

(19)



(11)

EP 2 028 124 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
25.02.2009 Bulletin 2009/09

(51) Int Cl.:
B65D 71/12 (2006.01) **B65C 3/00** (2006.01)
B65C 9/00 (2006.01) **B65C 9/02** (2006.01)
B65C 9/06 (2006.01)

(21) Application number: **08162445.4**

(22) Date of filing: **14.08.2008**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT
RO SE SI SK TR**
Designated Extension States:
AL BA MK RS

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(30) Priority: **15.08.2007 GB 0715910**

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(54) **Carton for packaging articles, package, blank, part-formed carton and method of packaging**

(57) A carton for retaining articles (B) comprising a top structure (16, 14, 12, 6) including a top panel (12) and means (48) for retaining an upper portion of an article. The carton comprising a bottom structure (8, 10) including a bottom panel (10) and means (80) for retaining a lower portion of the same article. The carton comprises

a back panel (4). Wherein the means (48) for retaining an upper portion of an article comprises an article engaging means (48) for engaging a radially protruding portion of an article and wherein only the back panel (4) is connected to both the top structure (16, 14, 12, 6) and to the bottom structure (8, 10) and provides the only connection therebetween.

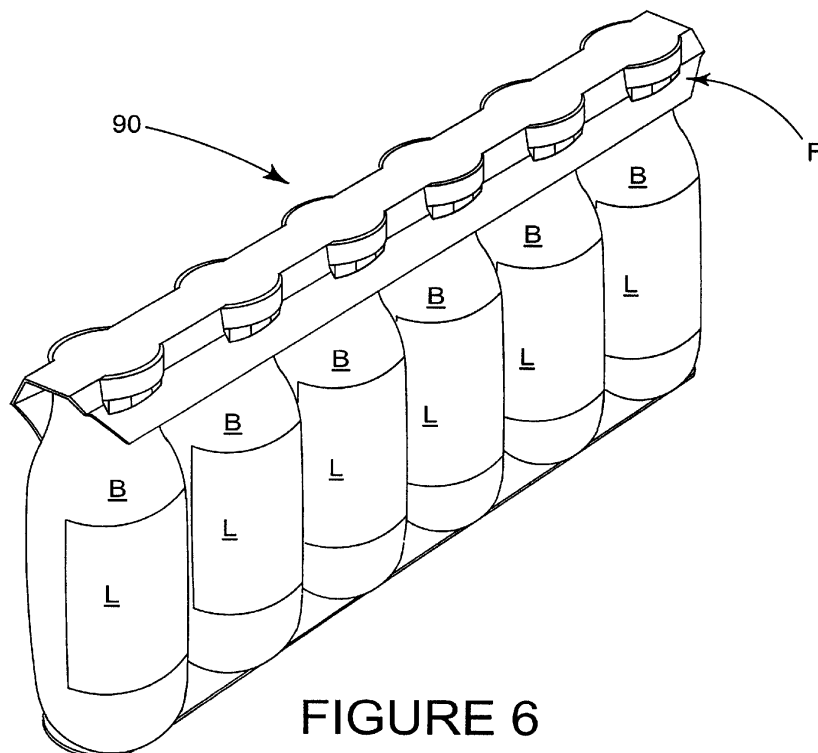


FIGURE 6

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Description

Field of the Invention

[0001] The present invention relates to packaging for articles. More specifically, though not exclusively, the invention relates to packaging for retaining articles in an array formation. Yet more specifically, though again not exclusively, the invention relates to packaging for retaining articles which articles are held such that they may be labelled after having been inserted into a carton.

Background of the Invention

[0002] There is a need in the field of packaging to provide cartons, capable of retaining articles there within, which fulfil two requirements: the first being that the article must be securely retained within the body of the carton; and the second being that the carton itself must use as little material as possible, so as to minimise costs of production. Numerous types of cartons are provided in the prior art, which cartons provide opposing side and end walls coupled to opposing top and base panels so as to form an enclosure in which to hold the articles, but these cartons require substantial amounts of material from which to form each said walls and panels. There is a need therefore for a carton that uses the minimum number of walls and panels in order to securely restrain a predetermined number of articles and yet to allow a user to withdraw one or more articles from the carton as desired.

[0003] A further requirement of the packaging industry is that the articles that are subsequently disposed within the containers be individually labelled for identification and marketing purposes. It would, however, be advantageous if the articles might be labelled once they had already been positioned in-situ in the container.

[0004] The present invention seeks to overcome or at least mitigate the problems of the prior art by providing a container that requires a minimum amount of material and yet securely restrains articles placed within it and furthermore allows the articles so restrained to be labelled once they have been positioned within the carton.

Summary of the Invention

[0005] A first aspect of the invention provides a carton for retaining articles comprising a top structure including a top panel and means for retaining an upper portion of an article, a bottom structure including a bottom panel and means for retaining a lower portion of the same article and a back wall, wherein the means for retaining an upper portion of an article comprises an article engaging means for engaging a radially protruding portion of an article and wherein only the back wall is connected to both the top structure and to the bottom structure and provides the connection therebetween.

[0006] Optionally, the top structure comprises a first wall that is hingable to be brought releasably into en-

gagement with an upper portion of an article, when present in the carton, which engagement thereby retains the carton in an erected condition and wherein the aforesaid engagement, when released, allows the carton to be collapsed into a substantially planar condition.

[0007] Preferably, there further comprises a fold line defined across said back wall and contiguous with frangible lines extending across each of the top and bottom structures, which frangible lines, once broken, allow the back wall of the carton to be foldable to bring one portion of the back wall into contact with another portion of the back wall.

[0008] Preferably the bottom structure comprises a pair of bottom panels folded to form a composite structure, wherein the composite structure is formed of an outer bottom wall hinged to an inner bottom wall about a second fold line and wherein the means for retaining a lower portion of the same article comprises securing said article to the composite structure.

[0009] Preferably the back wall comprises one or more additional fold lines extending substantially horizontally along its length, which additional fold lines allow the back wall to flex and become shaped to accept the profile of the articles contained therein.

[0010] Preferably upper portions of the back and/or first walls comprise a fold line which defines a bevel panel at the upper end of that wall, which bevel panel is articulable to accommodate the shape of the upper portions of the articles contained by the carton.

[0011] Preferably the article engaging means for engaging a radially protruding portion of an article comprises one or more apertures for receiving upper portions of the aforesaid articles, said article receiving apertures being formed in any one or more of: upper portions of the first wall; upper portions of the back wall; and/or said top panel, and/or the article engaging means for engaging a radially protruding portion of an article comprises one or more foldable retaining tabs.

[0012] According to a second aspect the invention provides a package comprising a carton in accordance with any the preceding paragraphs and one or more articles.

[0013] Preferably the package further comprises securing means to maintain contact between lower portions of the articles and a surface of the bottom structure of the carton, so as to retain the articles in the carton and wherein said securing means is selected from the following: an adhesive material applied to said surface or a mechanical fastener.

