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(54) **Cut flower transport and display vessel**

(57) A vessel for transporting cut flowers and displaying the cut flowers at the point of sale comprises an outer cardboard carton and inner waterproof liner to hold water within the vessel in which the stems of cut flowers are placed. The outer cardboard carton has a full trans-

port height extending above the heads of the cut flowers to protect the flowers and the wall of the carton has a line of weakness along which the wall can be torn to reduce the height of the carton to expose the flower heads at the point of sale.

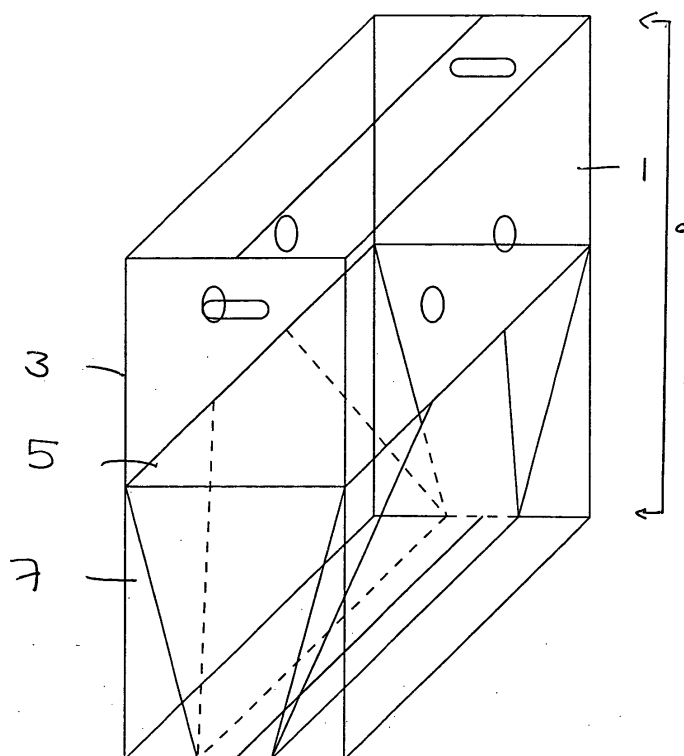


Figure 3

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Description

[0001] The invention relates to improvements in vessels for the transport and display of cut flowers.

[0002] Current trends are towards the purchase of cut flowers from large stores and supermarkets which can sell cut flowers in large volumes. This has led to changes in the transport and packing of cut flowers since at the point of sale, it is likely that they will be handled by shelf stackers relatively unskilled in flower handling. In order to maintain the quality of cut flowers it is important that no air enters the cut base of the stems. Thus it is desirable that the base of the stems remain submerged in water from packing by the packers to purchase by the final customer in the supermarket. Currently this is achieved by packing the cut flowers in a substantially upright attitude in plastic buckets which are transported to the supermarket in conventional cardboard cartons. On reaching the supermarket the shelf stacker at the supermarket has to open the carton, pick up the bucket from the carton and place the bucket on display. Thus the bucket used for transport is also used for display on the supermarket shelf and in this way the base of the cut flower stems can be maintained submerged under water from packing to purchase.

[0003] However, there are a number of disadvantages to this system. Most importantly, the shelf stacker reaching into the carton to remove the bucket often may damage some of the cut flowers. Also the system involves the use of many thousands of plastic buckets which are generally non-recyclable and then have to be transported after use to a land infill site. The buckets are of cylindrical or frusto-conical shape, thus having a circular footprint on the supermarket shelf and in the transport carton and not utilising the shelf space efficiently or the carton space efficiently.

[0004] According to the invention there is provided a combined transport and display vessel for cut flowers, comprising an outer cardboard carton and an inner waterproof liner for holding water and cut flower stems in a substantially upright attitude, in which the walls of the outer cardboard carton have a full transport height extending above the heads of the cut flowers but having defined thereon at least one line of weakness along which the carton wall may be readily torn to reduce the height of the carton walls to a display condition in which the heads of the cut flowers are exposed.

[0005] Thus there is no necessity for the supermarket to have to lift any vessel from the carton. During transport the full height of the carton walls protect the cut flowers within and on arrival at the point of sale the cartons are ripped along the line of weakness to reduce the height of the carton wall to expose the heads of the cut flowers for display.

[0006] Preferably the inner waterproof liner is a plastic coated cardboard since this is inexpensive and light. The outer carton and inner liner could be all of the same material with either the inner liner being provided by an

inner coating or by forming a secondary inner vessel, from the same or a different blank than the carton. However, the most commercially viable arrangement is to have the outer cardboard carton of standard corrugated cardboard and the inner liner of waterproof cardboard. One major advantage of these being separate is that the inner liner can be made of a different shape to the outer carton.

[0007] Preferably the outer carton is cuboid of standard dimensions for transport and delivery to and within a supermarket in standard pallets and trolleys. Preferably the inner liner is of trapezoidal cross-section so that its outer walls taper inwards towards the base. This is the most efficient arrangement since the base of cut flowers take less space than the heads of the cut flowers and thus allows the volume of water to be minimised, thus keeping the weight of the filled carton to a minimum. Preferably the cross-sectional area of the base of the inner liner is between 0.33 and 0.5 of the area of the base of the outer carton.

