Oct. 31, 1961 C. TODD 3,006,524

SHIPPING AND DISPLAY CARTON

Original Filed Sept. 16, 1957 4 Sheets-Sheet 1

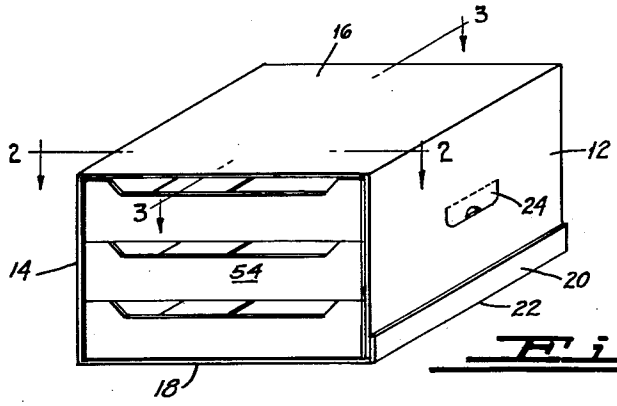


Fig. 1

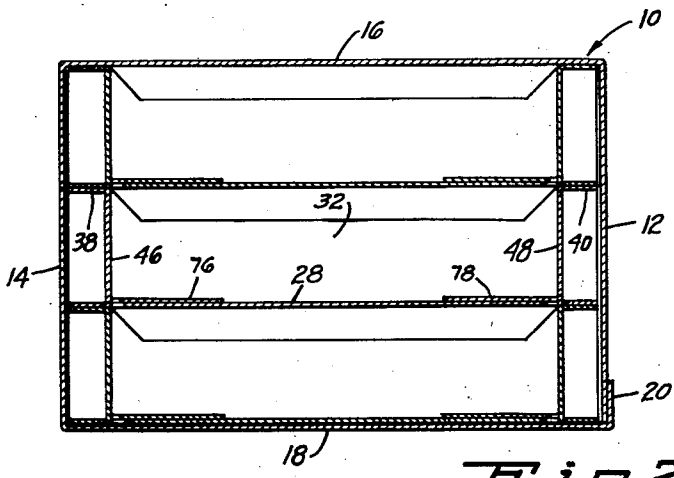


Fig. 2

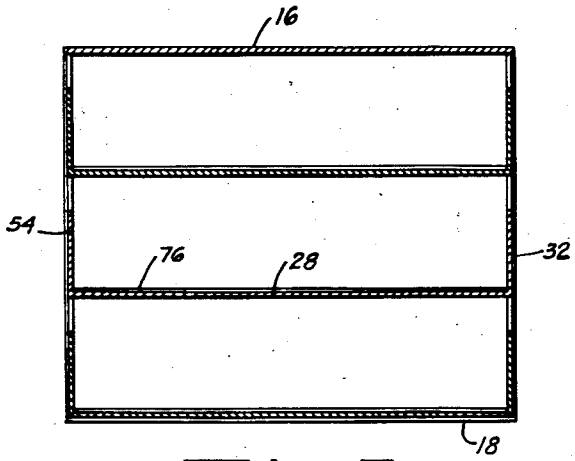


Fig. 3

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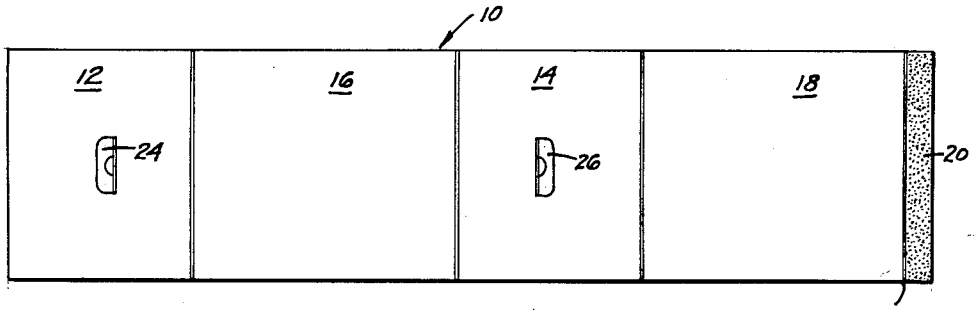


