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(54) Carton and blank therefor

(57) A carton (1) for receiving one or more primary articles (10) and one or more secondary articles (9), the carton comprising a plurality of outer panels (2, 3, 4, 5, 6, 7, 8) hingedly connected together to form a tubular structure and a plurality of inner panels disposed substantially inside the tubular structure, the outer panels including a first outer panel (5) and second (4) and third (6) outer panels hingedly connected respectively to the opposed side edges of the first outer panel, the inner panels including a first inner panel (54a,54b) and second (44a, 44b) and third (64a, 64b) inner panels hingedly connected to opposed side edges of the first inner panel, wherein the first inner panel is hingedly connected to the first outer panel and folded into the tubular structure to take a partitioning position where the first inner panel at least partially partitions an internal space of the tubular structure into two compartments for receiving primary and secondary articles respectively and wherein the second and third inner panels are disposed in face-contacting relationship with the second and third outer panels respectively to anchor the first inner panel at the partitioning position.

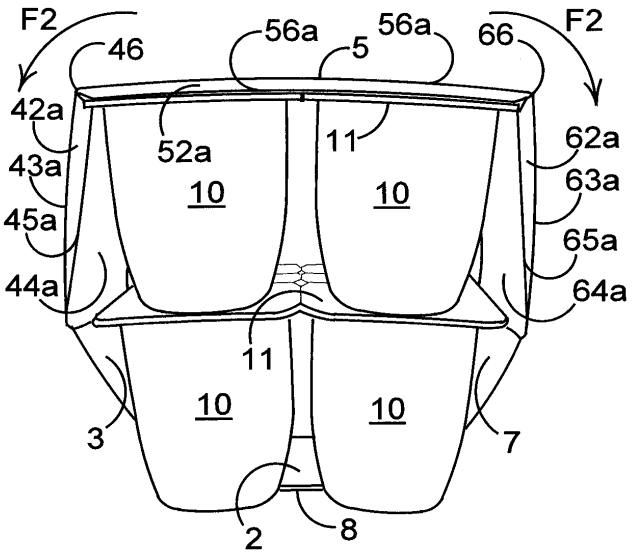

FIGURE 4

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Description

Background of the Invention

[0001] The present invention relates generally to cartons and more specifically to cartons for receiving primary and secondary articles. The invention is particularly, although not exclusively, concerned with wrap around cartons.

[0002] It is generally known that success in increasingly competitive consumer product markets requires creative marketing strategies. One such strategy is to include secondary goods within the packaging for the primary goods, for example, secondary articles which compliment the primary goods.

[0003] There is therefore a need for an improved carton which is able to accommodate both primary and secondary articles.

Summary of the Invention

[0004] Accordingly, a first aspect of the invention provides a carton for receiving primary articles, the carton comprising an outer panel and an inner panel, wherein the inner panel is folded or foldable into a overlying relationship, more preferably a face-contacting relationship, with the outer panel thereby to create, in use, a space between the outer panel and the inner panel for receiving secondary articles therein.

[0005] Preferably, a spacing panel is provided hingedly connected to a first outer panel by a first fold line and hingedly connected to a first inner panel by a second fold line wherein at least a portion of each of said fist and second fold lines are divergent with respect to one another.

[0006] The provision of a space between the outer panel and primary articles in use prevents or at least mitigates damage to the secondary articles which may result from, for example, forming the carton around the articles.

[0007] The inner panel may create the space on erection of the carton, for example by deforming or bowing. The inner panel may comprise a spacing panel, which may comprise a spacer panel and/or a gusset panel. The spacing panel may be hinged to the outer panel.

[0008] The inner panel may be arranged such that an edge thereof lies adjacent the outer panel. The edge of the inner panel may abut the outer panel. Preferably, opposing edges of the inner panel lie adjacent and/or abut the outer panel.

[0009] The inner panel may comprise first and second inner panel portions, for example which are hinged together. The first and second panel portions may comprise respective spacing panels, for example gusset panels which may oppose one another.

[0010] The outer panel may comprise first and second outer panel portions, for example which are hinged together. The gusset panels of the first and second inner panel portions may be hinged to respective first and second outer panel portions.

[0011] The outer panel may be a first outer panel, wherein the carton comprises second and/or third outer panels. The second and/or third outer panels may be hinged to the first outer panel, for example hinged to opposed edges of the first outer panel.

[0012] The inner panel may be a first inner panel, wherein the carton comprises second and/or third inner panels. The second and/or third inner panels may be hinged to the first inner panel, for example hinged to opposed edges of the first inner panel.

[0013] Portions of the inner panel or first inner panel may be retained, in use, relative to the second and/or third outer panels, for example such that the space is created by bowing of the inner panel or first inner panel.

[0014] The second and/or third inner panels may comprise respective spacing panels, for example gusset panels which may oppose one another.

[0015] Where the carton comprises a spacer panel and two gusset panels, the spacer panel may be separated from the first gusset panel and/or the second gusset panel, for example by an aperture which may be triangular in shape.

[0016] Where the carton comprises two gusset panels, they may be hinged together such as along a common minor edge.

[0017] The carton may provide a wraparound carton. The inner panel is preferably arranged to create, in use, a space between the inner panel and outer panel when the carton is wrapped around primary articles.

[0018] Alternatively, the carton may comprise an enclosed carton or any other form of carton.

[0019] A second aspect of the invention provides a blank for forming a carton according to the first aspect of the invention.

[0020] A third aspect of the invention provides a container comprising a carton according to the first aspect of the invention including secondary articles received therein.

[0021] A fourth aspect of the invention provides a package comprising a container according the third aspect of the invention including primary articles received therein.

Brief Description of the Drawings

[0022] Exemplary embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

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

Figure 2 is a plan view of the blank of Figure 1 with a plurality of secondary articles located thereon;

Figure 3 is a plan view of the blank with secondary articles shown in Figure 2 with the inner panels folded over the secondary articles;

Figure 4 is an end view of a package formed from the blank of Figure 1 containing primary articles and secondary articles;

Figure 5 is a perspective view of the package of Figure 4;

Figure 6 is a plan view of a blank for forming a carton according to a second embodiment of the invention;

Figure 7 is a plan view of the blank of Figure 6 with a plurality of secondary articles located thereon;

Figure 8 is a plan view of the blank with secondary articles shown in Figure 7 with the inner panels folded over the secondary articles;

Figure 9 is a plan view of the partially erected blank as shown in Figure 8 with primary articles located thereon; and

Figure 10 is a perspective view of a package formed from the blank of Figure 6 containing primary articles and secondary articles.

Detailed Description of Embodiments of the Invention

[0023] Referring to Figure 1 there is shown a blank 1 according to a first embodiment of the invention. The blank 1 includes a first base panel 2, a first lower side panel 3, and first upper side panel 4, a top panel 5, a second upper side panel 6, a second lower side panel 7 and a second base panel 8, which panels are hinged together in series.

[0024] The blank also includes a pair of first gusset panels 42a, 42b, a pair of spacer panels 52a, 52b, a pair of second gusset panels 62a, 62b, a pair of first inner side panels 44a, 44b, a pair of inner top panels 54a, 54b and a pair of second inner side panels 64a, 64b.

