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(54) **CARTON AND CARTON BLANK**
KARTON UND ZUSCHNITT DAFÜR
CARTON ET DE COUPE DE CARTON

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Description

Background of the Invention

[0001] This invention relates generally to a carton having an end retention feature and more particularly to a wraparound type article carrier designed for articles such as connected plastic cups containing yoghurt or other similar foodstuff.

[0002] The prior art illustrates wraparound cartons with end closure panels for closing the ends of the carton that are connected to respective side and base panels by a series of gusset panels that assist in forming the end closure panels. There are many arrangements of gusset panels, examples of which are shown in US 5 180 054, FR-A-1 44 536. Prior art structures illustrate carriers for carrying articles with planar sides for example cans or bottles and end retention structures are therefore formed in a planar relationship with respective sides and ends of the corner.

[0003] When articles with inclined side walls or articles provided with flanges, for example yoghurt pots, are packaged in groups a spacing is formed between adjacent articles, thereby allowing relative movement between adjacent articles within the carton which is undesirable. Prior art carriers do not provide satisfactory retention for articles of this type. Another problem associated with the prior art relates to retention of the gusset panels within the carrier when the articles are free to move within it.

[0004] Another aspect of the invention relates generally to an arrangement and method for securing at least three panels in an overlapping relationship.

[0005] It is well known in the art to secure two panels, for example base panels of a wraparound carton in an overlapping relationship using glue. As the construction of cartons becomes more advanced, it is often necessary to secure together three or more panels in end retention arrangements, for example. If this is the case, then glue must be applied to two separate panel surfaces in order to secure all of the panels together. This additional application of glue may to the complexity of the carton erection process, possibly requiring the use of additional machinery. The erection process may also be slowed, thus reducing its overall efficiency.

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

[0007] One aspect of the invention provides an article carrier for holding articles, for example connected plastic cups, comprising a top wall, opposed side walls and a base wall hingedly connected together to form a tubular structure and wherein there further comprises article retention means hingedly connected to one of said side walls and said base wall, which article retention means is formed by a plurality of panels including a side end flap so constructed and arranged to taper inwardly towards said base wall to substantially conform to the

shape of an adjacent article. The article retention means further comprises a base end flap connected to the side end flap by a gusset panel and wherein the base end flap is hingedly connected to the base panel and adapted to underlie an outer article so that the side end flap is retained in a set up condition.

[0008] According to another optional feature of the said one aspect of the invention, the base end flap may further comprise a tab shaped to underlie the article and to prevent its release during distortion of the carton thereby to maintain said side end flap in a set up condition. Preferably, the tab may be defined by a side and end edge of the base end flap and by a slit between the base end flap and the gusset panel, which slit terminates at the fold line connecting the base end flap to the gusset panel.

[0009] According to another optional feature of the said one aspect of the invention the base end flap may be connected to the base wall by a fold line which fold line defines an acute angle with the lower edge of the adjacent side wall thereby to maximise the length of the base end flap that underlies the article.

[0010] According to another optional feature of the said one aspect of the invention the fold line between the side end flap and the adjacent carton side wall may be curved to impart inward bowing to the side end flap.

[0011] According to another optional feature of the said one aspect of the invention the fold line connecting the side end flap to the gusset panel may be angled with respect to the edge of the side wall to compensate for the panel arrangement in a set up condition thereby to maintain the gusset panel and base end panel in a substantially flat arrangement with said base wall.

[0012] A second aspect of the invention provides article retention means for retaining articles within a tubular carton, which article retention means comprises a side end flap hingedly connected to a side wall of the carton by an arcuate fold line, a base end flap hingedly connected to a base panel of the carton and a gusset panel hingably connecting the side end flap to the base end flap wherein a gusset fold line connecting the base end flap to the gusset panel is co-linear with an imaginary line tangent to the arcuate fold line.

[0013] According to an optional feature of the second aspect of the invention there may further comprise an aperture struck from a portion of the base end flap, wherein an edge of the aperture interrupts said gusset fold line and is co-linear with said imaginary line.

[0014] According to another optional feature of the second aspect of the invention the fold line interconnecting the side end flap with the gusset panel may be offset the lower edge of the side wall panel to compensate for the panel arrangement in a set up condition thereby to maintain the gusset panel and base end flap in a substantially flat arrangement with said base panel.

[0015] A third aspect of the invention provides a carton blank for forming an article carrier for holding articles with tapered sides, for example connected plastic cups,

comprising a top panel, first side wall panel, base panel and a second side wall panel hingedly connected together in series, wherein there further comprises article retention means hingedly connected to at least one of said side wall panel and said base panel, which article retention means is formed by a plurality of panels including a side end flap so constructed and arranged to taper inwardly towards said base panel to substantially conform to the shape of an adjacent article held in a set up carton. The retention means further comprises a base end flap connected to the side end flap by a gusset panel and wherein the base end flap is hingedly connected to the base panel and adapted to underlie an outer article so that the side end flap is retained in a set up condition.

[0016] Preferably, the base end flap may further comprise a tab shaped to underlie the article and to prevent its release during distortion of the carton thereby to maintain the side end flap in a set up condition. More preferably, the tab may be defined by a side and end edge of the base end flap and by a slit between the base end flap and the gusset panel, which slit terminates at the fold line connecting the base end flap to the gusset panel.

[0017] According to an optional feature of the third aspect of the invention the base end flap may be connected to a base panel by a fold line which fold line defines an acute angle with the lower edge of the adjacent side wall thereby to maximise the length of the base end flap that underlies the article.

[0018] According to another optional feature of the third aspect of the invention the fold line between the side end flap and the adjacent carton side wall may be curved to impart inward bowing to the side end flap in a set up carton.

[0019] According to another optional feature of the third aspect of the invention the fold line connecting the side end flap to the gusset panel may be angled with respect to the edge of the side wall to compensate for the panel arrangement in a set up condition thereby to maintain the gusset panel and base end flap in a substantially flat arrangement with said base panel.

[0020] Exemplary embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which: -

FIGURE 1 illustrates a blank for forming a carton according to an aspect of the invention;

FIGURE 2 illustrates the second embodiment of a blank for forming a carton according to an aspect of the invention;

FIGURE 3 is an enlarged perspective view of a portion of the end retention panels and gusset arrangement viewed from within the carton formed from the blank shown in Figure 1a;

FIGURES 4a and 4b illustrate the cartons formed

from the blanks shown in Figures 1a and 1b respectively;

FIGURES 5 and 6 illustrate examples of known cartons loaded with plastic cups in stored and deflected positions;

FIGURE 7 illustrates the carton shown in Figure 4a loaded with articles, and

Detailed Description of the Preferred Embodiments

[0021] Referring to the drawings, and in particular Figures 1 and 2, there is shown two embodiments of a blank for forming a carton made from paperboard or similar foldable sheet material. In these embodiments, wrap-around type cartons can be formed from the blanks although the invention can be applied to other carton types, for example end loading cartons, without departing from the invention. Furthermore, it will be recognised that rather than the bottom wall being formed from the interlocked panels, the carton blank may be rearranged whereby some other wall such as a top wall or a side wall is formed from the interlocked panels.

[0022] Turning to the first embodiment shown in Figure 1 the blank 10 comprises a first base panel 12, first side wall panel 14, top panel 16, second side wall panel 18, second base panel 20 hingedly connected one to the next in series along fold lines 22, 24, 26 and 28 respectively.

[0023] A series of panels for forming an article retention structure is provided at one or each end of the carton. The article retention arrangement 29 at one corner of side and base panels 12, 14 comprises a bottom end flap 30 hingedly connected to base panel 12 along fold line 32.

There further comprises a side end flap 42 hingedly connected to side wall panel 14 along fold line 43. In this embodiment, the fold line 43 is curved to impart inward bowing to the side end flaps when the carton is set up. Side end flap 42 and base end flap 30 are interconnected by a gusset panel 34. It will be seen from Figure 1 that gusset panel 34 is hingedly connected to base end flap 30 along fold line 38 and to side end flap 42 along fold line 40. Preferably, fold line 38 is co-linear with an imaginary line tangent to and extending beyond fold line 43.

