



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
30.07.2008 Bulletin 2008/31

(51) Int Cl.:
B65D 71/20 (2006.01)

(21) Application number: **08100979.7**

(22) Date of filing: **28.01.2008**

(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

(30) Priority: **27.01.2007 GB 0701593**

(71) Applicant: **MeadWestvaco Packaging Systems LLC**
Glen Allen, VA 23060 (US)

(72) Inventor: **Le Bras, Phillippe**
36000 Chateauroux (FR)

(74) Representative: **Baldwin, Mark**
Coulson & Associates
1st Floor Suite
5 Newbold Road
Rugby
Warwickshire CV21 2LQ (GB)

(54) **Carton and blank therefor**

(57) A carton for packaging articles (A), which carton comprises a bottom panel (12) hinged to a side panel (18) about a fold line (30), defined within at least of portion of which side panel is a primary tab, which primary tab (26) is hinged to the bottom panel by said fold line, and which primary tab is folded inwardly of the carton so as

to become interposed between some portion of the bottom panel and a base portion of an article (A) that is loaded into the carton, wherein adhesive material (G) is applied to a surface of the primary tab, which surface is in face contacting relation with said base portion, and which adhesive material serves to secure that article within the carton.

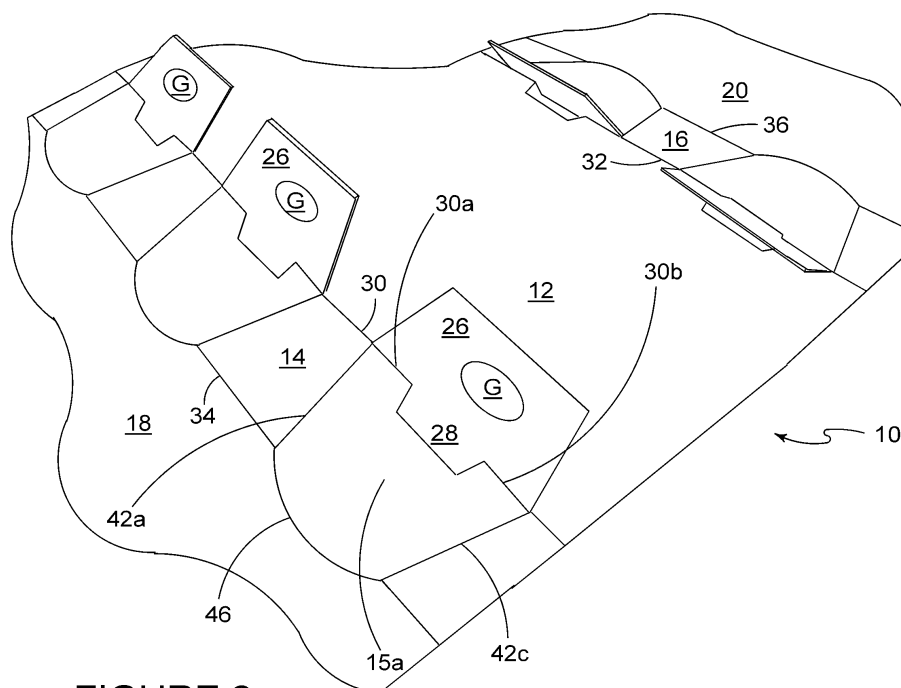


FIGURE 2

Description

Field of the Invention

[0001] The present invention relates to a carton for packaging articles, a blank for forming the carton and a package comprising the carton. More specifically, though not exclusively, the present invention relates to a wrap-around carton comprising tabs that retain the articles within the carton. Yet more specifically, though still not exclusively, the present invention relates to a carton wherein the aforementioned tabs comprise adhesive that releasably secure the tabs to undersides of the articles, thereby restricting unintentional egress of the articles from the carton despite possible deformation of those articles.

Background to the Invention

[0002] Various carton designs are known in the field of packaging, which cartons are targeted at retaining articles therein through some application of retention structures that engage portions of the article and prevent unintentional egress thereof. However, retention of the articles within such cartons relies upon the assumption that the articles themselves do not significantly deform and therefore will remain engaged with such retention structures as are provided.

[0003] Where the articles are, in fact, deformable as in the case of, for example, bottles made from soft plastics material, the effectiveness of such article retention arrangements, formed within the panels of the carton, is diminished. This is because the articles may deform to such an extent to release themselves from engagement from such arrangements unintentionally, and thereby egress from the carton. It is therefore necessary to provide a carton design that allows such deformable articles to be securely maintained within the carton in spite of substantial deformation thereof. It is a further requirement that the articles are readily releasable from the carton as and when required by an end user. Further, the aesthetic appeal of the articles must not be compromised as this would lead to a perceived reduction in value of the article by user.

[0004] The present invention seeks to overcome, or at least mitigate, at least one of the problems with the prior art, associated with packaging deformable articles.

Summary of Invention

[0005] A first aspect of the present invention provides a package comprising a carton having a substantially tubular structure including a first panel, and one or more articles placed within the tubular structure, wherein a primary tab is struck from the tubular structure and hingedly connected to the first panel, the primary tab being folded inwardly of the carton to an operative position where the primary tab is disposed between the first panel and one

of said one or more articles while an outside surface of the primary tab is pressed against said one of said one or more articles due to resilience of material from which the carton is formed, and wherein the outside surface of the primary tab is secured to said one of said one or more articles by means of adhesive material applied to said outside surface of the primary tab whereby retaining said one of said one or more articles within the carton.

