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(54) **-Carboard box for horticultural products**

(57) The box is structured from a laminated and monopiece body of cardboard, in which by means of stamping, a central sector (1) is established constitutive of the bottom of the box, and lateral sectors (3) and (4) constitutive of the end panels and the side panels. Said end panels (3), incorporate lateral prolongations (5) which fold over the side panels (4) and they fasten to these, with said end panels being oversized in height so

that in the sector of the outstanding prolongations (5) respecting the side panels (4) and by means of horizontal cut lines (6), fins (7) are defined provided with two vertical folding lines (8) and (9), so that said fins fold in toward the interior of the box, their first sector configuring a triangular ring (10) to rigidify the corresponding corner of the box and the second sector adapts and fastens by means of adhesive to the internal face.

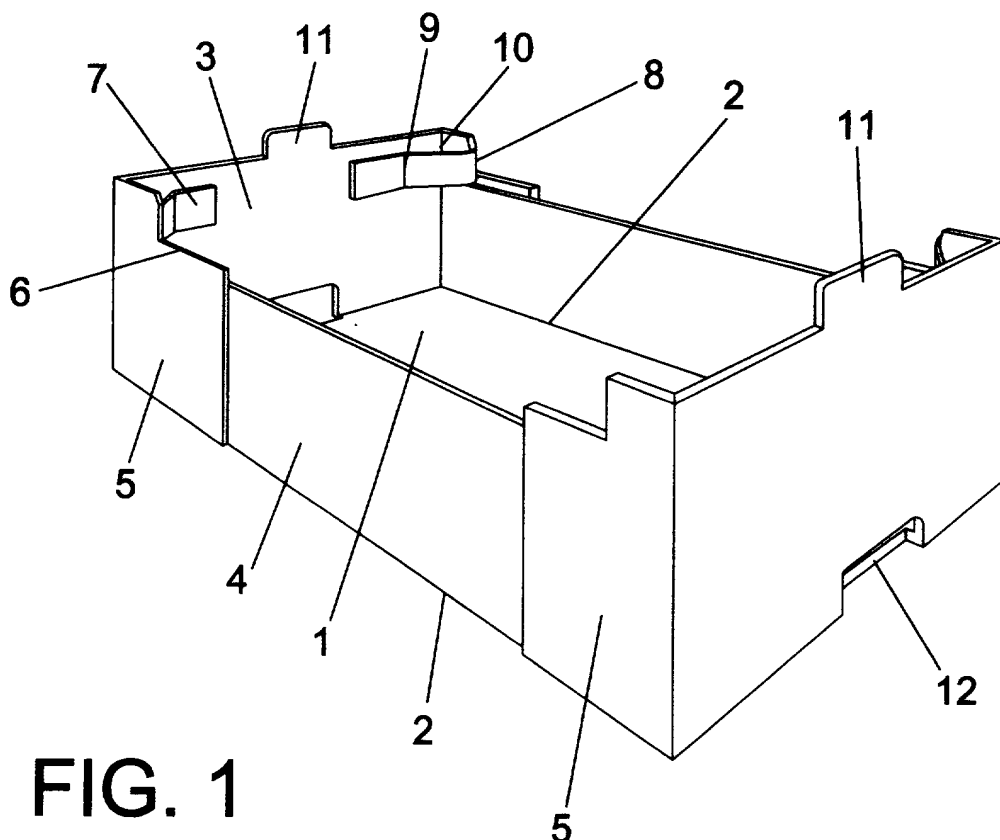


FIG. 1

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Description

OBJECT OF THE INVENTION

[0001] The present invention refers to a cardboard box, of the type used in the transport of horticultural products, a box which has been conceived and structured in order to attain a maximum mechanical resistance with a minimum use of material.

[0002] It is likewise the object of this invention to attain a box which offers optimum stability properties when being stacked with other identical ones, and that also ensures an optimum ventilation for the products contained inside, when in such a stacked situation.

BACKGROUND OF THE INVENTION

[0003] The normal evolution in the design of cardboard boxes with the above-mentioned application has lead to the generalized use of monopiece boxes, in which by means of stamped lines a bottom is defined from which, by means of folding lines, two end panels and two side panels emerge which must have mutual means of fastening in order to obtain the assembly of the box.