[0024] Base end flap 30 may further comprise a tab portion 31 defined in part by the end and side edges of flap 30 and by cut line 36 which terminates at foldline 38. In use, tab portion 31 is adapted to be retained between the base panel 12 and an outer article to retain the side end flap 42 in a set up condition.

[0025] A stress relief aperture 44 may be provided. Figure 1 shows an example of a stress relief aperture 44 which is struck from base end flap 30 and, preferably, extends into base panel 12. It is preferable that aperture 44 does not extend into gusset panel 34, instead an

edge of aperture 44 is co-linear with fold line 38. This feature leads to a reduction of stress when folding base end flap 30 and gusset panel 34. Furthermore, gusset panel 34 does not tend to be distorted during set up process which leads to improved folding along fold lines 38 and 40.

[0026] Likewise, the opposing side of base and side wall panels 12 and 14 there may further comprise a similar article retention arrangement 47 comprising a base end flap 48 hingedly connected to base panel 12 along fold line 46. There further comprises a side end flap 58 hingedly connected to side wall panel 14 along fold line 60. In this embodiment, the fold line 60 is curved to impart inward bowing to the side end flaps when the carton is set up. Side end flap 58 and base end flap 48 are interconnected by a gusset panel 54. It will be seen from Figure 1 that gusset panel 54 is hingedly connected to base end flap 48 along fold line 52 and to side end flap 58 along fold line 56. Preferably, fold line 52 is co-linear with an imaginary line tangent to and extending beyond fold line 60.

[0027] Base end flap 48 may further comprise a tab portion 49 defined in part by the end and side edges of flap 48 and by cut line 50 which terminates at foldline 52. In use, tab portion 49 is adapted to be retained between the base panel 12 and an outer article to retain the side end flap 58 in a set up condition.

[0028] A similar stress relief aperture 62 to stress relief aperture 44 may be provided which in this embodiment is struck from base end flap 48 and, preferably, extending into base panel 12.

[0029] In one class of embodiments, fold lines 32 and 38 defining the base end flap 30 of article retaining structure 29 may diverge away from a point of intersection with fold lines 40 and 43 so that fold line 32 defines an acute angle α with fold line 22, preferably, 85 degrees and fold line 38 is offset by a suitable angle β , for example 15 degrees from a notional line perpendicular to fold line 22. Optionally, the fold line 40 connecting the gusset panel 34 to the side end flap 42 may define an acute angle θ with respect to a notional extension of fold line 22 to compensate for the panel arrangement in a set up condition. Preferably, the acute angle θ may, for example, be 10 degrees which corresponds substantially to the angle ϕ (Figure 3) of the side wall panel with respect to a notional vertical line Y-Y and/or corresponds to the difference between the bottom of the cup and the top flange of the cup. Of course, the article retention structure 47 would be adapted accordingly to correspond to article retention structure 29.

[0030] Other configurations are envisaged, and in particular different configurations of fold lines 32, 38 and 40, and corresponding fold lines 46, 52 and 56 so that the side end flaps 42, 58 can be tapered inwardly towards the base 12, 22 to a greater or lesser extent to conform to the shape of a different profile of article. In some embodiments, the degree of twisting imparted on the side end flaps 42, 58 can be altered by changing the

relative position of any one or each of the fold lines 32, 38, 40.

[0031] It will be seen from Figure 1a that the end closure structures formed from panels 18 and/or 20 are designated by corresponding reference numerals with the addition of letter "a" because they are substantially identical to the end retention structures formed from panels 12 and 14 described above, and are not therefore described in any more detail.

[0032] Turning to the second embodiment shown in Figure 2, the blank 110 is similar to the first embodiment and therefore like panels are designated by the same reference numeral but are prefixed with the numeral "1". Therefore only the differences are described in any greater detail.

[0033] It will be seen that in the second embodiment, the fold line 143 and 160 are straight and extend from the upper edge of side wall panel 114 to terminate at the intersection of fold lines 140, 122 and 156, 122 respectively. Thus, the side end flaps 142 and 158 are substantially triangular in configuration. The side end flaps 142, 158 function in identical manner to the side end flaps of the first embodiment. Aside from these differences, the end retention structures are formed from similar panels and are constructed in the same way as the first embodiment.

[0034] Turning to the construction of the carton from a carton blank as illustrated in Figure 1, the blank 10 requires a series of sequential folding and gluing operations which is preferably performed 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 can be altered according to particular manufacturing requirements.

[0035] The carton is applied to an array of articles, for example four arranged in a two by two formation, whereby the top panel 16 is supported by the tops of the articles. The side wall panels 14 and 18 are then folded out of alignment with top panel 16 along fold lines 24, 26 and base panels 12, 20 are folded out of alignment with side wall panels 14, 18 respectively along fold lines 22, 28 so that side and base panels 14, 18 and 12, 20 are folded towards each other. As side wall panels 14, 18 and base panels 12, 20 continue to be folded the construction of the end retention structures take place.

[0036] Each article retention structure is formed in a substantially like manner so only the construction of article retention structure 29 will now be described. It is usual for the structures on a blank to be formed at substantially the same time by a suitable arrangement of guides and/or locating means.

[0037] Thus, article retention structure 29 is formed by first folding base end flap 30 about fold line 32 such that base end flap is folded into face contacting relationship with base panel 12. This action causes gusset panel 34 to be folded out of alignment with base end flap 30 about fold line 38 and is drawn inwardly towards base

panel 12 until a portion of the outer face of gusset panel 34 overlies base end flap 30.

[0038] As gusset panel 34 is drawn inwards towards base panel 12 it is folded out of alignment with side end flap 42 along fold line 40 into a substantially perpendicular relationship which causes side end flap to be moved out of alignment with side wall panel 14 and into an obtuse, angular relationship along fold line 43. Thus, the side end flap 42 is caused to taper inwardly towards the base panel 12 as shown in Figure 3. In this embodiment, the curved fold line 43 causes side end flap 42 to bow inwardly to conform to the shape of the article to be held by the carrier. Optionally the base end flap 30 and the gusset panel 34 can be secured to the base panel 12 by glue or other suitable means or by another aspect of the invention described below.

[0039] As shown in Figure 3, the angle of incline ϕ of side wall panel 14 with respect to a notional vertical plan Y-Y is adjusted by changing the angle θ (Figure 1) of fold line 40. It will also be seen that in this embodiment end flap 42 is caused to be in a twisted condition to conform to the shape of the article.

[0040] The other article retention structures are also formed in the same manner as described in the preceding two paragraphs.

[0041] Thereafter, the folding of side and base panels 12, 14 and 20, 18 is completed so that a portion 64 (Figure 1) of base panel 12 is placed into face contacting relationship with a corresponding overlapping portion 64a (Figure 1) of base panel 20 and is secured together to form a base structure, by glue or other means known in the art as illustrated in Figure 4a.

[0042] The construction of the second embodiment shown in Figure 2 is substantially the same as that described above to produce a carton shown in Figure 4b.

[0043] Figures 5 and 6 show an example of known article carriers for example yoghurt pots that have flanges and are connected along their tops. In the usual stored position shown in Figure 4, there is a gap (W) between the lower portions of adjacent articles. When the loaded carton is lifted the articles tend to move towards each other in direction X, shown in Figure 6 and thereby distort the carton.

[0044] In view of the distortion of the above known article carrier, the tab portion 31 of the embodiment of Figure 1 may be of the size such that the width of base end flap 30 is greater than the distance D of distortion shown in Figure 6. Alternatively, fold line 32 may be slanted so that the free end edge of base end flap 30 is at an angle with respect to fold line 32. This may increase the effective width of base end flap 30 because it is the corner of base end flap 30 that is placed at the inner most point rather than the free end edge thereof as shown in Figure 4a. This arrangement allows the article retention structures to remain intact even when the carton is distorted. This is because base end flaps 30, 48, 30a, 48a are prevented by the articles from being outwardly moved to release the articles retention structure. The tab portion

of the embodiment of Figure 2 may also be subject to the above arrangement to allow its retention structures to remain intact.

[0045] Figure 7 illustrates a carton formed from a blank of the first embodiment shown in Figure 1. More particularly, there is illustrated an article carrier for holding articles, for example connected plastic cups, comprising a top wall 16, opposed side walls 14, 18 and a base 12, 20 hingedly connected together to form a tubular structure and wherein there further comprises article retention means 29 hingedly connected to one of said side walls 14 and said base 12, which article retention means is formed by a plurality of panels including a side end flap 42 so constructed and arranged to taper inwardly towards said base to substantially conform to the shape of an adjacent article A.

