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(54) **ARTICLE CARRIER AND BLANK THEREFORE**

ARTIKELTRÄGER UND ZUSCHNITT DAFÜR

CASIER DE TRANSPORT D'ARTICLES ET SA DECOUPE

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(56) References cited:
FR-A- 2 733 740 **US-A- 5 611 431**

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Description

[0001] The invention relates to an article carrier of the wraparound type adapted to accommodate a plurality of articles, such as bottles and to a blank for forming the carrier. A wraparound carrier often comprises a handle means struck from a top panel by which the carrier can be lifted and carried. More often than not, bottles are arranged in rows.

[0002] The present invention provides a handle arrangement which cooperates with handle openings and which provides a reinforcement structure within the handle arrangement to support the articles. The reinforcement structure can be held in place by the articles.

[0003] The present invention has a number of advantages over the prior art because reinforcement is provided by a separate blank. This enables carton locking to be achieved at the base allowing such a carton to be erected on standard equipment. Further, as the reinforcement panel is a separate piece, it can be formed of different material, for example, different calliper or uncoated board, thus providing a cost saving.

[0004] One aspect of the present invention provides a wraparound carton for carrying a plurality of articles, for example, bottles comprises a top, a base and a pair of oppositely disposed side walls interconnecting the top and the base, wherein a detachable reinforcement panel is disposed between the side panels internally of the carton adjacent the top. The side panels are formed with openings so that a box beam structure formed by the top, the reinforcement panel and the side panels provides a handle for the carton and in that the reinforcement panel comprises a plurality of apertures each adapted to receive and retain a neck portion of one of the articles.

[0005] According to an optional feature of this aspect of the invention, the oppositely disposed side walls may taper outwardly towards the base to conform to the shape of the articles.

[0006] According to another optional feature of this aspect of the invention, the handle openings may each include a foldable tab extending from an upper edge of each of the openings and wherein the tabs are juxtaposed to the reinforcement panel.

[0007] Preferably, the reinforcement panel may include a pair of side edges, each of the side edges being disposed adjacent an interior surface of one of the carton side walls. More preferably, there may further comprise a pair of side reinforcing panels connected to the reinforcement panel along each side edge thereof, one of the side reinforcing panels being disposed in contact with the interior surface of one of the carton side walls.

[0008] According to a further optional feature of this aspect of the invention, there may further comprise an end closure panel connected to the top panel, which end closure panel is adapted to abut an end portion of the reinforcement panel and/or as the case may be, the side reinforcing panels. Preferably, the reinforcement panel

may be held in abutment with the top by virtue of the presence of the articles and is held restrained from endways movement by foldable end retention panels.

[0009] A second aspect of the present invention provides a method of constructing a wraparound carton comprising the following steps: (i) grouping of a single row of articles; (ii) placing a neck portion of the articles through the apertures of the reinforcement panel to keep the articles in alignment; (iii) folding the side panels of the reinforcement beam upwards and inwards; (iv) introducing the wraparound carrier to the articles and the reinforcement panel; and (v) forming the carton around the articles.

[0010] A third aspect of the invention provides a combination of a blank for forming a wraparound carton which may comprise a top panel, a pair of base panels and a pair of side panels interconnecting the top panel and respective ones of the base panels, wherein a pair of oppositely disposed end closure flaps are hingably connected to the top panel and wherein a handle aperture is struck from each of the side panels and a blank for forming a reinforcement beam structure comprising a reinforcement panel and a pair of side panels hingably connected to the opposite sides of the reinforcement panel, wherein the reinforcement panel comprises an aperture adapted to receive a neck portion of an article. Preferably, the handle apertures may each include a foldable tab extending from an upper edge of each of the openings.

[0011] According to an optional feature of the third aspect of the invention there may further comprise a pair of side reinforcing panels connected to the reinforcement panel along each side edge thereof.

[0012] According to another optional feature of the third aspect of the invention there may further comprise an end closure panel hingedly connected to the top panel

[0013] An embodiment of the invention will now be described by way of example only with reference to following drawings:

FIGURE 1 is a plan view of an unfolded single blank paperboard from which a wraparound carton according to the invention is formed;

FIGURE 2 is plan view of an unfolded blank paperboard from which a beam structure according to the invention is formed;

FIGURE 3 is a perspective view of the construction of the beam structure; and

FIGURE 4 is a perspective view of the erected carton formed from the blanks shown in Figures 1 and 2 viewed from above and one end.

