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(54) **Tray container and blank**

(57) A tray for holding foodstuff or the like which tray is formed from paperboard or like foldable sheet material and can be erected from a flat collapsed condition into a position of use, the tray comprising a plurality of panels for forming a base, opposed side and end walls.

The panels forming the tray are a composite structure comprising inner and outer panels forming the base, side and end walls. Part of the end portion along the inner side panel remains flat with the outer base panel and an engaging tab is formed along the part of the end portion to engage a slot in the inner side panel.

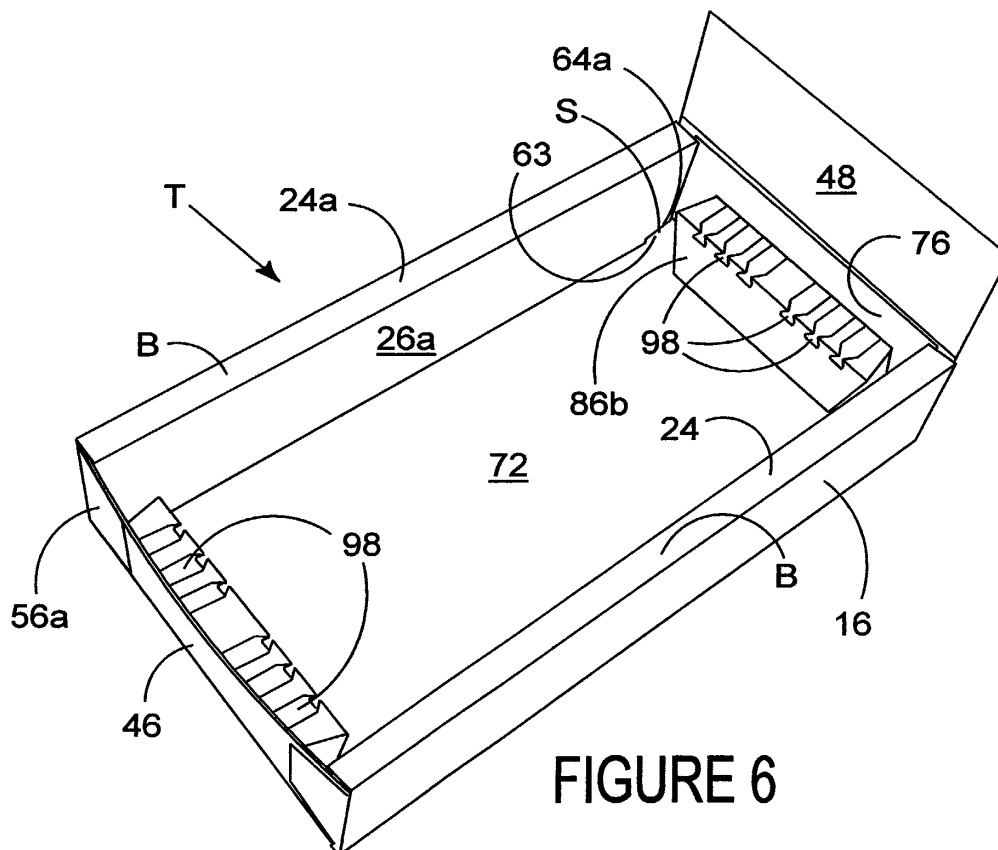


FIGURE 6

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Description

[0001] The present invention relates to a carton (or tray) for accommodating foodstuff, for example fish or meat, and more particularly to a carton formed from one or more blanks of paperboard or other suitable foldable sheet material.

[0002] Tray structures for meat are commonly formed from plastics material, for example polystyrene.

[0003] There can be excess food liquid, for example blood or water from foodstuff which is undesirable. One solution is illustrated in US 3 156 402, which shows a food products support tray including two layers in which the liquid is stored. The liquid passes through openings and is held between the layers. It is apparent that handling of the tray will push liquid back through the openings. Further, if the tray is stored in an upright position, the liquid will collect along the edges and at the corners.

[0004] One problem associated with known trays is how to secure the inner and outer panels together to restrict relative movement or from becoming separated. One solution proposed in US2,465,169 which shows the inner base panel secured to the tray by inserting tabs 32, 33 into apertures on the side wall and end wall. However, it is necessary to manufacture these trays by hand so as to construct the tubular structure 22 at one end of the tray. This arrangement is not suited to automated manufacture where trays are formed at high speeds.

[0005] An alternative solution is to glue the inner and outer base panels, although this is an additional process in the formation of the carton, which is undesirable as it may slow the formation process down, or increase the complexity of manufacture.

[0006] The present invention and its preferred embodiments seek to overcome or at least mitigate the problems of the prior art.

[0007] One aspect of the invention there is provided a tray for holding foodstuff or the like which tray is formed from paperboard or like foldable sheet material and can be erected from a flat collapsed condition into a position of use, the tray comprising a plurality of panels for forming a base, opposed side and end walls wherein the panels forming the tray are a composite structure comprising inner and outer panels forming the base, side and end walls. An outer portion of inner base panel remains flat with the outer base panel and in that an engaging tab is formed along the part of the outer portion to engage a slot formed in the inner side panel. Preferably, the engaging tab is adapted to retain the inner base panel in face contacting arrangement with the outer base panel.

[0008] According to an optional feature of this aspect of the invention there further comprises an article retention structure struck at least in part from the outer portion of the inner base panel.

[0009] Preferably, the engaging tab is located at the outer portion of the inner base panel resists the load of articles held by the retention structure to hold the reten-

tion structure in a set up position.

[0010] According to an optional feature of this aspect of the invention an outer portion of the inner end panel is retained by the inner side panel to retain the inner end panel in a set up condition while the retention structure is formed.

[0011] According to an optional feature of this aspect of the invention the inner panels forming the base, side and end walls are provided by an insert.

