Oct. 21, 1969 A. DE CAZENOVE 3,473,690

FRUIT PACKING BOX

Filed June 14, 1968

FIG.1

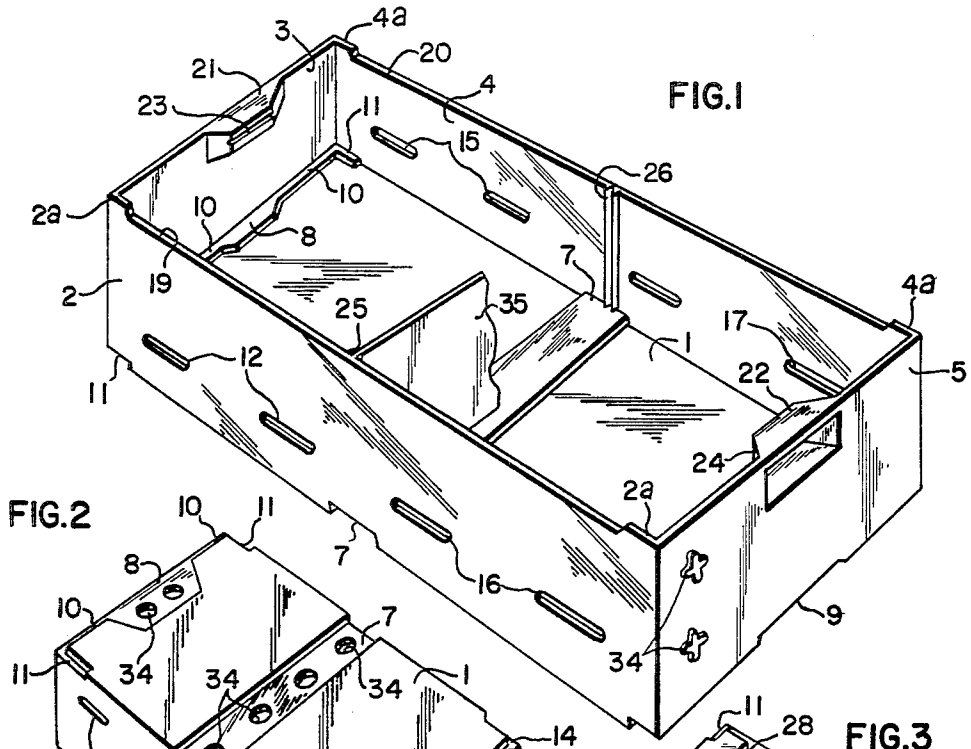


FIG.2

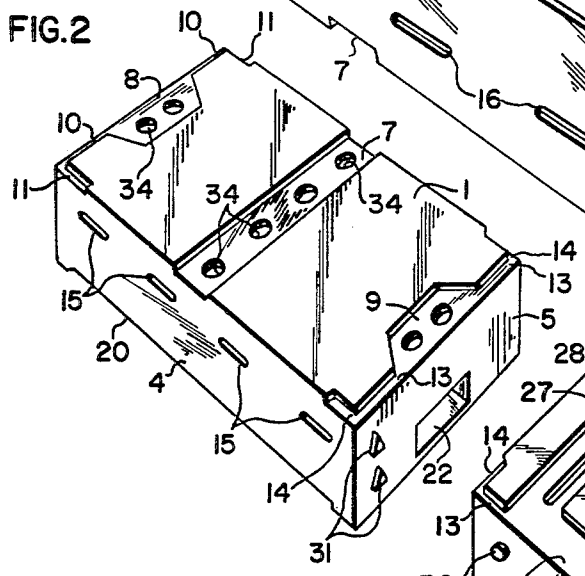


FIG.3

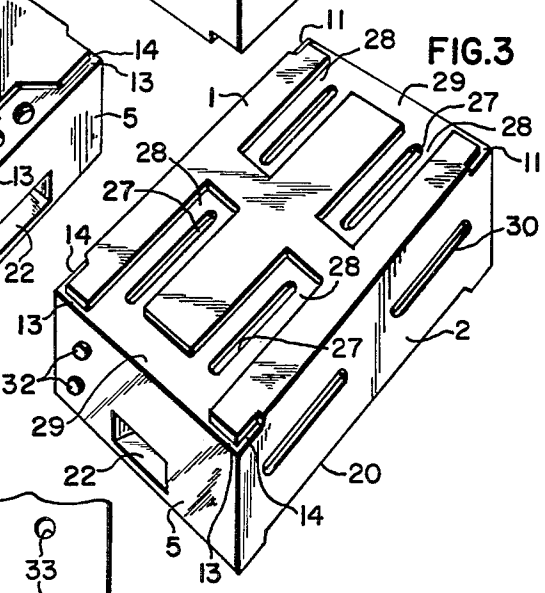
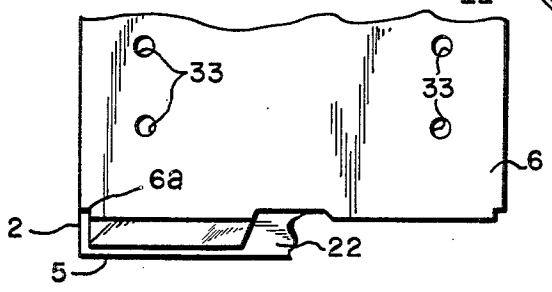


