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(54) **ARTICLE CARRIER FOR FRAGILE ARTICLES AND CORRESPONDING BLANK**

BEHÄLTER FÜR ZERBRECHLICHE GEGENSTÄNDE SOWIE ENTSPRECHENDER ZUSCHNITT

CARTON ET DECOUPE DE CARTON

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(73) Proprietor: **MeadWestvaco Packaging Systems LLC**
Glen Allen, VA 23060 (US)

(72) Inventor: **AUCLAIR, Jean-Michel**
36000 Chateauroux (FR)

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

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Description

Background of the Invention

[0001] The present invention relates to a carton and carton blank for forming the cartons. More particularly, the invention relates to a carton and blank for packaging fragile articles such as bottles of perfume for example.

[0002] It is known to provide a two part package comprising an inner cushion member and an outer carton, see for example US 2 692 077 (KUHLMAN) or US 4 114 796. However, in such cartons, the base, sides and tops of the article can be prone to damage when moved or stored.

[0003] In US 2 643 814 (Bradley) there is shown a carton for packaging a light bulb comprising side and end walls hinged together to form a collapsible upright tubular structure. There further comprises a support structure provided by a keel structure at the lower end of the carton.

Summary of the Invention

[0004] The present invention and its preferred embodiments seek to overcome or at least mitigate the problems of the prior art.

[0005] One aspect of the invention provides a receptacle for packaging fragile articles comprising a plurality of side wall panels hinged together to form a collapsible upright tubular structure for receiving an article and an article support structure at the lower end of the tubular structure for supporting the article, The support structure comprises a plurality of displaceable strips secured together such that when the tubular structure is erected from a flat collapsed form, the displaceable strips are automatically displaced into the tubular structure to form the support structure when the receptacle is formed.

[0006] Preferably, at least one of the displaceable strips is provided along its upper edge with a foldable flap for providing a platform for the article.

[0007] According to an optional feature of this aspect of the invention there may comprise two pair of mutually hinged side wall panels, each pair having a respective displaceable strip wherein the displaceable strips are interconnected.

[0008] In one embodiment, the displaceable strips may be partially connected along a common lower edge. Alternatively, a portion of the displaceable strips may be in face contacting relationship. Optionally, the support structure may further comprise a pair of glue flaps to secure part of the displaceable strips together.

[0009] A second aspect of the invention provides a blank for forming a receptacle comprising two pairs of mutually hinged side wall panels to form a collapsible upright tubular structure for receiving an article and an article support structure at the lower end of the tubular structure for supporting the article, wherein each pair of side wall panels having a respective displaceable strip for forming a support structure. The support structure further comprises a pair of glue flaps to secure part of the displaceable strips together in a set up carton. Preferably, at least one of the displaceable strips is provided along its upper edge with a foldable flap for providing a platform for the article in a set up condition.

[0010] According to an optional feature of the second aspect of the invention, the displaceable strips are partially connected along a common lower edge.

Brief Description of the Drawings

[0011] Exemplary embodiments of the present invention will now be described, by way of example only, with reference to the accompanying drawings in which:-

FIGURE 1 is a plan view of a blank for forming an article cushion member according to the first embodiment of the invention;

FIGURE 2 is a plan view of a blank for forming an article cushion member of a second embodiment;

FIGURE 3 is a plan view of a blank for forming an article cushion member and outer carton according to a third embodiment;

FIGURE 4 is a perspective view of the cushion member of the first embodiment partially formed and in a flat collapsed condition;

FIGURE 5 is a perspective view of the first embodiment set up and loaded with an article;

FIGURE 6 is a perspective view from the underside showing the article support means according to one aspect of the invention;

FIGURE 7 is a bottom plan view of the article support means and outer carton shown in Figure 6; and

FIGURE 8 is a perspective view from above illustrating the top protection structure according to another aspect of the invention.

Detailed Description of the Preferred Embodiments

[0012] Referring to the drawings, and in particular Figure 1 there is shown a 0 for forming a cushion member or receptacle made from paperboard or other like foldable sheet material. The cushion member is adapted to be placed in an outer carton. In this embodiment, the blank 10 comprises a plurality of side wall panels including a first side wall panel 12, a second side wall panel 14 hingedly connected together along fold line 30. There further comprises third side wall panel 16 and fourth side wall panel 18 hingedly connected together along fold line 38. The side wall panels 12, 14, 16, 18 are connected together to form a collapsible upright tubular structure for

receiving an article.

[0013] Preferably, there further comprises stabilising means hingedly connected to the panels forming the tubular structure, which stabilising means is adapted for frictional engagement with the inside surface of an outer carton, described below. In this embodiment, stabilising means is provided by support panels 20, 22 and 24, 26 which are adapted to protrude outwardly beyond one or more corners of the tubular structure.

[0014] Thus it can be seen from Figure 1 that support panel 20 is hingedly connected to first side wall panel 12 along fold line 28. Support panels 22 and 24 are hingedly connected to second side wall panel 14 and third side wall panel 16 along fold lines 32 and 36 respectively. In this embodiment, support panels 22 and 24 are hingedly connected together along a common side edge by fold line 34. Support panel 26 is hingedly connected to fourth side wall panel 18 along fold line 40.

[0015] Another aspect of the invention is provided by article support structure 51 (Figure 4), which comprises a plurality of displaceable strips 49, 49a secured together. In the embodiment shown in Figure 1, the first displaceable strip 49 is provided by two outer parts 42, 44 sandwiching central part 46 hingedly connected together in series along fold lines 54 and 56.

[0016] Similarly, the second displaceable strip 49a is provided by two outer parts 42a, 44a sandwiching central part 46a hingedly connected in series along fold lines 54a, 56a. Preferably, the first displaceable strip 49 is hingedly connected to the first and second side wall panels 12, 14 along fold lines 50 and 52 thereby to bisect fold line 30. The second displaceable strip 49a is hingedly connected to the third and fourth side wall panels 16, 18 along fold lines 52a and 50a thereby to bisect fold line 38. In one class of embodiments, there further comprises a glue flap 48, 48a hingedly connected to at least one of the displaceable strips 49, 49a along fold line 57, 57a.

[0017] Optionally, there further comprises a top protection structure 59 for supporting an upper portion of an article contained within the cushion member. In this embodiment, the top protection structure 59 comprises first and second upper panels 60 and 64 that are hingedly connected to third and fourth side wall panels 16 and 18 along fold lines 62 and 66 respectively. There further comprises gusset panel 68 intermediate upper panels 60 and 64 hingedly connected thereto along fold lines 70 and 72. The fold lines 70 and 72 are arranged such that the gusset panel is, preferably, triangular in shape and is adapted to be folded into face contacting relationship with panels 60 and 64, described below. There may further comprise a glue tab 74 struck from the gusset panel 68 and connected to one of the upper panels 64, which glue tab extends into gusset panel 68 and is separated therefrom by cut line 76. In this embodiment, the glue tab 74 is substantially semicircular in shape.

[0018] A second embodiment of cushion member is illustrated in Figure 2 which shows a blank formed from paperboard or similar foldable sheet material. In this embodiment, the cushion member is provided with a top protection structure 159, stabilising means and article support structure 151 formed from panels similar to those described in the first embodiment and therefore like parts are designated by the same reference numeral with the prefix "1" and are not therefore described in any greater detail. Only the differences between the first and second embodiments shall be described below.