Fig. 4

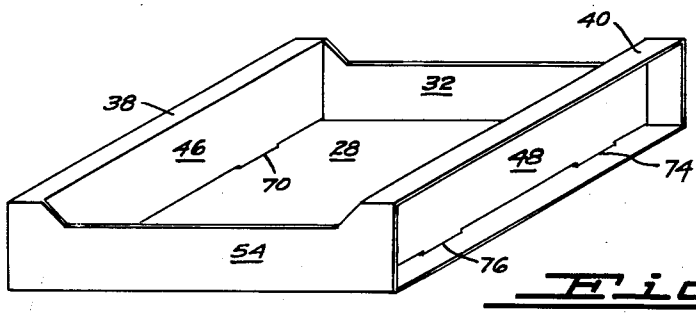


Fig. 5

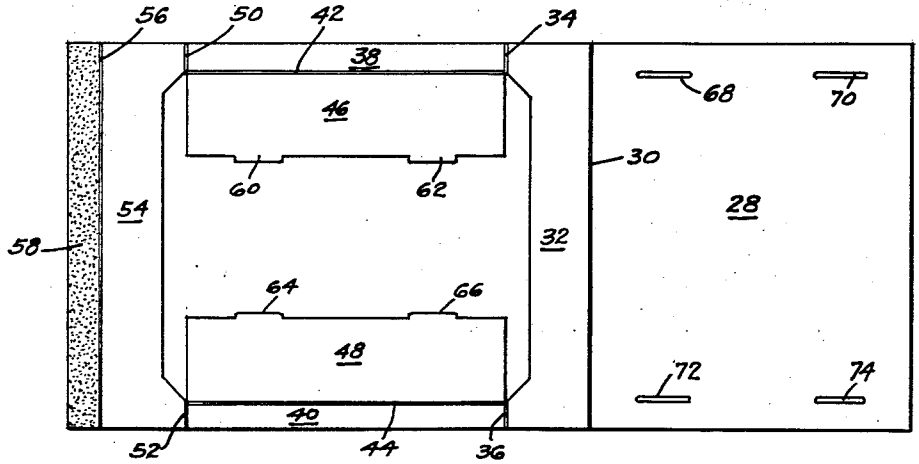


Fig. 6

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SHIPPING AND DISPLAY CARTON

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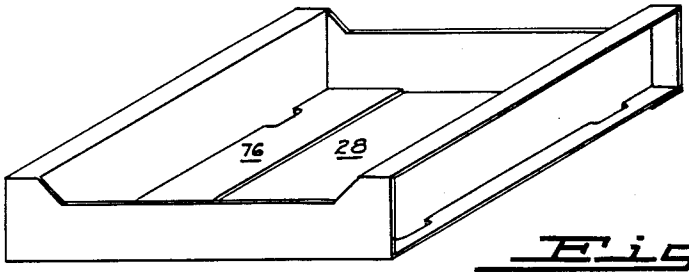