[0014] Referring to the drawings, and in particular Figures 1 and 2 thereof, a carton carrier is formed from a

two part blank 10, 80 of paperboard or other suitable foldable sheet material. The carrier C is adapted to accommodate three bottles B arranged in a single row. Turning to the carton blank 10 illustrated in Figure 1, this blank 10 includes a first base panel 12, first side panel 14, top panel 16, a second side panel 18, intermediate panel 20 and second base panel 22 hingably connected one to the next along fold lines 24, 26, 28, 30 and 32 respectively.

[0015] Base panel 12 can comprise three spaced triangular apertures 34 positioned intermediate the opposing side edges of base panel 12 being laterally aligned. The apertures 34 are used to receive retaining posts to hold the erected carton and articles securely in a crate. Three further apertures 36 are struck from base panel 12 extending away from fold line 24 being spaced therefrom. The apertures 36 can be used by folding machinery to assist in carton construction: for example, to be used by tightening equipment to tighten the carton prior to securing the base panels.

[0016] A handle aperture 38 is struck from an upper portion of side panel 14. In this embodiment, the aperture 38 is substantially trapezoidal in shape. A tab 40 is struck from the upper edge of aperture 38. Tab 40 in this embodiment is curved in shape with two wider portions disposed either side of a narrower central portion in order to conform to the shape of the articles. Likewise, a handle aperture 42 and tab 43 are struck from an upper portion of side panel 18 corresponding in shape and position to aperture 38 and tab 40 of side panel 14.

[0017] As shown in Figure 1, an end closure flap 44 is optionally provided, which flap 44 is hingably connected to a side edge of top panel 16 along fold line 46. A pair of gusset panels 48, 50 are hingably connected to the opposed lateral edges of end closure flap 44 along extensions of fold lines 26 and 28 respectively. Gusset panel 48 is hingably connected to side panel 14 along fold line 52. Fold line 52 is in an angular relationship with fold line 26 and extends from the intersection of fold line 46 and fold line 26 to the intersection of the free edges of side panel 14 and gusset panel 48. Likewise, gusset panel 50 is hingably connected to side panel 18 along fold line 54. Fold line 54 is in an angular relationship with fold line 28 and extends from the intersection of fold line 46 and fold line 26 to the intersection of the free edges of side panel 18 and gusset panel 50.

[0018] Preferably, a second end closure flap 56 is struck from the opposing side edge of top panel 16 along fold line 58. A pair of gusset panels 60, 62 are hingably connected to end closure flap 56 along extensions of opposing fold lines 26, 28. Gusset panel 60 is hingably connected to side panel 14 along fold line 64. Fold line 64 is in an angular relationship with fold line 26 and extends from the intersection of fold line 58 and fold line 26 to the intersection of the free edges of side panel 14 and gusset panel 60. Likewise, gusset panel 62 is hingably connected to side panel 18 along fold line 66. Fold line 64 is in an angular relationship with fold line 26 and

extends from the intersection of fold line 58 and fold line 28 to the intersection of the free edges of side panel 18 and gusset panel 62.

[0019] As illustrated in Figure 1, bottle engaging and retention means 68 is provided at intermediate panel 20 and base panel 22, comprising a series of flaps struck from and hingably connected to intermediate panel 20 and base panel 22. The retention means 68 is disclosed in European patent EP 0 171 229 B and is not, therefore, described in any greater detail. The patentee of the aforementioned patent is also the applicant of the present application.

[0020] Base panel 22 comprises three apertures 70 extending from each of respective retention means 68 and can be used by folding machinery to assist in carton construction. Base panel 12 and base panel 22 also comprise locking tabs 72 and retaining tabs 74 to enable base panels 12 and 22 to be interengaged as is well known.

[0021] The second part of the blank (or beam blank) 80 illustrated in Figure 2 comprises a first side (or side reinforcing) panel 82, reinforcement panel 84, and second side (or side reinforcing) panel 86 hingably connected one to the next along fold lines 88 and 90 respectively. Reinforcement panel 84 corresponds substantially to the width W of the upper portions of side panels 14 and 18. Three apertures 92 are struck from reinforcement panel 84 being positioned in a spaced relationship between opposing free edges of reinforcement panel 84. Preferably, first side panel 82 includes three notches 94 being spaced along the free lateral edge of first side panel 82 and positioned to be in alignment with respective ones of apertures 92. Likewise, second side panel 86 can include three notches 96 which are shaped and positioned to correspond with the notch 94 of the first side panel 82. The notches may be used to support the bottle caps as shown in Figure 3, and advantageously, reduce the carton thickness required at the cap level.

