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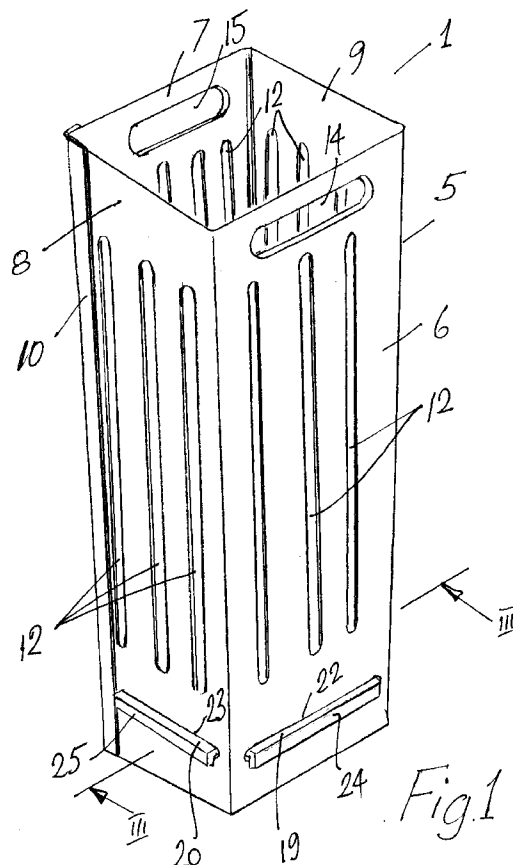
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### (54) A display system

(57) A display system for a freezer cabinet has a number of open topped plastics display bins (1) arranged within the freezer cabinet sub-dividing the freezer cabinet into a number of smaller display compartments each containing products for sale. Each bin (1) comprises an open topped box shaped body (5) having upstanding sidewalls (6, 7, 8, 9) and a base comprising a pair of overlapping floor plates (19, 20) which engage within associated openings (22, 23) in opposed sidewalls (6 and 7, 8 and 9) to secure the floor plates (19, 20) between the sidewalls (6, 7, 8, 9).



*Fig.1*

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## Description

**[0001]** This invention relates to a display system and to a display bin for use in the display system. The invention is particularly concerned with the display of chilled goods for sale in refrigerated cabinets in retail outlets.

**[0002]** The invention particularly relates to a display system for a freezer display cabinet of the type described in our previously filed European Patent Application No. 97650040.5 comprising a plurality of independent display bins for mounting in the display cabinet to sub-divide the display cabinet into a number of smaller display units or compartments.

**[0003]** The present invention is concerned with the manufacture of display bins for such display systems in a simple and economic manner and with constructions of the display bins which facilitate this.

**[0004]** The invention is characterised in that each bin comprises a box shaped body having upstanding side-walls and a base comprising a floor plate mounted between the sidewalls adjacent a lower end of the side-walls, opposite sides of the floor plate engaging with opposed sidewalls to secure the floor plate between the side walls. Conveniently the body and the base are formed separately and then joined to form the bin. This simplifies the manufacturing process and enables the bin to be produced economically.

**[0005]** In a particularly preferred embodiment, floor plate receiving openings are provided in the side walls, the floor plate engaging within the openings to secure the floor plate between the side walls. This construction provides for positive engagement between the floor plate and side walls for secure mounting of the floor plate on the side walls.

**[0006]** In another embodiment, the floor plate has means for retaining the floor plate between the side walls in engagement with the openings.

**[0007]** In a preferred embodiment, the floor plate has flanged ends for engagement through the openings with outer faces of the side walls for retaining the floor plate in engagement with the side walls. This prevents dislodgement of the floor plate from the slots.

**[0008]** Ideally, a pair of overlapping floor plates are provided.

**[0009]** In another embodiment, the sidewall is formed from a flat panel bent intermediate its ends, free ends of the panel being joined together. Any suitable joint may be provided. For example, a butt joint may be provided with glued edges or the edges may be sonic welded. If desired, the free ends may be overlapped prior to gluing or sonic welding. In a further alternative, the edges may be arranged to interlock or interengage.