[0012] According to a second aspect of the invention there is provided a tray for holding foodstuff or the like which tray is formed from paperboard or like foldable sheet material and can be erected from a flat collapsed condition into a position of use, the tray comprising a plurality of panels for forming a base, opposed side and end walls wherein the panels forming the tray are a composite structure comprising inner and outer panels forming the base, side and end walls and an article retention structure struck at least in part from the outer portion of the inner base panel characterized in that an outer portion of the inner end panel is retained by the inner side panel to retain the inner end panel in a set up condition while the retention structure is formed.

[0013] According to an optional feature of either aspect of the invention there further comprises a beam support structure formed along one side of the tray from the inner side panel foldably connected along a first fold line to the outer base panel and the outer side panel foldably connected along a second fold line to the outer base panel, wherein the first and second fold lines are offset such that the inner side panel extends upwardly to abut the outer end panel thereby to define the beam. Preferably there further comprises a spacer panel hingedly interconnecting the inner and outer end panels to form the beam.

[0014] In one class of embodiments, there may further comprise a deformable portion hinged to the adjacent side and end panels between the base panel and the securing means, the deformable portion deformed when the tray is erected to provide a ply of material spanning the side and end panels to inhibit egress of fluid from the base panel at each the corner of the tray.

[0015] Preferably the deformable portion is hingedly connected to the adjacent side panel by a fold line in an obtuse angular relationship with the fold line connecting the end panel and base panel.

[0016] According to an optional feature of this aspect of the invention the securing means comprises a flap hingedly connected to one of the side and end panels and foldable to be superposed with the other the side and end panels to be secured therewith, which flap is severed from the deformable portion.

[0017] According to a further optional feature of this aspect of the invention the deformable portion is provided by a gusset panel.

[0018] In another class of embodiments, the inner and outer walls forming the base and the side and end walls define one or more skinned zones providing one or more

voids wherein means are provided to give fluid communication between the internal surface of the base and the void so that fluid present in the tray can drain into the voids in the base and in the side and end walls.

[0019] Preferably the fluid communication means comprises a plurality of perforations distributed along at least one edge of the inner base wall.

[0020] According to an optional feature of this aspect of the invention the voids may include absorbing means to absorb the liquid.

[0021] According to a third aspect of the invention there is provided a blank for forming a tray for holding foodstuff or the like which tray is formed from paperboard or like foldable sheet material comprising a plurality of panels for forming an outer base, opposed side and end walls and an insert comprising a plurality of panel forming the inner base, side and end walls characterised in that there further comprises an article retention structure struck from an outer portion of inner base panel such that a part of the outer portion along the inner side panel remain flat with the outer base panel in a set up condition and wherein an engaging tab is formed along the part of the end portion to engage the end slot in the inner side panel.

[0022] Preferably the engaging tab is located at the outer portion of the inner base wall panel.

[0023] According to an optional feature of this aspect of the invention the tab is adapted to retain the inner base panel in face contacting arrangement with the outer base panel, in a set up condition.

[0024] According to a further optional feature of this aspect of the invention there further comprises a beam support structure formed along one side of the set up tray from the inner side panel foldably connected along a first fold line to the outer base panel and the outer side panel foldably connected along a second fold line to the outer base panel, wherein the first and second fold lines are offset such that the inner side panel extends upwardly to abut the outer end panel thereby to define the beam in a set up tray.

[0025] A fifth aspect of the invention comprises a method of forming a tray from a blank, which method comprises the steps: -

- (i) forming a two ply base, end and side wall structures;
- (ii) folding the side walls out of alignment with the base such that the inner end panels and article retention structure are automatically erected in response to folding the opposed side walls towards each other; and
- (iii) folding the outer end panels to abut a portion of the inner end walls to be secured to the side walls thereby to complete construction of the tray.

[0026] 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 an outer tray according to a preferred embodiment of the invention;

FIGURE 2 is a plan view of the blank for forming an insert for the tray shown in Figure 1;

FIGURES 3, 4 and 5 illustrate the construction of the tray from the blank shown in Figure 1;

FIGURE 6 is a perspective view of the tray and insert in a set up condition;

FIGURE 7 is a plan view of a unitary blank for forming an outer tray and insert according to another preferred embodiment of the invention;

FIGURES 8, 9 and 10 illustrate the construction of the tray from the blank of Figure 7; and

FIGURE 11 is a perspective view of the set up tray formed from the blank of Figure 7.

[0027] Referring to the drawings there is shown a collapsible tray and a blank 10 for forming a collapsible tray or carton made from one or more blanks of paperboard or similar foldable sheet material.

[0028] In the first embodiment shown in Figure 1, the collapsible tray is formed from a two part blank. The first blank is shown in Figure 1 and shows outer blank 10 comprising a plurality of panels for forming the outer tray. There comprises first outer side wall panel 12, base panel 14, and second outer side wall panel 16 hingedly connected together in series along foldlines 18, 20 respectively. There further comprises an inner side wall structure hingedly connected to side wall panels 16 and 12 respectively along fold lines 32 and 32a.

[0029] Turning to the construction of inner side wall structure, there comprises a securing flap 27 and an inner side wall panel 26 hingedly connected together along fold line 30. In some embodiments the inner side wall panel 26 is connected to outer side wall panel, although in the illustrated embodiment, there may further comprise spacer panel 24 hingedly interconnecting outer side wall panel 16 to inner side wall panel 26 along fold lines 32 and 28 respectively.

[0030] The opposing inner wall structure 22a is identical in construction to inner wall panel 22 and like parts have been designated by the same reference numeral with the addition of the letter "a": therefore they are not described in any greater detail.

[0031] End wall structures are hingedly connected to the opposing ends of base panel 14 along fold lines 51 and 52 respectively. Describing the first end structure in more detail, there comprises an end panel 46 hingedly connected to base panel 14 along fold line 52.

[0032] The opposing end wall structure is provided by end wall panel 44 hingedly connected to opposing end

of base panel 14 along fold line 51. There may further comprise a support flap 48 hingedly connected to end wall panel 46 along fold line 53 to support "stretch" film placed over the tray.

