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(54) **A TRAY CONTAINER AND BLANK**

SCHALE UND ZUSCHNITT

RECIPIENT FORMANT PLATEAU ET DECOUPE

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(56) References cited:
**DE-C- 906 404 FR-A- 914 213
US-A- 3 734 391 US-A- 3 910 483**

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Description

[0001] The present invention relates to a carton (or tray) for accommodating an article, for example foodstuff or the like formed from a unitary blank of paperboard or other suitable material and more particularly to a corner arrangement for retaining liquid from the foodstuff.

[0002] Commonly, trays are formed from plastics material, for example polystyrene.

[0003] It is also known from WO 93/15962 to provide a fluid tight packaging tray formed from cardboard comprising a single base panel surrounded by side and end wall structures and connected by an enclosure arrangement to maintain a foodtight seal and to prevent liquid from rising by capillarity.

[0004] US 3 734 391 (Manizza) discloses an article carrier for holding foodstuff or the like comprising a base panel, side panels and end panels and a corner arrangement for retaining liquid foodstuff in the article carrier. The corner arrangement comprises a tab hinged to the adjacent side and end panels. The tab is folded to span the side and end panels to inhibit egress of fluid from the base panel at each corner of the carrier

[0005] The present invention and its preferred embodiment seeks to overcome or at least mitigate the problems of the prior art.

[0006] A first aspect of the invention provides a tray for holding foodstuff or the like comprising a base panel, side panels and end panels and a corner arrangement at each corner of the tray for retaining liquid foodstuff in the tray, which corner arrangement comprises securing means for securing together the adjacent side and end panels, and a deformable portion hinged to the adjacent side and end panels between the base panel and the securing means, the deformable portion deformed when the tray is erected to provide a ply of material spanning the side and end panels to inhibit egress of fluid from the base panel at each corner of the carrier. The deformable portion is folded to form an outwardly protruding anchor at each of said corners to anchor a stretch film applied to the tray. Preferably, the deformable portion may be hingedly connected to the adjacent side panel by a fold line in an obtuse angular relationship with the fold line connecting the end panel and base panel.

[0007] An advantage of the carton (or tray) of the first or second aspects of the invention is that a leak proof corner arrangement is provided with a simple folding arrangement to minimise the "folding process" time.

[0008] According to an optional feature of this aspect of the invention the securing means may comprise a flap hingably connected to one of the side and end panels and foldable to be superposed with the other side and end panels to be secured therewith, which flap is severed from the deformable portion.

[0009] According to another optional feature of this aspect of the invention the deformable portion may be provided by a gusset panel.

[0010] According to another optional feature of this aspect of the invention the deformable portion may comprise an anchoring element to receive and retain the film applied to the tray to seal the package.

[0011] A second aspect of the invention provides a blank for forming an article carrier for holding foodstuff or the like comprising a base panel, side panels and end panels and a corner arrangement for retaining liquid foodstuff in the tray, which corner arrangement comprises securing means for securing together the adjacent side and end panels, and a deformable portion hinged to the adjacent side and end panels between the base panel and the securing means. The deformable portion is capable of being deformed when the tray is erected to provide a ply of material protruding outwardly and spanning the side and end panels to inhibit egress of fluid from the base panel at each corner of the erected carrier.

[0012] Preferably, the deformable portion may be hingedly connected to the adjacent side panel by a fold line in an obtuse angular relationship with the fold line connecting the end panel and base panel.

[0013] According to an optional feature of the second aspect of the invention the securing means may comprise a flap hingedly connected to one of the side and end panels and foldable to be superposed with the other side and end panels to be secured therewith, which flap is severed from the deformable portion.

[0014] According to another optional feature of the second aspect of the invention the deformable portion may be provided by a gusset panel.

[0015] Embodiments of the invention will now be described by way of example only by reference to the accompanying drawings in which:

FIGURE 1 is a plan view of the corner arrangement of a blank for forming a carton or tray according to a preferred embodiment of the invention;

FIGURES 2, 3, 4 and 5 illustrate the steps during construction of the corner arrangement from a blank shown in Figure 1;

FIGURE 6 is an isometric illustration of a corner arrangement fully closed and sealed; and

FIGURE 7 is an isometric illustration of a carton formed incorporating the corner arrangement illustrated in Figure 6.

[0016] Referring first to Figure 1 there is illustrated part of a blank 10 for forming a collapsible tray or carton made from a unitary blank of paperboard or similar foldable sheet material and adapted to hold foodstuff or the like. The tray includes a corner arrangement for retaining liquid from the foodstuff which corner arrangement comprises securing means 22 for securing together a side panel 14 and an end panel 18 of the tray and at

least one tab 30 foldably interconnecting said side panel and end panel, which tab is adapted to protrude outwardly of said comer arrangement.

