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(54) **CARTON AND BLANK**

KARTON UND ZUSCHNITT DAFÜR

CARTON ET EBAUCHE

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Description

[0001] This invention relates to a carton of the type in which one or more articles are held in complementary article receiving apertures provided in a main panel disposed normally perpendicular to the main axes of the articles, as defined in the preamble of appended claim 1.

[0002] The invention is particularly suitable for use with frusto-conical cups, and other articles such as trays that taper along their vertical axis and/or have enlarged lip portions.

[0003] In the present invention, panels for flanking body portions of the packaged articles include positioning tabs which extend into the article receiving aperture(s) so that during loading and formation of the package, the article(s) is/are urged against the positioning tabs which thereby automatically cause their associated flanking panels to be pivoted into the required article flanking position.

[0004] US 4 706 814 to The Mead Corporation discloses a multipack carton in which a plurality of articles are held in a complementary set of apertures provides in a main panel in which panels flanking the articles are automatically pivoted during loading due to the provision of tabs integral with the flanking panels that extend into the apertures.

[0005] The present invention and its preferred embodiments seek to overcome or at least mitigate the problems of the prior art.

[0006] US 3 278 075 to Weiss discloses a wraparound carrier wherein tabs within the apertures facilitate folding of cnd portions of the carton.

[0007] A first aspect of the invention provides a carton in which a plurality of articles are held in a complementary set of apertures formed within a main panel of the carton so that a portion of each article is exposed to view while other portions are enclosed by other panels of the carton, wherein opposed end portions of the main panel are provided for flanking the other portions of some of the packaged articles, which end portions include integrally formed mutually divergent positioning tabs each extending, when the carton is in a blank form, into an adjacent one of the article receiving apertures so that during loading and formation of the carton, the articles are urged against the positioning tabs so that they pivot and automatically cause the opposed end portions of the main panel to be pivoted into and held in the article flanking position, characterised in that the apertures are formed in rows and wherein the main panel is provided with at least one medial fold line extending between the end portions of the main panel and between adjacent rows of apertures, the or each medial fold line causing the main panel to bow upwardly to enhance the retention between the articles and their complementary aperture.

[0008] Preferably, each of the flanking end portions is defined by mutually divergent fold lines and an end edge of the carton and wherein the integrally formed positioning tabs extend divergently into adjacent complementary apertures from the mutually divergent fold lines.

[0009] According to an optional feature of this aspect of the invention, the main panel further includes at least one integrally formed cushioning tab for each of the article receiving apertures.

[0010] According to an optional feature of this aspect of the invention, there further comprises a pair of side wall panels hinged to the main panel, and a cover panel hinged to the side wall panels and overlying the tops of the articles.

[0011] Preferably, there further comprises an intermediate panel disposed between the main panel and the cover panel, wherein the intermediate panel includes apertures in register with those in the main panel and wherein each article is received in an aperture in the main panel and a registering aperture in the intermediate panel.

[0012] Preferably, the cover panel is hinged to one of the side wall panels and the intermediate panel is hinged to the other side wall panel.

[0013] According to an optional feature of this aspect of the invention, the positioning tabs include portions which are in locking engagement with the or each endmost article in the carton.

[0014] According to an optional feature of this aspect of the invention, the end portions each include an upper edge for engagement with an adjacent article.

[0015] According to an optional feature of this aspect of the invention, each of the end portions are hinged to an adjacent part of the main panel along curved fold lines.

[0016] A second aspect of the invention provides a blank for forming a carton which blank comprises a main panel, a plurality of apertures, a pair of side wall panels hinged to the main panel and opposed end portions hinged to the main panel which end portions include integrally formed mutually divergent positioning tabs each extending into an adjacent one of the article receiving apertures so that during loading and formation of the carton, articles to be accommodated in the carton are urged against the positioning tabs so that they pivot and automatically cause the opposed end portions of the main panel to be pivoted into and held in an article flanking position characterised in that the apertures are formed in rows, and wherein the main panel is provided with at least one medial fold line extending between the end portions of the main panel and between adjacent rows of apertures, the or each medial fold line causing the main panel to bow upwardly to enhance the retention between the articles and their complementary apertures.

[0017] 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 use in forming a carton according to one embodiment which does not form part of the present invention;

FIGURE 2 is an exploded perspective view of a partially completed carton formed from the blank of Fig-

ure 1 during loading;

FIGURE 3 is a perspective view of a partially completed carton formed from the blank of Figure 1 during loading;

FIGURE 4 is a perspective view of the completed and loaded carton formed from the blank of Figure 1;

FIGURE 5 is a plan view of a blank for use in forming a carton according to a second embodiment forming part of the present invention;

FIGURE 6 is a perspective view of a partially completed carton formed from the blank of Figure 5 prior to loading;

FIGURE 7 is a perspective view of a partially completed carton formed from the blank of Figure 5 during loading;

FIGURE 8 is a perspective view of the completed and loaded carton formed from the blank of Figure 5;

FIGURE 9 is a perspective view from another angle of the completed and loaded carton of Figure 8;

FIGURE 10 is a plan view of a blank for forming a carton according to a third embodiment forming part of the present invention; and

FIGURE 11 is a perspective view of a completed and loaded carton formed from a blank shown in Figure 10.

Detailed Description of the Preferred Embodiments

[0018] Referring first to Figure 1, not part of the present invention, an elongate blank 10 is provided, which is formed from paperboard or similar foldable sheet material. There comprises a plurality of panels for forming a carton, for example a top gripping type, so that there comprises a top, a base and opposed sides hingedly connected together. In this embodiment, there comprises a top wall panel 12, a first side wall panel 14, a base wall panel 16, a pair of flanking structures 18a, 18b, a second base wall panel 20, a second side wall panel 22 hingedly interconnected in series along fold lines 30, 32, 34a, 34b, 36a, 36b, 38. In some embodiments, there comprises a securing flap 24, hingedly connected to second side wall 22 along fold line 40.

[0019] Flanking structures 18a, 18b are, in this embodiment, subdivided into integral positioning tabs 48a, 48b that protrude into a central aperture 49, defined by base wall panels 16, 20 and the structures 18a, 18b, and flanking panels 46a, 46b that extend outwardly of the blank 10.

[0020] There may further comprise cushioning tabs 26 and 28, that are preferably hingedly connected to first and second base wall panels 16, 18 along fold lines 42, 44 respectively and which also protrude into aperture 49.

[0021] Turning to the construction of the carton as illustrated in Figures 2, 3 and 4 it is envisaged that the carton can be formed by a series of sequential folding operations in a straight line machine so that the carton is not required to be rotated or inverted to complete its construction. The folding process is not limited to that described below and may be altered according to particular manufacturing requirements.

[0022] Turning in particular to Figure 2, there is shown an exploded perspective view of the partially erected carton and article A, which in this embodiment is a tray of the type that may be used for "ready meals", pre-packed salads and the like. The carton is loaded by relative vertical movement between article A, and blank 10 whilst the base of the article is aligned with aperture 49.

[0023] The base of the article A is lowered and begins to enter the apertures and peripheral portions of the article base strike against the positioning tabs 48a, 48b.

[0024] As application of the blank 10 relative to the article continues, end flanking panels 46a, 46b are caused to pivot upwardly, relative to base panels 16, 20, about fold lines 34a, 36a, 34b, 36b respectively, by virtue of the downward displacement of the positioning tabs 48a, 48b by the article A. Cushioning tabs 26, 28 are simultaneously caused to fold downwardly about fold lines 42, 44 respectively.

[0025] The position of the tabs and panels after this operation is shown most clearly in the exploded view of Figure 2. The folding process continues so that the article progressively is more fully inserted into the aperture 49 and the flanking panels 46a, 46b are folded upwardly to bring the side flanking panels into upright flanking relationship with respect to the side wall of the tray such that flanking panels 46a, 46b engage in this embodiment, in a recess defined by the side wall of the article A and the downwardly extending lip portion of the article lid L, as shown in Figure 3.

