a first tab hingedly connected to the carton wall along a first fold line and a second tab hingedly connected to the carton wall along a second fold line, the second fold line is contiguously arranged with the first fold line.
6. A dispensing feature according to claim 1 or 2, wherein the dispenser panel extends a distance d_1 from an end edge of the carton wall, the article comprises a diameter d_A and the distance d_1 is less than the diameter d_A of the article B.
7. A dispensing feature according to claim 6, wherein the distance d_1 is greater than half of the diameter d_A of the article B.
8. A carton for packaging one or more articles, the carton comprising a plurality of panels defining an interior, and a dispensing feature comprising a dispenser panel connected to a carton wall detachably at least in part along a severance line, the severance line defining a tear initiation tab joined to the dispenser panel, the dispensing feature further comprising a

pair of yieldable tabs disposed on the opposite sides of the tear initiation tab, wherein the yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a part of a dispensing opening, through which an article exits the carton.

9. A carton for packaging one or more articles, the carton comprising a plurality of panels defining an interior, and a dispensing feature comprising a dispenser panel detachably connected to a carton wall, at least in part, along a severance line, the severance line defining a tear initiation tab joined to the dispenser panel, the dispensing feature further comprising a pair of yieldable tabs disposed on the opposite sides of the tear initiation tab, wherein the yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a dispensing opening in the carton wall and provide a flange along a perimeter of the dispensing opening for guiding exiting movement of an article.
10. A carton according to claim 8 or 9, wherein a portion of the fold line hinging each yieldable tab to the carton wall is continuously arranged with a portion of a severance line defining, at least in part, the dispenser panel.
11. A carton according to claim 9, wherein the dispenser panel comprises a panel portion defined in an end wall panel, the flange being arranged to fold in opposition to the end wall panel.
12. A carton according to claim 8 or 9, wherein the pair of yieldable tabs includes a first tab hingedly connected to the carton wall along a first fold line and a second tab hingedly connected to the carton wall along a second fold line, the second fold line is contiguously arranged with the first fold line.
13. A carton according to claim 8 or 9, wherein the dispenser panel extends a distance d_1 from an end edge of the carton wall, the article comprises a diameter d_A and the distance d_1 is less than the diameter d_A of the article B.
14. A carton according to claim 13, wherein the distance d_1 is greater than half of the diameter d_A of the article B.
15. A carton according to claim 13, wherein the carton comprises a machine handling region disposed at a second distance d_2 from the end edge of the carton wall and wherein distance d_1 is less than the second distance d_2 .
16. A carton according to claim 15, wherein the second distance d_2 is less than the diameter d_A of the article B.

17. A carton according to claim 15, wherein the machine handling region is provided by an uninterrupted panel portion.
18. A carton according to claim 17, wherein the machine handling region is free from cutaways, severance lines, yieldable tabs or other interruptions.
19. A blank for forming a carton, the blank comprising a plurality of panels for forming a tubular structure defining an interior, and a dispensing feature comprising a dispenser panel connected to a carton wall detachably at least in part along a severance line, the severance line defining a tear initiation tab joined to the dispenser panel, the dispensing feature further comprising a pair of yieldable tabs disposed on the opposite sides of the tear initiation tab, wherein the yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a part of a dispensing opening, through which an article exits the carton.
20. A blank for forming a carton, the blank comprising a plurality of panels for forming a tubular structure defining an interior, and a dispensing feature comprising a dispenser panel detachably connected to a carton wall, at least in part, along a severance line, the severance line defining a tear initiation tab joined to the dispenser panel, the dispensing feature further comprising a pair of yieldable tabs disposed on the opposite sides of the tear initiation tab, wherein the yieldable tabs are hingedly connected to the carton wall along fold lines such that the yieldable tabs, when folded, define a dispensing opening in the carton wall and provide a flange along a perimeter of the dispensing opening for guiding exiting movement of an article.