[0046] The present invention and its preferred embodiment relates to an arrangement for securing together two outer panels and at least one inner panel, however it is anticipated that the invention can be applied to a variety of carriers, and is not limited to those of the wraparound type hereinabove described and could be used for numerous applications where three or more panels are to be secured in a face contacting relationship in which a single application of glue is used e.g. to secure a divider panel the interior of a carton.

[0047] It will also be recognised that as used herein, directional references such as "top", "base", "end" and "side" do not limit the respective panels to such orientation, but merely serve to distinguish these panels one from another. The terms "printed" and "non-printed" are merely used to distinguish one face of a panel from another, and do not limited the panels to having faces orientated in this manner. Furthermore, the term "panel" should, for the purposes of this application, be understood to mean any type of panel or flap which may form part of a carton or carton blank.

[0048] It will be recognised that rather than the top wall be formed from the secured panels, the carton blank may be re-arranged whereby some of the walls such as a top wall or side wall is formed from secured panels. 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.

[0049] The present invention and its preferred embodiment relates to an article carrier that is shaped to provide satisfactory strength to hold articles securely, but with a degree of flexibility so that during transit the articles are retained within the carrier. The shape of the blank minimises the amount of paperboard required and the carrier can be applied to an array of articles by hand or automatic machinery. It is anticipated that the invention can be applied to a variety of carriers and is not limited to those of the wraparound type hereinabove described. Further or alternatively, the carton may be

adapted to carry a greater or lesser number of articles without departing from the scope of the invention.

Claims

1. An article carrier for holding articles (A), for example connected plastic cups, comprising a top wall (16; 116; 216), opposed side walls (14, 18; 114, 118; 214) and a base wall (12, 20; 112, 120; 212) hingedly connected together to form a tubular structure and wherein there further comprises article retention means (29, 29a, 47, 47a; 129, 147; 229, 247) hingedly connected to one of said side walls and said base wall, which article retention means is formed by a plurality of panels including a side end flap (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 258) so constructed and arranged to taper inwardly towards said base wall **characterised in that** said article retention means further comprises a base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) connected to the side end flap (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 248) by a gusset panel (34, 54; 34a, 54a; 134, 154, 134a, 154a; 234, 254) and wherein the base end flap is hingedly connected to the base wall and adapted to underlie an outer article so that the side end flap is retained in a set up condition.
2. An article carrier according to claim 1 wherein the base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) further comprises a tab (31, 49, 31a, 49a; 131, 149, 131a, 149a; 231, 249) shaped to underlie the article (A) and to prevent its release during distortion of the carton thereby to maintain said side end flap in a set up condition.
3. An article carrier according to claim 2 wherein the tab (31, 49, 31a, 49a; 131, 149, 131a, 149a; 231, 249) is defined by a side and end edge of the base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) and by a slit (36, 50, 36a, 50a; 136, 150, 136a, 150a; 236, 250) between the base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) and the gusset panel (34, 50, 34a, 50a; 134, 154, 134a, 154a; 234, 254), which slit terminates at the fold line (38, 52, 38a, 52a; 138, 152, 138a, 152a; 238, 252) connecting the base end flap to the gusset panel.
4. An article carrier according to any one of claims 1 to 3 wherein the base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) is connected to the base wall (12, 20; 112, 120; 212) by a fold line (32, 46, 32a, 46a; 132, 146, 132a, 146a; 232, 246) which fold line defines an acute angle (α) with the lower edge (22, 28; 122, 128; 222) of the adjacent side wall (14, 18; 114, 118; 214) thereby to maximise the length of the base end flap that underlies the article.
5. An article carrier according to any preceding claim wherein the fold line (43, 60, 43a, 60a; 243, 260) between the side end flap (42, 58, 42a, 58a; 242, 258) and the adjacent carton side wall (14, 18; 218) is curved to impart inward bowing to the side end flap.
6. An article carrier according to any preceding claim wherein the fold line (40, 56, 40a, 56a; 140, 156, 140a, 156a; 240, 256) connecting the side end flap (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 258) to the gusset panel (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254) is angled with respect to the edge of the side wall (14, 18; 114, 118; 214) to compensate for the panel arrangement in a set up condition thereby to maintain the gusset panel and base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) in a substantially flat arrangement with said base wall (12, 20; 112, 120; 212).
7. Article retention means as defined in any one of claims 1 to 3 for retaining articles within a tubular carton, which article retention means comprises a side end flap (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 248) hingedly connected to a side wall (14, 18; 114, 118; 214) of the carton by an arcuate fold line (43, 60, 43a, 60a; 243, 260), a base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) hingedly connected to a base panel (12, 20; 112, 120; 212) of the carton and a gusset panel (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254) hingably connecting the side end flap to the base end flap wherein a gusset fold line (38, 52, 38a, 52a; 138, 152, 138a, 152a; 238, 252) connecting the base end flap to the gusset panel is co-linear with an imaginary line tangent to the arcuate fold line.
8. Article retention means as claimed in claim 7 further comprising an aperture (44, 62, 44a, 62a; 144, 162, 144a, 162a; 244, 262) struck from a portion of the base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248), wherein an edge of the aperture interrupts said gusset fold line (38, 52, 38a, 52a; 138, 152, 138a, 152a; 238, 252) and is co-linear with said imaginary line.
9. Article retention means according to claims 7 or 8 wherein the fold line (40, 56, 40a, 56a; 140, 156, 140a, 156a; 240, 256) interconnecting the side end flap (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 258) with the gusset panel (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254) is offset the lower edge of the side wall panel (14, 18; 114, 118; 214) to compensate for the panel arrangement in a set up condition thereby to maintain the gusset panel and base end flap (30, 48, 30a, 48a; 130, 148, 130a,

148a; 230, 248) in a substantially flat arrangement with said base panel (12, 20; 112, 120; 212).

10. A carton incorporating article retention means as claimed in any one of claims 7 to 9.
11. A carton blank for forming an article carrier for holding articles (A) with tapered sides, for example connected plastic cups, comprising a top panel (16; 116; 216), first side wall panel (14; 114; 214), base panel (12, 20; 112, 120; 212) and a second side wall panel (18; 118) hingedly connected together in series, wherein there further comprises article retention means (29, 29a, 47, 47a; 129, 147; 229, 247) hingedly connected to at least one of said side wall panel and said base panel, which article retention means is formed by a plurality of panels including a side end flap (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 258) so constructed and arranged to taper inwardly towards said base panel in a set up carton **characterised in that** said article retention means further comprises a base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) connected to the side end flap by a gusset panel (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254) and wherein the base end flap is hingedly connected to the base panel and adapted to underlie an outer article (A) so that the side end flap is retained in a set up condition.
12. A blank as claimed in claim 11 wherein the base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) further comprises a tab (31, 49, 31a, 49a; 131, 149, 131a, 149a; 231, 249) shaped to underlie the article (A) and to prevent its release during distortion of the carton thereby to maintain said side end flap (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 258) in a set up condition.
13. A blank as claimed in claim 12 wherein the tab (31, 49, 31a, 49a; 131, 149, 131a, 149a; 231, 249) is defined by a side and end edge of the base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) and by a slit (36, 50, 36a, 50a; 136, 150, 136a, 150a; 236, 250) between the base end flap and the gusset panel (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254), which slit terminates at the fold line (38, 52, 38a, 52a; 138, 152, 138a, 152a; 238, 252) connecting the base end flap to the gusset panel.
14. A blank as claimed in any one of claims 11 to 13 wherein the base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) is connected to a base panel (12, 20; 112, 120; 212) by a fold line (32, 46, 32a, 46a; 132, 146, 132a, 146a; 232, 246) which fold line defines an acute angle (α) with the lower edge (22, 28; 122, 128; 222) of the adjacent side wall (14, 18; 114, 118; 214) thereby to maximise the

length of the base end flap that underlies the article.