[0006] Preferably, the adhesive material is pressure sensitive adhesive and is resilient to deformation of the article and of said outside surface.

[0007] Preferably there further comprises an access means for manipulating folding of the primary tab.

[0008] Preferably, the access means comprises a minor tab coupled to the primary tab.

[0009] Preferably, the primary tab is hingedly connected to the first panel by a fold line and wherein the minor tab interrupts the fold line.

[0010] Preferably, the minor tab is struck at least in part from the first panel.

[0011] Preferably, the access means comprises means to encourage engagement of the primary tab with said one of said one or more articles.

[0012] Preferably, when the primary tab is in said operative position, the minor tab projects outwardly of the tubular structure beyond said fold line, whereby the minor tab may be manipulated to undergo pressure to cause a corresponding reverse direction pressure on the primary tab to insure that the adhesive material is brought into contact with the article.

[0013] Preferably, the adhesive material secures the primary tab to said one of said one or more articles such that said one of said one or more articles may be intentionally removed from the carton without affecting the aesthetic appeal of said one of said one or more articles.

[0014] Preferably, the adhesive material secures the primary tab to said one of said one or more articles such that said one of said one or more articles may be intentionally removed from the carton without tearing the primary tab from the first panel.

[0015] A second aspect of the present invention provides a carton for packaging articles which carton comprises a substantially tubular structure having a first panel, a primary tab formed from the tubular structure and hingedly connected to the first panel about a fold line, the primary tab being folded inwardly of the carton to an operative position where an inside surface of the primary tab faces an inside surface of the first panel so that an outside surface of the primary tab is urged toward an article that is, in use, loaded into the carton, and adhesive material applied to the outside surface of the primary tab to secure the primary tab to the article.

[0016] Preferably, the adhesive material is pressure sensitive and is resilient to deformation of the article and of said outside surface.

[0017] Preferably, there further comprises an access means for manipulating folding of the primary tab. Preferably, the access means comprises a minor tab coupled

to the primary tab.

[0018] Preferably, said fold line is interrupted by the minor tab that extends from a proximal edge of the primary tab.

[0019] Preferably, the minor tab projects outwardly of the tubular structure beyond said fold line when the primary tab is in said operative position, whereby the minor tab is manipulatable to move in a first direction to cause a reverse direction pressure on the primary tab to insure that the adhesive material is brought into contact with the article.

[0020] Preferably, the adhesive material secures the primary tab to the article such that the article may be intentionally removed from the carton without affecting the aesthetic appeal of the article.

[0021] Preferably, the adhesive material secures the primary tab to the article such that the article may be intentionally removed from the carton without tearing the primary tab from the first panel.

[0022] Preferably, the carton is formed of a material that resists folding and, as such, urges the primary tab away from the first panel when brought into abutment with the first panel or arranged to lie adjacent thereto, as such, when an article is located in the carton, with the primary tab interposed between the first panel and the article, the primary tab is urged toward the article.

[0023] A third aspect of the present invention provides a blank for forming a carton for packaging articles, which carton comprises a substantially tubular structure having a first panel, a primary tab formed from the tubular structure and hingedly connected to the first panel about a fold line, the primary tab being folded inwardly of the carton to an operative position where an inside surface of the primary tab faces an inside surface of the first panel so that an outside surface of the primary tab is urged toward an article that is, in use, loaded into the carton, and adhesive material applied to the outside surface of the primary tab to secure the primary tab to the article.

[0024] A fourth aspect of the present invention provides a package comprising a carton having a first panel hinged to a second panel, and one or more articles each having a base, wherein a primary tab is struck at least in part from the second panel, which primary tab is hinged to the first panel, the primary tab being folded inwardly of the carton so as to be disposed between the first panel and a portion of one of said one or more articles loaded into the carton, and wherein the primary tab is secured by adhesive material to said portion of said one of said one or more articles within the carton.

Brief Description of the Figures

[0025] Exemplary embodiments of the present invention will now be described with reference to the Figures in which:

FIGURE 1 illustrates a part of a blank of a carton according to a preferred embodiment of the inven-

tion;

FIGURE 2 illustrates the glue tabs of the blank of Figure 1 in partially set up condition;

FIGURE 3 illustrates a partially set up carton formed from the blank of Figure 1 loaded with articles;

FIGURE 4 illustrates a fully set up carton formed from a blank of Figure 1; and

FIGURE 5 illustrates an enlarged view of the glue panels of the carton of Figure 4 in contact with portions of the articles contained therein.

Detailed Description of the Exemplary Embodiment of the Present Invention

[0026] A first aspect of the present invention provides a wraparound carton that securely retains deformable articles therein through cooperation between lower glue tabs. With reference to the Figures 1 to 5, a detailed description of a preferred embodiment of the present invention is described below.

[0027] In Figure 1, there is illustrated a blank 10, formed of paperboard or like foldable material, comprising a plurality of panels for forming a substantially tubular structure. The blank 10 comprising a bottom panel 12, hinged upon either side, by fold lines 30, 32, to bevel panels 14, 16, which bevel panels 14, 16 are then further hinged at their respective ends to side panels 18, 20 about fold lines 34 and 36. Side panel 20 is then further hinged to top panel 22 (as best shown in Figure 3) about fold line 40 and side panel 18 is hinged to glue strip 24 about fold line 38.