[0033] Suitable securing means for connecting the end and the side wall panels is provided. In this embodiment there comprises a pair of oppositely disposed securing flaps 50a to 50d, extending from corresponding ends of the side wall panels 16 and 12 and are connected thereto along a co-linear extension of fold line 51 or 52, designated by reference numeral 57.

[0034] Each securing flap 50 is identical and therefore only securing flap 50a will now be described by reference to Figure 1. The securing flap 50a comprises a panel 56a adjacent end wall panel 46 and is separated in part from end wall panel 46. Panel 56a is hingedly connected to side wall panel 12 along fold line 57a.

[0035] In this embodiment, there comprises one or more fluid retaining structures. It will be seen from Figure 1 that one embodiment of the fluid retention structure comprises a tab 58a formed from end flap 56 and hingedly connected to end wall panel 46 along fold line 59a. In use, the tab 58 forms a deformable portion that prevents egress of fluid. Fold line 59a extends outwardly from the intersection of the fold lines 18 and 52 connecting the side wall and end wall to the base panel 14. A cut line extends from the end wall panel to the edge of fold line 59a. There usually comprises a fluid retaining structure positioned in each of the corners of the side and end walls of the tray, shown in Figure 1.

[0036] As mentioned above, there further comprises a separate insert 70 to be used with tray blank 10, shown in Figure 2. The insert comprises an inner base panel 72 and opposed end wall panels 74, 76 hingedly connected to inner base panel 72 along opposed fold lines 78 and 80 respectively.

[0037] The insert 70 further comprises one or more article retention structures 82a, 82b. In this embodiment there are illustrated two article retention structures, each structure is identical and therefore only the article retention structure 82a will be described in any greater detail.

[0038] The article retention structure 82a is formed from at least part of inner base panel 72 and, preferably, extends into inner end wall panel 74 being hingedly interconnected to the aforementioned panels along fold lines 84a and fold line 90a. The article retention structure 82a is otherwise separated from inner base panel 72 and wall panel 74 along proposed cut lines 94 and 96 which extend between the opposed ends of fold lines 84a and 90a. In this embodiment, the article retention structure comprises a riser panel 86a and a tread panel 88a hingedly connected together along interrupted fold line 92a. In use, the article retention structure 82a forms a step.

[0039] There further comprises a plurality of apertures 98 for receiving part of an article to be held by the article retention structure 82a. Preferably the apertures 98 extend into the riser panel 86a. More preferably, there

comprises one or more protruding portions that 97, 99 protrude into aperture 98 to provide a constriction so as to restrict movement of the article once it held within the aperture 98. In those embodiments with two opposed article retention structures 82, it is preferred that the opposing apertures 98 of article retention structure 82b are aligned with the corresponding apertures 98 in retention structure 82a.

[0040] In one class of embodiments, the inner end wall panels 74, 76 are wider than base panel 72 such that the opposite ends edges 73, 75; 77, 79 of the end wall panels project outwardly beyond the side edges of the base panel and outer end wall panels 44, 46.

Such an arrangement allows the end edges to be engaged with the inner side panels 26, 26a respectively in a set up tray, to retain the inner end panels in position whilst the retention structures 82 are formed from the inner base and inner end panels 72; 74, 76.

[0041] There further comprises a structure for securing the insert to the outer tray, whereby there comprises one or more engaging tabs 61, 63, 65 and 67 struck from inner base panel 72. There are corresponding slots S (Figure 6) in the end portion of the inner side wall panels 26a and 26, formed by protruding elements of securing flaps 27 and 27a and cut lines 62, 62a and 64 and 64a shown in Figure 1. Preferably, the engaging tabs 61, 63, 65, 67 are located at the end portion of the inner base panel 72 and are adapted to resist the load of the articles held by the article retention structure, defined in more detail below.

[0042] The construction of the tray from the blank shown in Figure 1 is described by reference to Figures 3, 4 and 5. It is envisaged that the construction of a flat collapsed tray and final construction and loading of the tray of the present invention can be formed by a series of sequential folding and gluing operations which can be performed in one or more straight line machines, so that the tray is not required to be rotated or inverted to complete its construction. The folding process is not limited to that described below and can be altered according to particular manufacturing requirements.

[0043] The side walls are first constructed, as illustrated in Figures 3 and 4 whereby the inner side wall structures of the outer tray are folded inwardly in direction X and Y, shown in Figure 3 along fold lines 32 and 32a respectively and are secured to the base panel 14. In the embodiment illustrated, securing panels 27 and 27a are secured to base wall panel 14 by glue or other suitable securing means known in the art. Thus, the tray is in a flat collapsed form as shown in Figure 4 to be supplied to the user so it can be erected.

[0044] Insert tray 70 is placed on base panel 14 by relative vertical movement between the insert and tray in a packaging machine, as is well known. In one class of embodiments, base panel 82 is secured to base panel 14 by glue or other suitable means known in the art, although it is advantageous not to secure the aforementioned panels together so as to provide a void which is

used to receive and retain fluid as described in another of the Applicant's patent applications (Docket D-7859) which is incorporated by reference.

[0045] In order to erect the tray T (Figure 6), the outer side wall panels 12 and 16 are folded inwardly in directions W and W¹ respectively, which causes the inner and outer side wall panels to be separated and spaced therefrom by the spacer panels 24 and 24a, and because fold lines 20 and 30 are spaced. This action causes the tabs 38, 40; 38a, 40a to become separated from the respective inner side wall panels 26 and 26a thereby to protrude inwardly with respect to the side walls, as shown in Figures 5 and 6.

[0046] Preferably, support structure is provided at each side, defined by inner and outer side wall panels 26, 26a; 12, 16, the spacer panel and part of outer base panel 14 of the outer tray which forms a beam B (Figure 6). It is envisaged that the support structure could be incorporated into the invention without there being fluid retaining structures present and without departing from the scope of invention.

[0047] Preferably the insert 70 is prevented from being separated from the tray T by the protruding tabs 61, 63, 65, 67 that are inserted into the corresponding adjacent slots S formed by cut lines 62, 62a, 64, 64a, shown in Figure 6. The outer side walls 12, 16 continue to be pushed inwardly in directions W and W¹ (Figure 5) until the side wall panels are placed in an erected condition. In this embodiment, the inner and outer side wall panels 16, 26; 12, 26a of the tray T are in a substantially perpendicular arrangement with respect to the base panel 14, as shown in Figure 6.