[0008] Typically the line of weakness may be a perforated cut or may comprise a standard tear tape such as that sold under the registered trade mark RIPPATAPE.

[0009] Although the liner could have a full height equal to the full height of the carton with the liner also having a line of weakness such as a perforated cut or tear tape, this would be unnecessarily wasteful. Preferably therefore the height of the inner liner is substantially the same or less than the distance from the base of the carton to the predetermined line of weakness in the outer carton.

[0010] Preferably the inner liner is made from a blank having no cuts. This reduces the possibility of leaks.

[0011] Although there are many materials which could be used for the inner liner which would be apparent to the skilled addressee of the specification, preferably the liner is made from corrugated cardboard, one face of which is formed by paper laminated with a polyester film. Preferably the polyester film adheres to the paper by a polyethylene layer.

[0012] Typically the size of carton for transport is 592mm x 392mm x 625mm. This sized carton will fit in standard pallets and trolleys used in supermarkets and can be stored on a supermarket shelf efficiently.

[0013] The tear line may be at the same height from the base across each wall and conveniently this may be arranged to be at halfway down the wall for ease of manufacture. However, as the skilled addressee would recognise, the tear lines may be arranged to be diagonal or at different heights on different walls to provide different display cartons. Because the outer carton is of cardboard and is retained on the supermarket shelf, preferably the outer carton is printed with indicia selected by the supermarket. This may be with information or decorative.

[0014] The emptied vessels can then be recycled which provide an environmentally friendly solution to the provision of cut flowers.

[0015] The inner liner may comprise one unitary

space within the vessel or may include one or more dividers to separate the cut flowers into groups. This can be especially helpful when the vessel has been half emptied of flowers - to support the remaining blooms.

[0016] Two combined transport and display vessels for cut flowers in accordance with the invention will now be described, by way of example only, with reference to the accompanying drawings in which: -

Figure 1 is an isometric view of the inner liner of a first vessel;

Figure 2 is a plan of the blank for the liner shown in Figure 1;

Figure 3 is a schematic isometric view of the vessel of Figure 1 in transport condition;

Figure 4 is a plan of the carton blank of the first vessel;

Figure 5 is an isometric view of the first vessel in display condition;

Figure 6 is an isometric view of the inner liner of a second vessel;

Figure 7 is a plan of the blank of the liner shown in Figure 6; and,

Figure 8 is a plan of the carton blank of the second vessel

[0017] Figures 1 to 5 of the drawings illustrate a combined transport and display vessel 1 for cut flowers, which comprises an outer cardboard carton 3 and an inner waterproof liner 5 for holding water and cut flower stems in a substantially upright attitude in which the walls 7 of the outer cardboard carton 3 have a full transport height 9 extending above the heads of the cut flowers but having defined thereon at least one line of weakness 11 along which the carton wall 7 may be readily torn to reduce the height of the carton wall 7 to a display condition as shown in Figure 5 in which the heads of the cut flowers are exposed.

[0018] The inner liner is formed from blank 13 shown in Figure 2 which has no cut line upon it. The liner is of a corrugated cardboard where the surface which will be inside the liner when constructed 15 is a paper laminated with polyester. In this case the material is 90 grams of paper laminated with 22 grams of polyester film x 10 grams of polyethylene. This provides a thin layer of polyester which is waterproof but allows the corrugated cardboard to be folded along fold lines defined in the blank 13 and shown in broken lines in Figure 2. The blank 13 is made up to form an inner vessel having a trapezoidal cross-section with a smaller base 19 than top 21. The blank is folded about fold lines 17, 18 and 19 to form a flap 23 on the outer wall of the vessel which can be adhered to that outer surface. Each corner of the vessel has a similar arrangement which provides a strong structure. The vessel has tapered walls which allows for cut flowers to be accommodated most efficiently since the base of the stems takes up a smaller cross-section than higher up the stems and at the heads of the

flowers. In this case the area taken up by the base 19 is less than a third of the top 21. This significantly reduces the amount of water required to cover the base of the stems (typically 1½-2 inches in depth) which keeps the weight of the finished transported product to a minimum.

[0019] The outer carton illustrated in Figures 3 and 4 is of standard corrugated cardboard and a standard coboid shape with handles 25 and ventilation holes 27 cut in the walls for convenience. The full height of the carton is defined by the dimension 29 as shown in Figure 4 with base 31 and top 33 also defined by the blank. Midway up the walls 7 is defined a line of weakness 11 across the walls 7 which in this case is formed by the tear tape sold under the trade mark RIPPATAPE allowing the walls 7 to be readily torn along this predetermined line.