[0026] The folding process is then completed by causing side wall panels 14, 22 to be folded inwardly and upwardly about fold lines 32 and 38 respectively and top wall panel 12 and securing flap 24 to be folded inwardly and downwardly so as to overlie the top of the article A. Top wall panel 12 and securing flap 24 are preferably secured together using glue or other suitable means known in the art to form the completed article as shown in Figure 4.

[0027] Turning now to the second embodiment which forms part of the present invention, as illustrated in Figures 5 to 9, like numerals have been where possible used to denote like parts with the addition of the prefix "1".

[0028] Referring first to Figure 5, an elongate blank 110 formed from paperboard or similar foldable sheet material comprises a plurality of panels forming a top, a base and opposed sides. Thus, there comprises, in series, a top wall panel 112, a first side wall panel 114, a base comprising a first base wall panel 116 and a second

basewall panel 120, a second side wall panel 122 and a securing flap 124 hingedly interconnected along fold lines 130, 132, 144, 138 and 140 respectively. A pair of flanking structures 118a, 118b are hingedly connected to the opposed longitudinal edges of the base wall panels along interrupted fold lines 134a, 136a; 134b, 136b.

[0029] In this embodiment, a plurality of article receiving apertures 149 are struck from the base wall panels 116, 120 and are arranged in two rows of three apertures each, although other arrangements e.g. 2x2 are envisaged. A pair of positioning tabs 148a and 148c which together with flanking panel 146a, integrally form flanking structure 118a and extend from the interrupted fold lines 134a and 136a into the space defined by the adjacent apertures 149, so that each aperture is partially obscured by a respective one of the positioning tabs. Fold lines 134a, 136a and 134b, 136b are, preferably, mutually divergent from fold line 144 and intersect where fold lines 132 and 138 respectively terminate. A similar arrangement is provided with respect to flanking structure 118b.

[0030] In some embodiments, there further comprises opposed pairs of article retention structures 150a - 150f, that are preferably provided along fold lines 130 and 140, the structures being arranged so as to interrupt the aforesaid fold lines. Each retention structure is substantially identical, and therefore only structure 150a is described in further detail. It will be seen from Figure 5 that structure 150a comprises a protruding portion of top wall panel 112 arranged so as to interrupt fold line 130 and being defined by curved cut line 152.

[0031] The structure further comprises a pair of spaced parallel cut lines 154 and 156 which are, in this embodiment, arranged substantially perpendicular to fold line 130, and extend from curved cut line 52 and terminate part way down side wall panel 14. The cut lines 154 and 156 thereby define a tab.

[0032] As illustrated in Figures 6 to 8 the blank 110 is applied to a group of articles A, which in this embodiment are frusto-conical plastics articles for holding yoghurt and the like so that the blank is not required to be rotated or inverted to complete its construction, as in the first embodiment.

[0033] The blank 110 and articles A are brought together by relative vertical movement therebetween such that articles A are in register with apertures 149 as shown in Figure 6 like the first embodiment.

[0034] Thereafter, the bottoms of the articles A begin to enter respective ones of the apertures 149 and peripheral portions of the bases thereof strike against the positioning tabs 148a -148d.

[0035] As application of the blank relative to the articles continues, end flanking panels 146a and 146b are caused to pivot upwardly, relative to base wall panels 116, 120 about interrupted fold lines 134a, 136a and 134b, 136b, respectively, by virtue of the downward displacement of the positioning tabs by the articles.

[0036] This partially loaded condition of the package is shown by Figure 7. The folding process continues so that the articles progressively are more fully inserted into the apertures 149 and the flanking panels are folded upwardly, relative to base wall panels 116, 120 about fold lines 134a, 136a; 134b, 136b to bring the flanking panels into a substantially upright flanking relationship with respect to the side walls of the articles.

[0037] The pivoting action of the flanking panels 118a, 118b simultaneously causes an inward bowing action thereof, as well as causing the base wall panels 116, 120 to be folded upwardly out of their mutually co-planar relationship about fold line 144. One advantage of this arrangement is that articles A may be held more tightly within apertures 149.

[0038] The folding process is then completed by causing side wall panels 114, 122 to be folded upwardly about fold lines 132 and 138, and top wall panel 112 and glue flap 124 to be folded inwardly and downwardly about fold lines 130 and 140 respectively, shown in Figures 7 and 8. The top wall panel 112 and securing flap 124 are thereby brought into overlapping relationship whereupon they are secured together by glue or other means known in the art. This causes the top flanges of the articles to be secured by the retention structures 150a - 150f, as is known in the art.

[0039] The carton is now fully set up and loaded as shown in Figures 8 and 9, in which there is shown a carton with complementary apertures 149 provided in a main panel 116/120. There further comprises an opposed pair of end panels 118a, 118b for flanking the outermost articles, having positioning tabs 148 which extend into the apertures. During formation, each article is urged against the positioning tab 148 which causes the end panels to be pivoted.

[0040] A third embodiment is shown in Figures 10 and 11 in which there is provided a blank similar to the second embodiment. Therefore, like references have been used, but replacing the prefix '1' with the prefix '2' and only the differences will be described in any greater detail.

[0041] In this third embodiment, forming part of the present invention, there is shown in Figure 10 a blank 210 for forming a top loading carton including a pair of upper and lower apertured support panels 223, 216, 220 and a cover panel 227 disposed over the articles to prevent upward dislodging movement of the articles.

[0042] The cover panel 227 is hingedly connected to side wall panel 214 along fold line 230. There further comprises an outer side wall panel 229 hingedly connected to cover panel 227 along fold line 225. In use, the outer side wall panel 229 is secured to inner side wall panel 222 in face contacting arrangement.

[0043] Preferably, cover panel 227 is provided with opposed tear lines to form a tear strip so that in use, the tear strip is removed to reveal the articles.

[0044] There may further comprise an intermediate panel 223 hingedly connected to inner side wall panel 222 along fold line 240. A plurality of apertures 257 are struck from intermediate panel 223 in corresponding position to apertures 249, so that in use apertures 249 and

257 are aligned vertically. The apertures 257 may be shaped to conform to the shape of the article.

[0045] In this embodiment, there further comprises a plurality of cushioning tabs 251a, 251b extending into apertures 249 and are hingedly connected to base panels 216, 220.

[0046] The carton is formed from the blank of Figure 10 in like manner to the second embodiment, and the cover and intermediate panels 227, 223 are constructed at the same time; whereby intermediate panel 223 is folded out of alignment with side wall panel 222 along fold line 240 and inner side wall 224 is folded along fold line 241 to be brought into face contacting relationship with side wall panel 214.

[0047] The articles are loaded into the part formed carton so that they are inserted into the apertures in the intermediate and base panels 223, 216/220. The end panel structure is formed in like manner to the second embodiment. The cushioning tabs 251 are also forced out of alignment to engage an article contained in the aperture 249.

[0048] Thereafter, the cover panel 227 is formed by folding inwardly along fold line 230 and outer side wall panel 229 is folded along fold line 225. The outer side wall panel 229 is placed in face contacting arrangement with inner side wall panel 222 to be secured thereto by glue or other means known in the art.

[0049] Thus, the carton is in a set up and loaded condition as shown in Figure 11.

[0050] It will be recognised that as used herein, directional references such as "top", "base", "end", "side", "upper", "lower", "inner", "outer" 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.

[0051] It will be understood that numerous changes may be made within the scope of the invention without departing from the subject matter as defined in the appended claims. For example, the size and shape of the panel may be altered according to the specific requirements of the articles to be packaged, as may the number and arrangement of the receiving apertures.

Claims

1. A carton in which a plurality of articles (A) are held in a complementary set of apertures (149; 249) formed within a main panel (116, 120; 216, 220) of the carton so that a portion of each article is exposed to view while other portions are enclosed by other panels (112, 114, 122; 212, 214, 222) of the carton, wherein opposed end portions (118a, 118b; 218a, 218b) of the main panel are provided for flanking said other portions of some of the packaged articles, which end portions include integrally formed mutually divergent positioning tabs (148a, 148b, 148c, 148d; 248a, 248b, 248c, 248d) each extending, when the carton is in a blank form, into an adjacent one of the article receiving apertures so that during loading and formation of the carton, the articles are urged against the positioning tabs so that they pivot and automatically cause said opposed end portions of the main panel to be pivoted into and held in the article flanking position, **characterised in that** the apertures are formed in rows and wherein said main panel is provided with at least one medial fold line (144; 244) extending between said end portions of the main panel and between adjacent rows of apertures, the or each medial fold line causing the main panel to bow upwardly to enhance the retention between the articles and their complementary aperture.