[0017] More particularly, there is shown in Figure 1, a portion of the base panel 12, and a side panel 14 hingably connected to base panel 12 along fold line 16. There further comprises part of an end panel 18 hingably connected to base panel 12 along fold line 20.

[0018] In this embodiment, securing means 22 comprises a securing flap 24 hingably connected to end panel 18 along fold line 25. As shown in Figure 1, securing flap 24 is positioned adjacent side panel 14 being contiguous therewith and separated by cut line 26. Cut line 26 terminates short of the intersection of fold lines 16, 20 and 25 and is connected to a second cut line 28. Cut line 28 is substantially arcuate in shape and terminates at fold line 25. Thus, a tab 30 is defined by an extension of side panel 14, and by cut line 28 and fold line 25.

[0019] Turning to the construction of the tray, shown in Figures 2 to 7, side panel 14 is folded in direction "X" about fold line 16 into a substantially perpendicular relationship with base panel 12. Thus, securing flap 24 and tab 30 are moved out of alignment, as shown in Figure 2. Thereafter, end panel 18 is folded in direction "Y" about fold line 20 into a substantially perpendicular relationship with base panel 12, shown in Figures 3 and 4. It will be seen that the folding action of end panel 18 causes tab 30 to be compressed and pushed outwardly from the comer between side panel 14 and end panel 18, as shown in Figure 4.

[0020] Thereafter, the securing flap 24 is folded in direction "Z" about fold line 25 into face contacting relationship with side panel 14 and is secured thereto by glue or other suitable means known in the art. Thus, the comer arrangement is in a complete set up form with tab 30 protruding outwardly as shown in Figures 5 and 6. The remaining corner arrangements are set up in like fashion such that the carton or tray is erected and ready to receive one or more articles, as shown in Figure 7.

[0021] It is envisaged that the carton of the present invention could 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 above and can be altered to particular manufacturing requirements.

[0022] Thereafter the article or foodstuff is loaded from above into the tray or carton and stretch film can be applied to the tray to seal the package. The shape of tab 30 defined by cut line 28 defines an anchor member 32, shaped to receive a portion of the stretch film applied to the tray to seal the package. Thus, the anchoring of the film by the tray is improved.

[0023] It is envisaged that the shape of free edge 34 of tab 30 can be changed to incorporate a different design of anchor member 32, for example a barb, without departing from the scope of invention.

[0024] The present invention and its preferred embodiment relates to an article carrier and more particularly a comer arrangement which is shaped to provide satisfactory rigidity to retain the tray and/or stretch film in a set up condition. The shape of the blank minimises the amount of paperboard required for the carton. The items can be applied to the carrier by hand or by automatic machinery. It is anticipated that the invention can be applied to a variety of cartons and not limited to those of a tray like sort. For example, the flat tray structure could be replaced by a structure with longer side and end panels to receive larger articles without departing from the scope of invention.

Claims

1. A tray for holding foodstuff or the like comprising a base panel (12), side panels (14) and end panels (18) and a comer arrangement at each corner of the tray for retaining liquid foodstuff in the tray, which comer arrangement comprises securing means (22) for securing together the adjacent side and end panels, and a deformable portion (30) hinged to the adjacent side and end panels between the base panel and the securing means, said deformable portion being deformed when the tray is erected to provide a ply of material spanning the side and end panels to inhibit egress of fluid from the base panel at each said comer of the tray **characterised in that** the deformable portion (30, 32) is folded to form an outwardly protruding anchor (32) at each of said comers to anchor a stretch film applied to the tray.
2. The tray as claimed in claim 1 wherein the deformable portion is hingedly connected to the adjacent side panel by a fold line in an obtuse angular relationship with the fold line connecting the end panel and base panel.
3. The tray as claimed in claims 1 or claim 2 wherein said securing means comprises a flap (24) hingedly connected to one of said side and end panels and foldable to be superposed with the other said side and end panels to be secured therewith, which flap is severed from the deformable portion.
4. The tray as claimed in any of claims 1 to 3 wherein said deformable portion is provided by a gusset panel.
5. A blank for forming a tray as claimed in any of claims 1 to 4, wherein the deformable portion (30) is defined by an extrusion of side panel (14) and by a end time (28) and the fold line (25) connecting the end panel (13) and the securing means (22).
6. A blank for forming an article carrier for holding

foodstuff or the like comprising a base panel, side panels and end panels and a corner arrangement for retaining liquid foodstuff in the tray, which corner arrangement comprises securing means for securing together the adjacent side and end panels, and a deformable portion hinged to the adjacent side and end panels between the base panel and the securing means **characterised in that** said deformable portion is capable of being deformed when the tray is erected to provide a ply of material protruding outwardly and spanning the side and end panels to inhibit egress of fluid from the base panel at each said corner of the erected carrier.