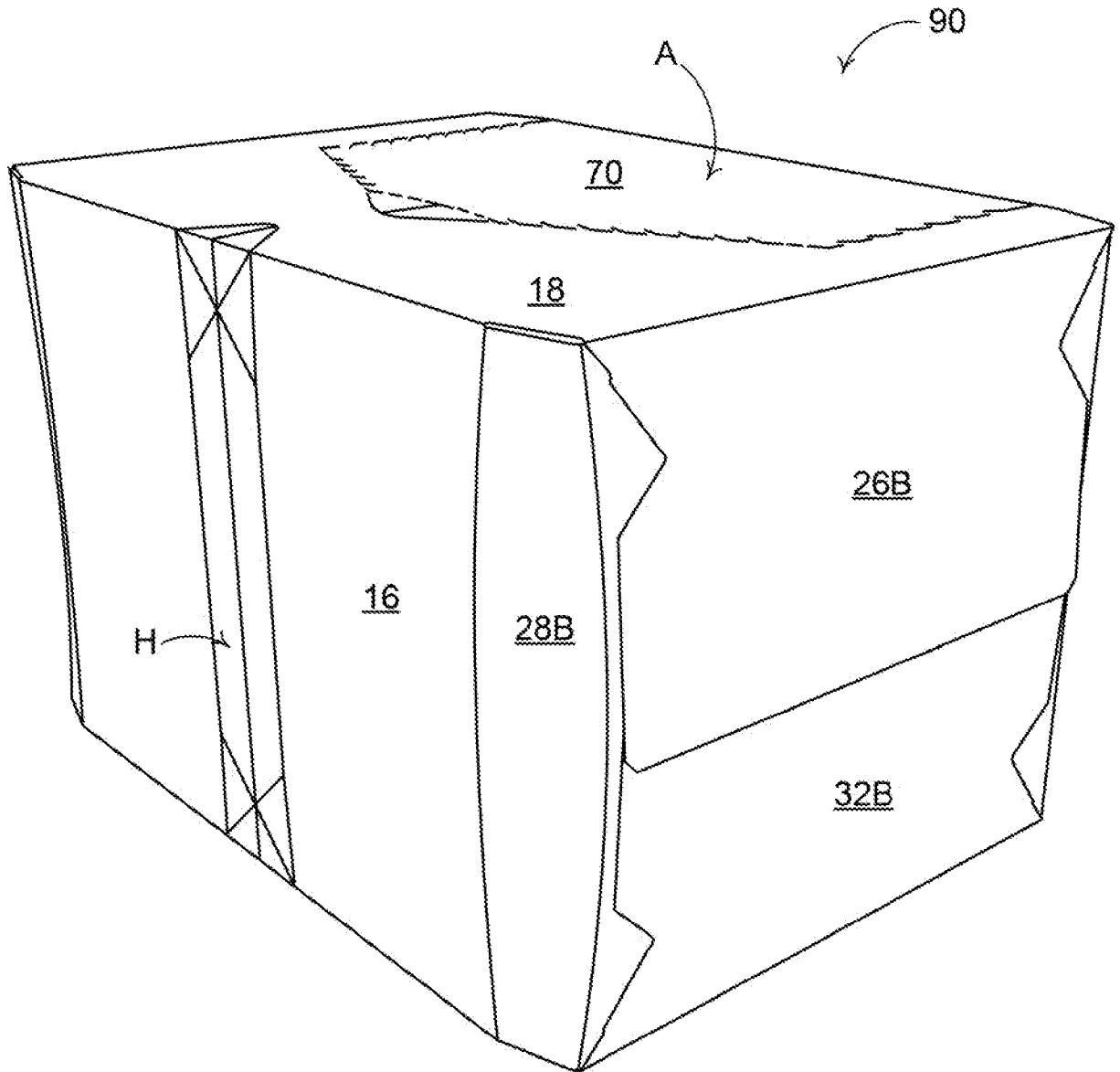


FIG. 2

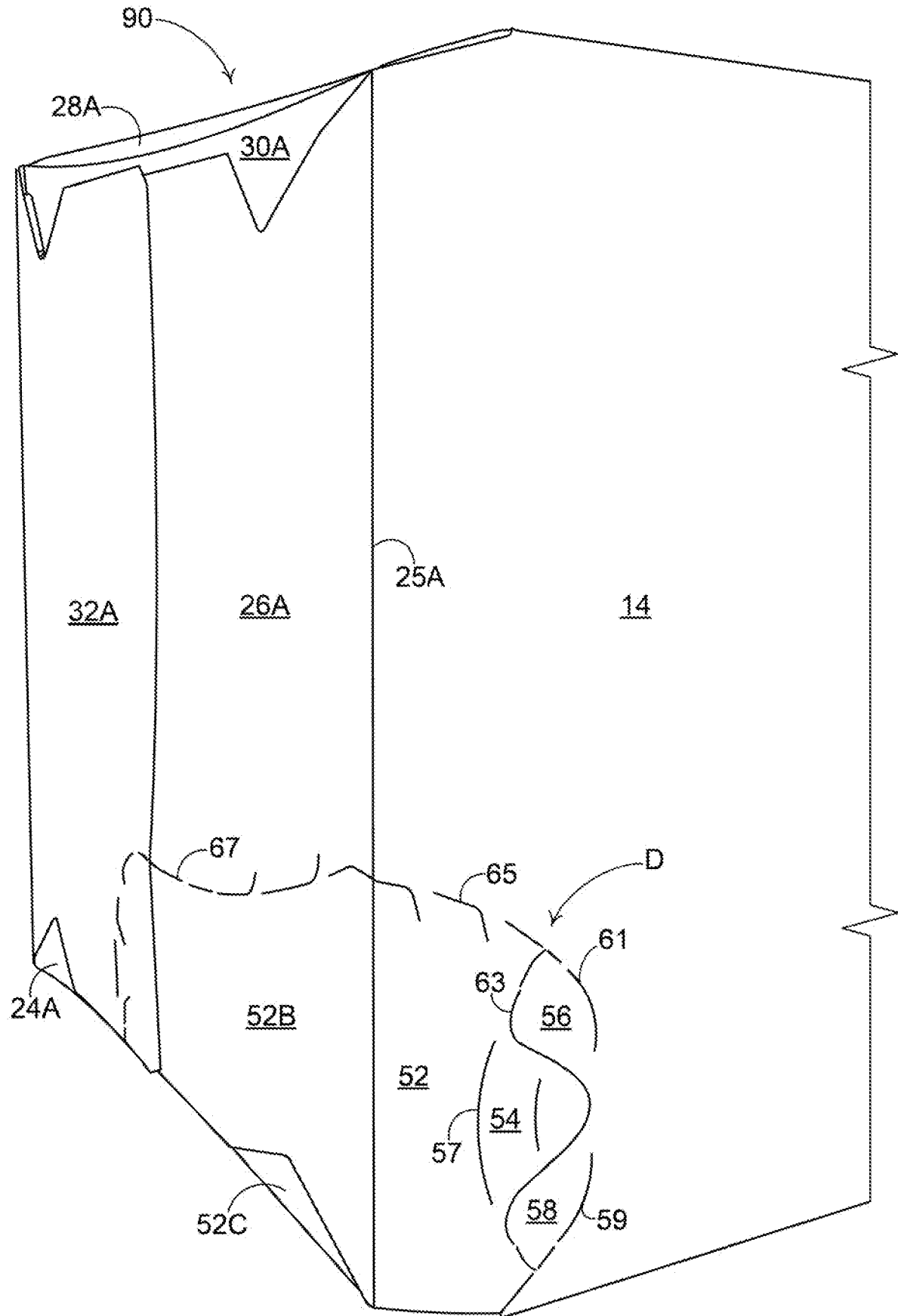


FIG. 3

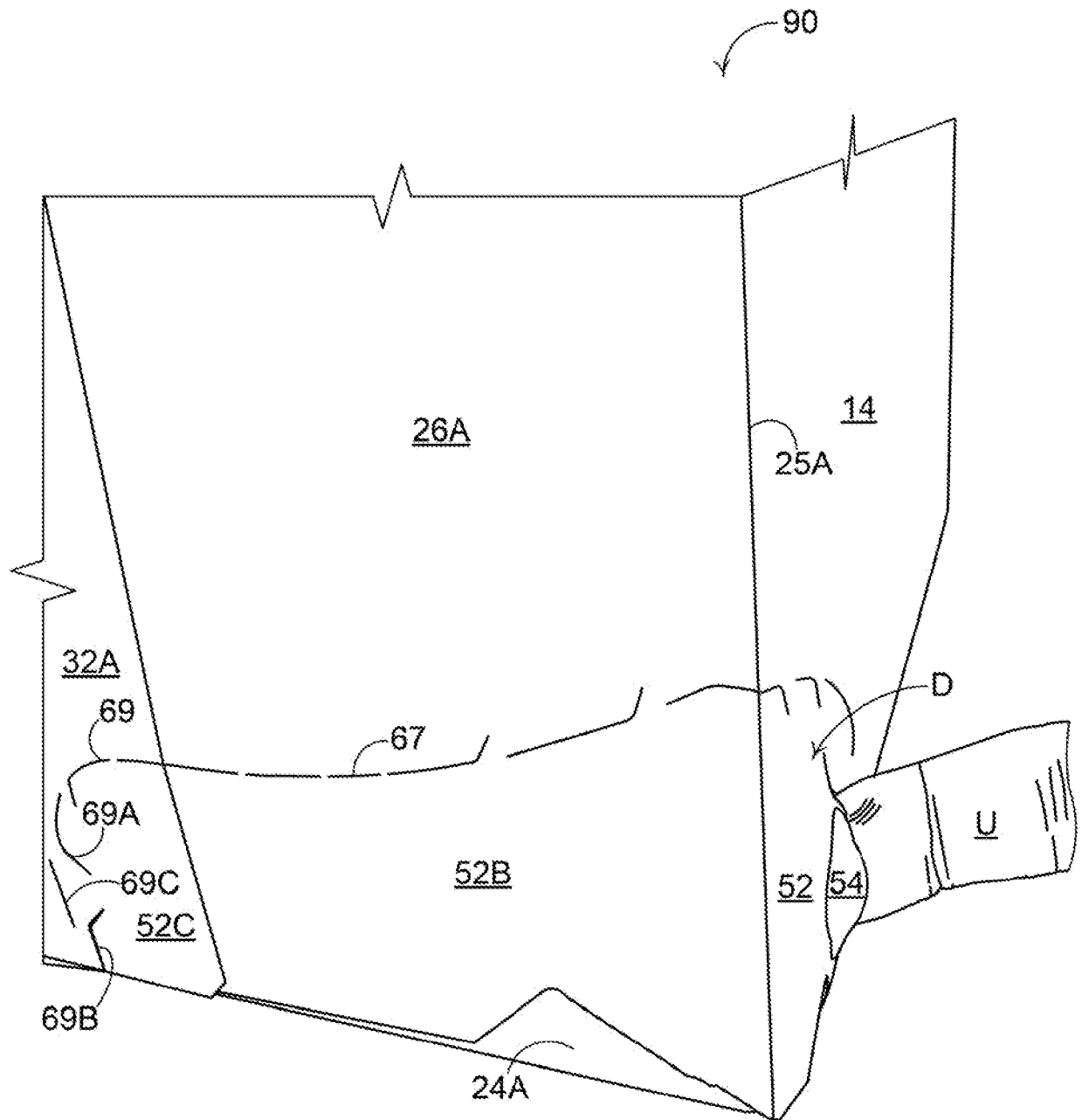


FIG. 4

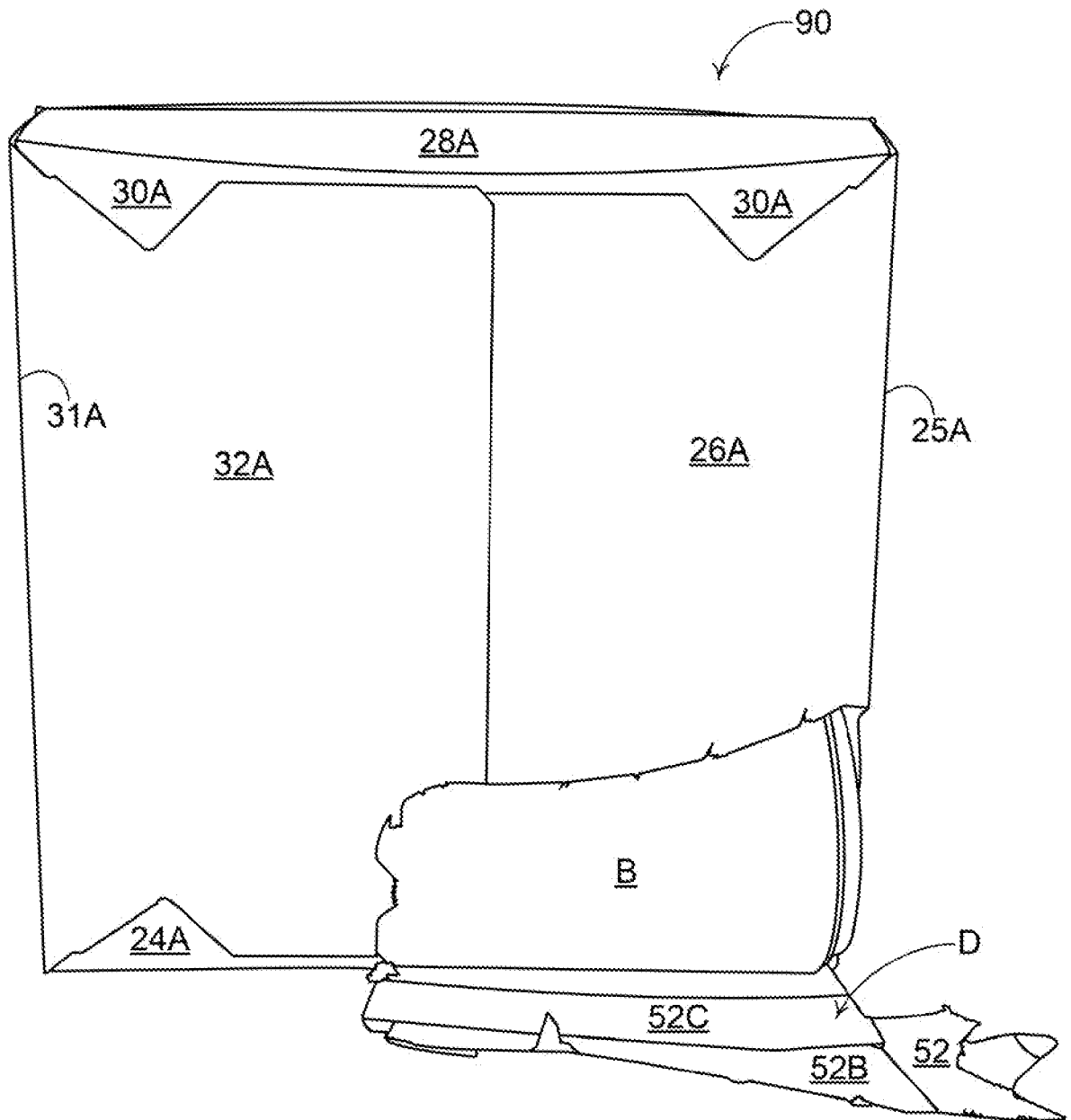


FIG. 5

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2023/062922

A. CLASSIFICATION OF SUBJECT MATTER

INV. **B65D71/36** **B65D5/72**

ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 478 219 B1 (HOLLEY JR JOHN M [US]) 12 November 2002 (2002-11-12) column 4, line 13 - column 9, line 13 figures 1-10 -----	1-20
X	US 2007/210144 A1 (BRAND KIRSTEN LAURA [US]) 13 September 2007 (2007-09-13) paragraph [0020] - paragraph [0044] figures 1-9 -----	1-20
A	US 9 096 344 B1 (BLOCK STEVEN J [US]) 4 August 2015 (2015-08-04) column 4, line 58 - column 9, line 46 figures 1-9 -----	1-20
A	US 2006/054522 A1 (KLINE MICHAEL J [US] ET AL) 16 March 2006 (2006-03-16) paragraph [0025] - paragraph [0037] figures 1-7 -----	1-20

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

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

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

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

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

"&" document member of the same patent family

Date of the actual completion of the international search

21 June 2023

Date of mailing of the international search report

30/06/2023

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2023/062922

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