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(72) Inventor: **MONERRIS PENALVA, Joaquín**
03690 SAN VICENTE DEL RASPEIG (Alicante)
(ES)

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(74) Representative: **Gonzalez Palmero, Fé**
Calle Sagasta, 4
28004 Madrid (ES)

(71) Applicant: **Kappa Iberoamericana, S.A.**
03690 San Vicente del Raspeig (ES)

(54) **BOX FOR PERISHABLE PRODUCTS**

(57) The object of this invention, as is indicated by its heading, is a box designed for the transport of perishable products, formed by a laminar body whereon a longitudinal alignment of broad rectangular sectors is established; said sectors constitute the sides, bottom and top, the bottom sector being located at one of the ends and

the top sector being affected by a broad rectangular window, limiting said upper sector to two strips which determine seatings; said window extends towards the side pieces defining the cut-outs of the same; the bottom sector being extended into a narrow tab which, on being fixed by means of adhesive, forms a tubular body.

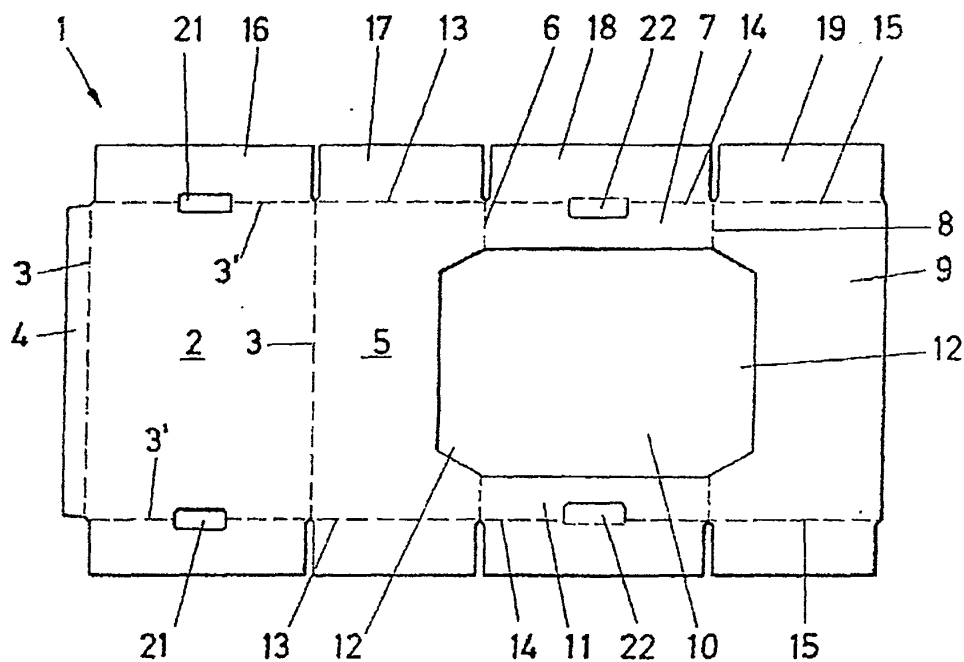


FIG.1

Description

OBJECT OF THE INVENTION

[0001] This invention relates to a box for perishable products, specifically to a cardboard box of the type commonly used for the marketing of fruit, vegetables and other perishable products.

[0002] The object of this invention is the obtaining of a box which, with a minimum use of material, will have a maximum structural rigidity, in particular in the zone of its end caps, in order to improve the stacking conditions of the same.

BACKGROUND OF THE INVENTION

[0003] Among the wide variety of cardboard boxes for perishable products currently available on the market, one of these is that wherein the end caps of the box are folded orthogonally inwards at their upper edge, at the same time these are extended into tabs at their ends which are folded against the side pieces, in such a way that the mouth of the box is partially narrowed, and forming a broad seat for an upper box when the boxes are stacked, the mouth of the box also being reinforced by means of the narrowing of the same, which tends to eliminate the twisting effect in the box, which may be caused by unbalanced loads, as is the case when these boxes are of a considerable size and are designed for fruits which are also of a considerable size, as is the case with melons and similar.

