Sept. 3, 1963 J. P. HAMILTON 3,102,674

STRAWBERRY TRAY

Filed Jan. 18, 1962 3 Sheets-Sheet 1

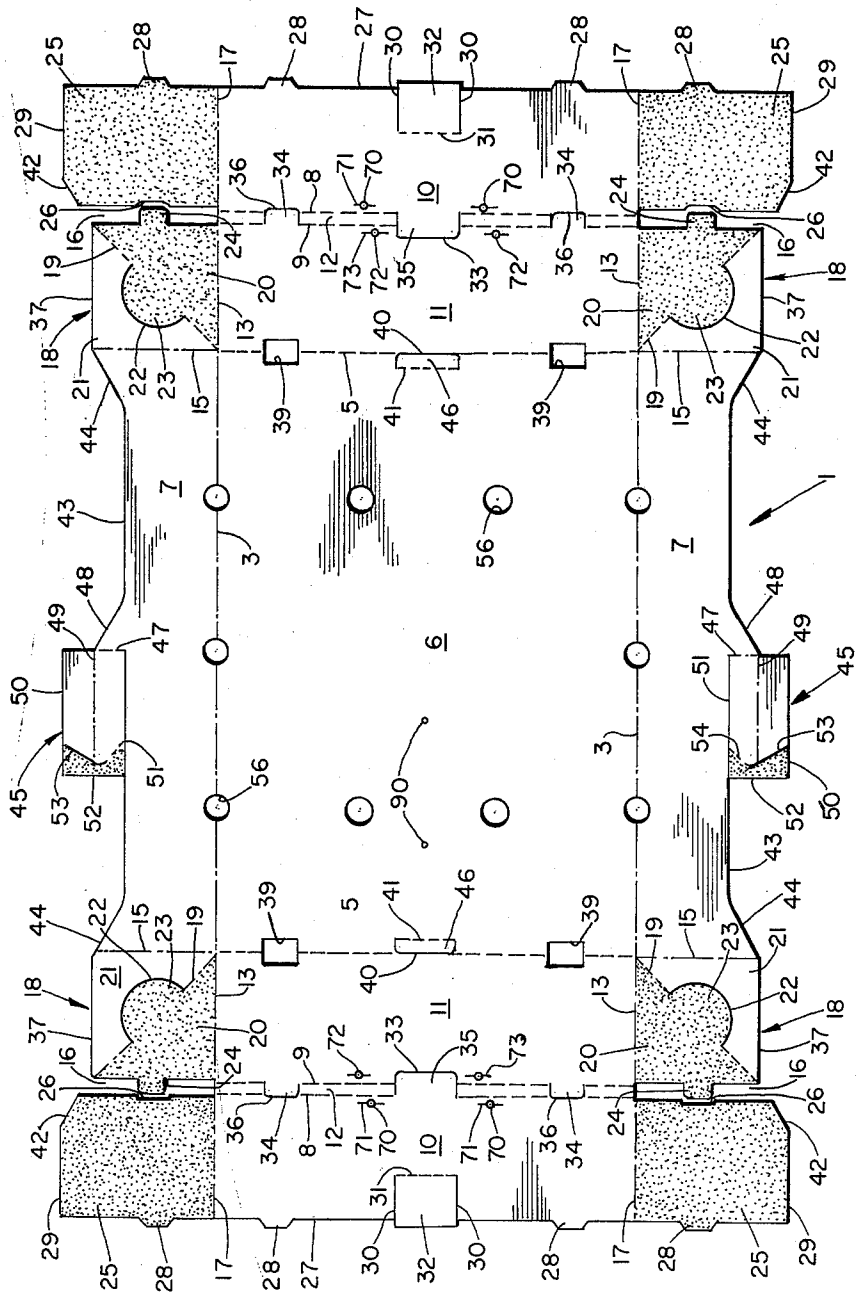


FIG_1

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STRAWBERRY TRAY

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3 Sheets-Sheet 2