[0025] The first base panel 2 is substantially rectangular in shape and includes a pair of cut-outs 26a, 26b (in this case semi-circular cut outs) along a free longitudinal edge 21a thereof, a tab 20 along second longitudinal edge 21b thereof, a pair of male punch lock elements 24a, 24b and a pair of finger apertures 22a, 22b.

[0026] The male punch lock elements 24a, 24b are substantially arrow shaped with rounded corners and point in the direction of the free edge 21a of the first base panel 2. The male punch lock elements 24a are struck from the first base panel 2 and include respective base portions 27a, 27b which are integral with the first base panel 2.

[0027] Each of the base portions 27a, 27b includes a transverse fold line 25a, 25b adjacent, but spaced from the connection between the base portion 27a, 27b and the first base panel 2.

[0028] The finger apertures 22a, 22b are substantially triangular in shape with a flattened apex and rounded corners. The apex of each triangular finger aperture 22a, 22b faces the free edge 21 a of the first base panel 2.

[0029] The first base panel 2 is hinged to the first lower side panel 3 along a pair of fold lines 28a, 28b, one of which lies on either side of the tab 20. The first lower side panel 3 a pair of legs 36a, 36b which define therebetween an aperture 32 having the shape of a semi-ellipsoid which extends from the outer edges of the tab 20. The outer edges 38a, 38b of the first lower side panel 3 flare outwardly towards the first upper side panel 4 to which the first lower side panel 3 is hinged along fold line 34.

[0030] The upper side panel 4 is rectangular in shape and is hinged to a respective first inner side panel 44a, 44b along an edge orthogonal to fold line 34 by a respective fold line 43a, 43b.

[0031] Each of the first inner side panels 44a, 44b is rectangular in shape and includes a respective first gusset panel 42a, 42b. Each first gusset panel 42a, 42b is substantially triangular in the shape with the apex of the triangle adjacent one end of fold line 34 and is hinged to the relevant first inner side panel 44a, 44b by a fold line 45a, 45b. Each pair of fold lines 43a, 45a and 43b, 45b of the first gusset panels 42a, 42b extends from a respective end of the fold line 34 between the first lower side panel 3 and the first upper side panel 4. A first of the fold lines 43a, 43b extends substantially perpendicularly from the fold line 34. A second of the fold lines 45a, 45b diverges from the first fold line 43a, 43b to a respective spacer aperture 48a, 48b, thereby to delineate each of the first gusset panels 42a, 42b.

[0032] The first upper side panel 4 is hinged to the top panel 5 along a side edge thereof at fold line 46. The first inner side panels 44a, 44b are hinged to a respective inner top panel 54a, 54b along a side edge thereof at respective fold lines 47a, 47b.

[0033] The top panel 5 is rectangular in shape and is hinged at each of its transverse edges by a fold line 56a, 56b, to a respective inner top panel 54a, 54b. Each inner top panel 54a, 54b is rectangular in shape and includes a spacer panel 52a, 52b defined by a respective pair of fold lines 56a, 58a and 56b, 58b. The spacer panels 52a, 52b are separated from the first gusset panels 42a, 42b by a respective triangular aperture 48a, 48b.

[0034] The top panel 5 is hinged along its other side edge to the second upper side panel 6 along fold line 56. Each of the inner top panels 54a, 54b is hinged along its other side edge to a respective second inner side panel 64a, 64b along a respective fold line 67a, 67b. The second upper side panel 6 is substantially rectangular in shape and is hinged along an edge orthogonal to fold line 66 by respective fold lines 63a, 63b to respective second inner side panels 64a, 64b.

[0035] The second upper side panel 6 is hinged to the second lower side panel 7 along a fold line 74.

[0036] Each of the second inner side panels 64a, 64b is substantially rectangular in shape and includes a respective second gusset panel 62a, 62b. Each of the sec-

ond gusset panels 62a, 62b is substantially triangular in shape with the apex of the triangle adjacent one end of fold line 74 and is hinged to the relevant second inner side panel 64a, 64b by a fold line 65a, 65b. Each pair of fold lines 63a, 65a and 63b, 65b of the second gusset panels 62a, 62b extends from a respective end of the fold line 74 between the second upper side panel 6 and the second lower side panel 7. A first of the fold lines 63a, 63b extends substantially perpendicularly from the fold line 74. A second of the fold lines 65a, 65b diverges from the first fold line 63a, 63b to a respective spacer aperture 68a, 68b, thereby to delineate each of the second gusset panels 62a, 62b.

[0037] The second lower side panel 7 has a pair of legs 76a, 76b which define therebetween an aperture 72 having the shape of a semi-ellipsoid which extends from the outer edges of a tab 80. The outer edges 78a, 78b of the second lower side panel 7 flare outwardly towards the second upper side panel 6 to which the second lower side panel 7 is hinged along fold line 74. The second lower side panel 7 is hinged to the second base panel 8 along a pair of fold lines 88a, 88b.

[0038] The second base panel 8 includes a pair of semi-circular apertures 86a, 86b along the free longitudinal edge thereof and the tab 80 along the opposite longitudinal edge thereof. The hinged lines 88a, 88b are located on either side of the tab 80. The second base panel 8 however comprises a pair of apertures 82a, 82b and a pair of female punch lock elements 84a, 84b. The apertures 82a, 82b are substantially triangular in shape with flattened apexes and smoothed edges. Each of the family punch lock elements includes a substantially rectangular element and a pair of cut lines extending therefrom all of which are struck from the same second base panel 8.

[0039] The second base panel 8 is substantially rectangular in shape and includes a pair of semi-circular cutouts 86a, 86b along a free longitudinal edge 81a thereof, a tab 80 along second longitudinal edge 81 b thereof, a pair of female punch lock elements 84a, 84b and a pair of finger apertures 82a, 82b.

[0040] Each female punch lock element 84a, 84b is rectangular with a pair of cuts 85a, 85b extending perpendicularly from the longitudinal edges thereof adjacent the free edge 81a of the second base panel 8. The female punch lock elements 84a are struck from the second base panel 8 and include respective base portions 87a, 87b which are integral with the second base panel 8.

[0041] The finger apertures 82a, 82b are substantially triangular in shape with a flattened apex and rounded edges. The apex of each triangular finger aperture 82a, 82b faces the free edge 81a of the second base panel 8.

[0042] The fold lines 88a, 88b between the second base panel 8 and the second lower side panel 7 lie on either side of the tab 80.

[0043] Referring now to Figure 2 there is shown a plurality of secondary articles 9 which are straws 9 in this embodiment. The straws 9 are arranged and held together in an array by a transparent sleeve, thus forming a secondary package 9a. The secondary package 9a is placed on the top panel 5.

[0044] As shown in Figure 3, the groups of inner panels 44a, 54a, 64a and 44b, 54b, 64 are folded over the secondary package 9a in direction F1 which automatically erects the gusset panels 42a, 42b, 62a, 62b and spacer panels 52a, 52b thereby creating a space in which the secondary package 9a is located and retained.