[0028] Lower apertures 15 are struck in part from side panels 18, 20 and bevel panels 14, 16. Lower aperture 15 is defined in part by curved cut line 46, by upper portions of cut lines 42a, 42c and by cut line 42b. The curved cut line 46 extends between two points P1, P2 on fold line 34. The blank 10 comprises a plurality of lower apertures 15 which in the preferred embodiment shown in Figures 1 to 5 there are six lower apertures. The lower apertures 15 are substantially identical to one another therefore only one of which will be described in detail.

[0029] Cut lines 42a and 42c extend across the entire width of bevel panel 14 between fold line 34 and fold line 30. Cut line 42b defines a free leading edge of a primary tab 26, which together with lower portions of cut lines 42a and 42c define a primary tab 26 which is substantially trapezoidal in shape. Primary tab 26 is hinged to base panel 12 by portions 30a, 30b of fold line 30. Portions 30a, 30b are spaced apart by a minor tab 28 struck from bottom panel 12. Minor tab 28 is unitary with and connected to primary tab 26 along a notional line coincident with fold line 30. Minor tab 28 is defined in part by cut lines 44a, 44b, 44c such that minor tab 28 is substantially trapezoidal in shape.

[0030] When primary tab 26 and minor tab 28 are displaced out of the plane of the blank 10 lower apertures are increased in size. Enlarged lower apertures 15a, best illustrated in Figure 2, are defined in by cut line 46, cut line 42a and 42c, portions 30a and 30b and by cut lines 44a, 44b, 44c. Enlarged apertures 15a are therefore struck in part from side panel 18, bevel panel 4 and bottom panel 12.

[0031] A hinged glue tab 26/28 is created comprising primary tab 26 from which extends minor tab 28. The entire glue tab 26/28 hinges about portions of fold line 30 such that it may become folded into substantially face contacting relation with portions of bottom panel 12.

[0032] Figure 2 illustrates the first steps in setting up the carton 100 of Figure 3 from the blank 10 of Figure 1. The primary tabs 26 are folded about fold line 30 into a position overlapping the bottom panel 12 and adhesive G applied to the now uppermost surface thereof. In a preferred embodiment the primary tab 26 is folded more than 90 degrees out of the plane of the blank 10 and in yet another embodiment the primary tab 26 is folded more than 135 degrees out of the plane of the blank 10. It can be seen that minor tab 28 when supported from below as shown in Figure 2 prevents primary tab 26 from returning to the plane of the aperture 15a. Minor tab 28 therefore acts as a stopping means which maintains the primary tab 26 in position pending delivery of an article A.

[0033] Once the adhesive G has been applied, articles A are loaded into the partially set up carton 100 as shown in Figure 3. One article A is positioned over each primary tab 26 so that it becomes secured thereto by virtue of the adhesive G. The hinging of the primary tabs 26 is such that the natural tendency of the paperboard material is to return the primary tab 26 to a coplanar position within the enlarged aperture 15a and thus the primary tab 26 is urged upwardly toward base portions of the articles A and encourages adhesive contact therebetween.

[0034] Figure 3 shows the bevel panels 14, 16 and side panels 18, 20 folded up about the side of the articles A and Figure 4 illustrates the set up carton 100 whereby glue strip 24 is folded down into contact with the tops of some of the articles A before top panel 22 is likewise folded down into face contacting relation therewith and thereby secured by some means known in the art such as adhesive, although alternative mechanical locking means as known in the art are also envisaged.

[0035] Figure 5 illustrates, in more detail, the relationship between the primary tab 26 and base portions of the articles A, and specifically illustrates the incline between the primary tab 26 and the bottom panel 12 such that the primary tab 26 is directed upwardly into surface contacting relation with portions of the base of the articles A. Consequently, the minor tab 28 protruding from an edge of the primary tab 26 is directed at an incline away from the bottom panel 12. The minor tab 28 allows additional pressure to be applied between the primary tab 26 and the article A without any requirement for access to the underside of the carton 100 since as downward pressure

applied to the minor tab 28 translates into an upward thrust upon the primary tab 26 as the primary tab 26 hinges about fold line 30. This feature is also useful when setting up the carton 100, as a machine may be provided alongside the carton 100 that may fold the primary tab 26 into a position over the bottom panel 12 advantageously using, in part, an upward pressure on minor tab 28.

[0036] It is contemplated that pressure sensitive adhesive is used, as the adhesive G, to secure the primary tab 26 to the articles A such that the increased pressure between the tab 26 and the articles A serves to aid the strength of the bond formed therebetween. It is envisaged that the pressure sensitive adhesive will be of sufficient strength so as to allow the retention of the articles A within the carton 100, whilst also allowing the articles A to be removed intentionally by the user without any requirement for ripping the glue tabs 26/28 away from the remainder of the carton 100. This feature is aided by a robust connection between the glue tab 26, 28 and the bottom panel 12 of the carton 100 which connection comprises significant portions of the fold line 30 and which portions are relatively widely spaced apart to maximise the robustness thereof. It is further envisaged that the adhesive G will be sufficiently resilient so as to withstand deformation of the article A and/or the glue tab 26/28 without cracking or detriment to the strength of the bond between the article A and the glue tab 26/28.

[0037] Once fully set up and loaded with articles A, the carton 100 of the preferred embodiment presents a continuous barrier between the bases of the articles A and any surface upon which the carton 100 is disposed. This prevents damage occurring to the articles A which may detract from their aesthetic appeal and therefore perceived value.