**[0010]** In a further embodiment the free ends of the panel abut and a bonding strip is mounted across the abutting free ends, the bonding strip being secured to each of the free ends. Where the free ends join at a corner the bonding strip is of L-section. If the free ends are located between corners a flat bonding strip may be

used.

**[0011]** It will be appreciated that the flat panel may be prefabricated and transported whilst flat which greatly facilitates transport and then afterwards may be bent into the body shape on which the floor plates are mounted.

**[0012]** In another embodiment, a divider panel is provided for mounting with the bin to subdivide the bin internally.

**[0013]** Conveniently, the divider panel engages with vertical slots in opposite side walls of the bin to support the divider panel in an upright position within the bin.

**[0014]** In a further embodiment the or each floor plate is mounted on the sidewalls spaced upwardly from a bottom of the side walls. This construction prevents moisture build-up in the bin which might damage goods. Drainage holes may conveniently be provided in each floor plate to ensure good drainage.

**[0015]** In another aspect the invention provides a display bin for a display system of the type herein described.

**[0016]** The invention will be more clearly understood by the following description of some embodiments thereof, given by way of example only, with reference to the accompanying drawings, in which:-

Fig. 1 is a perspective view of a display bin according to the invention;

Fig. 2 is an underneath plan view of the display bin;

Fig. 3 is a detail sectional elevational view showing a lower portion of the bin taken along the line III-III of Fig. 1;

Fig. 4 is a perspective view of another display bin according to the invention;

Fig. 5 is a perspective view of a display system according to the invention comprising a number of the display bins mounted in a refrigerated cabinet; and

Fig. 6 is a plan view of an alternative floor plate forming portion of a display bin.

**[0017]** Referring to the drawings, there is illustrated a display bin according to the invention, indicated generally by the reference numeral 1. A number of the display bins 1 are used to form a display system according to the invention comprising a number of the display bins 1 arranged within a refrigerated cabinet 2 (Fig. 5) subdividing the refrigerated cabinet 2 into a number of smaller display compartments each containing products 3 for sale.

**[0018]** Each bin 1 has an open topped box shaped body 5 of generally rectangular section formed by a flat plastics panel bent intermediate its ends to form a front wall 6, a rear wall 7, and end walls 8, 9. An L-section bonding strip 10 engages and wraps around free edges

of the panel to form the body 5. The bonding strip 10 may be attached to the walls 7, 8 in any suitable manner such as by gluing or by sonic welding.

**[0019]** A plurality of ventilation slots 12 are provided in the sidewalls 6, 7, 8, 9. Hand grips 14, 15 are formed by slots at an upper end of the front wall 6 and rear wall 7.

**[0020]** A base 18 of the bin 1 is formed by a pair of overlapping floor plates 19, 20. Each floor plate 19, 20 extends through associated openings 22, 23 in opposite side walls 6, 7, 8, 9 of the body 5. Each floor plate 19, 20 has flanged ends 24, 25 which extend through the openings 22, 23 and engage with an outer face of the side walls to retain the floor plates 19, 20 in engagement with the side walls. It will be noted that the floor plates 19, 20 also add structural rigidity to the body 5. A number of drainage/ventilation openings 28 are provided in the floor plates 19, 20 to allow circulation of cooling air through the display bin 1 and drainage of moisture from the display bin 1.

**[0021]** In use, a number of the bins 1 are mounted in a refrigerated cabinet 2 as shown in Fig. 5. Products 3 for sales are then stored in each of the bins 1 which display the products 3 for sale. The bins 1 can be readily easily moved around the freezer cabinet as desired. Also, when restocking the refrigerated cabinet 2, a bin 1 can simply be removed and replaced with a fresh bin 1 containing the fresh stock. Any few remaining goods 3 in the old bin can be simply tipped into the new bin so that the old stock will be used first. Thus advantageously, there is no build-up of old stock at the bottom of the freezer cabinet 2 which can lead to wastage.