[0022] Optionally, the corner portions of side panel 82 and 86 are cut away to form intermediate edges 98, 100 between respective end edges and side edges.

[0023] Turning to the construction of the completed carrier illustrated in Figure 5, the blanks 10, 80 require a series of sequential folding and, optionally, gluing operations which can be 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 the particular manufacturing requirements.

[0024] Thus, bottles are grouped together in a single row of three bottles and the "beam" blank 80 is introduced to the group from above. The beam blank 80 is introduced to the bottles by relative vertical movement between the bottles B and the beam blank 80 during forward feed movement, well known in the art by which the bottles B enter their respective apertures 92 on the reinforcement panel 84 until the edges of each aperture

92 are in abutment with a neck portion of each of the respective bottles B. A box beam structure 83 is then formed as illustrated in Figure 3. First side panel 82 and second side panel 86 are folded about fold lines 88 and 90 respectively into a substantially perpendicular or tapered relationship with reinforcement panel 84 as illustrated in Figure 3.

[0025] As can be seen in Figure 3, side panels 82 and 86 are formed to have a height y selected so that when folded into their upright position, the upper edges 102, 104 of side panels 82 and 86 are disposed coplanar with the upper surface of the bottle caps.

[0026] Thereafter, the carton blank is introduced to the bottles B and box beam structure 110. In this embodiment, the blank is introduced from above. The side panels 14, 18 of the carton blank 10 are folded about fold lines 26 and 28 respectively into an angular relationship with top panel 16 such that the side panels 14, 18 preferably taper downwardly and outwardly from said top panel 16. The side panels 82, 86 of the beam structure are placed in a face to face relationship with upper portions of the side panels 14, 18 of the carton blank, such that the reinforcement panel 84 substantially aligned with the upper edges of hand apertures 38, 42 with the upper edges of side panels 82 and 86 being in abutment with fold lines 26 and 28 respectively.

[0027] The end closure flap 44 and gusset panels 48, 50 are folded about fold lines 46, 52 and 54 respectively such that end closure flap 44 forms a substantially perpendicular relationship with top panel 16. Gusset panels 48 and 50 are folded about fold lines 26 and 28 respectively to form a face to face relationship with respective ones of side panels 14 and 18. Likewise, end closure flap 56 and gusset panels 60, 62 are folded about fold lines 58, 64 and 66 respectively such that end closure flap 44 forms a substantially perpendicular relationship with top panel 16. Gusset panels 60 and 62 are folded about fold lines 26 and 28 respectively to form a face to face relationship with respective ones of side panels 14 and 18. Preferably, the angle between fold lines 52, 64 and 54, 66 and fold lines 26 and 28 respectively correspond substantially between the angle of intermediate edges 98, 100 and upper edges 102, 104 of side panels 82, 86, thereby preventing lateral movement of the box beam structure 110.

[0028] Optionally, glue may be applied to the face of gusset flaps 48, 50 and 60, 62 in contact with side panels 14, 18 to hold the end closure flaps 44, 56 in place. In addition, side panels 82 and 86 may be connected to the side panels 14 and 18 respectively by glue or other means known in the art.

[0029] In the described embodiment, however, gluing is not necessary because the increasing width of the bottle neck portions prevent downward movement of the box beam structure 110, and the dimensions of various ones of the carton panels are selected to avoid the need for glue. Because side panels 82, 86 are of height y, their upper edges 102, 104 are disposed against the under-

surface of top panel 16, thus preventing upward movement of the reinforcing structure in use. Similarly, end closure flaps 44, 56 may be formed with a height y whereby their respective lower edges 116, 118 are disposed against the upper surface of reinforcing panel 84 for a similar effect. (End closure flaps 44, 56 perform the additional aesthetic function of closing the ends of the tubular reinforcing structure from view.)

[0030] Of course these particular dimensional relationships are not necessary in the event glue is used to secure the beam blank 80 in place. Indeed, the end closure structure comprising flaps 44, 48, 50, 56, 60 and 62 may be eliminated entirely in such case.