7. A blank as claimed in claim 6 wherein the deformable portion is hingedly connected to the adjacent side panel by a fold line in an obtuse angular relationship with the fold line connecting the end panel and base panel.

8. A blank as claimed in claim 6 or claim 7 wherein said securing means comprises a flap hingedly connected to one of said side and end panels and foldable to be superposed with the other said side and end panels to be secured therewith, which flap is severed from the deformable portion.

9. A blank as claimed in any of claims 6 to 8 wherein said deformable portion is provided by a gusset panel.

Patentansprüche

1. Schale zum Halten von Lebensmitteln oder dergleichen umfassend eine Bodenwandfläche (12), Seitenwandflächen (14) und Endwandflächen (18) sowie eine Eckanordnung in jeder Ecke der Schale zum Zurückhalten flüssiger Lebensmittel in der Schale, wobei die Eckanordnung Befestigungsmittel (22) zum miteinander Befestigen der angrenzenden Seiten- und Endwandflächen umfasst sowie einen deformierbaren Abschnitt (30), der zwischen der Bodenwandfläche und den Befestigungsmitteln gelenkig an die angrenzenden Seiten- und Endwandflächen angebracht ist, wobei der deformierbare Abschnitt deformiert wird, wenn die Schale aufgerichtet wird, um eine Lage von Material bereitzustellen, die sich über die Seiten- und Endwandflächen erstreckt, um einen Auslass von Flüssigkeit von der Bodenwandfläche an jeder der Ecken der Schale zu verhindern, **dadurch gekennzeichnet, dass** der deformierbare Abschnitt (30, 32) gefaltet wird, um eine an jeder der Ecken nach außen abstehende Verankerung (32) auszubilden, um eine auf die Schale aufgebrachte Stretchfolie zu verankern.

2. Schale nach Anspruch 1, wobei der deformierbare Abschnitt durch eine Faltlinie gelenkig mit der angrenzenden Seitenwandfläche in einer stumpfwinkligen Beziehung mit der Faltlinie verbunden ist, die die Endwandfläche und die Bodenwandfläche verbindet.

3. Schale nach Anspruch 1 oder 2, wobei die Befestigungsmittel eine Klappe (24) umfassen, die mit einer der Seiten- und Endwandflächen gelenkig verbunden ist und faltbar ist, um mit der anderen der Seiten- und Endwandflächen übereinander gelegt zu werden, um mit dieser befestigt zu werden, wobei die Klappe von dem deformierbaren Abschnitt abgetrennt ist.

4. Schale nach einem der Ansprüche 1 bis 3, wobei der deformierbare Abschnitt durch eine Zwickelwandfläche bereitgestellt ist,

5. Zuschnitt zum Ausbilden einer Schale nach einem der Ansprüche 1 bis 4, wobei der deformierbare Abschnitt (30) durch eine Verlängerung der Seitenwandfläche (14) und durch eine Stanzlinie (28) und die Faltlinie (25) definiert ist, die die Endwandfläche (18) und die Befestigungsmittel (22) verbindet.

6. Zuschnitt zum Ausbilden eines Gegenstandsträgers zum Halten von Lebensmitteln oder dergleichen umfassend eine Bodenwandfläche, Seitenwandflächen und Endwandflächen sowie eine Eckanordnung zum Zurückhalten flüssiger Lebensmittel in der Schale, wobei die Eckanordnung Befestigungsmittel zum miteinander Befestigen der angrenzenden Seiten- und Endwandflächen umfasst sowie einen deformierbaren Abschnitt, der zwischen der Bodenwandfläche und den Befestigungsmitteln gelenkig an die angrenzenden Seiten- und Endwandflächen angebracht ist, **dadurch gekennzeichnet, dass** der deformierbare Abschnitt deformiert werden kann, wenn die Schale aufgerichtet wird, um eine Lage von Material bereitzustellen, die nach außen absteht und sich über die Seiten- und Endwandflächen erstreckt, um einen Auslass von Flüssigkeit von der Bodenwandfläche an jeder der Ecken der aufgerichteten Schale zu verhindern.

7. Zuschnitt nach Anspruch 6, wobei der deformierbare Abschnitt durch eine Faltlinie gelenkig mit der angrenzenden Seitenwandfläche in einer stumpfwinkligen Beziehung mit der Faltlinie verbunden ist, die die Endwandfläche und die Bodenwandfläche verbindet.

8. Zuschnitt nach Anspruch 6 oder 7, wobei die Befestigungsmittel eine Klappe umfassen, die mit einer der Seiten- und Endwandflächen gelenkig verbun-

den ist und faltbar ist, um mit der anderen der Seiten- und Endwandflächen übereinander gelegt zu werden, um mit dieser befestigt zu werden, wobei die Klappe von dem deformierbaren Abschnitt abgetrennt ist.