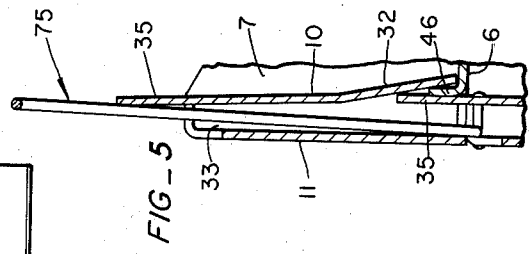


FIG_5

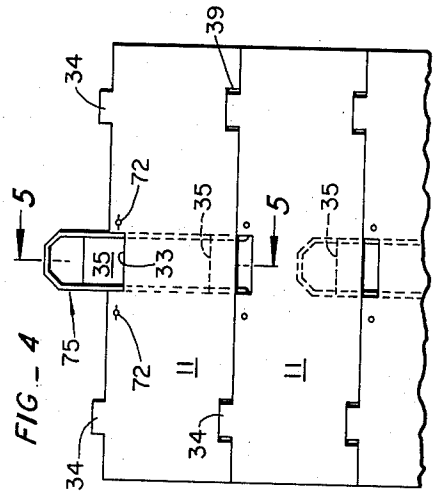


FIG_4

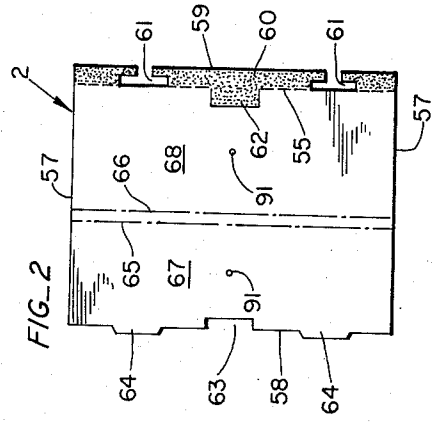


FIG_2

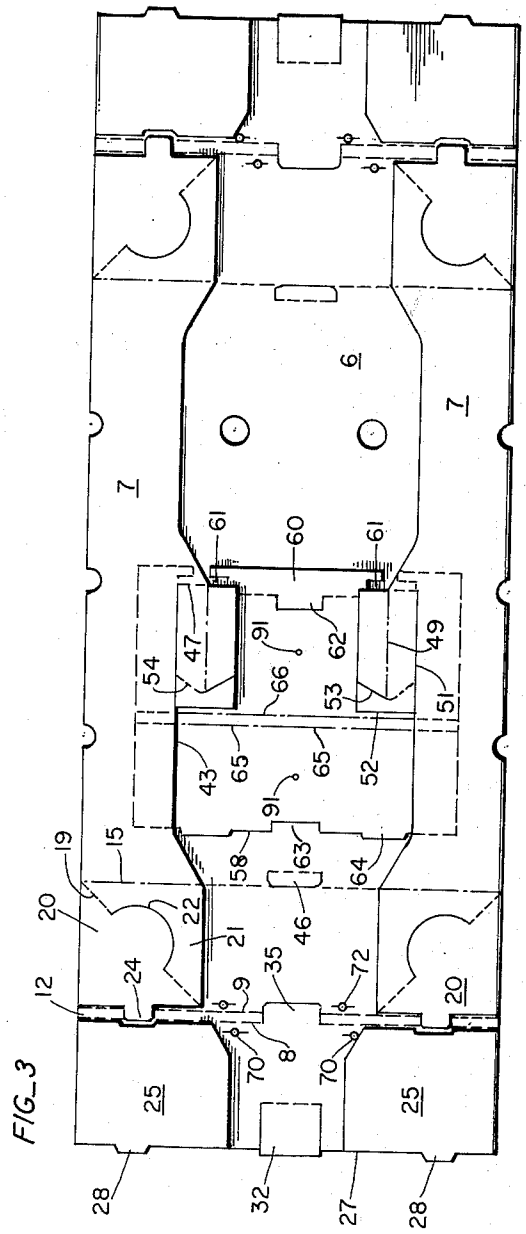


FIG_3

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Sept. 3, 1963 J. P. HAMILTON 3,102,674