[0020] The vessel in transport condition is illustrated in Figure 3 where the inner liner 5 sits within the outer carton 3 upon its base with the wall 7 of the carton extending well above the height of the inner with dimension 9 corresponding to distance 29 in Figure 4. The height of inner 5 is the same as the distance of the tear line 11 from base 31. Flowers may then be transported in a substantially upright condition within the carton with their stems submerged in water and because the cartons are of a standard shape they can be transported within a supermarket trolley to the supermarket shelf at which point the tear tape 11 is ripped to remove the top half of the wall 7 and the top of the carton 33 to provide the condition illustrated in Figure 5. At this point the cut heads of the flowers can be clearly seen and are displayed for potential purchasers. The outer carton 3 may be printed with decorative designs or any indicia required by the supermarket.

[0021] Figures 6 to 8 illustrate a second combined transport and display vessel 35 comprising an outer cardboard carton 37, the blank for which is shown in Figure 8, and an inner waterproof liner 39.

[0022] Inner waterproof liner 39 is identical to the inner 5 of the first vessel save that its upper edge (the perimeter edge of the blank) includes a series of cooperating locking notches 41. These notches 41 are cut so as to interlock and lock with notches on the overlapping surfaces when the blank is folded into erected condition to lock overlying faces together.

[0023] Also the two longer parallel edges of the upper edges include longitudinal cuts 43. These allow strips 45 to be bent away from the wall to extend across the liner. Each strip 45 includes a locking slot 47 which allows the two strips 45 to be locked together to form a transverse dividing bar 49 when the liner is erected. This dividing bar 49 supports the remaining cut flowers upright when the vessel is more than half empty - thus preventing any flowers falling down into the water.

[0024] The outer carton 37 is identical to carton 3 of the first vessel save for the presence of two extra handle slots 51. These will allow the filled vessel to be lifted by these slots 51 when the upper portion of the carton has

been removed for display.

Claims

1. A combined transport and display vessel (1) for cut flowers, comprising an outer cardboard carton (3; 37) and an inner waterproof liner (5; 39) for holding water and cut flower stems in a substantially upright attitude, in which the walls (7) of the outer cardboard carton (3; 37) have a full transport height extending above the heads of the cut flowers but having defined thereon at least one line of weakness (11) along which the carton wall (7) may be readily torn to reduce the height of the carton walls (7) to a display condition in which the heads of the cut flowers are exposed.

2. A combined transport and display vessel according to claim 1 **characterised in that** the inner waterproof liner (5; 39) is a plastic coated cardboard, preferably corrugated cardboard, one face of which is formed by paper laminated with a plastic film, for example a polyester film adhered to the paper such as by a polyethylene layer.

3. A combined transport and display vessel according to claim 1 **characterised in that** the outer cardboard carton (3; 37) is of corrugated cardboard.

4. A combined transport and display vessel according to claim 1 **characterised in that** the outer cardboard carton (3; 37) is cuboid and the inner liner (5; 39) is of trapezoidal cross-section so that its outer walls taper inwards towards the base (19) such that the cross-sectional area of the base (19) of the inner liner (5; 39) is preferably between 0.33 and 0.5 of the area of the base of the outer cardboard carton (3; 37).

5. A combined transport and display vessel according to claim 1 **characterised in that** the line of weakness (11) is a perforated cut or a tear tape, preferably at the same height from the base across each wall (7), more preferably half-way down the wall (7).

6. A combined transport and display vessel according to claim 1 **characterised in that** the height of the inner liner (5; 39) is substantially the same or less than the distance from the base of the carton (3; 37) to the predetermined tear line (11) of the outer cardboard carton (3; 37).

7. A combined transport and display vessel according to claim 1 **characterised in that** the inner liner (5; 39) is made from a blank having no cuts.

8. A combined transport and display vessel according

to claim 1 **characterised in that** the outer cardboard carton (3; 37) is printed with indicia, optionally comprising information or decoration.

9. A combined transport and display vessel according to claim 1 **characterised in that** the inner liner (39) includes one or more dividers (49) to separate the cut flowers into groups.

10. A combined transport and display vessel according to claim 1 **characterised in that** the outer carton (3; 37) is provided with ventilation holes (27) and/or handles (25; 51) in the walls (7).