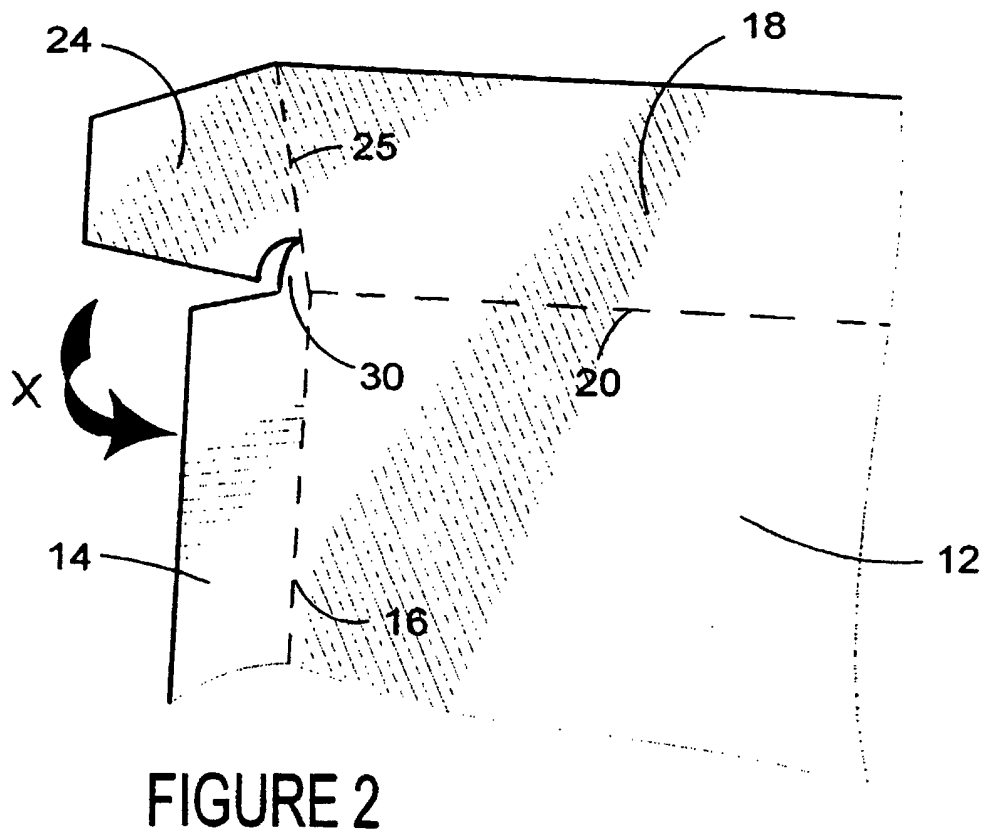
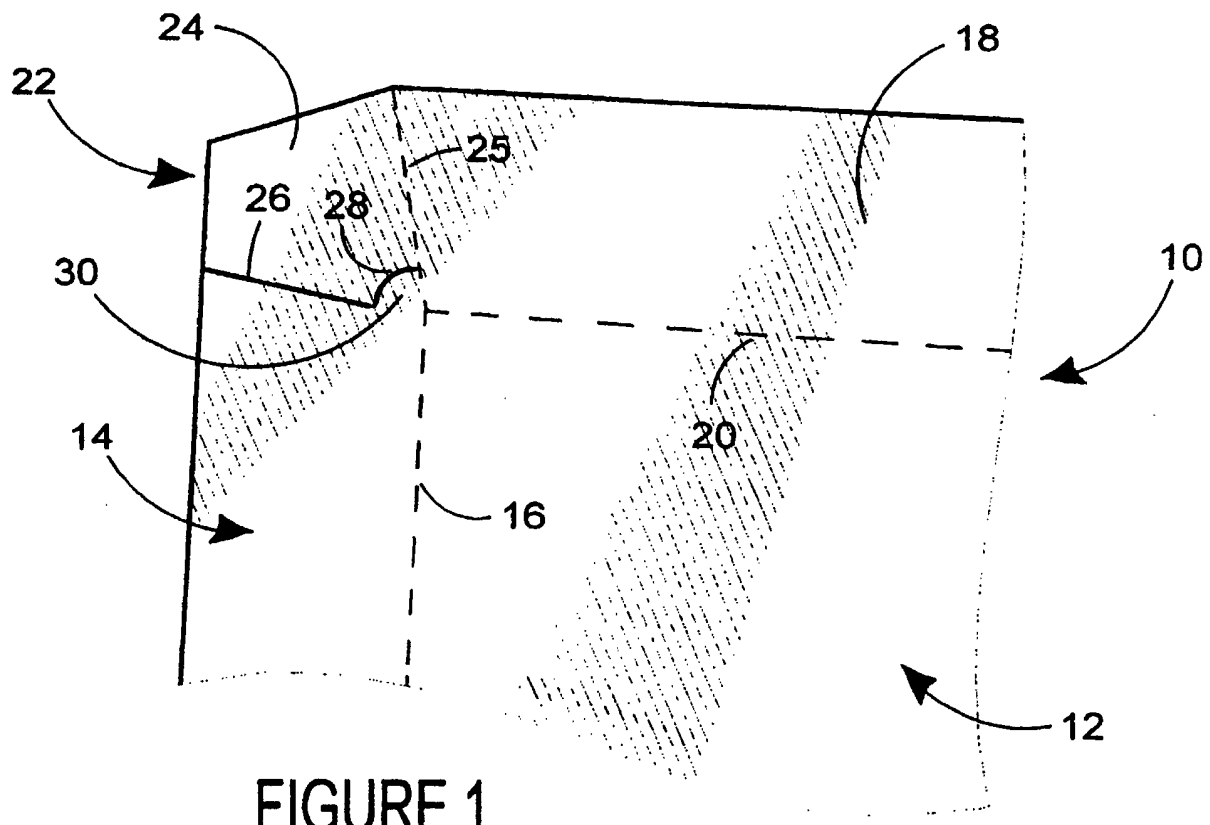
9. Schale nach einem der Ansprüche 6 bis 8, wobei der deformierbare Abschnitt durch eine Zwickelwandfläche bereitgestellt ist.