[0038] The bevel panels 14, 16 are optional, and it is contemplated that the glue tabs could be struck entirely from a respective side panel 18, 20 hinged directly to the bottom panel 12. Where the bevel panels 14, 16 are included, the apertures 15, 15a formed therein may engage with lower portions of the articles A so as to aid retention of the articles A within the carton 100. These enlarged lower apertures 15a are optionally dimensional so as to engage lower portions of the articles A and it is contemplated that they may not be 50 dimensional whilst still providing glue tabs 26/28.

[0039] In the exemplary embodiment shown in the Figures, the carton 100 comprises a series of optional upper retention apertures 52 which engage laterally extending upper portions F of the articles A to aid retention thereof within the carton 100. Whilst such upper retention apertures 52, defined within upper portions of the side panel 18, 20 and/or portions of the top panel 22 or glue strip 24 are advantageous in retaining articles A within the carton 100, their provision is not required and, for example, dependant upon the requirements of the specific articles A to be packaged.

[0040] In the exemplary embodiments illustrated in the

Figures, the carton 100 comprises six glue tabs 26/28, this is, however, not a limiting feature of the invention and it is specifically contemplated that any number of articles A may be accommodated by increasing the dimensions of the carton and the number of glue tabs 26/28. It will be appreciated by those skilled in the art that the glue tabs 26/28 are free to move pivotally about fold lines 30a and 30b such that the package is provided with resilience to relative movement between the articles and the carton 100. The primary tab 26 is therefore maintained in contact with the base of the article A; first as a consequence of the natural tendency of the primary tab 26 to return to a coplanar relationship with the bottom panel 12 and second as a consequence of the adhesive bond between the base of the article A and the primary tab 26. In this way the stress placed on the adhesive bond between the primary tab 26 and the base of the article A is reduced when the article A moves relative to the carton 100 thereby reducing the likelihood of the adhesive bond breaking.

[0041] Any directional references used in the above description are incorporated for clarity only and are not intended to be limiting. It will therefore be recognised that as used herein, that terms such as "top", "bottom", "side", "end", "inner", "outer", "upper", and "lower" with respect to the panels of the carton or carton blank are relative terms, and that the carton formed from the blank may be reoriented as necessary or as desired. Any reference to a hinged or foldable connection should not be construed as necessarily referring to a single fold line only: indeed, it is envisaged that a hinged or foldable connection can be formed from one or more of the following, a score line, a frangible line or a fold line, without departing from the scope of the present invention.

[0042] Where the top panel 22 is described as being secured to glue strip 24, it is envisaged as an alternative, that some means other than adhesive may be used, such as mechanical fastening, such is known in the art. Furthermore it will be appreciated by those skilled in the art that the present invention is not limited to the tubular structure shown and described in the preferred embodiment but can be of any shape including, but not limited to, square, oval, round, triangular, trapezoidal and hexagonal.

Claims

1. A package comprising a carton having a substantially tubular structure including a first panel (14, 18), and one or more articles (A) placed within the tubular structure, wherein a primary tab (26) is struck from the tubular structure and hingedly connected to the first panel, the primary tab being folded inwardly of the carton to an operative position where the primary tab is disposed between the first panel and one of said one or more articles while an outside surface of the primary tab is pressed against said one of said

one or more articles due to resilience of material from which the carton is formed, and wherein the outside surface of the primary tab is secured to said one of said one or more articles by means of adhesive material (G) applied to said outside surface of the primary tab whereby retaining said one of said one or more articles within the carton.

2. A package according to claim 1, wherein the adhesive material is pressure sensitive adhesive and is resilient to deformation of the article and of said outside surface.
3. A package according to any of the preceding claims, further comprising access means for manipulating folding of the primary tab.
4. A package according to claim 3, wherein the access means comprises a minor tab (28) coupled to the primary tab.
5. A package according to claim 4 wherein the primary tab is hingedly connected to the first panel by a fold line (30) and wherein the minor tab interrupts the fold line.
6. A package according to either claim 4 or 5, wherein the minor tab is struck at least in part from the first panel.
7. A package according to any of claims 3 to 6, wherein the access means comprises means to encourage engagement of the primary tab with said one of said one or more articles.
8. A package according to any of claims 4, 5 of 6, wherein when the primary tab is in said operative position, the minor tab projects outwardly of the tubular structure beyond said fold line, whereby the minor tab is manipulatable to move in a first direction to cause a reverse direction pressure on the primary tab to insure that the adhesive material is brought into contact with the article.
9. A package according to any of the preceding claims, wherein the adhesive material secures the primary tab to said one of said one or more articles such that said one of said one or more articles may be intentionally removed from the carton without affecting the aesthetic appeal of said one of said one or more articles.
10. A package according to any of the preceding claims wherein the adhesive material secures the primary tab to said one of said one or more articles such that said one of said one or more articles may be intentionally removed from the carton without tearing the primary tab from the first panel.