**[0022]** Referring now to Fig. 4, there is shown another display bin 40 which is largely similar to the display bin described previously and like parts are assigned the same reference numerals. In this case, the body 5 of the bin is more elongated and a divider panel 41 is provided for mounting within the bin 40 to subdivide the bin 40 into two separate compartments. The divider panel 41 engages vertical slots 12 in the sidewalls 8, 9 to support the divider panel in an upright position within the bin 40. A flanged lip 42 at each end of the panel 41 extends through the slots 12 to engage an outside face of the sidewalls 8, 9 to retain the panel 41 in position.

**[0023]** Referring now to Fig. 6 there is illustrated an alternative construction of floor plate 50. In this case the floor plate 50 is a generally flat rectangular plate with outwardly projecting tongues 51 along each edge for engagement within the slots 22, 23 in the side walls 6, 7, 8, 9. The floor plate 50 is sufficiently flexible to deform to allow engagement of the tongues 51 in the slots 22, 23. The floor plate 50 may be arranged to engage only two opposed slots 22, 23 in opposite side walls or in all four slots 22, 23. The size of the floor plate 50 is such that when the tongues 51 are snapped into engagement with the slots 22, 23 the floor plate 50 cannot be dislodged without deforming the floor plate 50.

**[0024]** The display bins may be of any suitable materials of construction. Preferably the display bins are con-

structed of a plastics material. Most preferably the plastics material is PET (polyethylene terephthalate). The term PET is to be understood to include the following: crystallisable and amorphous PET homopolymers, crystallisable and amorphous PET copolymers, crystallisable and amorphous PET compounds, crystallisable and amorphous recycled PET and other variants of amorphous and crystallisable PET.

**[0025]** The floor plates may be manufactured as flat plates which are inserted through the openings in the side walls and then bent downwardly at each end to secure the floor plates in position. Alternatively the floor plates may be formed with the flanges at each end, the floor plates being sufficiently deformable to insert the flanged ends through the openings in the side walls upon assembly of the display bin.

**[0026]** It will also be noted that instead of using the bonding strip to join the free ends of the body as described above one or both of the side walls may be extended around the other side wall, overlapping the side wall at the join the overlapping portions of the side walls being joined together in any suitable fashion such as welding or gluing.

**[0027]** It will be appreciated that the invention provides display bins which are of relatively simple construction which are relatively easy to manufacture.

**[0028]** The invention is not limited to the embodiments hereinbefore described which may be varied in both construction and detail.

## Claims

1. A display system for a display cabinet, the display system comprising a plurality of independent display bins for mounting in the display cabinet to subdivide the display cabinet into a number of smaller display units or compartments, characterised in that each bin comprises a box shaped body having upstanding sidewalls and a base comprising a floor plate mounted between the sidewalls adjacent a lower end of the sidewalls, opposite sides of the floor plate engaging with opposed side walls to secure the floor plate between the side walls.
2. A system as claimed in claim 1, wherein floor plate receiving openings are provided in the side walls, the floor plate engaging within the openings to secure the floor plate between the side walls.
3. A system as claimed in claim 2, wherein the floor plate has means for retaining the floor plate between the side walls in engagement with the openings.
4. A system as claimed in claim 3, wherein the floor plate has flanged ends for engagement through the openings with outer faces of the side walls for re-

taining the floor plate in engagement with the side walls.

5. A system as claimed in any preceding claim, wherein a pair of overlapping floor plates are provided, each engaging a pair of opposed side walls of the bin body. 5
6. A system as claimed in any preceding claim, wherein the bin body is formed from a flat panel bent intermediate its ends, free ends of the panel being joined together. 10
7. A system as claimed in any preceding claim, wherein a divider panel is provided for mounting within the bin to sub-divide the bin internally. 15
8. A system as claimed in claim 7, wherein the divider panel engages with vertical slots in opposite side walls of the bin to support the divider panel in an upright position within the bin. 20
9. A system as claimed in any preceding claim, wherein the or each floor plate is mounted on the sidewalls spaced upwardly from a bottom of the side walls. 25
10. A display bin for a display cabinet display system as claimed in any preceding claim, the display bin comprising a box shaped body having upstanding side walls and a base comprising a floor plate mounted between the side walls adjacent a lower end of the side walls, opposite sides of the floor plate engaging with opposed side walls to secure the floor plate between the side walls. 30

