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(54) **Display units**

(57) A display unit has a front wall and a rear wall which are moveable towards and away from each other,

and further comprises a foldable, collapsible bracing structure extending between the front and rear walls.

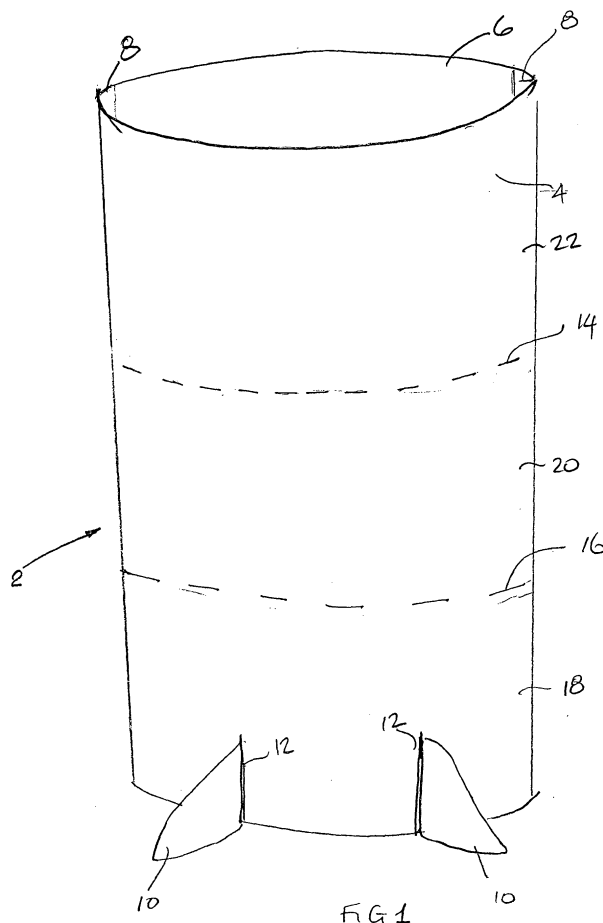


FIG 1

Description

[0001] The present invention relates to display units such as those which may be used to provide product information or advertising materials at a point of sale.

[0002] Typically such units comprise opposed front and rear walls which can be collapsed flat so as to facilitate transportation of the unit to its intended point of use. At that point of use, the front and rear faces are moved apart from one another and maintained in that position typically using one or more elastic bands. An example of such a construction is shown in US 6347772 B1. The present invention seeks to provide an improved display unit of this type which does not require the use of elastic bands which may break or become detached from the product.

[0003] From a first aspect, therefore, the invention provides a display unit having a front wall and a rear wall which are moveable towards and away from each other, and further comprising a foldable, collapsible bracing structure extending between the front and rear walls.

[0004] Thus in accordance with the present invention a foldable, collapsible bracing structure is arranged between the walls, this structure being deployable at a point of view in order to maintain the front and rear walls at a desired spacing.

[0005] The bracing structure may be collapsible and foldable about a horizontal axis, but preferably it is collapsible and foldable about one or more vertical axes.

[0006] The bracing structure member may be positioned so as to brace the unit generally centrally thereof, but in a preferred embodiment, a plurality of bracing structures are provided. This acts to provide bracing between the walls over a greater area, providing better bracing.

[0007] In a particularly preferred embodiment, two bracing structures are provided which are spaced apart laterally from one another, most preferably generally symmetrically with respect to the display unit.

[0008] In a preferred embodiment, the or each bracing structure comprises a bracing member which extends between the front and rear walls.

[0009] Preferably the or each bracing member is attached, more preferably pivotally attached, to one or other of the walls of the display unit.

[0010] Most preferably, the bracing member is hingedly attached to the side wall of the unit by a first attachment panel which is attached, for example glued, to the wall of the display unit. In a preferred embodiment, the first attachment panel is released from the bracing member.

[0011] In order to give the bracing member strength, it may be constructed with a double thickness, for example by being folded over on itself.

[0012] The bracing member also preferably has a free end which is locatable in a bracing position with respect to the other wall. Thus the bracing member is preferably attached at one end to one side wall of the unit and has a free end which cooperates with the other side wall to locate the walls apart.

[0013] Preferably the free end of the bracing member is provided with a locating tab which engages in a locating feature such as a locating slot provided in, on, or attached to the other wall.

[0014] In the preferred embodiment, the locating feature is provided in a second attachment panel which is attached, for example glued, to the unit wall. Most preferably, the second attachment panel is divided into two parts by a hinge line and the locating feature is provided along that hinge line. The second attachment panel is attached to the display unit wall by the part on one side of the hinge line and the other part of the panel on the other side of the hinge line is free so as to allow the second attachment flap more easily to follow the contour of the display unit wall.

[0015] The second attachment flap may be separate from the bracing member, but in the preferred embodiment the bracing member and second attachment flap are formed from the same blank of material, more particularly cardboard or other foldable sheet material.