[0014] According to a third aspect the invention provides a blank for forming a carton, which blank comprises panels, including a top panel, for forming a top structure and means for retaining an upper portion of an article, the blank comprises panels, including a bottom panel, for forming a bottom structure and means for retaining a lower portion of the same article and a panel for forming a back wall of the carton, wherein the means for retaining an upper portion of an article comprises an article engaging means for engaging a radially protruding portion

of an article and wherein only the back wall is connected to both the top structure and to the bottom structure and provides the connection therebetween.

[0015] Preferably the blank comprises a first wall that is hingeable, when the blank is set up into the erected carton, to be brought releasably into engagement with an upper portion of an article, when present in the carton, which engagement thereby retains the carton in an erected condition and wherein the aforesaid engagement, when released, allows the carton to be collapsed into a substantially planar condition.

[0016] Preferably a fold line is defined across the panel for forming the back wall, which fold line is contiguous with frangible lines extending into the panels for forming the top structure and contiguous with frangible lines extending into the panels for forming the bottom structure which frangible lines are arranged such that, once broken, the back wall of the erected carton is foldable such that one portion of the back wall is brought into contact with another portion of the back wall.

[0017] According to a fourth aspect, the invention provides a part-formed carton wherein at least two panels of said blank are secured together.

[0018] According to a fifth aspect the invention provides, a method of packaging, which method comprises providing a blank, or comprises providing a part-formed blank; forming said blank or part-formed blank about an article to form a top structure having means for retaining an upper portion of that article, a bottom structure with means for retaining a lower portion of the same article and a back panel, wherein only the back panel is connected to both the top structure and to the bottom structure and is structured such that a portion of said article is unobstructed by said carton, said method further comprising labelling said article in situ of said carton.

[0019] A further aspect of the present invention provides a carton for retaining articles, which carton comprises bottom wall, back wall, and top wall connected one to the next in linear series, and a front wall that is free to hinge only about an edge of the top wall and is hingeable to be brought releasably into engagement with an upper portion of an article, when present in the carton, which engagement thereby retains the carton in an erected condition and wherein the aforesaid engagement, when released, allows the carton to be collapsed into a substantially planar condition.

[0020] Preferably, the carton further comprises a fold line defined across back wall horizontally aligned with frangible lines extending across each of the front, top, and bottom walls, which frangible lines, once broken, allow the back wall of the carton to be foldable to bring one portion of the back wall into contact with another portion of the back wall.

[0021] Preferably, the bottom panel is a composite structure of at least two panels.

[0022] Preferably, the composite structure is formed of an outer bottom wall hinged to an inner bottom wall about a second fold line, wherein the inner bottom wall

is the mirror image of the outer bottom wall, about the second fold line.

[0023] Preferably, the back wall comprises a one or more additional fold lines extending horizontally along its length, which additional fold lines allow the back wall to flex and become shaped to accept the profile of the articles.

[0024] Preferably, upper portions of the back and/or front walls comprise a horizontal fold line which defines a bevel panel at the upper end of that wall, which bevel panel is articulable to accommodate the shape of the upper portions of the articles as the carton is formed.

[0025] Preferably, one or more of the following walls comprise apertures which receive portions of the aforesaid articles, and proximate said apertures are provided means for engaging those portions:

- a. upper portions of the front wall;
- b. upper portions of the back wall; and/or
- c. top wall.

[0026] Preferably, there is provided a package comprising a carton and one or more articles, wherein the articles are contained in the carton, and wherein the package further comprises securing means to maintain contact between lower portions of the articles and a surface of the bottom wall of the carton, so as to retain the articles in the carton.

[0027] Preferably, said securing means is:

- a) an adhesive material applied to said surface; or
- b) a mechanical fastener

[0028] Preferably, the package further comprises an additional container, into which the carton and the articles contained therein may be loaded.

[0029] A further aspect of the present invention provides a blank for forming a carton, which blank comprises panels for forming a bottom wall, back wall and top wall hinged one to the next, and a front wall that is free to hinge only about an edge of the top wall and is hingeable, when set up into the erected carton, to be brought releasably into engagement with an upper portion of an article, when present in the carton, which engagement thereby retains the carton in an erected condition and wherein the aforesaid engagement, when released, allows the carton to be collapsed into a substantially planar condition.

[0030] Alternatively, there is provided a blank for forming a carton.

[0031] Yet a further aspect of the present invention provides a method of packaging an article, which method comprises providing a blank for forming a carton, which blank comprises panels for forming bottom, back, top and front walls connected one to the next in linear series,

which top wall and upper portions of the front and back walls have means for engaging with upper portions of the articles, and wherein the front wall extends only part way from the top panel to the bottom panel; securing one or more articles upon the panel for forming the bottom wall; folding the back wall relative to the bottom wall so as to bring it into contact with said one or more articles, folding the upper portion of the front and back walls, and the top wall relative to one another so as to bring said upper portions of the articles into engagement with upper portions of the front and back walls, thus forming a package comprising one or more articles.

[0032] Preferably, said article comprises a first portion obstructed by said carton bottom, back, and front walls and a second portion unobstructed by said carton bottom, back, and front walls and wherein said second portion of said articles are labelled subsequent to said formation of said package.

Brief Description of the Drawings

[0033] The following description will reference the accompanying Figures of which:

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

Figure 2 illustrates a plan view of a blank for forming a carton according to a second embodiment of the present invention;

Figure 3 illustrates a plan view of a blank for forming a carton according to a third embodiment of the present invention; Figure 4 illustrates a plan view of a blank for forming a carton according to a fourth embodiment of the present invention;

Figure 5 illustrates a plan view of a blank for forming a carton according to a fifth embodiment of the present invention;

Figure 6 illustrates a set up carton formed from the blank similar to those illustrated in Figures 1, 2 and 5; and

Figure 7 illustrates a set-up carton formed from the blank of Figure 3.

Detailed Description of Exemplary Embodiments of the Invention

[0034] With reference to Figure 1 there is provided a blank 2 preferably formed of paperboard or other suitable flexible sheet material. The blank 2 comprises a back panel 4 hinged along one edge, via fold line 22, to an outer bottom panel 8 which outer bottom panel 8 is in turn hinged along a fold line 24, defined along an oppos-

ing edge, to an inner bottom panel 10. The back panel 4 is hinged along an opposing edge, via a fold line 20, to a first bevel panel 6, which is then in turn hinged, along a fold line 26, to a top panel 12. Top panel 12 is hinged along an opposing edge via fold line 28 to second bevel panel 14, which second bevel panel 14 is then hinged along an opposing edge via fold line 30 to a front panel or first panel 16. Thus each of the back, first bevel, top, second bevel, bottom and front panels are hinged one to next in a linear series via a plurality of fold lines.

[0035] Back panel 4 is, optionally, shaped along both of its free edges, which shape, if present, continues into the free edges of outer bottom panel 8. Inner bottom panel 10 is usually shaped such that it mirrors outer bottom panel 8 about fold line 24.