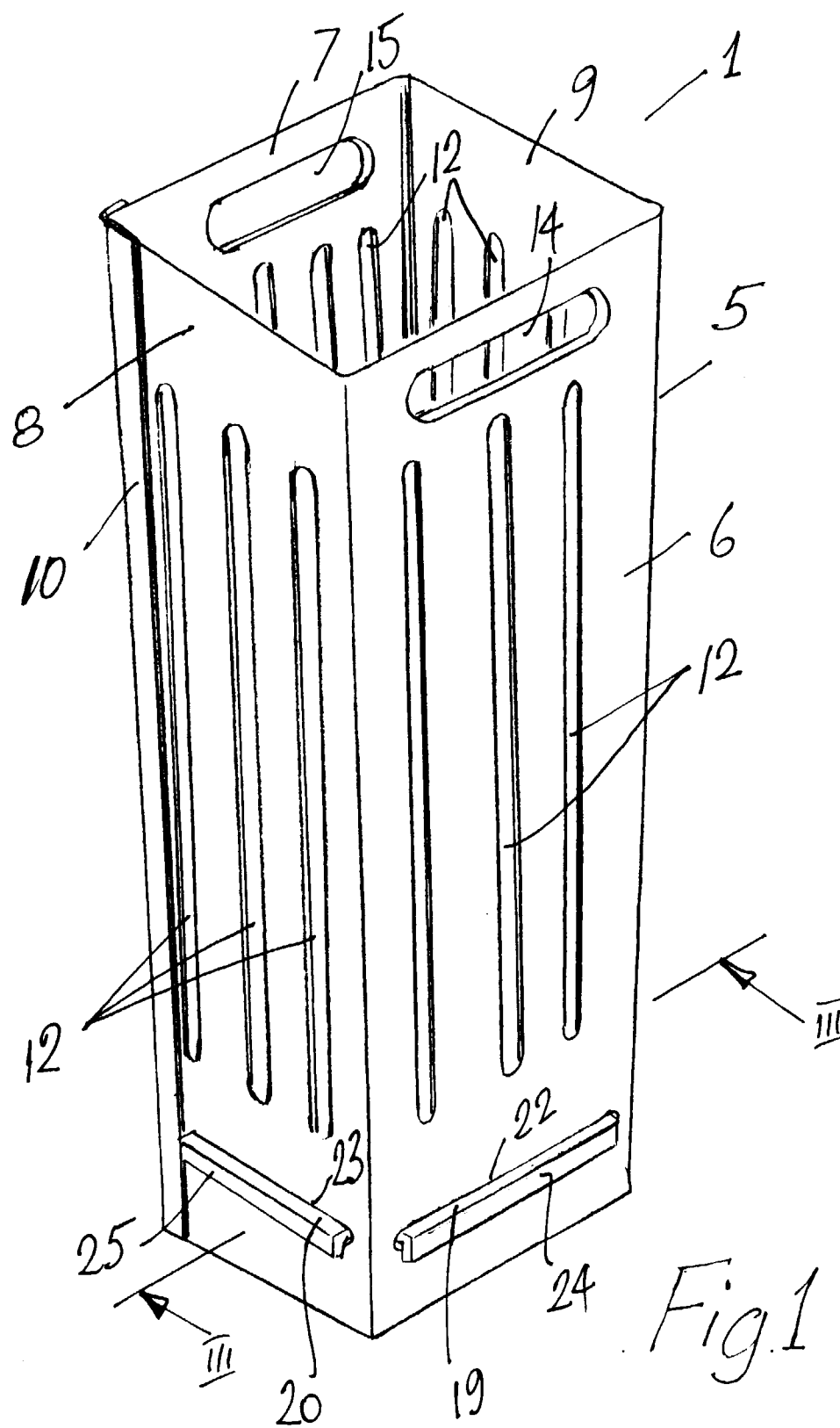
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