[0019] It will be seen that the first support panel 120, first and second side wall panels 112 and 114 and second support panel 122 are hingedly connected together in series along fold lines 128, 130 and 132 respectively to form one side of the tubular structure. Likewise, support panel 124, third and fourth side wall panels 116, 118 and support panel 126 are hingedly connected together in series along fold lines 136, 138 and 140 to form the other side of the cushion member. These panels forming each side of the tubular carton are hingedly connected along their respective lower edges. In this embodiment the hinged connection is along co-linear fold lines 180 and 181 extending across support panels 120/124, 122/126 only. Thus first and second side wall panels 112, 114 are separated from third and fourth side wall panels 116, 118 by cut line 182 which is aligned with and extends between fold lines 180 and 181. Cut line 182 extends into the article support structure 151 to separate the opposing outer parts 142, 142a and 144, 144a of the displaceable strips 149, 149a. The central displaceable strips 146 and 146a are hingedly connected together along fold line 184. It will be seen from Figure 2 that fold line 184 interrupts cut line 182.

[0020] There may further comprise a platform for holding the article. In this embodiment, the platform is provided by one or more foldable flaps 148 and 148a hingedly connected to the upper edge of the central parts 146, 146a of the displaceable strips.

[0021] The first and second embodiments illustrated in Figures 1 and 2 are adapted to be placed within an outer carton C, an example of which is illustrated in Figure 8. However, it is envisaged that the article support structure 51, 151 and top protection structure 59, 159 could be applied to other types of carton or article carrier, for example wraparound or basket carriers where it is provided to support and/or protect an article.

[0022] Turning to the third embodiment illustrated in Figure 3 there is shown a blank 210 in which the cushion member 201 and outer carton 301 are formed from a unitary blank of paperboard of similar foldable sheet material. The cushion member 201 is similar to the first embodiment and like reference numerals are used to designate common features prefixed with the numeral "2".

[0023] It will be seen that there comprises first, second, third and fourth side wall panels 212, 214, 216, 218 hingedly connected together in series along fold lines 230, 234 and 238. Article support means formed from displaceable strips 249 and 249a are struck from the first and second side wall panels 212, 214 and third and fourth side wall panels 216, 218 respectively. The displaceable

strips 249, 249a correspond to the strips 49, 49a of the first embodiment. Preferably, there further comprises a top protection structure 259 substantially the same as structure 59 described above.

[0024] In this embodiment, the stabilising means is provided at one edge of the tubular structure and is formed by panel 220 hingedly connected to the first side wall panel 212 along fold line 228. A glue flap 226 is hingedly connected to the fourth side wall panel 218 along fold line 240 to be glued to the first side wall panel 212.

[0025] The outer carton 301 is constructed from first end panel 286, front panel 288, second end wall panel 290 and rear panel 292 hingedly connected together one to the next along fold lines 294, 296, 298 respectively. Preferably, there further comprises support flaps 302 hingedly connected to upper and lower edges of the end wall panels 286 and 290 along fold lines 304. There further comprises top and bottom wall panels 306 and securing flaps 310 hingedly connected along fold lines 312 to the top and bottom wall panels which in turn are connected to front and rear panels 288, 292 respectively along fold lines 308.

[0026] The cushion member is hingedly connected to a side edge of one of the panels forming the outer carton. In this embodiment the cushion member 201 is hingedly connected to rear panel 292 along fold line 300.

[0027] The cushion member of the first, second and third embodiments is not limited to a rectangular or diamond tubular shape and could comprise other panels to define other polygonal shapes and sizes, depending upon the article to be contained within the cushion member.

[0028] It is envisaged that the cushion member and/or article carrier of the present invention can be formed by a series of sequential folding and gluing operations which can be formed 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.

[0029] Turning to the first embodiment shown in Figure 1, in order to set up the cushion member into a position of use, side wall panels 12, 14 and support panels 20 and 22 are folded about fold line 34 in direction X (Figure 1) into face contacting relationship with corresponding support panels 24 and 26 and side panels 16 and 18 respectively, as shown in Figure 4. Optionally, the support panels 22, 24 and 20, 26 are secured together by glue or other suitable means known in the art. In this embodiment, glue is applied to part or all of the section G.

[0030] In order to form the article support structure 51 shown in Figure 7, the central part 46 and 46a of the displaceable strip may be secured together. In those embodiments with glue flaps, the glue flaps 48, 48a are secured together by glue designated by letter G or other suitable means known in the art. Figure 4 shows the carton in a flat collapsed condition ready to be placed in a set up condition to receive the article.

[0031] In order to put the cushion member 10 into a position of use, side panels 12 and 14 are folded out of alignment along fold line 30 and likewise third and fourth side wall panels 16 and 18 are folded out of alignment along fold line 38. This folding action causes support panels 20/26 and 22/24 to be folded out of alignment with the adjacent side wall panel along fold lines 28/40 and 32/36.

[0032] By folding the side wall panels in an outward direction, an open ended tubular structure is formed, as shown in Figure 5. In this embodiment the structure is diamond shaped although it is envisaged that the carton could be rectangular, trapezoidal, square or another polygonal form.

[0033] As the tubular structure is constructed, the support structure 51 is automatically displaced into the tubular structure whereby the outer parts 42, 42a, 44, 44a of the displaceable strips are folded along fold lines 50, 50a and 52, 52a in an inward direction, shown in Figure 7, such that the central parts 46, 46a of the displaceable strips remain within a central region of the tubular structure. Thereafter, glue flaps 48 and 48a can be folded along their upper edges into a substantially perpendicular relationship with the respective central parts 46, 46a (not shown) of the displaceable strips 49, 49a. In use, the glue flaps 48,48a may be adapted to frictionally engage the base wall of the outer carton, thereby to provide additional stability to the article support structure 51 and in some embodiments is secured thereto by glue or other suitable known means. Thereafter, the article is loaded by relative vertical movement between the article and cushion member. The cushion member and article are loaded into an outer carton C.

[0034] The second embodiment shown in Figure 2 is constructed in a like manner by reference to Figures 2 and 6 whereby support panels 120 and 122 and first and second side panels 112 and 114 are folded about fold line 180, 181 and 184 into face contacting relationship with the respective side wall support panels 124, 126 and third and fourth side wall panels 116 and 118. Optionally, support panels 120, 124 and 122, 126 are secured together by glue or other suitable means known in the art. Construction of the article support structure 151 is substantially the same as for the first embodiment described above and shown in Figure 6. It is not therefore described in any greater detail.

[0035] In those embodiments with a platform structure 143 shown in Figure 6, the flaps 148, 148a forming the platform structure may be secured together by glue or other suitable means known in the art to provide a double ply platform. In order to construct and load the tubular structure of the second embodiment the same folding procedure is carried out as that described above for the first embodiment, so that the platform structure 143 is folded into a substantially horizontal arrangement shown in Figure 6 thereby to provide a platform on which the article rests. Alternatively, the flaps 148, 148a may remain unglued and may be folded away from each other

to take the respective horizontal positions. In this option, the central parts 146, 146a of the displaceable strips 149, 149a may be glued together.

