

(19)



(11)

**EP 1 528 003 B1**

(12)

## EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention  
of the grant of the patent:  
**10.12.2008 Bulletin 2008/50**

(51) Int Cl.:  
**B65D 5/18 (2006.01)**

(21) Application number: **04256720.6**

(22) Date of filing: **29.10.2004**

(54) **Container**

Behälter

Réceptient

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IT LI LU MC NL PL PT RO SE SI SK TR**

(30) Priority: **30.10.2003 GB 0325365**

(43) Date of publication of application:  
**04.05.2005 Bulletin 2005/18**

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**EP 1 528 003 B1**

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## Description

**[0001]** This invention relates to containers made of cardboard, paperboard or similar lightweight foldable sheet material and is particularly directed to the provision of an improved container in the form of a tub, made from a one piece blank.

**[0002]** EP-A-734956 discloses a substantially liquid tight ice cream container made from a foldable blank. US-A-4200219 discloses a container for liquid products which is formed of a single sheet of paperboard folded into a cup-like container. DE-A-1486436 shows a liquid carton.

**[0003]** According to the invention there is provided a container in the form of a tub, made from a one piece blank of cardboard, paperboard or similar lightweight foldable sheet material, comprising:

- a base panel;
- a first side wall panel hinged to and upstanding from one edge of the said base panel; and
- a second side wall panel hinged to and upstanding from an opposite edge of the said base panel and having its opposite side regions overlapping the opposite side regions of the said first side wall panel and secured thereto;

wherein the said base panel has a central portion to opposite edges of which the said side wall panels are hinged, and two opposite outer portions inclining upwardly from the central portion into the container, each outer portion comprising a central panel which is hingedly connected to the central portion and is spaced from the adjacent side wall panels, has the central panel having converging edges; and

wherein edge panels are hingedly attached to respective edges of the central panels to at least partially close the space formed between the central panels and the adjacent side wall panels.

**[0004]** Preferably the side walls are generally upright. By "generally upright" we mean that the side wall could be vertical or it could slope somewhat outwardly or, less preferably, somewhat inwardly. The walls could, however, slope outwardly at a greater angle to give a more dish like appearance.

**[0005]** Preferably each central panel is generally triangular, but other shapes, for example trapezoidal shapes, may be suitable.

**[0006]** Preferably each said edge panel has an arcuate outer edge so that it may follow more closely the curved side wall of the container.

**[0007]** Preferably each edge panel is inclined downwardly with respect to the central panel to which it is attached to give further strength to the base of the container.

**[0008]** The edge panel may also be hingedly attached to an adjacent side wall panel.

**[0009]** The central panels and edge panels need not

be attached to the side wall panels. In a preferred embodiment, however, a glue tab may be provided on one or more of the panels for gluing to one or more of the side wall panels. Preferably the glue tab is hingedly attached to the respective central or edge panel.

**[0010]** In one embodiment a glue tab is hingedly connected to each edge panel for bonding to a respective side wall. Preferably each such tab is folded up with respect to its edge panel so that it lies inside and is glued to the inside of the tub.

**[0011]** In another, more preferred embodiment, however, a single glue tab is hingedly connected to just one of the edge panels at either end of the base panel. The tab is preferably configured so that it extends circumferentially beyond the panel to which it is attached, preferably substantially as far as the other edge panel at that end of the base. Preferably the glued tab overlaps the join between the side wall panels in the base region to strengthen that join. Preferably the tab is folded down with respect to the edge panel so that it lies within and is glued within the recessed base of the tub.

**[0012]** The side wall panels may be of substantially similar widths. Preferably however one of the panels is wider than the other, to allow for overlap between the panels to secure the panels together.

**[0013]** The present invention also extends to a blank for making a container in accordance with the invention.

**[0014]** From a further aspect, therefore the invention provides a one piece blank of cardboard, paperboard or similar lightweight foldable sheet material for erection into a container, said blank comprising:

- a base panel;
- a first side wall panel hinged to one edge of the said base panel; and
- a second side wall panel hinged to an opposite edge of the said base panel and configured such that upon erection its opposite side regions overlap opposite side regions of the said first side wall panel for securing thereto;
- said base panel having a central portion to opposite edges of which the said side wall panels are hinged, and two opposite outer portions hingedly connected to the central portion;
- each outer portion comprising a central panel with edge panels hingedly attached to respective edges of the central panel, each edge panel having a cut edge facing the adjacent side wall panel for at least partially closing a space formed between the central panel and the adjacent side wall panel.

**[0015]** The blank may have the further preferred features described above.

**[0016]** Some embodiments of the invention will now be described by way of example and with reference to the accompanying drawings, in which:-

Figure 1 is a plan view of a blank for making a first

embodiment of a container according to the invention;

Figure 2 is a perspective view of the container made from the blank of Figure 1, partly erected;

Figure 3 is a perspective view of the container made from the blank of Figure 1, in a later stage of erection;

Figure 4 is a perspective view of the container fully erected, from above;

Figure 5 is a perspective view of the container fully erected, from below

Figure 6 is a plan view of a blank for making a second embodiment of the invention; and

Figure 7 is a plan view of a blank for making a second embodiment of the invention.

**[0017]** Referring firstly to Figure 1, a cardboard blank 2 for making a container in the form of a tub 4 (Figure 4) with a rounded side wall comprises a base panel 6, a first side wall panel 8, and a second side wall panel 10. The second side panel 10 has display openings 12 formed therein. These are covered by a transparent plastic sheet 14 attached to the inner face of the side wall panel 10.

**[0018]** The base panel 6 is of a generally oval configuration and comprises a central portion 16 to whose opposite edges the first and second side wall panels 8, 10 are connected by way of hinge lines 18. It further comprises two outer portions 20 connected to the central portion by hinge lines 22.

**[0019]** Each outer portion 20 comprises a central, triangular, panel 24 to either side of which edge panels 26 having an arcuate free edge 28 are attached by hinge lines 30. The end of each edge panel 26 adjacent the hinge lines 22 is also attached to its adjacent side wall panel 8,10 by a hinge line 32.

**[0020]** A glue tab 34 is connected to one edge panel 26 at each side of the base panel 4 by a hinge line 36.

**[0021]** To facilitate hinging of the various panels, the hinge lines 30, 32 and 36 are formed as intermittent cuts.

**[0022]** Referring now to Figures 2 to 5, to erect the tub the side wall panels 8,10 are folded up about the respective hinge lines 18, as shown in Figure 2.

