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ARTICLE CARRIER

The invention relates to a carton which is used for packaging a plurality of articles, for example bottles, which vary in size from one another. More particularly, the invention relates to a carton of the top gripping type which attaches to the tops of articles thereby to secure the articles in an array. It is known to provide top gripping cartons for articles of the same size. Accordingly, the carton can be formed to a regular shape. For articles of different sizes and shapes, a problem with top gripping cartons is that the carton itself must be irregularly shaped. In addition, rigidity and strength must be maintained to support the articles.

One aspect of the invention provides an article carrier of the top gripping type for accommodating a plurality of differently sized articles, for example bottles, which carton comprises a first and second side panel and a base panel interconnecting the side panels to form a plurality of aligned tubular sections, each adapted to accommodate one article, wherein said first panel has a plurality of apertures and the second panel has corresponding apertures in registry with respective ones of those apertures from the first panel and wherein at least one edge of each corresponding pair of apertures of the first and second panel is adapted operatively to engage a neck portion of an article extending through said base panel characterised in that portions of said first and second side panels are connected together in a face to face relationship so that each of the aligned tubular sections are sized to accommodate a respective one of said articles and in that said base panel has a plurality of apertures of different sizes to receive correspondingly differently sized articles.



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In one feature of the invention each tubular section may be of a different size relative to a next adjacent tubular section.

5 In a further feature of the invention the first and/or second side panels may extend beyond said tubular sections and the handle means may be incorporated into the extension of the first and/or second side panel.

10 Another aspect of the invention provides an article blank for forming an article carrier of the top gripping type which blank comprises a first and second side panel each having a plurality of apertures and a base panel having a plurality of apertures hinged to and interconnecting said first and second side panels so that the apertures of the first side panel can be brought into
15 registry with corresponding apertures of the second side panel when the blank is set up characterised in that complementary portions of each of said side panels are displaceable out of the plane of adjacent portions thereof so that the blank can be formed into a carrier suitable
20 for carrying articles of different sizes.

In one feature of this aspect of the invention a further reinforcing side panel may be hinged to one of the first or second side panels and which substantially corresponds to that first or second side panel.

25 In another feature at least some of the apertures of said base panel may vary in size in relation to one another.

30 An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-

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FIGURE 1 is a plan view of a carton blank according to one embodiment of the invention;

FIGURE 2 shows a carton formed from a blank as shown in Figure 1.

5 Referring now to Figure 1, there is shown a carton blank 10 for forming a top gripping carton and made from paperboard or similar foldable sheet material. The blank comprises a first panel 12, a base panel 14 and a second panel 16 hingably connected one to the next along fold lines 30 and 32 respectively. Foldably connected to second panel 16 along fold line 34 is outer reinforcing panel 18.

15 First panel 12 comprises apertures 50 positioned in opposing outer sections and a single aperture 52 positioned centrally. Aperture 52 is shaped to include handle tab 20 which is foldably connected along fold line 100. Extending laterally through apertures 50 and along the free edge of handle tab 20, from one edge of first panel 12 to the opposing edge is fold line 36. Located on 20 either side of aperture 52 in diametrically opposed positions are cut-out sections 54 which extend from fold line 36 to beyond fold line 30. A further fold line 68 extends between the end points of cut-out sections 54 to coact with fold line 30. The cut-out sections 54 25 facilitate a folding action when the carton is set up. Positioned between cut-outs 54 and passing through aperture 52 is fold line 38.

30 As illustrated in Figure 1, base panel 14 is formed with a row of three substantially circular apertures 56 and 58. When the carton is set up, apertures 56 accommodate bottles of larger diameter than a bottle supported by aperture 58. Extending laterally from one edge of base panel 14 to the opposing edge is fold line 40

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which also passes through the central portions of apertures 56 and 58.

Second panel 16 comprises apertures 60 positioned in opposing outer sections and a single aperture 62 positioned centrally. Aperture 62 is shaped to include handle tab 22 which is foldably connected along fold line 102. Extending laterally through apertures 60 and along the free edge of handle tab 22 from one edge of second panel 16 to the opposing edge are three fold lines 42. Located on either side of aperture 62 in diametrically opposed positions are cut lines 72 which extend from fold lines 42 to beyond fold line 32. A further fold line 70 extends between the end points of cut line 60 to coact with fold line 32. Positioned between cut lines 72 and passing through aperture 62 is fold line 44.