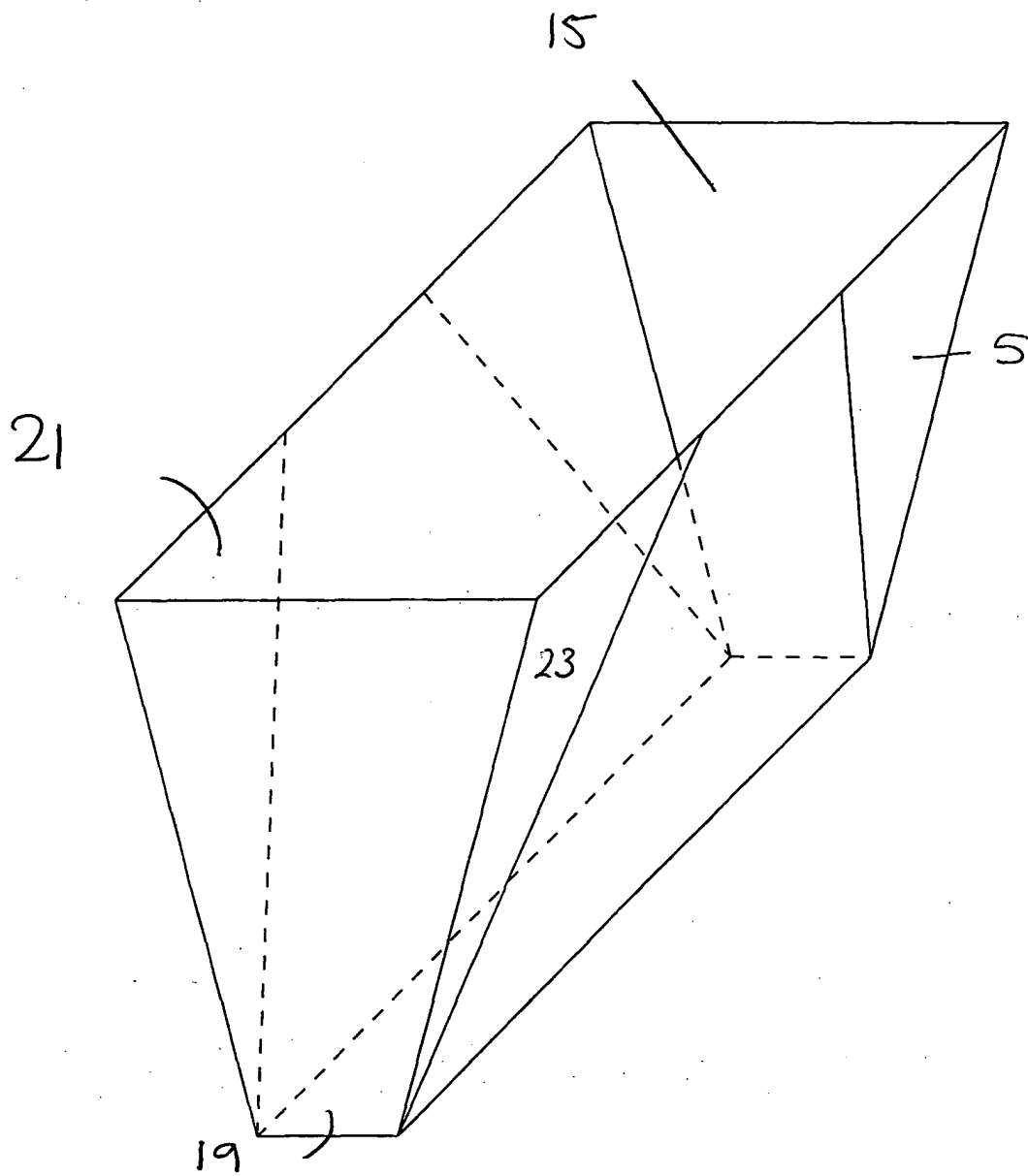


Figure 1