[0031] The bottle retaining means 68 is formed and the base panels 12, 22 are folded out of alignment with side panel 14 and 18 respectively such that the bottom portion of the bottles B protrude through the apertures 112 formed by the retaining means and is held in position thereto by the tabs 114 of the retaining means, as shown in Figure 4.

[0032] Base panels 12 and 22 are brought into an overlapping relationship and connected together by locking tabs 72, 74. It will be recognised that alternatively the base panels may be secured together by gluing.

[0033] In use, handle tabs 40, 43 of carton C are folded out of alignment with side panels 14 and 18 respectively and folded into a face to face relationship with reinforcement panel 84 to further secure the beam structure and carton as shown in Figure 4 of the drawings and to enable a users hand to grip the handle structure H.

[0034] It will readily be seen that the invention is not limited to the three-bottle carton as disclosed herein, but that cartons for various quantities of bottles (or other primary containers) may be made in accordance with the invention. In particular, it should be noted that the invention may also be used for cartons for packaging bottles in two rows. It is anticipated that the invention can be applied to a variety of carriers.

[0035] The present invention and its preferred embodiments relate to an article carrier which is shaped to provide satisfactory strength to hold bottles securely but with a degree of flexibility so that load transferred to the handle is absorbed by the carrier. The shape of the blank minimises the amount of paperboard required and the carrier can be applied to an array of bottles by hand or automatic machinery.

Claims

1. A wraparound carton for carrying a plurality of articles, for example, bottles comprises a top (16), a base (12) and a pair of oppositely disposed side walls (14, 18) interconnecting said top and said base, wherein a detachable reinforcement panel (84) is disposed between said side panels internally of the carton adjacent said top **characterised in**

that said side panels are formed with openings (38, 42) so that a box beam structure formed by said top said reinforcement panel and said side panels provides a handle for the carton and in that the reinforcement panel comprises a plurality of apertures (92) each adapted to receive a neck portion of one of said articles.

2. A wraparound carton according to claim 1 wherein said oppositely disposed side walls (14, 18) taper outwardly towards said base (12) to conform to the shape of said articles.
3. A wraparound carton according to claim 1 or claim 2 wherein the handle openings (38, 42) each include a foldable tab (40, 43) extending from an upper edge of each of said openings and wherein said tabs are juxtaposed to said reinforcement panel (82, 84, 86).
4. A wraparound carton according to any of claims 1 to 3 wherein said reinforcement panel (82, 84, 86) includes a pair of side edges, each of said side edges being disposed adjacent an interior surface of one of said carton side walls.
5. A wraparound carton according to claim 4 further comprising a pair of side reinforcing panels (82, 86) connected to said reinforcement panel (84) along each side edge thereof, one of said side reinforcing panels being disposed in contact with said interior surface of one of said carton side walls.
6. A wraparound carton according to any of claims 1 to 5, further comprising an end closure panel (44, 56) connected to the top panel (16), which end closure panel is adapted to abut an end portion of said reinforcement panel (84) and/or as the case may be, said side reinforcing panels (82, 86).
7. A wraparound carton as claimed in claim 6 wherein the reinforcement panel is held in abutment with the top by virtue of the presence of said articles and is held restrained from endways movement by foldable end retention panels (44, 56).
8. A method of constructing a wraparound carton according to any of claims 1 to 7 comprising the following steps:
 - (i) grouping of a single row of articles;
 - (ii) placing a neck portion of the articles through the apertures (92) of the reinforcement panel (84) to keep said articles in alignment;
 - (iii) folding the side panels (82, 86) of the reinforcement beam upwards and inwards;
 - (iv) introducing said wraparound carrier to said articles and said reinforcement panel; and

(v) forming the carton around said articles.

9. A combination comprising a blank (10) for forming a wraparound carton (C) comprising a top panel (16) a pair of base panels (12, 22) and a pair of side panels (14, 18) interconnecting said top panel and respective ones of said base panels, wherein a pair of oppositely disposed end closure flaps (44, 56) are hingably connected to said top panel (16) and wherein a handle aperture (38, 42) is struck from each of said side panels and a blank (80) for forming a reinforcement beam structure comprising a reinforcement panel (84), and a pair of side panels (82, 86) hingably connected to said opposite sides of said reinforcement panel wherein said reinforcement panel comprises an aperture (92) adapted to receive a neck portion of an article.
10. The combination according to claim 9 wherein the handle apertures (38, 42) each include a foldable tab (40, 43) extending from an upper edge of each of said openings.
11. The combination according to claim 9 or claim 10 further comprising a pair of side reinforcing panels (82, 86) connected to said reinforcement panel (84) along each side edge thereof.
12. The combination according to any one of claims 9 to 12, further comprising an end closure panel (44, 56) hingedly connected to the top panel (16).

