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(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) **Multipacks for flanged articles**

(57) A carton (8, 108, 208) for packaging articles (A), which carton comprises a top panel (12, 112, 212) hinged to a securing panel (14, 16) about a hinge line (18, 20), some portion of which securing panel is secured, with adhesive (G), in face contacting relation to some portion

of the top panel adjacent the hinge line, leaving a remaining portion of the securing panel unsecured to the top panel, which remaining portion may be sufficiently deformed away from the top panel so as to accommodate a laterally protruding upper portion (F) of an article, and thereby to retain that article within the carton.

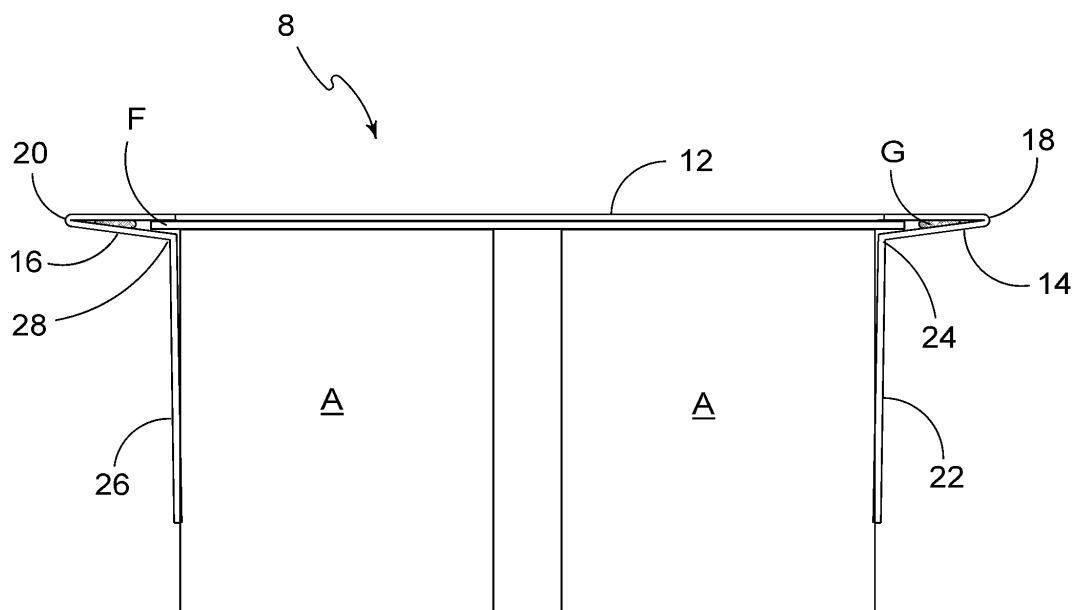


FIGURE 2

Description

Field of Invention

[0001] This invention relates to a carton for packaging one or more articles. More specifically, though not exclusively, this invention relates to a carton that engages with a portion of the aforementioned one or more articles, so as to retain the or each article within the carton. Yet more specifically, though again not exclusively, this invention relates to a carton that engages protruding portions of the or each article and that allows the or each article to be removed without tearing the carton.

Background of the Invention

[0002] European Patent Number 0,141,631 discloses a carton comprising a group of flanged articles that has a paperboard cover including securing strips which are secured to the undersides of the article flanges by ultrasonic welding.

[0003] European Patent Number 0,368,518 discloses a carton substantially similar to that described above, but further comprising side panels that extend down some portion of the length of the sides of the articles, which side panels are then glued to the articles to maintain them in coplanar contact with the sides thereof.

[0004] DE 9203578 discloses a carton for containing flanged articles wherein an end closure arrangement prevents removal of the flanged articles.

[0005] However, in the current state of the art, there is no provision for a carton that engages the protruding portions, that is to say "the flanges", of the contained articles, without a requirement for the carton to be physically adhered or secured to some portions of those articles or for the carton to be torn to remove the articles. This leads to a problem in that removal of one or more articles is difficult and inherently leads to tearing of the carton and/or damage to the articles.

[0006] The present invention seeks to overcome, or at least mitigate, the problems of the prior art.

Summary of the Invention

[0007] According to a first aspect of the present invention there is provided a carton for packaging articles, which carton comprises a top panel hinged to a securing panel about a hinged connection, a portion of which securing panel is secured, in face contacting relationship to a portion of the top panel adjacent the hinged connection, so as to provide a channel between the securing panel and the top panel, whereby, in use, a laterally protruding portion of an article may be located in the channel to retain the article within the carton.