[0016] A bracing structures may be arranged at any convenient height location within the display unit. In a preferred embodiment, the display unit when in its flat condition may have a number of vertically stacked sections which are foldable one relative to the other in order to reduce the amount of space taken by the unit during transit. Respective bracing structures may be provided in one or preferably more than one of these sections.

[0017] In a particularly preferred arrangement, bracing structures are provided in a lower part or section of the display stand and incorporate feet which extend through the base of the unit in order to provide a firm foundation for the unit.

[0018] The invention also extends to a bracing structure for a display unit in accordance with the invention and a blank for making such a bracing structure.

[0019] More particularly, the invention provides a one piece bracing structure formed from a blank of cardboard or other foldable sheet material, said bracing structure comprising a first attachment panel for attachment to a first wall of a display unit; a second attachment panel for attachment to an opposing wall of a display unit and a bracing panel hingedly connected with respect to said attachment panels.

[0020] The invention also provides a one piece blank of cardboard or other foldable sheet material for forming a bracing structure, said blank comprising a first attachment panel for attachment to a first wall of a display unit; a second attachment panel for attachment to an opposing wall of a display unit and a bracing panel hingedly connected with respect to said attachment panels.

[0021] Preferably, the first attachment panel is defined within the bracing panel so as to be rotatable out of the plane thereof.

[0022] Preferably the second attachment panel is attached to the bracing panel through an intermediate panel which is hinged relative to the bracing panel.

[0023] Most preferably, the intermediate panel is

hinged with respect to the bracing panel at a point intermediate the length of the bracing panel.

[0024] The intermediate panel is preferably hingedly connected to one end of a spacing panel which is hingedly connected at its other end to the bracing panel. The spacing panel is preferably attached, preferably glued, face to face with the bracing panel.

[0025] Most preferably, a plurality of hingedly interconnected bracing panels is provided with the bracing panels members being folded and secured into face to face contact to give a multi thickness construction.

[0026] Preferably the second attachment panel is formed with a slot for receiving a tab or other formation provided on the bracing panel or panels. Most preferably, a hinge line is formed so as to extend through said slot.

[0027] In those bracing structures which are used to provide feet for the display unit, leg forming panels may be formed to extend from the spacing and intermediate panels. Preferably the lower ends of the feet forming panels have a pair of flaps interconnected hingedly by a hinge line which may be folded into contacts which provide a double thickness foot.

[0028] A preferred embodiment of the invention will now be described with reference to the accompanying drawings, in which:

Figure 1 shows a display unit in accordance with the invention;

Figure 2 shows the display unit of Figure 1 disassembled to show its component parts;

Figures 3 through to 6 illustrate the manner in which the display unit of Figure 1 is erected;

Figure 7 shows a blank for making a first bracing unit incorporating a foot; and

Figure 8 shows a second blank for making a second bracing unit.

[0029] With reference to Figure 1, a display unit 2 in accordance with the invention comprises front and rear walls 4, 6. Each of these walls is formed from a separate panel, the walls being joint together by glue strips 8 hingedly formed at the edges of one or both panels. When erected, the unit 2 has a generally lenticular horizontal cross section.

[0030] The unit 2 further comprises four feet 10, only two of which are shown. These feet extend through slots 12 formed in the bottom of the walls 4, 6 of the unit 2.

[0031] The front and rear walls 4, 6 are provided with aligned hinge lines 14, 16 which divide the unit into lower, middle and upper sections 18, 20 and 22. When the unit 2 is collapsed flat, it may be folded about the fold lines 14, 16 in order to provide a more compact arrangement for transit.

[0032] Referring now to Figure 2, the display unit 2 comprises two upper bracing units 24 and two lower bracing units 26. The upper bracing units 24 are located in the upper section 22 of the unit 2 while the lower bracing units 26 are arranged in the lower section 18 of the display

unit 2.

[0033] With reference to Figure 8, each upper bracing unit 24 is made from a single blank 25 of cardboard or other foldable sheet material. It will be understood that the material chosen should be sufficiently strong to resist buckling when the display unit 2 is erected. A corrugated board would be a suitable material for the bracing units 24, 26 in most if not all instances.

[0034] The blank 25 comprises a first bracing panel 30, and a second bracing panel 32 hingedly attached to the first bracing panel about a hinge line 34. A first attachment panel 36 is released from the first bracing panel 30. First bracing panel 30 is attached to one end of a spacing panel 38 about a double hinge line 40, the other end of the spacing panel 38 being attached to an intermediate panel 42 about a hinge line 44. A second attachment panel 46 is attached to the intermediate panel 42 about a further hinge line 48. The second attachment panel 46 is provided with an intermediate hinge line 50 which extends through a slot 52. The hinge line 50 divides the second attachment panel into first and second parts, 54, 56. The slot 52 will in use receive a tab formed by tabs 58 arranged on the outer edges of the first and second bracing panels 30, 32. The hinge lines 40, 44, 48 and 50 are parallel.