The outer first panel 18 comprises apertures 64 positioned in opposing outer sections and aperture 66 positioned centrally. Aperture 66 is shaped to include handle tab 24 which is foldably connected along fold line 104. Extending laterally through apertures 64 and along the free edge of handle tab 24 from one edge of the outer first panel 18 to the opposing edge are three fold lines 46. Located on either side of aperture 66 in diametrically opposed positions are cut lines 74 which extend from fold lines 46 to the outer edge of panel 18 being shaped accordingly. Positioned between cut lines 74 and passing through aperture 66 is fold line 48.

Tabs 26 are frangibly connected to first panel 12 between apertures 50 and 56 and apertures 52 and 58 respectively.

Tabs 28 are frangibly connected from apertures 64 and 66 to the free edge of outer first panel 18. When

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the carton is in set up condition tabs 26 are in registry with corresponding tabs 28 in a face to face relationship.

Figure 2 illustrates the carton in a substantially set up condition. The carton is constructed by folding first panel 12 and base panel 14 along fold line 30 and second panel 16 and base panel 14 along fold line 32 to form a triangular relationship between the first, second and base panels. Outer reinforcing panel 18 is then folded along fold line 34 so that a face to face relationship is formed with first panel 12 and apertures 64 and 66 are in registry with apertures 50 and 52 respectively. Panels 12 and 18 are connected together by means of glue or other suitable means known in the art.

The portion of first panel 12 between fold line 36 and its free edge is connected to the corresponding portion of the second panel 16 between fold lines 34 and 42 in a face to face relationship using glue or other suitable means so that apertures 50, 52 and 60, 62 are in registry with one another.

The portion of first panel 12 between fold lines 36 and 38 is connected to the corresponding portion of second panel 16 between fold lines 42 and 44 in a face to face relationship by glue or other suitable means.

By connecting the above mentioned panels together, the carton is maintained in a set up condition with keel structure K, as shown in Figure 2. The keel structure K contains three discrete tubular sections for different sized bottles B. Articles are inserted through the support apertures 56 and 58 until the lower edges of apertures 50, 52, 60, 62, 64 and 66 come into contact with the underside of the respective bottle B tops or flanges thereby holding the articles in position.

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The present invention and its preferred embodiment relate to a carton shaped to provide sufficient rigidity and by forming a double layer of board where strength is required. The shape of the blank ensures a
5 minimum width is used which reduces the amount of board required. This carton can be applied to an array of bottles by hand or by automatic machinery.



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CLAIMS

1. An article carrier of the top gripping type for accommodating a plurality of differently sized articles, for example bottles, which carton comprises a first and second side panel and a base panel interconnecting the side panels to form a plurality of aligned tubular sections, each adapted to accommodate one article, wherein said first panel has a plurality of apertures and the second panel has corresponding apertures in registry with respective ones of those apertures from the first panel and wherein at least one edge of each corresponding pair of apertures of the first and second panel is adapted operatively to engage a neck portion of an article extending through said base panel characterised in that portions of said first and second side panels are connected together in a face to face relationship so that each of the aligned tubular sections are sized to accommodate a respective one of said articles and in that said base panel has a plurality of apertures of different sizes to receive correspondingly differently sized articles.
2. An article carrier according to claim 1 wherein each tubular section is of a different size relative to a next adjacent tubular section.
3. An article carrier according to claims 1 or 2 wherein the first and/or second side panels extend beyond said tubular sections and wherein handle means is incorporated into the extension of the first and/or second side panel.
4. An article carrier blank for forming an article carrier of the top gripping type which blank comprises a first and second side panel each having a plurality of apertures and a base panel having a plurality of apertures hinged to and interconnecting said first and second side panels so that the apertures of the first side panel can be brought into registry with corresponding apertures of the second side