STRAWBERRY TRAY

Filed Jan. 18, 1962 3 Sheets-Sheet 3

FIG_6

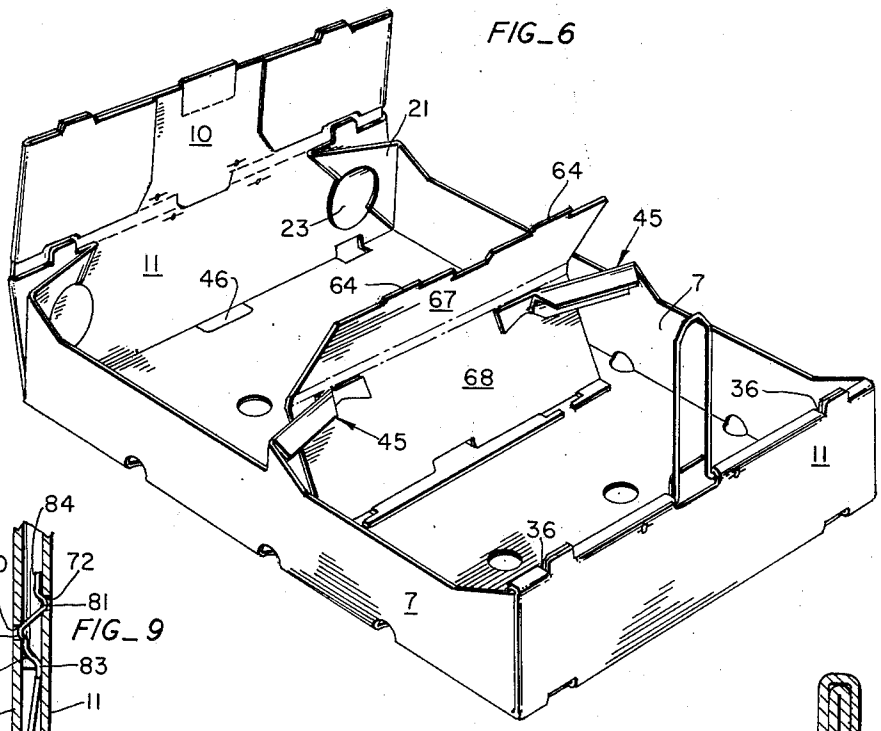


FIG_9

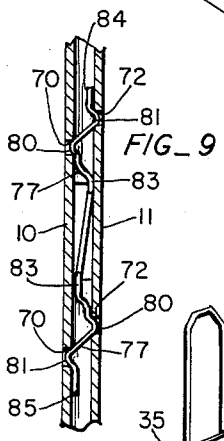


FIG_8

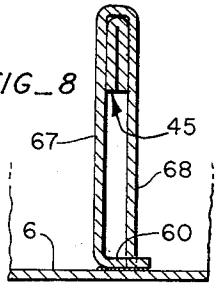
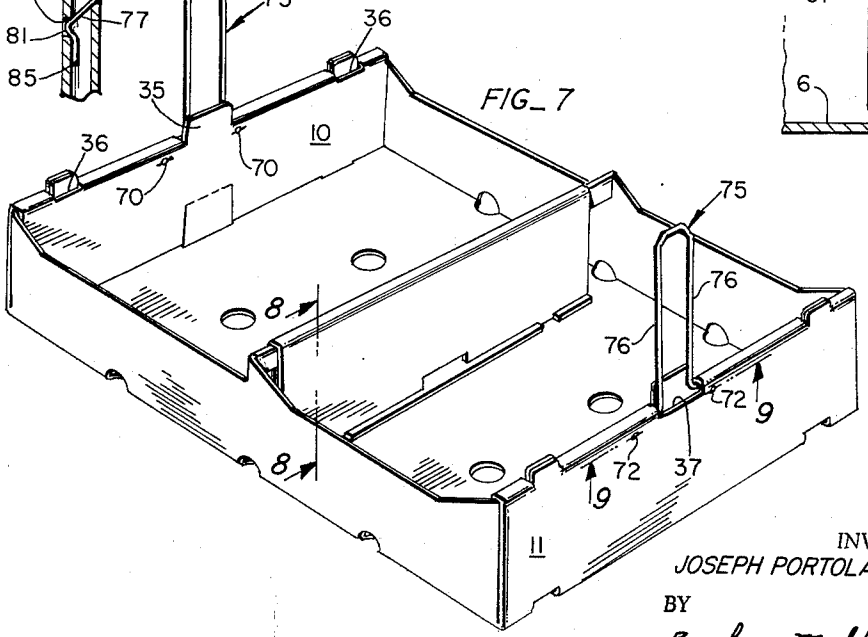