[0008] Preferably, the channel is provided by spacer means located between the securing panel and the top panel.

[0009] Preferably, the spacer means is provided by ad-

hesive applied between the securing panel and the top panel.

[0010] Preferably, the adhesive is applied such that a remaining distal portion of the securing panel is unsecured to the top panel, which remaining distal portion may be sufficiently deformed away from the top panel to provide the channel.

[0011] Additionally or alternatively, the securing panel may be mechanically locked to the top panel and said mechanical lock may provide at least a part of said spacer means.

[0012] Preferably, a side panel is hinged to the securing panel, which side panel extends, in use, down a portion of a side of said article.

[0013] Preferably, two such securing panels are provided along opposed edges of the top panel, which securing panels, in use, cooperate to accommodate laterally extending upper portions of opposed sides of an article or a group of articles.

[0014] Preferably, the one or both securing panels comprise one or more embossed lines formed therein, the or each embossed line being substantially perpendicular to said hinged connection, which embossed lines restrict deformation of the securing panel about an axis parallel to that hinged connection.

[0015] Preferably, there further comprises a plurality of ridges or ribs on one or both of the securing panels and/or the top panel, which ridges or ribs providing article engaging means.

[0016] Preferably, the top panel comprises lifting means for a user to engage to lift the carton, wherein, in use, the lifting means may be configurable to prevent movement of the carton with respect to the articles.

[0017] Preferably, the lifting means is provided by a finger tab engagement means.

[0018] Preferably, the carton further comprises an embossed line spaced apart from and parallel to a free edge of the top panel for facilitating insertion and removal of an article or article group into the carton.

[0019] Preferably, a corner of the top panel is recessed such that an upper part of the laterally protruding part of the article is engageable whereby facilitating slideable removal of an article or group of articles from the carton.

[0020] Preferably, the or each securing panel comprises at least one recessed portion at at least one end thereof whereby an underside of the laterally protruding portion is engageable for facilitating slideable removal of an article or group of articles from the carton.

[0021] According to a second aspect of the present invention there is provided a package comprising the carton as here before described and an article retained therein, wherein the article is removable by sliding the article or group of articles in a direction parallel to said hinged connection.

[0022] Preferably, the article contained within the carton is removable from the carton without tearing the carton.

[0023] Optionally, there comprises further articles

which provide a group of connected articles which possess laterally extending upper portions at least along two opposed sides of the group.

[0024] According to a third aspect of the present invention there is provided a blank for forming a carton for packaging articles, which blank comprises a first panel and a second panel, hinged to one another about a hinged connection, which first and second panels form a top panel and securing panel respectively in a set up carton, wherein the securing panel is dimensioned such that when folded about said hinged connection, a portion thereof is securable to a portion of the top panel and a sufficient proportion of the securing panel will remain unsecured to provide a channel for accommodating a laterally extending protruding portion of an article thereby to retaining that article within the set up carton.

[0025] Preferably, the second panel comprises multiple embossed lines define therein, perpendicular to said hinged connection, which embossed lines reduce deformation about a longitudinal axis of the securing panel in the set up carton.

Brief Description of the Drawings

[0026] Exemplary embodiments of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which;

FIGURE 1 illustrates a plan view of a blank, according to a preferred embodiment of the present invention,

FIGURE 2 illustrates an end view of a set up carton, according to a preferred embodiment of the present invention, loaded with articles,

FIGURE 3 illustrates a perspective view of the removal of the articles contained within the carton of Figure 2, without tearing the carton,

FIGURE 4 illustrates perspective view of a set up package incorporating a carton produced from the blank of FIGURE 1,

FIGURE 5 illustrates a perspective view of a second embodiment of the present invention, and

FIGURE 6 illustrates a perspective view of a third embodiment of the present invention.

Detailed Description of Exemplary Embodiments of the Present Invention

[0027] Referring first to Figure 1 of the drawings, there is shown an elongate blank 10 formed from paperboard or similar foldable sheet material. The blank 10 comprises a top panel 12 to each of the transverse edges of which securing strips 14 and 16 are hinged along hinge

lines 18 and 20, respectively. A side panel 22 is hinged to a distal edge of securing strip 14 along hinge line 24 and a further side panel 26 is similarly hinged to securing strip 16 along hinge line 28.