15. A blank according to any one of claims 11 to 14 wherein the fold line (43, 60, 43a, 60a; 243, 260) between the side end flap (42, 58, 42a, 58a; 242, 258) and the adjacent carton side wall (14, 18; 114, 118; 214) is curved to impart inward bowing to the side end flap in a set up carton.
16. A blank according to any one of claims 11 to 15 wherein the fold line (40, 56, 40a, 56a; 140, 156, 140a, 156a; 240, 256) connecting the side end flap (42, 58, 42a, 58a; 242, 258) to the gusset panel (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254) is angled with respect to the edge of the side wall (14, 18; 114, 118; 214) to compensate for the panel arrangement in a set up condition thereby to maintain the gusset panel and base end flap (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) in a substantially flat arrangement with said base panel (12, 20; 112, 120; 212).

Patentansprüche

1. Gegenstandsträger zum Halten von Gegenständen (A), beispielsweise von miteinander verbundenen Kunststoffbechern, umfassend eine Deckenwand (16; 116; 216), gegenüberliegende Seitenwände (14, 18; 114, 118; 214) sowie eine Bodenwand (12, 20; 112, 120; 212), die gelenkig miteinander verbunden sind, um eine röhrenförmige Struktur auszubilden, wobei ferner Gegenstandsrückhaltemittel (29, 29a, 47, 47a; 129, 147; 229, 247) umfasst werden, die gelenkig mit einer der Seitenwände und der Bodenwand verbunden sind, wobei die Gegenstandsrückhaltemittel von einer Vielzahl von Wandflächen ausgebildet werden, einschließlich einer Seitenendklappe (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 258), die derart ausgestaltet und angeordnet ist, sich nach innen in Richtung der Bodenwand zu verjüngen, **dadurch gekennzeichnet, dass** die Gegenstandsrückhaltemittel ferner eine Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) umfassen, die durch eine Zwickelwandfläche (34, 54; 34a, 54a; 134, 154, 134a, 154a; 234, 254) mit der Seitenendklappe (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 248) verbunden ist, wobei die Bodenendklappe gelenkig mit der Bodenwand verbunden ist und angepasst ist, unter einem äußeren Gegenstand zu liegen, so dass die Seitenendklappe in einem aufgerichteten Zustand zurückgehalten wird.
2. Gegenstandsträger nach Anspruch 1, wobei die Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) ferner eine Lasche (31, 49, 31a, 49a; 131, 149, 131a, 149a; 231, 249) umfasst, die

- geformt ist, unter dem Gegenstand (A) zu liegen und um deren Freigabe während einer Verbiegung der Schachtel zu verhindern, um somit die Seitenendklappe in einem aufgerichteten Zustand beizubehalten.
3. Gegenstandsträger nach Anspruch 2, wobei die Lasche (31, 49, 31a, 49a; 131, 149, 131a, 149a; 231, 249) durch eine Seitenkante und eine Endkante der Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) und einen Schlitz (36, 50, 36a, 50a; 136, 150, 136a, 150a; 236, 250) zwischen der Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) und der Zwickelwandfläche (34, 50, 34a, 50a; 134, 154, 134a, 154a; 234, 254) definiert ist, wobei der Schlitz an der Faltlinie (38, 52, 38a, 52a; 138, 152, 138a, 152a; 238, 252) endet, die die Bodenendklappe mit der Zwickelwandfläche verbindet.
4. Gegenstandsträger nach einem der Ansprüche 1 bis 3, wobei die Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) mit der Bodenwand (12, 20; 112, 120; 212) mittels einer Faltlinie (32, 46, 32a, 46a; 132, 146, 132a, 146a; 232, 246) verbunden ist, wobei die Faltlinie einen spitzen Winkel (α) mit der unteren Kante (22, 28; 122, 128; 222) der angrenzenden Seitenwand (14, 18; 114, 118; 214) definiert, um **dadurch** die Länge der Bodeneridklappe zu maximieren, die unter dem Gegenstand liegt.
5. Gegenstandsträger nach einem der vorstehenden Ansprüche, wobei die Faltlinie (43, 60, 43a, 60a; 243, 260) zwischen der Seitenendklappe (42, 58, 42a, 58a; 242, 258) und der angrenzenden Schachtelseitenwand (14, 18; 218) gebogen ist, um zu bewirken, dass die Seitenendklappe sich nach innen biegt.
6. Gegenstandsträger nach einem der vorstehenden Ansprüche, wobei die Faltlinie (40, 56, 40a, 56a; 140, 156, 140a, 156a; 240, 256), die die Seitenendklappe (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 258) mit der Zwickelwandfläche (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254) verbindet, hinsichtlich der Kante der Seitenwand (14, 18; 114, 118; 214) gewinkelt ist, um die Wandflächenanordnung in einem aufgerichteten Zustand zu kompensieren, um somit die Zwickelwandfläche und die Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) in einer im wesentlichen flachen Anordnung mit der Bodenwand (12, 20; 112, 120; 212) beizubehalten.
7. Gegenstandsrückhaltemittel, wie diese in einem der Ansprüche 1 bis 3 definiert sind, zum Zurückhalten von Gegenständen in einer röhrenförmigen Schachtel, wobei die Gegenstandsrückhaltemittel eine Seitenendklappe (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 248) umfassen, die mittels einer bogenförmigen Faltlinie (43, 60, 43a, 60a; 243, 260) gelenkig mit einer Seitenwand (14, 18; 114, 118; 214) der Schachtel verbunden ist, eine Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248), die gelenkig mit einer Bodenwandfläche (12, 20; 112, 120; 212) der Schachtel verbunden ist, sowie eine Zwickelwandfläche (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254), die die Seitenendklappe gelenkig mit der Bodenendklappe verbindet, wobei eine Zwickelfaltlinie (38, 52, 38a, 52a; 138, 152, 138a, 152a; 238, 252), die die Bodenendklappe mit der Zwickelwandfläche verbindet, kolinear mit einer imaginären Linientangente der gebogenen Faltlinie ist.
8. Gegenstandsrückhaltemittel nach Anspruch 7, ferner umfassend eine Öffnung (44, 62, 44a, 62a; 144, 162, 144a, 162a; 244, 262), die aus einem Abschnitt der Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) ausgestanzt ist, wobei eine Kante der Öffnung die Zwickelfaltlinie (38, 52, 38a, 52a; 138, 152, 138a, 152a; 238, 252) unterbricht und mit der imaginären Linie kolinear ist.
9. Gegenstandsrückhaltemittel nach Anspruch 7 oder 8, wobei die Faltlinie (40, 56, 40a, 56a; 140, 156, 140a, 156a; 240, 256), die die Seitenendklappe (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 258) mit der Zwickelwandfläche (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254) verbindet, von der unteren Kante der Seitenwandfläche (14, 18; 114, 118; 214) versetzt ist, um die Wandflächenanordnung in einem aufgerichteten Zustand zu kompensieren, um somit die Zwickelwandfläche und die Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) in einer im Wesentlichen flachen Anordnung mit der Bodenwandfläche (12, 20; 112, 120; 212) beizubehalten.
10. Schachtel, die Gegenstandsrückhaltemittel nach einem der Ansprüche 7 bis 9 enthält.
11. Schachtelzuschnitt zum Ausbilden eines Gegenstandsträgers zum Halten von Gegenständen (A) mit verjüngten Seiten, beispielsweise von verbundenen Kunststoffbechern, umfassend eine Deckenwandfläche (16; 116; 216), eine erste Seitenwandfläche (14; 114; 214), eine Bodenwandfläche (12, 20; 112, 120; 212) sowie eine zweite Seitenwandfläche (18; 118), die der Reihe nach gelenkig miteinander verbunden sind, wobei ferner Gegenstandsrückhaltemittel (29, 29a, 47, 47a; 129, 147; 229, 247) umfasst werden, die gelenkig mit der Seitenwandfläche und/oder der Bodenwandfläche verbunden sind, wobei die Gegenstaridsrückhaltemit-

tel von einer Vielzahl von Wandflächen ausgebildet werden, einschließlich einer Seitenendklappe (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 258), die derart ausgestaltet und angeordnet ist, sich in einer aufgerichteten Schachtel nach innen in Richtung der Bodenwand zu verjüngen, **dadurch gekennzeichnet, dass** die Gegenstandsrückhaltemittel ferner eine Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) umfassen, die durch eine Zwickelwandfläche (34, 54; 34a, 54a; 134, 154, 134a, 154a; 234, 254) mit der Seitenendklappe verbunden ist, wobei die Bodenendklappe gelenkig mit der Bodenwandfläche verbunden ist und angepasst ist, unter einem äußeren Gegenstand (A) zu liegen, so dass die Seitenendklappe in einem aufgerichteten Zustand zurückgehalten wird.