FIG_7



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3,102,674

STRAWBERRY TRAY

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Filed Jan. 18, 1962, Ser. No. 167,143
14 Claims. (Cl. 229—15)

This invention relates to a berry or produce tray of the type used for holding a plurality of conventional berry baskets such, for example, as those used for strawberries.

One of the objects of the invention is the provision of a folding tray, adapted to be folded substantially flat, and to be quickly unfolded to a set-up position and locked in said position, and when so locked, will provide a tray of rigid structure, which tray may be readily stacked on another tray of similar structure and is provided with means for supporting such trays in vertical alignment in a stack.

Heretofore, trays for berries have usually been formed from blanks that include structure providing a horizontal corner piece, or rest, at each of the upper four corners of each tray.

It should be noted that the provision of the corner rests in conventional trays does not prevent the trays from shifting relative to each other, but merely enables the upper of superposed trays to be out of vertical alignment on the tray therebelow without completely losing support from the lower tray.

Also, the provision of the corner rests, or for that matter, any pieces extending over the contents of the tray, such as berry baskets of strawberries or other produce, is highly undesirable. Where such projections exist, the purchaser of a basket of berries frequently spills the contents upon attempting to lift a filled basket from the tray by reason of the basket accidentally striking an overhanging corner rest or other projection.

One of the advantages of the present tray is the elimination of corner rests and other projections that might accidentally engage a berry basket being lifted from the tray.

A still further object of the present invention is the provision of structure that eliminates "bottom sag" in a tray, which is the sagging of the bottom of the tray under a load.

Berry trays of the present general type are oblong, having end walls that are shorter than the side walls, and a partition is provided midway between the end walls. In conventional trays, the bottom sags at and adjacent to the partition.

In the present invention, the partition is part of the tray, being inseparable therefrom and when the tray is unfolded from its flat, knock-down, collapsed position to its set-up position, the partition will be perpendicular to the bottom and secured along its lower edge to the bottom. Thus, in addition to performing its function as a partition, the latter also functions as a vertical rib to reinforce the bottom wall against sagging.

Heretofore it has been customary to make trays with double end walls at each end of the tray, and to provide upstanding bails or wire handles that are held between the double end walls at their lower ends and that are adapted to project upwardly from the upper edges of the end walls into the space between the end walls of a superposed tray of similar structure. However, these handles were always susceptible of being pushed downwardly with the space between the double end walls, instead of projecting upwardly.

In the present tray, the end walls are formed to cooperate with the lower ends of the wire handles to enable quick and easy insertion of the handles, and to automatically hold the handles upright on the end walls against being pushed downwardly into the space between the end walls.

Another object of the invention is the provision of a knock-down folding tray that is made and pre-assembled before delivered in the field and which may be delivered to the packer in a knock-down, flat, folded condition and quickly set up without the use of glue or the insertion of separate partitions or the like.

Other objects and advantages will appear on the description and in the drawings.

In the drawings:

FIG. 1 is a plan view of the blank from which the tray is formed;

FIG. 2 is a plan view of the blank adapted to form the partition;

FIG. 3 is a plan view of the tray assembled, and in its collapsed, flat, knock-down position;

FIG. 4 is an end elevational view of several trays in a stack;

FIG. 5 is an enlarged cross-sectional view at line 5—5 of FIG. 4;

FIG. 6 is an isometric, substantially three-quarter view of the tray in partially set-up position showing the partition and the far end wall in an intermediate stage in setting up the tray;

FIG. 7 is an isometric view similar to that of FIG. 6, but showing the tray fully set up;

FIG. 8 is an enlarged cross-sectional view taken vertically through the partition along line 8—8 of FIG. 7; and

FIG. 9 is an enlarged, horizontal sectional view taken along line 9—9 of FIG. 7.