2. A carton according to claim 1, wherein each of the flanking end portions is defined by mutually divergent fold lines (134a, 134b, 136a, 136b; 234a, 234b; 236a, 236b) and an end edge of the carton and wherein said integrally formed positioning tabs extend divergently into adjacent complementary apertures from said mutually divergent fold lines.

3. A carton as claimed in claim 1 or claim 2, wherein said main panel further includes at least one integrally formed cushioning tab (251a, 251b) for each of said article receiving apertures.

4. A carton as claimed in any of claims 1 to 3, further comprising a pair of side wall panels (114, 122; 214, 222) hinged to the main panel, and a cover panel (112; 212) hinged to the side wall panels and overlying the tops of the articles.

5. A carton according to claim 4, further comprising an intermediate panel (223) disposed between the main panel and the cover panel, wherein the intermediate panel includes apertures (257) in register with those in the main panel and wherein each article is received in an aperture in the main panel and a registering aperture in the intermediate panel.

6. A carton as claimed in claim 5 wherein the cover panel is hinged to one of the side wall panels and the intermediate panel is hinged to the other side wall panel.

7. A carton according to any of the preceding claims wherein said positioning tabs include portions which are in locking engagement with the or each endmost article in the carton.

8. A carton according to any of the preceding claims wherein the end portions each include an upper edge

for engagement with an adjacent article.

9. A carton as claimed in any preceding claim wherein each of the end portions are hinged to an adjacent part of the main panel along curved fold lines.

10. A blank for forming a carton (110, 210) which blank comprises a main panel (116,120; 216, 220), a plurality of apertures (149, 249), a pair of side wall panels (114, 214; 122, 222) hinged to the main panel and opposed end portions (118a, 118b), 218a, 218b) hinged to the main panel which end portions include integrally formed mutually divergent positioning tabs (148a, 148b, 148c, 148d, 248a, 248b, 248c, 248d) each extending into an adjacent one of the article receiving apertures so that during loading and formation of the carton, articles to be accommodated in the carton are urged against the positioning tabs so that they pivot and automatically cause said opposed end portions of the main panel to be pivoted into and held in an article flanking position **characterised in that** the apertures are formed in rows, and wherein said main panel is provided with at least one medial fold line (144; 244) extending between said end portions of the main panel and between adjacent rows of apertures, the or each medial fold line causing the main panel to bow upwardly to enhance the retention between the articles and their complementary apertures.

11. A blank as claimed in claim 10 for forming a carton as claimed in claim 1 or any of claims 2 to 9.

Patentansprüche

1. Schachtel, in der eine Vielzahl von Gegenständen (A) in einem komplementären Satz von Öffnungen (149; 249) gehalten wird, die innerhalb einer Hauptwandfläche (166, 120; 216, 220) der Schachtel ausgebildet sind, so dass ein Abschnitt von jedem Gegenstand frei liegt, während andere Abschnitte von anderen Wandflächen (112, 114, 122; 212, 214, 222) der Schachtel umgeben sind, wobei gegenüberliegende Endabschnitte (118a, 118b; 218a, 218b) der Hauptwandfläche bereitgestellt sind, um die anderen Abschnitte von einigen der verpackten Gegenstände zu flankieren, wobei die Endabschnitte integral ausgebildete, von einander weg divergierende Positionierungslaschen (148a, 148b, 148c, 148d; 248a, 248b, 248c, 248d) umfassen, die sich, wenn sich die Schachtel in Zuschnittsform befindet, jeweils in eine angrenzende Gegenstandsaufnahmeöffnung erstrecken, so dass während des Beladens und des Ausbildens der Schachtel, die Gegenstände gegen die Positionierungslaschen gedrückt worden, so dass diese schwenken und automatisch bewirken, dass die gegenüberliegenden Endabschnitte der Hauptwandfläche, in die den Gegenstand flankierende Position geschwenkt werden und in dieser gehalten werden, **dadurch gekennzeichnet, dass** die Öffnungen in Reihen ausgebildet sind, wobei die Hauptwandfläche mit wenigstens einer mittleren Faltlinie (144; 244) bereitgestellt ist, die sich zwischen den Endabschnitten der Hauptwandfläche und zwischen angrenzenden Reihen der Öffnungen erstreckt, wobei die oder jede mittlere Faltlinie bewirkt, dass sich die Hauptwandfläche nach oben krümmt, um das Zurückhalten der Gegenstände durch deren komplementäre Öffnung zu verstärken.

2. Schachtel nach Anspruch 1, wobei jeder der flankierenden Endabschnitte durch von einander weg divergierende Faltlinien (134a, 134b, 136a, 136b; 234a, 234b; 236a, 236b) und eine Endkante der Schachtel definiert werden und wobei sich die integral ausgebildeten Positionierungslaschen von den von einander weg divergierenden Faltlinien divergierend in angrenzende komplementäre Öffnungen erstrecken.

3. Schachtel nach Anspruch 1 oder 2, wobei die Hauptwandfläche ferner wenigstens eine integral ausgebildete Kissenlasche (251a, 251b) für jede der Gegenstandsaufnahmeöffnungen umfasst.

4. Schachtel nach einem der Ansprüche 1 bis 3, wobei die Schachtel ferner ein Paar von Seitenwandflächen (114, 122; 214, 222) umfasst, die gelenkig an die Hauptwandfläche angebracht sind, sowie eine Abdeckwandfläche (112; 212), die gelenkig an die Seitenwandflächen angebracht ist und über den oberen Enden der Gegenstände liegt.

5. Schachtel nach Anspruch 4, wobei die Schachtel ferner eine Zwischenwandfläche (223) umfasst, die zwischen der Hauptwandfläche und der Abdeckwandfläche angeordnet ist, wobei die Zwischenwandfläche Öffnungen (257) in Passung mit denen in der Hauptwandfläche umfasst, und wobei jeder Gegenstand in einer Öffnung in der Hauptwandfläche und einer passenden Öffnung in der Zwischenwandfläche aufgenommen wird.

6. Schachtel nach Anspruch 5, wobei die Abdeckwandfläche gelenkig an eine der Seitenwandflächen angebracht ist und die Zwischenwandfläche gelenkig an die andere Seitenwandfläche angebracht ist.

7. Schachtel nach einem der vorhergehenden Ansprüche, wobei die Positionierungslaschen Abschnitte umfassen, die sich in verriegelnder Ineingriffnahme mit dem oder jedem endseitigen Gegenstand in der Schachtel befinden.

8. Schachtel nach einem der vorhergehenden Ansprü-

che, wobei die Endabschnitte jeweils eine obere Kante für die Ineingriffnahme eines angrenzenden Gegenstands umfassen.

9. Schachtel nach einem der vorhergehenden Ansprüche, wobei jeder der Endabschnitte entlang gekrümmter Faltlinien gelenkig an einen angrenzenden Teil der Hauptwandfläche angebracht ist.

10. Zuschnitt zum Ausbilden einer Schachtel (110; 210), wobei der Zuschnitt eine Hauptwandfläche (116, 120; 216, 220), eine Vielzahl von Öffnungen (149; 249), ein Paar von Seitenwandflächen (114, 214; 122, 222), die gelenkig an die Hauptwandfläche angebracht sind, sowie gegenüberliegende Endabschnitte (118a, 118b; 218a, 218b) umfasst, die gelenkig an die Hauptwandfläche angebracht sind, wobei die Endabschnitte integral ausgebildete, von einander weg divergierende Positionierungslaschen (148a, 148b, 148c, 148d; 248a, 248b, 248c, 248d) umfassen, die sich jeweils in eine angrenzende Gegenstandsauf nahmeöffnung erstrecken, so dass während des Beladens und des Ausbildens der Schachtel, Gegenstände, die in der Schachtel aufgenommen werden sollen, gegen die Positionierungslaschen gedrückt worden, so dass diese schwenken und automatisch bewirken, dass die gegenüberliegenden Endabschnitte der Hauptwandfläche, in eine den Gegenstand flankierenden Position geschwenkt werden und in dieser gehalten werden, **dadurch gekennzeichnet, dass** die Öffnungen in Reihen ausgebildet sind, wobei die Hauptwandfläche mit wenigstens einer mittleren Faltlinie (144; 244) bereitgestellt ist, die sich zwischen den Endabschnitten der Hauptwandfläche und zwischen angrenzenden Reihen der Öffnungen erstreckt, wobei die oder jede mittlere Faltlinie bewirkt, dass sich die Hauptwandfläche nach oben krümmt, um das Zurückhalten der Gegenstände durch deren komplementäre Öffnung zu verstärken.