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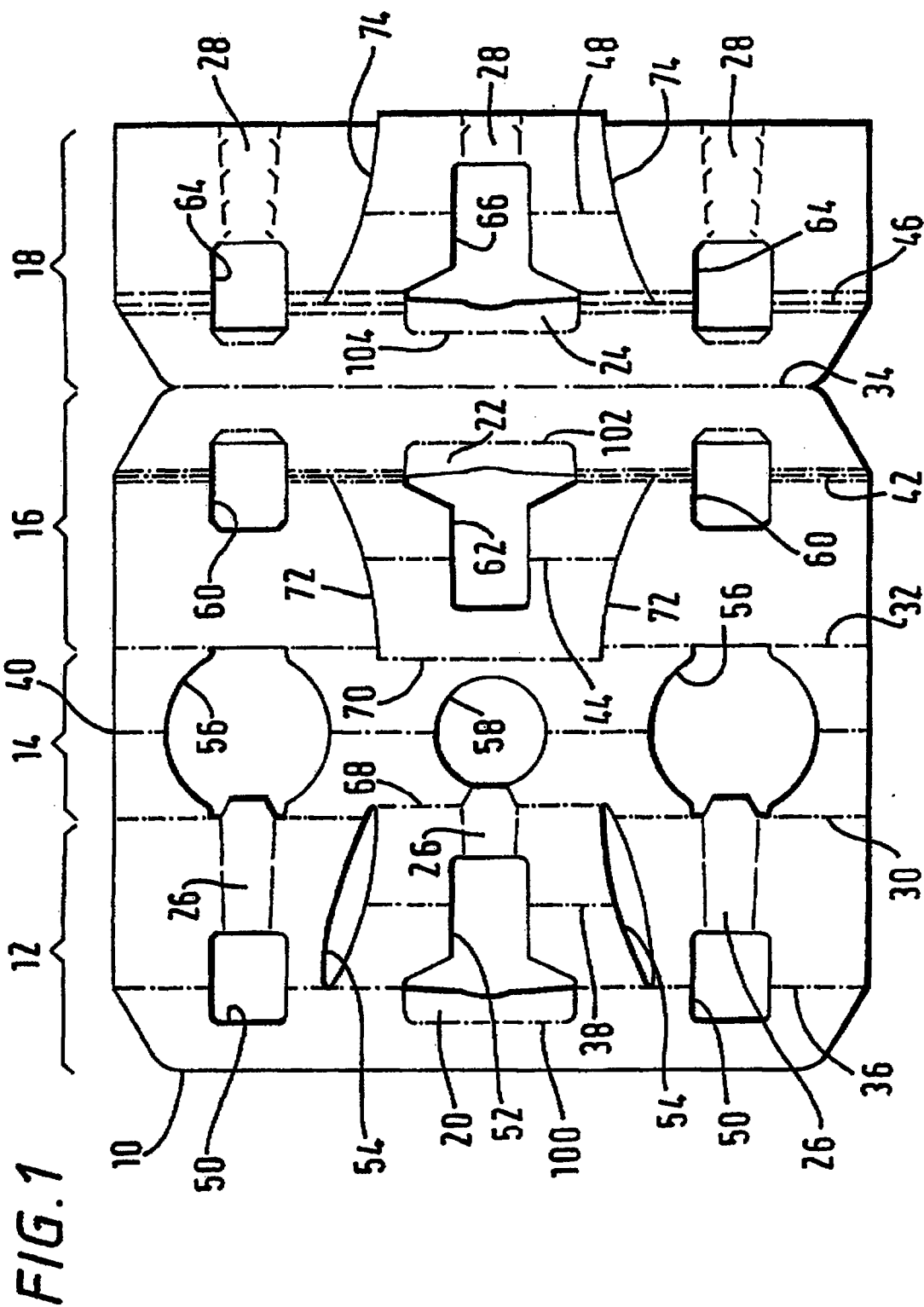
panel when the blank is set up characterised in that complementary portions of each of said side panels are displaceable out of the plane of adjacent portions thereof so that the blank can be formed into a carrier suitable for carrying articles of different sizes.

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5. A blank according to claim 4 further comprising a further reinforcing side panel hinged to one of the first or second side panels and which substantially corresponds to that first or second side panel.
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6. A blank according to claim 4 or claim 5 wherein at least some of the apertures of said base panel vary in size in relation to one another.