In detail, the blank illustrated in FIG. 1, and generally designated 1, is generally oblong in outline, and is preferably of double faced, corrugated cardboard with the corrugations extending longitudinally of the blank. The outline of the blank is symmetrical at opposite sides of a medial line extending longitudinally thereof. This blank 1 is adapted to be folded to form the main body of the tray, and the blank of FIG. 2, generally designated 2, is adapted to be secured to the blank 1 to form a partition within the tray.

Referring back to FIG. 1, the blank 1 is formed with a pair of parallel folding creases 3 extending longitudinally thereof, which creases are equally spaced from the longitudinally extending edges of the blank.

A pair of parallel folding creases 5 extend across the end portions of the blank, equally spaced from the end edges of the blank, and extend across and at right angles to creases 3.

These folding creases 3, 5 define the rectangular outline of the bottom wall 6 of the tray that will be formed, and the marginal portions of the blank outwardly of folding creases 3 and between the ends of the creases 5 will form the side walls 7. The end portions of the blank between creases 5 and the end edges of the blank adjacent thereto respectively, will form the end walls of the blank.

Each end portion of the blank is the same, and each is formed with a pair of parallel, folding creases 8, 9 extending thereacross, parallel with creases 5. The crease 8 of each pair 8, 9 is the crease that is nearest to the outer free end edge of the blank, and creases 8, 9 are closely spaced apart a distance that is preferably approximately equal to a double thickness of the blank 1. These pairs of creases 8, 9 are each approximately midway between one of the free end edges of the blank and the crease 5 that is adjacent thereto.

By the above structure, each end portion of the blank 1 comprises two panels 10, 11. The panel 10 is the panel along each end edge of the blank, while the panel 11 is the one between each pair of creases 8, 9 and crease

5 that is adjacent thereto. Thus, panels 11 adjoin the bottom wall 6.

The folding creases 3, 5 intersect each other at right angles at their ends, and continue to the free side and end edges of the blank beyond their points of intersection. The extensions of creases 3 that extend across the end portions of panels 11 are designated 13 and the extensions of creases 5 that extend across the ends of side walls 7 are designated 15.

The creases 8, 9 terminate at their ends at the extensions 13 and the said end portions of the blank 1 are formed with slots 16 that are in longitudinal extension of the material 12 of said end portions lying between each pair of creases 8, 9. The creases 3 continue beyond extensions 13 across the ends of the panels 10, as at 17.

The extensions 13, 15 of creases 3, 5 define two of the edges of substantially square corner pieces that are generally designated 18.

Folding creases 19 extend diagonally across the corner pieces 18 from the points of intersection of creases 3, 5 to the outer ends of slots 16, except for a substantially semi-circular cut 22 that is positioned centrally between the outer ends of said creases 19. Actually, each crease 19 is in two aligned sections thereof, with their adjacent ends terminating at opposite ends of each arcuate cut 22; hence, each pair of such sections, and the cut 22 therebetween unequally divides each corner piece 18 into parts 20, 21, with the part 20 being along each crease extension 13, while part 21 is along each crease extension 15. Each cut 22 defines the outline of a tab 23 that lies within the outline of the cut.

The edge of each corner piece 18 that defines one side of each slot 16 is formed with a projection 24 of rectangular outline that extends across the slot toward the opposite edge of the slot. The said opposite edge of each slot 16 is in a flap 25, and each flap 25 is the end portion of each panel 10 that is positioned outwardly of each crease 17. Each crease 17 is in extension of the crease extensions 13, and the latter are continuations of creases 3. The edge of each flap 25 that forms the side of the slot 16 opposite to projection 24 is preferably slightly recessed at 26 and the edges of recess 26 are substantially complementary to the outline of the outer portion of each projection 24.