11. Zuschnitt nach Anspruch 10 zum Ausbilden einer Schachtel nach einem der Ansprüche 1 bis 9.

Revendications

1. Carton dans lequel une pluralité d'articles (A) sont maintenus en un ensemble d'ouvertures complémentaires (149 ; 249) formées à l'intérieur d'un panneau principal (116, 120 ; 216, 220) du carton de façon qu'une partie de chaque article soit exposée à la vue tandis que d'autres parties sont enfermées dans les autres panneaux (112, 114, 122 ; 212, 214, 222) du carton, dans lequel des parties d'extrémité opposées (118a, 118b ; 218a, 218b) du panneau principal sont prévues pour flanquer lesdites autres parties de certains des articles emballés, lesquelles parties d'extrémité comprennent des pattes de positionnement mutuellement divergentes intégrées (148a, 148b, 148c, 148d ; 248a, 248b, 248c, 248d) s'étendant chacune, lorsque le carton est sous forme de découpe, dans l'une adjacente des ouvertures de réception d'article de façon que pendant le chargement et la formation du carton, les articles soient poussés contre les pattes de positionnement de façon à pivoter et amener automatiquement lesdites parties d'extrémité opposées du panneau principal à pivoter et à rester dans la position flanquante d'article, **caractérisé en ce que** les ouvertures sont formées en rangées et dans lequel ledit panneau principal est muni d'au moins une ligne de pliure médiane (144 ; 244) s'étendant entre lesdites parties d'extrémité du panneau principal et entre les rangées adjacentes d'ouvertures, la ou chacune des ligne(s) de pliure médiane amenant le panneau principal à se courber vers le haut afin d'améliorer la fixation entre les articles et leur ouverture complémentaire.

2. Carton selon la revendication 1, dans lequel chacune des parties d'extrémité flanquante est définie par des lignes de pliure mutuellement divergentes (134a, 134b, 136a, 136b ; 234a, 234b, 236a, 236b) et un bord d'extrémité du carton et dans lequel lesdites pattes de positionnement intégrées s'étendent de façon divergente dans les ouvertures complémentaires adjacentes depuis lesdites lignes de pliure mutuellement divergentes.

3. Carton selon la revendication 1 ou la revendication 2, dans lequel ledit panneau principal comprend en outre au moins une patte d'amortissement intégrée (251a, 251b) pour chacune desdites ouvertures de réception d'article.

4. Carton selon l'une quelconque des revendications 1 à 3, comprenant en outre une paire de panneaux latéraux (114, 122 ; 214, 222) articulés sur le panneau principal, et un panneau de couverture (112 ; 212) articulé sur les panneaux latéraux et recouvrant le sommet des articles.

5. Carton selon la revendication 4, comprenant en outre un panneau intermédiaire (223) disposé entre le panneau principal et le panneau de couverture, dans lequel le panneau intermédiaire comprend des ouvertures (257) correspondant à celles du panneau principal et dans lequel chaque article est reçu dans une ouverture dans le panneau principal et une ouverture correspondante dans le panneau intermédiaire.

6. Carton selon la revendication 5, dans lequel le panneau de couverture est articulé sur l'un des panneaux latéraux et le panneau intermédiaire est articulé sur l'autre panneau latéral.

7. Carton selon l'une quelconque des revendications précédentes, dans lequel lesdites pattes de positionnement comprennent des parties qui sont bloquées en prise avec le ou chaque article à l'extrémité du carton.

8. Carton selon l'une quelconque des revendications précédentes, dans lequel les parties d'extrémité comprennent chacune un bord supérieur destiné à venir en prise avec un article adjacent.

9. Carton selon l'une quelconque des revendications précédentes, dans lequel chacune des parties d'extrémité est articulée à une partie adjacente du panneau principal le long des lignes de pliure courbes.

10. Découpe pour former un carton (110, 210), laquelle découpe comprend un panneau principal (116, 120 ; 216, 220), une pluralité d'ouvertures (149, 249), une paire de panneaux latéraux (114, 122 ; 214, 222) articulés sur le panneau principal et des parties d'extrémité opposées (118a, 118b) ; 218a, 218b) articulées sur le panneau principal, lesquelles parties d'extrémité comprennent des pattes de positionnement mutuellement divergentes intégrées (148a, 148b, 148c, 148d ; 248a, 248b, 248c, 248d) s'étendant chacune dans l'une adjacente des ouvertures de réception d'article de façon que pendant le chargement et la formation du carton, les articles à loger dans le carton soient poussés contre les pattes de positionnement de façon à pivoter et amener automatiquement lesdites parties d'extrémité opposées du panneau principal à pivoter et à rester dans une position flanquante d'article, **caractérisée en ce que** les ouvertures sont formées en rangées et dans laquelle ledit panneau principal est muni d'au moins une ligne de pliure médiane (144 ; 244) s'étendant entre lesdites parties d'extrémité du panneau principal et entre les rangées adjacentes d'ouvertures, la ou chacune des ligne(s) de pliure médiane amenant le panneau principal à se courber vers le haut afin d'améliorer la fixation entre les articles et leurs ouvertures complémentaires.

11. Découpe selon la revendication 10, permettant de former un carton selon la revendication 1 ou l'une quelconque des revendications 2 à 9.