[0004] However, this narrowing of the mouth of the box, being constituted by an extension of the end cap, prevents said end cap from presenting a dual structuring, as is the case with other boxes, which confers to the same a high degree of resistance when stacking; it should also be added that if it is desired to make windows in the end caps, to act as hand holds or for the ventilation of the product in the interior of the box, said end caps are weakened even further, and consequently, the box as a whole is also weakened with regard to the aforementioned stresses due to stacking.

DESCRIPTION OF THE INVENTION

[0005] The box for perishable products proposed by the invention solves the problem expounded above in a totally satisfactory way, maintaining its degree of resistance to twisting, considerably increasing the structural rigidity of the end caps, and therefore its resistance during stacking, all of this with no increase in the quantity of material to be used in said box, which can even turn out to be cheaper than conventional boxes in this line.

[0006] In order to do this, and more specifically, the box advocated is constructed, as is habitual, from a single-piece laminar body whereon, by means of stamped lines, different areas forming the different parts of the box are defined, but with the special peculiarity that in contrast

with the conventional structuring by which the bottom of the box is surrounded by the four sectors which constitute its side pieces and end caps, the bottom of the box is located corresponding to one of the ends of the laminar body, being aligned with another three sectors, two of which will form the side pieces of the box and the third will constitute the narrowed mouth of the same; to this end the latter sector features a broad window, which delimits the typical lateral seatings of the mouth of the box; a window which extends towards the adjacent sectors in order to form the typical cut-outs of the side pieces.

[0007] The four sectors mentioned above extend towards both sides as basically rectangular flaps which, on folding said four sectors, that is to say, on assembling the box, determine on each side rectangular frames corresponding to the respective end caps, where said flaps partially overlap each other and define a central window, with the dual function of being hand-holds and ventilation orifices, whose dimensions may be regulated at will, in order to avoid the egress of the products through the same, said flaps featuring a greater or lesser width, in accordance with the use to which the box will be put.

[0008] In all other respects, the box will feature the typical tabs and cut-outs for the tongue-and-groove coupling between boxes while stacking.

[0009] The four main sectors comprise a tubular body, which closes upon itself with the help of a tab located in correspondence with the free edge of the bottom sector, a tab which is fixed to the opposite end of the aforementioned line of four sectors, specifically to the end sector which constitutes one of the side pieces.

DESCRIPTION OF THE DRAWINGS

[0010] To complement the description which is being made, and with the purpose of contributing to a better understanding of the characteristics of the invention, in accordance with a preferred embodiment of the same, a set of drawings with an illustrative and non-limitative character is attached as an integral part of said description, wherein the following is portrayed:

Figure 1 portrays a plan view of a box for perishable products executed in accordance with the object of this invention.

Figure 2 portrays a perspective view of the box in the previous figure, duly assembled.

PREFERRED EMBODIMENT OF THE INVENTION

[0011] On examining the figures described, it may be seen how the box advocated is constituted by means of a single-piece laminar body (1), preferably of corrugated cardboard, whereon a rectangular sector (2) is defined, which shall form the bottom of the box, delimited by four fold lines (3-3') in such a way that at one of the longer fold lines (3) there extends a tab (4) for the assembly of the box, as shall be seen below, while at its other fold

line (3) which is opposite to that mentioned previously, it extends into a second sector (5) designed to constitute one of the side pieces of the box; this in turn extends, through another fold line (6), into a second sector of rectangular shape (7), which theoretically corresponds to the top of the box; and finally through another fold line (8) the sector (7) extends into the second side piece (9), dimensionally identical to the side piece (5), while the sector (7) is dimensionally identical to the sector (2) which constitutes the bottom of the box.

[0012] The majority of the upper sector (7) is affected by a broad window (10) which only leaves free two narrow peripheral strips (11) designed to constitute a narrowing in the mouth of the box in order to facilitate the seating between boxes when stacking the same, said window (10) extending towards sectors (5) and (9), which constitute the side pieces, where it defines the typical cut-outs (12) which affect the majority of the length of the side pieces at the peripheral and upper zone of the same.