Each of the outer end edges 27 of the blank 1 is formed with a plurality of outwardly projecting tabs 28 of corresponding outline. These tabs 28 project only a relatively slight distance outwardly of the end edges 27 of the blank, which distance may be approximately equal to the thickness of the material of the blank and the edges of the tabs between the end edges of the blank and the outer edges of the tabs, preferably extend convergently outwardly from said end edges. The tabs 28 are elongated longitudinally of the end edges of the blank, and the outer edges of the tabs 28 that are along each end edge of the blank are in alignment and parallel with said end edges.

One of the tabs 28 along each end edge 27 of the blank is on each flap 25 approximately midway between crease 17 and the outer free edge 29 of the flap that is opposite to crease 17, while two of the other tabs 28 are respectively equally spaced from the end of the crease 17 that is nearest thereto. These latter two tabs 28 are on panel 10 and are closer to creases 17 than to the center of the outer edge 27 of the panel.

Midway between the ends of each panel 10, a pair of spaced, parallel cuts 30 extend at right angles to the edge 27 and into said panel 10 and the inner ends of the said cuts are connected by a folding crease 31.

The portions 32 between cuts 30 may also be called flaps, and they project slightly outwardly of the end edges 27 of the blank, the outer edge of each flap 32 being parallel with edge 27.

Along each crease 9 of the pair of creases 8, 9, are a pair of tabs 34 that are elongated longitudinally of each crease 9. These tabs are integrally connected with the panel 11 along a line that is coincidental with the crease 9, and they extend slightly across the crease 8 and across portion 12 between creases 8, 9. Substantially right angle cuts separate the tabs 34 from the blank 1 except where they are connected with the panel 11. The creases 9 do not extend across the bases of tabs 34 where the latter are connected with panel 11. By this structure, when the panel 10 is bent along creases 8, 9 to extend over the panel 11, the tabs 34 will remain rigid and coplanar with the panel 11, and will project outwardly of both panels 10, 11, and an opening will be formed in the material 12 between creases 8, 9 alongside each tab 34.

Tabs 34 are in alignment with tabs 28 in a direction longitudinally of the blank 1.

Centrally between tabs 34 at each end of the blank 1, a larger tab 35 is formed, which tab also is preferably elongated longitudinally of the pair of creases 8, 9, and the base of each tab 35 is integral with the panel 10 along a line coincidental with crease 8. Each tab 35 is cut out of the blank (except along the base where it connects with panel 10) to extend across the material 12 between each pair of creases 8, 9 and a distance into the panel 11. When the panel 10 is bent along creases 8, 9 to overlie panel 11 it is seen that a substantial, elongated opening 33 (FIG. 4) will be formed in the material between creases 8, 9 alongside each tab 35.

The purpose of these openings alongside the tabs 34 and alongside the tab 35 will later appear. However, the openings alongside the tabs 34 are generally indicated at 36 in FIGS. 1 and 7 and the openings alongside tabs 35 are indicated at 33, the lead lines from said numerals 36, 33 extending to one of the edges of each opening.

In alignment with the tabs 28, 34 longitudinally of the blank, and along each folding crease 5, are rectangular openings 39 (FIG. 1) which openings extend equally to opposite sides of the creases 5 into bottom wall 6 and into panels 11. The length of each of these openings longitudinally of each crease 5 is approximately the same as the length of each tab 28, since the tabs 28 are to enter said openings when the tray is formed.

Centrally between the openings 39 along each crease 5 is a slit 40 having short, right angle cuts at its ends extending into bottom wall 6, and a crease 41 formed in said bottom wall parallel with slit 40 extends between the ends of said short cuts. By this structure the tabs 46 between the slit 40 and crease 41 will readily be bent upwardly to provide an elongated opening along crease 5. The length of this opening will be substantially the same as the length of the opening that will be alongside each tab 35 when the panels 10, 11 are folded to opposed relation along creases 8, 9.

The end edges 37 of the corner pieces 18 are parallel with the end edges 29 of the flaps 25 that are at the ends of panels 10, but the corner pieces 18 do not project as far from the crease extensions 13 as the flaps 25 project from crease extensions 17. Also, preferably, the outer corners of the flaps 25 that are adjacent to the corner pieces 18 are each cut off at an angle, as indicated at 42.

The side walls 7 that extend between the corner pieces 18 are narrower than the widths of corner pieces 18, for most of their lengths, in the same dimension.