12. Zuschnitt nach Anspruch 11, wobei die Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) ferner eine Lasche (31, 49, 31a, 49a; 131, 149, 131a, 149a; 231, 249) umfasst, die geformt ist, unter dem Gegenstand (A) zu liegen und um deren Freigabe während einer Verbiegung der Schachtel zu verhindern, um somit die Seitenendklappe (42, 58, 42a, 58a; 142, 158, 142a, 158a; 242, 258) in einem aufgerichteten Zustand beizubehalten.

13. Zuschnitt nach Anspruch 12, wobei die Lasche (31, 49, 31a, 49a; 131, 149, 131a, 149a; 231, 249) durch eine Seitenkante und eine Endkante der Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) und einen Schlitz (36, 50, 36a, 50a; 136, 150, 136a, 150a; 236, 250) zwischen der Bodenendklappe und der Zwickelwandfläche (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254) definiert ist, wobei der Schlitz an der Falllinie (38, 52, 38a, 52a; 138, 152, 138a, 152a; 238, 252) endet, die die Bodenendklappe mit der Zwickelwandfläche verbindet.

14. Zuschnitt nach einem der Ansprüche 11 bis 13, wobei die Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) mit einer Bodenwandfläche (12, 20; 112, 120; 212) mittels einer Falllinie (32, 46, 32a, 46a; 132, 146, 132a, 146a; 232, 246) verbunden ist, wobei die Falllinie einen spitzen Winkel (α) mit der unteren Kante (22, 28; 122, 128; 222) der angrenzenden Seitenwand (14, 18; 114, 118; 214) definiert, um **dadurch** die Länge der Bodenendklappe zu maximieren, die unter dem Gegenstand liegt.

15. Zuschnitt nach einem der Ansprüche 11 bis 14, wobei die Falllinie (43, 60, 43a, 60a; 243, 260) zwischen der Seitenendklappe (42, 58, 42a, 58a; 242, 258) und der angrenzenden Schachtelseitenwand (14, 18; 114, 118; 218) gebogen ist, um zu bewirken, dass sich die Seitenendklappe in einer aufgerichteten

ten Schachtel nach innen biegt.

16. Zuschnitt nach einem der Ansprüche 11 bis 15, wobei die Falllinie (40, 56, 40a, 56a; 140, 156, 140a, 156a; 240, 256), die die Seitenendklappe (42, 58, 42a, 58a; 242, 258) mit der Zwickelwandfläche (34, 54, 34a, 54a; 134, 154, 134a, 154a; 234, 254) verbindet, hinsichtlich der Kante der Seitenwand (14, 18; 114, 118; 214) gewinkelt ist, um die Wandflächenanordnung in einem aufgerichteten Zustand zu kompensieren, um somit die Zwickelwandfläche und die Bodenendklappe (30, 48, 30a, 48a; 130, 148, 130a, 148a; 230, 248) in einer im wesentlichen flachen Anordnung mit der Bodenwandfläche (12, 20; 112, 120; 212) beizubehalten.

Revendications

1. Carton destiné à contenir des articles (A), par exemple des pots en plastique connectés, comprenant une paroi supérieure (16 ; 116 ; 216), des parois latérales opposées (14, 18 ; 114, 118 ; 214) et une paroi de base (12, 20 ; 112, 120 ; 212) connectées les unes aux autres de manière articulée pour former une structure tubulaire et comprenant en outre un moyen de retenue d'articles (29, 29a, 47, 47a ; 129, 147 ; 229, 247) connecté de manière articulée à un élément parmi lesdites parois latérales et ladite paroi de base, lequel moyen de retenue d'articles est formé par une pluralité de panneaux incluant un rabat d'extrémité latéral (42, 58, 42a, 58a ; 142, 158, 142a, 158a ; 242, 258) conçu et agencé pour se rétrécir vers l'intérieur en direction de ladite paroi de base, **caractérisé en ce que** ledit moyen de retenue d'articles comprend en outre un rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) connecté au rabat d'extrémité latéral (42, 58, 42a, 58a ; 142, 158, 142a, 158a ; 242, 248) par un panneau de gousset (34, 54 ; 34a, 54a ; 134, 154, 134a, 154a ; 234, 254) et dans lequel le rabat d'extrémité de base est connecté de manière articulée à la paroi de base et adapté pour se trouver sous un article extérieur, de sorte que le rabat d'extrémité latéral est retenu dans un état dressé.

2. Carton selon la revendication 1, dans lequel le rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) comprend en outre une patte (31, 49, 31a, 49a ; 131, 149, 131a, 149a ; 231, 249) conçue pour se trouver sous l'article (A) et pour empêcher sa sortie au cours d'une distorsion du carton pour maintenir ainsi ledit rabat d'extrémité latéral dans un état dressé.

3. Carton selon la revendication 2, dans lequel la patte (31, 49, 31a, 49a ; 131, 149, 131a, 149a ; 231, 249)

- est définie par un bord latéral et d'extrémité du rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) et par une fente (36, 50, 36a, 50a ; 136, 150, 136a, 150a ; 236, 250) entre le rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) et le panneau de gousset (34, 50, 34a, 50a ; 134, 154, 134a, 154a ; 234, 254), laquelle fente se termine au niveau de la ligne de pliage (38, 52, 38a, 52a ; 138, 152, 138a, 152a ; 238, 252) reliant le rabat d'extrémité de base au panneau de gousset.
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4. Carton selon l'une quelconque des revendications 1 à 3, dans lequel le rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) est connecté à la paroi de base (12, 20 ; 112, 120 ; 212) par une ligne de pliage (32, 46, 32a, 46a ; 132, 146, 132a, 146a ; 232, 246) qui définit un angle aigu (α) avec le bord inférieur (22, 28 ; 122, 128 ; 222) de la paroi latérale voisine (14, 18 ; 114, 118 ; 214) pour maximiser ainsi la longueur du rabat d'extrémité de base qui se trouve sous l'article.
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5. Carton selon l'une quelconque des revendications précédentes, dans lequel la ligne de pliage (43, 60, 43a, 60a ; 243, 260) entre le rabat d'extrémité latéral (42, 58, 42a, 58a ; 242, 258) et la paroi latérale de carton voisine (14, 18 ; 218) est courbée pour imprimer une flexion vers l'intérieur au rabat d'extrémité latéral.
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6. Carton selon l'une quelconque des revendications précédentes, dans lequel la ligne de pliage (40, 56, 40a, 56a ; 140, 156, 140a, 156a ; 240, 256) reliant le rabat d'extrémité latéral (42, 58, 42a, 58a ; 142, 158, 142a, 158a ; 242, 258) au panneau de gousset (34, 54, 34a, 54a ; 134, 154, 134a, 154a ; 234, 254) forme un angle par rapport au bord de la paroi latérale (14, 18 ; 114, 118 ; 214) pour compenser l'agencement du panneau dans un état dressé pour maintenir ainsi le panneau de gousset et le rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) dans un agencement sensiblement plat avec ladite paroi de base (12, 20 ; 112, 120 ; 212).
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7. Moyen de retenue d'articles tel que défini dans l'une quelconque des revendications 1 à 3 pour retenir des articles à l'intérieur d'un carton tubulaire, lequel moyen de retenue d'articles comprend un rabat d'extrémité latéral (42, 58, 42a, 58a ; 142, 158, 142a, 158a ; 242, 258) connecté de manière articulée à une paroi latérale (14, 18 ; 114, 118 ; 214) du carton par une ligne de pliage courbée (43, 60, 43a, 60a ; 243, 260), un rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) connecté de manière articulée à un panneau de base (12, 20 ; 112, 120 ; 212) du carton et un panneau
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- de gousset (34, 54, 34a, 54a ; 134, 154, 134a, 154a ; 234, 254) reliant de manière articulée le rabat d'extrémité latéral au rabat d'extrémité de base, où une ligne de pliage de gousset (38, 52, 38a, 52a ; 138, 152, 138a, 152a ; 238, 252) reliant le rabat d'extrémité de base au panneau de gousset est colinéaire avec une ligne imaginaire tangente à la ligne de pliage courbée.
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8. Moyen de retenue d'articles selon la revendication 7, comprenant en outre une ouverture (44, 62, 44a, 62a ; 144, 162, 144a, 162a ; 244, 262) découpée dans une partie du rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248), où un bord de l'ouverture interrompt ladite ligne de pliage de gousset (38, 52, 38a, 52a ; 138, 152, 138a, 152a ; 238, 252) et est colinéaire avec ladite ligne imaginaire.
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9. Moyen de retenue d'articles selon la revendication 7 ou 8, dans lequel la ligne de pliage (40, 56, 40a, 56a ; 140, 156, 140a, 156a ; 240, 256) reliant le rabat d'extrémité latéral (42, 58, 42a, 58a ; 142, 158, 142a, 158a ; 242, 258) au panneau de gousset (34, 54, 34a, 54a ; 134, 154, 134a, 154a ; 234, 254) est décalée par rapport au bord inférieur du panneau de paroi latérale (14, 18 ; 114, 118 ; 214) pour compenser l'agencement du panneau dans un état dressé pour maintenir ainsi le panneau de gousset et le rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) dans un agencement sensiblement plat avec ledit panneau de base (12, 20 ; 112, 120 ; 212).
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10. Carton comportant un moyen de retenue d'articles conforme à l'une quelconque des revendications 7 à 9.
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11. Découpe de carton destinée à former un carton destiné à contenir des articles (A) à côtés inclinés, par exemple des pots en plastique connectés, comprenant un panneau supérieur (16 ; 116 ; 216), un premier panneau de paroi latérale (14 ; 114 ; 214), un panneau de base (12, 20 ; 112, 120 ; 212) et un deuxième panneau de paroi latérale (18 ; 118) connectés en série les uns aux autres de manière articulée, comprenant en outre un moyen de retenue d'articles (29, 29a, 47, 47a ; 129, 147 ; 229, 247) connecté de manière articulée à au moins un élément parmi ledit panneau de paroi latérale et ledit panneau de base, lequel moyen de retenue d'articles est formé par une pluralité de panneaux incluant un rabat d'extrémité latéral (42, 58, 42a, 58a ; 142, 158, 142a, 158a ; 242, 258) conçu et agencé pour se rétrécir vers l'intérieur en direction dudit panneau de base dans un carton dressé, **caractérisé en ce que** ledit moyen de retenue d'articles comprend en outre un rabat d'extrémité de base
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(30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) connecté au rabat d'extrémité latéral par un panneau de gousset (34, 54 ; 34a, 54a ; 134, 154, 134a, 154a ; 234, 254) et dans lequel le rabat d'extrémité de base est connecté de manière articulée au panneau de base et adapté pour se trouver sous un article extérieur (A), de sorte que le rabat d'extrémité latéral est retenu dans un état dressé.