[0036] In those embodiments with stabilising means, the support or stabilizing panels 20, 26 and 24, 28 are folded along their common side edges with the tubular structure, such that the support panels are in a substantially parallel arrangement, so that the cushion member can be inserted into the carton, for example a rectangular carton. The nature of the paperboard or like material is resilient such that the stabilising panels 22/24 and 20/26 will tend to return to its original orientation with respect to the tubular structure in directions Y and Z (Figure 7) and thus when inserting the carton will frictionally engage the inside surface of the outer carton, shown in Figures 7 and 8.

[0037] In those cartons with top protecting structure 59, it is constructed by folding upper panels 60 and 64 out of alignment along fold line 70 to allow the tubular structure to be formed as shown in Figure 5. In order to close the top protection structure 59, gusset panel 68 is folded along fold lines 70 and 72 to be placed in overlapping face contacting relationship with the upper surface of panel 60 and thereafter the glue tab 74 is secured to the upper surface of panel 60 by glue or other suitable means known in the art. The completed top protection structure is shown in Figure 8 and the top 106 and end flaps 102 of the outer carton. C are folded over and secured in a closed form as is well known.

[0038] The third embodiment shown in Figure 3 is formed whereby the cushion member 201 is constructed first in a similar manner to the first embodiment described above whereby first and second side wall panels 212 and 214 are placed in face contacting relationship with third and fourth side wall panels 216, 218 and the glue flaps and/or central parts of the displaceable strips 249, 249a of the support structure are glued together as described above. The glue flap 226 is folded along the fold line 240 and glued to the inside surface of the first side wall panel 212. Thereafter, the panels forming the outer carton are folded about the cushion member in a wraparound fashion whereby panels 290, 292 are folded about fold line 300 into face contacting relationship with side panels 216 and 218 of the cushion member and panels 286 and 288 are folded about fold line 296 to come into face contacting relationship with the opposing side wall panels 212, 214 of the cushion member and is secured together by gluing end panel 286 to support panel 220 thereby to form the carton in a flat collapsed condition.

[0039] In order to construct the tubular structure and carton C, the end panels 286, 290 and the front and rear panels 288, 292 are separated to form a tubular structure which causes the cushion member side walls 212, 214 and 216, 218 to be separated. The support structure 249, 249a is automatically deployed in the manner described above so that an article A can be placed within the cushion member. Thereafter the top protection structure 259 is formed as described above and the base and top panels of the carton can be closed as is well known in the art. Thus there is provided a carton C substantially similar to that illustrated in Figure 8.

[0040] It is envisaged that the support structure 51; 151; 249, 249a of the invention can be automatically erected so as to act as a strut by employing configurations other than those described above, without departing from the scope of invention. For example, the support structure 51 need not be centrally positioned. The support structure strengthens the overall carton structure and assists in maintaining a tubular structure when for example the carton is stored on a supermarket shelf. The platform 48, 143 provides further support for the article contained within it.

[0041] Furthermore the support structure can be adapted so that the panels will tend to crumple for example in a vertical plane in the event of excessive or sudden movement of the article within the carton for example during transit, thereby to dissipate the forces, and reduce the risk the article will be damaged.

[0042] It will be recognised that as used herein, directional references such as "top", "base", "end", "side", "upper" and "lower" do not limit the respective panels to such orientation, but merely serve to distinguish these panels from one another. Any reference to hinged connection should not be construed as necessarily referring to a single fold line only: indeed it is envisaged that hinged connection can be formed from one or more of one of the following, a score line, a frangible line or a fold line, without departing from the scope of invention.

[0043] The present invention and it preferred embodiments relate to a carton and/or cushion member which is shaped to provide satisfactory rigidity to hold fragile items such as bottles securely but with a degree of flexibility. The shape of the blank minimises the amount of paperboard required for the carton. The carton can be constructed from a flat collapsed condition to a position of use by hand or automatic machinery. Furthermore, the base configured to act as a strut can be replaced by a strut formed from other panels of the carton and/or can include one or more struts without departing from the scope of invention.

Claims

1. A receptacle for packaging fragile articles comprising a plurality of side wall panels (12,14,16,18; 112,114,116,118;212,214,216,218) hinged together to form a collapsible upright tubular structure for receiving an article and an article support structure (51;151;251) at the lower end of the tubular structure for supporting the article, **characterised in that** the support structure comprises a plurality of displaceable strips (49,49a;149,149a;249,249a) secured together such that when the tubular structure is erected from a flat collapsed form, the displaceable strips are automatically displaced into the tubular structure to

form the support structure when the receptacle is formed.

2. The receptacle as claimed in claim 1 wherein at least one of the displaceable strips is provided along its upper edge with a foldable flap (48,48a;148,148a; 248,248a) for providing a platform for the article.

3. The receptacle as claimed in claim 1 or claim 2 wherein there comprises two pairs of mutually hinged side wall panels (112,114,116,118), each pair having a respective displaceable strip wherein the displaceable strips are interconnected.

4. The receptacle as claimed in claim 3 wherein the displaceable strips are partially connected along a common lower edge (184).

5. The receptacle as claimed in claim 3 wherein a portion of the displaceable strips are in face contacting relationship.

6. The receptacle as claimed in claim 5 wherein the support structure further comprises a pair of glue flaps (46,46a;146,146a;246,246a) to secure part of the displaceable strips together.

7. An article carrier comprising an outer carton (C) with opposing side and end walls and a receptacle as claimed in any one of claims 1 to 6.

8. A blank for forming a receptacle comprising two pairs of mutually hinged side wall panels (12,14,16,18; 112,114,116,118;212,214,216,218) to form a collapsible upright tubular structure for receiving an article (A) and an article support structure (51;151;251) at the lower end of the tubular structure for supporting the article, wherein each pair of side wall panels having a respective displaceable strip (49,49a; 149,149a;249,249a) for forming the support structure **characterised in that** the support structure further comprises a pair of glue flaps (46,46a;146,146a; 246,246a) to secure part of the displaceable strips together in a set up carton.

9. The blank as claimed in claim 8 wherein at least one of the displaceable strips is provided along its upper edge with a foldable flap (48,48a;148,148a; 248,248a) for providing a platform for the article in a set up condition.

10. The blank for forming an article carrier as claimed in claim 8 wherein the displaceable strips are partially connected along a common lower edge (184).

11. A blank for forming an article carrier comprising an outer carton (C) with opposing side and end walls and a receptacle as claimed in any one of claims 8 to 10.

Patentansprüche

1. Behältnis zum Verpacken zerbrechlicher Gegenstände, umfassend eine Vielzahl von Seitenwandflächen (12, 14, 16, 18; 112, 114, 116, 118; 212, 214, 216, 218), die gelenkig miteinander verbunden sind, um eine zusammenlegbare aufrecht stehende röhrenförmige Struktur auszubilden, um einen Gegenstand aufzunehmen, sowie eine Gegenstandsträgerstruktur (51; 151; 251) an dem unteren Ende der röhrenförmigen Struktur, um den Gegenstand zu tragen, **dadurch gekennzeichnet, dass** die Trägerstruktur eine Vielzahl von verschiebbaren Streifen (49, 49a; 149, 149a; 249, 249a) umfasst, die aneinander befestigt sind, so dass dann, wenn die röhrenförmige Struktur aus einer flachen zusammengelegten Form aufgerichtet wird, die verschiebbaren Streifen automatisch in die röhrenförmige Struktur verschoben werden, um die Trägerstruktur auszubilden, wenn das Behält nis ausgebildet wird.