[0036] Defined within portions of back panel 4 proximate fold line 20 and portions of first bevel panel 6 and top panel 12, proximate fold line 26, are series of apertures 48 for accepting flanged upper portions F of articles, e.g. bottles B (best shown in Figure 6) that are to be loaded within the carton 90 once it has been set up from blank 2. The apertures 48 are provided in both first 6 and second bevel panels 14 such that the arrangement of apertures is symmetrical about a centre longitudinal axis of top panel 12 parallel to fold line 26. Each aperture 48 is defined by cut lines 40, 42, 44 and 46. Side cut lines 42 and 44 extend from terminal points of fold line 32 across a width of the bevel panels 14 or 6 as appropriate and then continue, across fold line 26, partially into top panel 12. The first cut lines 46 extend between the free terminal edges of the side cut lines 42 and 44 and may optionally be curved in shape such that portions of top panel 12 extend into first and second bevel panels 6, 14. Where this is the case, fold lines 26, 28 may be interrupted by the curved portions of the top panel 12. Each aperture 48 has struck therefrom a retaining tab 50 hinged along optionally curved fold lines 34 to portions of back panel 4 or front panel 16 as appropriate, on either side of optionally curved cut line 32. Side edges of retaining tabs 60 are defined by cut line 34 extending beyond cut line 40.

[0037] Optionally, fold line 60 extends transversely of the length of back wall 4, from the free or distal end of front panel 16 through to the terminal end of inner bottom panel 10. Where fold line 60 intersects with fold line 24 there is positioned an optional aperture 70, defined by cut lines 72, which cut lines extend from points on fold line 60 either side of fold line 24 and intercept with one another at points on fold line 24 so as to define between them a substantially square aperture 70. It is of course envisaged that aperture 70 may be varied in shape and the square geometry of apertures 70 of this particular embodiment is not a limiting feature of this invention. Rather any shape suitable to remove material at the junction of fold lines 60 and 24 would serve the purpose of reducing material at the corner of the carton, which when fold line 60 is deployed for folding the back panel 4, would otherwise represent a difficult corner to manipulate. The

beneficial arrangement of fold line 60 and frangible portions of line 60 that extend into the top and bottom retention structures enables the overall carton length to be halved. This function may be useful in a retail outlet where the display space may be limited, or alternatively or additionally this functionality may be useful to the end user once the carton has been taken home and is stored. Space may be limited at this point also. Nevertheless, by starting with a longer carton, capable of holding more articles, optimum display and advertising in store can be achieved and/or orientation of labelling can readily be made uniform as described below. Where fold line 60 continues across the inner and outer bottom panels 8, 10, and the top, front and first and second bevel panels 12, 16, 6, 14, it is preferably frangible so that these lines can be broken for folding the erected and loaded carton in half. It will be envisaged that by positioning the fold line 60 and/or utilising additional fold/frangible lines 60 the overall package formed may be foldable into a number of configurations. The preferred configuration is folding the package in half in a "back-to-back" arrangement.

[0038] At equal spacing to the apertures 48 in bevel panels 14 and 6, are a plurality of optional apertures 80, defined by a cut line 82 within the inner bottom panel 10. The pairs of apertures 48 formed either side of the top panel 12 and apertures 80 are aligned such that, in the set up carton 90, best shown in Figure 6, articles such as bottles B, having flanged upper portions F may be positioned over the apertures 80 in the inner bottom panel 10 whilst their upper flanged portions F are received and retained by the apertures 48. Front panel 16 is optionally tapered at its free side edges such that its terminal free end is narrower than fold line 30. It will be understood by those skilled in the art, that the apertures 80 are optional and provide one means to secure said articles, thus rendering said article(s) fixed or substantially fixed in place by the bottom retention structure thereby provided. The article(s) may additionally, or alternatively, be secured by various means including, but not limited to gluing or fitting into indents or apertures within the inner bottom panel 10.

[0039] Once the carton structure is completed and articles retained therein by the upper retention structure of panels 6, 12, 14 and 16 and by the lower retention means 8, 10 (plus optional adhesive), the article(s) B comprise a first portion which is obstructed by the carton bottom 8/10, back 4, and front walls 16 and a second portion unobstructed by any of the carton walls. This allows the unobstructed portion of the article(s) to be labelled subsequent to the formation of the package which comprises the article(s). Since the article(s) are secured, the labels, printing, or marking affixed to the article(s) remains easily visible on the unobstructed portion of the article(s). As used herein, "labelled" means any means of marking, printing or identifying. Because the articles are retained when the labelling takes place and preferably such that subsequent rotation of any of the articles cannot take

place, not only in labelling a number of aligned articles easier, but also subsequent alignment by rotation of the articles is not required in order to ensure maximum impact advertising of the branded product. Additionally, during manipulation of the articles during metering of articles and package construction any damage that might occur to the labels is avoided.

[0040] The following description sets out a number of alternative embodiments of the present invention wherein like numerals, prefixed with '1', '2', '3' and '4', have where possible, been used to refer to like features. Generally, only the differences between the embodiments have been described.

[0041] Figure 2 illustrates a second embodiment of the present invention which embodiment comprises substantially the same panels as the blank of Figure 1 including first panel 116, top panel 112 and first and second spacing or bevel panels 106, 114. Together these panels with apertures 148 and/or retention tabs 150 form a top retention structure. The blank 102 differs from blank 2 in that the back panel 104 comprises two parallel spaced fold lines 162 and 164 along its length, and further in that tabs 150 comprise offset parallel fold lines 166, perpendicular to the free edge defined by a cut line 140.

[0042] Further, the side edges of retaining tabs 150 are provided by cut lines 135 that extend perpendicular to cut line 140, and cut lines 144 defining aperture 148 are coterminal with cut line 140.

[0043] Fold line 162 defines an upper portion of the back wall 104 which can bow inwardly (when viewed from the outside of the carton) against the articles held in the carton. This serves to further retain the articles tightly and works in co-operation with the retaining tabs 150 which are in this arrangement provided with fold lines 166 which enable the foldable retaining tabs 150 to bow outwardly (when viewed from the outside of the carton).

[0044] The free edges of back panel 104 are substantially straight between fold lines 162 and 164, but taper inwardly proximate fold line 122 and define an indent proximate fold line 120. These features are optional and may be widely varied to accommodate the articles to be packaged.

[0045] The bottom retention structure comprises inner bottom panel 108. Preferably lower portions of articles held within a carton formed from blank 102 of Figure 2 are secured by adhesive or other means to the bottom structure 108.

[0046] A third embodiment, shown in Figure 3, comprises a series of panels 205, 206, 212, 216 for forming a top retention structure and a series of panels 208, 207, 203, 209 for forming a bottom retention structure. The top and bottom retention structures are connected only by a back wall 204 (see figure 7).

[0047] The top retention structure comprises a first panel 212, top panel 205 and first and second upper spacing panels 206, 216. Together these panels are foldable to form a substantially tubular structure for enclosing and retaining an upper portion of an article (see Figure

7). A back panel 204 is hinged at its upper and lower edges along fold lines 262 and 264 to the aforescribed top retention structure and to a bottom retention structure. The bottom retention structure is formed from an outer bottom panel 208 and an inner bottom panel 206 that are spaced by first and second lower spacing panels 207, 209.