**[0023]** As the side wall panels 8,10 are being curved around into a curved configuration, each triangular panel 24 is hinged upwardly around its hinge line 22. At the same time, the edge panels 26 are hinged downwardly about the hinge lines 30 and upwardly around the hinge lines 32 so as to incline outwardly towards the adjacent side wall panels 8,10, as shown in Figure 3.

**[0024]** The tabs 34 are folded downwardly about their hinge lines 36 so as to come into contact and overlap the side wall panels 8,10 at the base of the tub.

**[0025]** When the side walls 8,10 are fully curved around and the base panel 6 fully folded, overlapping regions 38 of the walls 8,10 are glued together to hold the walls in a generally upright position, and the tabs 34 glued into position to consolidate the base of the tub 4. Although only one outer portion 20 of the base panel 6 is shown folded in Figure 3, both outer portions are folded

at the same time.

**[0026]** The folding and shaping of the tub can be effected using a suitable mandrel which may enter the top and base of the tub as it is formed. Alternatively the tub can be erected in some other manner, for example by hand.

**[0027]** The erected tub 4 is shown in Figures 4 and 5. As can be best seen in Figure 5, the folding of the various panels results in the triangular panels 24 being upwardly inclined relative to the central portion 16 of the base panel 6 in the erected tub, with the edge portions 26 being downwardly inclined relative to the triangular panels 24 so as to close the space between the triangular panels 24 and the side wall panels 8,10. The tabs 34 are glued inside the side wall panels 8,10 at the base of the tub to provide additional strength to the base.

**[0028]** Turning now to Figures 6 and 7, two blanks 42, 44 for forming modified tubs are shown.

**[0029]** In the embodiment of Figure 6, the tab 34 of the first embodiment has been replaced by two separate glue tabs 46. In this case, the tabs will be folded upwardly around the hinge lines 48 during erection so as to lie within the tub 4.

**[0030]** In the embodiment of Figure 7, the tabs 34, 46 have been omitted altogether.

**[0031]** The embodiments of the invention shown in the Figures are open topped tub of generally oval shape in horizontal section, with an outwardly inclined wall. In a further modification, the side wall panels may have longitudinal fold lines to form a faceted, rather than a rounded, tub.

**[0032]** Tubs according to the invention may be provided with a top closure of any convenient form, for example in the form of a plug made of plastics, cardboard, polystyrene or a pulp material.

## Claims

1. A container in the form of a tub (4), made from a one piece blank of cardboard, paperboard or similar lightweight foldable sheet material, comprising:

- a base panel (6);
  - a first side wall panel (8) hinged to one edge of the said base panel (6); and
  - a second side wall panel (10) hinged to an opposite edge of the said base panel (6) and having its opposite side regions overlapping the opposite side regions of the said first side wall panel and secured thereto;
- wherein the said base panel (6) has a central portion (16) to opposite edges of which the said side wall panels (8, 10) are hinged, and two opposite outer portions (20) inclining upwardly from the central portion (16) into the container, each outer portion (20) comprising a central panel (24) which is hingedly connected to the central

- portion (16) and is spaced from the adjacent side wall panels (8, 10), said central panel having converging edges; and wherein edge panels (26) are hingedly attached to respective edges of the central panels (24) to at least partially close the space formed between the central panels (24) and the adjacent side wall panels (8, 10).
2. A container as claimed in claim 1 wherein said side walls are generally upright.
  3. A container as claimed in claim 1 or 2 wherein said central panel (24) is triangular.
  4. A container as claimed in claim 1, 2 or 3 wherein each said edge panel (26) has an arcuate outer edge.
  5. A container as claimed in any preceding claim wherein said edge panels (26) are inclined downwardly with respect to the central panels (24) to which they are attached.
  6. A container as claimed in any preceding claim wherein said edge panels (26) are also hingedly attached to an adjacent portion of an adjacent side wall panel (8, 10).
  7. A container as claimed in any preceding claim wherein said edge panels (26) or said central panel (24) are provided with a glue tab (34) glued to one or more of the side wall panels (8, 10).
  8. A container as claimed in claim 6 wherein the glue tab (34) is hingedly attached to a respective central or edge panel.
  9. A container as claimed in claim 8 wherein a glue tab (34) is hingedly connected to each edge panel (26).
  10. A container as claimed in claim 9 wherein the glue tab (34) is folded up so as to lie inside the tub (4).
  11. A container as claimed in claim 8 wherein a single glue tab (34) is hingedly connected to just one of the edge panels (26) at either end of the tub base.
  12. A container as claimed in claim 11 wherein the glue tab (34) extends circumferentially beyond the edge panel (26) to which it is attached, preferably substantially as far as the other edge panel.
  13. A container as claimed in claim 11 or 12 wherein the glue tab (34) overlaps the join between the side wall panels.
  14. A container as claimed in claim 11, 12 or 13 wherein the glue tab (34) is folded so as to lie in the external base of the tub.
  15. A one piece blank of cardboard, paperboard or similar lightweight foldable sheet material for erection into a container, said blank comprising:
    - a base panel (6);
    - a first side wall panel (8) hinged to one edge of the said base panel (6); and
    - a second side wall panel (10) hinged to an opposite edge of the said base panel (6) and configured such that upon erection its opposite side regions overlap opposite side regions of the said first side wall panel (8) for secural thereto;
    - said base panel (6) having a central portion (16) to opposite edges of which the said side wall panels (8, 10) are hinged, and two opposite outer portions (20) hingedly connected to the central portion (16);
    - each outer portion (20) comprising a central panel (24) and edge panels (26) hingedly attached to respective edges of the central panel (24), each edge panel (26) having a cut edge facing the adjacent side wall panel (8, 10) for at least partially closing a space formed between the central panel (24) and an adjacent side wall panel (8, 10).
  16. A blank as claimed in claim 15 wherein said central panel (24) is triangular.
  17. A blank as claimed in claim 15 or 16 wherein each said edge panel (26) has an arcuate outer edge.
  18. A blank as claimed in any of claims 15 to 17 wherein said edge panels (26) are also hingedly attached to an adjacent portion of an adjacent side wall panel (8, 10).
  19. A blank as claimed in any of claims 15 to 18 wherein said edge panels (26) or said central panel (24) are provided with a glue tab (34).
  20. A blank as claimed in claim 19 wherein the glue tab (34) is hingedly attached to the respective central or edge panel.
  21. A blank as claimed in claim 20 wherein a glue tab (34) is hingedly connected to each edge panel (26).
  22. A blank as claimed in claim 20 wherein a single glue tab (34) is hingedly connected to just one of the edge panels (26) at either end of the blank.