Revendications

1. Plateau destiné à contenir des aliments ou éléments similaires comprenant un panneau de base (12), des panneaux latéraux (14) et des panneaux d'extrémité (18) et un agencement de coin en chaque coin du plateau pour retenir la nourriture liquide dans le plateau, lequel agencement de coin comprend un moyen de fixation (22) pour attacher ensemble les panneaux latéraux et d'extrémité adjacents, et une partie déformable (30) reliée de manière articulée aux panneaux latéraux et d'extrémité adjacents entre le panneau de base et le moyen de fixation, ladite partie déformable étant déformée quand le plateau est monté pour fournir un pli de matériau qui enjambe les panneaux latéraux et d'extrémité pour empêcher la sortie de fluide du panneau de base en chacun desdits coins du plateau **caractérisé en ce que** la partie déformable (30, 32) est pliée de manière à former un élément d'ancrage faisant saillie vers l'extérieur (32) en chacun desdits coins pour accrocher un film étirable appliqué au plateau.
2. Plateau selon la revendication 1, dans lequel la partie déformable est connectée de manière articulée au panneau latéral adjacent par une ligne de pliage en un rapport angulaire obtus avec la ligne de pliage qui relie le panneau d'extrémité et le panneau de base.
3. Plateau selon la revendication 1 ou 2, dans lequel ledit moyen de fixation comprend un rabat (24) connecté de manière articulée à l'un desdits panneaux latéraux et d'extrémité et pouvant être plié pour être superposé avec l'autre desdits panneaux latéraux et d'extrémité pour être fixé à celui-ci, lequel rabat est détaché de la partie déformable.
4. Plateau selon l'une quelconque des revendications 1 à 3, dans lequel ladite partie déformable est fournie par un panneau formant gousset.
5. Découpe pour former un plateau conforme à l'une quelconque des revendications 1 à 4, dans lequel la partie déformable (30) est définie par un prolongement du panneau latéral (19) et par une ligne dé-

coupée (28) et la ligne de pliage (25) qui relie le panneau d'extrémité (13) et le moyen de fixation (22).

6. Découpe pour former un porte-articles destiné à contenir des aliments ou éléments similaires comprenant un panneau de base, des panneaux latéraux et des panneaux d'extrémité et un agencement de coin pour retenir la nourriture liquide dans le plateau, lequel agencement de coin comprend un moyen de fixation pour attacher ensemble les panneaux latéraux et d'extrémité adjacents, et une partie déformable reliée de manière articulée aux panneaux latéraux et d'extrémité adjacents entre le panneau de base et le moyen de fixation **caractérisée en ce que** ladite partie déformable est apte à être déformée quand le plateau est monté pour fournir un pli de matériau faisant saillie vers l'extérieur et qui enjambe les panneaux latéraux et d'extrémité pour empêcher la sortie de fluide du panneau de base en chacun desdits coins du porte-articles monté.
7. Découpe selon la revendication 6 dans laquelle la partie déformable est connectée de manière articulée au panneau latéral adjacent par une ligne de pliage en un rapport angulaire obtus avec la ligne de pliage qui relie le panneau d'extrémité et le panneau de base.
8. Découpe selon la revendication 6 ou 7 dans laquelle ledit moyen de fixation comprend un rabat connecté de manière articulée à l'un desdits panneaux latéraux et d'extrémité et pouvant être plié pour être superposé avec l'autre desdits panneaux latéraux et d'extrémité pour être fixé à celui-ci, lequel rabat est détaché de la partie déformable.
9. Découpe selon l'une quelconque des revendications 6 à 8 dans laquelle ladite partie déformable est fournie par un panneau formant gousset.