[0045] The partially erected carton 1 and secondary package 9a are then brought into contact with primary articles 10, which are yoghurt pots 10 with upper flanges 11 in this embodiment, such that the inner top panels 54a, 54b are in contact with the flanges 11. The primary articles 10 are provided stacked to form two levels. The side panels 3, 4, 6 and 7 and base panels 2, 8 are then wrapped around the articles 10 by folding the first base panel 2, first lower side panel 3 and first upper side panel 4 relative to the top panel 5 in direction F2 and folding the second base panel 8, second lower side panel 7 and second upper side panel 6 relative to the top panel 5 in direction F3 (see Figure 4 for directions F2 & F3).

[0046] As the first upper side panel 4 is folded relative to the top panel 5 and the second upper side panel 6 is being folded relative to the top panel 5, the transverse edges 47a, 67a and 47b, 67b of the inner top panels 54a, 54b brace against fold lines 46 and 66 thus causing the inner top panels 54a, 54b to bow away from the top panel 5.

[0047] The presence of the gusset panels 42a, 42b, 62a, 62b and the spacer panels 52a, 52b cause the bowing or deformation of the inner top panels 54a, 54b to occur adjacent the fold lines 47a, 47b by virtue of the apertures 48a, 48b. This arrangement reinforces the pocket created by the bowing of the inner top panels 54a, 54b.

[0048] Moreover, as the carton 1 is being wrapped around the articles 10, excessive bowing of the inner top panels 54a, 54b is prevented by virtue of the flanges 11 of the articles 10.

[0049] As the base panels 2, 8 are brought together, portions of the inner panels 44a, 54a, 64a, 44b, 54b, 64b, adjacent the fold lines 34, 74 contact the flanges 11 of the lower level of primary articles 10.

[0050] Following the aforementioned wrapping of the carton 1 and secondary package 9a around the articles 10, the base panels 2, 8 are then engaged. This is effected by urging the base panels closer to one another using the finger apertures 22a, 22b and 82a, 82b and urging the male punch lock elements 24a, 24b through the female punch lock elements 84a, 84b such that the female elements 84a, 84b retain the male elements 24a, 24b in a substantially upright position (not shown).

[0051] Thus, a tubular structure is provided around the primary articles by the carton 1. The carton 1 also provides a partial partition by virtue of the inner top panels 54a, 54b.

[0052] It will be appreciated that the erected carton 1

retains the secondary articles 9 in the space created by the gusset panels 42a, 42b, 62a, 62b between the outer top panel 5 and the inner top panels 54a, 54b thereby providing a package which effectively secures the secondary articles and substantially isolates them from the primary articles.

[0053] Referring now to Figure 6 there is shown a blank according to a second embodiment of the invention. The blank 100 includes a top panel 120, a first upper side panel 130, a first lower side panel 140, a base panel 150, a second lower side panel 160, a second upper side panel 170 and an upper securing panel 180 hingedly inter-connected in series. The blank also includes a pair of inner top panels 122a, 122b, a pair of first gusset panels 132a, 132b, a pair of second gusset panels 142a, 142b, a pair of first inner upper side panels 134a, 134b, a pair of first inner lower side panels 144a, 144b, a pair of inner base panels 152a, 152b, a pair of third gusset panels 162a, 162b, a pair of fourth gusset panels 172a 172b, a pair of second inner lower side panels 164a, 164b, a pair of second inner upper side panels 174a, 174b and a pair of inner securing panels 182a, 182b.

[0054] The top panel 120 is rectangular in shape with chamfered corners 121a, 121b and is hinged along each transverse edge by a respective fold line 123a, 123b to a respective inner top panel 122a, 122b. Each of the inner top panels 122a, 122b includes a respective quarter-circular aperture 1 24a, 1 24b with the corner thereof being substantially aligned with the adjacent corner of the top panel 120.

[0055] The top panel 120 is hinged to the first upper side panel 130 along one of its side edges by a fold line 126. Each of the inner top panels 122a, 122b is hinged to a respective first inner upper side panel 134a, 134b along a side edge thereof by a respective fold line 128a, 128b. The first upper side panel 130 is substantially rectangular in shape with transverse edges that converge slightly from the top panel 120 towards the first lower side panel 140.

[0056] The first upper side panel 130 is hinged along its transverse edges by fold lines 133a, 133b to the first gusset panels 132a, 132b. Each of the first gusset panels 132a, 132b is substantially triangular in shape with the apex of the triangle adjacent fold line 126. Each of the first gusset panels 132a, 132b is hinged to a respective first inner upper side panel 134a, 134b. Each inner upper side panel 134a, 134b is substantially rectangular in shape with one converging longitudinal edge which is provided by fold lines 135a, 135b.

[0057] The first upper side panel 130 is hinged to the first lower side panel 140 by fold line 136. Each first gusset panel 132a, 132b is hinged to a respective second gusset panel 142a, 142b. Each first inner upper side panel 134a, 134b is hinged to a respective first inner lower side panel 144a, 144b by a respective fold line 137a, 137b.

[0058] The first lower side panel 140 is hinged along its transverse edges by fold lines 143a, 143b to the second gusset panels 142a, 142b. Each of the second gusset panels 142a, 142b is substantially triangular in shape with the apex of the triangle adjacent fold line 146. Each of the second gusset panels 142a, 142b is hinged to a respective first inner lower side panel 144a, 144b. Each first inner lower side panel 144a, 144b is substantially rectangular in shape with one converging edge 145a, 145b.

[0059] The first lower side panel 140 is hinged to the base panel 150 by hinge line 146. Each first inner lower side panel 144a, 144b is hinged along one of its side edges to a respective inner base panel 152a, 152b by fold line 147a, 147b.

[0060] The base panel 150 is rectangular in shape and includes three pairs of triangular apertures 159a, 159b and 159c, 159d and 159e, 159f and a respective spacer tab 153a, 153b, 153c between each pair of apertures 159a, 159b and 159c, 159d and 159e, 159f. Each of the spacer tabs 153a, 153b, 153c is hinged to the base panel 150 by a respective fold line 158a, 158b, 158c. The base panel 150 is hinged along its transverse edges to a respective inner base panel 152a, 152b. The base panel 150 is hinged to the second lower side panel 160 along fold line 156. Each inner base panel 152a, 152b is hinged to a respective second inner lower base panel 164a, 164b along a side edge thereof by a respective fold line 157a, 157b.

[0061] The second lower side panel 160 is substantially rectangular in shape with its transverse edges converging from the base panel 150. The three pairs of triangular apertures 159a, 159b and 159c, 159d and 159e, 159f extend into the second lower side panel 160. The second lower side panel 160 also includes a respective spacer tab 163a, 163b, 163c between each pair of apertures 159a, 159b and 159c, 159d and 159e, 159f which are hinged to the spacer tabs 153a, 153b, 153c of the base panel 150 along a respective fold line 156a, 156, 156c. Each of the spacer tabs 153a, 153b, 153c is hinged to the second lower side panel 160 by a respective fold line 168a, 168b, 168c.