#### Patentansprüche

1. Behälter in der Form eines Bechers (4), der aus ei-

- nem einstückigen Zuschnitt aus Karton, Pappe oder ähnlichem leichtem, faltbarem Flächenmaterial hergestellt ist, mit einem Basisfeld (6), einem ersten Seitenwandfeld (8), das gelenkig mit einem Rand des Basisfelds (6) verbunden ist, und einem zweiten Seitenwandfeld (10), das gelenkig mit einem gegenüberliegenden Rand des Basisfelds (6) verbunden ist und dessen gegenüberliegende Seitenbereiche die gegenüberliegenden Seitenbereiche des ersten Seitenwandfelds überlappen und an diesen befestigt sind, wobei das Basisfeld (6) einen mittleren Abschnitt (16), an dessen gegenüberliegenden Rändern die Seitenwandfelder (8, 10) gelenkig angebracht sind, sowie zwei gegenüberliegende äußere Abschnitte (20) hat, die sich vom mittleren Abschnitt (16) nach oben in den Behälter neigen, wobei jeder äußere Abschnitt (20) ein mittleres Feld (24) umfasst, das gelenkig mit dem mittleren Abschnitt (16) verbunden und von den benachbarten Seitenwandfeldern (8, 10) beabstandet ist, wobei das mittlere Feld konvergierende Ränder hat, und wobei die Randfelder (26) gelenkig an jeweiligen Rändern der mittleren Felder (24) angebracht sind, um den zwischen den mittleren Feldern (24) und den benachbarten Seitenwandfeldern (8, 10) gebildeten Raum mindestens teilweise zu schließen.
2. Behälter nach Anspruch 1, wobei die Seitenwände im Allgemeinen aufrecht sind.
  3. Behälter nach Anspruch 1 oder 2, wobei das mittlere Feld (24) dreieckig ist.
  4. Behälter nach Anspruch 1, 2 oder 3, wobei jedes Randfeld (26) einen bogenförmigen äußeren Rand hat.
  5. Behälter nach einem der vorhergehenden Ansprüche, wobei die Randfelder (26) bezüglich der mittleren Felder (24), an denen sie angebracht sind, nach unten geneigt sind.
  6. Behälter nach einem der vorhergehenden Ansprüche, wobei die Randfelder (26) auch gelenkig an einem benachbarten Abschnitt eines benachbarten Seitenwandfelds (8, 10) angebracht sind.
  7. Behälter nach einem der vorhergehenden Ansprüche, wobei die Randfelder (26) oder das mittlere Feld (24) mit einer Klebelasche (34) versehen sind, die an eines oder mehrere der Seitenwandfelder (8, 10) angeklebt ist.
  8. Behälter nach Anspruch 6, wobei die Klebelasche (34) gelenkig an einem jeweiligen mittleren oder Randfeld angebracht ist.
  9. Behälter nach Anspruch 8, wobei eine Klebelasche (34) gelenkig an jedem Randfeld (26) angebracht ist.
  10. Behälter nach Anspruch 9, wobei die Klebelasche (34) so zusammengefasst ist, dass sie im Becher (4) liegt.
  11. Behälter nach Anspruch 8, wobei eine einzige Klebelasche (34) gelenkig mit nur einem der Randfelder (26) an einem der beiden Enden der Becherbasis verbunden ist.
  12. Behälter nach Anspruch 11, wobei sich die Klebelasche (34) umfangsmäßig über das Randfeld (26), an dem sie angebracht ist, hinaus erstreckt, und zwar vorzugsweise im Wesentlichen bis zum anderen Randfeld.
  13. Behälter nach Anspruch 11 oder 12, wobei die Klebelasche (34) die Fuge zwischen den Seitenwandfeldern überlappt.
  14. Behälter nach Anspruch 11, 12 oder 13, wobei die Klebelasche (34) so gefaltet ist, dass sie in der äußeren Basis des Bechers liegt.
  15. Einstückiger Zuschnitt aus Karton, Pappe oder ähnlichem leichtem, faltbarem Flächenmaterial, um einen Behälter daraus aufzurichten, wobei der Zuschnitt Folgendes aufweist:
 

ein Basisfeld (6),  
 ein erstes Seitenwandfeld (8), das gelenkig mit einem Rand des Basisfelds (6) verbunden ist, und  
 ein zweites Seitenwandfeld (10), das gelenkig mit einem gegenüberliegenden Rand des Basisfelds (6) verbunden und so konfiguriert ist, dass seine gegenüberliegenden Seitenbereiche beim Aufrichten gegenüberliegende Seitenbereiche des ersten Seitenwandfelds (8) überlappen, um daran befestigt zu werden, wobei das Basisfeld (6) einen mittleren Abschnitt (16), an dessen gegenüberliegenden Rändern die Seitenwandfelder (8, 10) gelenkig angebracht sind, sowie zwei gegenüberliegende äußere Abschnitte (20) hat, die gelenkig mit dem mittleren Abschnitt (16) verbunden sind, wobei jeder äußere Abschnitt (20) ein mittleres Feld (24) und Randfelder (26) aufweist, die gelenkig an jeweiligen Rändern des mittleren Felds (24) angebracht sind, wobei jedes Randfeld (26) einen geschnittenen Rand hat, der dem benachbarten Seitenwandfeld (8, 10) zugewandt ist, um einen zwischen dem mittleren Feld (24) und einem benachbarten Seitenwandfeld (8, 10) gebildeten Raum mindestens teilweise zu schließen.

16. Zuschnitt nach Anspruch 15, wobei das mittlere Feld (24) dreieckig ist.
17. Zuschnitt nach Anspruch 15 oder 16, wobei jedes Randfeld (26) einen bogenförmigen äußeren Rand hat. 5
18. Zuschnitt nach einem der Ansprüche 15 bis 17, wobei die Randfelder (26) auch gelenkig an einem benachbarten Abschnitt eines benachbarten Seitenwandfelds (8, 10) angebracht sind. 10
19. Zuschnitt nach einem der Ansprüche 15 bis 18, wobei die Randfelder (26) oder das mittlere Feld (24) mit einer Klebelasche (34) versehen sind. 15
20. Zuschnitt nach Anspruch 19, wobei die Klebelasche (34) gelenkig an einem jeweiligen mittleren oder Randfeld angebracht ist. 20
21. Zuschnitt nach Anspruch 20, wobei eine Klebelasche (34) gelenkig an jedem Randfeld (26) angebracht ist.
22. Zuschnitt nach Anspruch 20, wobei eine einzige Klebelasche (34) gelenkig mit nur einem der Randfelder (26) an einem der beiden Enden des Zuschnitts verbunden ist. 25