11. A carton for packaging articles (A), which carton comprises a substantially tubular structure having a first panel (14, 18), a primary tab (26) formed from the tubular structure and hingedly connected to the first panel about a fold line (30), the primary tab being folded inwardly of the carton to an operative position where an inside surface of the primary tab faces an inside surface of the first panel so that an outside surface of the primary tab is urged toward an article (A) that is, in use, loaded into the carton, and adhesive material (G) applied to the outside surface of the primary tab to secure the primary tab to the article. 5
12. A carton according to claim 11 wherein the adhesive material is pressure sensitive and is resilient to deformation of the article and of said outside surface. 10
13. A carton, according to either claim 11 or 12, further comprising access means for manipulating folding of the primary tab. 15
14. A carton according to claim 13 wherein the access means comprises a minor tab (28) coupled to the primary tab. 20
15. A carton according to claim 14, wherein said fold line is interrupted by the minor tab that extends from a proximal edge of the primary tab. 25
16. A carton according to claim 15, wherein when the primary tab is in said operative position, the minor tab projects outwardly of the tubular structure beyond said fold line, whereby the minor tab is manipulatable to move in a first direction to cause a reverse direction pressure on the primary tab to insure that the adhesive material is brought into contact with the article. 30
17. A carton according to any of the preceding claims, wherein the adhesive material secures the primary tab to the article such that the article may be intentionally removed from the carton without affecting the aesthetic appeal of the article. 35
18. A carton according to any of the preceding claims, wherein the adhesive material secures the primary tab to the article such that the article may be intentionally removed from the carton without tearing the primary tab from the first panel. 40
19. A carton according to any of claims 11 to 18, wherein the carton is formed of a material that resists folding and, as such, urges the primary tab away from the first panel when brought into abutment with the first panel or arranged to lie adjacent thereto, as such, when an article is located in the carton, with the primary tab interposed between the first panel and the article, the primary tab is urged toward the article. 45
20. A blank (10) for forming a carton for packaging articles (A), which carton comprises a substantially tubular structure having a first panel (14, 18), a primary tab (26) formed from the tubular structure and hingedly connected to the first panel about a fold line (30), the primary tab being folded inwardly of the carton to an operative position where an inside surface of the primary tab faces an inside surface of the first panel so that an outside surface of the primary tab is urged toward an article that is, in use, loaded into the carton, and adhesive material (G) applied to the outside surface of the primary tab to secure the primary tab to the article. 50
21. A package comprising a carton having a first panel (12) hinged to a second panel, and one or more articles (A) each having a base, wherein a primary tab (26) is struck at least in part from the second panel (14), which primary tab is hinged to the first panel, the primary tab being folded inwardly of the carton so as to be disposed between the first panel and a portion of one of said one or more articles loaded into the carton, and wherein the primary tab is secured by adhesive material (G) to said portion of said one of said one or more articles within the carton. 55