[0028] In order to set up the blank 10 shown in Figure 1 into the carton 8 shown in Figure 2 adhesive material G is applied proximate hinge lines 18 and 20 and securing strips 14 and 16 are folded about hinge lines 18 and 20 respectively, thus bringing securing strips 14 and 16 into face to face relationship with top panel 12. The side panels 22 and 26 are then folded away from top panel 12 about respective hinge lines 24 and 28. It is contemplated that the combined width of either securing strip 14 and side panel 22 or securing strip 16 and side panel 26 may be greater than that of the top panel 12. In this case, it may be necessary to fold one of the side panels 22 or 26 backwards about respective hinge lines 18 or 28, after folding one of securing strips 14 or 16, and before folding the other of the securing strips 14 or 16 into face contacting relationship with the top panel 12 as described above.

[0029] The effect of positioning adhesive material G proximate hinge lines 18 and 20, prior to folding the securing strips 14 and 16, is that the securing strips 14 and 16 thereby become part secured in co-planar contact with the top panel 12. It is, however, preferable that a portion of the width of the securing panels 14 and 16 is left unsecured to form a channel, so as to accommodate laterally extending upper portions of the articles A.

[0030] Once both securing strips 14 and 16 are folded about respective hinge lines 18 and 20, and side panels 22 and 26 have been folded away from the top panel 12, about hinge lines 24 and 28, the carton 8 is in a state of readiness to be loaded with articles A.

[0031] An optional feature of the present invention is that of an arrangement of a series of embossed lines 30 running parallel with one another and substantially perpendicularly between hinge lines 18 and 24 or similarly between hinge lines 20 and 28. These embossed lines 30, formed on an exterior surface of the paperboard or similar foldable sheet material, create ridges (not shown) on the corresponding interior surface. The ridges allow the adhesive material G to better 'key' onto the surface of the paperboard or similar foldable sheet material and form a stronger adhesive bond therewith. Further, the embossed lines 30 form 'ribs' along the length of the securing strips 14, 16 which ribs resist deformation of the securing strips 14, 16 about a longitudinal axis of the securing strips 14, 16, and therefore encourage stronger engagement of the articles A.

[0032] Figure 1 illustrates the blank 10 with optional chamfered corners 31 on the top panel 12 and a chamfered upper corner 29 on the securing strips 14, 16. The chamfered corners 29, 31 each form a recess 33 and are so shaped and arranged as to aid the insertion of upper portions F of the articles A between the top panel 12 and the securing panels 14, 16. Similarly, the lower corners of the side panels 22, 26 are also chamfered so as to aid

the insertion of the articles A into the set-up carton 8. It can be seen that the arrangement of the chamfered corners 29, 31 leaves a portion of the upper portion F of the articles exposed to view. This facilitates access to the articles for removal and when assembling the carton and articles in to the package shown in Figure 4.

[0033] The blank 10 also incorporates an exemplary finger tab arrangement 40a/40b, which arrangement is defined, within top panel 12, in vertical registry with a corresponding aperture (not shown) between the articles A in the carton 8 of Figure 2. The individual finger tabs 40a and 40b, defined between curved cut lines 42a and 42b and separating cut line 44, may be folded inwardly of the carton between the articles A. Folding the finger tabs 40a and 40b inwardly in this way achieves not only a means by which the loaded carton 8 may be grasped by a user, but also restricts unintentional egress of the articles A from the carton.

[0034] Figure 2 illustrates articles A loaded into the set up carton 8. The laterally extending upper portions F of the article A are interposed between portions of the securing strips 14, 16 and the top panel 12. The adhesive material G located proximate hinge line 18, 20, provides a spacer means between the securing strips 14, 16 and the top panel 12, which creates a channel within which the laterally extending upper portions F of the article A may be located. Friction between surfaces of the article A and the carton 8 restrict unintentional egress of the article A from the carton 8. The 'ribs' created by embossed lines 30 enhance retention of the articles within the carton.

[0035] Figure 3 illustrates a second perspective view of a carton 8 being loaded with articles A. The articles A are arranged in an interconnected group each article A having a laterally extending upper portions F or flange which extends toward one of the securing strips 14 or 16. The individual articles A are each linked to one another between their inward edges, such that a laterally extending upper portion F of a first article of the group engages with one of the securing strips 14 or 16 and a laterally extending upper portion F of an opposing article connected to the first article engages the other one of the securing strip 14, 16 which is sufficient to retain both the articles within the carton 8.

[0036] The articles A can be intentionally removed from the carton 8 by a user, without requiring the carton 8 to be torn. To achieve this, the articles A are withdrawn from the carton 8 by sliding the articles A relative to the carton 8 in a direction D1 or D2 parallel with hinge lines 18 and 20. Of course, alternatively, the carton 8 may be withdrawn from the articles A in that same direction D1 or D2, to achieve the same result.