2. Behältnis nach Anspruch 1, wobei wenigstens einer der verschiebbaren Streifen entlang dessen oberer Kante mit einer faltbaren Klappe (48, 48a; 148, 148a; 248, 248a) bereitgestellt ist, um eine Plattform für den Gegenstand bereitzustellen.

3. Behältnis nach Anspruch 1 oder Anspruch 2, wobei zwei Paare von gegenseitig gelenkig angebrachten Seitenwandflächen (112, 114, 116, 118) umfasst werden, wobei jedes Paar einen jeweiligen verschiebbaren Streifen aufweist, wobei die verschiebbaren Streifen miteinander verbunden sind.

4. Behältnis nach Anspruch 3, wobei die verschiebbaren Streifen entlang einer gemeinsamen unteren Kante (184) teilweise verbunden sind.

5. Behältnis nach Anspruch 3, wobei sich ein Abschnitt der verschiebbaren Streifen in einer flächenberührenden Beziehung befindet.

6. Behältnis nach Anspruch 5, wobei die Trägerstruktur ferner ein Paar von Klebeklappen (46, 46a; 146, 146a; 246, 246a) umfasst, um einen Teil der verschiebbaren Streifen miteinander zu befestigen.

7. Gegenstandsträger, der eine äußere Schachtel (C) mit gegenüberliegenden Seiten- und Endwänden umfasst, sowie ein Behältnis nach einem der Ansprüche 1 bis 6.

8. Zuschnitt zum Ausbilden eines Behältnisses, umfassend zwei Paare von gegenseitig gelenkig angebrachten Seitenwandflächen (12, 14, 16, 18; 112,

114, 116, 118; 212, 214, 216, 218), um eine zusammenlegbare aufrecht stehende röhrenförmige Struktur auszubilden, um einen Gegenstand (A) aufzunehmen, sowie eine Gegenstandsträgerstruktur (51; 151; 251) an dem unteren Ende der röhrenförmigen Struktur, um den Gegenstand zu tragen, wobei jedes Paar von Seitenwandflächen einen jeweiligen verschiebbaren Streifen (49, 49a; 149, 149a; 249, 249a) aufweist, um die Trägerstruktur auszubilden, **dadurch gekennzeichnet, dass** die Trägerstruktur ferner ein Paar von Klebeklappen (46, 46a; 146, 146a; 246, 246a) umfasst, um einen Teil der verschiebbaren Streifen in einer aufgerichteten Schachtel aneinander zu befestigen.

9. Zuschnitt nach Anspruch 8, wobei wenigstens einer der verschiebbaren Streifen entlang dessen oberer Kante mit einer faltbaren Klappe (48, 48a; 148, 148a; 248, 248a) bereitgestellt ist, um eine Plattform für den Gegenstand in einem aufgerichteten Zustand bereitzustellen.

10. Zuschnitt zum Ausbilden eines Gegenstandsträgers nach Anspruch 8, wobei die verschiebbaren Streifen entlang einer gemeinsamen unteren Kante (184) teilweise verbunden sind.

11. Zuschnitt zum Ausbilden eines Gegenstandsträgers, umfassend eine äußere Schachtel (C) mit gegenüberliegenden Seiten- und Endwänden sowie ein Behältnis, nach einem der Ansprüche 8 bis 10.

Revendications

1. Une boîte pour l'emballage d'articles fragiles comprenant une pluralité de panneaux de paroi latéraux (12,14,16,18; 112,114,116,118; 2.12,214,216,218) reliés de façon articulée entre eux pour former une structure tubulaire verticale repliable susceptible de recevoir, à l'extrémité inférieure de la structure tubulaire pour supporter l'article, un article et une structure (51;151;251) servant de support aux articles, **caractérisée en ce que** la structure de support comprend une pluralité de bandes amovibles (49,49a; 149,149a;249,249a) rattachées ensemble de telle manière que lorsque la structure tubulaire est assemblée à partir d'une forme plate repliable, les bandes amovibles sont automatiquement déplacées dans la structure tubulaire pour former la structure de support une fois la boîte montée.

2. La boîte selon la revendication 1 dans laquelle au moins une des bandes amovibles est prévue le long de son bord supérieur avec un rabat repliable (48,48a;148,148a;248,248a) qui sert de base pour les articles.

3. La boîte selon la revendication 1 ou revendication 2 dans laquelle il y a deux paires de panneaux de paroi latéraux reliés mutuellement de façon articulée (112,114,116,118), chaque paire possédant une bande amovible respective et dans laquelle les bandes amovibles sont interconnectées.

4. La boîte selon la revendication 3 dans laquelle les bandes amovibles sont partiellement connectées le long d'un bord inférieur commun (184).

5. La bande selon la revendication 3 dans laquelle une partie des bandes amovibles est assemblée par leurs faces correspondantes.

6. La boîte selon la revendication 5 dans laquelle la structure de support comporte en outre une paire de rabats adhésifs (46,46a;146,146a;246,246a) pour rattacher une partie des bandes amovibles ensemble.

7. Un porte-articles comprenant un carton extérieur (C) avec des parois latérales et d'extrémité opposées et une boîte selon l'une quelconque des revendications 1 à 6.

8. Une ébauche pour former une boîte comportant deux paires de panneaux de paroi latéraux reliés de façon articulée entre eux (12,14,16,18; 112,114,116,118;212,214,216,218) pour former une structure tubulaire verticale repliable et susceptible de recevoir un article (A) et une structure de support d'articles (51, 151 et 251), à l'extrémité inférieure de la structure tubulaire pour le support d'articles, dans laquelle chaque paire de panneaux de paroi latéraux a une bande amovible respective (49,49a;149,149a; 249,249a) pour former la structure de support, **caractérisée en ce que** la structure de support comprend en outre une paire de rabats adhésifs (46,46a; 146,146a; 246,246a) pour rattacher, dans une boîte en carton assemblée, une partie des bandes amovibles ensemble.

9. L'ébauche selon la revendication 8 dans laquelle au moins une des bandes amovibles est prévue le long de son bord supérieur avec un rabat repliable (48,48a;148,148a;248,248a) qui, une fois assemblée, sert de base aux articles.

10. L'ébauche pour former un porte-articles selon la revendication 8 dans laquelle les bandes amovibles sont partiellement connectées le long du bord inférieur commun (184).

11. Une ébauche pour former un porte-articles comportant un carton extérieur (C) avec les parois latérales et d'extrémité opposées et une boîte selon l'une quelconque des revendications 8 à 10.