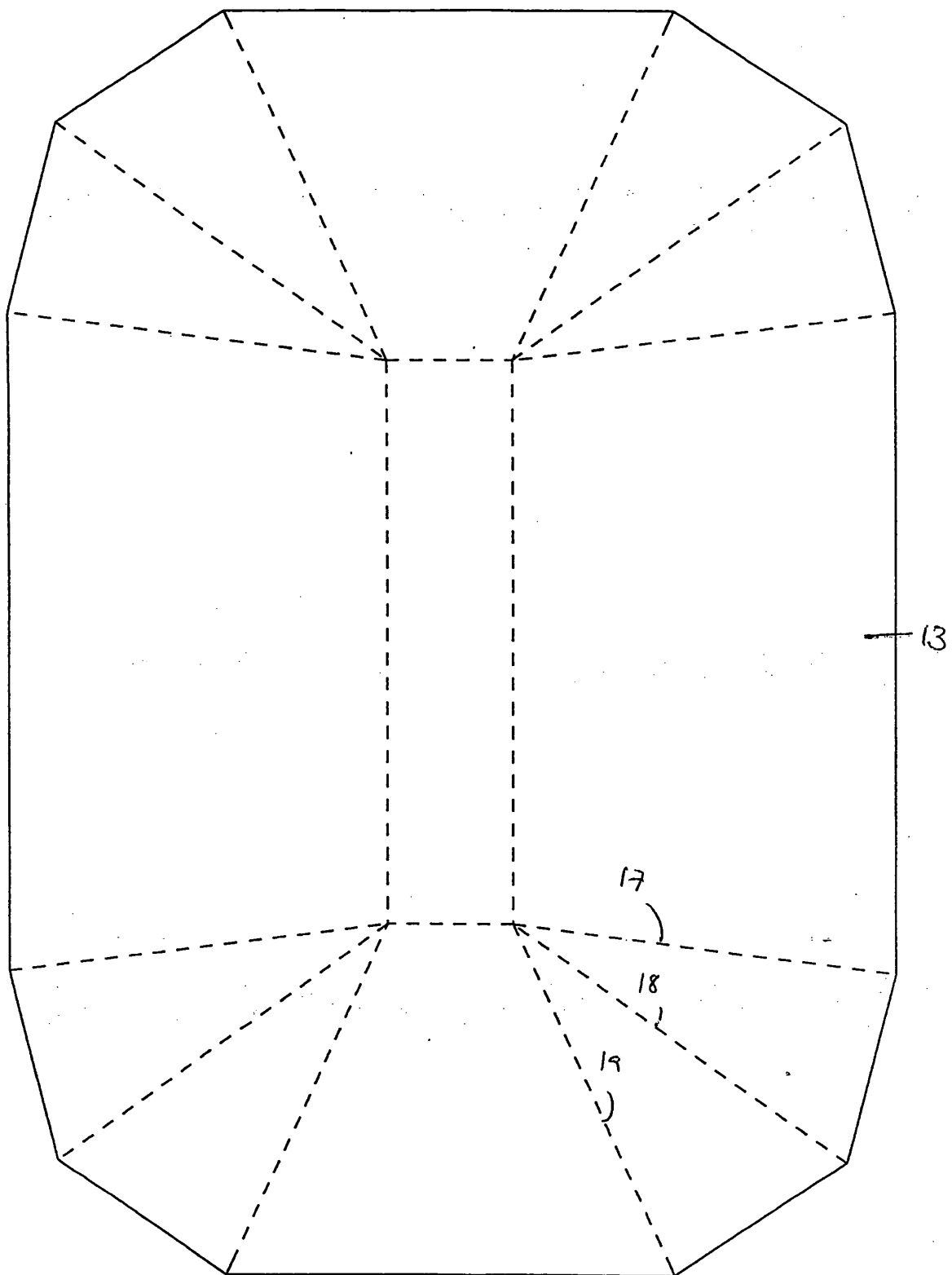


Figure 2

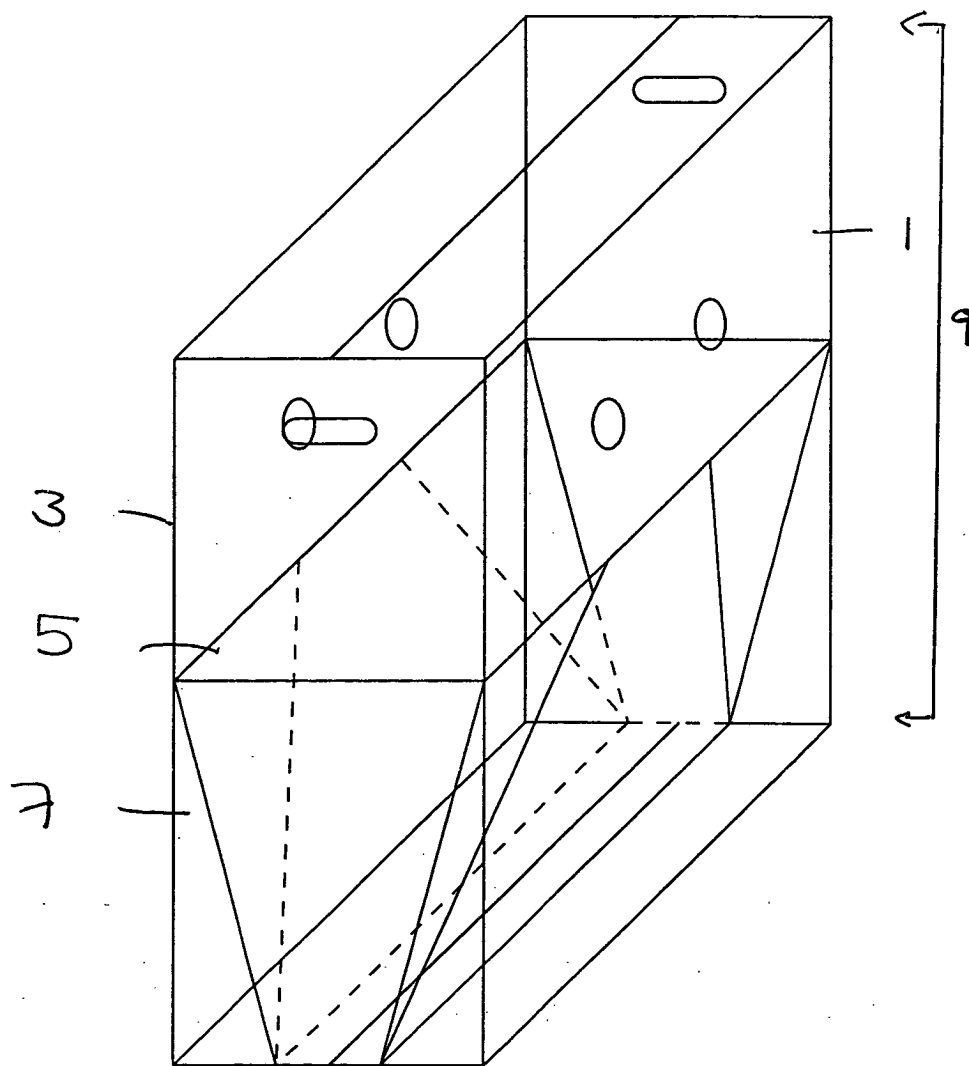