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114, 118 ; 214) pour compenser l'agencement du panneau dans un état dressé pour maintenir ainsi le panneau de gousset et le rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) dans un agencement sensiblement plat avec ledit panneau de base (12, 20 ; 112, 120 ; 212).

12. Découpe selon la revendication 11, dans laquelle le rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) comprend en outre une patte (31, 49, 31a, 49a ; 131, 149, 131a, 149a ; 231, 249) conçue pour se trouver sous l'article (A) et pour empêcher sa sortie au cours d'une distorsion du carton pour maintenir ainsi ledit rabat d'extrémité latéral (42, 58, 42a, 58a ; 142, 158, 142a, 158a ; 242, 258) dans un état dressé.

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13. Découpe selon la revendication 12, dans laquelle la patte (31, 49, 31a, 49a ; 131, 149, 131a, 149a ; 231, 249) est définie par un bord latéral et d'extrémité du rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) et par une fente (36, 50, 36a, 50a ; 136, 150, 136a, 150a ; 236, 250) entre le rabat d'extrémité de base et le panneau de gousset (34, 54, 34a, 54a ; 134, 154, 134a, 154a ; 234, 254), laquelle fente se termine au niveau de la ligne de pliage (38, 52, 38a, 52a ; 138, 152, 138a, 152a ; 238, 252) reliant le rabat d'extrémité de base au panneau de gousset.

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14. Découpe selon l'une quelconque des revendications 11 à 13, dans laquelle le rabat d'extrémité de base (30, 48, 30a, 48a ; 130, 148, 130a, 148a ; 230, 248) est connecté à un panneau de base (12, 20 ; 112, 120 ; 212) par une ligne de pliage (32, 46, 32a, 46a ; 132, 146, 132a, 146a ; 232, 246) qui définit un angle aigu (α) avec le bord inférieur (22, 28 ; 122, 128 ; 222) de la paroi latérale voisine (14, 18 ; 114, 118 ; 214) pour maximiser ainsi la longueur du rabat d'extrémité de base qui se trouve sous l'article.

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15. Découpe selon l'une quelconque des revendications 11 à 14, dans laquelle la ligne de pliage (43, 60, 43a, 60a ; 243, 260) entre le rabat d'extrémité latéral (42, 58, 42a, 58a ; 242, 258) et la paroi latérale de carton voisine (14, 18 ; 114, 118 ; 214) est courbée pour imprimer une flexion vers l'intérieur au rabat d'extrémité latéral dans un carton dressé.

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16. Découpe selon l'une quelconque des revendications 11 à 15, dans laquelle la ligne de pliage (40, 56, 40a, 56a ; 140, 156, 140a, 156a ; 240, 256) reliant le rabat d'extrémité latéral (42, 58, 42a, 58a ; 242, 258) au panneau de gousset (34, 54, 34a, 54a ; 134, 154, 134a, 154a ; 234, 254) forme un angle par rapport au bord de la paroi latérale (14, 18 ;

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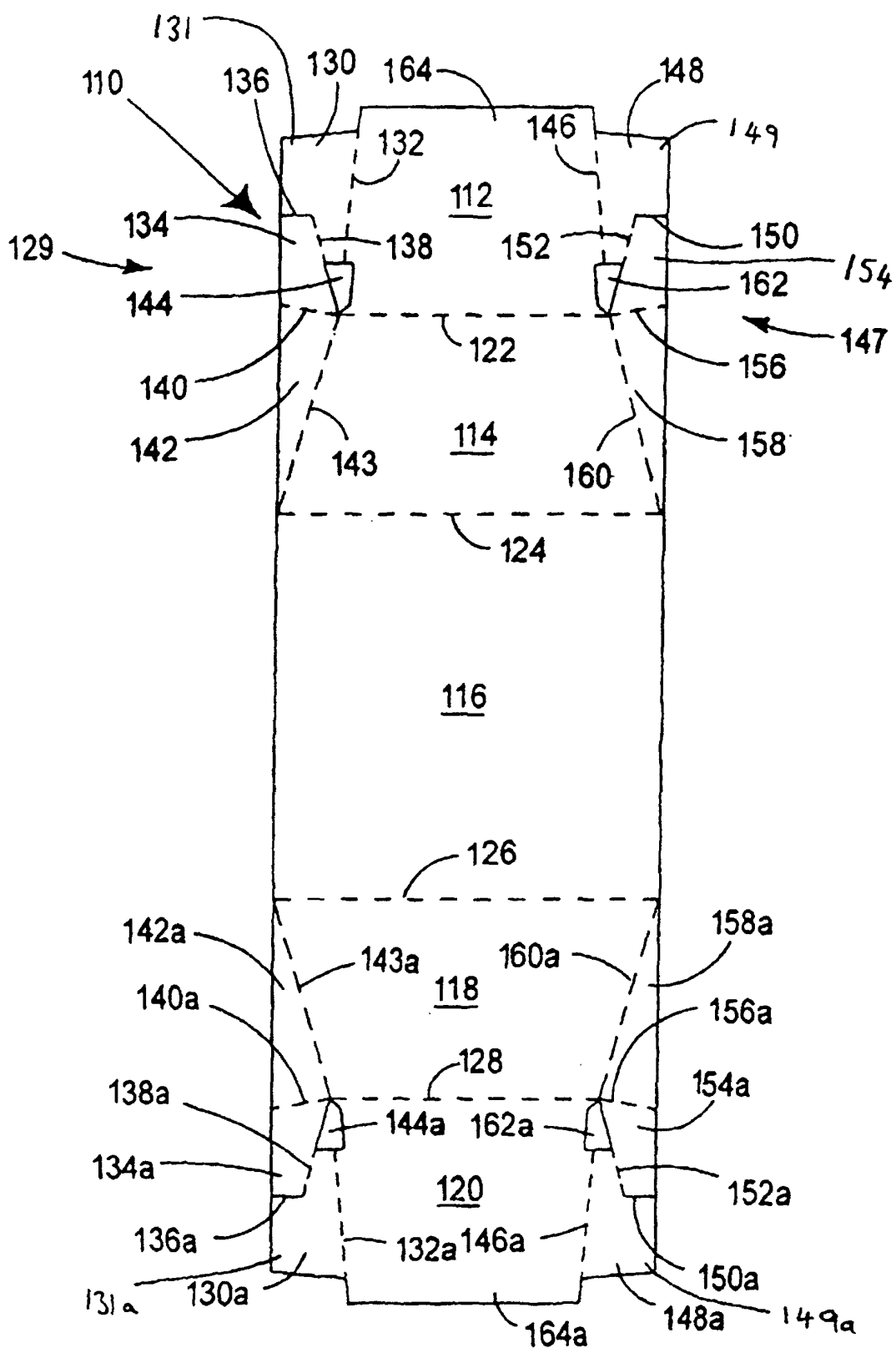