Fig. 7

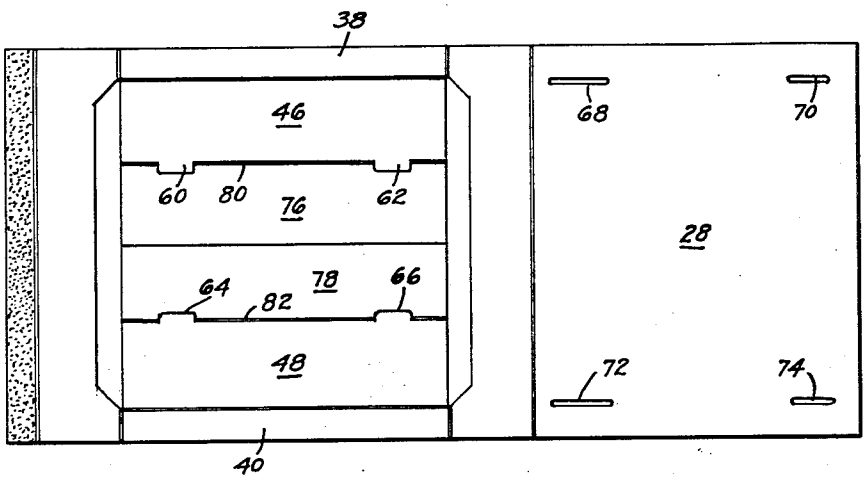


Fig. 8

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SHIPPING AND DISPLAY CARTON

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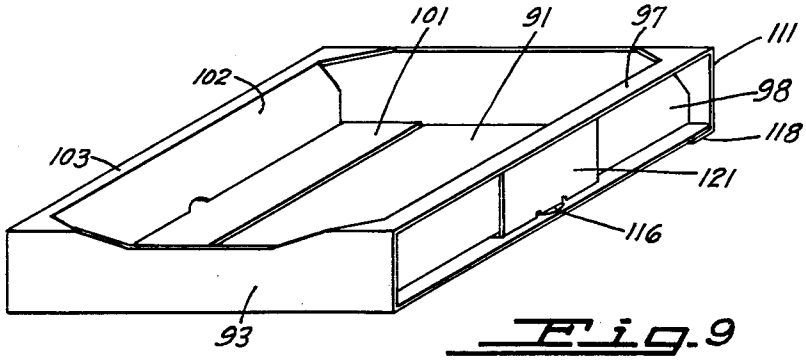


Fig. 9

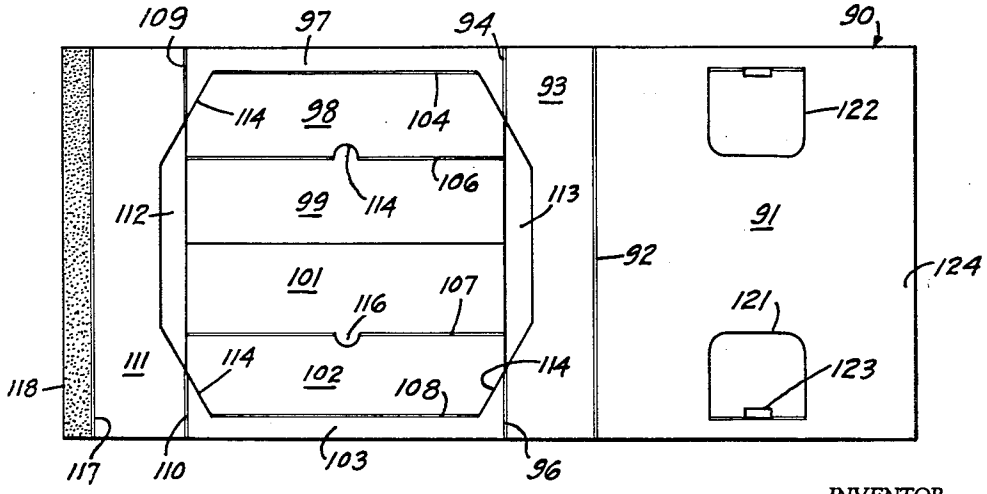


Fig. 10

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3,006,524

SHIPPING AND DISPLAY CARTON

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Substituted for abandoned application Ser. No. 684,095, Sept. 16, 1957. This application Feb. 29, 1960, Ser. No. 11,576

4 Claims. (Cl. 229—16)

This invention relates in general to a tray and shipping container therefor and more particularly to a tray particularly suited for shipment and display of fresh fruit.

Most shipping containers used for fresh fruit and vegetables are suitable only for this purpose and, at the destination, the comestible must be transferred to a suitable display package. It is obviously desirable, however, to employ a container which obviates the necessity for rehandling the fruit or vegetable on arrival at the retail or wholesale distributing point.

It is therefore an object of this invention to provide a container into which fresh fruits and vegetables may be packed, but which is of such a structure that it may be disassembled into a plurality of containers which may be used for displaying the articles.

It is a further object of this invention to provide an open tray which may be prepared from a single sheet of paper board, corrugated cardboard or similar material and which may be superposed on one or more similar trays and the entire group packed in a larger container for shipment.