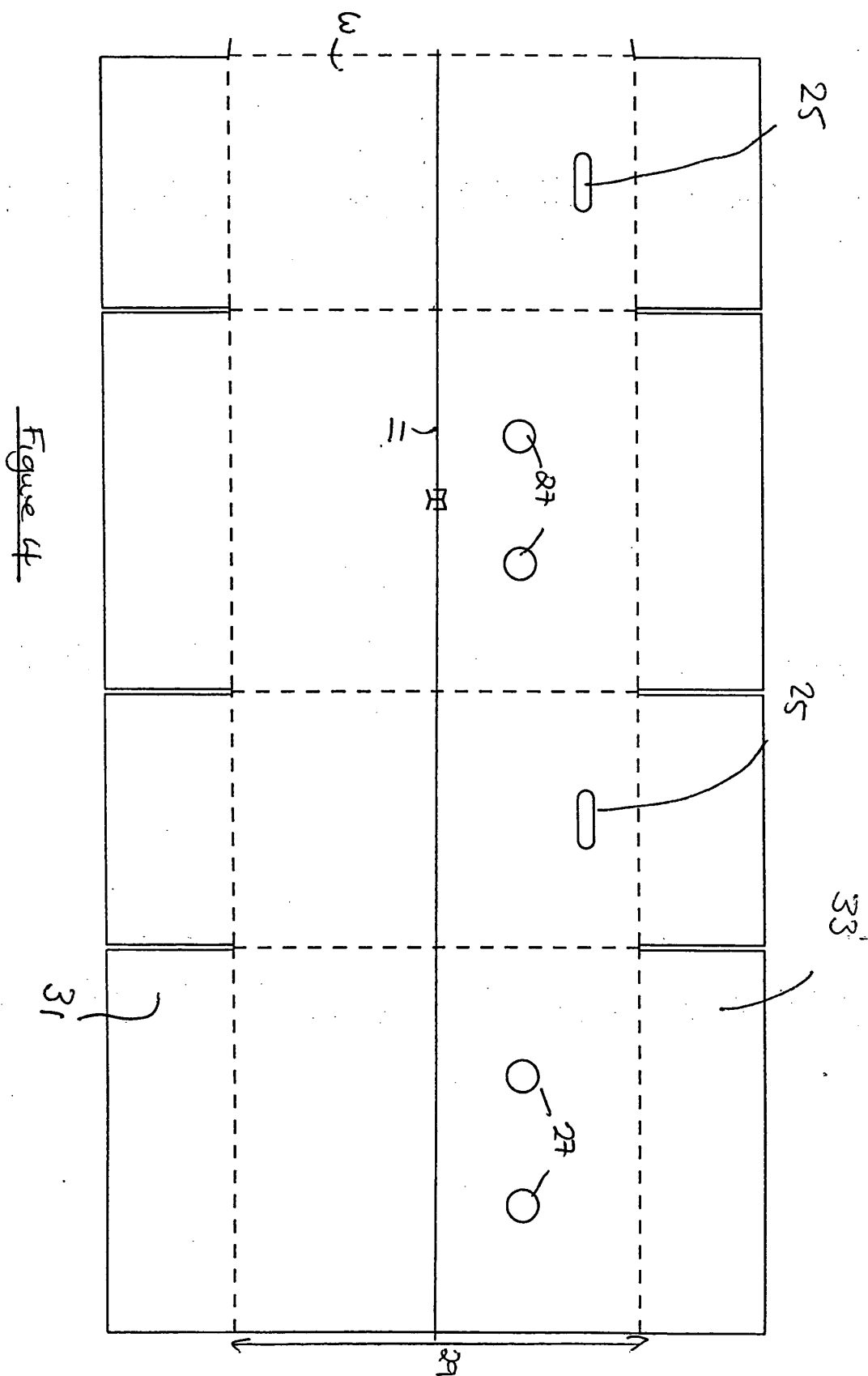