[0062] The second lower side panel 160 is hinged along its transverse edges to a respective third gusset panel 162a, 162b along a respective fold line 163a, 163b. Each third gusset panel 162a, 162b is substantially triangular in shape with the apex of the triangle adjacent fold line 156. Each of the third gusset panels 162a, 162b is hinged to a respective second inner lower side panel 164a, 164b along a respective fold line 165a, 165b.

[0063] The second lower side panel 160 is also hinged to the second upper side panel 170 along fold line 166. Each third gusset panel 162a, 162b is hinged to a respective fourth gusset panel 174a, 174b along a respective fold line 179a, 179b. Each second inner lower side panel 164a, 164b is hinged to a respective second inner upper side panel 174a, 174b by a respective fold line 167a, 167b.

[0064] The second upper side panel 170 is substantially rectangular in shape with its transverse edges con-

verging from the second lower side panel 160. The second upper side panel 170 is hinged along its transverse edges to a respective fourth gusset panel 172a, 172b along a respective fold line 173a, 173b. Each fourth gusset panel 172a, 172b is substantially triangular in shape with the apex of the triangle adjacent fold line 176. Each of the fourth gusset panels 172a, 172b is hinged to a respective to a second inner upper side panel 174a, 174b along a respective fold line 175a, 175b.

[0065] The second upper side panel 170 is also hinged to the upper securing panel 180 along fold line 176. Each second inner upper side panel 174a, 174b is hinged along one of its side edges to a respective inner securing panel 182a, 182b by a respective fold line 177a, 177b.

[0066] The upper securing panel 180 includes two retaining panels 184a, 184b struck therefrom which is hinged to the second upper side panel 170 adjacent the fold line 176 along a respective arcuate fold line 187a, 187b, the purpose of which will be discussed below.

[0067] The upper securing panel 180 is also hinged along its transverse edges to the inner securing panels 182a, 182b along a respective fold line 188a, 188b. Each inner securing panel 182a, 182b is substantially square in plan with a chamfered edge 181a, 181b and includes a quarter-circular aperture 186a, 186b with the corner thereof being substantially aligned with the adjacent corner of the upper securing panel 180.

[0068] The carton also includes four circular spacer apertures 138a, 138b, 178a, 178b. One of the spacer apertures is located at each junction of the fold lines 135a, 137a, 139a, 145a and 135b, 137b, 139b, 145b and 165a, 167a, 175a, 179a and 165b, 167b, 175b, 179b between the respective groups of gusset and inner side panels 132a, 134a, 142a, 144a and 132b, 134b, 142b, 144b and 162a, 164a, 172a, 174a and 162b, 164b, 172b, 174b.

[0069] Referring now to Figure 7 there is shown four groups of secondary articles which, in this embodiment, include two clear plastics packages 190a of bendable straws 191a and two clear plastic packages 190b of straight straws 191b. The secondary packages 190a, 190b are placed on the side panels 130, 140, 160, 170.

[0070] As shown in Figure 8 the groups of inner panels 122a, 134a, 144a, 152a, 164a, 174a, 182a and 122b, 134b, 144b, 152b, 164b, 174b, 182b are folded over the secondary packages 190a, 190b in direction F10 which automatically erects the gusset panels 132a, 132b, 142a, 142b, 162a, 162b, 172a, 172b thereby creating a space in which the secondary packages 190a, 190b are located and retained.

[0071] Referring now to Figure 9, two levels of articles 10, which are yoghurt pots 10 with upper flanges 11 in this embodiment, are placed on the base panel 150 and the carton is wrapped around them.

[0072] The upper securing panel 180 and retaining tabs 184a, 184b are folded about fold line 176 as shown by arrow F20. The second lower side panel 160, second upper side 170 and upper securing panel 180 are then folded along fold line 156 as shown by arrow F30.

[0073] In doing so, the transverse edges 157a, 177a and 157b, 177b of the second lower side panel 160 and the second upper side panel 170 brace against fold lines 156 and 176 thus causing the second inner side panels 164a, 164b, 174a, 174b to bow away from their respective side panel 160, 170. The presence of the gusset panels 162a, 162b, 1 72a, 1 72b encourage the bowing or deformation of the second inner side panels 164a, 164b, 174a, 174b. This arrangement reinforces the pocket created by the bowing of the second inner side panels 1 64a, 1 64b, 1 74a, 1 74b.

[0074] The retaining tabs 184a, 184b are brought into abutment with the underside of the flanges 11 of the articles 10 and the upper securing panel is brought into an overlying relationship with the top of the flanges 11.

[0075] In doing so, portions of the inner panels 164a, 174a, 164b, 174b, adjacent the fold line 166 contact the flanges 11 of the lower level of primary articles 10, and brace thereagainst. The spacer apertures 178a, 178b allow the material adjacent the fold lines 179a, 1 79b to deform and thereby accommodate the bent configuration shown in Figure 10 whilst maintaining the space between the inner panels 164a, 164b, 174a, 174b and the side panels 160, 170.

[0076] The top 120, first upper side panel 130 and first lower side panel 140 are then folded about fold line 146 as shown by arrow F40.

[0077] In doing so, the transverse edges 147a, 128a and 147b, 128b of the first lower side panel 140 and the first upper side panel 130 brace against fold lines 146 and 126 thus causing the first inner side panels 134a, 134b, 144a, 144b to bow away from their respective side panel 130, 140. The presence of the gusset panels 132a, 132b, 142a, 142b encourage the bowing or deformation of the first inner side panels 134a, 134b, 144a, 144b. This arrangement reinforces the pocket created by the bowing of the first inner side panels 134a, 134b, 144a, 144b.

[0078] The folding F40 is continued until fold line 136 lies adjacent to the flanges 11 in the lower row of the articles 10 and fold line 126 lies adjacent the flanges 11 of the upper row of articles 10.

[0079] In doing so, portions of the inner panels 134a, 144a, 134b, 144b, adjacent the fold line 136 contact the flanges 11 of the lower level of primary articles 10, and brace thereagainst. The spacer apertures 138a, 138b allow the material adjacent the fold lines 139a, 139b to deform and thereby accommodate the bent configuration shown in Figure 10 whilst maintaining the space between the inner panels 134a, 134b, 144a, 144b and the side panels 130, 140.

[0080] Glue (not shown) is applied to the upward facing surface of the upper securing panel 180 and the top panel 120 is then folded about fold line 126 as shown by arrow F50 such that it overlies the articles and adheres to the glue (not shown) on the upper securing panel 180.

[0081] The spacer tabs 153a, 169a and 153b, 169b and 153c, 169c are then urged inwardly to ensure separation between adjacent primary articles.

[0082] Thus, a tubular structure is provided around the primary articles by the carton 100. The carton 1 also provides two partial partitions by virtue of the inner side panels 134a, 134b, 144a, 144b and 164a, 164b, 174a, 174b.

[0083] Accordingly, the second embodiment of present invention provides in a reinforced space or pocket between the remaining portions of the inner panels 134a, 144a, 134b, 144b, 164a, 174a, 164b, 174b and the adjacent side panel 130, 140, 160, 170.