[0035] The lower bracing units 26 are formed from blanks 27 which are generally similar to those of the upper bracing units 24 apart from the provision of feet 10. The feet 10 are formed by elongated spacing and intermediate panels 38', 42'. The lower end of these respective panels 38', 42' are broadened out to form foot panels 60. Additional foot panels 62 are attached to the foot panels 60 about a double hinge line 64 to provide double thickness feet 10.

[0036] The blanks 25, 27 may be cut from a single sheet of material in a material efficient manner by arranging their L-shaped parts in an interlocking manner.

[0037] In order to erect an upper bracing unit 24 from its blank 25, adhesive is applied to one or both of the hatched areas 66 of the first and second bracing panels 30, 32 shown in Figure 8. The second bracing panel 32 is then folded over and glued to the first bracing panel 30 in order to form a double thickness bracing member 68 (Figure 3).

[0038] The spacing panel 38 is then folded back about the double hinge line 40 and glued to the second bracing panel 32 by glue applied in the shaded region 70 of the spacing panel 38. This reinforces the base of the bracing panels 30, 32. The intermediate and second attachment panels 42, 46 are then folded back about hinge line 44 such that the second attachment panel 46 projects beyond the bracing panels 30, 32. The second attachment panel 46 is then folded back about hinge line 48 so as to lie behind the bracing panels 30, 32, spacing panel 38 and intermediate panel 42.

[0039] In this configuration, the bracing unit is flat and the first attachment panel 36 and second attachment panel 46 can be glued to desired locations on the front

and rear walls 2, 4 of the display unit 2 respectively by adhesive applied in the shaded regions 72, 74 shown in Figure 8. The relative lateral positions of the bracing units 24, 26 can best be seen from Figure 6 which shows the position of the two lower bracing units 26. The upper bracing units 24 are vertically aligned with the lower bracing units 26.

[0040] The bracing units 24, 26 may be attached to the front and rear walls 4, 6 after the latter have been joined together, or before. For example, the front and rear panels 4, 6 may be joined along one glue flap 8, the bracing units glued to one or other of the walls 4, 6 and the front and rear panels 4, 6 then folded over to be joined along the other glue flap 8, the gluing of the bracing units 24, 26 to the other wall taking place at the same time.

[0041] As can be seen from Figure 2, the upper bracing units 24 are placed in the upper section 22 of the unit 2 and the lower bracing units in the lower section 18 of the unit 2. It has been found that this provides sufficient rigidity for the unit 2 and that bracing units are not required in the middle section 20 of the unit 2.

[0042] The lower bracing units 26 may be assembled in a similar manner, with the foot panels 60, 62 being glued to one another in the hatched regions 76 to provide double thickness feet 10.

[0043] Referring now to Figures 3 to 6, in order to erect the display unit the front and rear faces 2, 4 are pulled apart in the direction of arrow A such that the bracing units 24, 26 expand. In particular, the first attachment panel 36 will remain attached to the rear wall 4 while the bracing member 68 pivots relative thereto about the fold line 40. The intermediate panel 42 is able to rotate relative to the bracing member 68 about the hinge line 44. As the movement continues, the second part 56 of the second attachment panel 46 is able to rotate around hinge line 50 so as to conform more closely to the shape of the front wall 2. The front walls 2, 4 are pulled apart until such time as, as shown in Figure 5, the second parts 56 generally abut and the tabs 78 formed on the end of each bracing member 24, 26 engage in the slot 52. The resilience of the walls 2, 4, will maintain the tabs 78 in the slots 52 as shown.

[0044] To collapse the unit 2, the tabs 78 can simply be disengaged from the slots 52 and the walls 2, 4 pushed together. The bracing units 24, 26 will then collapse flat allowing the unit to be folded about the hinge lines 14, 16 for compact transit or disposal.

[0045] It will be understood that the terms front and rear as used herein are not limiting on the scope of the invention, but merely convey a relative position of the respective walls.

[0046] Also, while the unit described above has only two walls, it may of course have more than two walls, for example being quadrilateral in shape.

Claims

1. A display unit (2) having a front wall (4) and a rear wall (6) which are moveable towards and away from each other, and further comprising a foldable, collapsible bracing structure (24,26) extending between the front and rear walls (4,6).
2. A display unit (2) as claimed in claim 1 wherein the bracing structure (24,26) is collapsible and foldable about one or more vertical axes.
3. A display unit (2) as claimed in claim 1 or 2 comprising a plurality of bracing structures (24,26) spaced apart laterally from one another.
4. A display unit (2) as claimed in claim 3 wherein the bracing structures (24,26) are arranged generally symmetrically with respect to the display unit (2).
5. A display unit (2) as claimed in any preceding claim wherein the or each bracing structure (24,26) comprises a bracing member (68) which extends between the front and rear walls (4,6).
6. A display unit (2) as claimed in claim 5 wherein the or each bracing member (68) is hingedly attached to one or other of the walls (4,6) of the display unit (2).
7. A display unit (2) as claimed in claim 6 wherein the bracing member (68) is hingedly attached to the side wall (6) of the unit by a first attachment panel (36) which is attached to the wall (6) of the display unit.
8. A display unit (2) as claimed in claim 7 wherein the first attachment panel (36) is released from the bracing member (68).
9. A display unit (2) as claimed in any of claims 5 to 8 wherein the bracing member (68) is of double thickness.
10. A display unit (2) as claimed in any of claims 5 to 9 wherein the bracing member (68) has one end attached with respect to one wall (6) of the unit and a free end which is locatable in a bracing position with respect to the other wall (4) of the unit.
11. A display unit (2) as claimed in claim 10 wherein the free end of the bracing member (68) is provided with a locating tab (78) which engages in a locating feature (52) provided in, on, or attached to the other wall (4) of the unit.
12. A display unit (2) as claimed in claim 11 wherein the locating feature (52) is provided in a second attachment (46) panel which is attached to the other wall (4) of the unit.