[0048] The first panel 212 comprises apertures 248, defined in linear series along the length thereof, each aperture 248 being defined by a substantially circular cut line 246 defined, which cut line 246 is interrupted proximate the fold line 226 by preferable foldable retaining tabs 250. Each foldable retaining tab 250 extends from the first upper spacing panel 206 into each aperture 248. Aligned with fold line 226 and formed mid way across the width of each tab 250 is curved cut line 270 that allows each foldable retaining tab 250 to flex resiliently when the carton is in set up condition and thereby engage the underside of a radially protruding part of an article for retaining that article and minimising relative vertical movement of that article. The opposing side of aperture 248 proximate fold line 228 comprises a rebate 272 which extends substantially up to the fold line 228 to form a 'notch' in the edge of the aperture.

[0049] The bottom retention structure comprises an outer bottom panel 208 hinged along fold line 222 to a first lower spacing panel 207, hinged along fold line 268 to inner bottom panel 203 which is hinged along fold line 267 to second lower spacing panel 209. Together these panels are foldable to form a substantially tubular structure for enclosing and retaining a lower portion of an article (see Figure 7).

[0050] In one embodiment of the invention, the bottom retention structure is formed by folding the outer bottom panel 208 about fold line 264 such that the outer bottom panel 208 is disposed substantially perpendicularly to the back wall 204. Then the first lower spacing panel 207 is folded about fold line 222 until it is disposed in a substantially perpendicular relationship to the outer bottom panel 208 and as such in a substantially parallel relationship with the back wall 204. The inner bottom panel 203 is then folded about fold line 268 until it is disposed generally above and in a substantially parallel relationship with the outer bottom panel 208. To complete the formation of a tubular bottom retention structure, the second lower spacing panel 209 is folded about fold line 267. Optionally, the second lower spacing panel 209 is folded into face contacting relationship with the back wall 204 above the inner bottom panel 203. Alternatively the second lower spacing panel 209 is folded into face contacting relationship with the back wall 204 below the inner bottom panel 206.

[0051] In the former arrangement wherein the second lower spacing panel 209 is folded into face contacting relationship with the back wall 204 above the inner bottom panel 203, adhesive means such as glue or mechanical fixing is preferably used to secure that lower spacing panel 209 to the back wall 204.

[0052] In the later arrangement wherein the second lower spacing panel 209 is folded into face contacting relationship with the back wall 204 below the inner bottom panel 203, adhesive means may not be required at all and the second lower spacing panel 209 held in place by virtue of being sandwiched between the back wall 204 and the tubular bottom retention structure.

[0053] Optionally, and as is shown in Figure 3, the second lower spacing panel 209 has a greater depth than the first lower spacing panel 207. As such and especially so in the arrangement where the second lower spacing panel 209 is folded into face contacting relationship with the back wall 204 below the inner bottom panel 203, the inner bottom panel 206 is angled or slopes. In this way the inner bottom panel 203 has an elevation above the outer bottom panel 208 that is greater closest to the back wall 204 than the elevation of the inner bottom panel 203 above the outer bottom panel 208 closest to the first lower spacing panel 207 at the front of the carton. Article receiving apertures 280 formed in the bottom retention structure are therefore elliptically shaped. In embodiments where the first and second spacing panels 207, 209 have similar depth, or in embodiments where the second lower spacing panel 209 is folded into face contacting relationship with the back wall 204 above the inner bottom panel 203, the inner bottom panel 203 may be aligned such that it is not sloped and is disposed in parallel relationship to the outer bottom panel 208. In such embodiments the article receiving apertures 280 may be more circular than elliptical.

[0054] At both free edges of the back panel 204 substantially semi circular indents centred about a mid point of those free edges and formed between fold lines 262 and 264 parallel to and offset from that mid point.

[0055] Figure 4 illustrates a fourth embodiment of the present invention and provides a blank 302 for forming a carton (not shown) having a tubular upper retention structure similar in configuration to that of Figure 3 and a substantially planar or flatish bottom retention structure, similar to that of Figures 1 and 2.

[0056] The upper or top retention means has a top panel 305, first and second upper spacing panels 306, 316 and a first panel 312. The free ends of back panel 304 comprise curved indentations between fold lines 362 and 322, the edges of which curved indentations continue into the free edges of outer bottom panel 308, before curving inwardly once more to intersect with fold line 324. Fold line 324 hinges inner bottom panel 310 to outer bottom panel 308. Inner bottom panel 310 is shaped to mirror outer bottom panel 308 about fold line 324.

[0057] The inner bottom panel 310 comprises an optional linear series of apertures 380 defined by cut lines 382 disposed a fixed offset around the periphery of which are optional cut lines 384 that define a substantially circular cut portion hinged about either side of inner bottom panel 310. The series of apertures 380 are similar to apertures 80 of Figure 1.

[0058] Defined within first panel 312 is the same ap-

erture, tab and indent arrangement 348, 350, 327 as was described in relation to the third embodiment of this present invention depicted in Figure 3.

[0059] Figure 5 illustrates a fifth embodiment of the present invention and provides a blank 402. The back panel 404 of which comprises parallel spaced fold lines 462 and 464 like those provided by the embodiments of Figures 3 and 4. The free edge of back panel 404 comprise curved indentations between fold lines 420 and 422, defined by a curved edge, which curved edge continues into outer bottom panel 408 before curving inwardly again at that terminal end of outer bottom panel 408.

[0060] The apertures 448 and corresponding tabs 450 are the same as those provided by the first embodiment of the present invention discussed with reference to Figure 1.

[0061] The above blanks 2, 102, 402 can be set up into a carton 90 substantially as that depicted in Figure 6 or 7, erected from the blank 2 of Figure 1; whereas the blanks 202, 302 can be set-up into a carton having a tubular top retention structure such as that illustrated in Figure 7. Carton 90 is illustrated in both Figures 6 and 7 with a series of bottles B having been loaded into it, such that the flanged upper portions F of each bottle B protrude through an aperture 48 and/or are contained by an upper tubular retention structure. Figure 6 also illustrates the labelling L of each bottle B which labels may preferably be sized so as to be attached only to one side of each bottle B and after those bottles have been arranged within the carton 90.

[0062] To set up the carton 90 from the blank 2, inner bottom panel 10 is folded about fold line 24 such that it becomes disposed in coplanar contact over substantially all of outer bottom panel 8. The two panels may be secured together by adhesive or some mechanical fastening means though this is not a limiting feature of the invention. The back panel 4 is then folded about fold line 22 to bring it into a perpendicular relation with composite bottom panel 8/10 such that the outer bottom panel 8 may be disposed lowermost. Articles B are then disposed in registry with optional apertures 80 defined in the inner bottom panel 10 (best shown in Figure 6) and preferably secured thereto by retaining means such as adhesive. Subsequently bevel panel 6, top panel 12, bevel panel 14 and side panel or first panel 16 are each folded about the top portion of the bottles B via folding along fold lines 20, 26, 28 and 30 respectively. This folding brings the upper flanged portions F of the bottles B into registry with the apertures 48, which are sized and arranged to accommodate them and retain them. Tabs 50 struck from those apertures 48, thereby retain the upper flange portions F of the bottles B from movement out of the apertures 48 by holding the flanged upper portions F in a braced condition. In place of the tabs 50, other engaging means such as adhesives or mechanical fixings may be provided. If present, the adhesive may be protected by a releasable liner in the blank.