## Revendications

1. Récipient en forme de bac (4), fabriqué à partir d'un flan d'une seule pièce en carton, en papier cartonné ou une matière en feuille pliable légère similaire, comportant :
- un panneau de base (6) ;  
un premier panneau de paroi latérale (8) articulé sur un bord dudit panneau de base (6) ; et  
un deuxième panneau de paroi latérale (10) articulé sur un bord opposé dudit panneau de base (6) et ayant ses zones latérales opposées qui chevauchent les zones latérales opposées dudit premier panneau de paroi latérale et fixées dessus ;  
ledit panneau de base (6) ayant une partie centrale (16) sur des bords opposés de laquelle lesdits panneaux de paroi latérale (8, 10) sont articulés, et deux parties externes opposées (20) inclinées vers le haut depuis la partie centrale (16) dans le récipient, chaque partie externe (20) comportant un panneau central (24) qui est relié de manière articulée à la partie centrale (16) et est espacé des panneaux de paroi latérale adjacents (8, 10), ledit panneau central ayant des bords convergents ; et  
des panneaux de bord (26) étant fixés de ma-

nière articulée sur des bords respectifs des panneaux centraux (24) afin de fermer au moins partiellement l'espace formé entre les panneaux centraux (24) et les panneaux de paroi latérale adjacents (8, 10).

2. Récipient selon la revendication 1, dans lequel lesdites parois latérales sont globalement verticales.
3. Récipient selon la revendication 1 ou 2, dans lequel ledit panneau central (24) est triangulaire.
4. Récipient selon la revendication 1, 2 ou 3, dans lequel chaque dit panneau de bord (26) a un bord externe courbe.
5. Récipient selon l'une quelconque des revendications précédentes, dans lequel lesdits panneaux de bord (26) sont inclinés vers le bas par rapport aux panneaux centraux (24) sur lesquels ils sont fixés.
6. Récipient selon l'une quelconque des revendications précédentes, dans lequel lesdits panneaux de bord (24) sont également fixés de manière articulée sur une partie adjacente d'un panneau de paroi latérale adjacent (8, 10).
7. Récipient suivant une quelconque revendication précédente, dans lequel lesdits panneaux de bord (26) ou ledit panneau central (24) sont pourvus d'une patte de collage (34) collée sur un ou plusieurs des panneaux de paroi latérale (8, 10).
8. Récipient selon la revendication 6, dans lequel la patte de collage (34) est fixée de manière articulée sur un panneau central ou de bord respectif.
9. Récipient selon la revendication 8, dans lequel une patte de collage (34) est reliée de manière articulée sur chaque panneau de bord (26).
10. Récipient selon la revendication 9, dans lequel la patte de collage (34) est repliée afin de se trouver à l'intérieur du bac (4).
11. Récipient selon la revendication 8, dans lequel une patte de collage unique (34) est reliée de manière articulée juste à l'un des panneaux de bord (26) à chaque extrémité de la base de bac.
12. Récipient selon la revendication 11, dans lequel la patte de collage (34) s'étend de manière circumférentielle au delà du panneau de bord (26) sur lequel elle est fixée, de préférence sensiblement jusqu'à l'autre panneau de bord.
13. Récipient selon la revendication 11 ou 12, dans lequel la patte de collage (34) recouvre la jonction en-

tre les panneaux de paroi latérale.

**14.** Récipient selon la revendication 11, 12 ou 13, dans lequel la patte de collage (34) est pliée afin de se trouver dans la base externe du bac.

**15.** Flan d'une seule pièce en carton, en papier cartonné ou une matière en feuille pliable légère similaire, destiné à se dresser sous la forme d'un récipient, ledit flan comportant :

un panneau de base (6) ;  
un premier panneau de paroi latérale (8) articulé sur un bord dudit panneau de base (6) ; et  
un deuxième panneau de paroi latérale (10) articulé sur un bord opposé dudit panneau de base (6) et configuré de telle sorte que, lorsqu'il est dressé, ses zones latérales opposées chevauchent des zones latérales opposées dudit premier panneau de paroi latérale (8) pour fixation dessus ;  
ledit panneau de base (6) ayant une partie centrale (16) sur des bords opposés de laquelle lesdits panneaux de paroi latérale (8, 10) sont articulés, et deux parties externes opposées (20) reliées de manière articulée à la partie centrale (16) ;  
chaque partie externe (20) comportant un panneau central (24) et des panneaux de bord (26) fixés de manière articulée sur des bords respectifs du panneau central (24), chaque panneau de bord (26) ayant un bord coupé face au panneau de paroi latérale (8, 10) adjacent afin de fermer au moins partiellement un espace formé entre le panneau central (24) et un panneau de paroi latérale adjacent (8, 10).