Patentansprüche

1. Schachtel des Umwickeltyps zum Tragen einer Vielzahl von Gegenständen wie etwa Flaschen, die einen Decke (16), einen Boden (12) und ein Paar gegenüber angeordneter Seitenwände (14, 18) umfasst, die die Decke und den Boden miteinander verbinden, wobei eine herausnehmbare Verstärkungswandfläche (84) zwischen den Seitenwandflächen im Inneren der Schachtel angrenzend an die Decke angeordnet ist, **dadurch gekennzeichnet, dass** die Seitenwandflächen mit Öffnungen (38, 42) ausgebildet sind, so dass eine durch die Decke, die Verstärkungswandfläche und die Seitenwandflächen ausgebildete Schachtel-Balkenstruktur einen Griff für die Schachtel bereitstellt, und dadurch, dass die Verstärkungswandfläche eine Vielzahl von Öffnungen (92) umfasst, die jeweils angepasst sind, um einen Halsabschnitt eines der Gegenstände aufzunehmen.
2. Schachtel des Umwickeltyps nach Anspruch 1, wobei sich die gegenüber angeordneten Seitenwände (14, 18) nach außen zum Boden (12) hin verjüngen, um sich der Form der Gegenstände anzupassen.

3. Schachtel des Umwickeltyps nach Anspruch 1 oder 2, wobei die Grifföffnungen (38, 42) jeweils eine faltbare Lasche (40, 43) einschließen, die sich von einer oberen Kante der jeweiligen Öffnungen erstreckt, und wobei die Laschen in Juxtaposition zu der Verstärkungswandfläche (82, 84, 86) angeordnet sind. 5
4. Schachtel des Umwickeltyps nach einem der Ansprüche 1 bis 3, wobei die Verstärkungswandfläche (82, 84, 86) ein Paar von Seitenkanten einschließt, wobei jede der Seitenkanten angrenzend an eine Innenfläche der Schachtelseitenwandflächen angeordnet ist. 10
5. Schachtel des Umwickeltyps nach Anspruch 4, die ferner ein Paar von Seitenverstärkungswandflächen (82, 86) umfasst, die mit der Verstärkungswandfläche (84) entlang jeder Seitenkante davon verbunden sind, wobei eine der Seitenverstärkungswandflächen in Kontakt mit der Innenfläche einer der Schachtelseitenwandflächen angeordnet ist. 15
6. Schachtel des Umwickeltyps nach einem der Ansprüche 1 bis 5, die ferner eine Endverschlusswandfläche (44, 56) umfasst, die mit der Deckenwandfläche (16) verbunden ist, wobei die Endverschlusswandfläche angepasst ist, um an einen Endabschnitt der Verstärkungswandfläche (84) und/oder gegebenenfalls an die Seitenverstärkungswandflächen (82, 86) anzustoßen. 20
7. Schachtel des Umwickeltyps nach Anspruch 6, wobei die Verstärkungswandfläche aufgrund der Anwesenheit der Gegenstände angrenzend an die Decke gehalten und von einer zum Ende gerichteten Bewegung durch faltbare Endrückhaltewandflächen (44, 56) zurückgehalten wird. 25
8. Verfahren zum Errichten einer Schachtel des Umwickeltyps nach einem der Ansprüche 1 bis 7, das die folgenden Schritte umfasst: 30
 - (i) Gruppieren einer einzelnen Reihe von Gegenständen; 35
 - (ii) Einbringen eines Halsabschnittes der Gegenstände durch die Öffnungen (92) der Verstärkungswandfläche (84), um die Gegenstände ausgerichtet zu halten; 40
 - (iii) Falten der Seitenwandflächen (82, 86) des Verstärkungsbalkens nach oben und nach innen; 45
 - (iv) Einführen des Umwickeltyp-Trägers auf die Gegenstände und die Verstärkungswandflächen; 50

che; und

(v) Ausbilden der Schachtel um die Gegenstände.