FIG.4



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FRUIT PACKING BOX

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U.S. Cl. 220—22 11 Claims

ABSTRACT OF THE DISCLOSURE

A fruit packing box has a pair of like handles extending inwardly from two of its side walls. The edges of the two other side walls each have a pair of edge portions defining therebetween like elongated indentations. The outer face of the bottom wall defines recesses whereinto the handles and the edge portions fit whereby a plurality of such boxes may be securely stacked in superposed relationship.

BACKGROUND AND SUMMARY OF THE INVENTION

The present invention relates to improvements in boxes useful for packing fruit, such as bananas.

Boxes of this type comprise a bottom wall and two pairs of side walls, the side walls of each pair being parallel to each other and one pair of the side walls being perpendicular to the other pair of side walls. Each of the walls has an inner and an outer face, and the side walls form a box edge in a plane parallel to the bottom wall. It has been proposed to make such boxes of molded material, for instance composition board consisting of ligneous or fibrous masses in a suitable binder.

It is the primary object of this invention to make boxes of this type so that they may be easily and securely stacked, have an optimum packing volume for their size, and are well ventilated.

This and other objects are accomplished according to the invention by providing a pair of like handle means extending inwardly from the side walls of one pair of side walls, with each handle means having an element extending in the plane parallel to the bottom wall. The edges of the side walls of the other pair of side walls each have a pair of edge portions in this plane defining therebetween like elongated indentations. The outer face of the bottom wall defines recesses whereinto the handle means elements and the edge portions fit whereby a plurality of the boxes may be securely stacked in superposed relationship.

The handle means elements may be of trapezoidal shape and the recesses may have groove portions of mating shape.

In one embodiment of the invention, the recesses are a pair of like grooves at opposite ends of the bottom wall, each groove including a pair of L-shaped groove portions at the corners of the box and a central groove portion extending inwardly from the L-shaped groove portions. In another embodiment, the central groove portion is U-shaped. In either case, the handle means elements fit into the central groove portions.

A cover is mounted in the elongated indentations of the side wall edges, and the handle means define a pair of like grooves of a width corresponding to the thickness of the cover. The cover is mounted by a snap fit in the grooves.

BRIEF DESCRIPTION OF DRAWING

The above and other objects, features and advantages of the present invention will become more fully understood by reference to the following detailed description of preferred embodiments, taken in conjunction with the accompanying drawing wherein

FIG. 1 is a perspective top view of a box for packing bananas according to one embodiment of this invention, with the cover removed;

FIG. 2 is a perspective bottom view, at a smaller scale, of the box of FIG. 1;

FIG. 3 is a perspective bottom view of another embodiment of a box for packing bananas; and

FIG. 4 is a fragmentary top view of a box with a cover.

DETAILED DESCRIPTION

Referring now to the drawing and first to FIGS. 1, 2 and 4, there is shown a rectangularly parallelepiped box particularly useful for packing individual bananas. This box comprises a bottom wall **1**, a first pair of like side walls **3**, **5** and a second pair of like side walls **2**, **4**. The side walls of each pair are parallel to each other and one pair of side walls is perpendicular to the other pair of side walls. Each wall has an inner and outer face, and the side walls form a box edge in a plane parallel to the bottom wall **1**.

In the illustrated embodiment, a reinforcing rib **7** extends centrally along the inner face of the bottom wall perpendicularly to the pair of side walls **2**, **4**, a recess corresponding in shape to this reinforcing rib being formed in the outer face of the bottom wall, as appears from FIG. 2.

A pair of like handle means **21**, **22** extend inwardly from the side walls **3**, **5**, each handle means consisting of a generally prismatic body of trapezoidal section having an element which extends in the plane of the box edge. The edges of the side walls **2**, **4** each have a pair of edge portions **2***a*, **2***a* and **4***a*, **4***a* in this plane, which define therebetween like elongated indentations **19**, **20**.

The outer face of the bottom wall **1** (see FIGS. 2 and 3) defines recesses whereinto the handle means elements and the edge portions fit, thus enabling a plurality of such boxes to be securely stacked in superposed relationship. In the embodiment of FIG. 2, the recesses in the outer bottom wall face are a pair of like grooves at opposite ends of the bottom wall, each groove including a pair of like L-shaped groove portions **10**, **11** and **13**, **14** at the corners of the box, and a central groove portion **8** and **9** extending inwardly from the L-shaped groove portions. The central groove portions are of mating shape with the trapezoidal handle means elements in the edge plane of the box.