**16.** Flan selon la revendication 16, dans lequel ledit panneau central (24) est triangulaire.

**17.** Flan selon la revendication 15 ou 16, dans lequel chaque dit panneau de bord (26) a un bord externe courbe.

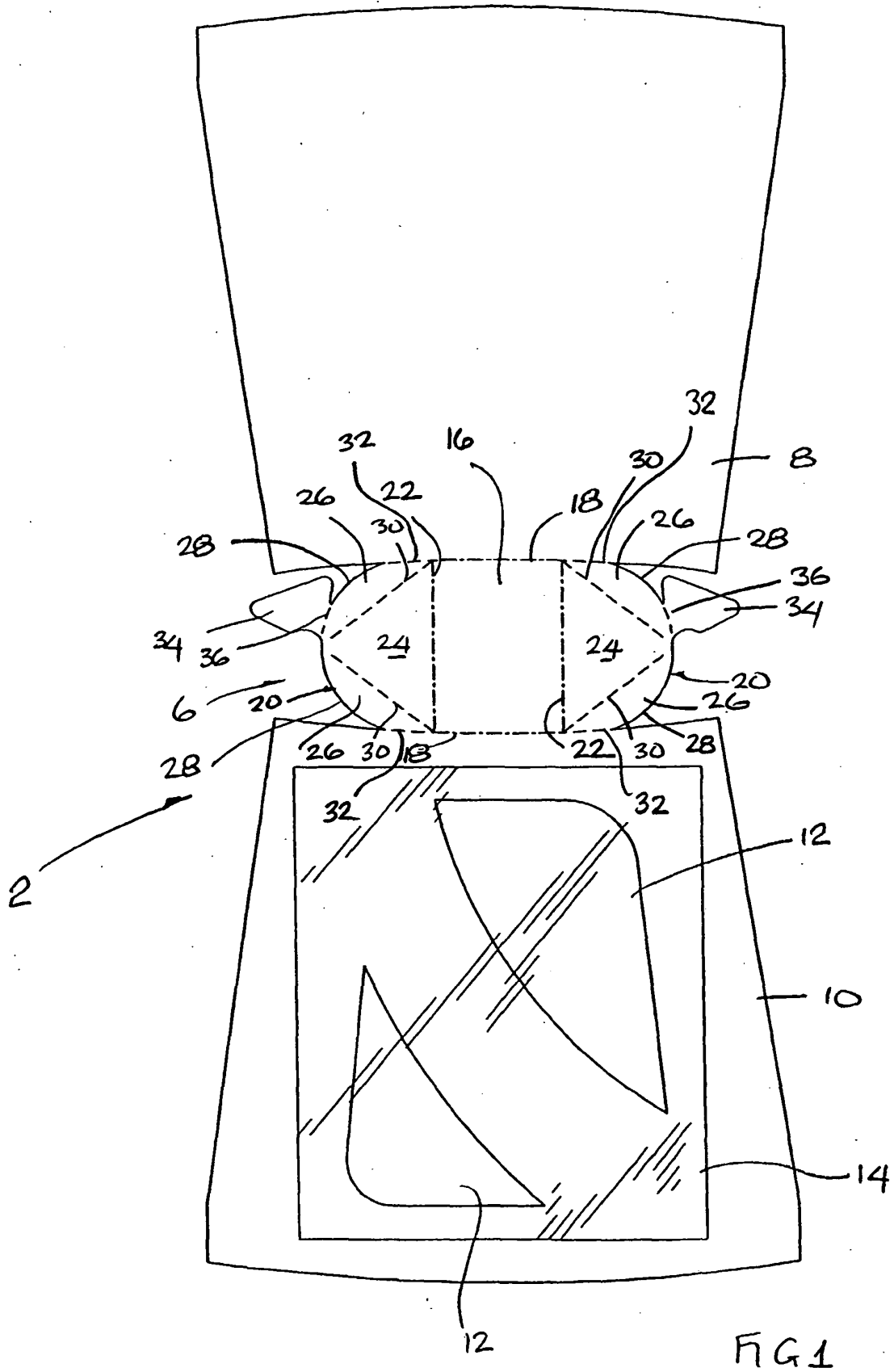
**18.** Flan selon l'une quelconque des revendications 15 à 17, dans lequel lesdits panneaux de bord (26) sont également fixés de manière articulée sur une partie adjacente d'un panneau de paroi latérale adjacent (8, 10).

**19.** Flan selon l'une quelconque des revendications 15 à 18, dans lequel lesdits panneaux de bord (26) ou ledit panneau central (24) sont pourvus d'une patte de collage (34).

**20.** Flan selon la revendication 19, dans lequel la patte de collage (34) est fixée de manière articulée sur le panneau central ou de bord respectif.

**21.** Flan selon la revendication 20, dans lequel une patte de collage (34) est reliée de manière articulée à chaque panneau de bord (26).

**22.** Flan selon la revendication 21, dans lequel une patte de collage unique (34) est reliée de manière articulée à juste l'un des panneaux de bord (26) à chaque extrémité du flan.