[0084] It will be recognised that as used herein, directional references such as "top", "base", "end", "side", "inner", "outer", "upper" and "lower" do not limit the respective panels to such orientation, but merely serve to distinguish these panels from one another. Any reference to hinged connection should not be construed as necessarily referring to a single fold line only: indeed it is envisaged that hinged connection can be formed from one or more of one of the following, a score line, a frangible line or a fold line, without departing from the scope of invention.

[0085] It will be appreciated by those skilled in the art that several variations to the above construction are envisaged without departing from the scope of the invention.

[0086] It will also be appreciated that whilst the gusset panels and the spacer panels have been described as separate from the inner panels, this is by no means limiting and more specifically, they may be described as forming part of the inner or outer panels.

Claims

1. A carton for receiving one or more primary articles and one or more secondary articles, the carton comprising a plurality of outer panels hingedly connected together to form a tubular structure and a plurality of inner panels disposed substantially inside the tubular structure, the outer panels including a first outer panel and second and third outer panels hingedly connected respectively to the opposed side edges of the first outer panel, the inner panels including a first inner panel and second and third inner panels hingedly connected to opposed side edges of the first inner panel, wherein the first inner panel is hingedly connected to the first outer panel and folded into the tubular structure to take a partitioning position where the first inner panel at least partially partitions an internal space of the tubular structure into two compartments for receiving primary and secondary articles respectively and wherein the second and third inner panels are disposed in overlying relationship with the second and third outer panels respectively to anchor the first inner panel at the partitioning position.

2. A carton as claimed in claim 1, wherein the first inner panel is bowed away from the first outer panel.

3. A carton as claimed in either of claims 1 or 2, wherein the spacing panel is hingedly connected to the first outer panel by at least a portion of a first fold line and hingedly connected to the first inner panel by at least a portion of a second fold line wherein said fist and second fold lines at least in part are divergent with respect to one another.

4. A carton as claimed in any preceding claim, wherein the opposed side edges of the first inner panel abut the first outer panel.

5. A carton as claimed in any preceding claim, further comprising a spacing panel hingedly interconnecting the first inner panel with the first outer panel.

6. A carton as claimed in claim 5, wherein the spacing panel extends between the first inner panel and the first outer panel so that the first inner panel is spaced at least in part from the first outer panel.

7. A carton as claimed in any preceding claim, wherein the second and third outer panels are hingedly connected to the first outer panel along respective outer fold lines, the second and third inner panels being hingedly connected to the first inner panel along respective inner fold lines, wherein the inner fold lines are registered with the outer fold lines respectively.

8. A carton as claimed in claim 5, further comprising a pair of gusset panels, one of the gusset panels hingedly interconnecting the second inner panel with the second outer panel, the other of the gusset panels hingedly interconnecting the third inner panel with the third outer panel.

9. A carton as claimed in claim 8, wherein in a blank form, the spacing panel is disposed between the gusset panels and separated from the gusset panels by apertures.

10. A carton as claimed in any preceding claim, wherein the first inner panel comprises a pair of inner panel portions wherein the inner panel portions are hingedly connected together.

11. A carton as claimed in claim 10, further comprising a pair of gusset panels that interconnect the inner panel portions to the first outer panel, the gusset panels being hingedly connected together.

12. A carton as claimed in claim 11, wherein the first outer panel comprises a pair of outer panel portions and wherein each of the gusset panels interconnects a respective one of the inner panel portions with an adjacent one of the outer panel portions.

13. A carton as claimed in claim 12, wherein the outer

panel portions are hinged together.

14. A blank for forming a carton as claimed in any preceding claim.

15. A package comprising a carton according to any of claims 1 to 14 including primary articles and/or secondary articles received therein.

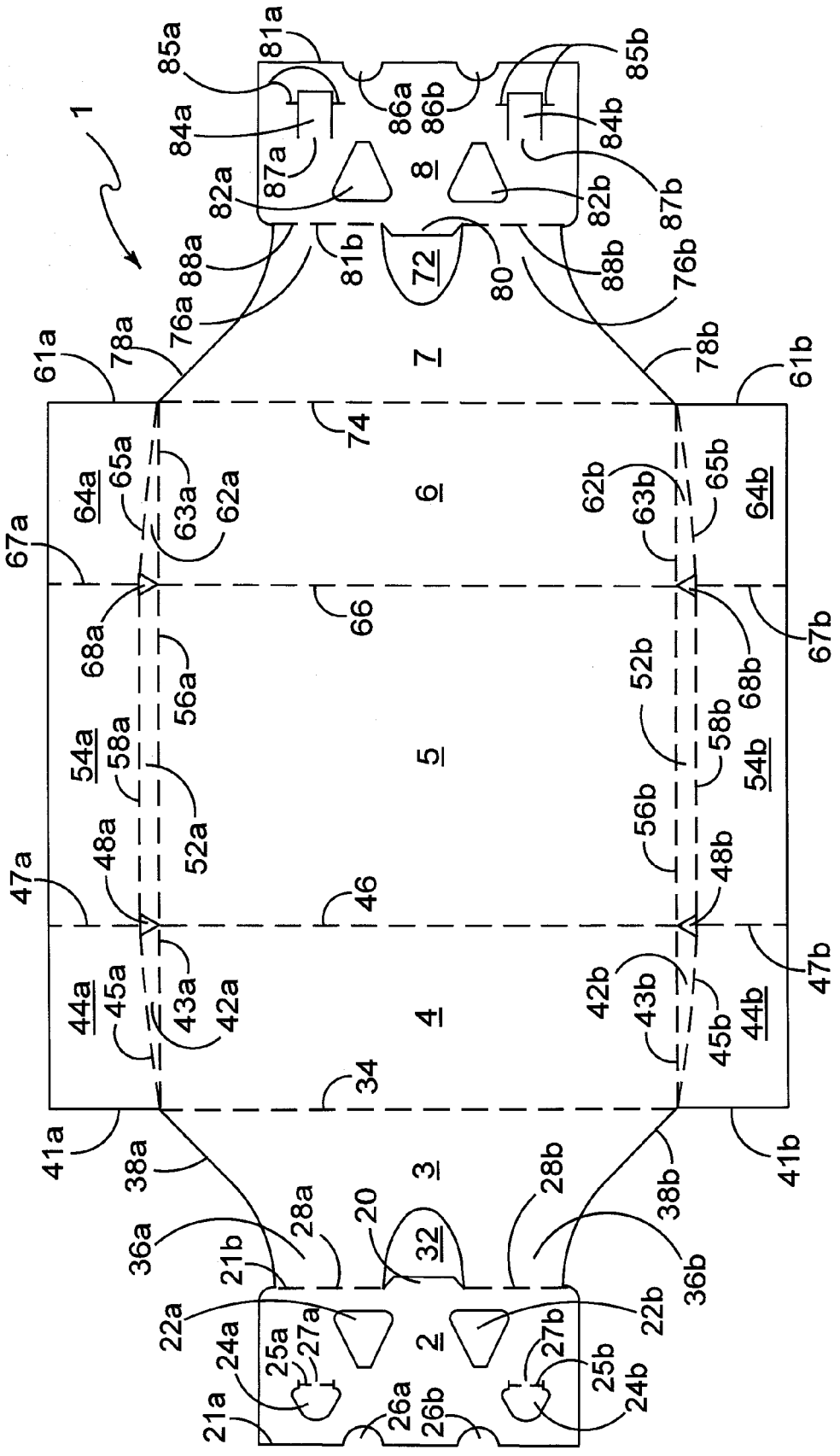
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FIGURE 1