Still another object of this invention is to provide a sturdy cardboard or corrugated paper tray which, as part of a larger package, may readily be secured closed so that the contents thereof will not be spilled.

Further objects and advantages of this invention, if not specifically set out, will become apparent during the course of the detailed description which follows.

In the drawings:

FIGURE 1 is an isometric view of the entire package suitable for shipping a plurality of individual article-holding trays being stacked within the four-sided, tubular bodied container;

FIGURE 2 is a sectional view taken along the line 2—2 of FIGURE 1, showing the internal structure of the completed shipping package;

FIGURE 3 is a sectional view along the lines 3—3 of FIGURE 1, showing the internal structure of the entire shipping package from one side;

FIGURE 4 shows the blank from which the four-sided tubular (shipping) container is formed;

FIGURE 5 is an isometric view of one of the individual article-holding trays;

FIGURE 6 shows the unfolded carton blank from which the tray of FIGURE 5 is formed;

FIGURE 7 is an isometric view of a tray which represents a preferred embodiment of the invention;

FIGURE 8 shows the carton blank from which the tray of FIGURE 7 may be formed;

FIGURE 9 is a perspective view of a modified form of the tray, particularly characterized in that the end panels may be locked in place in a positive manner; and

FIGURE 10 is a plan view of the carton blank from which the tray of FIGURE 9 may be formed.

Broadly, the complete shipping package in its simplest form comprises two or more trays which are superposed within a preferably open ended, tubular container having top, bottom and side panels of at least sufficient size to enclose the longitudinal walls, top and bottom of the stacked trays. The exterior container, of course, may be of any suitable size but is preferably large enough to allow for receipt of three of the trays. A three-tray package is about optimum in size and weight where individual trays about 2–3 square feet in base area are used, for use with apples, pears and peaches. Where such use is contemplated, the trays, of course, are ideally of about the depth of the fruit for which the container is intended.

The exterior tubular carton may be constructed of cardboard or corrugated paper board as, with three trays stacked therein, it becomes adequately rigid. Obviously, however, other materials are suitable though not preferred.

Each individual tray is formed from a single folded blank and, in the simplest embodiment, has a rectangular base and a first sidewall panel articulated at right angles to the base along a first score line. The first sidewall panel is joined at either corner of its opposite (uppermost) edge with parallel strips which are spaced from and run parallel to the base of the carton. The parallel strips terminate at the opposite ends thereof in a second perpendicular downwardly depending panel, the dimensions of which are substantially equal to those of the first sidewall. The second panel is provided with means such as a glue tab or flap adapted to lie against the base. Other suitable fastening means may be employed for joining the panel securely to the base of the tray along an edge thereof. As just stated, except for the base and the parallel connecting strips at opposite ends of the two sidewalls, these wall panels are severed from the rest of the carton material. Articulated to the inward longitudinal edge of each parallel strip is another panel; and these panels, when folded downwardly to the base of the tray, form opposed end walls. Preferably these downwardly extending end portions have means for affixing them to the base of the tray. In the preferred embodiment of the invention, the base of the tray is provided with a plurality of slots for receiving tongues which depend from the downwardly extending end walls. In the most preferred embodiment of the invention, each downwardly extending end wall is scored in the middle thereof so that an additional panel may be formed at a right angle relative to the end wall which lies against the upper surface of the tray base and may be secured thereto.

Referring now to the drawings wherein like characters refer to like parts throughout, the exterior shipping carton, generally **10**, preferably is formed of a rectangular blank folded to produce a tubular structure having opposed sidewalls **12** and **14** and opposed top and bottom walls **16** and **18**. Tab **20** is joined along score line **22** to the base **18**. As shown in FIGURE 4, the tab preferably is provided with suitable adhesive so that it readily may be bonded to panel **12** to form the completed tubular shipping carton.

Preferably, shipping carton **10** is provided with partial cut-outs **24** and **26** which may be folded either inwardly or outwardly thereby providing means for grasping the filled shipping container.