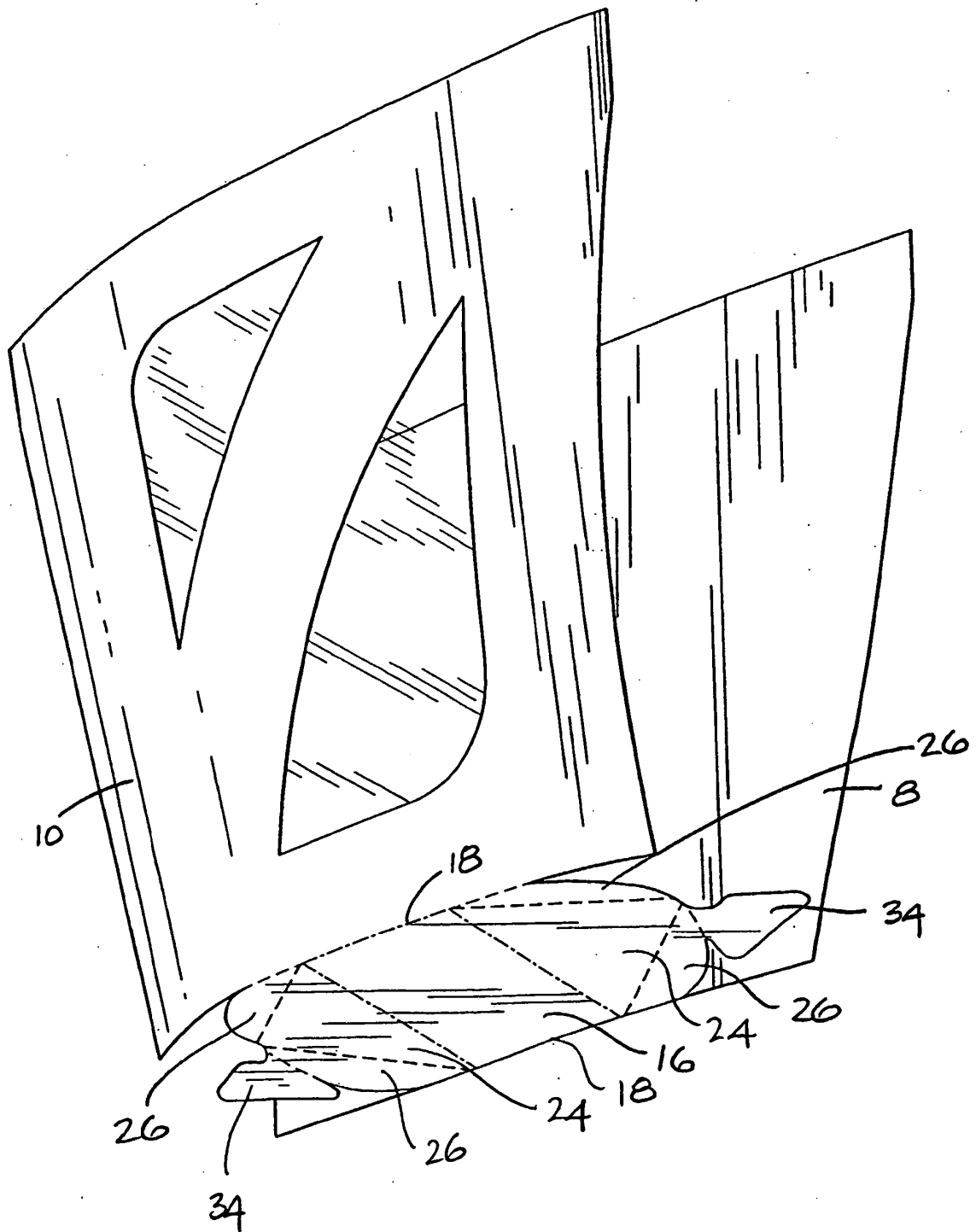
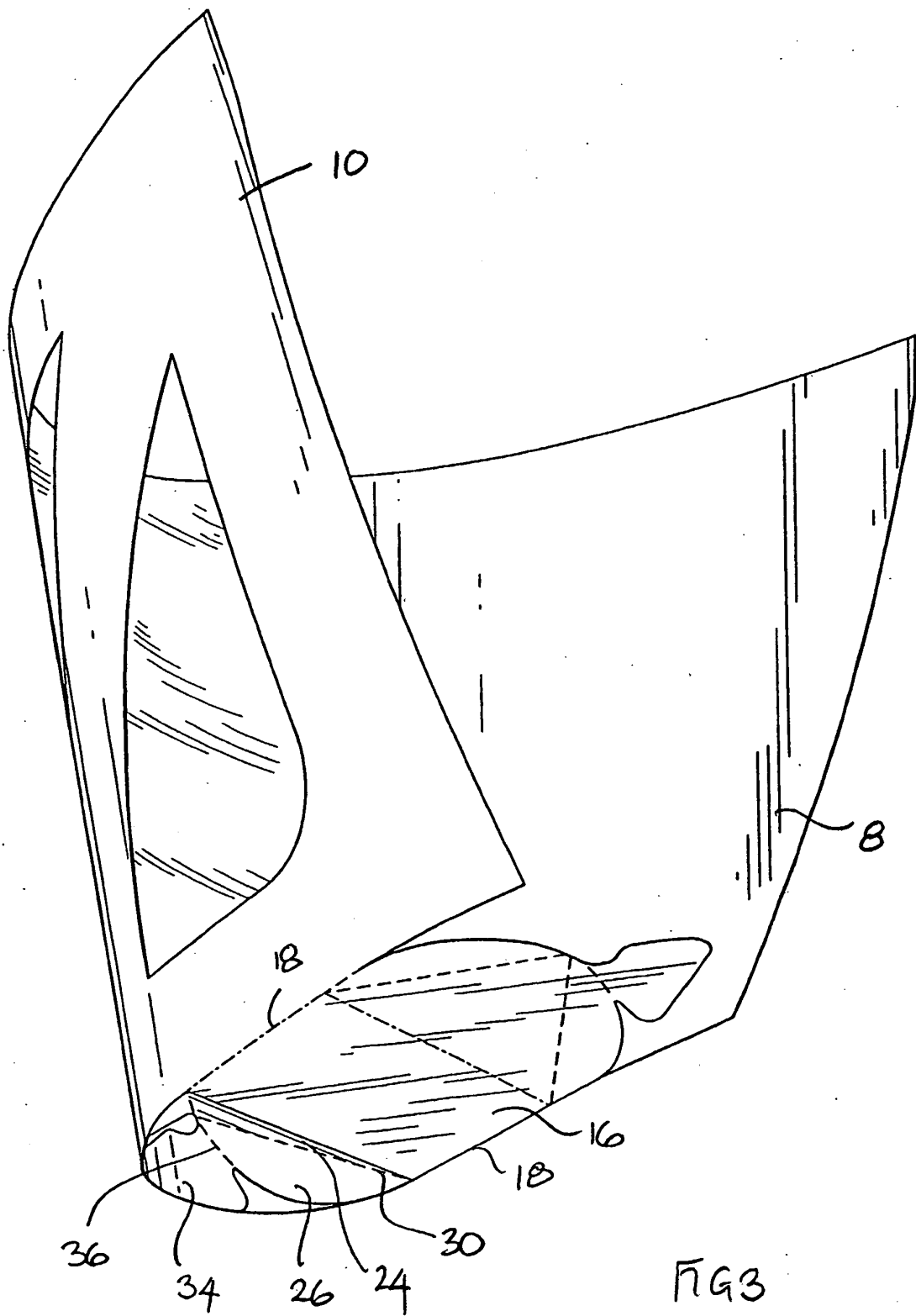