FIGURE 2

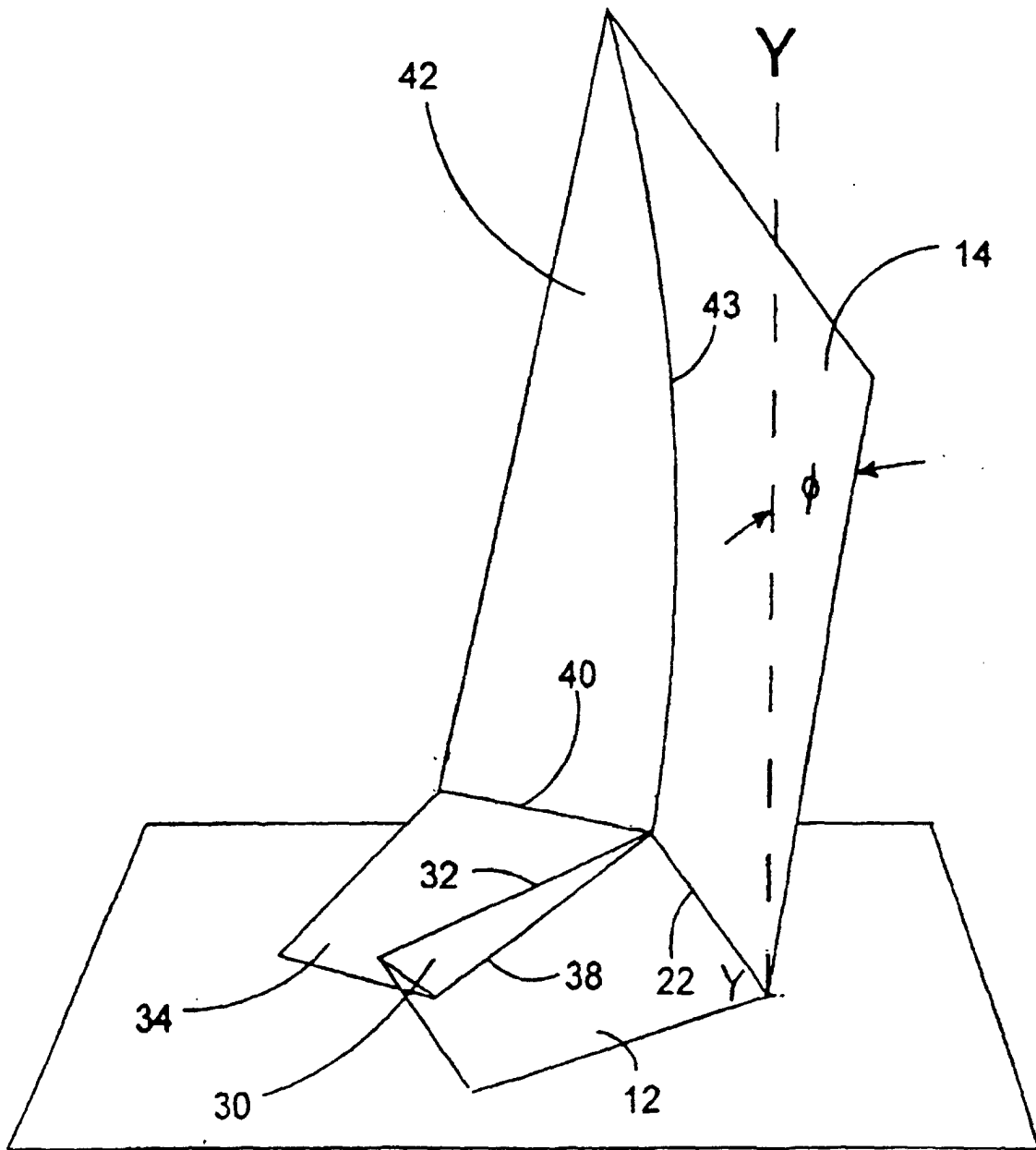


FIGURE 3

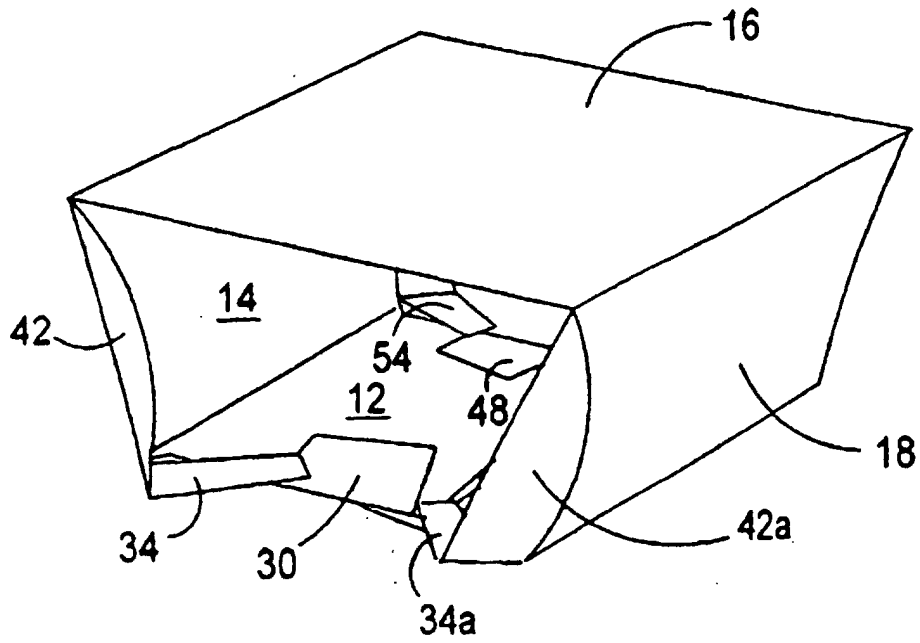


FIGURE 4a

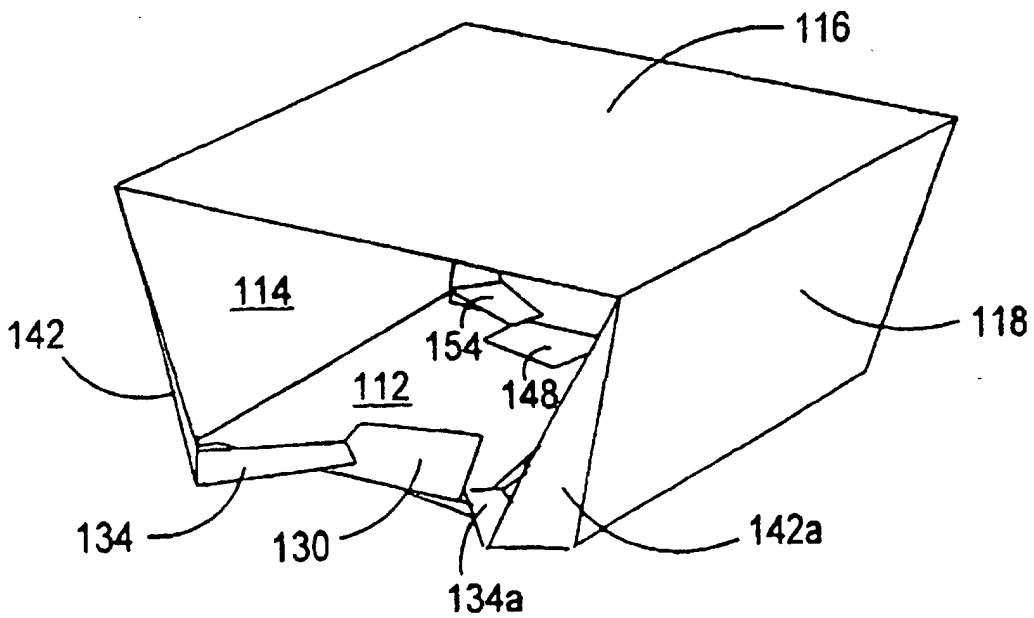