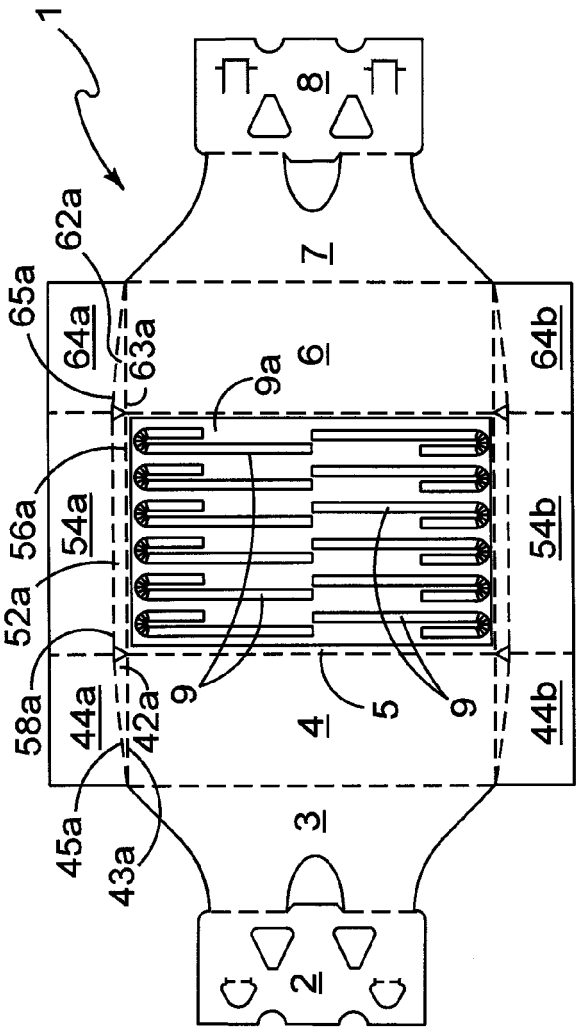

FIGURE 2

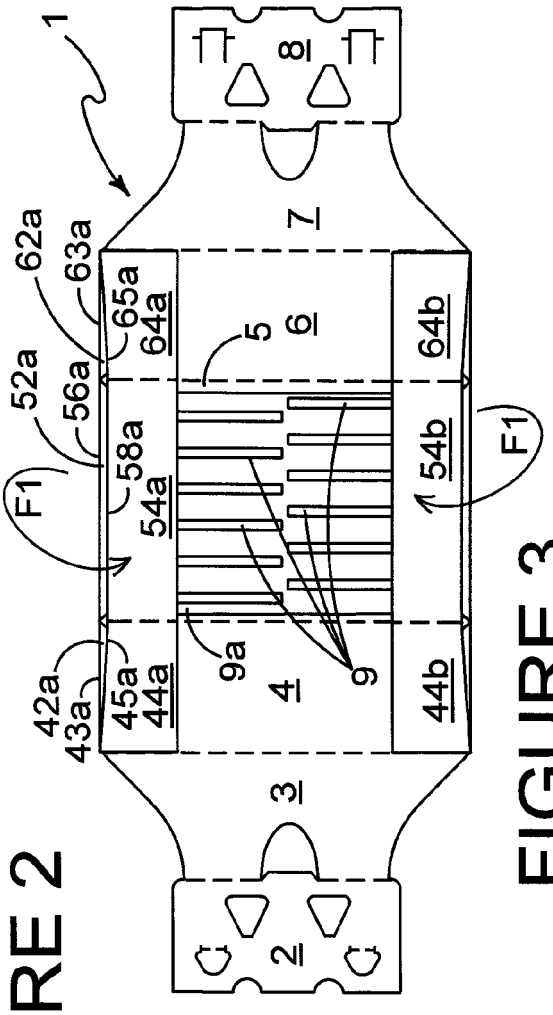

FIGURE 3

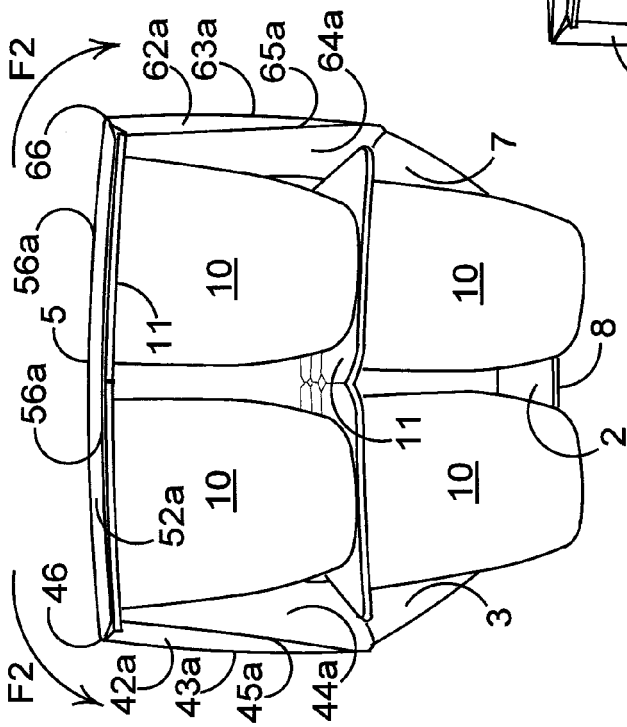

FIGURE 4

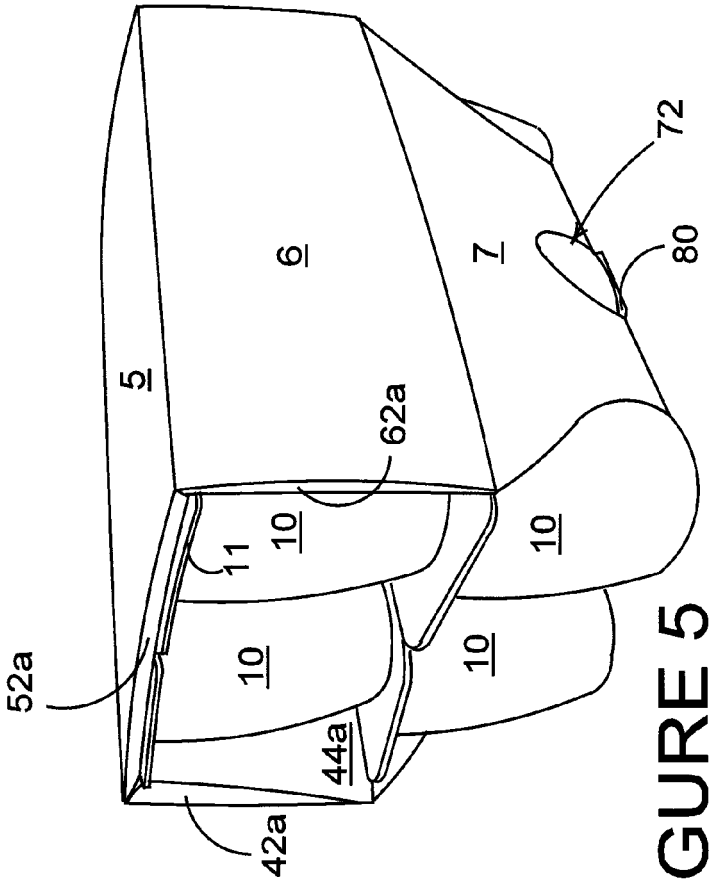