[0004] One of the usual solutions consists in prolonging the ends of the side panels with fins which fold around the end panels, duplicating the height of these and adding flanges to their free edge which, after folding the end panel on itself, with the insertion of the prolongations of the side panels, couple into openings established at the bottom of the box, thus attaining its assembly without adhesives, staples or any other element foreign to the laminated body of cardboard itself.

[0005] With this solution a box with reinforced end panels is obtained which, however, presents two fundamental problems, a complete absence of reinforcement at the level of the side panels and an excessive use of material.

[0006] A saving of material is attained making the end panels to be single, with these having the added prolongations at the ends and folding them over the side panels, fastening these latter pieces with staples, glue, or something similar, but this solution determines an absence of reinforcement in the end panels, which are precisely the elements of the box that are going to support greater stresses.

SPECIFICATION OF THE INVENTION

[0007] The cardboard box that the invention proposes constitutes a simple and efficient solution that resolves the problems mentioned previously.

[0008] To do so, and in a more specific way said box is constituted, as is conventional, by means of a monopiece body wherein is established a rectangular central sector, destined to constitute its bottom, from which by means of folding lines the end panels and the side pan-

els emerge, but with the special particularity that said end panels, oversized in height with respect to the side panels and having lateral prolongations which fold over and fasten to the side panels, incorporate in their upper and outstanding sector, with respect to said side panels, fins that partially affect in height said prolongations and that, by means of vertical folding lines, in turn fold over on the internal face of the end panel, each one of them configuring with this latter a triangular, straight and equilateral ring, which considerably reinforces the box at the level of the corners and further on from which said fins define an adapting and fastening surface to the corresponding end panel.

[0009] This structuring brings with it that in the stacking between boxes these establish continuity at the level of the end panels, defining ample windows at the level of the side panels, which allow an optimum ventilation of the contents of the box.

[0010] According to another characteristic of the invention it has been provided that the end panels have prominent flanges on their upper edge, destined to couple into complementary cut-outs in their lower edge, to attain a dovetail coupling in the stacking between boxes which ensures lateral immobility for these.

[0011] These flanges may be centrally placed above the end panels or at the ends of these, in this case with an angular configuration, that is, affecting both the end panel itself as well as its lateral prolongations adapted to the side panels.

DESCRIPTION OF THE DRAWINGS

[0012] To complement the description being made and with the object of assisting to have a better understanding of the characteristics of the invention, according to a preferred example of a practical embodiment of it, enclosed as an integral part of said description are a series of drawings in which, with an illustrative and non-limiting nature, the following has been represented:

Figure 1.- Shows, according to a perspective view, a cardboard box for horticultural products embodied according to the object of the present invention.

Figure 2.- Shows, according to a similar representation as that of the previous figure, a possible embodiment of the same box, in which the mentioned dovetail coupling flanges adopt a different configuration and position.

PREFERRED EMBODIMENT OF THE INVENTION

[0013] In view of the figures referred to and especially figure 1, it can be seen how the cardboard box being acclaimed is constituted by means of a laminated and monopiece body, preferably of cardboard, wherein a central sector (1) is defined, of rectangular configuration, constitutive of the bottom of the box, which by means of four folding lines (2), it prolongs into the end

panels (3) and the side panels (4) of the box which will constitute its lateral walls, with said end panels (3) also having lateral or end prolongations (5) which fold over the side panels (4) and that fasten to these by means of adhesive.

[0014] The mentioned prolongations (5) may adapt to the external face of the side panels (4), as shown in the figures, or be placed inside of them when a slight increase in the capacity of the box is needed.

[0015] In any case, the end panels (3) are oversized in height respecting the side panels (4), and in the prominent sector of their prolongations (5), by means of a horizontal cut line (6) which partially affects them, a fin (7) is defined, destined to fold in toward the interior, which by means of a pair of vertical fold lines (8) and (9) describes an angular and obtuse trajectory, so that the first section configures with the end panels (3) themselves and the prolongation (5) a ring that structurally rigidifies the corner of the box, further on from which the terminal sector of said fins (7) is fastened by means of adhesive to the internal face of the corresponding end panel (3).

[0016] This special arrangement, aside from rigidifying the corners or vertical edges of the entire box, determines that the side panels (4) remain substantially lowered with respect to the bottom of a box immediately above it, in the stacking of boxes, determining ample airing windows for the horticultural product contained in said box.