9. Kombination, die einen Zuschnitt (10) zum Ausbilden einer Schachtel (C) des Umwickeltyps umfasst, die eine Deckenwandfläche (16), ein Paar von Bodenwandflächen (12, 22) und ein Paar von Seitenwandflächen (14, 18) umfasst, die die Deckenwandfläche und die entsprechenden Bodenwandflächen miteinander verbinden, wobei ein Paar gegenüber angeordneter Endverschlussklappen (44, 56) gelenkig mit der Deckenwandfläche (16) verbunden ist, und wobei eine Grifföffnung (38, 42) aus jeder der Seitenwandflächen ausgestanzt ist, sowie einen Zuschnitt (80) zum Ausbilden einer Verstärkungsbalkenstruktur, die eine Verstärkungswandfläche (84) umfasst und ein Paar von Seitenwandflächen (82, 86), die gelenkig mit den gegenüberliegenden Seiten der Verstärkungswandfläche verbunden sind, wobei die Verstärkungswandfläche eine Öffnung (92) umfasst, die angepasst ist, um einen Halsabschnitt eines Gegenstands aufzunehmen. 5
10. Kombination nach Anspruch 9, wobei die Grifföffnungen (38, 42) jeweils eine faltbare Lasche (40, 43) einschließen, die sich von einer oberen Kante jeder der Öffnungen erstreckt. 10
11. Kombination nach Anspruch 9 oder 10, die ferner ein Paar von Seitenverstärkungswandflächen (82, 86) umfasst, die mit der Verstärkungswandfläche (84) entlang jeder Seitenkante davon verbunden sind. 15
12. Kombination nach einem der Ansprüche 9 bis 12, die ferner eine Endverschlusswandfläche (44, 56) umfasst, die mit der Deckenwandfläche (16) gelenkig verbunden ist. 20

Revendications

1. Carton d'enveloppement pour porter une pluralité d'articles, par exemple des bouteilles, comprenant un sommet (16), une base (12) et une paire de parois latérales disposées de façon opposée (14, 18) interconnectant ledit sommet et ladite base, dans lequel un panneau de renfort détachable (84) est disposé entre lesdits panneaux latéraux à l'intérieur du carton au voisinage dudit sommet, **caractérisé en ce que** lesdits panneaux latéraux sont formés avec des ouvertures (38, 42), de telle sorte qu'une structure de poutre de boîte formée par ledit sommet, ledit panneau de renfort et lesdits panneaux latéraux constitue une poignée pour le carton, et **en**

ce que le panneau de renfort comprend une pluralité d'ouvertures (92) adaptées chacune pour recevoir une partie de col de l'un desdits articles.

2. Carton d'enveloppement selon la revendication 1, dans lequel lesdites parois latérales disposées de façon opposée (14, 18) sont inclinées vers l'extérieur en direction de ladite base (12) afin de se conformer à la forme desdits articles. 5
3. Carton d'enveloppement selon la revendication 1 ou la revendication 2, dans lequel les ouvertures de poignée (38, 42) comprennent chacune une patte repliable (40, 43) s'étendant à partir d'un bord supérieur de chacune desdites ouvertures, et dans lequel lesdites pattes sont juxtaposées audit panneau de renfort (82, 84, 86). 10
4. Carton d'enveloppement selon l'une quelconque des revendications 1 à 3, dans lequel ledit panneau de renfort (82, 84, 86) comprend une paire de bords latéraux, chacun desdits bords latéraux étant disposé au voisinage d'une surface intérieure de l'une desdites parois latérales du carton. 15 20
5. Carton d'enveloppement selon la revendication 4, comprenant de plus une paire de panneaux de renfort latéraux (82, 86) reliés audit panneau de renfort (84) le long de chaque bord latéral de ceux-ci, l'un desdits panneaux de renfort latéraux étant disposé en contact avec ladite surface intérieure de l'une desdites parois latérales du carton. 25
6. Carton d'enveloppement selon l'une quelconque des revendications 1 à 5, comprenant de plus un panneau de fermeture d'extrémité (44, 56) relié au panneau supérieur (16), ce panneau de fermeture d'extrémité étant adapté pour buter contre une partie d'extrémité dudit panneau de renfort (84), et/ou, selon le cas, desdits panneaux de renfort latéraux (82, 86). 30 35 40
7. Carton d'enveloppement selon la revendication 6, dans lequel le panneau de renfort est maintenu en butée avec le sommet grâce à la présence desdits articles et est retenu vis-à-vis du déplacement vers les extrémités par des panneaux de rétention d'extrémité repliables (44, 56). 45
8. Procédé de construction d'un carton d'enveloppement selon l'une quelconque des revendications 1 à 7, comprenant les étapes suivantes : 50
 - (i) le regroupement d'une rangée unique d'articles ; 55
 - (ii) la disposition d'une partie de col des articles à travers les ouvertures (92) du panneau de renfort (84) de façon à maintenir lesdits articles

en alignement ;