FIGURE 5

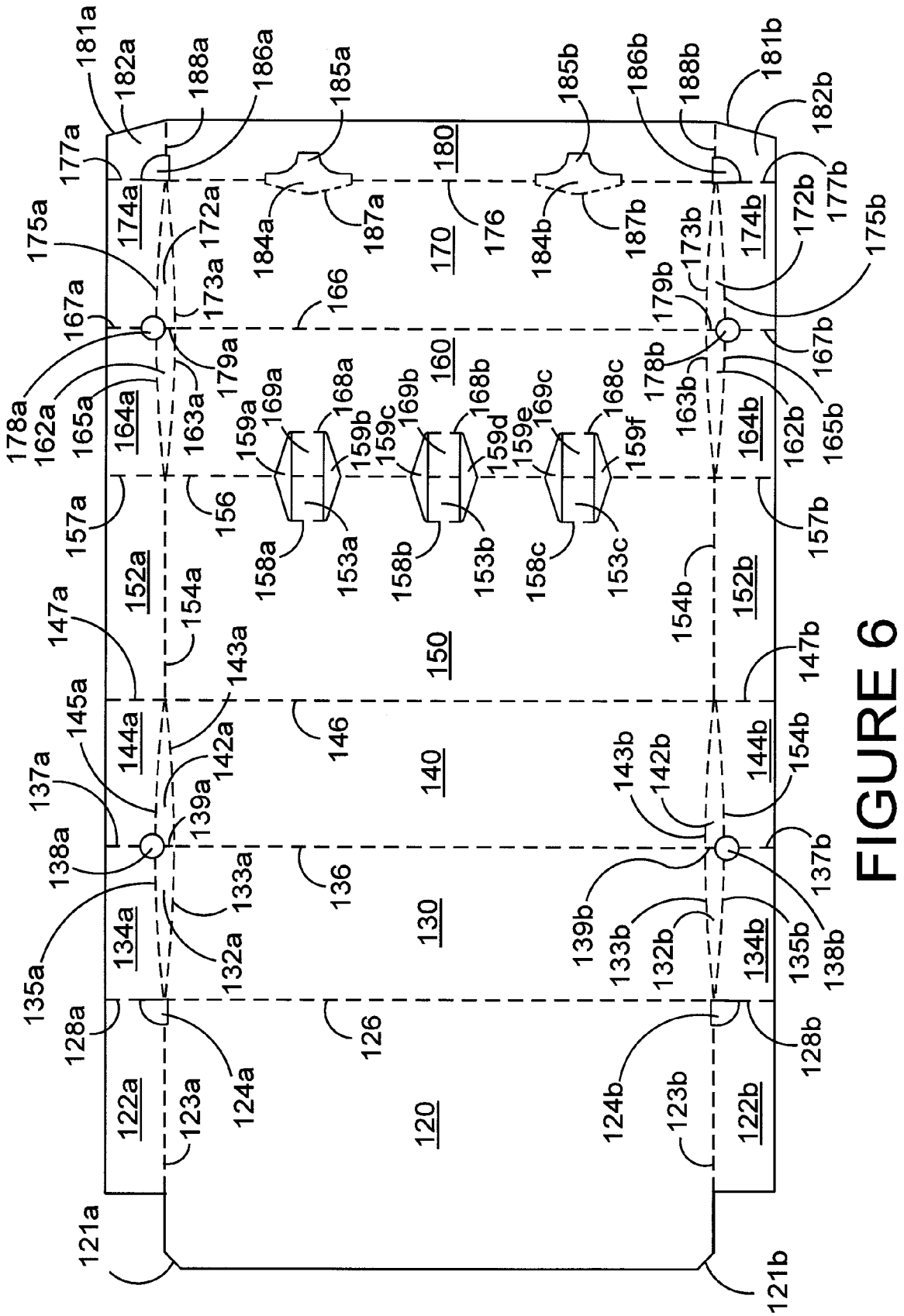
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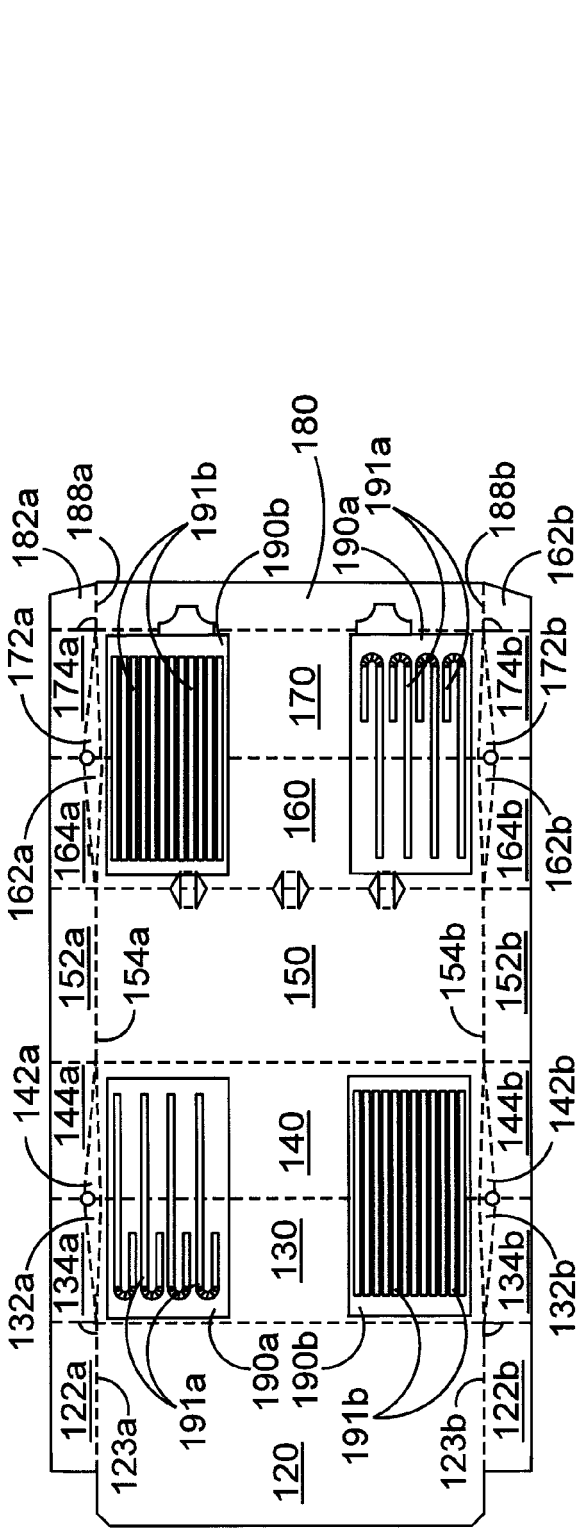
FIGURE 6