[0063] Optionally, the bottles B are glued down onto

the inner surface of inner bottom panel 10 or otherwise, to an inner surface of outer bottom panel 108, 208, 408. The articles may then be released by the user by overcoming the adhesion of the glue and removing the flanged upper portions from the corresponding apertures 48 of the bevel panels 6 and 14.

[0064] Each of the above embodiments of the blanks 2, 102, 202, 302, 402 may be constructed into a carton substantially similar to the carton 90 depicted in Figure 6 or Figure 7. The differing arrangement of panels, fold lines, and indentations in the free edges of those panels may be adapted to accommodate the specific requirements of the bottles to be packaged within the carton which bottles are to be concentrated to have the differing profiles and therefore different requirements with regards to the shape of the side panel 4, 104, 204, 304, 404. Fold lines 162, 262, 362, 462 and 164, 264, 464 may be provided so as to allow the back panel 4, 104, 204, 304, 404 to be bent to accommodate the profile of the differing article designs. Clearly, the number, arrangement and positioning of the fold lines may be altered as necessary and the above examples are not an exhaustive description of the possibilities that are contemplated.

[0065] The fold line 60 and associated aperture 72 illustrated in Figure 1 may be applied to any of the embodiments of the invention. By breaking the frangible portions of fold line 60, the set up carton may be folded about the mid point (or elsewhere, depending upon the exact location of fold line 60 of back panel 4, 104, 204, 304, 404 and thereby arranged such that two separate arrays of articles are formed, from a single initial array, and disposed in back-to-back formation. Optionally, adhesive with a further optional releasably liner may be employed to hold the two parts of the carton in back-to-back contact.

[0066] It is further contemplated that the carton 90, either once folded about fold line 60 (if provided) or before, might be loaded into an additional container (not shown), from which the articles may be withdrawn when needed.

[0067] The first and fourth embodiments described above have composite bottom panels, to give enhanced robustness to the base portion of the carton. This is contemplated to be a feature that may be incorporated into any of the exemplary embodiments through addition of an inner bottom panel.

[0068] Similarly the tubular bottom retention structure of the third embodiments could use in combination with any of the top retention structures; shaped back walls or other features of the other embodiments. In fact the various features for providing top retention and bottom retention of articles are interchangeable and usable in any workable combination. It is also envisaged that other known retention structures could be employed without departing from the scope of the invention which preferably provides a carton with means for retaining both upper and lower portions of articles whilst allowing as much of the articles to be unobscured by the carton for labelling and/or display purposes as possible and as such the top and bottom structures preferably are connected only by

a single back wall panel.

[0069] Whilst specific arrangements of the flange portion retaining apertures 48, 148, 248, 348, 448 have been discussed above, these do not represent a definitive list of those which may be used in combination with the carton and variations of the exemplary arrangements are contemplated within the invention.

[0070] Positional and directional adjectives used to denote or refer to elements in the above description, such as 'upper', 'lower', 'back', 'front', 'inner', 'outer' etc are non-limiting and are included only in the interests of aiding clarity of the description.

[0071] In the above description, the term "fold line" will be readily understood by one skilled in the art to encompass not only score lines, but also any common variation used in the field, such as intermittent cut lines and weakened lines etc. Nor does the term specifically denote single lines; each fold line could involve multiple fold lines parallel with one another.

Claims

1. A carton for retaining articles comprising a top structure including a top panel and means for retaining an upper portion of an article, a bottom structure including a bottom panel and means for retaining a lower portion of the same article and a back wall, wherein the means for retaining an upper portion of an article comprises an article engaging means for engaging a radially protruding portion of an article and wherein only the back wall is connected to both the top structure and to the bottom structure and provides the connection therebetween.
2. A carton according to claim 1 wherein the top structure comprises a first wall that is hingable to be brought releasably into engagement with an upper portion of an article, when present in the carton, which engagement thereby retains the carton in an erected condition and wherein the aforesaid engagement, when released, allows the carton to be collapsed into a substantially planar condition.
3. A carton according to claim 1 or claim 2, further comprising a fold line defined across said back wall and contiguous with frangible lines extending across each of the top and bottom structures, which frangible lines, once broken, allow the back wall of the carton to be foldable to bring one portion of the back wall into contact with another portion of the back wall.
4. A carton according to any preceding claim, wherein the bottom structure comprises a pair of bottom panels folded to form a composite structure, wherein the composite structure is formed of an outer bottom wall hinged to an inner bottom wall about a second fold line and wherein the means for retaining a lower portion of the same article comprises securing said article to the composite structure.
5. A carton according to any of the preceding claims, wherein the back wall comprises one or more additional fold lines extending substantially horizontally along its length, which additional fold lines allow the back wall to flex and become shaped to accept the profile of the articles contained therein.
6. A carton according to any of the preceding claims wherein upper portions of the back and/or first walls comprise a fold line which defines a bevel panel at the upper end of that wall, which bevel panel is articulable to accommodate the shape of the upper portions of the articles contained by the carton.
7. A carton according to any of the preceding claims wherein the article engaging means for engaging a radially protruding portion of an article comprises one or more apertures for receiving upper portions of the aforesaid articles, said article receiving apertures being formed in any one or more of: upper portions of the first wall; upper portions of the back wall; and/or said top panel, and/or the article engaging means for engaging a radially protruding portion of an article comprises one or more foldable retaining tabs.
8. A package comprising a carton according to any of Claims 1 to 7 and one or more articles.
9. A package according to claim 8 wherein the package further comprises securing means to maintain contact between lower portions of the articles and a surface of the bottom structure of the carton, so as to retain the articles in the carton and wherein said securing means is selected from the following: an adhesive material applied to said surface or a mechanical fastener.
10. A blank for forming a carton, which blank comprises panels, including a top panel, for forming a top structure and means for retaining an upper portion of an article, the blank comprises panels, including a bottom panel, for forming a bottom structure and means for retaining a lower portion of the same article and a panel for forming a back wall of the carton, wherein the means for retaining an upper portion of an article comprises an article engaging means for engaging a radially protruding portion of an article and wherein only the back wall is connected to both the top structure and to the bottom structure and provides the connection therebetween.
11. A blank according to claim 10 comprising a first wall that is hingeable, when the blank is set up into the erected carton, to be brought releasably into engagement with an upper portion of an article, when

present in the carton, which engagement thereby retains the carton in an erected condition and wherein the aforesaid engagement, when released, allows the carton to be collapsed into a substantially planar condition.