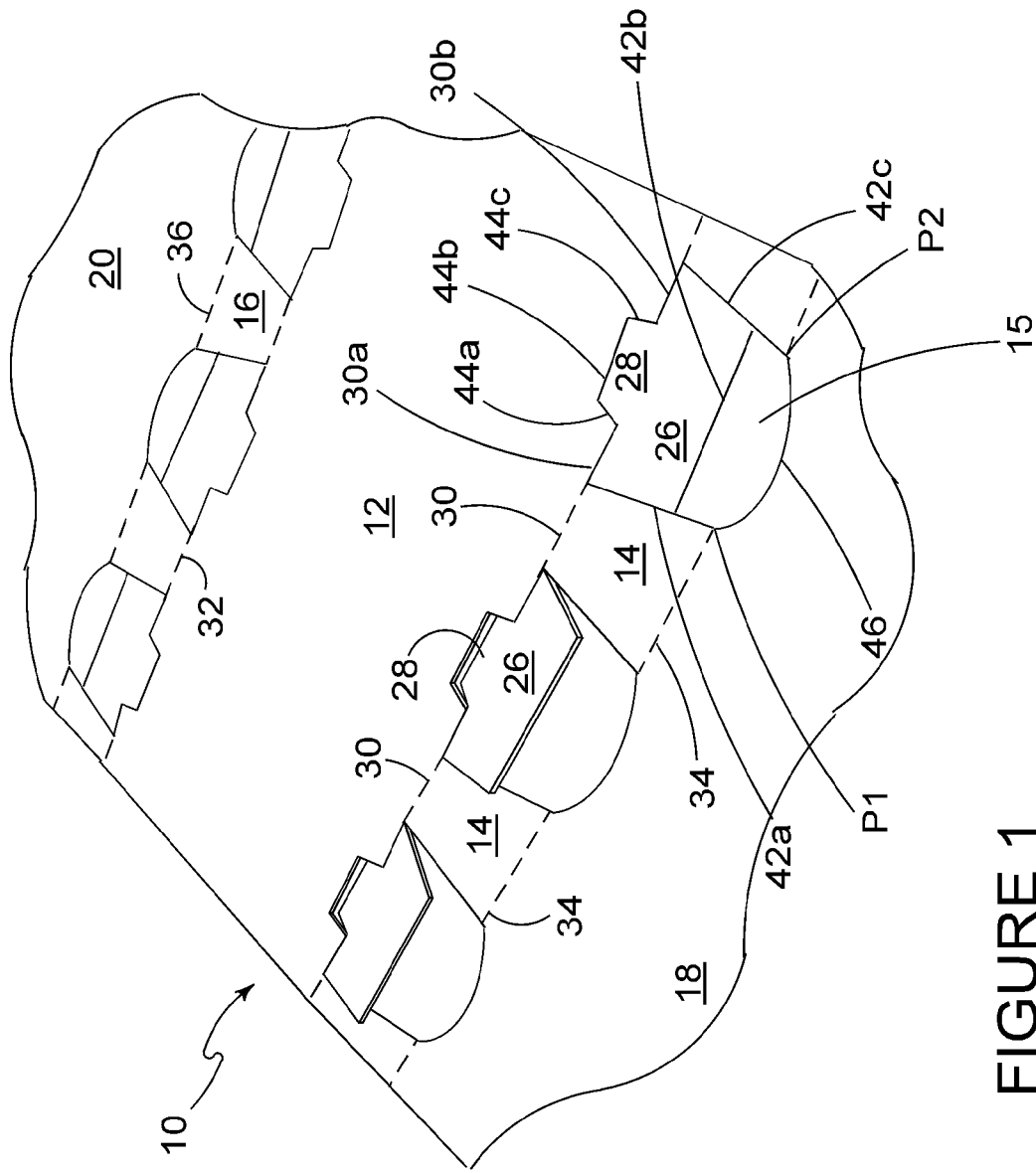


FIGURE 1

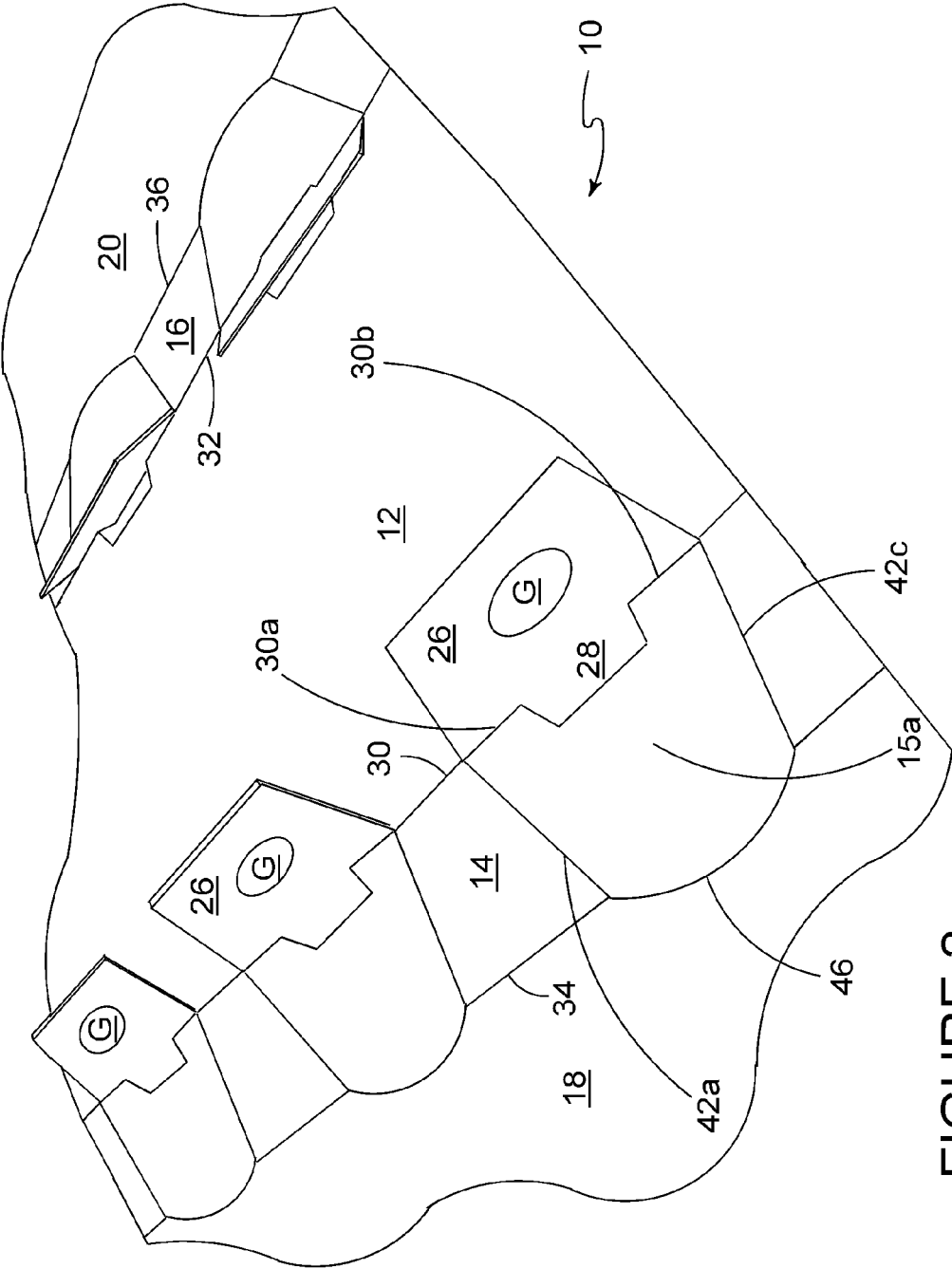