Figure 3



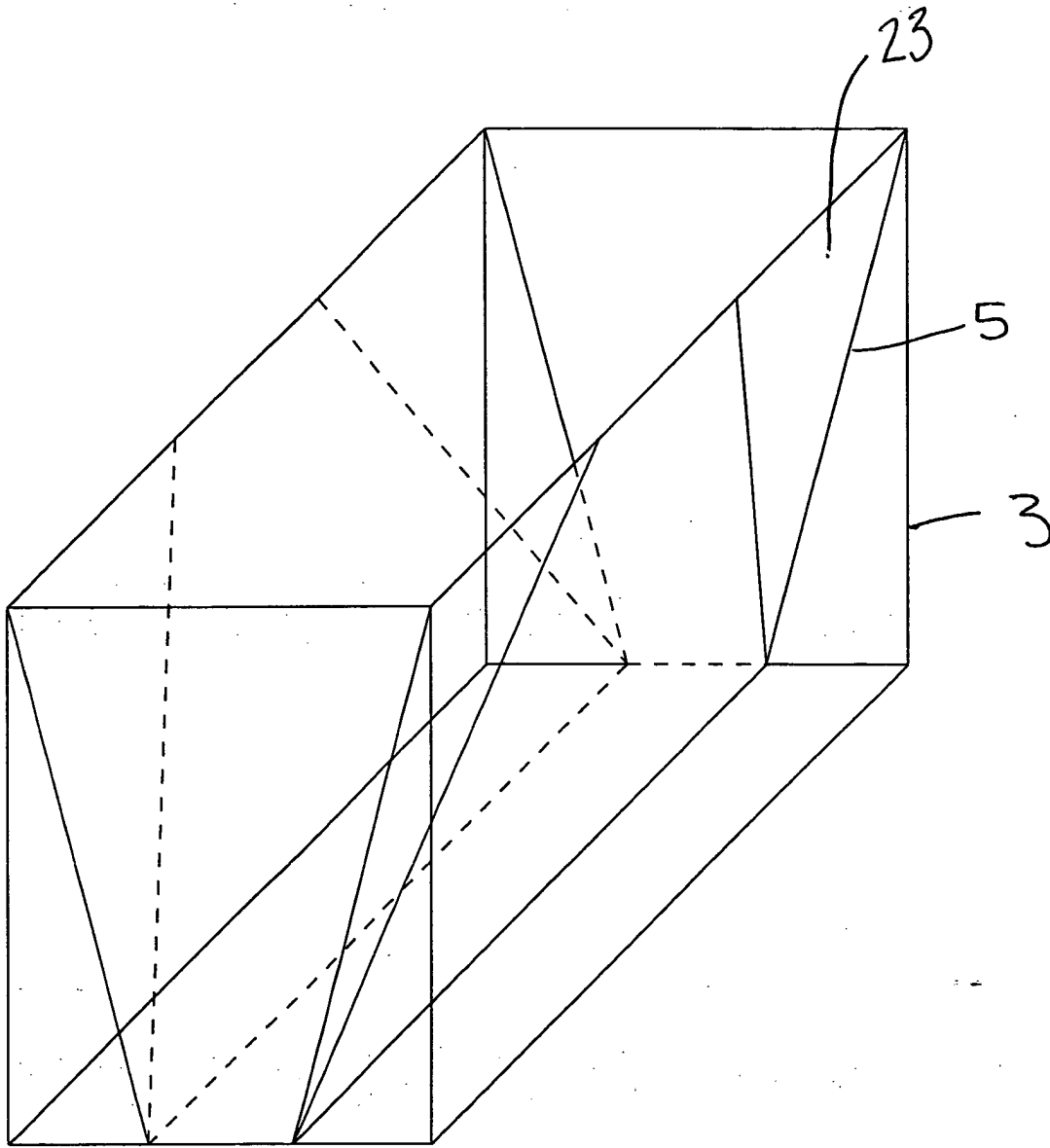


Figure 5

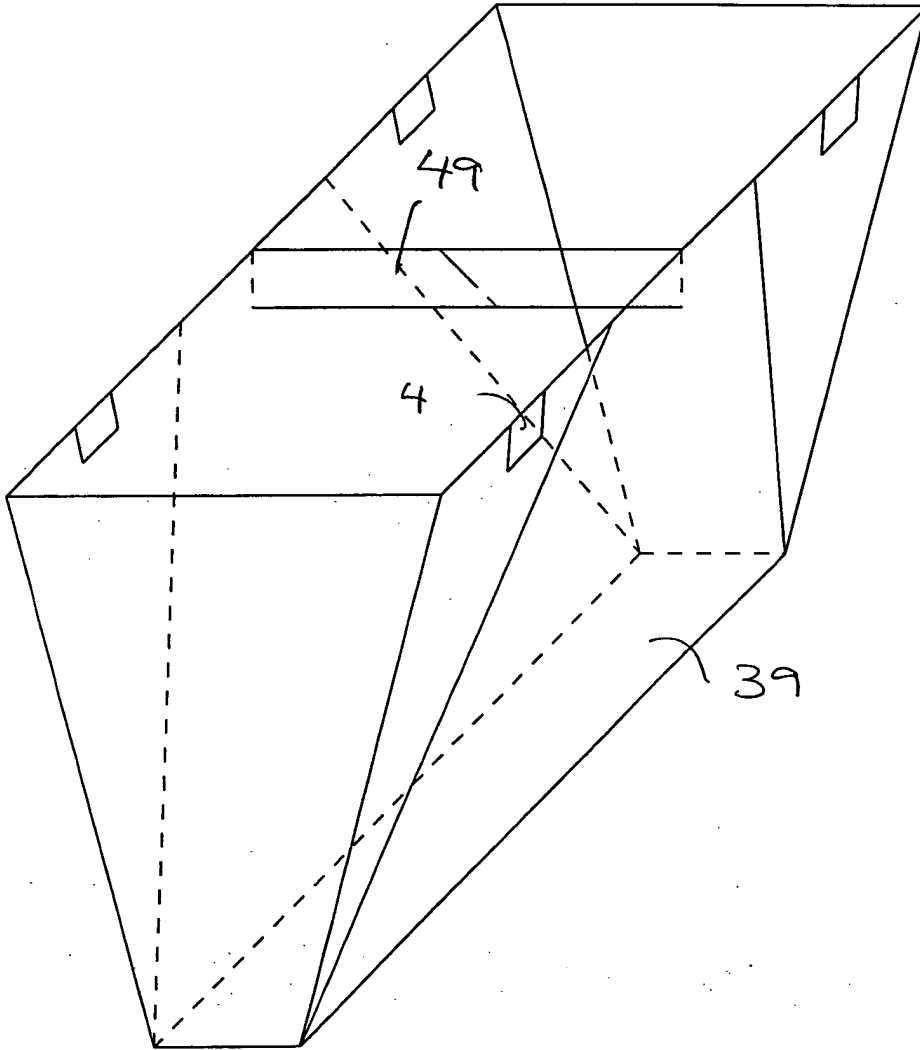