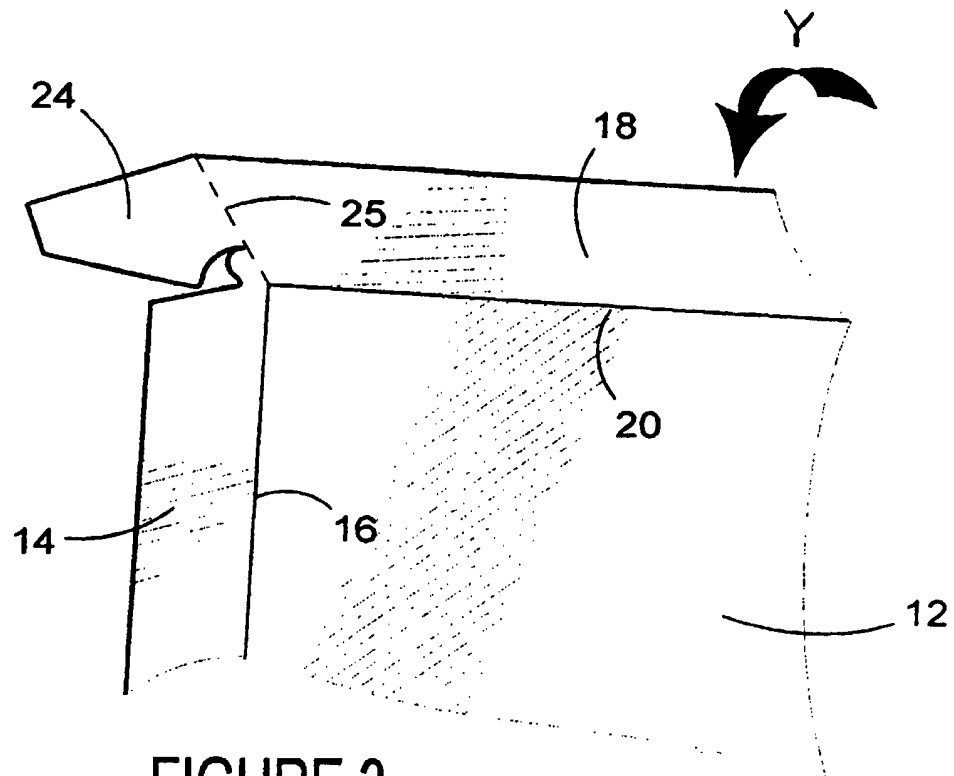


FIGURE 3

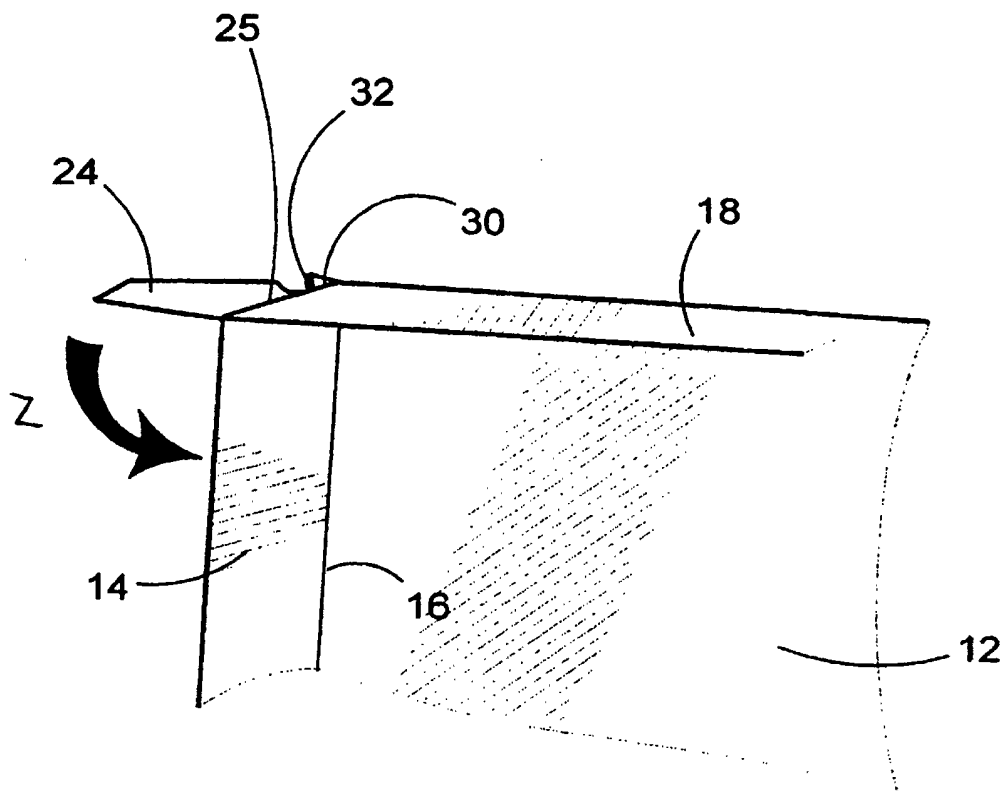