FIGURE 2

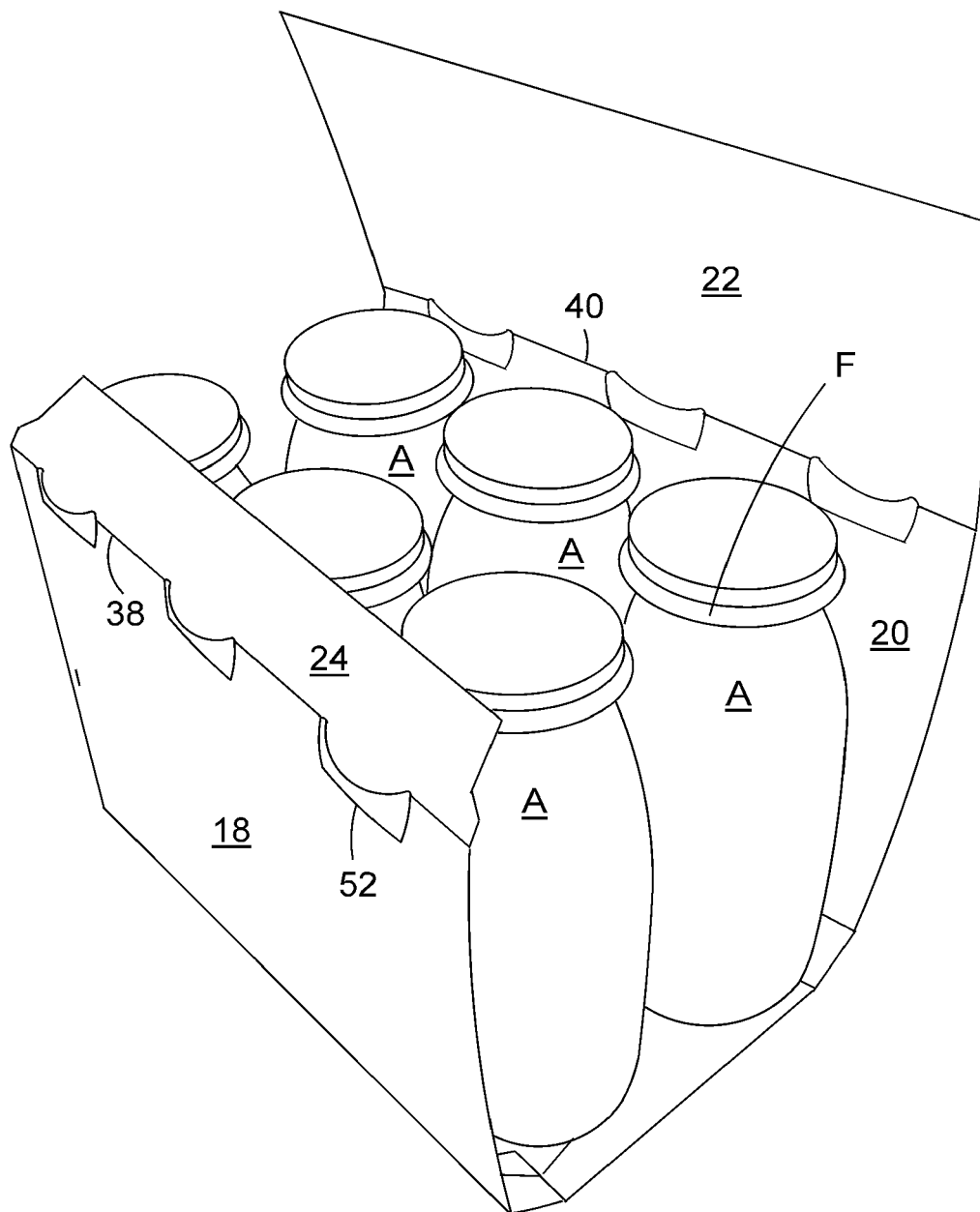


FIGURE 3