[0048] The ends of the tray T is constructed whereby the inner and outer end wall panels 72, 46 and 44, 76 are folded inwardly together along fold lines 94 and 50 respectively and thereafter the end securing flaps 56 are secured to the outer face of the end wall panels by glue or other suitable means known in the art. In other embodiments, the inner end panels 72, 76 are folded inwardly first, then securing flaps are folded inwardly to be secured to the outer face of the inner end panels, or as the case may be to the inner face of outer end panels 44, 46.

[0049] In order to construct the article retention structures 82, the inner end panels 74 and 76 are caused to be folded inwards which separates the article retaining structures 82 from their adjacent panels 72, 76; 74 along cut lines 94 and 96. The tread and riser panels 86, 88 are caused to be automatically folded out of alignment along fold line 94 by this action, so as to place the article retention structures in a set up condition. In this embodiment the retention structure is shaped as a step, although other structures are envisaged without departing from the scope of invention. For example the structure could be another tubular structure, such as a triangular shape, depending on the user requirements.

[0050] In those embodiments with a fluid retaining structure, the tab 58 is folded out of alignment with re-

spect to the end flap 56 along fold lines 60 and 18, so that as end flap 56 is secured to end wall panel 46, the tab 58 is placed in overlapping relationship with end flap 56 and end wall panel 46 to provide a structure that prevents egress of liquid from the corners. In one class of embodiments the tab forms a deformable portion that extends outwardly of the corner.

[0051] The tray is prevented from moving laterally with respect to the outer tray T because the edges of the inner end wall panels 72 and 76 extend beyond the inner side walls 26, 26a of the inner tray and to abut the end edges 73, 75, 77, 79 of the side wall panels.

[0052] Thus, the tray T is in a set up condition ready to receive an article, as shown in Figure 11.

[0053] One or more articles are placed on the inner tray and are retained by the article retaining structure.

[0054] It is envisaged that the article retaining structure and insert construction can be erected automatically by employing configurations other than those described above, without departing from the scope of invention.

[0055] Thus, a tray T for holding foodstuff or the like is provided which tray is formed from paperboard or like foldable sheet material and can be erected from a flat collapsed condition into a position of use and includes a double skinned zone around the side and end walls and the base wall to provide a void to receive excess liquid or exudates. The tray can be erected from a flat collapsed condition into a position of use and further comprises an article retention structure struck from an end portion of inner base panel such that a part of the end portion along the inner side panel remain flat with the outer base panel and wherein an engaging tab is formed along the part of the end portion to engage the end slot in the inner side panel.

[0056] It is envisaged that the or each void could be adapted to receive suitable absorbing material, for example absorbing stamp or bag, preferably during the initial set up process or by the application of absorbing polymer gel, for example polyacrylamide, during the set up or gluing steps of carton construction.

[0057] Turning to the second embodiment shown in Figures 7 to 11, it is formed from a unitary blank and is similar to the first embodiment, so like parts have been designated by the same reference with the prefix '1'. Therefore only the differences will be described in any greater detail with reference to Figure 7. The insert is connected to inner side wall panel 126 along fold line 130. In this embodiment the engaging tabs 165, 167 are formed on one side edge of the insert. The slots are formed from recesses 179 and 181.

[0058] Again the tray is constructed in very similar manner to the first embodiment, so only the differences will be described. The inner side wall panel 126a is folded inwardly in direction X¹ along fold line 132a and securing flap 127a is secured to base panel 114 as shown in Figure 8. Thereafter, the insert and inner side wall panel 126 are folded inwardly in direction Y¹ along fold

line 132 as illustrated in Figure 9, so the tray is in a flat collapsed condition ready to be supplied to an end user as shown in Figure 10. To erect the tray, the side walls and end walls are constructed and secured together as described above to produce a tray shown in Figure 11 ready to be loaded with one or more articles.

[0059] Beneficially, the two ply embodiment hereinbefore described provides a structure that is strengthened to retain foodstuff. The use of paperboard material provides an "environmentally friendly" alternative to trays formed from plastics material and the tray can include printed matter for marketing purposes, as the board can be recycled. The arrangement of the panels for the tray in the embodiment described above allows printed matter to be placed on the internal and external side and end walls of the tray.

[0060] A further advantage of the arrangement described above is that the material used for the tray and insert can differ. For example a different caliper of paper can be used, or the insert could be a food grade material, whilst the outer tray could be a material that is more suited to the application of printed matter.

[0061] It will be recognised that as used herein, directional references such as "top", "base", "end", and "side" 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.

[0062] The present invention and its preferred embodiment relates to a tray which is shaped to provide satisfactory rigidity to hold items such as meat or fish securely but with a degree of flexibility. The shape of the blank minimises the amount of paperboard required for the carton. The items can be applied to the carrier by hand or automatic machinery. It is anticipated the invention can be applied to a variety of carton or tray types and not limited to those of the flat tubular sort, for example the flat tubular structure could be replaced by a structure with longer sides and end panels to receive larger cuts of meat. Furthermore, the double skinned zones can be formed on the inner panels of the carton, without departing from the scope of invention.

Claims

1. A tray for holding foodstuff or the like which tray is formed from paperboard or like foldable sheet material and can be erected from a flat collapsed condition into a position of use, the tray comprising a plurality of panels for forming a base, opposed side and end walls wherein the panels forming the tray are a composite structure comprising inner and outer panels forming the base, side and end walls,

characterized in that part of an outer portion of inner base panel remains flat with the outer base panel and **in that** an engaging tab is formed along the part of the outer portion to engage a slot formed in the inner side panel.