[0017] In conclusion and with the object of conveniently stabilizing the boxes in the mentioned stacking, it is provided that the end panels incorporate, as also seen in figure 1, a flange (11), preferably rectangular, destined to couple in such a stacking into a complementary cut-out (12) centered above the lower edge of the end panel of the box immediately above, so that in such a stacking a dovetail effect is attained when each flange (11) fits into the corresponding cut-out (12), by which the boxes remain immobilized transversally.

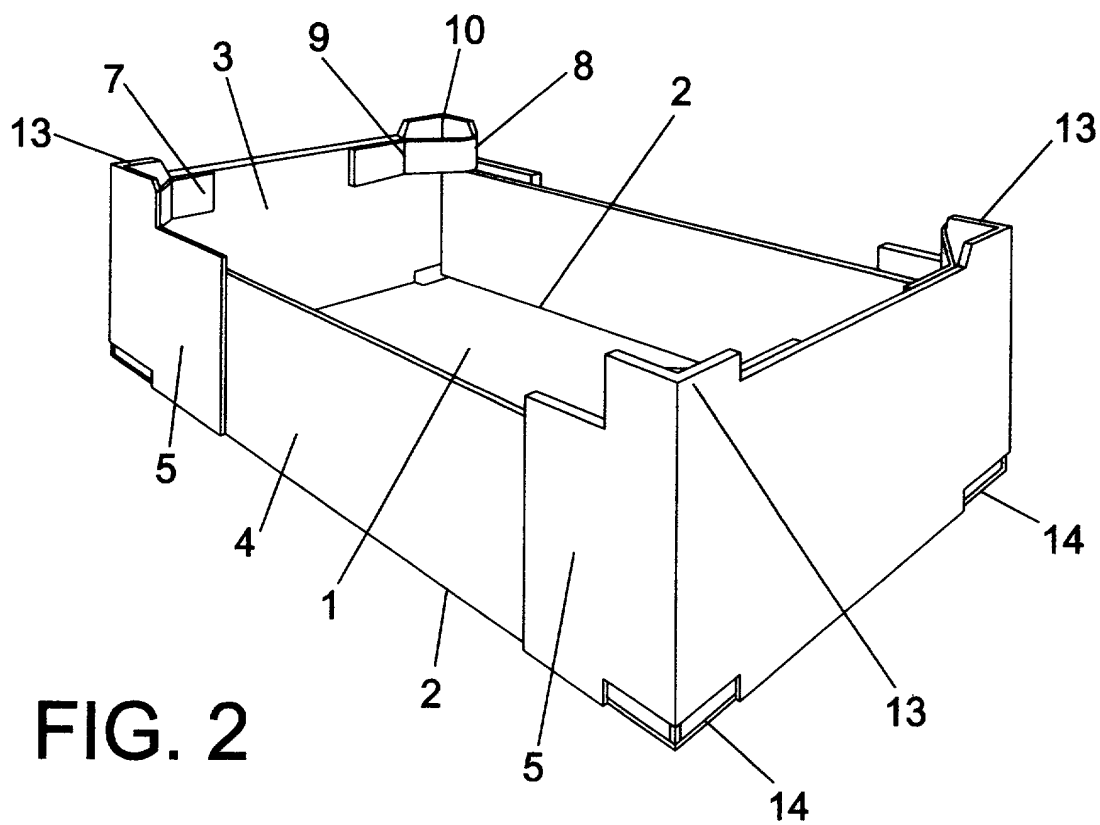
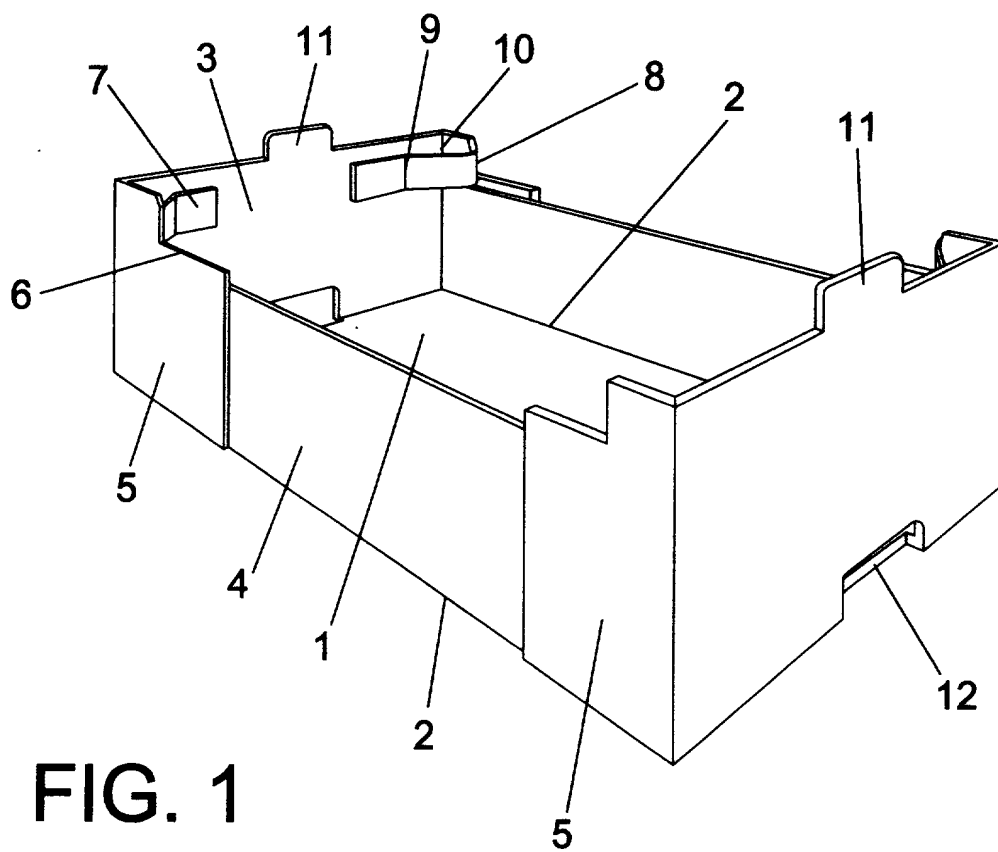
[0018] Nevertheless, the possibility represented in figure 2 has been provided, in that the central and only flange of each end panel may be substituted for two angular flanges (13) placed in the ends of the upper edge of the end panels and which extend also to the prolongations (5) of these latter, in which case four stabilization points are obtained between the boxes, existing in turn complementary cut-outs (14) in the lower vertices of the body of the box, likewise in correspondence with its end panels.