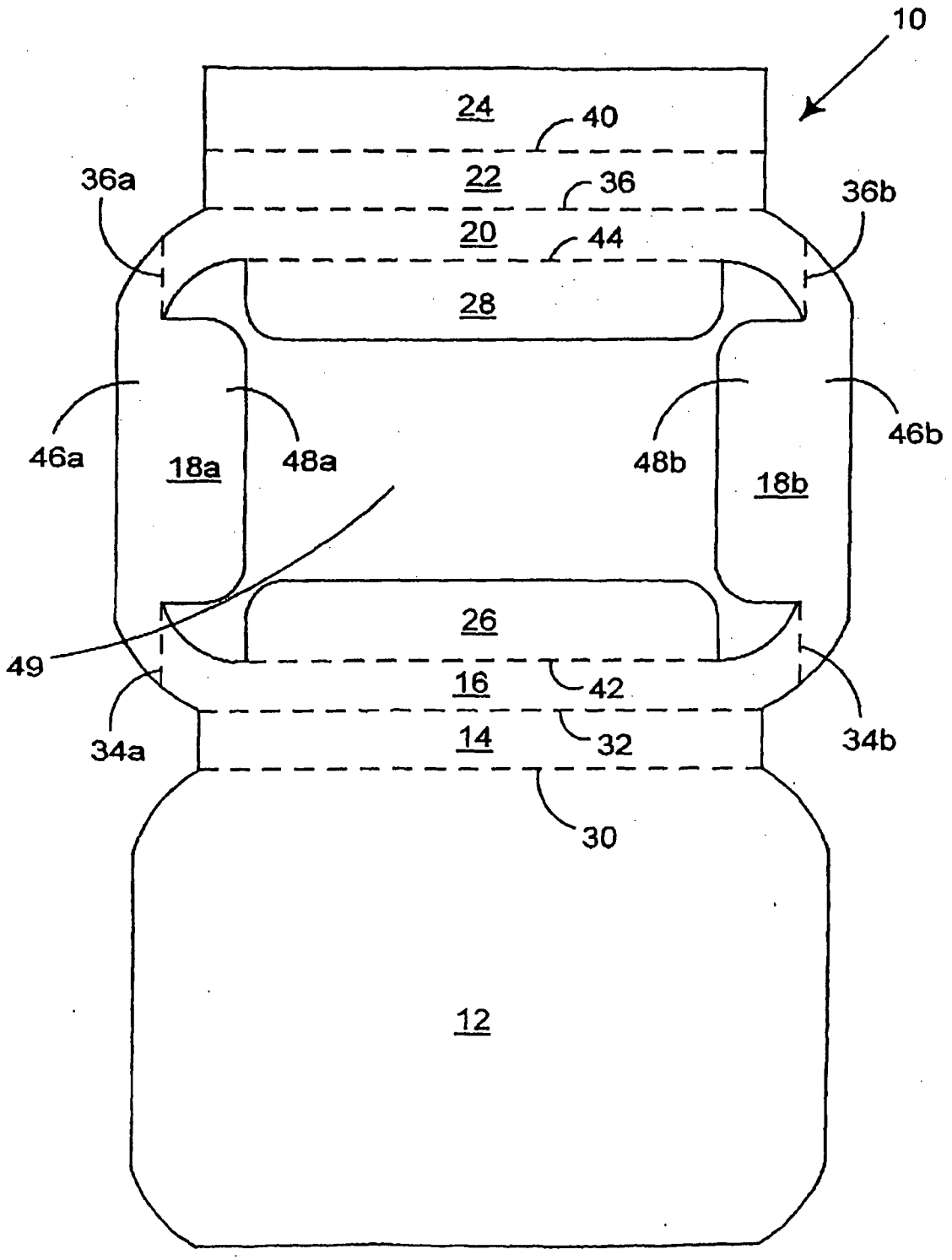

10
24
40
22
36
20
44
28
36a
36b
46a
18a
48a
48b
18b
46b
49
26
16
42
14
32
34a
34b
30
12