2. A tray as claimed in claim 1 wherein the engaging tab is adapted to retain the inner base panel in face contacting arrangement with the outer base panel.
3. A tray as claimed in claim 1 or claim 2 wherein there further comprises an article retention structure struck at least in part from said outer portion of the inner base panel.
4. A tray as claimed in claim 3 wherein the engaging tab is located at the outer portion of the inner base panel resists the load of articles held by the retention structure to hold the retention structure in a set up position.
5. A tray as claimed in claim 3 or claim 4 wherein an outer portion of the inner end panel is retained by the inner side panel to retain the inner end panel in a set up condition while the retention structure is formed.
6. A tray as claimed in any of claims 1 to 5 wherein the inner panels forming the base, side and end walls are provided by an insert
7. A tray for holding foodstuff or the like which tray is formed from paperboard or like foldable sheet material and can be erected from a flat collapsed condition into a position of use, the tray comprising a plurality of panels for forming a base, opposed side and end walls wherein the panels forming the tray are a composite structure comprising inner and outer panels forming the base, side and end walls and an article retention structure struck at least in part from said outer portion of the inner base panel **characterized in that** an outer portion of the inner end panel is retained by the inner side panel to retain the inner end panel in a set up condition while the retention structure is formed.
8. A tray according to any one of claims 1 to 7 further comprising a beam support structure formed along one side of the tray from the inner side panel foldably connected along a first fold line to the outer base panel and the outer side panel foldably connected along a second fold line to the outer base panel, wherein the first and second fold lines are offset such that the inner side panel extends upwardly to abut the outer end panel thereby to define the beam.
9. A tray according to claim 8 wherein there further

comprises a spacer panel hingedly interconnecting the inner and outer end panels to form the beam.

10. A tray as claimed in any preceding claim further comprising a deformable portion hinged to the adjacent side and end panels between the base panel and the securing means, said deformable portion deformed when the tray is erected to provide a ply of material spanning the side and end panels to inhibit egress of fluid from the base panel at each said corner of the tray.
11. A tray as claimed in claim 10 wherein the deformable portion is hingedly connected to the adjacent side panel by a fold line in an obtuse angular relationship with the fold line connecting the end panel and base panel.
12. A tray as claimed in claim 10 or claim 11 wherein said securing means comprises a flap hingedly connected to one of said side and end panels and foldable to be superposed with the other said side and end panels to be secured therewith, which flap is severed from the deformable portion.
13. A tray as claimed in any of claims 10 to 12 wherein said deformable portion is provided by a gusset panel.
14. A tray as claimed in any preceding claim wherein the inner and outer walls forming the base and the side and end walls define one or more skinned zones providing one or more voids wherein means are provided to give fluid communication between the internal surface of the base and said void so that fluid present in the tray can drain into the voids in the base and in the side and end walls.
15. A tray according to claim 14 wherein said fluid communication means comprises a plurality of perforations distributed along at least one edge of the inner base wall.
16. A tray according to claim 14 or claim 15 wherein the voids include absorbing means to absorb said liquid.
17. A blank for forming a tray for holding foodstuff or the like which tray is formed from paperboard or like foldable sheet material comprising a plurality of panels for forming an outer base, opposed side and end walls and an insert comprising a plurality of panel forming the inner base, side and end walls **characterised in that** there further comprises an article retention structure struck from an outer portion of inner base panel such that a part of the outer portion along the inner side panel remain flat with the outer base panel in a set up condition and

wherein an engaging tab is formed along the part of the end portion to engage the end slot in the inner side panel.

18. A blank as claimed in claim 17 wherein the engaging tab is located at the outer portion of the inner base wall panel.
19. A blank as claimed in claim 17 or claim 18 wherein the tab is adapted to retain the inner base panel in face contacting arrangement with the outer base panel, in a set up condition.
20. A blank according to any of claims 17 to 19 further comprising a beam support structure formed along one side of the set up tray from the inner side panel foldably connected along a first fold line to the outer base panel and the outer side panel foldably connected along a second fold line to the outer base panel, wherein the first and second fold lines are offset such that the inner side panel extends upwardly to abut the outer end panel thereby to define the beam in a set up tray.
21. A blank as claimed in any of claims 17 to 20 further comprising a deformable portion hinged to the adjacent side and end panels between the base panel and the securing means, said deformable portion deformed when the tray is erected to provide a ply of material spanning the side and end panels to inhibit egress of fluid from the base panel at each said corner of the tray.
22. A blank as claimed in claim 21 wherein the deformable portion is hingedly connected to the adjacent side panel by a fold line in an obtuse angular relationship with the fold line connecting the end panel and base panel.
23. The blank as claimed in any of claims 17 to 22 wherein said deformable portion is provided by a gusset panel.
24. A blank according to claim 23 wherein there further comprises a plurality of perforations distributed along at least one edge of the base.
25. A method of forming a tray from a blank as claimed in any of claims 17 to 24, which method comprises the steps: -
 - (i) forming a two ply base, end and side wall structures;
 - (ii) folding the side walls out of alignment with the base such that the inner end panels and article retention structure are automatically erected in response to folding the opposed side walls towards each other; and

(iii) folding the outer end panels to abut a portion of the inner end walls to be secured to the side walls thereby to complete construction of the tray.

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- 26.** The method as claimed in claim 25 wherein the gusset panels are automatically folded inwardly and upwardly in response to folding the side walls in step (ii).

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- 27.** A method as claimed in claim 25 or claim 26 wherein the gusset panels are pre-folded prior to final folding of the side and end walls.