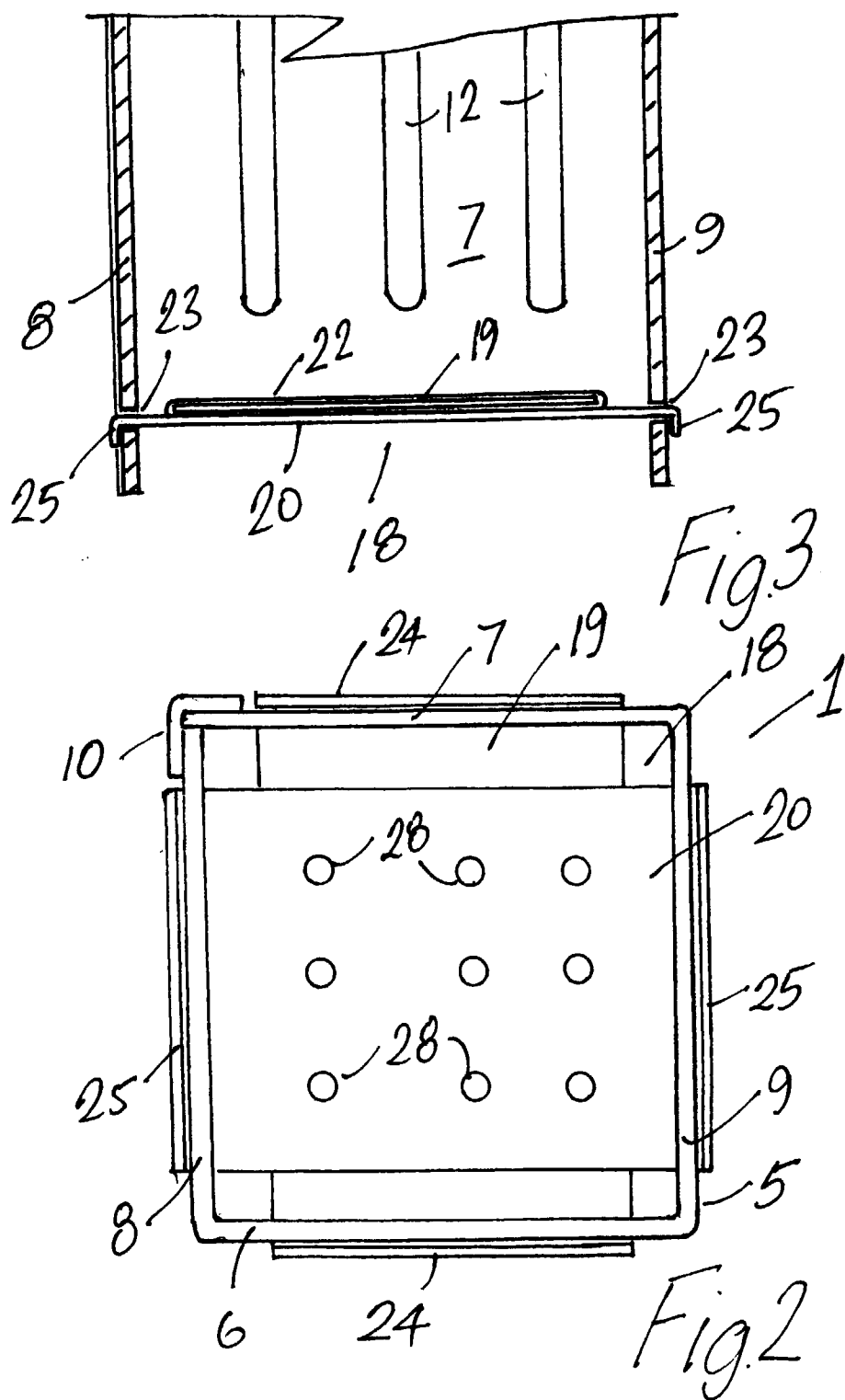
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