[0037] Returning to Figure 3 it can be seen that, optionally, there may be provided an embossed line 35 spaced apart from and parallel to a free edge of the top panel 12 for facilitating insertion and removal of an article A or article group into the carton 8.

[0038] One skilled in the art will appreciate that the

distance between side panels 22, 26 of the set up carton and must be at least equal to the width of the group of articles A, not including the laterally extending upper portions F, such that those articles A may be accommodated there between.

[0039] The paperboard of the carton 8 may be coated upon one side such that, for example, exterior surfaces thereof more readily accept printed graphics, or are more resistant to water.

[0040] The securing strips 14, 16 may be continuously glued to the top panel along their entire length or alternatively may be glued at selected locations. In yet a further alternative the glue may be replaced in part or in whole by a mechanical locking mechanism.

[0041] Figures 5 and 6 illustrate alternative embodiments of the present invention, like numerals have where possible, been used for like parts with the addition of the prefix "2" or "3". The second and third embodiments are similar to the first embodiment described above therefore only the differences will be described.

[0042] In Figure 5 it can be seen that the chamfered edges 131 of the top panel are structured and arranged such that the top panel 112 covers the entirety of the upper face of article group. In yet a further alternative it is envisaged that the chamfered corners 131 may be removed altogether to provide carton 108 having square corners.

[0043] In Figure 6 it can be seen that the article group is a 2 by 1 array rather than the 2 by 2 array shown in the previous embodiments. It can be seen that the carton 308 has been dimensioned and arranged to accommodate the change in the article grouping.

[0044] 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", "base", "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. It is specifically contemplated that the arrangement may be incorporated into other carton embodiments such, as, for example, wraparound type cartons. The side panels 22, 26 may be altered or omitted altogether without affecting the retention of the articles A within the carton 8. Similarly, the dimensions of each panel of the carton 8 may be altered to suit the requirements of the specific articles A to be packaged.

Claims

1. A pre-assembled carton (8, 108, 208) for packaging articles (A), which carton comprises a top panel (12, 112, 212) hinged along a first edge to a securing panel (14, 16) by a hinged connection (18, 20), a portion of the securing panel is secured, in face contacting relationship to a portion of the top panel adjacent the hinged connection, so as to provide a channel between the securing panel and the top panel, for slidably receiving a laterally protruding portion (F) of an article, whereby the carton may be slidably engaged with the article to retain the article within the carton.
2. A carton according to claim 1 wherein the channel is provided by spacer means (G) located between the securing panel and the top panel.
3. A carton according to claim 2 wherein said spacer means is provided by adhesive (G) applied between the securing panel and the top panel.
4. A carton according to claim 3 wherein the adhesive is applied such that a remaining distal portion of the securing panel is unsecured to the top panel, which remaining distal portion may be sufficiently deformed away from the top panel to provide the channel.
5. A carton according to any preceding claim wherein a mechanical lock is provided for locking the securing panel to the top panel.
6. A carton according to claim 5, wherein said mechanical lock is adapted to provide a spacer means to form the channel.
7. A carton according to any preceding claim, wherein a side panel (22, 26) is hinged to the securing panel, which side panel extends, in use, down a portion of a side of said article.
8. A carton according to any preceding claim, wherein a second securing panel (14, 16) is provided along a second edge opposing said first edge of the top panel, which securing panels, in use, cooperate to accommodate laterally extending upper portions (F) of opposed sides of an article or a group of articles.
9. A carton according to any preceding claim wherein the one or both securing panels comprise one or more embossed lines (30) formed therein, the or each embossed line being substantially perpendicular to said hinge connection, which embossed lines restrict deformation of the securing panel about an axis parallel to that hinged connection.
10. A carton according to any preceding claim, comprising a plurality of ridges or ribs on one or both of the securing panels and/or the top panel, which ridges or ribs providing article engaging means.
11. A carton according to any preceding claim, wherein the top panel comprises lifting means (40a, 40b) for a user to engage to lift the carton, wherein, in use, the lifting means acts to prevent movement of the carton with respect to the articles.
12. A carton according to claim 11, wherein said lifting means is provided by a finger tab engagement means.
13. A carton according to any preceding claim wherein the carton further comprises an embossed line (35) spaced apart from and parallel to a free edge of the top panel for facilitating insertion and removal of an article or article group into the carton.
14. A carton according to any preceding claim wherein at least one corner (31) of the top panel is bevelled (or chamfered) such that an upper part of the laterally protruding portion of the article protrudes outwardly beyond the at least one bevelled corner to become accessible by a user, whereby facilitating slideable removal of an article or group of articles from the carton.
15. A carton according to any preceding claim wherein the or each securing panel comprises at least one chamfered (or bevelled) portion (29) at at least on one end thereof whereby an underside of the laterally protruding portion of the article protrudes outwardly beyond the at least one chamfered portion to become accessible by a user so that slideable removal of an article or group of articles from the carton is facilitated.
16. A carton according to any preceding claim wherein at least one of the opposite ends of the channel is open so that the channel is engageable with the laterally protruding portion (F) of the article by moving one of the carton and the article relative to the other in the direction parallel to the hinged connection.
17. A package comprising the carton of any preceding claim and an article or group of articles retained therein, wherein the article is removable by sliding the said article or group of articles in a direction parallel to said hinged connection.
18. A package as claimed in claim 17, wherein the article contained within the carton is removable from the carton without tearing the carton.
19. A package as claimed in claim 16 or 18, comprising further articles which provide a group of connected