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12. A blank according to either claim 10 or 11, further comprising a fold line defined across the panel for forming the back wall, which fold line is contiguous with frangible lines extending into the panels for forming the top structure and contiguous with frangible lines extending into the panels for forming the bottom structure which frangible lines are arranged such that, once broken, the back wall of the erected carton is foldable such that one portion of the back wall is brought into contact with another portion of the back wall. 10 15
13. A blank for forming a carton according to any of claims 1 to 9. 20
14. A part-formed carton in particular according to any of claims 1 to 9, formed from a blank, in particular according to any of claims 10 to 12, wherein at least two panels of said blank are secured together. 25
15. A method of packaging, which method comprises providing a blank, in particular according to any of claims 10 to 13 or comprises providing a part-formed blank in particular according to claim 14; forming said blank or part-formed blank about an article to form a top structure having means for retaining an upper portion of that article, a bottom structure with means for retaining a lower portion of the same article and a back panel, wherein only the back panel is connected to both the top structure and to the bottom structure and is structured such that a portion of said article is unobstructed by said carton, said method further comprising labelling said article in situ of said carton. 30 35 40

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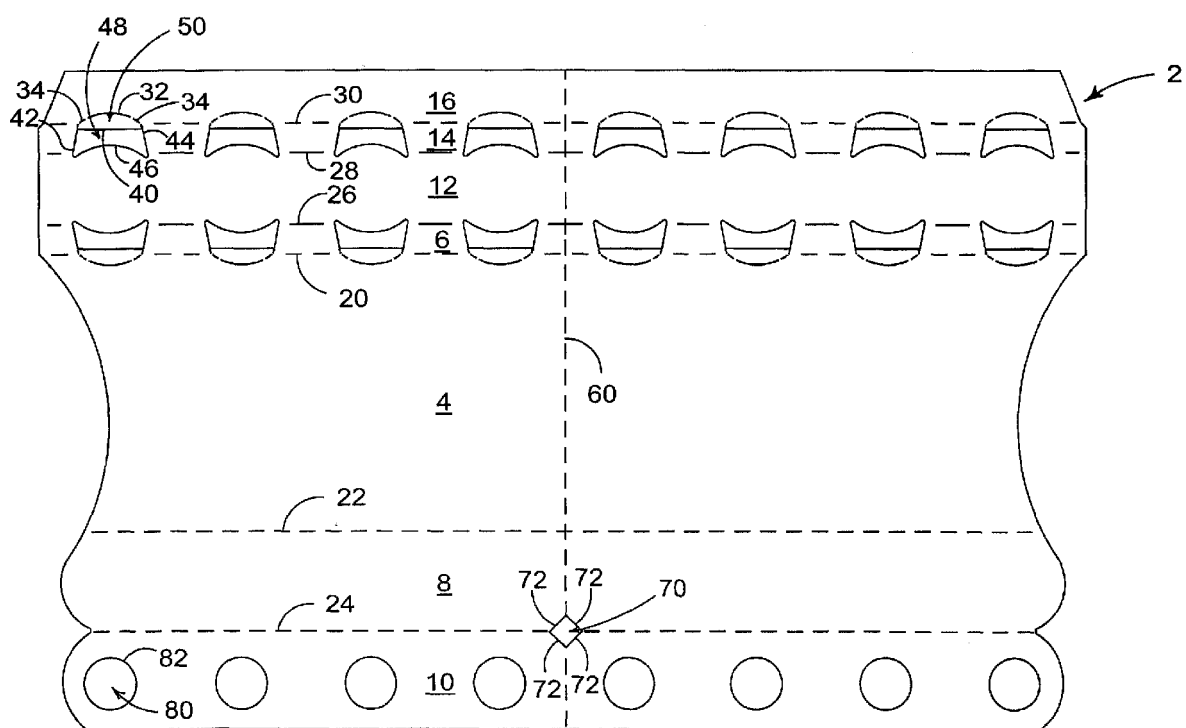