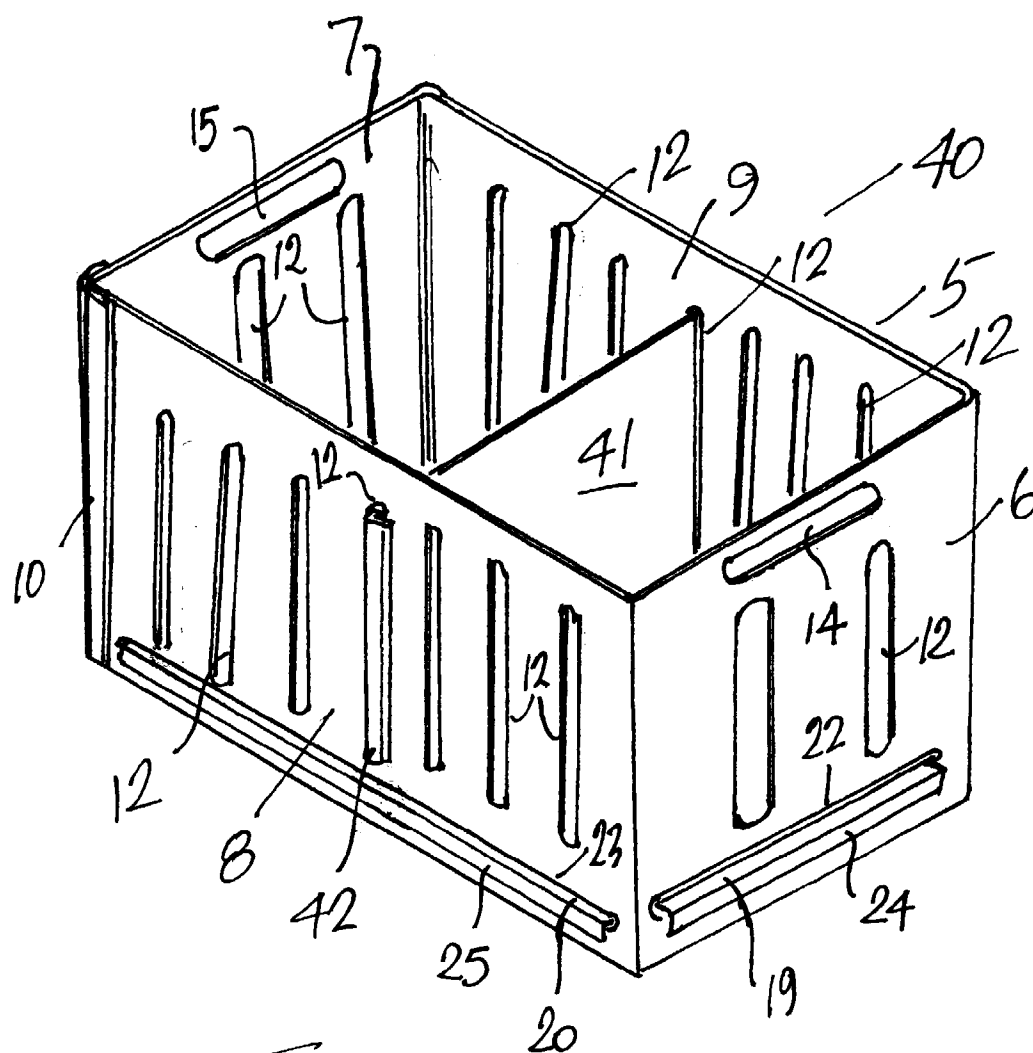


Fig.4

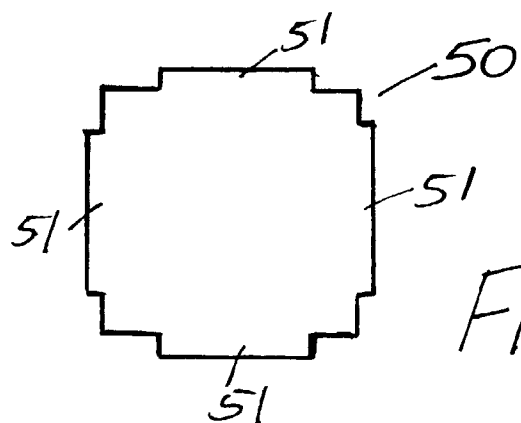


Fig. 6