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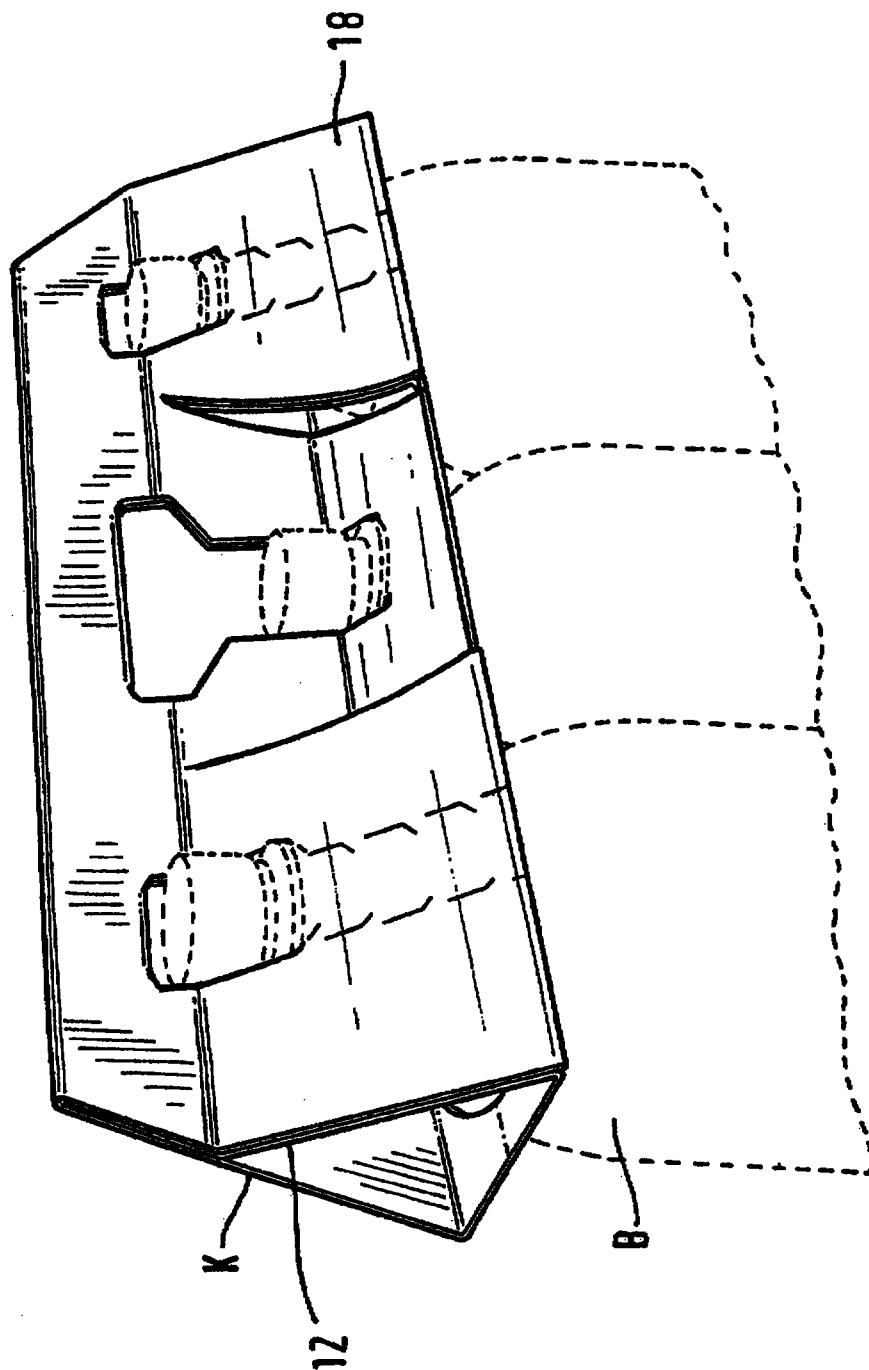


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FIG. 2



ARTICLE CARRIER

The invention relates to a carton which is used for packaging a plurality of articles, for example bottles, which vary in size from one another. More particularly, the invention relates to a carton of the top gripping type which attaches to the tops of articles thereby to secure the articles in an array. It is known to provide top gripping cartons for articles of the same size. Accordingly, the carton can be formed to a regular shape. For articles of different sizes and shapes, a problem with top gripping cartons is that the carton itself must be irregularly shaped. In addition, rigidity and strength must be maintained to support the articles.