articles which possess laterally extending upper portions (F) at least along two opposed sides of the group.

20. A blank (10) for forming a carton (8, 108, 208) for packaging articles (A), which blank comprises a first panel (12) and a second panel (14, 16), hinged to one another about a hinged connection (18, 20), which first and second panels form a top panel and securing panel respectively in a set up carton, wherein the securing panel is dimensioned such that when folded about said hinged connection, a portion thereof is securable to a portion of the top panel and a sufficient proportion of the securing panel will remain unsecured to provide a channel for accommodating a laterally extending protruding portion (F) of an article (A) thereby to retaining that article within the set up carton. 5 10 15
21. The blank of claim 20, wherein the second panel comprises multiple embossed lines (30) define therein, perpendicular to said hinged connection, which embossed lines reduce deformation about a longitudinal axis of the securing panel in the set up carton. 20 25

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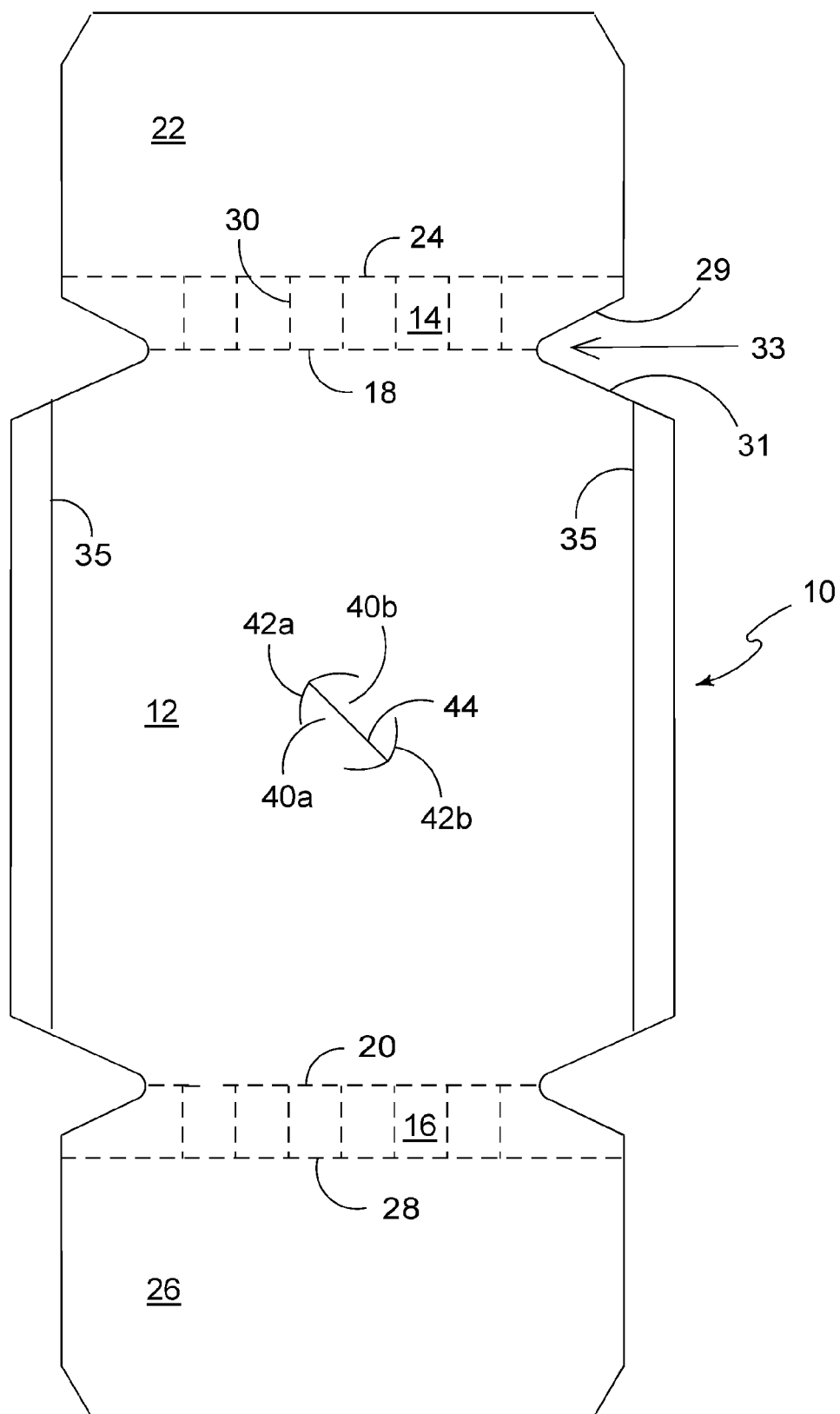