13. A display unit (2) as claimed in claim 12 wherein the second attachment panel (46) is divided into two parts (54,56) by a hinge line (50) and the locating feature (52) is provided along that hinge line (50). 5
14. A display unit (2) as claimed in claim 13 wherein the second attachment panel (46) is attached to the display unit wall (4) by the part (54) on one side of the hinge line (50) and the other part (56) of the panel on the other side of the hinge line (50) is free. 10
15. A display unit (2) as claimed in claim 12, 13 or 14 wherein the second attachment panel (46) is separate from the bracing member (68). 15
16. A display unit (2) as claimed in claim 12, 13 or 14 wherein the bracing member (68) and second attachment panel (46) are formed from the same blank of material (25,27). 20
17. A display unit (2) as claimed in any preceding claim wherein the display unit (2) comprises a number of sections (18,20,22) which are foldable one relative to the other when the unit (21) is in a flat condition. 25
18. A display unit (2) as claimed in claim 17 wherein respective bracing structures (24,26) are provided in more than one of the said sections (18,20,22). 30
19. A display unit (2) as claimed in claim 18 wherein respective bracing structures (24,26) are provided in an upper (22) and lower (18) section of the unit (2). 35
20. A display unit (2) as claimed in any preceding claim wherein one or more bracing structures (24,26) are provided in a lower part or section (18) of the display unit (2) and incorporate feet for the unit (10). 40
21. A bracing structure (24,26) for a display unit (2) as claimed in any preceding claim. 45
22. A blank (25,27) for making a bracing structure (24,26) as claimed in claim 21. 50
23. A one piece bracing structure (24,26) formed from a blank of cardboard or other foldable sheet material, said bracing structure (24,26) comprising a first attachment panel (36) for attachment to a first wall (6) of a display unit (2); a second attachment panel (46) for attachment to an opposing wall (4) of a display unit (2) and a bracing panel (68) hingedly connected with respect to said attachment panels (36,46). 55
24. A one piece blank (25,27) of cardboard or other foldable sheet material for forming a bracing structure (24,26), said blank (25,27) comprising a first attachment panel (36) for attachment to a first wall (6) of a display unit (2); a second attachment 5
25. A bracing structure (24,26) or blank (25,27) as claimed in claim 23 or 24 wherein the first attachment panel (36) is defined within the bracing panel (68) so as to be rotatable out of the plane thereof. 8
26. A bracing structure (24,26) or blank (25,27) as claimed in any of claims 23 to 25 wherein the second attachment panel (46) is attached to the bracing panel (68) through an intermediate panel (42) which is hinged relative to the bracing panel (68).
27. A bracing structure (24,26) or blank (25,27) as claimed in claim 26 wherein the intermediate panel (42) is hinged with respect to the bracing panel (68) at a point intermediate the length of the bracing panel (68).
28. A bracing structure (24,26) or blank (25,27) as claimed in claim 27 wherein the intermediate panel (42) is hingedly connected to one end of a spacing panel (38) which is hingedly connected at its other end to the bracing panel (68).
29. A bracing structure (24,26) or blank (25,27) as claimed in claim 28 wherein the spacing panel (38) is attached or attachable face to face to the bracing panel (68).
30. A bracing structure (24,26) or blank (25,27) as claimed in any of claims 23 to 29 wherein a plurality of hingedly interconnected bracing panels (30,32) is provided with the bracing panels members (30,32) being folded or foldable and secured or securable face to face.
31. A bracing structure (24,26) or blank (25,27) as claimed in any of claims 23 to 30 wherein the second attachment panel (46) is formed with a slot (52) for receiving a formation (78) provided on the bracing panel or panels (68).
32. A bracing structure (24,26) or blank (25,27) as claimed in claim 31 wherein a hinge line (50) extends through said slot (52).
33. A bracing structure (26) or blank (27) as claimed in any of claims 23 to 32 further comprising foot forming panels (60).
34. A bracing structure (26) or blank (27) as claimed in claim 33 as dependent directly or indirectly upon claim 28 or 29 wherein said foot forming panels (60) are formed as extensions of the spacing (38') and intermediate (42') panels.
35. A bracing structure (26) or blank (27) as claimed in claim 34 comprising overlapping or overlappable foot forming panels (62).