As appears from FIG. 1, the inner face of the bottom wall has ribs corresponding in shape to the recesses in the outer bottom wall face, thus providing additional reinforcement. Also, elongated openings **12**, **15** are provided in side walls **2** and **4** for purposes of aeration.

It is obvious from a consideration of FIGS. 1 and 2 that, upon stacking one box on top of another, the edge portions **2***a*, **4***a* of the one pair of side walls, the edges of the other pair of side walls, and the top wall of the handles will fit into the mating recesses in the outer face of the bottom wall of superposed box so that these boxes are securely stacked.

As appears from FIG. 4, a cover **6** is mounted in the elongated indentations **19**, **20** of the edges of side walls **2**, **4**, the rectangular cover having a cut-out **6***a* at each corner to fit abutting edge portions **2***a*, **4***a*. The handle means define a pair of like grooves **23**, **24** which extend parallel to the bottom wall slightly below the top wall element of the handle means. These grooves are of a width corresponding to the thickness of the cover **6** so

that the cover may be mounted in grooves **23, 24** by a snap fit, thus keeping the cover in position on the box.

In substance, the embodiment of FIG. 3 differs from the above-described embodiment only in the shape of the recesses in the outer face of the bottom wall (and the corresponding ribs on the inner face of the bottom wall). All other elements, which carry like reference numerals, are identical and will, therefore, not be described again.

As shown, the trapezoidal central groove portions **8, 9** are replaced by U-shaped groove portions, each such portion including a connecting portion **29** and two leg portions **28, 28.** The handle means fit into the connection portions **29, 29** of the recesses.

Elongated aerating openings **27** are provided in the leg portions **28** of the recesses, and aerating slots **30** are provided in the side walls **2** and **4.** Also, as shown in FIGS. 2 and 3, bosses **31** and/or **32** of various shapes, such as cylindrical, prisamatic, cross-shaped, etc., may be provided on the outer faces of the side walls. Such bosses will space adjacent boxes from each other when stacks of boxes are placed side-by-side, thus permitting ventilation between the stacks of boxes and also avoiding sticking together of adjacent box walls. Furthermore, additional aerating openings **33** may be provided in cover **6** and openings **34** in bottom wall **1.**

As shown in FIG. 1, a partition wall **35** may be removably mounted in grooved guides **25, 26** between the side walls **2, 4.** Thus, a plurality of bananas may be arranged in each compartment of the box formed by the partition wall, the reinforcing ribs at two opposite edges of the compartments hardly interfering with the placement of the bananas. On the other hand, the configuration of the U-shaped reinforcement ribs of the embodiment of FIG. 3 makes this box particularly useful for packing bunches of bananas. In this case, the tips of the bananas will rest on the bottom wall while their arcuately concave portions will arc over the ribs formed by legs **28.**

Various modifications and changes of the illustrated embodiments will readily occur to those skilled in the art after benefiting from the present teaching without departing from the spirit and scope of the disclosed invention.

I claim:

1. In a box comprising a bottom wall and two pairs of side walls, the side walls of each pair being parallel to each other and one pair of side walls being perpendicular to the other pair of side walls, each of said walls having an inner and an outer face, and the side walls forming a box edge in a plane parallel to the bottom wall, the improvement of:

(1) a pair of like handle means extending inwardly from the side walls of one of the pairs of side walls,

(a) each handle means having an element extending in said plane,

(2) the edges of the side walls of the other pair of side walls each having a pair of edge portions in said plane defining therebetween like elongated indentations, and

(3) the outer face of the bottom wall defining recesses whereinto the handle means elements and the edge portions fit whereby a plurality of said boxes may be securely stacked in superposed relationship.

2. In the box of claim **1,** wherein the recesses in the outer bottom wall face are a pair of like grooves at opposite ends of the bottom wall, each groove including a pair of like L-shaped groove portions at the corners of the box and a central groove portion extending inwardly from said L-shaped groove portions.

3. In the box of claim **2,** said handle means elements being of trapezoidal shape and said central groove portions being of mating shape.

4. In the box of claim **2,** said central groove portions being U-shaped.

5. In the box of claim **1,** the inner face of the bottom wall having ribs corresponding in shape to the recesses in the outer bottom wall face.

6. In the box of claim **1,** a partition wall removably mounted between one of the pairs of side walls.

7. In the box of claim **1,** a reinforcing rib extending centrally along the inner face of the bottom wall perpendicularly to one of the pairs of side walls.

8. In the box of claim **7,** a recess in the outer face of the bottom wall corresponding in shape to the reinforcing rib along the inner bottom wall face.

9. In the box of claim **1,** at least one of said walls defining openings for aeration.

10. In the box of claim **1,** a cover mounted in the elongated indentations of the side wall edges, the handle means defining a pair of like grooves of a width corresponding to the thickness of the cover, said cover being mounted by a snap fit in said grooves.

11. In the box of claim **1,** a plurality of bosses provided on the outer faces of the side walls, for spacing adjacent boxes from each other.

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U.S. Cl. X.R.

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