FIGURE 1

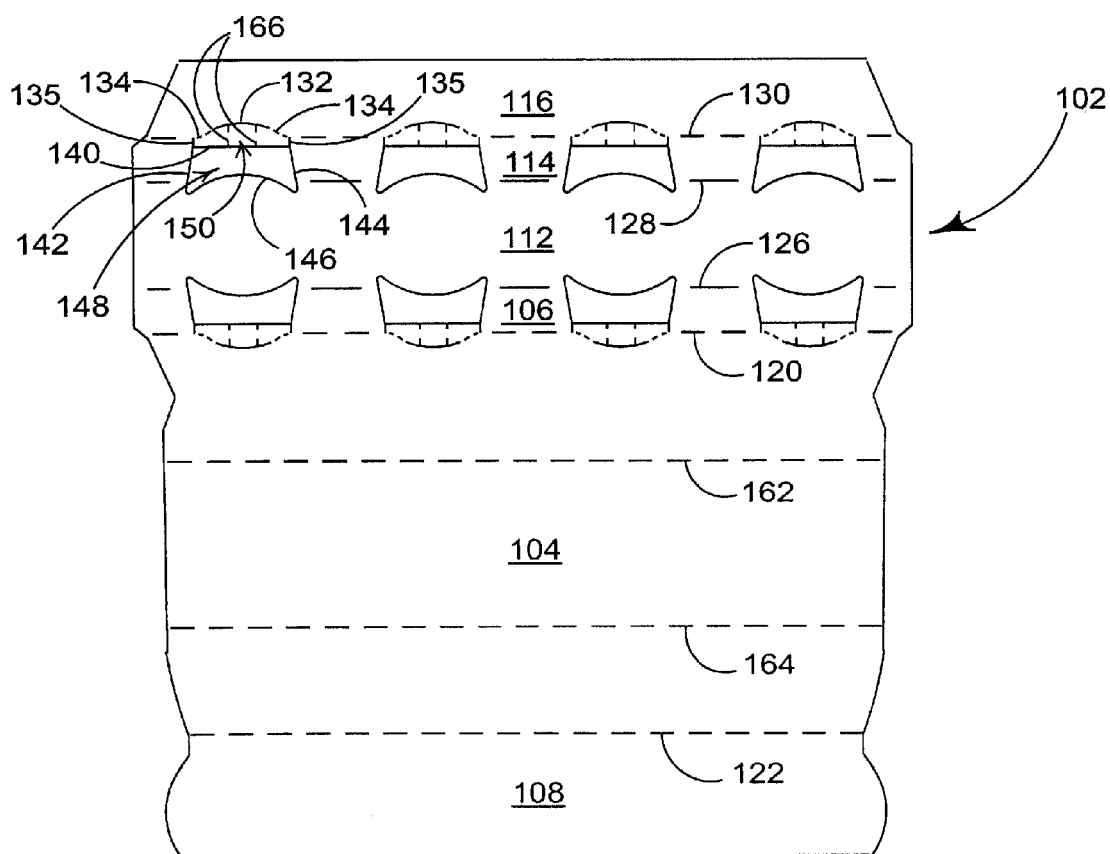


FIGURE 2

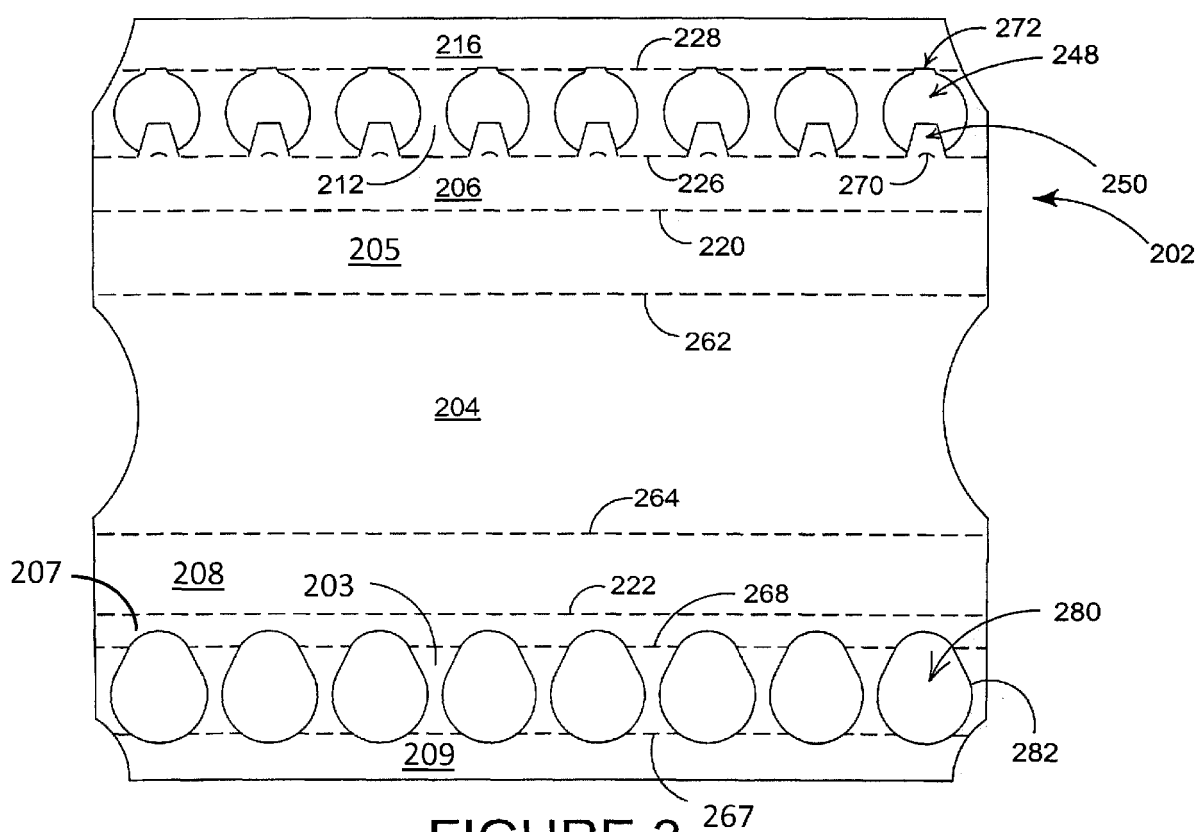


FIGURE 3

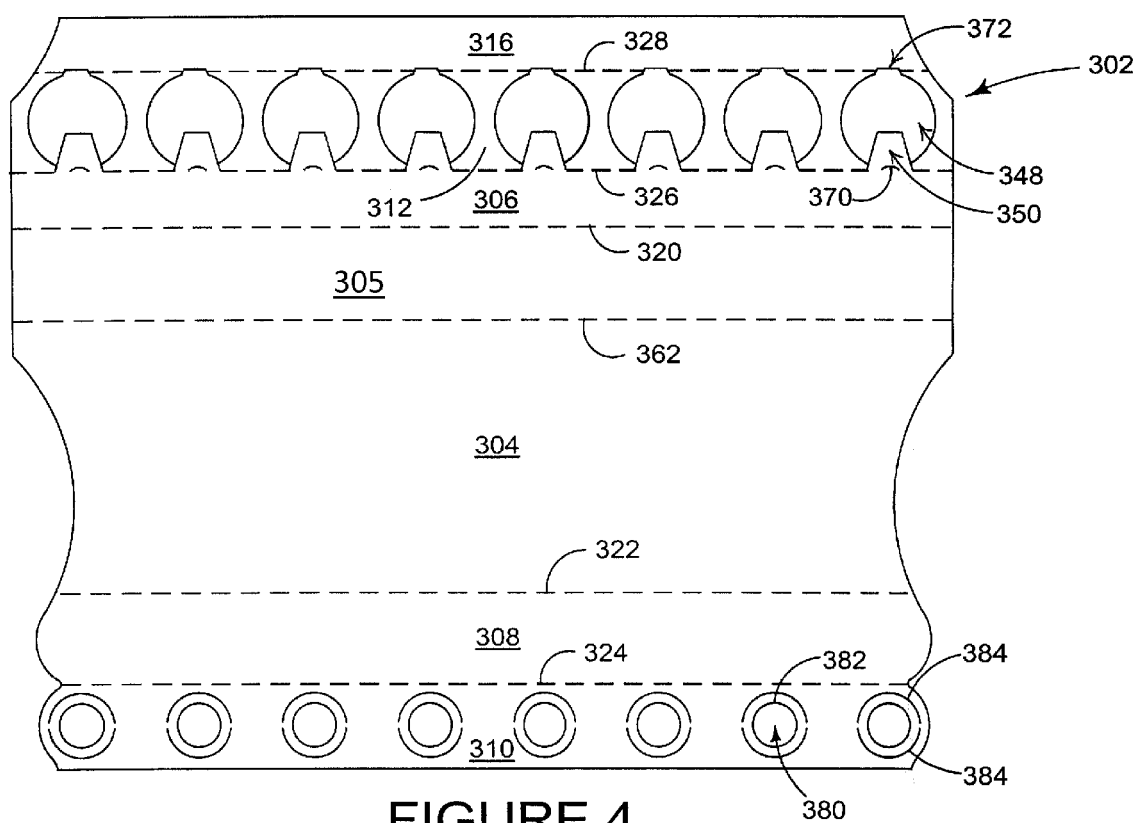