FIG 2



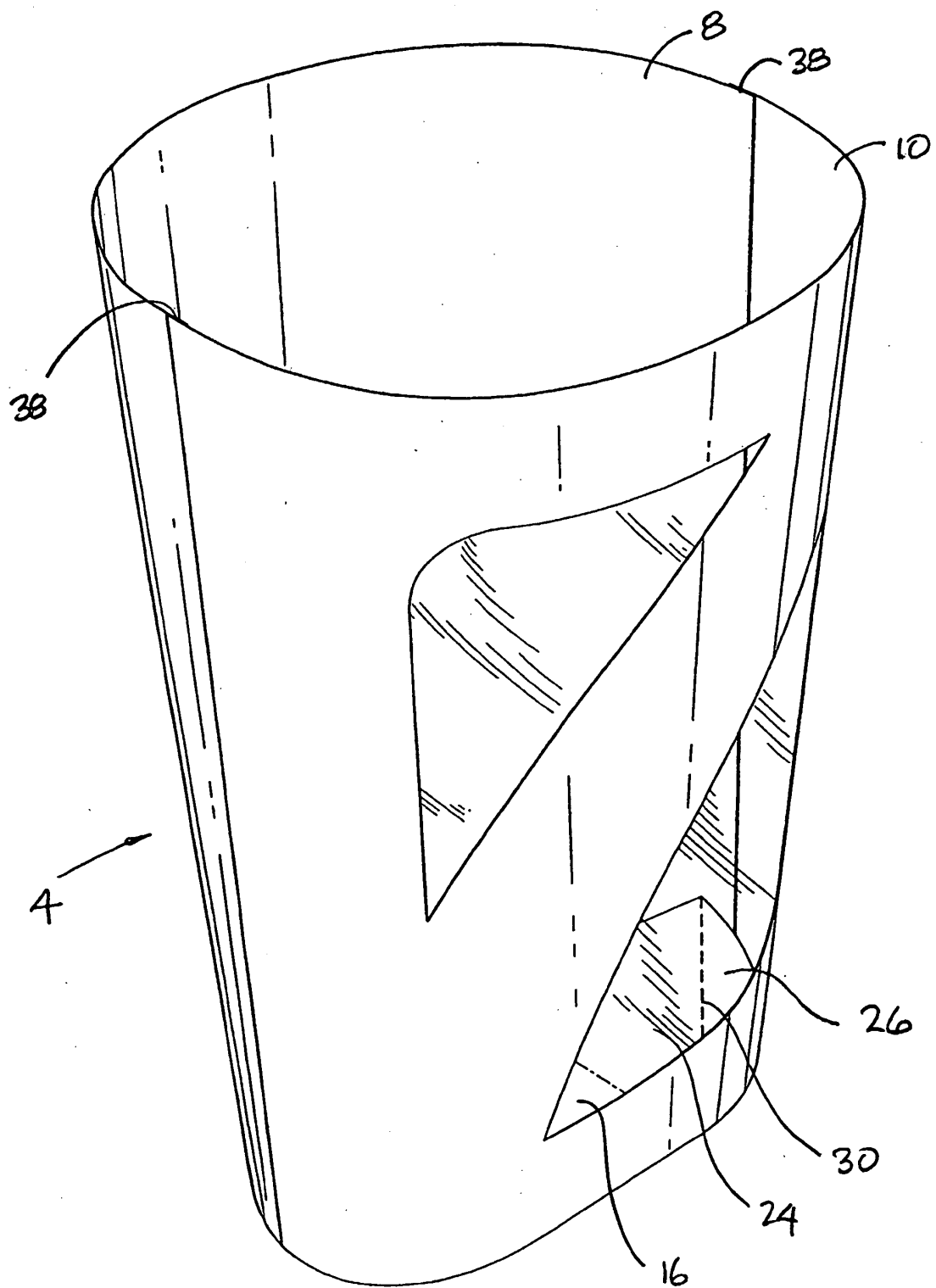
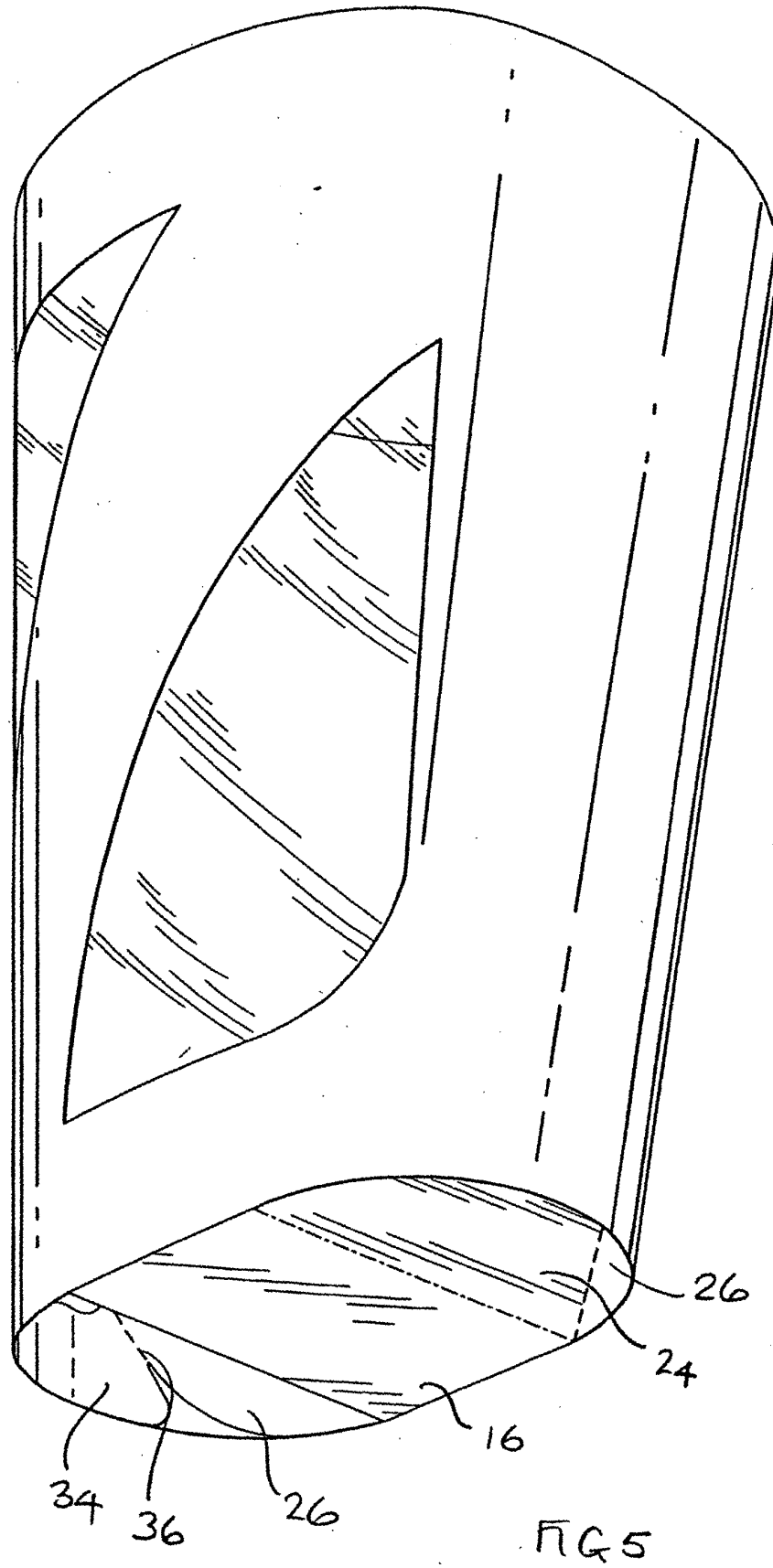