[0013] Sectors (5), (7) and (9) are further delimited by fold lines (13), (14) and (15), aligned with each other and aligned with the fold lines (3') of the sector (2) which constitutes the bottom of the box, in such a way that on the outside of these fold lines (3', 13, 14, 15) there are established rectangular flaps (16), (17), (18) and (19) which, as may be observed in Figure 2, will form the end caps of the box, specifically by means of the crossing or partial overlapping of the same, as may also be seen in Figure 2, delimiting, between each set of these a central window (20) with the dual function of being a hand-hold and a window for the ventilation of the product contained in the box.

[0014] The side piece at the extremity (9) is fixed to the sector (2) which constitutes the bottom of the box by means of the tab (4) of the latter, where it adheres or is fixed by adhesive to the internal side of the side piece (9), as is portrayed in Figure 2, and the flaps (16) and (18) are in turn folded down onto the flaps (17) and (19), to which they are also fixed by means of adhesive, the box thus being perfectly assembled.

[0015] Finally, it only remains to be mentioned that at the peripheral zones of the bottom sector (2) corresponding to the end caps (16) there are the typical cut-outs (21), complementary to which are the tabs (22) obtained by means of the stamping of the peripheral zones of the seatings (7) or narrowings of the mouth of the box, in such a way that said tabs (22) are inserted into the cut-outs (21) during the stacking of the boxes, thus improving the stability of said stack.

with cut-outs at the upper peripheral zone of its side pieces and with its mouth partially narrowed by seatings defined immediately within its end caps, **characterised in that** in said laminar body a longitudinal alignment is established of broad rectangular sectors, which constitute the bottom, side pieces and top of the box; specifically, the bottom sector being located at one of the ends, and the majority of the sector corresponding to the top of the box being affected by a broad rectangular window which reduces said upper sector to two narrow peripheral strips which determine the aforementioned seatings, a window which extends towards the sectors which constitute the side pieces, defining in these the cut-outs of the same, and the bottom sector being extended in the opposite direction from the other three sectors into a narrow tab which allows the closing of said four sectors, thus forming a tubular body, on being fixed by means of adhesive to the free peripheral zone of the side piece at the extremity; these four sectors also being extended laterally, through respective fold lines, to form rectangular flaps designed to partially overlap each other during assembly of the box, thus forming the end caps of the same.

2. A box for perishable products, according to claim 1, **characterised in that** the aforementioned flaps, or lateral extensions of the four main sectors, are fixed together by means of adhesive and form a central window, with the function of being a hand-hold and also a means of ventilation for the interior of the box; a window which will be of varied dimensions in accordance with the width with which the flaps which form the same are endowed.
3. A box for perishable products, according to preceding claims, **characterised in that** in correspondence with the central zone of the line of confluence between the bottom sector and the flaps on the same which form part of the end caps, respective cut-outs are established for the tongue-and-groove coupling of respective tabs stamped on the strips or seatings of the mouth of the box, located as an upper extension of the end caps, during the stacking of the boxes.

Claims

1. A box for perishable products, especially for fruit and vegetable products and similar, of the type of those formed by a single-piece body, made of cardboard, conveniently stamped in order to define a prismatic-rectangular receptacle, open at its upper surface,