FIGURE 4b

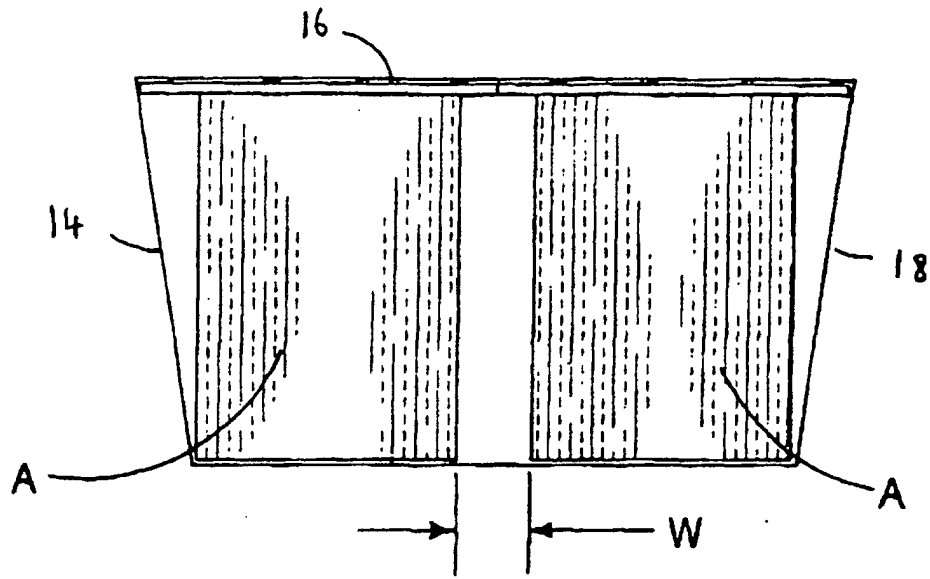


FIGURE 5

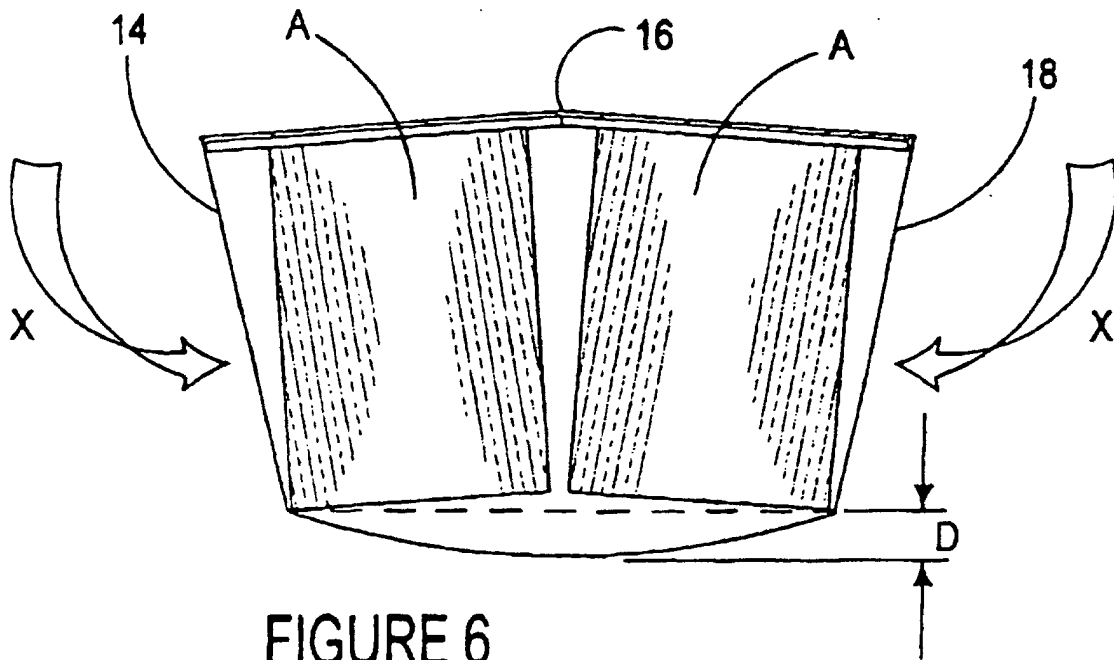


FIGURE 6

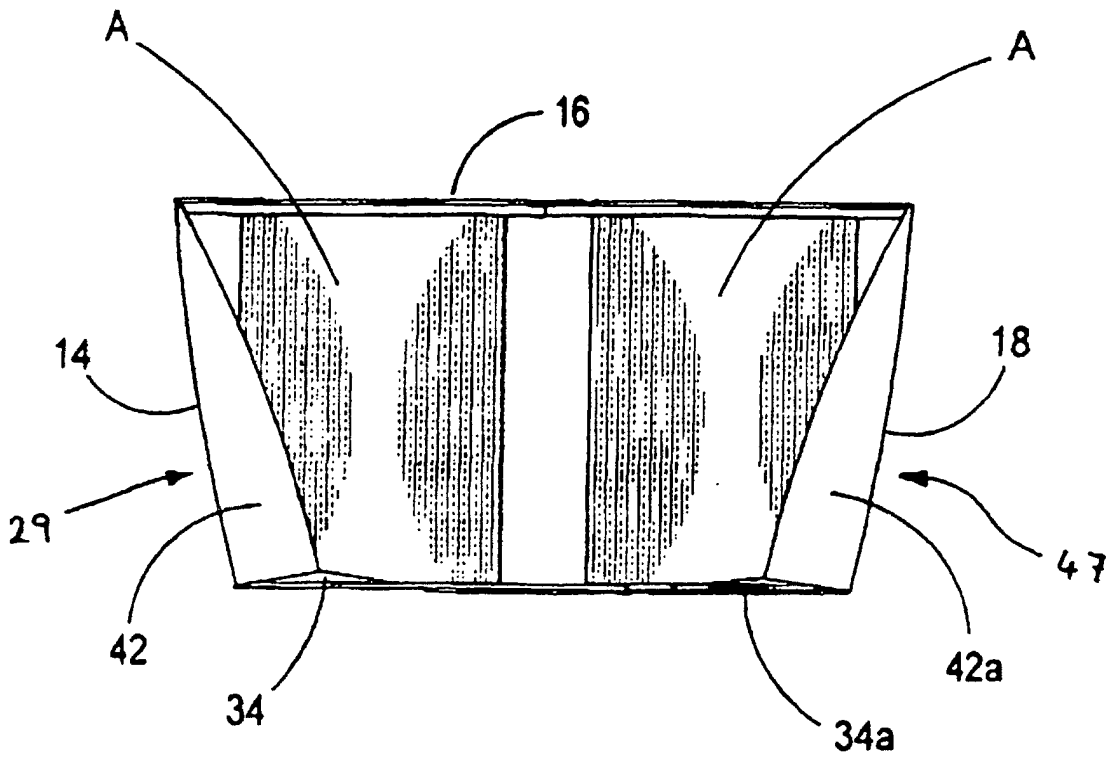


FIGURE 7