FIGURE 1

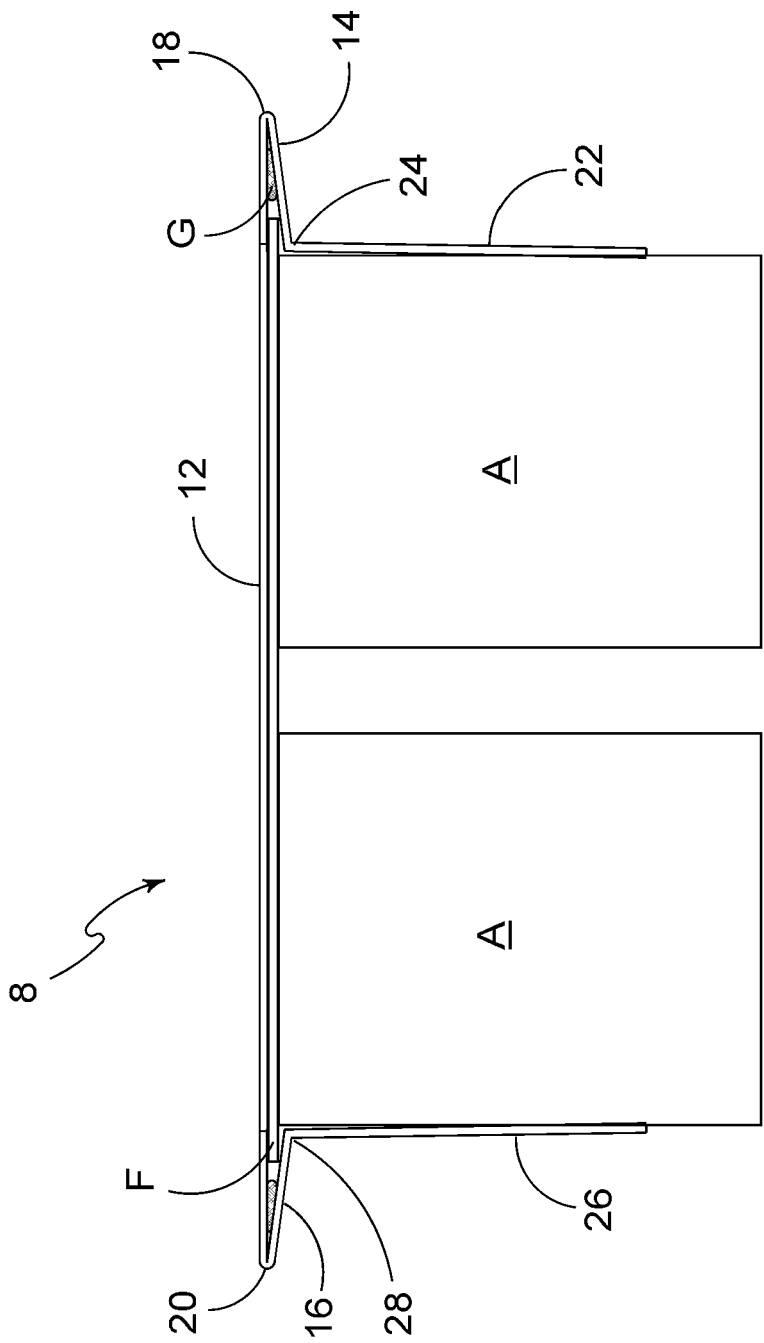


FIGURE 2

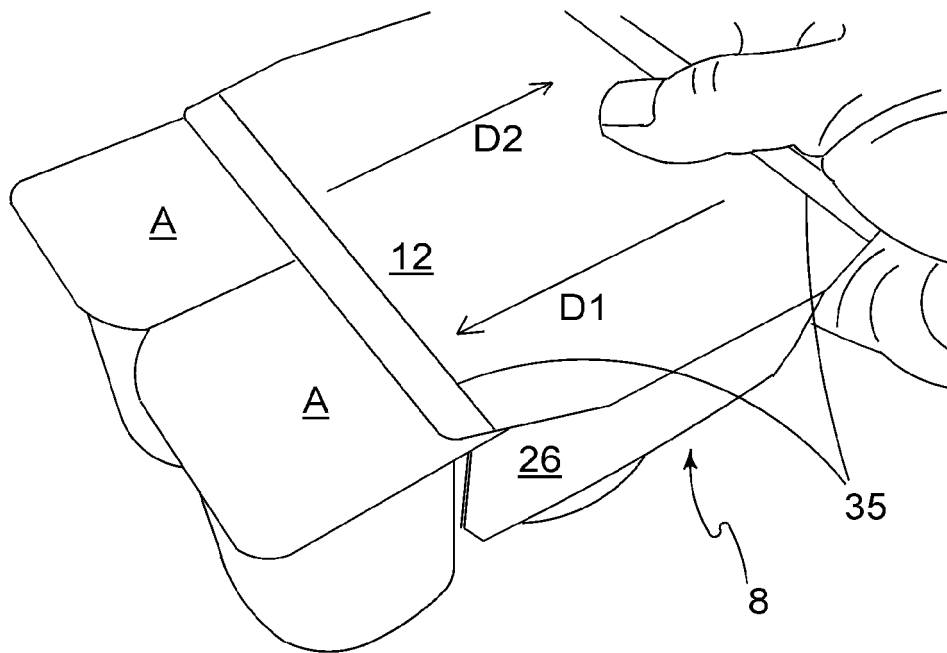


FIGURE 3

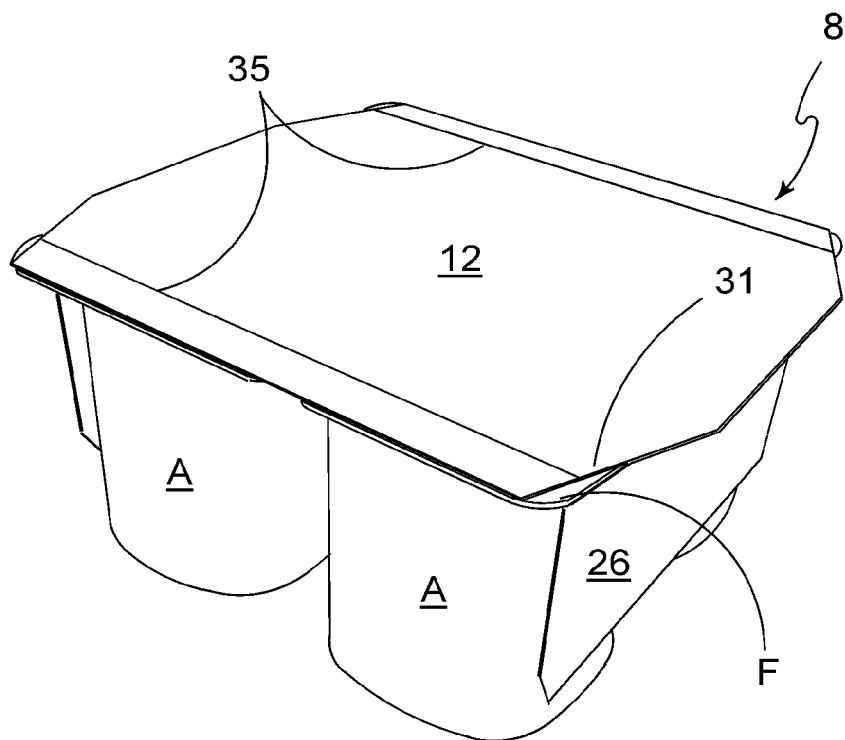


FIGURE 4