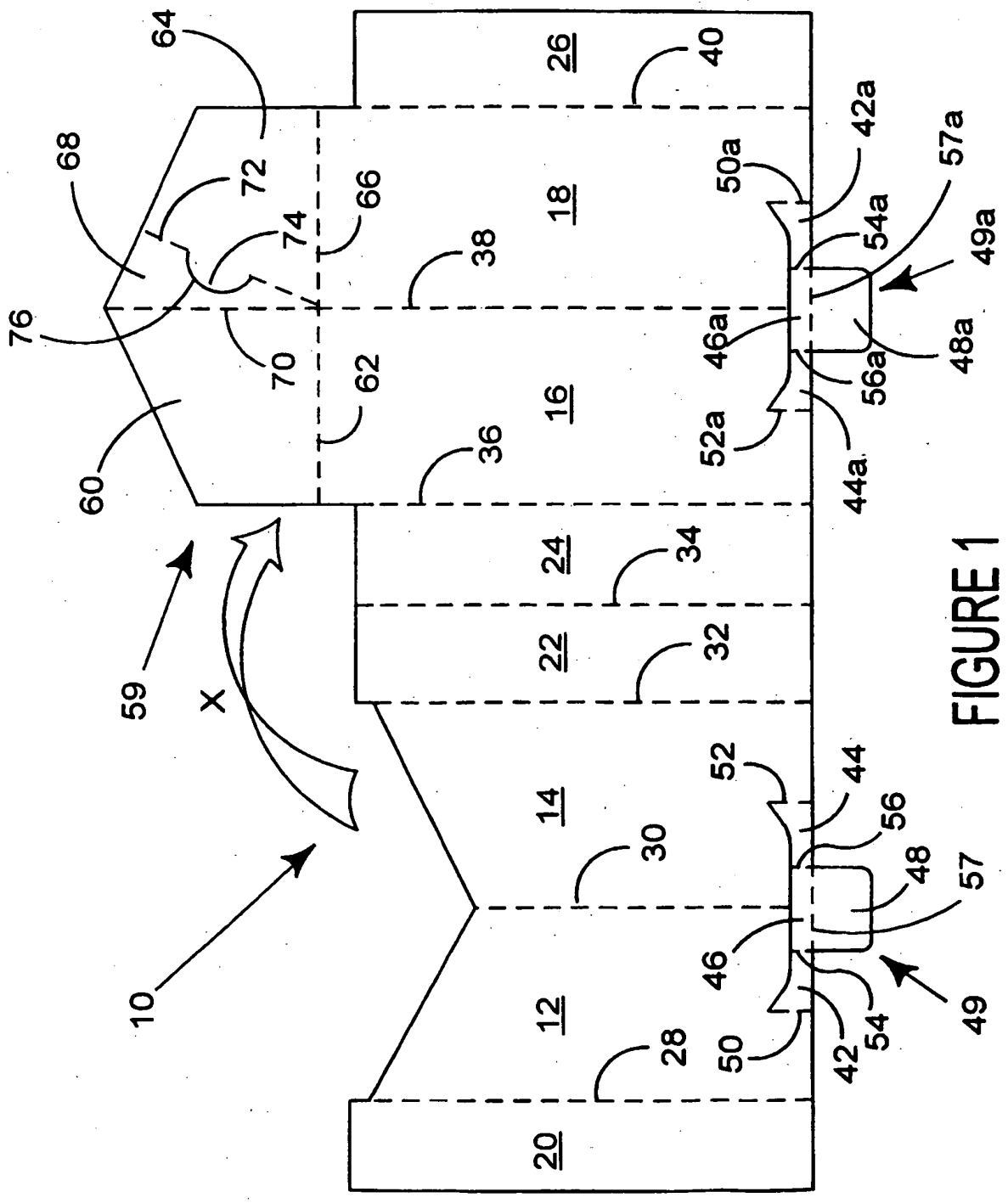

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X
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26
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24
34
22
32
14
30
12
28
20
42a
50a
57a
54a
49a
46a
48a
56a
52a
44a
52
44
56
48
57
46
50
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54
49

FIGURE 1

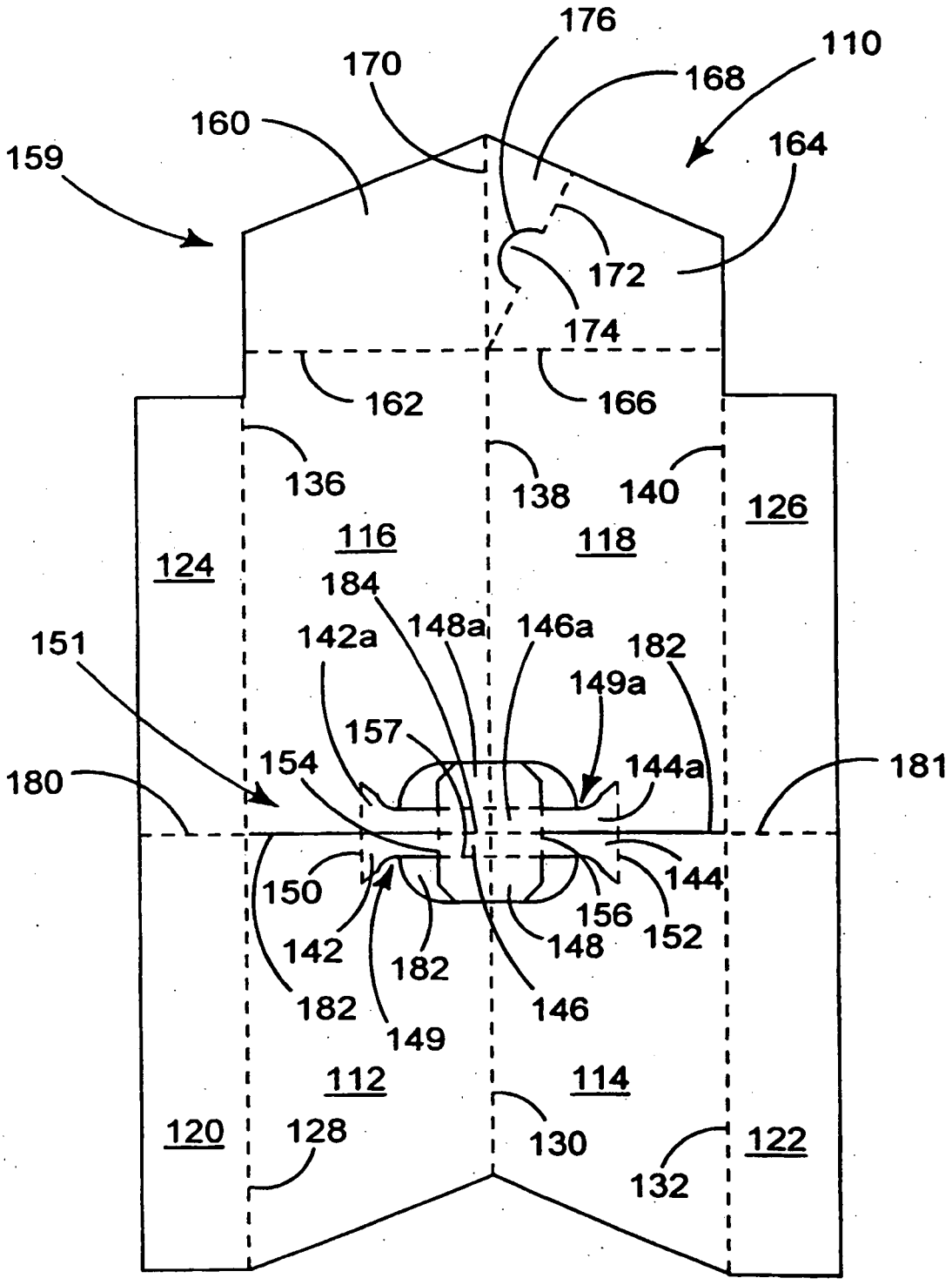

176
110
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168
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174
162
166
136
138
140
126
116
118
124
184
148a
146a
142a
182
151
149a
157
144a
181
154
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182
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146
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132