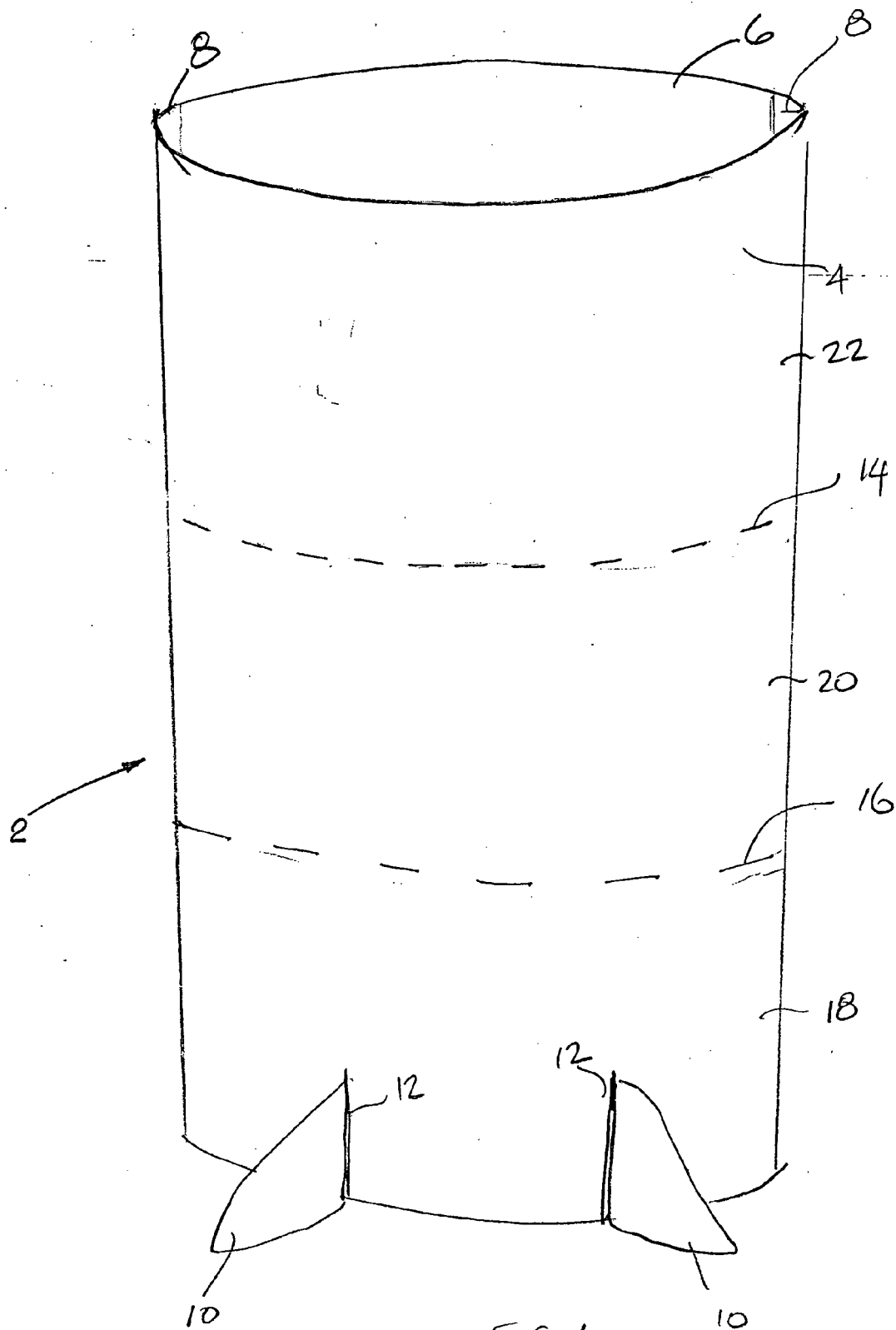


FIG 1

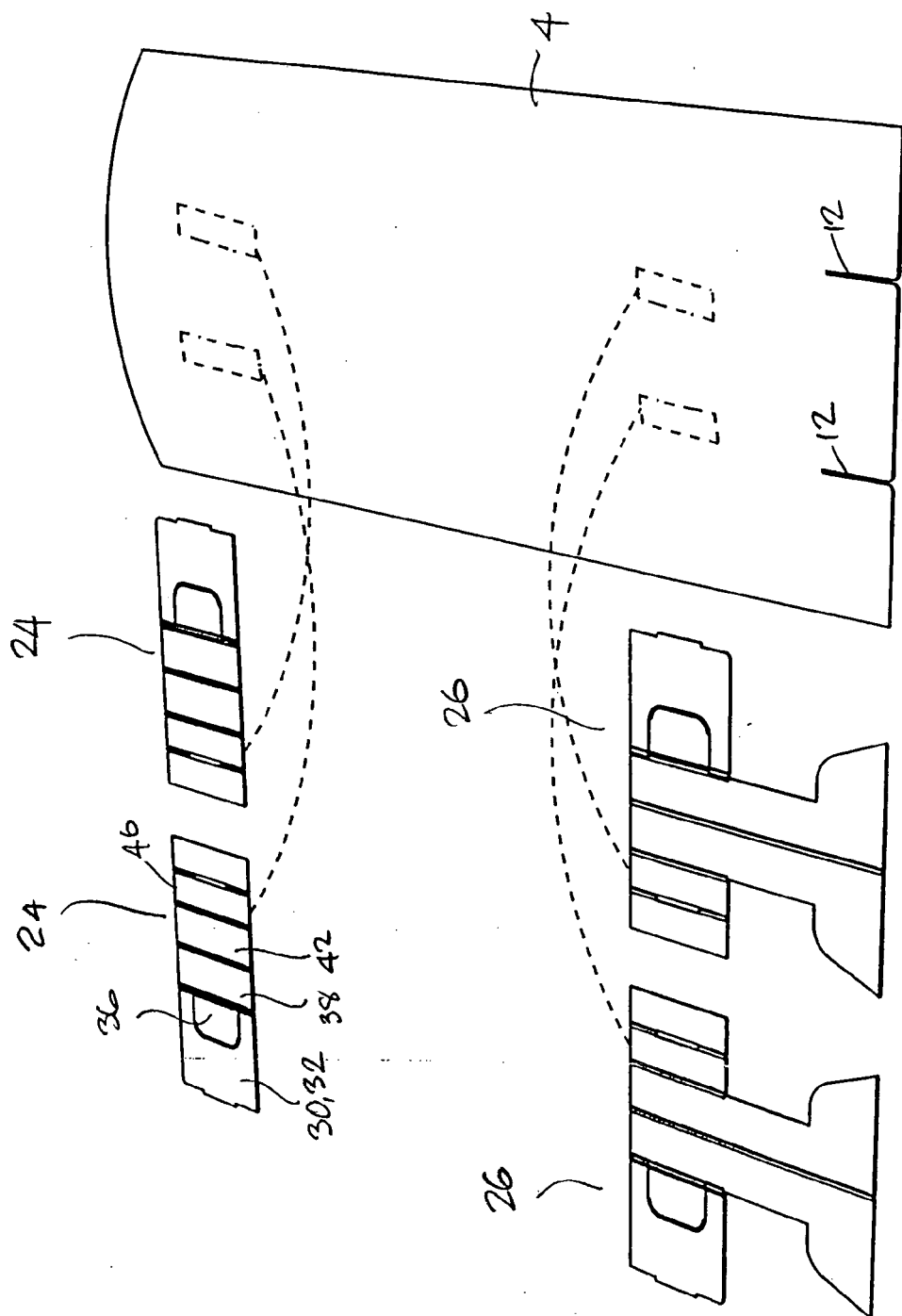
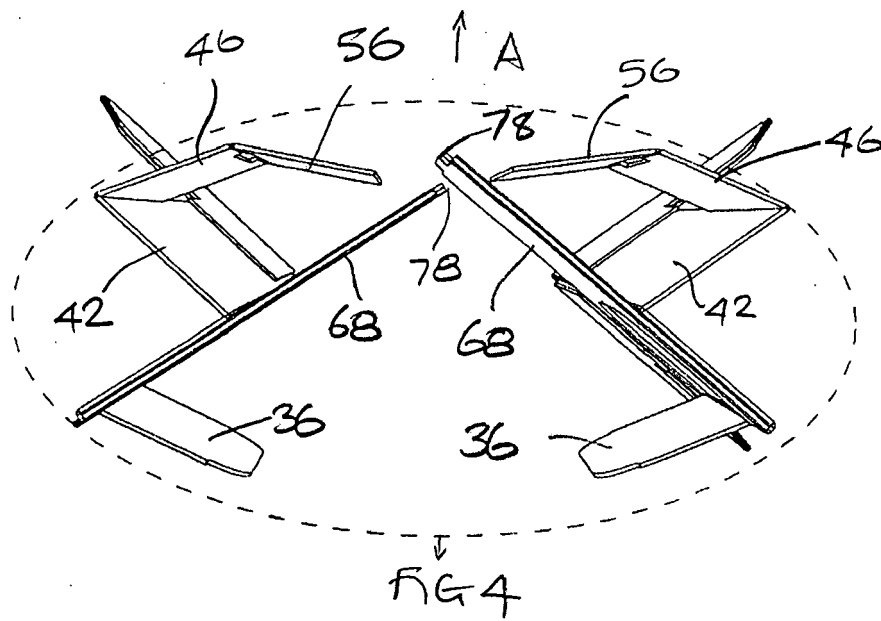