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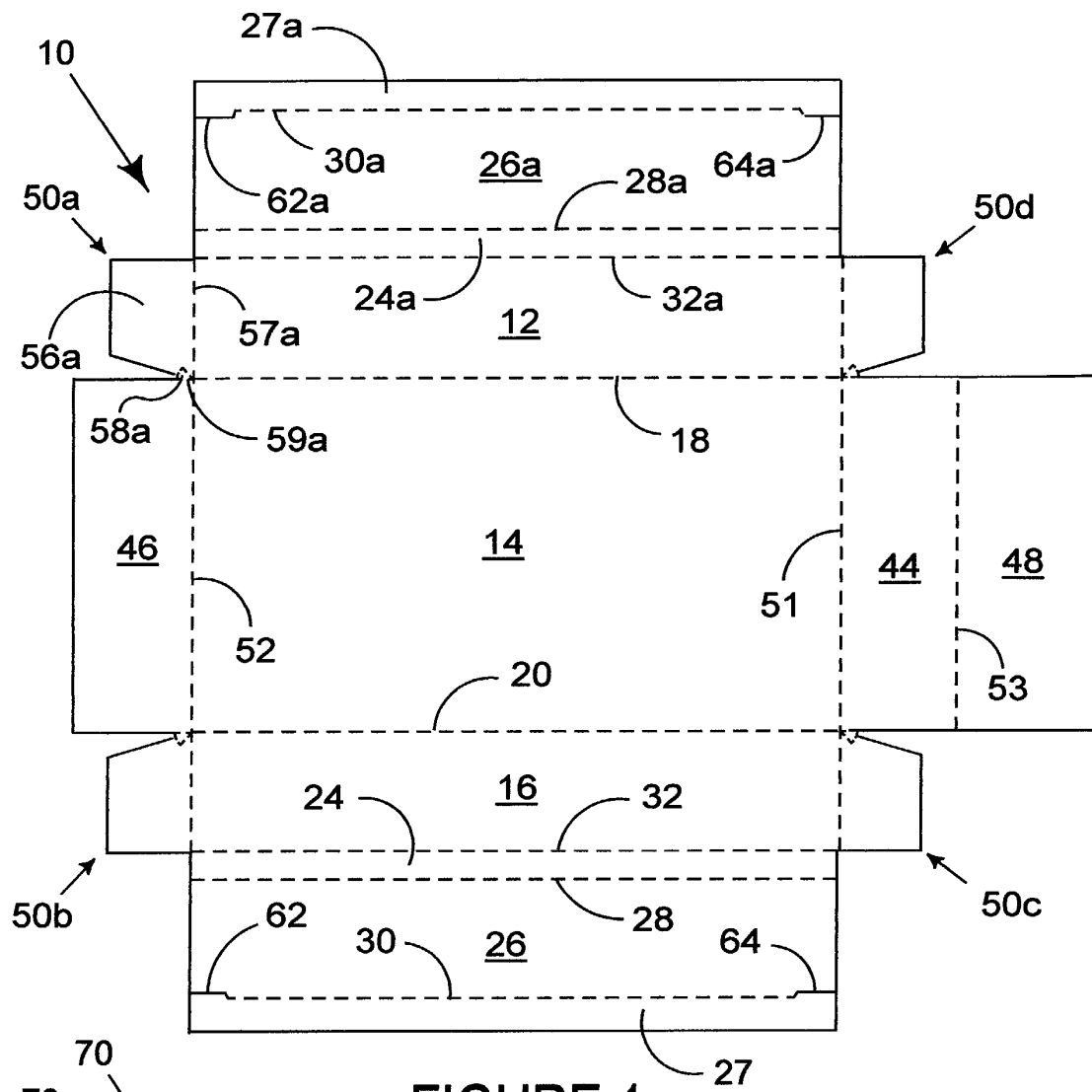