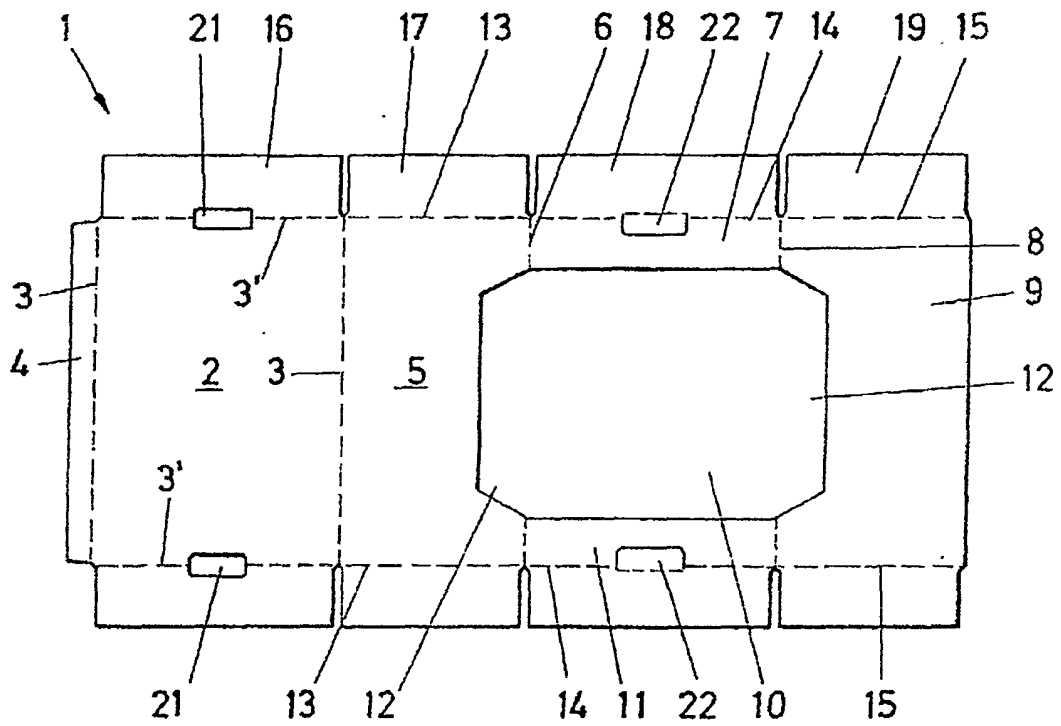


FIG.1

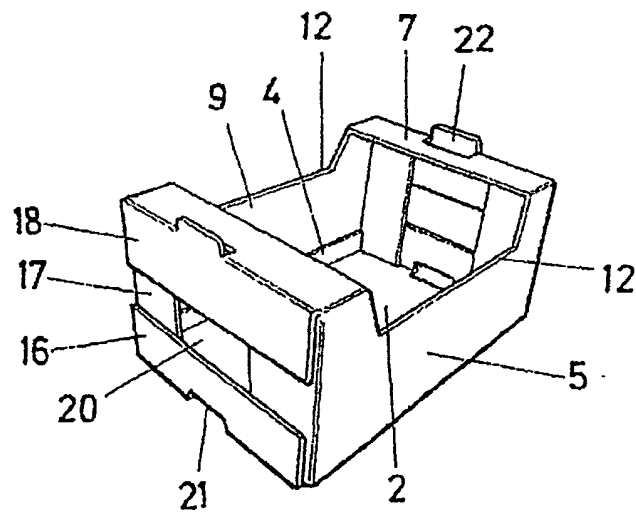


FIG.2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ ES 2006/000213

A. CLASSIFICATION OF SUBJECT MATTER

see extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B65D5/+

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

ES

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CIBEPAT,EPODOC,WPI,PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FR 2513968 A1 (SOCAR) 08.04.1983, the whole document.	1-3
Y	GB 1462843 A (TILLOTSONS CORRUGATED CASES) 26.01.1977, page 1, line 13 - page 3, line 8; figures	1-3
A	GB 615490 A (WILLIAM W CLELAND LTD) 06.01.1949, the whole document.	1
A	GB 1117400 A (AKERLUND & RAUSING AB) 19.06.1968, the whole document.	1
A	FR 1548648 A (THIOLAT) 06.12.1968, the whole document.	1

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance.		
"E" earlier document but published on or after the international filing date		
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"O" document referring to an oral disclosure use, exhibition, or other means	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other documents, such combination being obvious to a person skilled in the art
"P" document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family

Date of the actual completion of the international search

02.AUGUST.2006 (02.08.2006)

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(09-08-2006)

Name and mailing address of the ISA/
O.E.P.M.Paseo de la Castellana, 75 28071 Madrid, España.
Facsimile No. 34 91 3495304

Authorized officer

Belda Soriano, Leopoldo

Telephone No. + 34 913495585

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/ ES 2006/000213

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
FR2513968AB A B	08.04.1983	NONE	-----
GB1462843A A	26.01.1977	NONE	-----
GB615490A A	06.01.1949	NONE	-----
GB 1117400 A	19.06.1968	FR 1527601 A SE 312301 B DE 1586438 A	31.05.1968 07.07.1969 21.05.1970
FR 1548648 A	06.12.1968	BE 722493 A NL 6815242 A DE 6802933 U	01.04.1969 29.04.1969 22.05.1969
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Form PCT/ISA/210 (patent family annex) (April 2005)

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