lines, sectors constitutive of its end panels and its side panels, **characterized in that** the mentioned end panels (3) which have lateral prolongations (5) that fold over the side panels (4) and fasten to these by means of adhesive, are oversized in height, having provided in the outstanding sector of the prolongations (5) respecting the side panels (4), to establish a horizontal cut line (6), which partially affects said prolongations and determines a fin (7) provided with a pair of vertical fold lines (8) and (9) which allow the folding of said fins (7) in toward the interior of the box, so that one of its first sections configures with the end panel itself a triangular ring to rigidify the corner of the box, while the terminal sector of said fins adapts to the internal face of the end panels and it fastens to it by means of adhesive.

2. Cardboard box for horticultural products, according to claim 1, **characterized in that** the end panels (3) incorporate, as a prolongation of their upper edge, flanges (11-13) of which cut-outs (12-14) are complementary, in turn established in their lower edge, destined to allow a dovetail coupling in the stacking between boxes, which will immobilize them transversally.
3. Cardboard box for horticultural products, according to previous claims, **characterized in that** each end panel (3) incorporates a flange (11), centered above its upper edge, and a cut-out (12) centered above its lower edge.
4. Cardboard box for horticultural products, according to claims 1 and 2, **characterized in that** each end panel (3) incorporates two angular flanges (13), which affect both the end panel itself (3) as well as its prolongations (5), while in the lower edge of its end panels there are established in turn another four complementary cut-outs (14).

Claims

1. Cardboard box for horticultural products, of the type constituted by means of a laminated body, preferably of cardboard, properly stamped to configure in it a central sector constitutive of the bottom of the box with which are related, by means of folding





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Application Number
EP 00 50 0244

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
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Place of search		Date of completion of the search	Examiner
THE HAGUE		17 April 2001	Bridault, A
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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