Figure 6

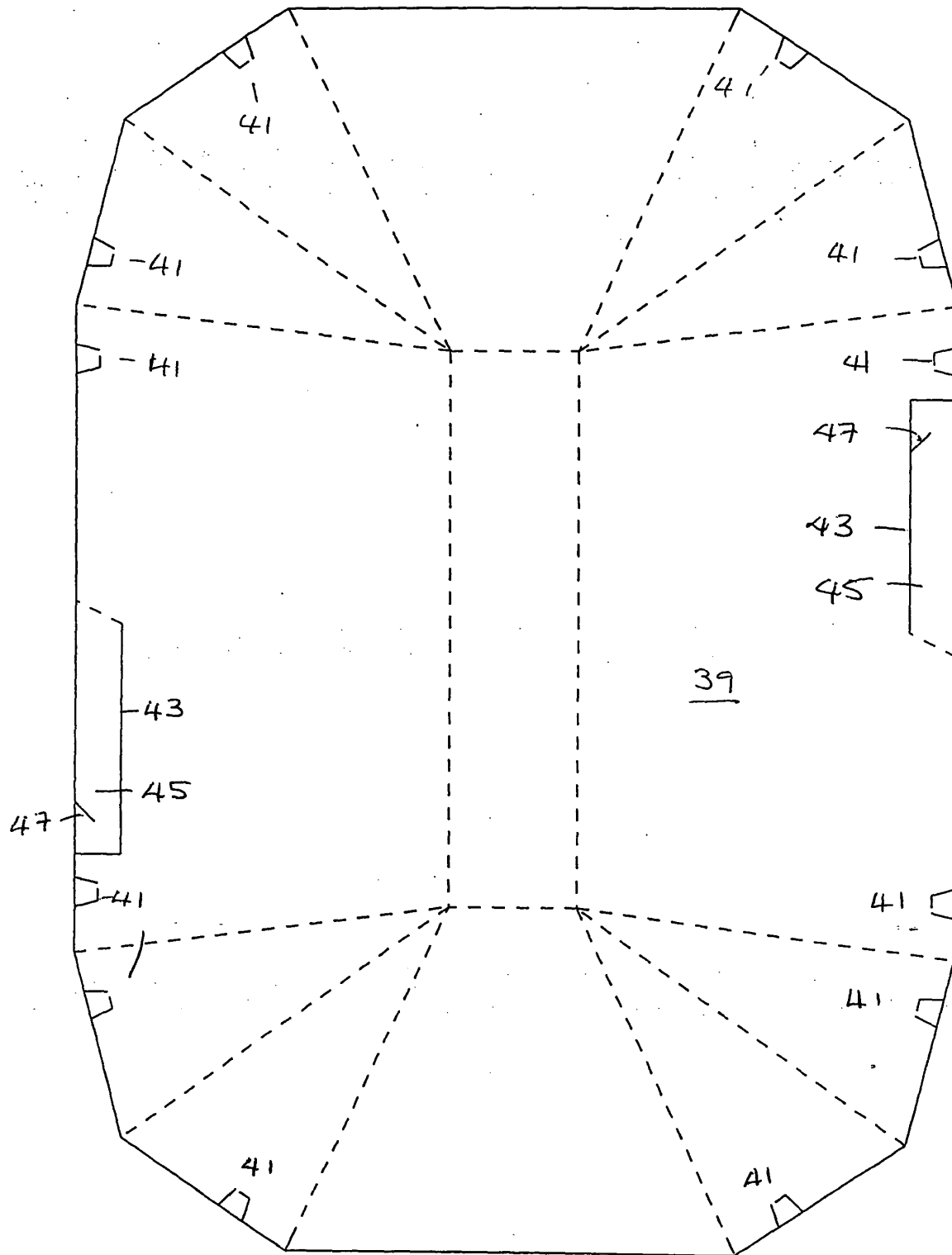


Figure 7