FIGURE 1

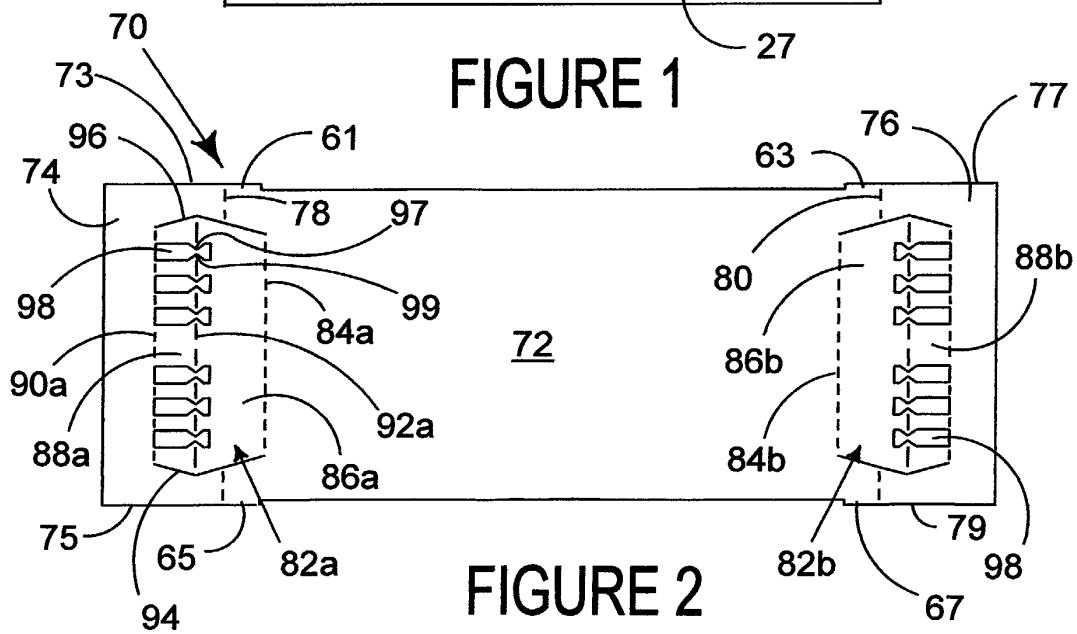
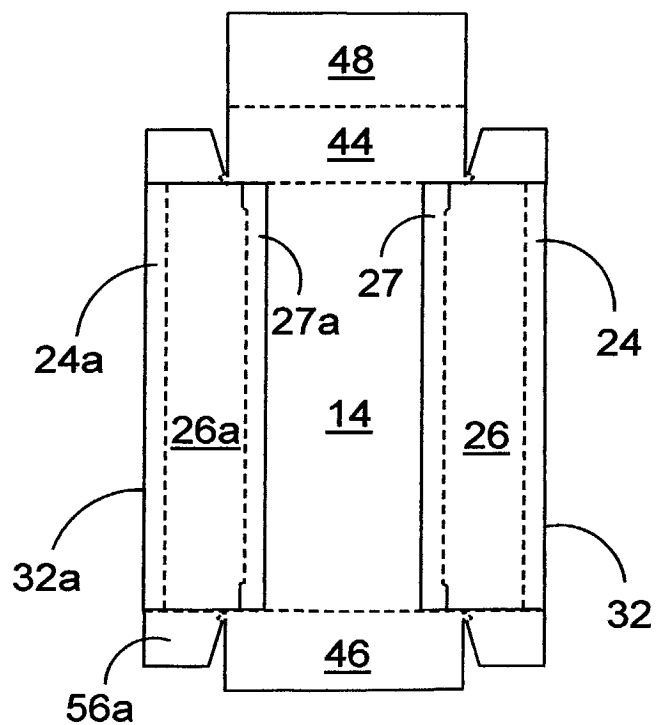
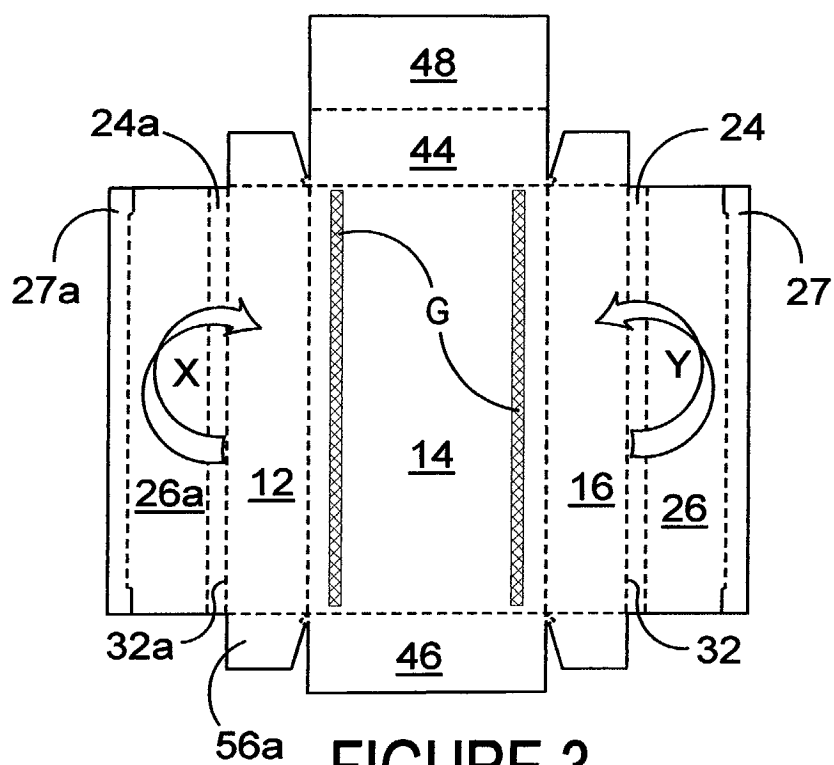
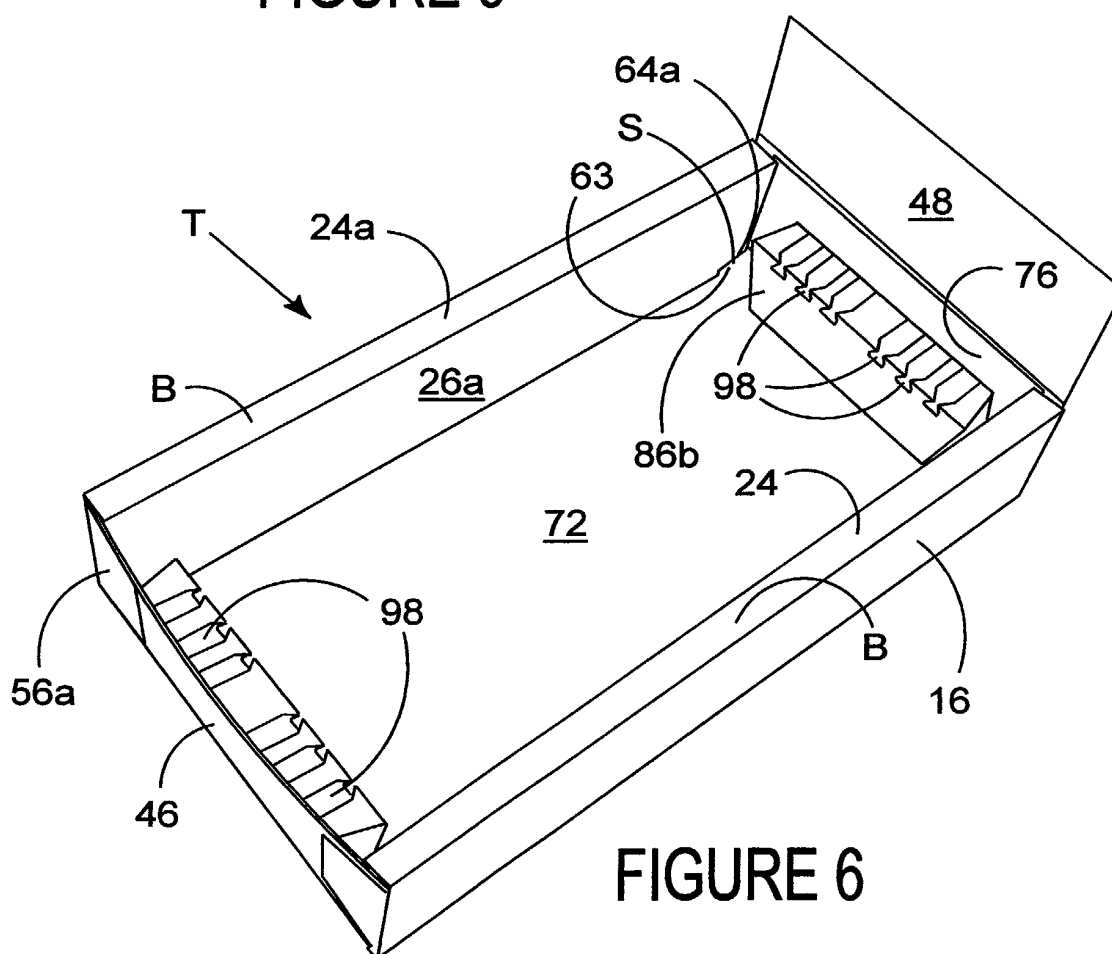
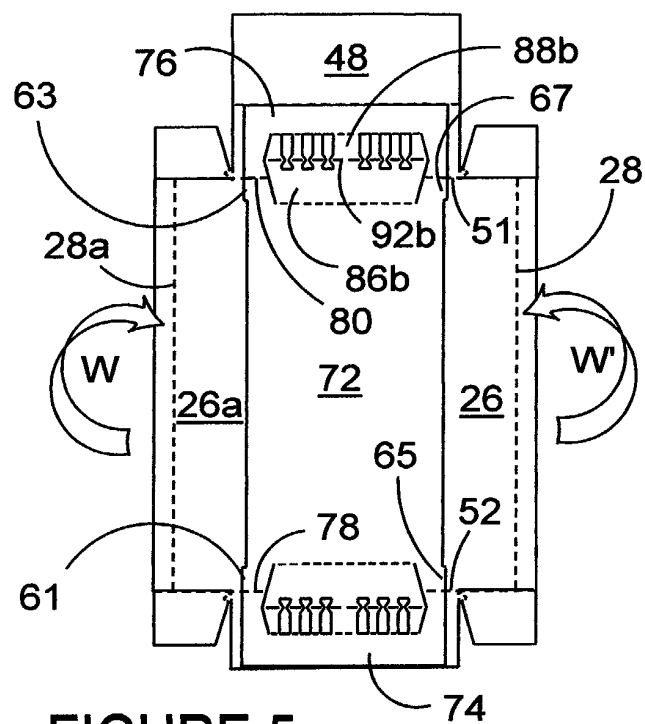