FIGURE 2

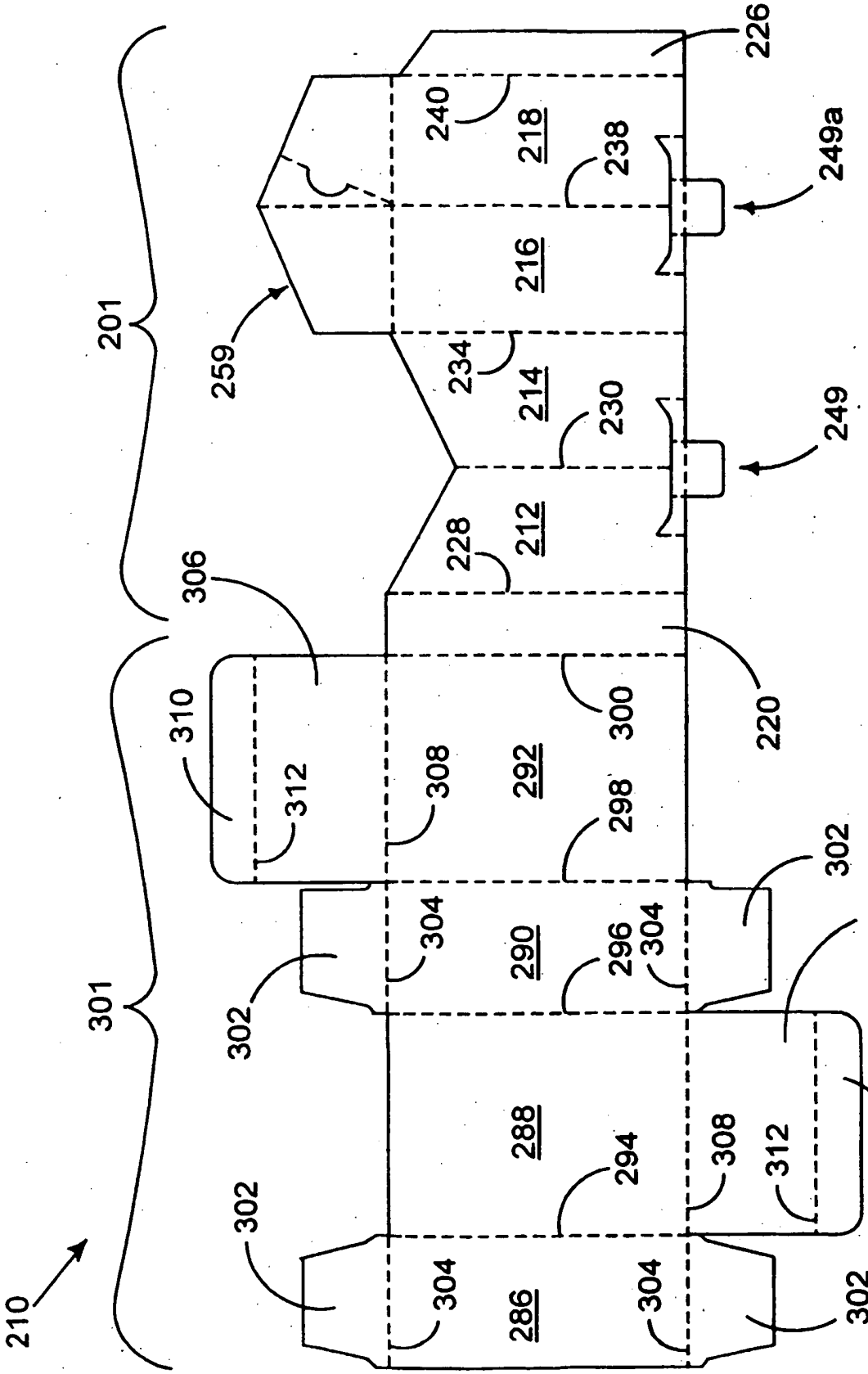

210
201
301
259
226
240
218
238
249a
216
234
214
230
249
228
212
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220
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292
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302