FIGURE 1

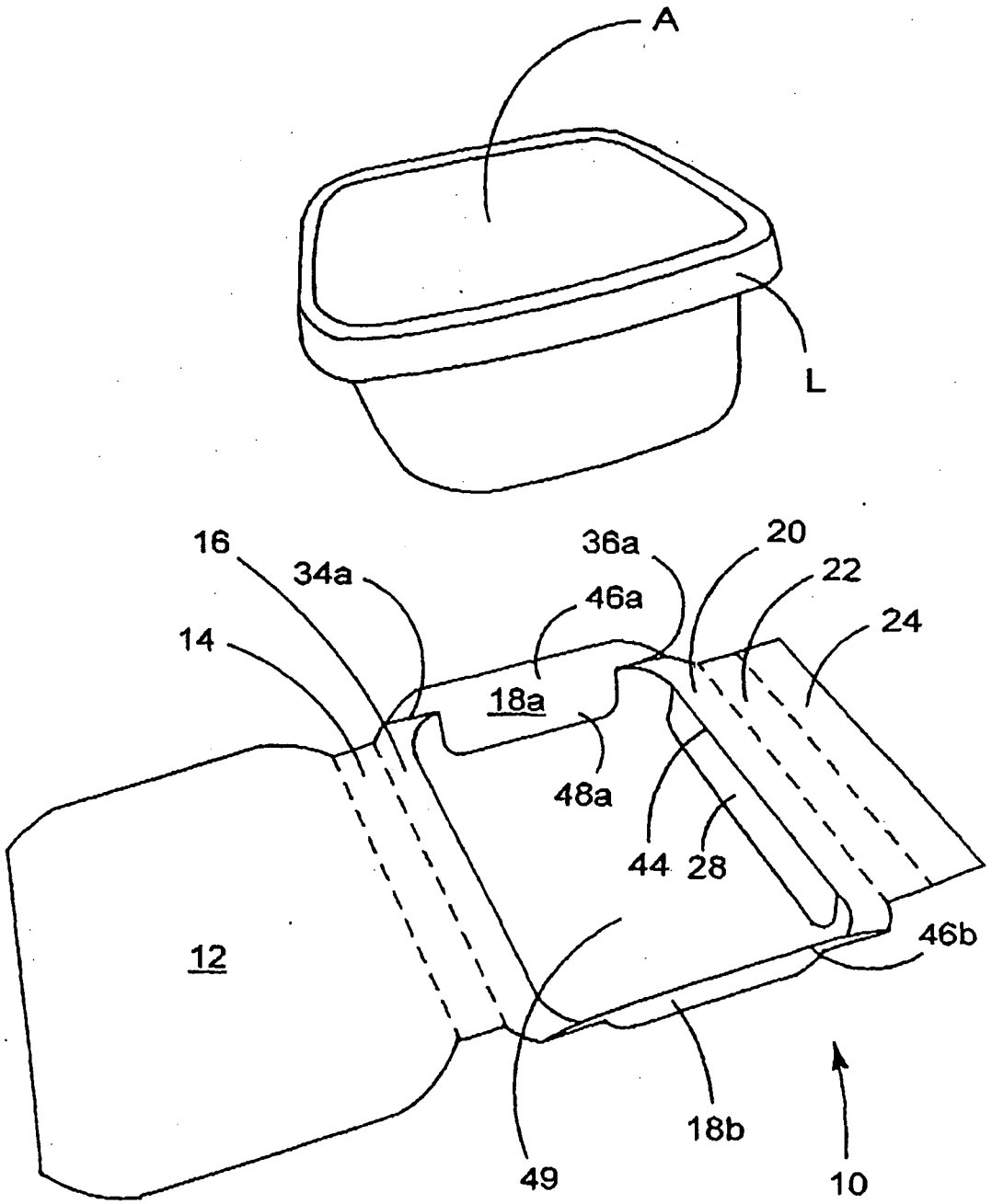


FIGURE 2

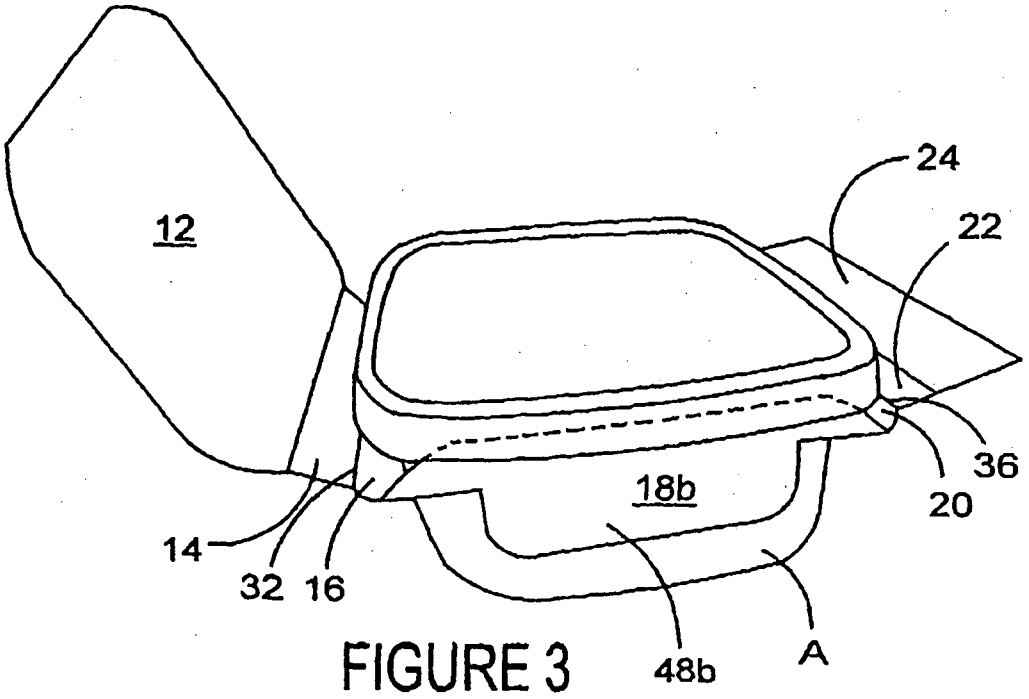


FIGURE 3

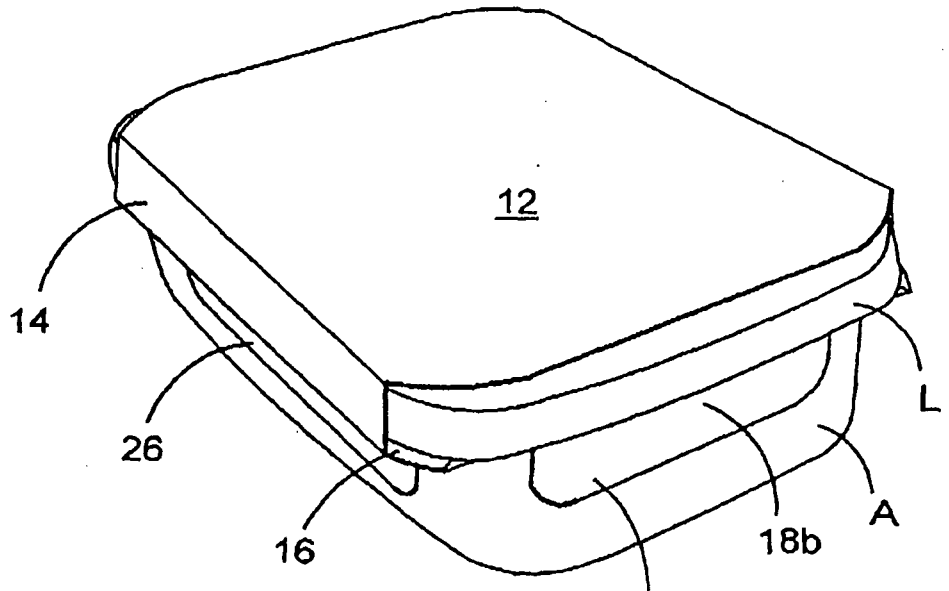


FIGURE 4

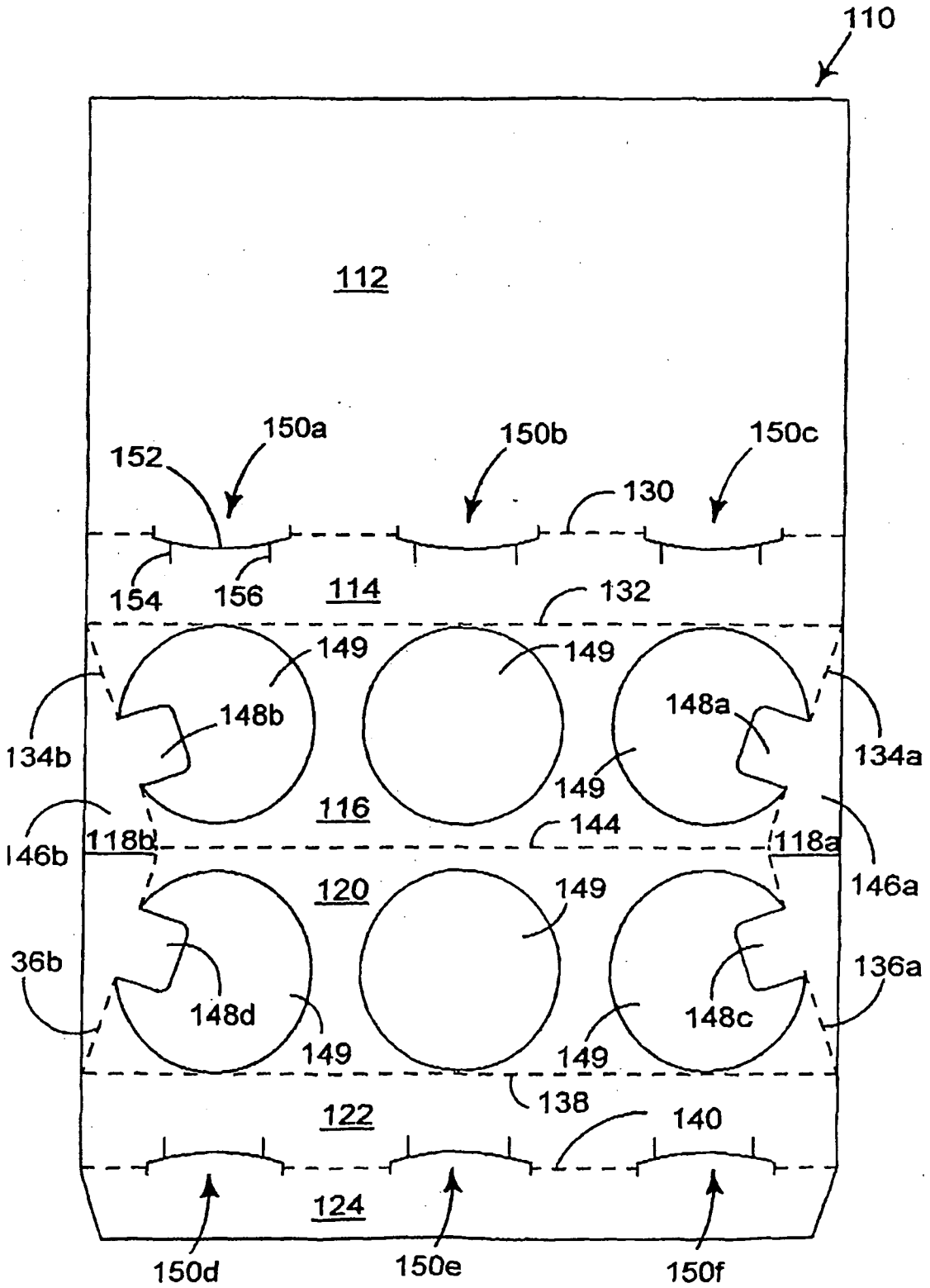

110
112
150a
150b
150c
152
130
154
156
114
132
149
149
148b
148a
134b
134a
149
116
144
146b
118b
118a
146a
120
149
36b
136a
148d
148c
149
149
138
122
140
124
150d
150e
150f