FIGURE 4

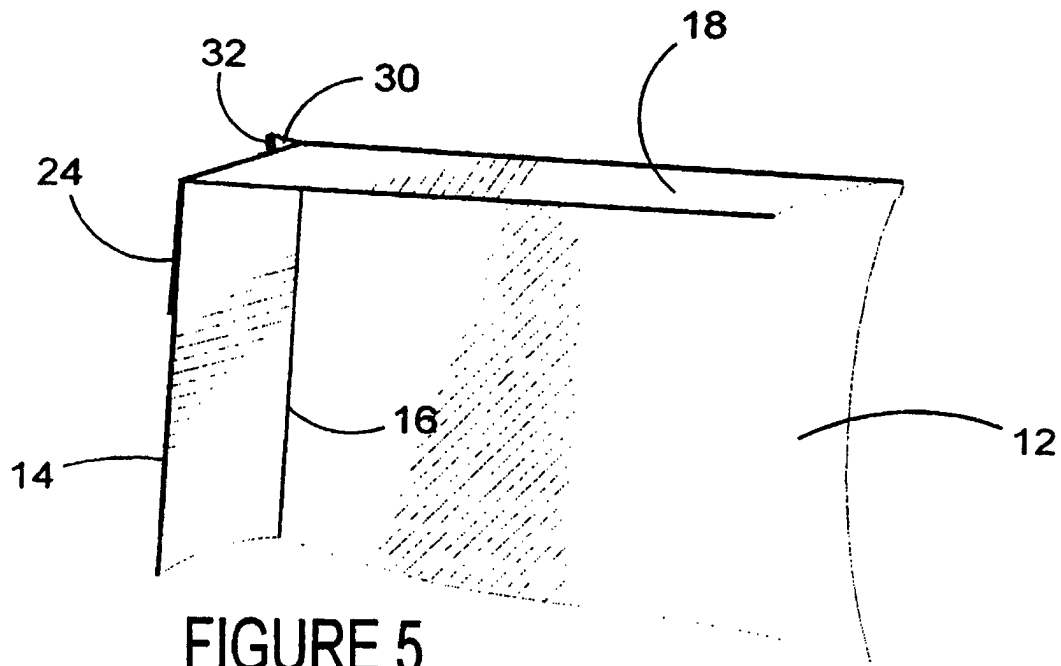


FIGURE 5