FIGURE 2





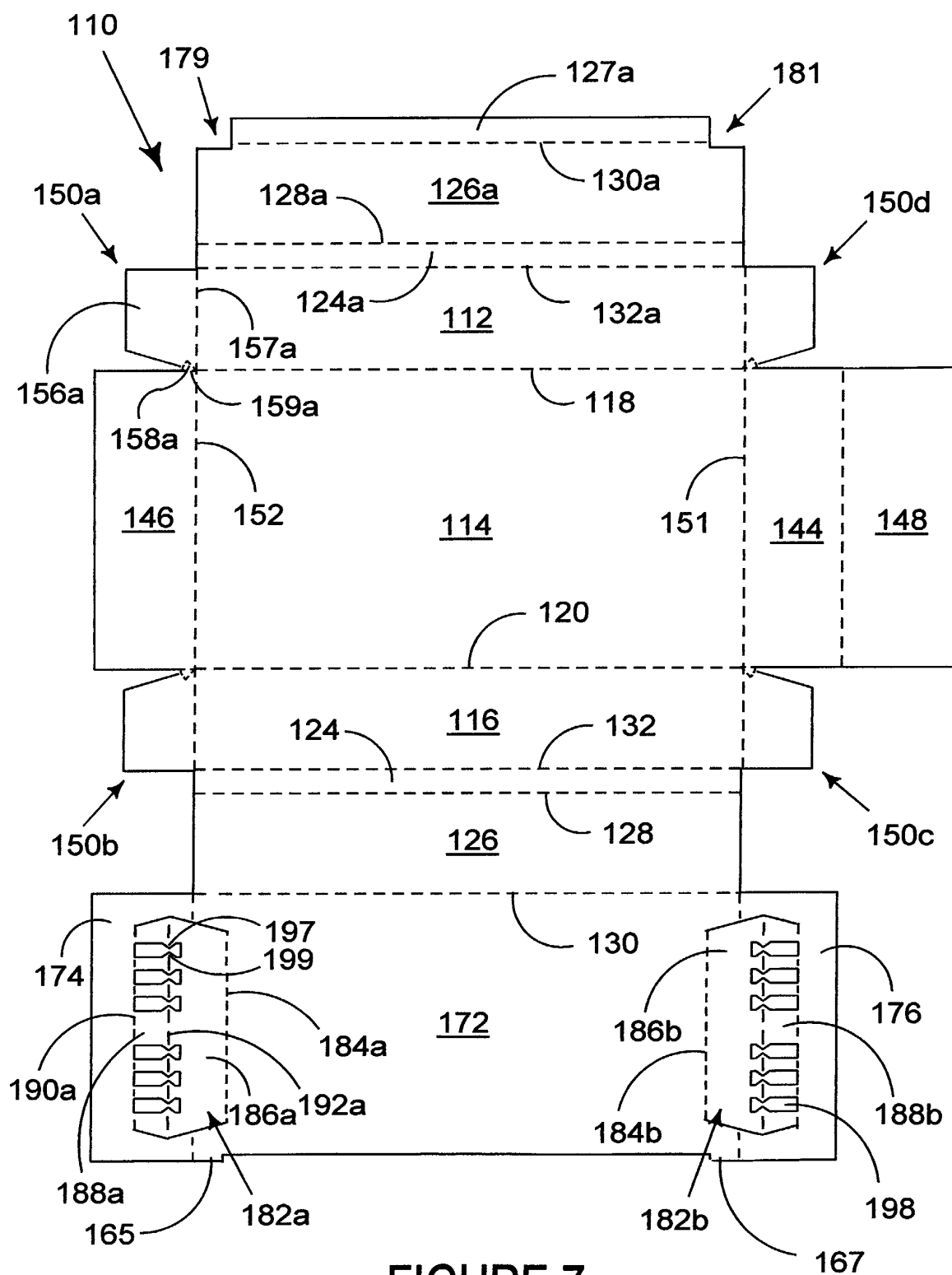


FIGURE 7