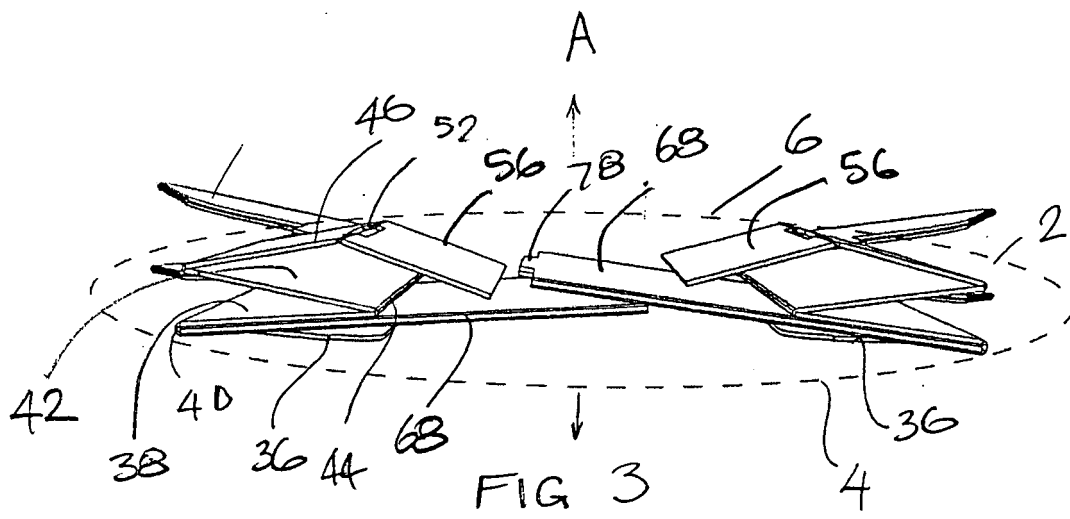
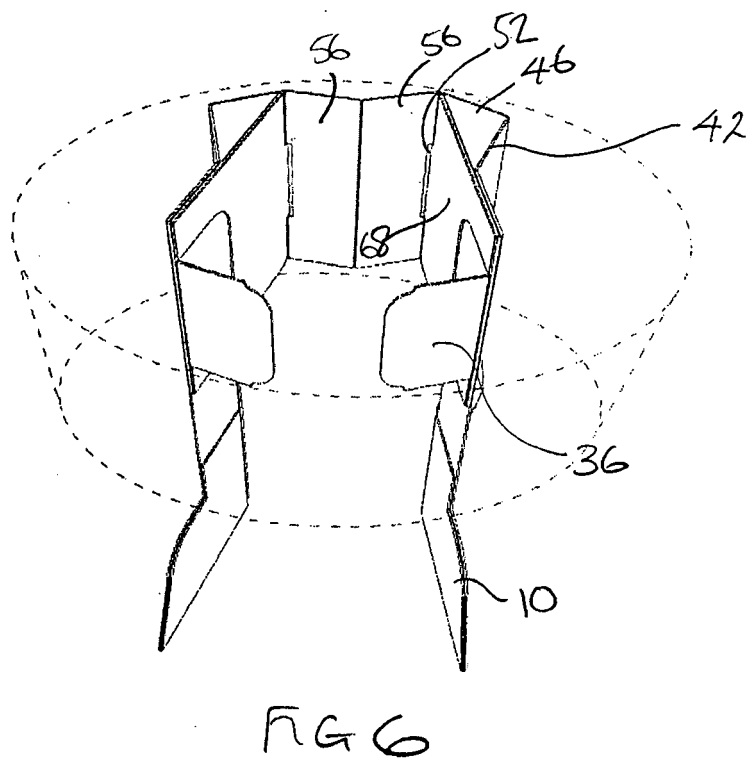