FIGURE 4

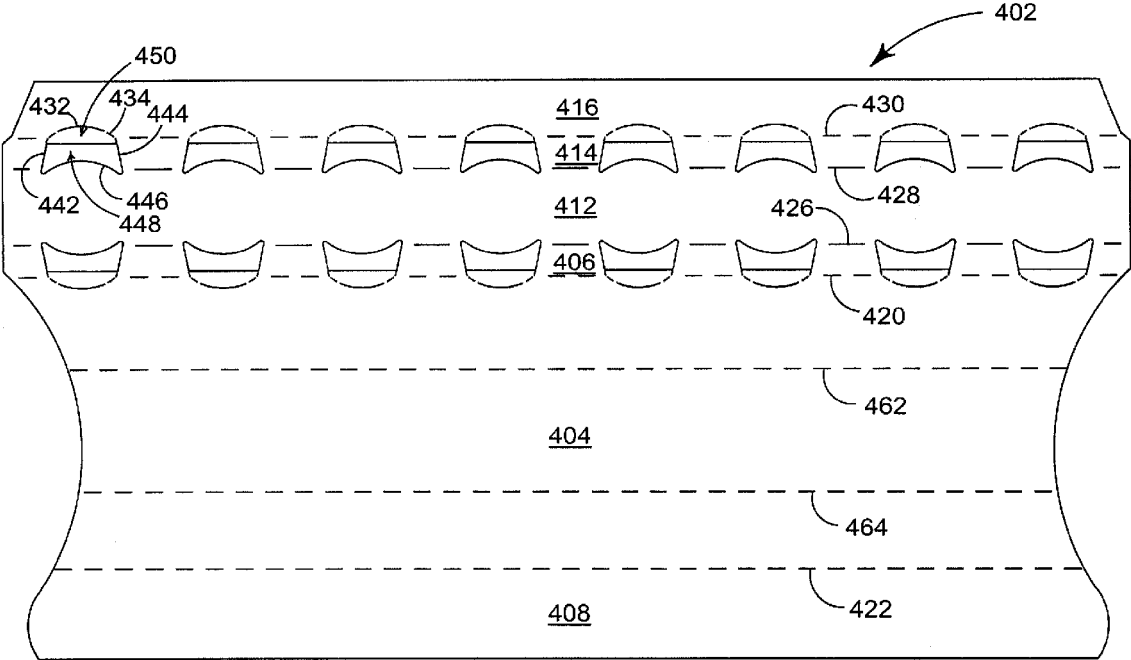


FIGURE 5

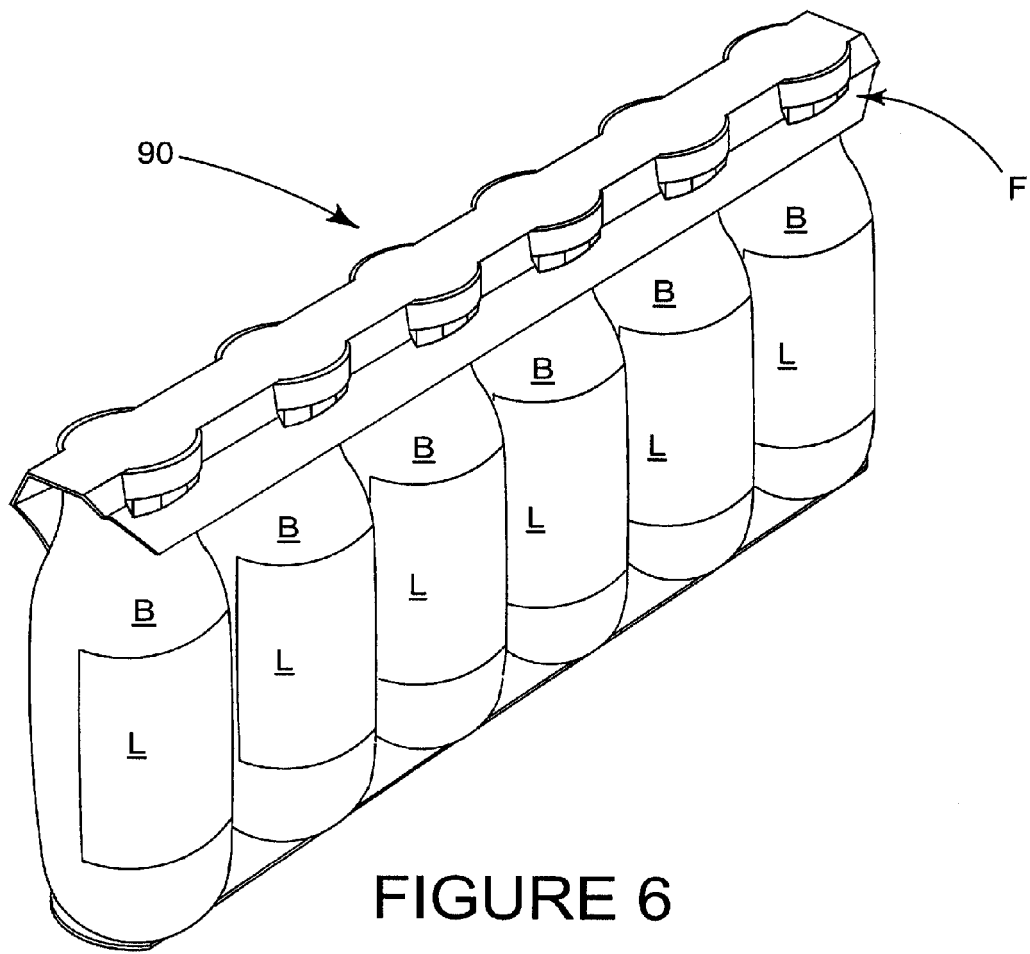


FIGURE 6

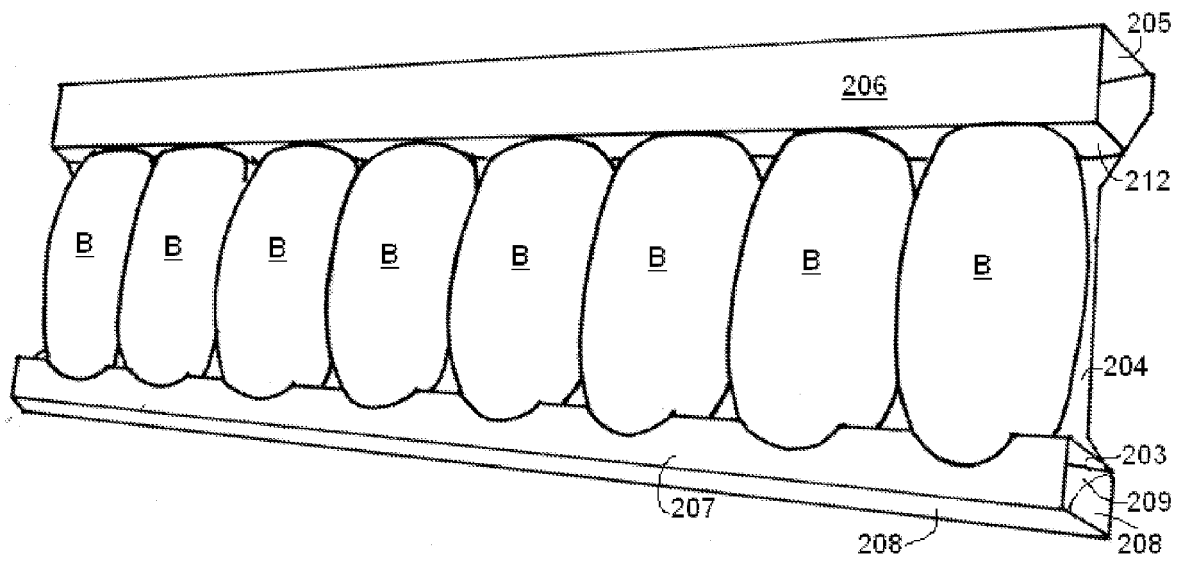


FIGURE 7