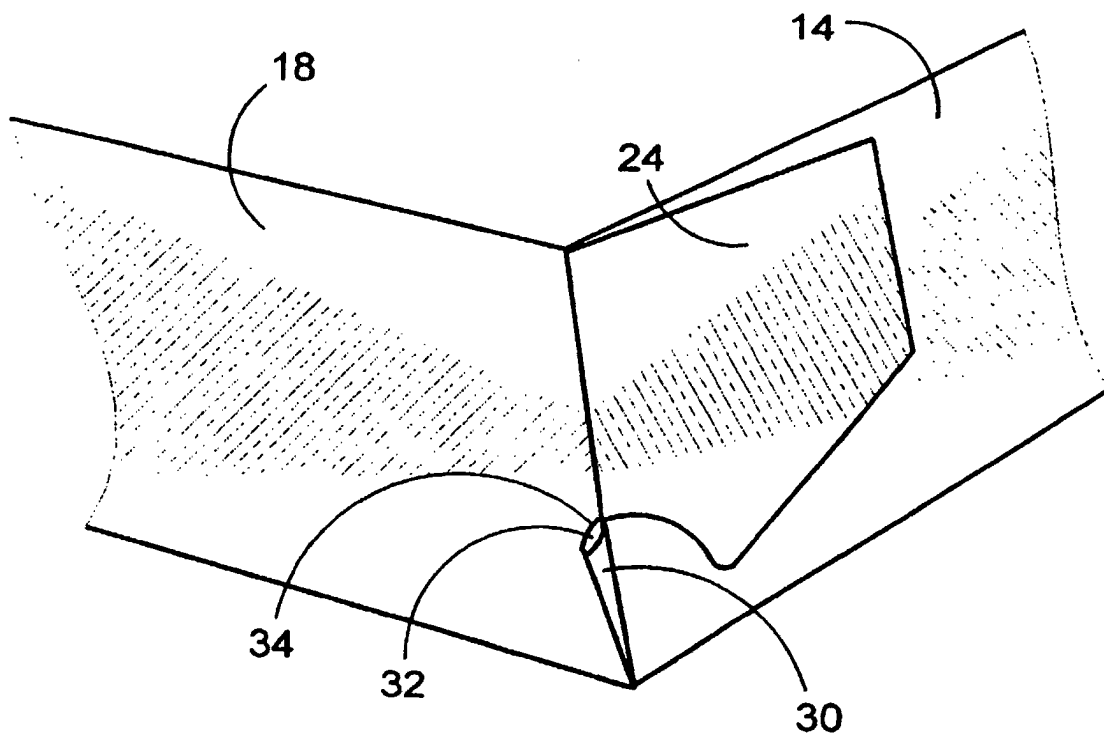


FIGURE 6

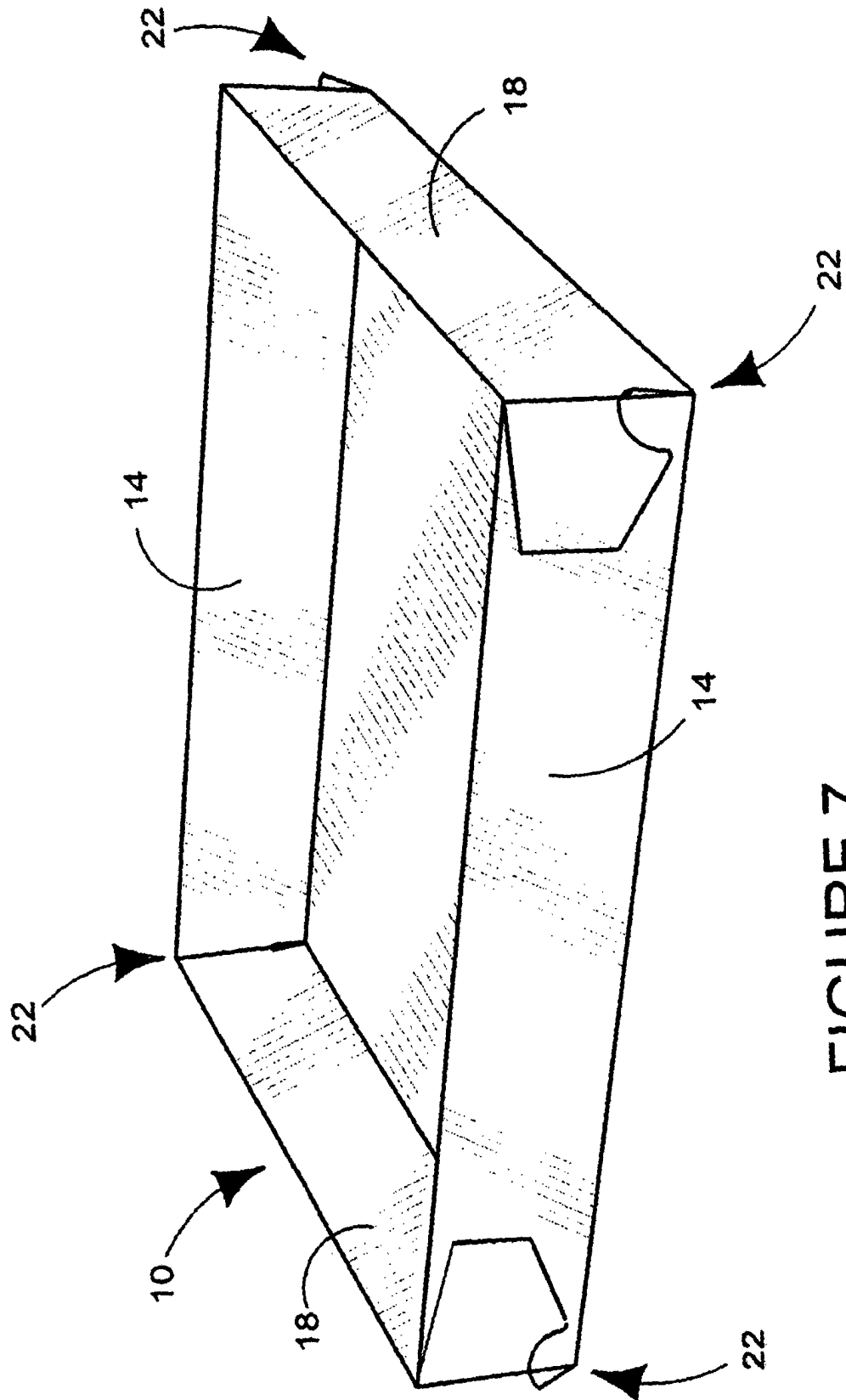


FIGURE 7