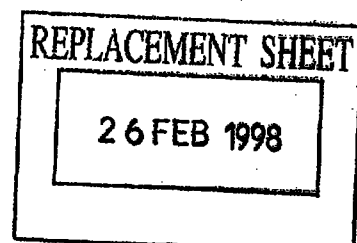
One aspect of the invention provides an article carrier of the top gripping type for accommodating a plurality of differently sized articles, for example bottles, which carton comprises a first and second side panel and a base panel interconnecting the side panels to form a plurality of aligned tubular sections, each adapted to accommodate one article, wherein said first panel has a pair of apertures and the second panel has corresponding apertures in registry with respective ones of those apertures from the first panel and wherein at least one edge of each corresponding pair of apertures of the first and second panel is adapted operatively to engage and support a neck portion of an article extending through said base panel characterised in that at least one tubular section is of a different size relative to a next adjacent tubular section.

In one feature of this aspect of the invention a portion of the base of said at least one tubular section is a different size relative the adjacent portion of the base of said adjacent tubular section.

In another feature of this aspect of the invention, the side panels of said at least one tubular section may be a different size relative to the side panels of said adjacent tubular structure.

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In a further feature of this aspect of the invention, the said at least one tubular section and said adjacent tubular section may be connected together by the base panel.

Preferably, the portions of the first and second panels are connected together in a face to face relationship so that each of the aligned tubular sections are sized to accommodate a respective one of said articles. Optionally, said base panel has a plurality of apertures of different sizes to receive correspondingly differently sized articles.

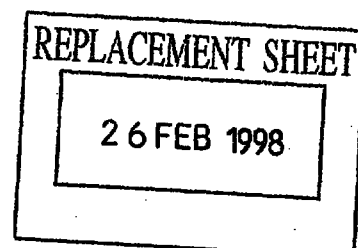
In a further feature of this aspect of the invention, the first and/or second side panels may extend beyond said tubular sections and wherein handle means is incorporated into the extension of the first and/or second side panel.

In another feature of this aspect of the invention the said at least one and said adjacent tubular sections may be connected together by said handle structure.

Another aspect of the invention provides an article blank for forming an article carrier of the top gripping type which blank comprises a first and second side panel each having a plurality of apertures and a base panel having a plurality of apertures hinged to and interconnecting said first and second side panels so that the apertures of the first side panel can be brought into registry with corresponding apertures of the second side panel when the blank is set up characterised in that complementary portions of each of said side panels are displaceable out of the plane of adjacent portions thereof so that the blank can be formed into a carrier suitable for carrying articles of different sizes.

In one feature of this aspect of the invention a further reinforcing side panel may be hinged to one of the first or second side panels and which substantially corresponds to that first or second side panel.

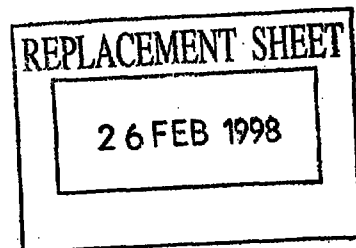
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In another feature at least some of the apertures of said base panel may vary in size in relation to one another.