(iii) le pliage des panneaux latéraux (82, 86) de la poutre de renfort vers le haut et vers l'intérieur ;

(iv) l'introduction dudit porteur à enveloppement sur lesdits articles et ledit panneau de renfort ; et

(v) le formage du carton autour desdits articles.

9. Combinaison comprenant une ébauche (10) pour former un carton d'enveloppement (C) comprenant un panneau supérieur (16), une paire de panneaux de base (12, 22) et une paire de panneaux latéraux (14, 18) interconnectant ledit panneau supérieur et des panneaux respectifs parmi lesdits panneaux de base, dans laquelle une paire de volets de fermeture d'extrémité disposés de façon opposée (44, 56) sont reliés de façon articulée audit panneau supérieur (16) et dans laquelle une ouverture de poignée (38, 42) est matriciée à partir de chacun desdits panneaux latéraux, et une ébauche (80) pour former une structure de poutre de renfort comprenant un panneau de renfort (84), et une paire de panneaux latéraux (82, 86) reliés de façon articulée auxdits côtés opposés dudit panneau de renfort, dans laquelle ledit panneau de renfort comprend une ouverture (92) adaptée pour recevoir une partie de col d'un article. 15 20 25 30
10. Combinaison selon la revendication 9, dans laquelle les ouvertures de poignée (38, 42) comprennent chacune une patte repliable (40, 43) s'étendant à partir d'un bord supérieur de chacune desdites ouvertures. 35
11. Combinaison selon la revendication 9 ou la revendication 10, comprenant de plus une paire de panneaux de renfort latéraux (82, 86) reliés audit panneau de renfort (84) le long de chaque bord latéral de celui-ci. 40
12. Combinaison selon l'une quelconque des revendications 9 à 12, comprenant de plus un panneau de fermeture d'extrémité (44, 56) relié de façon articulée au panneau supérieur (16). 45