A blank from which one of the trays of this invention may be formed is shown in FIGURE 6. The blank comprises a rectangular base portion **28** joined by means of score line **30** to panel **32**. At either end of panel **32** and, more specifically, along score lines **34** and **36**, parallel strips **38** and **40** are joined thereto. These preferably are no more than an inch or so in width—that is, they are only of sufficient width to lend adequate rigidity to the carton. This width, of course, may vary depending upon the thickness and inherent rigidity of the corrugated material or cardboard used. Score lines **42** and **44**, spaced from and parallel to the edge of the blank, join panels **46** and **48** to the parallel strips **38** and **40** respectively. Score lines **50** and **52** mark a junction of the parallel supporting strips **38** and **40** and panel **54**, this panel being substantially co-extensive with panel **32**. At the opposite end

of this panel **54** is score line **56** adjacent which is found glue flap **58** which provides means for uniting opposite ends of the blank. The two end panels **46** and **48** are provided with tongues **60**, **62**, **64** and **66** of a suitable size for reception in and registration with slots **68**, **70**, **72** and **84** of base **28**.

An alternative structure, and preferred embodiment of the invention, is that shown in FIGURES 7 and 8. As the structure is substantially identical to that shown in FIGURES 5 and 6, it will not be further described in detail except to point out that the modification involves retaining articulated panels **76** and **78** rather than severing such panels entirely from panels **46** and **48**. The only points of severance of each pair of panels are those outlined by the tongues. In this fashion, two extra reinforcing panels are provided whiich may be glued or otherwise secured to the base of the tray so as to provide additional rigidity. As a result, in this embodiment, the tongues **60**, **62**, **64** and **66** may be omitted. Thus, the score lines **82** and **84** may extend the full length of the panels.

However, the use of tongues **60**, **62**, **64** and **66** is to be recommended as it provides for rapid assembly from the carton blank and ensures proper positioning of end panels **46** and **48**. Where the tongues and slots **68**, **70**, **72** and **74** are provided, there is no possibility of any variation in the angle included between parallel strips **38** or **40** and each respective end panel **46** or **48**.

The tray is prepared by folding either the blank of FIGURE 6 or that of FIGURE 8 to form an enclosed rectangle. The leading edge of base **28** and glue tab **58** are held in close proximity and thereafter panels **46** and **48** are folded in a downward fashion. Tongues **60**, **62**, **64** and **66** mate with slots **68**, **70**, **72** and **74** and tab **58** is secured to the base to complete the tray.

Where the preferred embodiment, that shown in FIGURE 8, is assembled, panels **46** and **48** are folded downwardly at right angles to parallel strips **38** and **40** and panels **76** and **78** are folded in the opposite direction along score lines **80** and **82**, so as to cause panels **76** and **78** to lie flat against base **28**. Rigidity is assured by the fact that panels **76** and **78** are glued in place. Thus, the function of tongues **60**, **62**, **64** and **66** becomes largely that of serving as assembly guide means.

As can be seen from the figures, the preferred embodiment of the invention involves the formation of side panels **32** and **54** in such a fashion that indentations are provided at the top thereof. These provide means for readily grasping and removing any individual tray from the shipping carton **10**. Alternatively, each side panel is provided with a cut-out arrangement similar to **24** and **26** of shipping carton **10** so that it is possible to readily remove the desired tray. The structure shown in the drawings is to be preferred as against a tab arrangement similar to **24** or **26** since the notched structure shown provides ventilation for the fruit or vegetable within the tray, thus facilitating refrigeration. It further provides means for readily inspecting the contents of the tray.

In that form of the structure shown in FIGURE 9, a rectangular blank generally indicated at **90** is provided, this including a rectangular base portion **91** joined by a score line **92** to a panel **93**. Parallel strips **97** and **103** are joined at either end of panel **93** along score lines **94** and **96**. Strip **97** carries panels **98** and **99**, these being movable along crease lines **104** and **106**. Similarly, strip **103** carries panels **101** and **102** movable on crease lines **107** and **108**.

Each of panels **99** and **101** is cut as at **114** to provide a tongue **116**. A fold line **117** in panel **111** defines a glue flap **118**, which enables a blank to be assembled into that form in which it appears in FIGURE 9.