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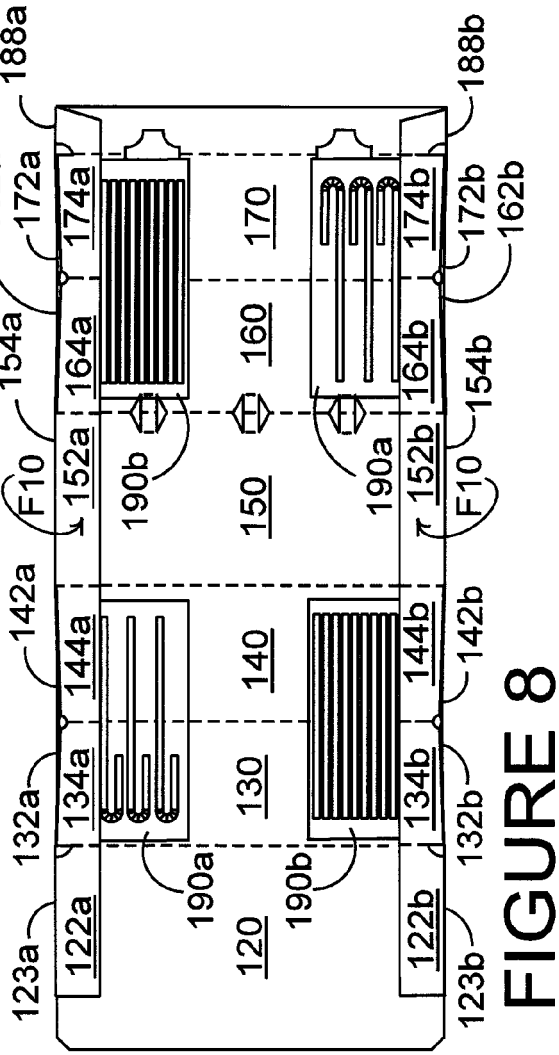

FIGURE 8

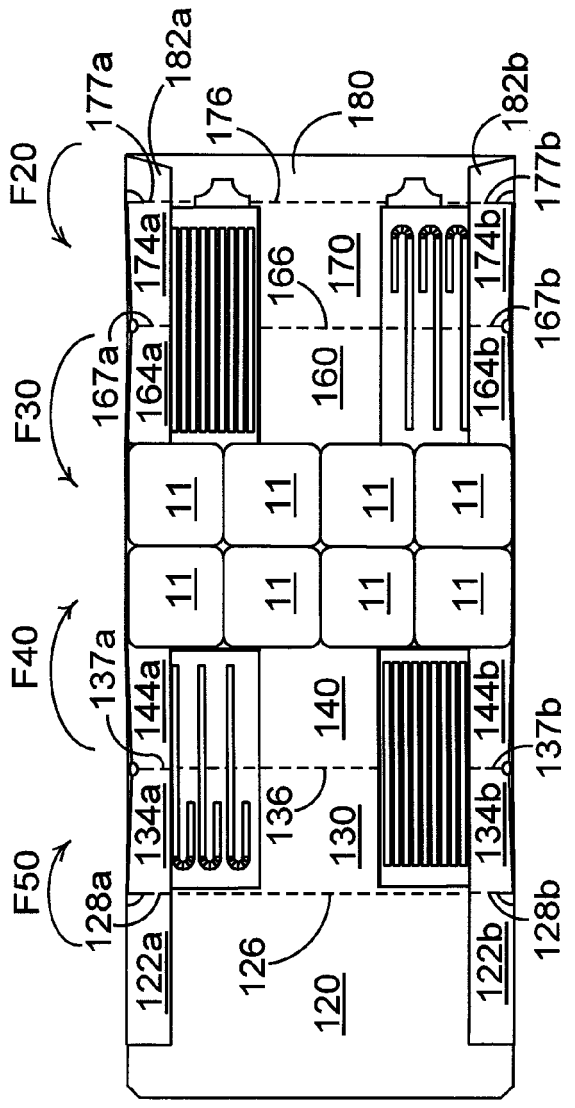

FIGURE 9

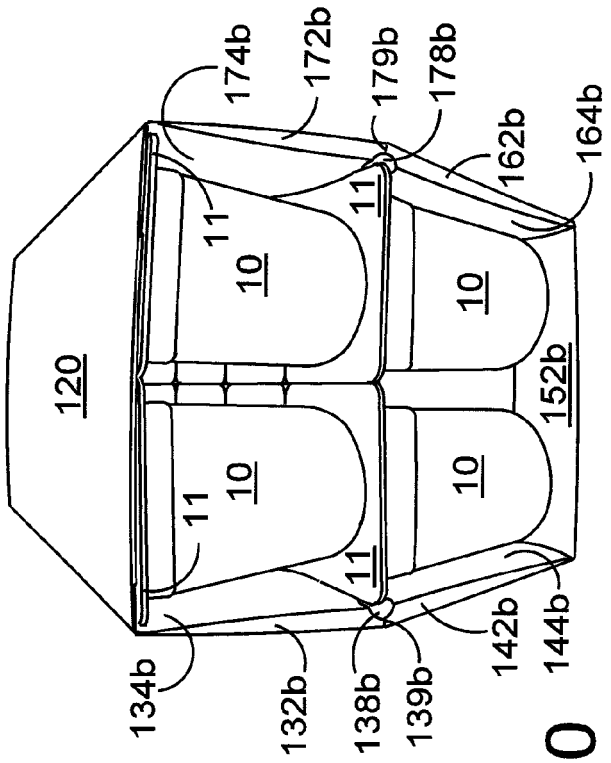

FIGURE 10

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EUROPEAN SEARCH REPORT

Application Number
EP 08 16 2443

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 29 51 351 A1 (4 P VERPACKUNGEN GMBH [DE]) 25 June 1981 (1981-06-25) * page 8, paragraph 3 * * figures 1,3 *	1,5-7, 14,15	INV. B65D71/24
A	US 6 112 977 A (SUTHERLAND ROBERT L [US] ET AL) 5 September 2000 (2000-09-05) * abstract; figures 1-10 *	1,15	
A	US 5 060 804 A (BEALES JONATHAN T [US] ET AL) 29 October 1991 (1991-10-29) * abstract; figures 1-3 *	1,15	

TECHNICAL FIELDS SEARCHED (IPC)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	10 November 2008	Piolat, Olivier

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 16 2443

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10-11-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 2951351 A1	25-06-1981	NONE	
US 6112977 A	05-09-2000	NONE	
US 5060804 A	29-10-1991	NONE	

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82