FIGURE 3

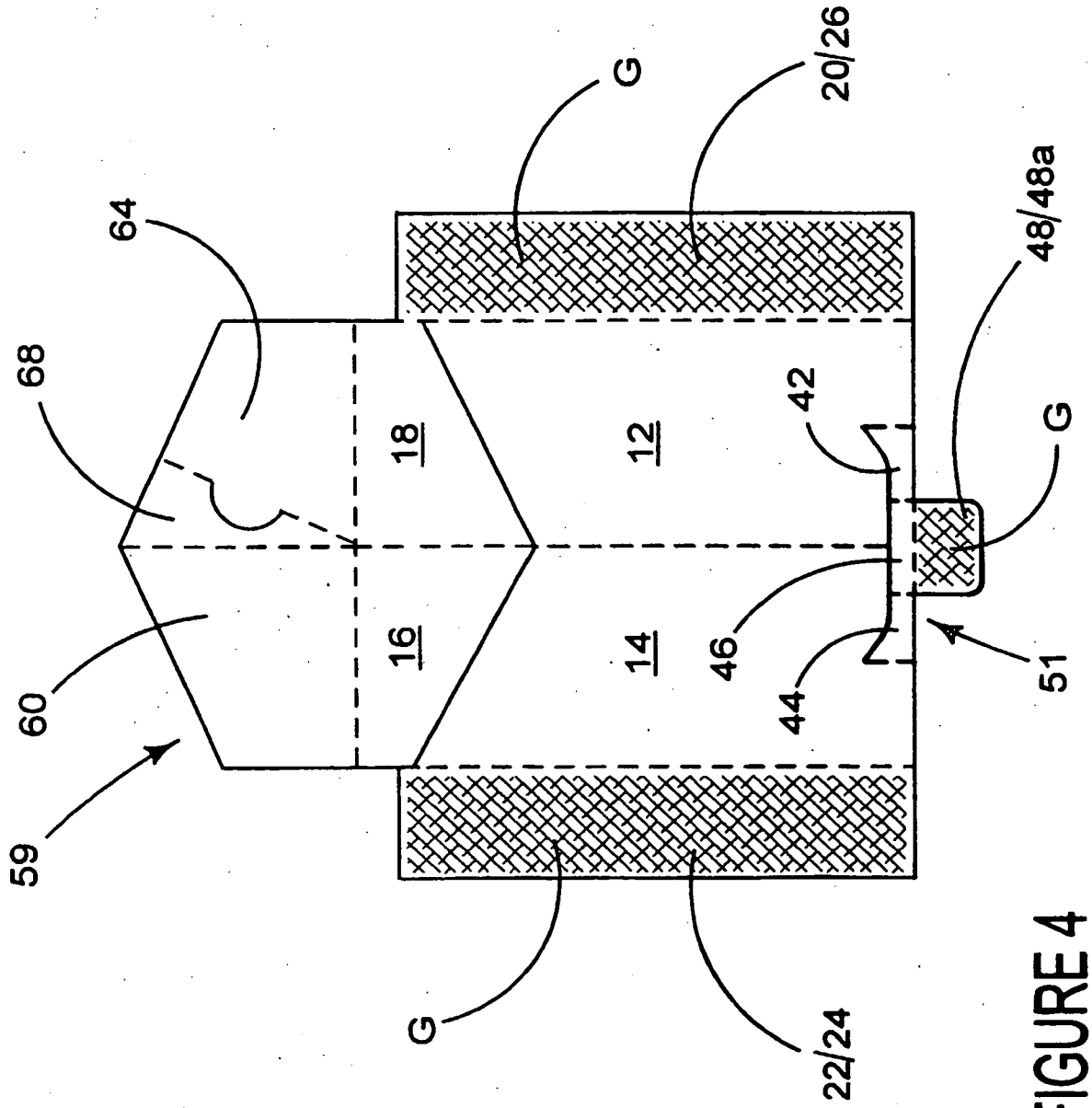


FIGURE 4

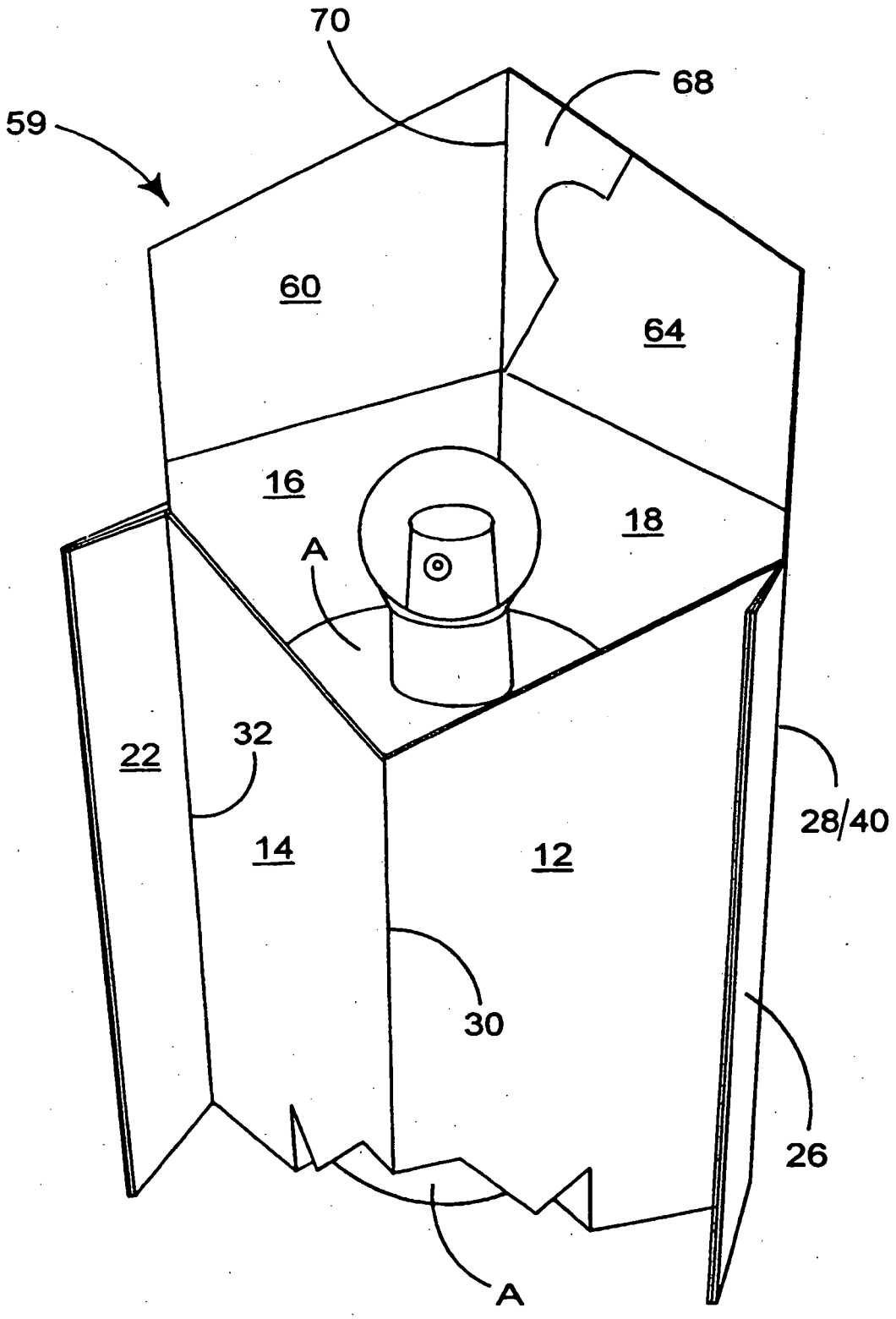


FIGURE 5

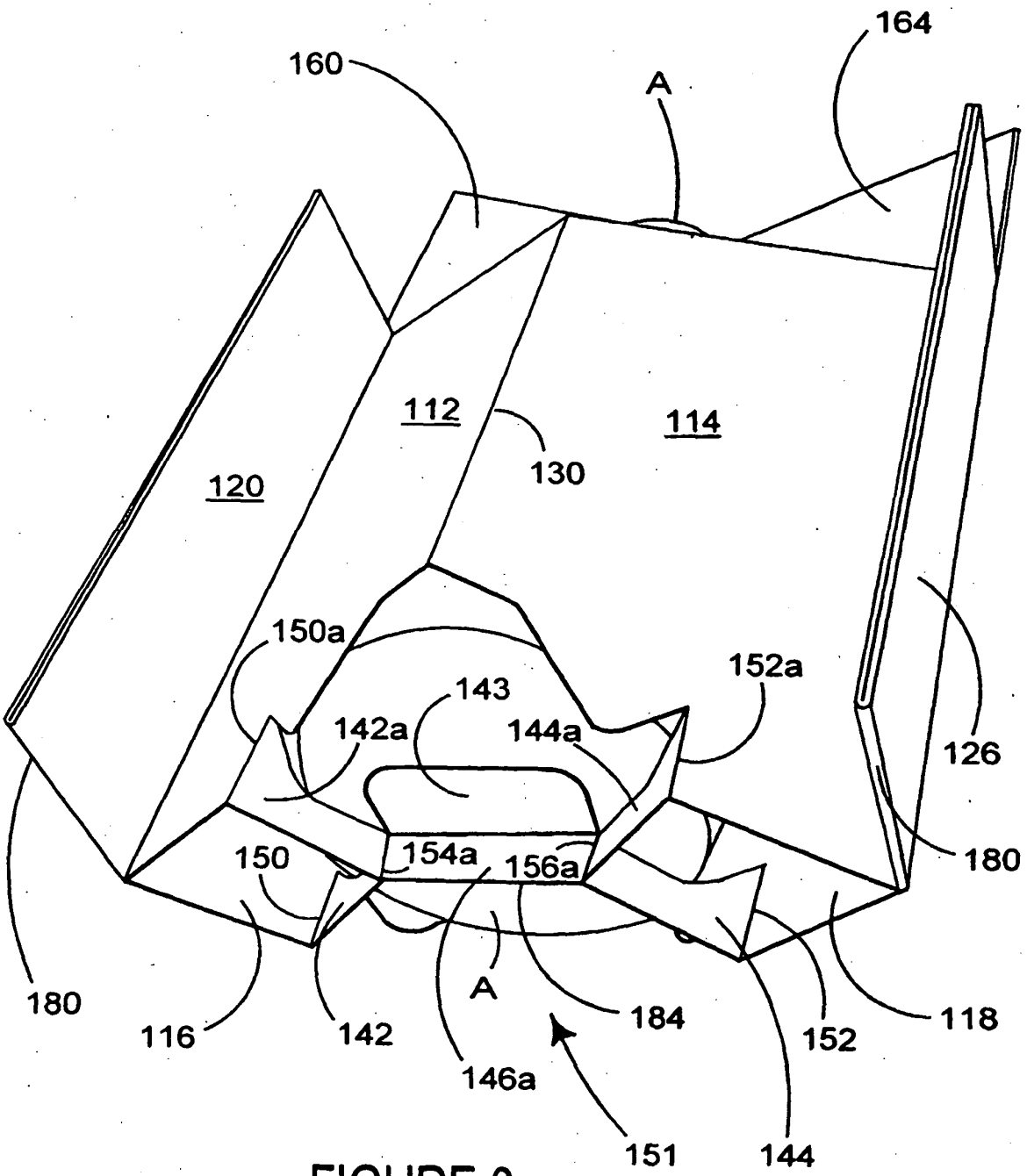

164
160
A
112
114
130
120
150a
152a
143
142a
144a
126
180
150
154a
156a
180
A
116
142
184