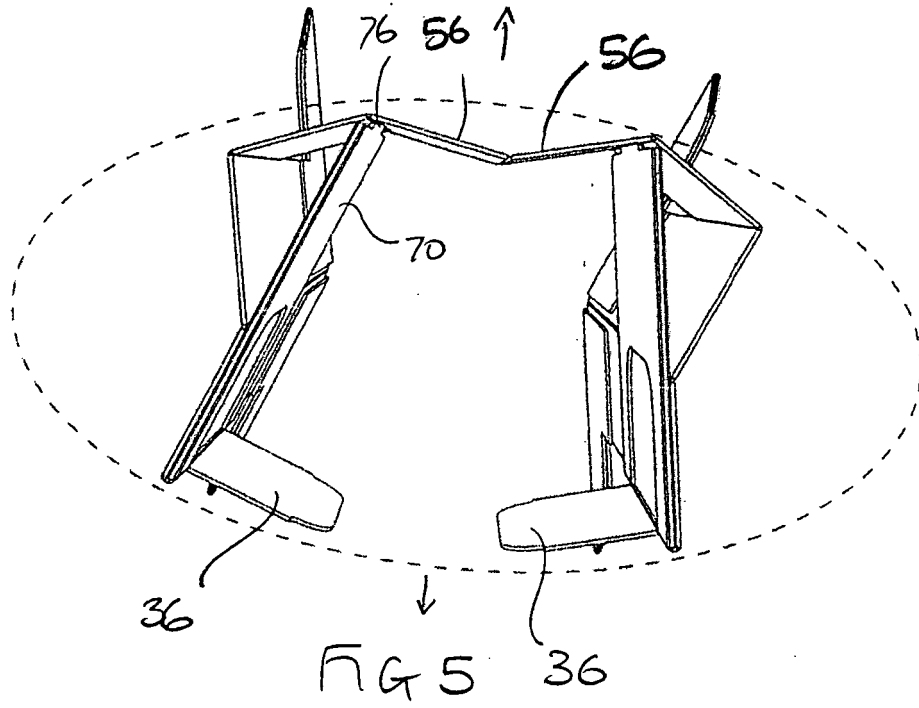
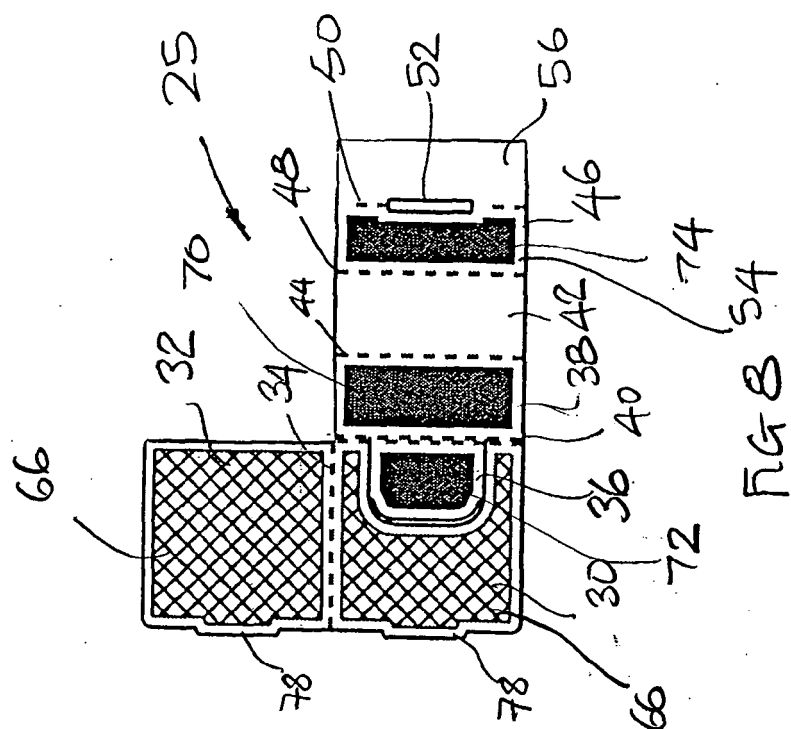
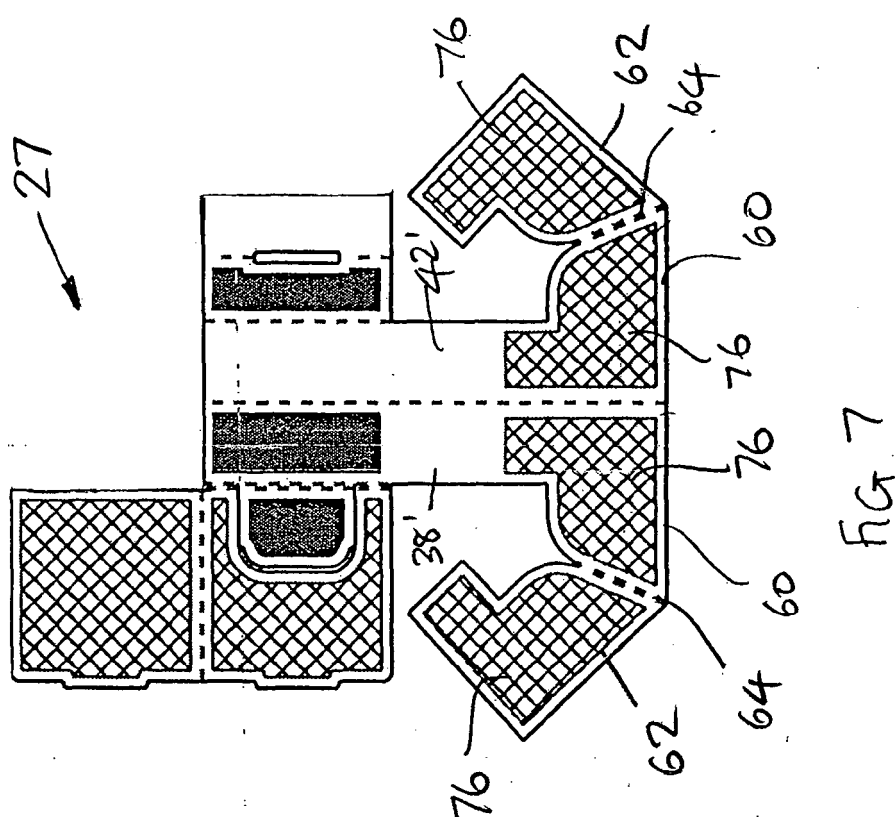


FIG 2







REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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