Referring again to panel **9**, flaps **121** and **122** are formed integrally of this panel, each being of an overall length corresponding to the width of panels **98** and **102**. Also, each of panels **121** and **122** is cut out as at **123** to receive a tongue **116**.

Upon assembly of the blank, the glue flap **118** is engaged with edge **124** of panel **91**, the flaps **121** and **122** are moved upwardly to engage the underside of each of strips **97** and **103**. At the same time, panels **101** and **102** and **98** and **99** are moved into position in which panels **98** and **102** are normal to panel **91**, panels **99** and **101** rest flatly on panel **91**, and flaps **121** and **122** are engaged with panels **98** and **102**. The upstanding flaps **121** and **122** provide support for the strips **97** and **103**. At the same time, the engagement of panels **99** and **101** with the bottom panel **91** serves to strengthen the container, while the engagement of tongues **114** and **116** with the cut-out portion **123** in each of the flaps provides locks against any end thrust upon the panels **98** and **102**.

Obviously, many modifications and variations of the invention as hereinbefore set forth may be made without departing from the spirit and scope thereof, and therefore only such limitations should be imposed as are indicated in the appended claims.

This application is a substitute for abandoned application Serial No. 684,095, filed September 16, 1957.

I claim:

1. A tray formed from a single folded blank comprising: a rectangular base having a first sidewall panel joined at right angles thereto along a first score line, said first sidewall panel being articulated at either corner of the opposite edge thereof to parallel strips perpendicular to said first sidewall panel, said strips being spaced from said base and positioned substantially parallel thereto, said parallel strips terminating at the far ends thereof at a second perpendicular side panel, said second perpendicular side panel being joined to said strips by means of score lines at opposite corners of said panel, said second sidewall panel having means at the opposite edge thereof for securing said second sidewall panel to said rectangular base, the aforementioned parallel strips each having a perpendicular downwardly depending panel joined thereto along a score line running longitudinally of said strips, said panel extending to said base, said depending panels serving as end-walls for said tray, said depending panels terminating in articulated perpendicular panels adapted to lie against the base of said tray, a portion of the base area lying beneath each of said perpendicular panels being severed from said base on all but one side and hinged to said base along lines directly beneath points where said end walls strike said base whereby to form flaps, and means for securing said flaps to the exteriors of said perpendicular end walls in an overlying relationship said panels lying against the base of said tray being of sufficient size to cover entirely the holes formed in the said rectangular base when said flaps are secured to said end walls.

2. The structure of claim 1 wherein the panels depending from said parallel strips are also provided with tongues adapted to register with slots in said base.

3. A container suitable for shipment comprising: a plurality of stacked trays each formed from a single blank, each of said trays comprising a rectangular base having a first sidewall panel joined at right angles thereto along a first score line, said first sidewall panel being articulated at either corner of the opposite edge thereof to parallel strips perpendicular to said first sidewall panel, said strips being spaced from said base and positioned substantially parallel thereto, said parallel strips terminating at the far ends thereof at a second perpendicular side panel, said second perpendicular side panel being joined to said strips by means of score lines at opposite corners of said panel, said second sidewall panel having means at the opposite edge thereof for securing said second sidewall panel to said rectangular base, the aforementioned parallel strips each having a perpendicular downwardly depending panel joined thereto along a score line running

longitudinally of said strips, said panel extending to said base, said depending panels serving as end walls for said tray, said depending panels terminating in articulated perpendicular panels adapted to lie against the base of said tray, a portion of the base area lying beneath each of said perpendicular panels being severed from said base on all but one side and hinged to said base along lines directly beneath points where said end walls strike said base whereby to form flaps, and means for securing said flaps to the exteriors of said perpendicular end walls in an overlying relationship said panels lying against the base of said tray being of sufficient size to cover entirely the holes formed in the said rectangular base when said flaps are secured to said end walls, the entire plurality of said stacked trays being enclosed by an exterior container exposing substantially the entirety of at least one side of each of said trays.

4. The structure of claim 3 wherein the exterior container is a four-sided tubular body enclosing only the longitudinal walls of said trays and the top of the topmost tray and bottom of the lowermost tray of said stack of trays.

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