152
118
146a
151
144

FIGURE 6

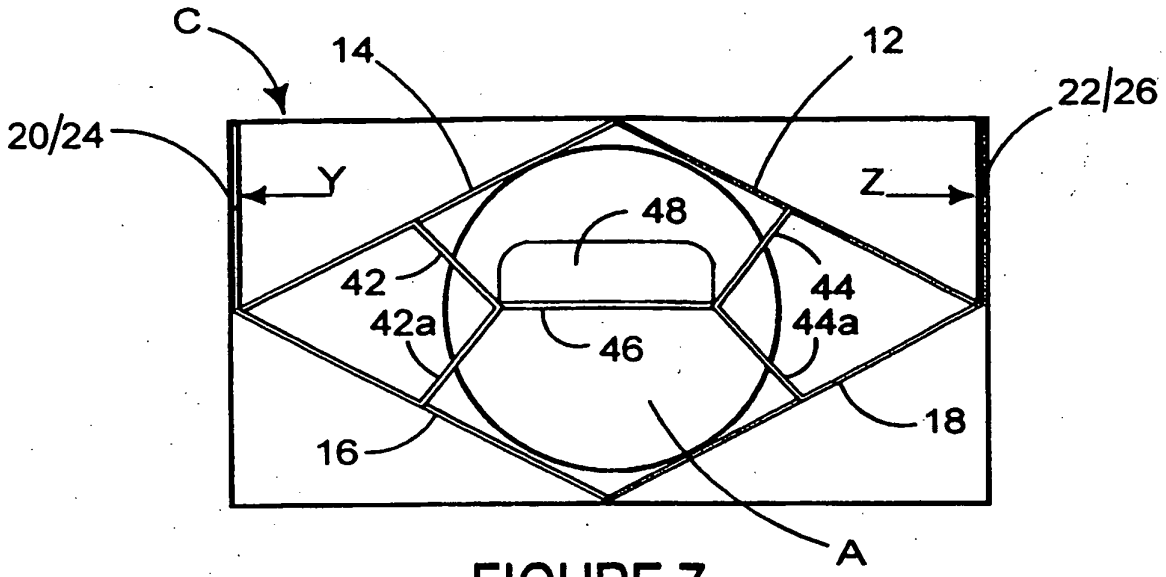


FIGURE 7

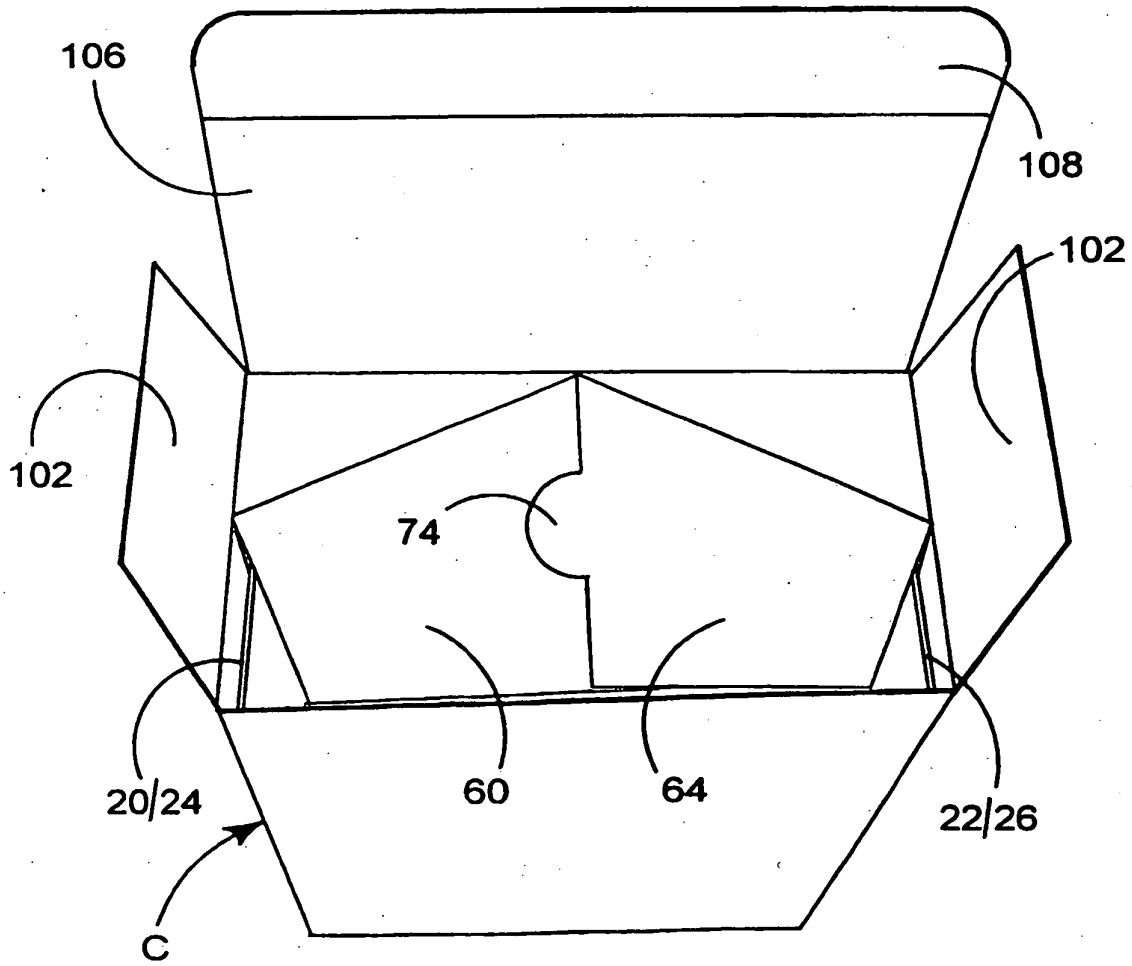


FIGURE 8

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- US 4114796 A **[0002]**
- US 2643814 A, Bradley **[0003]**