FIGURE 5

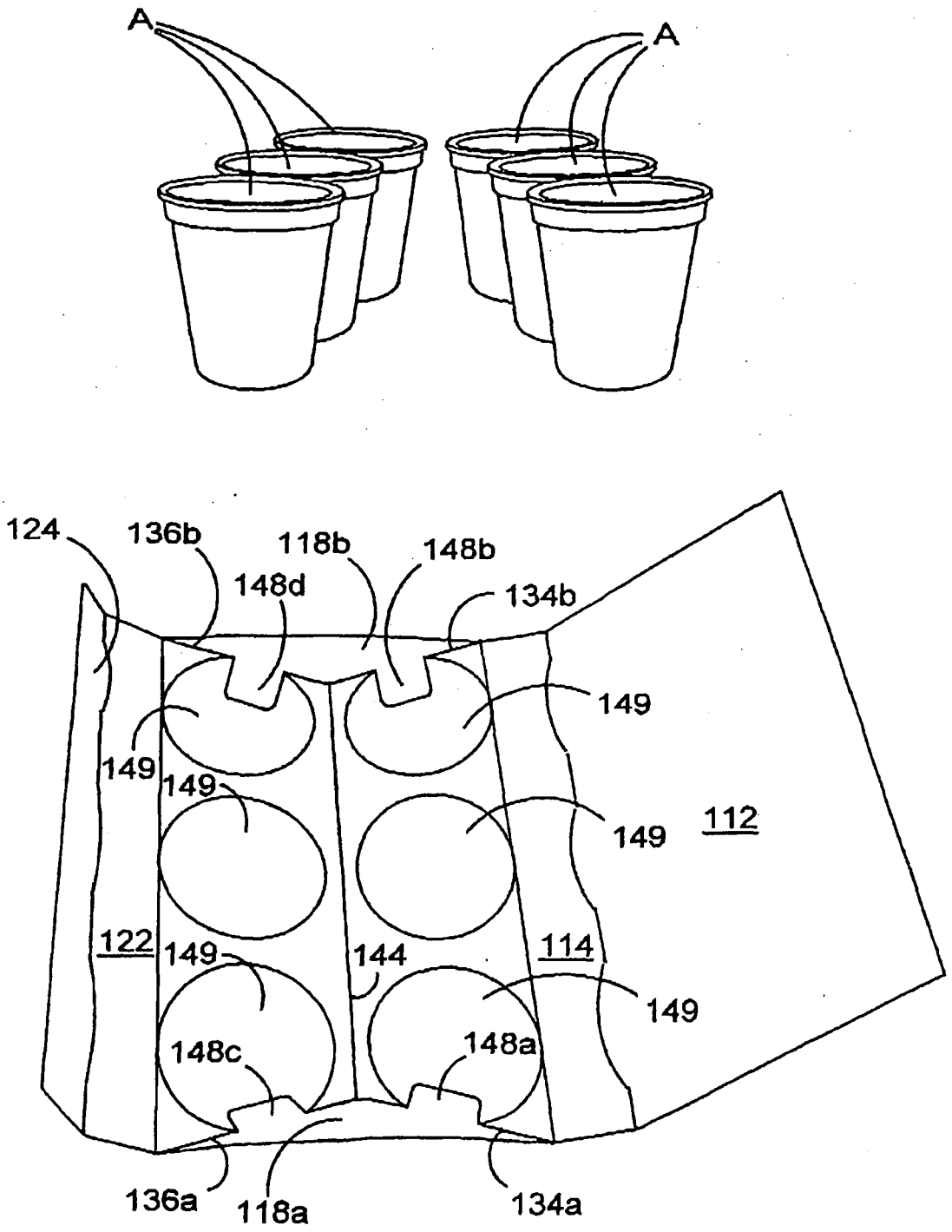

A
A
124
136b
118b
148b
148d
134b
149
149
149
149
112
122
149
144
114
149
148c
148a
136a
118a
134a