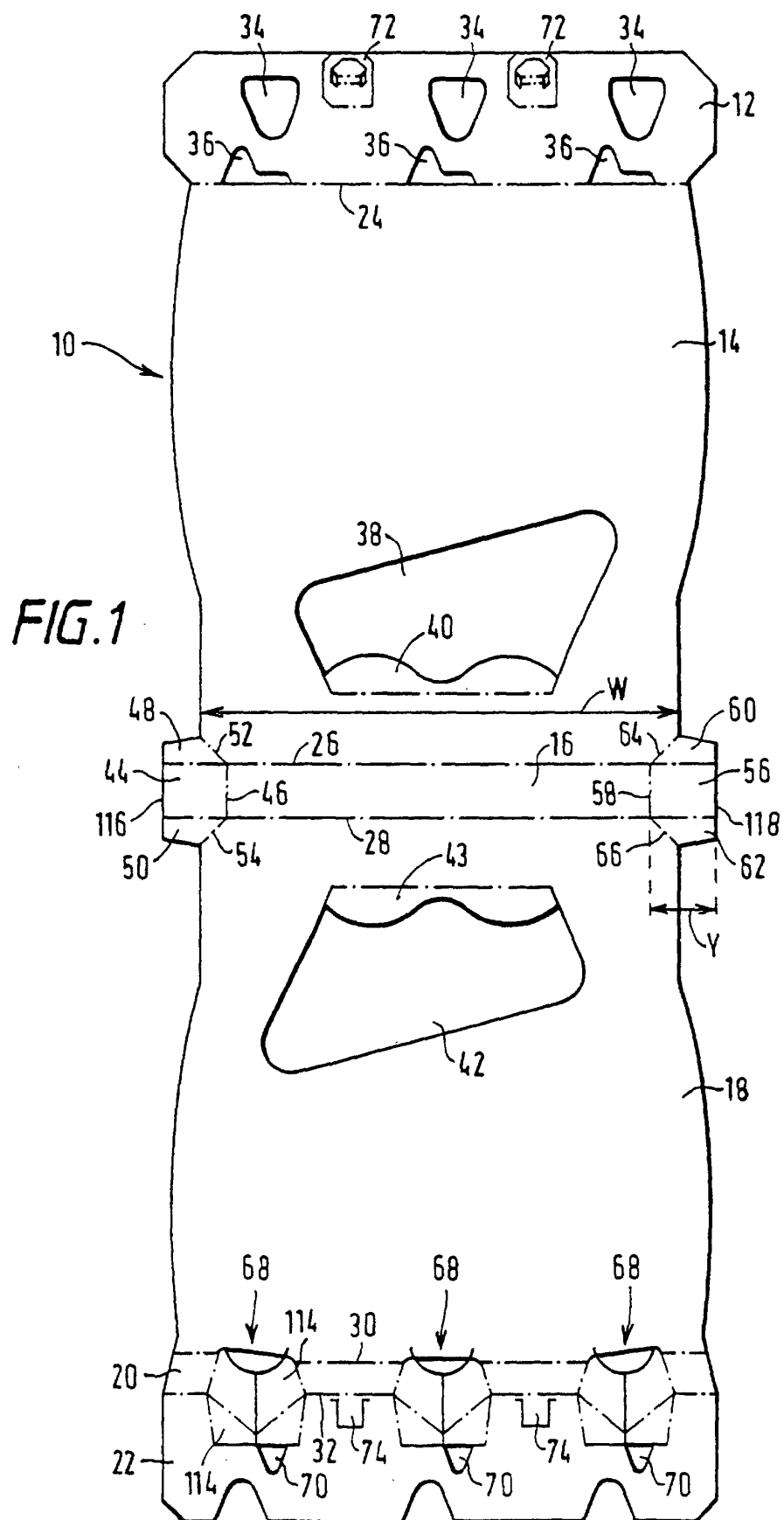


FIG. 2

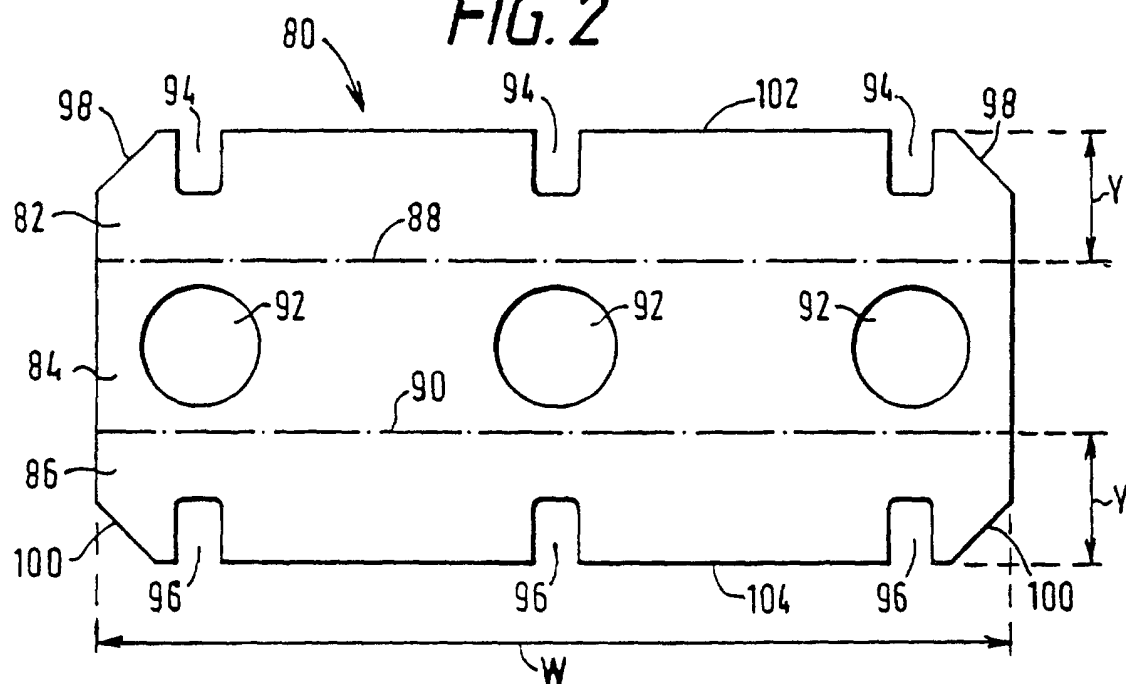


FIG. 3