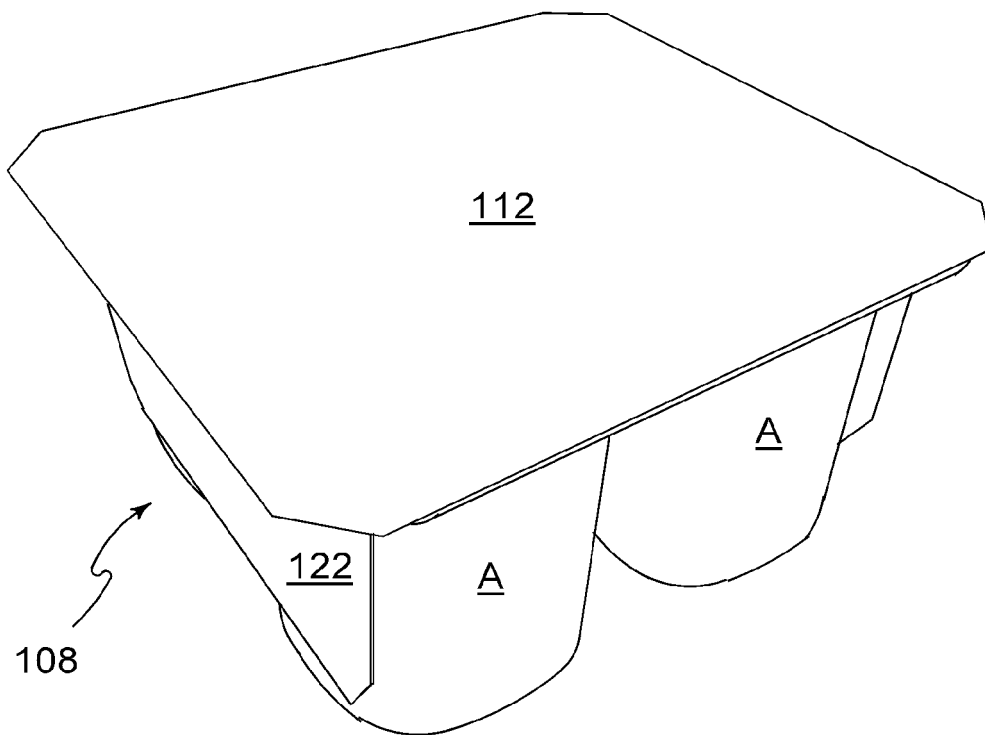


FIGURE 5

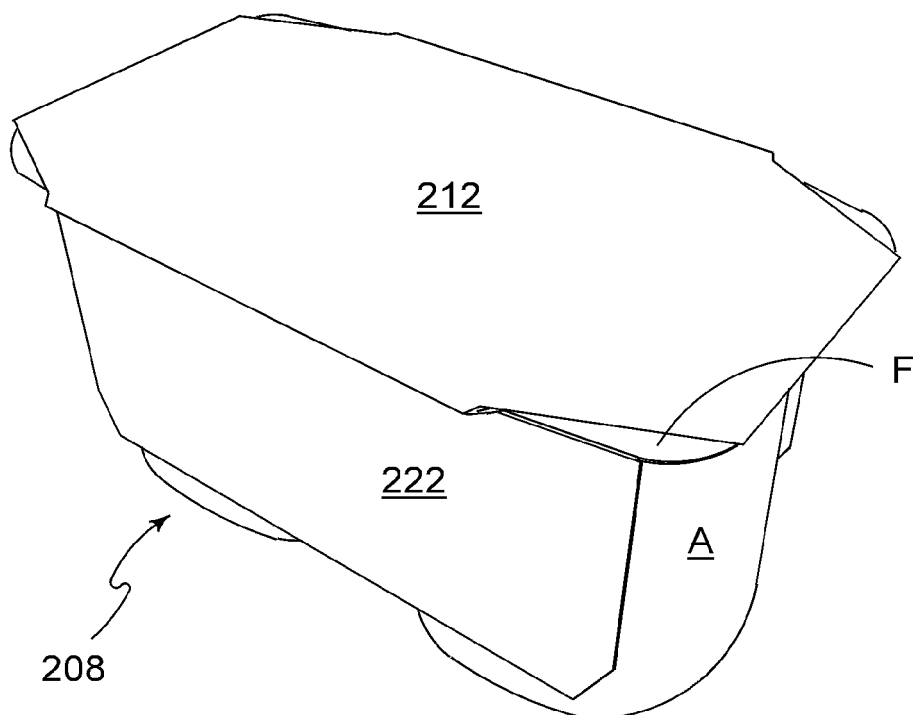


FIGURE 6



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 08 10 0948

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 5 May 2008	Examiner Galli, Monia
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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