FIGURE 6

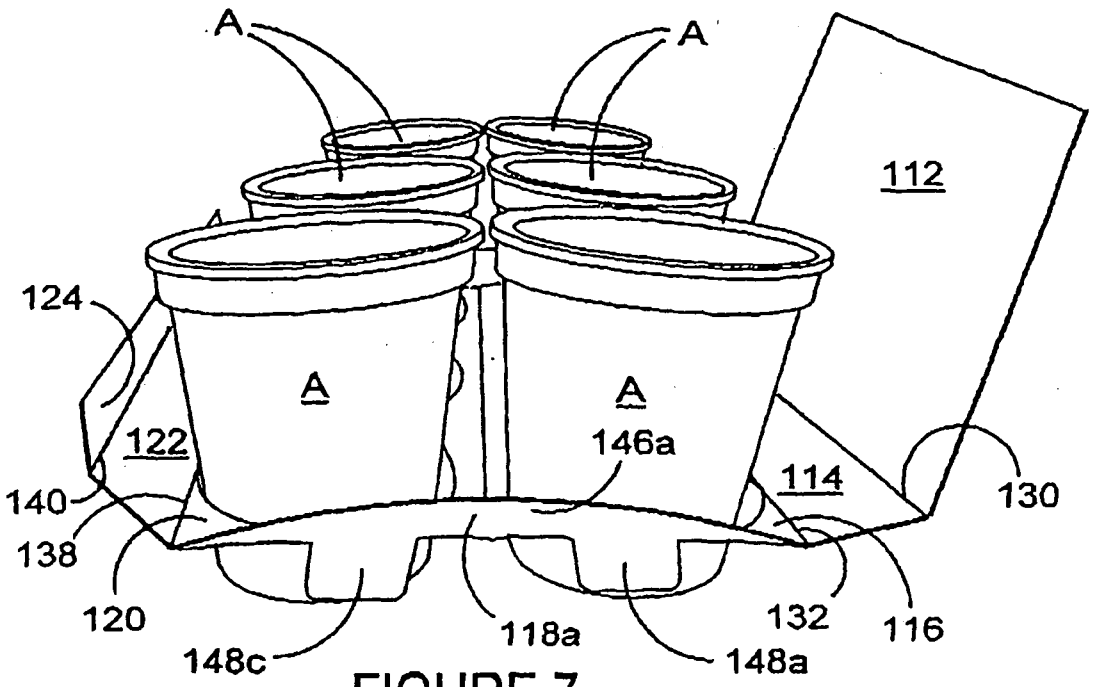


FIGURE 7

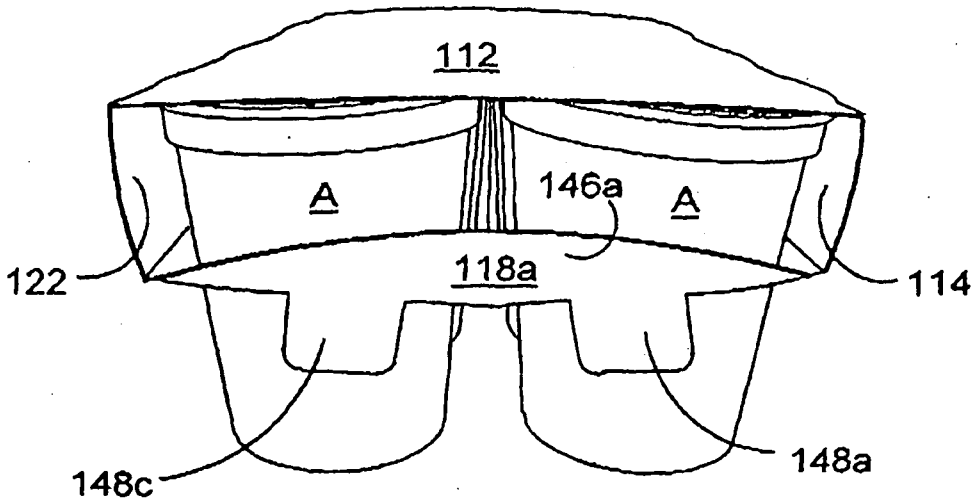


FIGURE 8

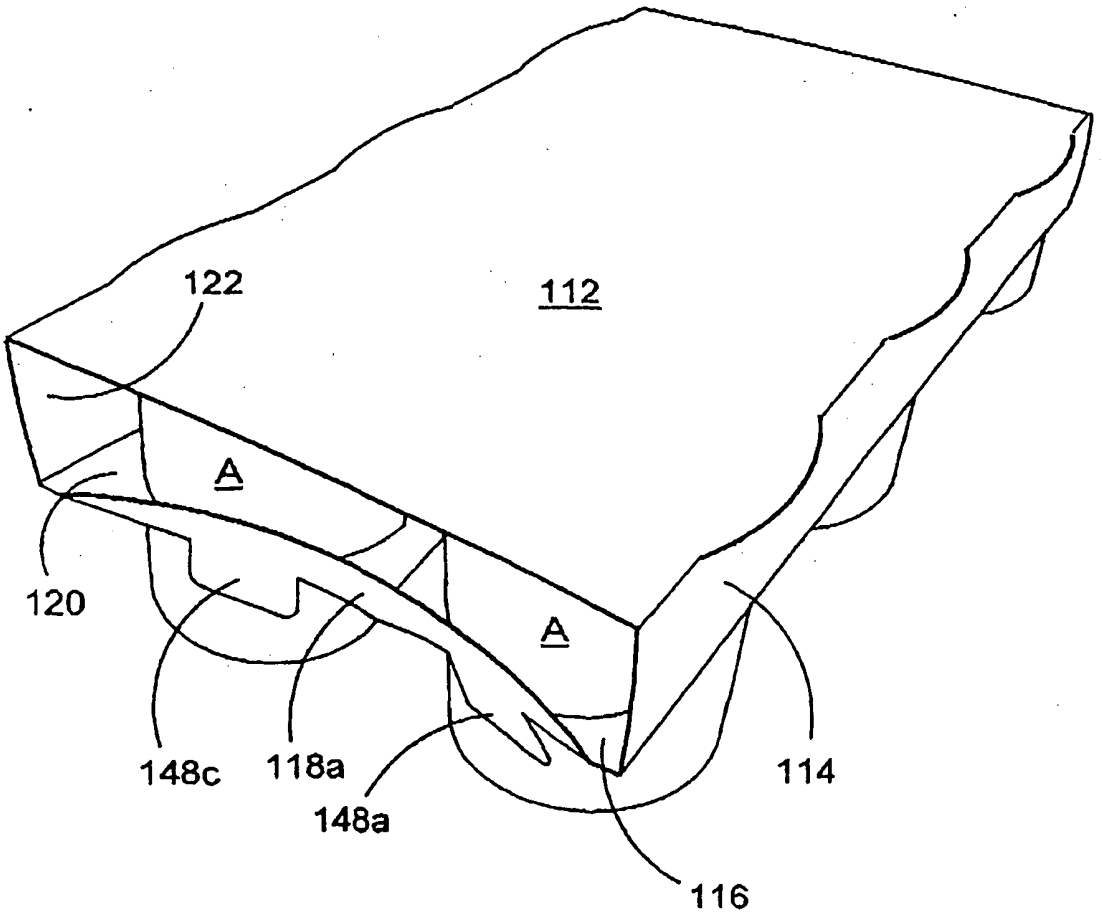


FIGURE 9

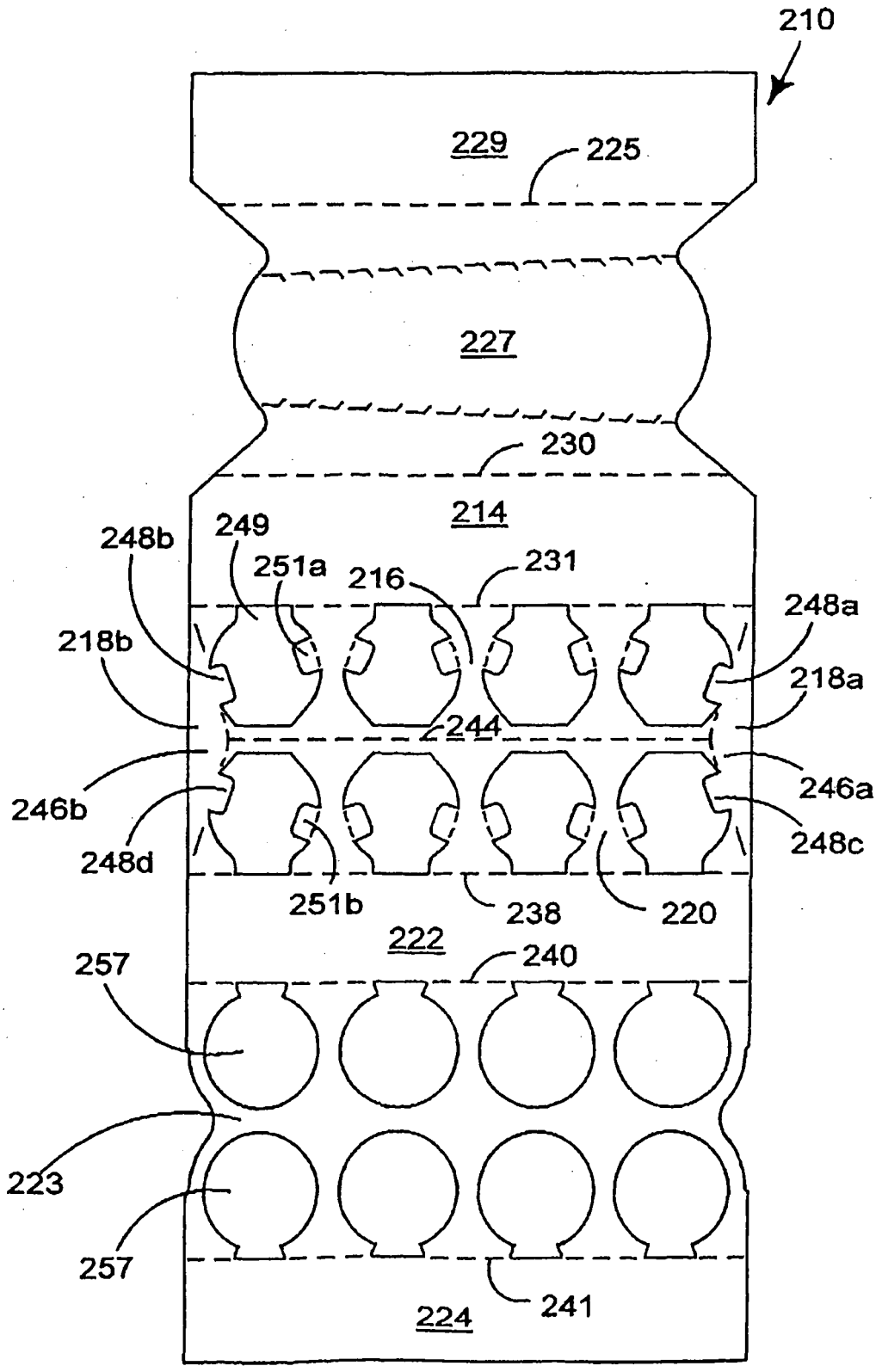

210
229
225
227
230
214
248b
249
251a
216
231
248a
218b
218a
244
246b
246a
248d
248c
251b
238
220
222
257
240
223
257
241
224

FIGURE 10

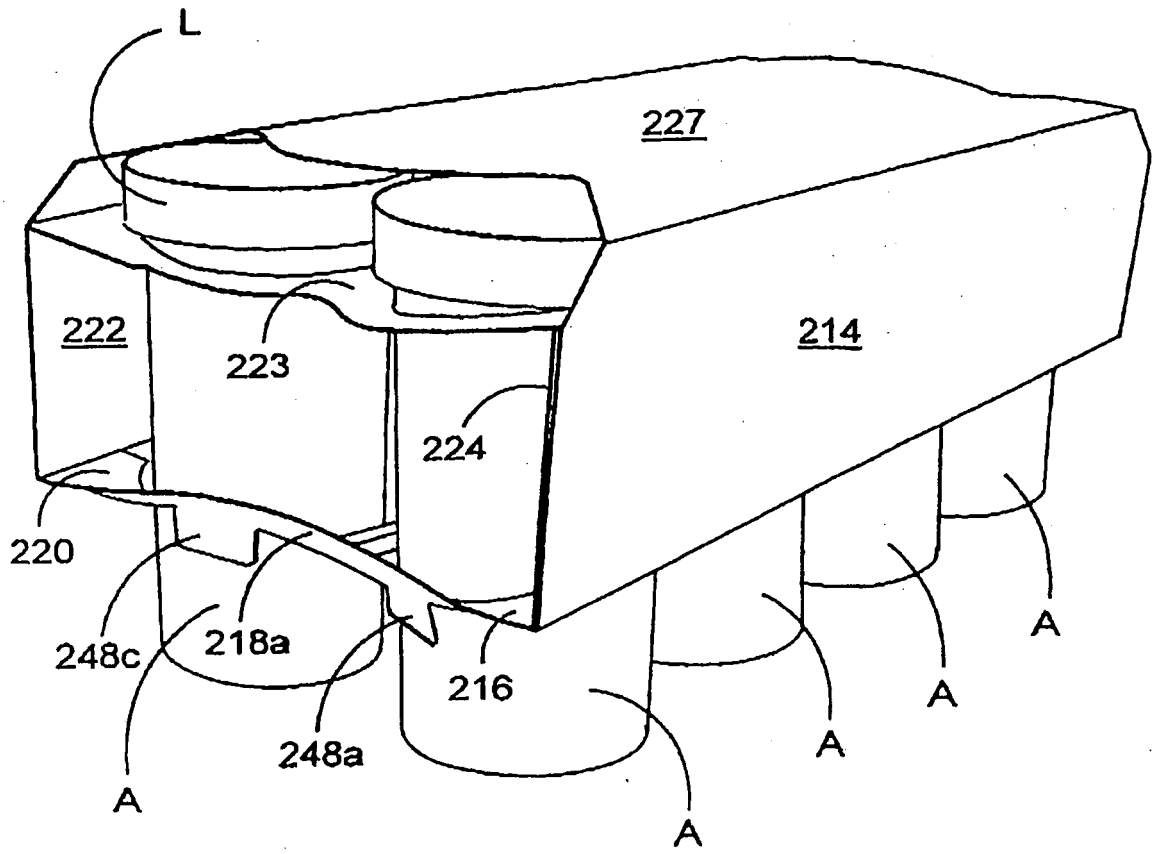


FIGURE 11