An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:-



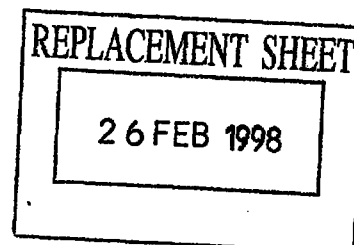
CLAIMS



1. An article carrier of the top gripping type for accommodating a plurality of differently sized articles, for example bottles, which carton comprises a first and second side panel (12, 16) and a base panel (14) interconnecting the side panels to form a plurality of aligned tubular sections, each adapted to accommodate one article, wherein said first panel has a pair of apertures (50, 52) and the second panel has corresponding apertures in registry (60, 62) with respective ones of those apertures from the first panel and wherein at least one edge of each corresponding pair of apertures of the first and second panel is adapted operatively to engage and support a neck portion of an article B extending through said base panel characterised in that at least one tubular section is of a different size relative to a next adjacent tubular section.
2. A carrier as claimed in claim 1 wherein a portion of the base of said at least one tubular section is a different size relative the adjacent portion of the base of said adjacent tubular section.
3. A carrier as claimed in claim 1 or claim 2 wherein the side panels of said at least one tubular section is a different size relative the side panels of said adjacent tubular structure.
4. An article carrier as claimed in any of claims 1 to 3 wherein said at least one tubular section and said adjacent tubular section are connected together by the base panel (14).
5. An article carrier as claimed in any preceding claim wherein portions of the first and second side panels (12, 16) are connected together in a face to face relationship so that each of the aligned tubular sections are sized to accommodate a respective one of said articles (B).

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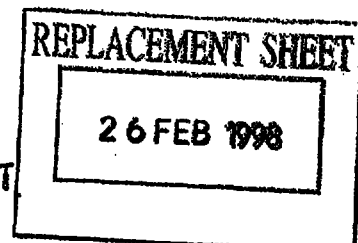




6. An article carrier according to any preceding claim wherein said base panel (14) has a plurality of apertures (6, 58) of different sizes to receive correspondingly differently sized articles.
7. An article carrier according to any preceding claim wherein the first and/or second side panels (12, 16) extend beyond said tubular sections and wherein handle means is incorporated into the extension of the first and/or second side panel.
8. An article carrier as claimed in Claim 7 wherein said at least one and said adjacent tubular sections are connected together by said handle structure.
9. An article carrier blank for forming an article carrier of the top gripping type which blank comprises a first and second side panels (12, 16) each having a plurality of apertures (50, 52; 60, 62) and a base panel (14) having a plurality of apertures (52, 58) hinged to and interconnecting said first and second side panels so that the apertures of the first side panel can be brought into registry with corresponding apertures of the second side panel when the blank is set up characterised in that complementary portions of each of said side panels (12, 16) are displaceable out of the plane of adjacent portions thereof so that the blank (10) can be formed into a carrier suitable for carrying articles of different sizes.
10. A blank according to claim 7 further comprising a further reinforcing side panel (18) hinged to one of the first or second side panels and which substantially corresponds to that first or second side panel.
11. A blank according to claim 7 or claim 8 wherein at least some of the apertures (56, 58) of said base panel vary in size in relation to one another.

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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : B65D 71/46 ✓	A1	(11) International Publication Number: WO 97/25257 ✓ (43) International Publication Date: 17 July 1997 (17.07.97)
(21) International Application Number: PCT/US97/00745 ✓ (22) International Filing Date: 9 January 1997 (09.01.97) ✓ (30) Priority Data: 9600366.0 ✓ 9 January 1996 (09.01.96) ✓ GB (71) Applicant (for all designated States except US): THE MEAD CORPORATION [US/US]; Courthouse Plaza, Northeast, Dayton, OH 45463 (US). ✓ (72) Inventor; and (75) Inventor/Applicant (for US only): GARNIER, Jean-Michel [FR/FR]; 3 ter, rue Notre-Dame, F-36100 Issoudun (FR). ✓ (74) Agents: DREW, Michael, V. et al.; The Mead Corporation, 4850D North Church Lane, Smyrna, GA 30380 (US). ✓		(81) Designated States: AU, BR, BY, CA, CN, CZ, EE, FI, HU, IL, JP, KE, KR, LT, LV, MX, NO, NZ, PL, RO, RU, SE SK, TR, US, VN, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published With international search report.
(54) Title: ARTICLE CARRIER ✓ (57) Abstract ✓ A top-gripping article carrier which can accommodate different sized articles such as bottles (B) has side panels (12, 16, 18) and a base panel (14) foldably adjoining one another which are formed into a keel (K) formed by a plurality of aligned tubular sections. The side panels (12, 16, 18) each have groups of apertures (50, 52, 60, 62, 64, 66) that correspond to and are disposed in registry with one another in the erected carton. Portions of the side panels are connected together in face to face relationship so that each of the aligned tubular sections are sized to accommodate a respective one of said articles.		