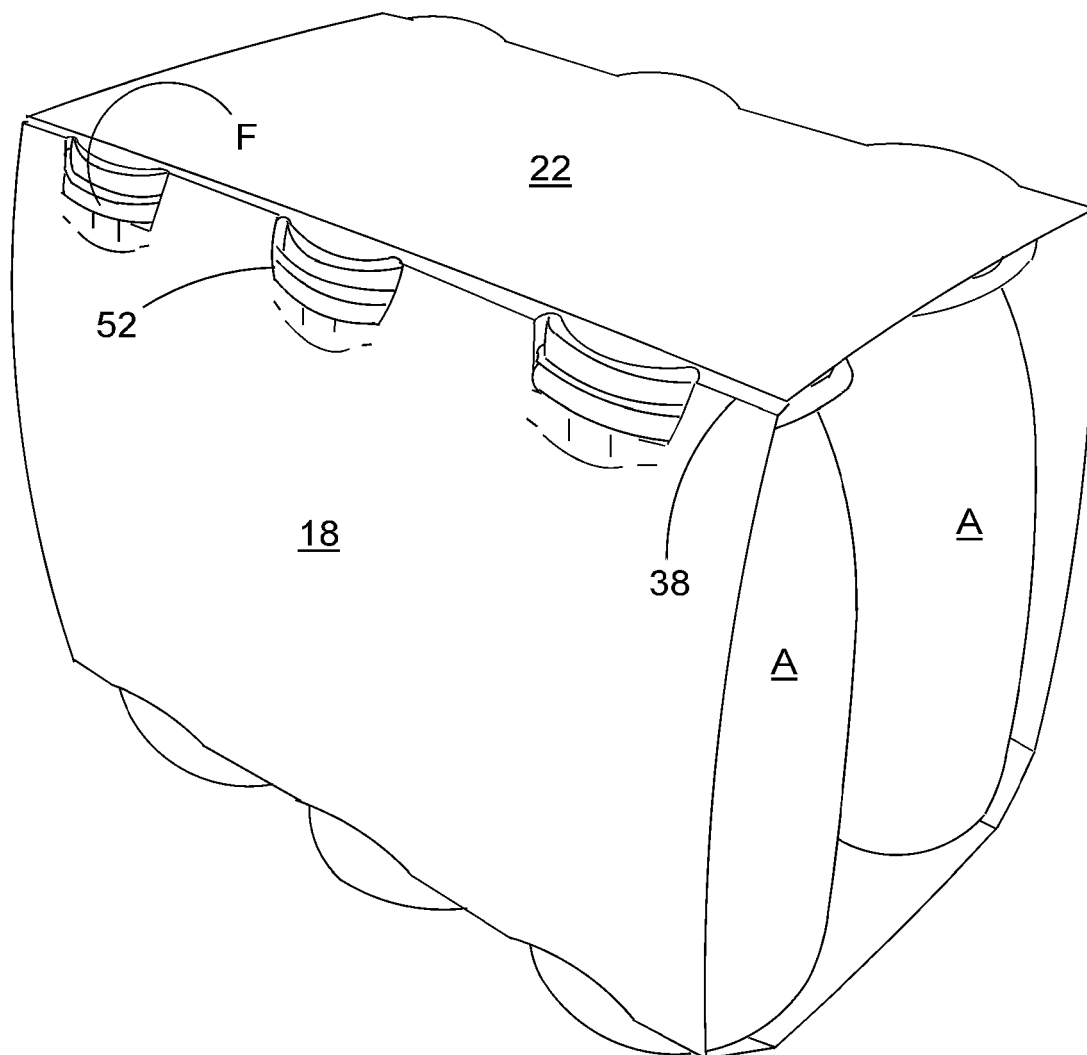


FIGURE 4

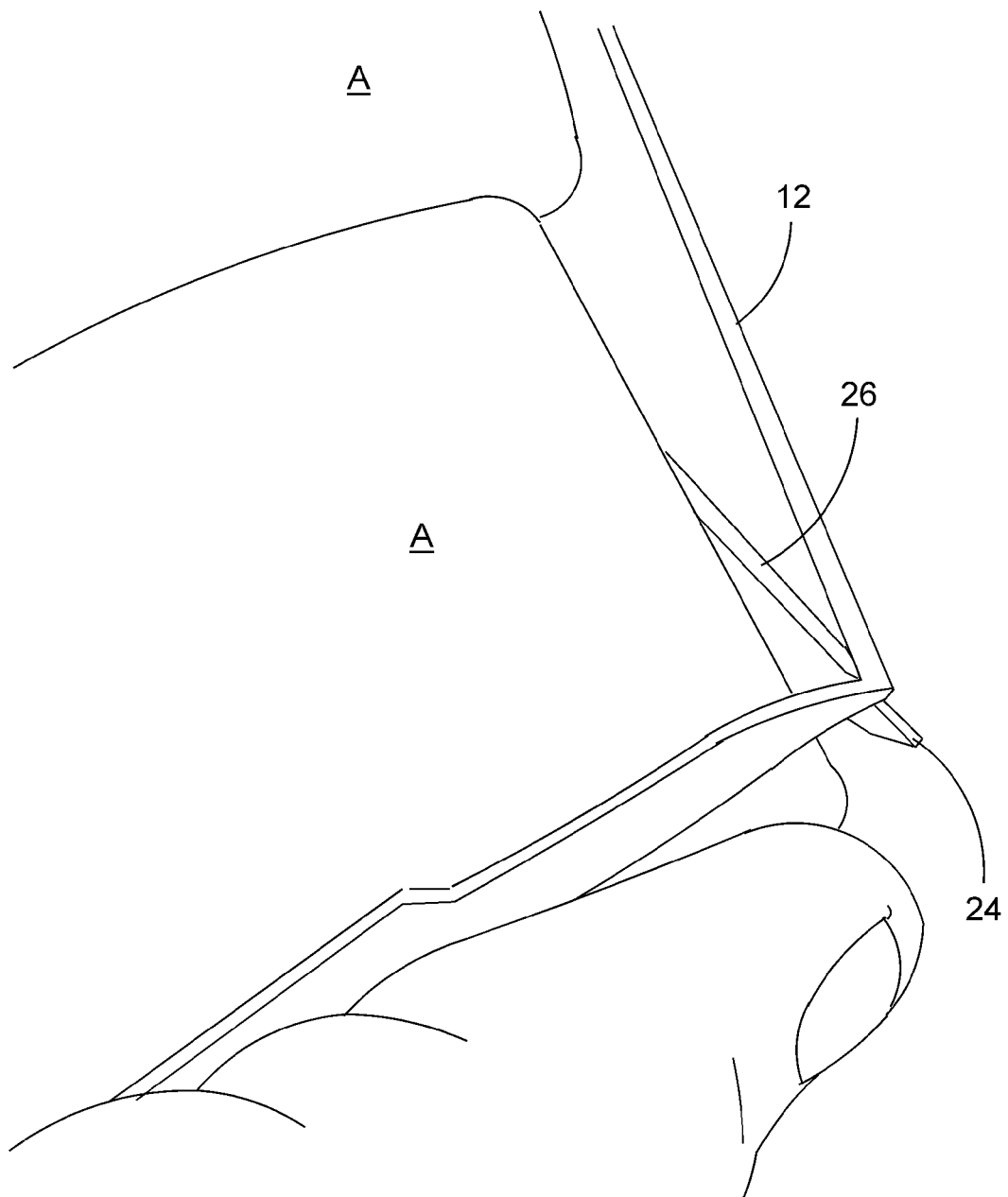


FIGURE 5