FIG 4



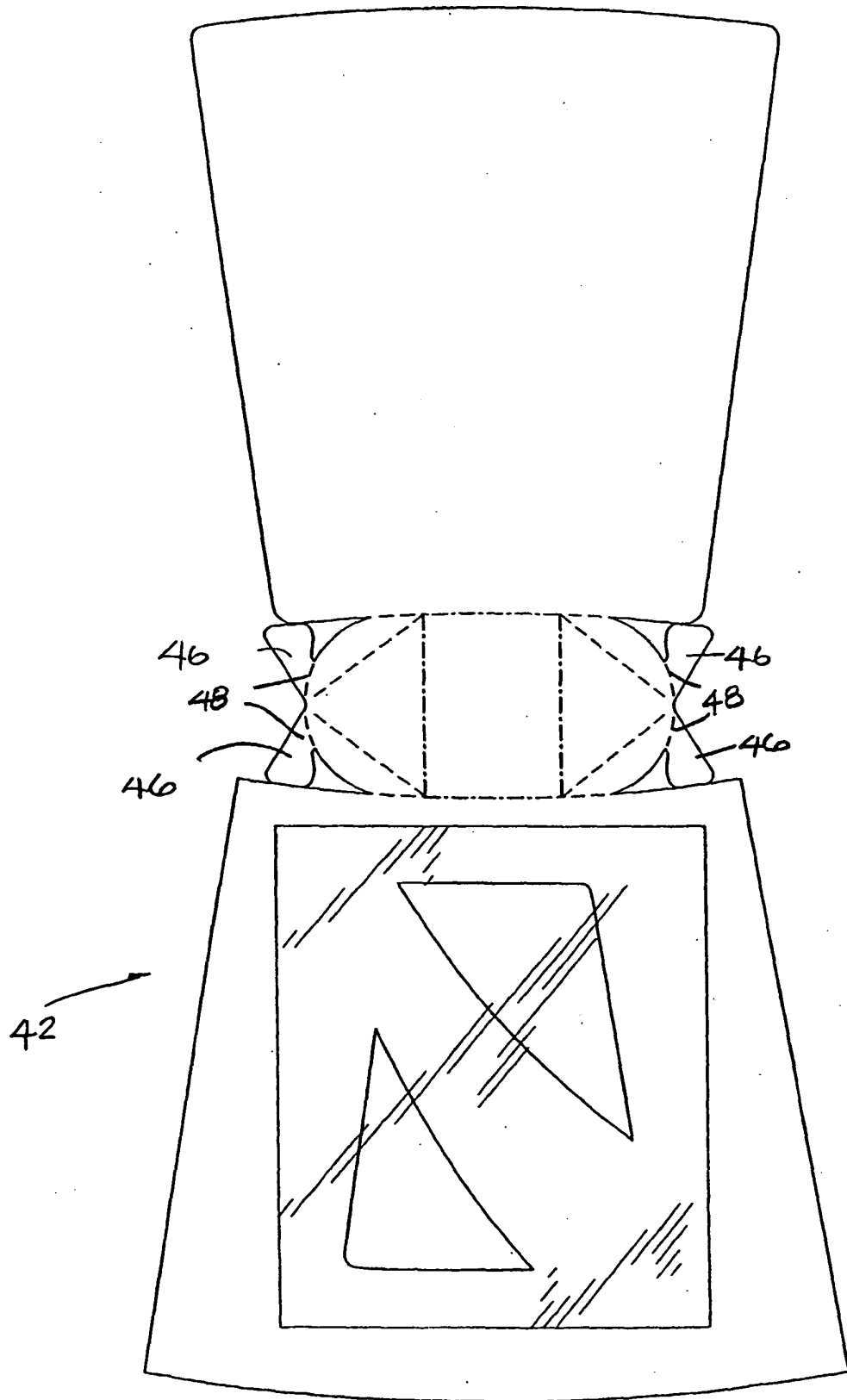


FIG 6

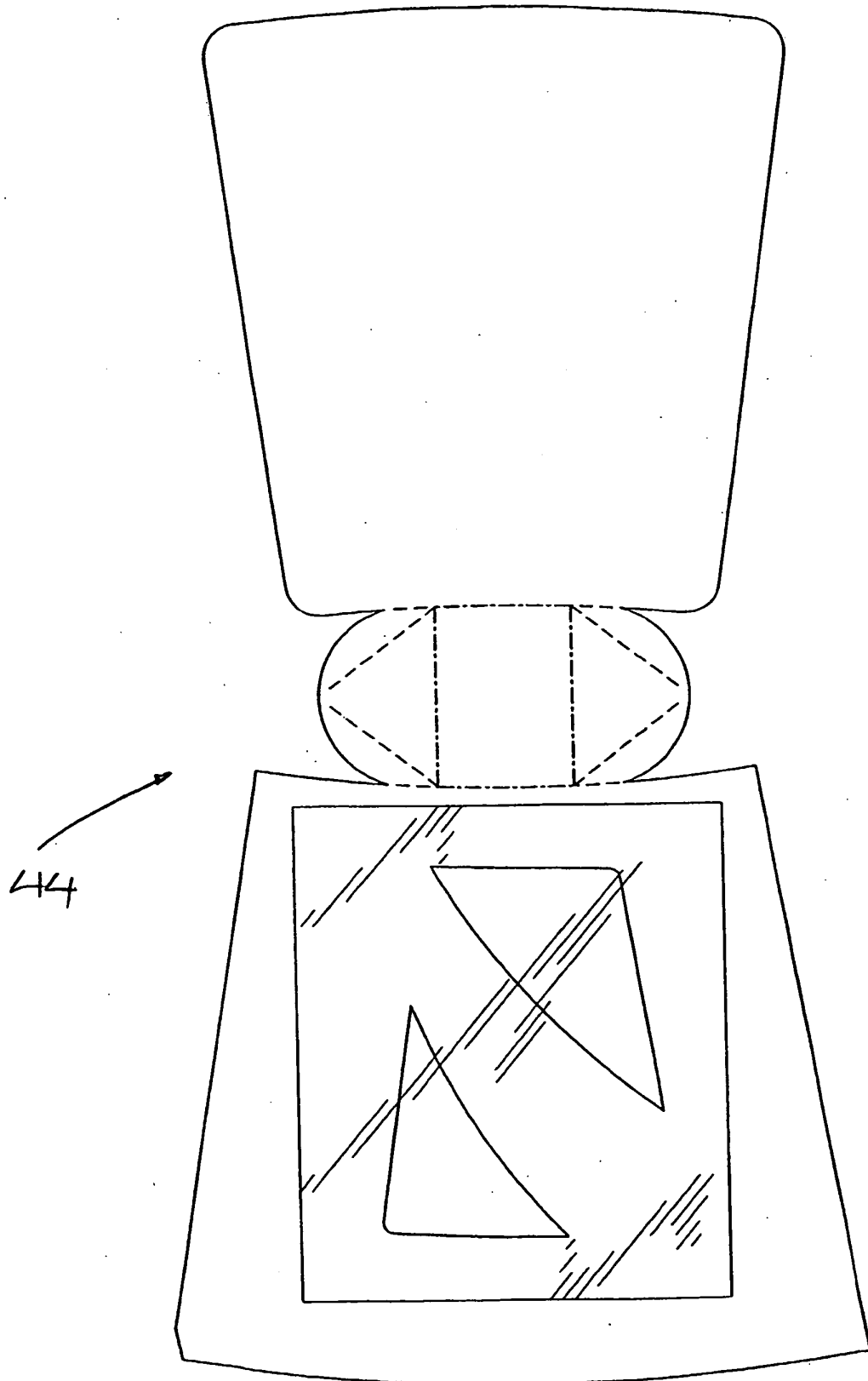


FIG 7

**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

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