The outer edges 43 of the side walls 7 are parallel with creases 3, except at their ends 44 where they extend slantingly outwardly to meet one of the ends of the outer edges of the corner pieces 18.

Intermediate the ends of the side walls 7, each side wall is formed with an outwardly projecting portion generally designated 45. These portions 45 are elongated longitudinally of the side walls and are generally oblong in outline and extend to one side of a medial line extending transversely across the blank.

One of the corresponding ends of the projections 45 is connected with each side wall 7 along a short folding

crease 47 that defines one half of one end edge of each oblong projection. These folding creases 47 are at right angles to the length of each side wall 7 and are in alignment. Also they are positioned substantially centrally between the ends of the side walls.

A progressively widening enlargement 48 on each side wall 7 extends outwardly from the edge 43 of each side wall to connect with the said one half of one end of each projection 45 along crease 47.

A folding crease 49 extends longitudinally across each oblong projection, centrally thereof, from the outer end of crease 47 to a point spaced from the end of the projection 45 that is opposite to crease 47.

One of the longitudinally extending edges 50 of each projection 45 is in longitudinal alignment with the outer end edges 29 of the flaps 25 that are at the same side of the blank, and the other longitudinally extending edges 51 of each projection 45 is in alignment and in continuation of the edge 43 of each side wall that is at the side of the projection opposite to each enlargement 48. Edges 51 extend to the inner ends of creases 47.

The end edge 52 of each projection 45 that is opposite to crease 47 is spaced slightly from the end of crease 49, and approximately at the point where the end of each crease 49 terminates, a cut 53 extends slantingly in a direction away from edge 52 to the edge 50, while a folding crease 54 extends from said point slantingly away from edge 52, to the edge 51.

Ventilating openings 56 may be formed in the bottom wall 6 and along the folding creases 3 to provide ventilation for the contents of the tray.

Referring to FIG. 2, in which the partition blank 2 is shown, said blank 2 is generally oblong in outline, the dimension of greatest length being shown as less than the width of the bottom wall 6. The two end edges 57 may be parallel and straight, so as to be parallel with the side walls 7 of the blank 1 when the said side walls are perpendicular to the bottom wall 6 and the partition is within the tray.

The other two edges of the partition blank are designated 58 and 59 and are at right angles to the edges 57.

A folding crease 55, parallel with edge 59 is adjacent to said edge 59 and said edge 59 and crease 55 define opposite outer limits of a marginal portion 60 along edge 59.

A pair of generally T-shaped slots are formed along the edge 59 in marginal portion 60, the leg of each slot opening outwardly of edge 59 at points equally spaced from the ends of edge 59, while the head 61 of each slot is within marginal portion 60 and along and parallel with crease 55.

Centrally between the ends of the crease 55 a tab 62, integral with marginal portion 60, is cut from the body of the partition along said crease. Thus when marginal portion 60 is bent along crease 55 to a position at right angles to the body of the partition, the tab 62 will remain coplanar with the marginal portion.

Centrally between the ends of edge 58, a rectangular recess 63 is formed, which recess is approximately the same length longitudinally of edge 58 as the length of tab 62 in the direction of crease 55.

Also along edge 58 are a pair of projections 64 spaced the same distances from the edges 57 of the blank as the heads 61 of the T-shaped recess are spaced from said edges 57.

Intermediate the edges 58, 59 and parallel therewith are a pair of slightly spaced folding creases 65, 66. These divide the partition into panels 67, 68, the latter carrying marginal portion 60.

The structure so far described is adequate to form the tray itself. In order to make provision for the wire handle, a pair of openings 70 are formed in panel 10 adjacent to crease line 8 and spaced at opposite sides of the base of each tab 35. Slits 71 are parallel with crease 8 extend oppositely outwardly a short distance from each of the openings 70.

A second pair of openings 72 of the same size as openings 70 are formed in panel 11 adjacent to crease 9 and are spaced at opposite sides of each tab 35. Also, slits 73, corresponding to slits 71, extend from opposite edges of the openings 72.

The pair of openings 70 are slightly offset in direction transversely of blank 1 relative to the pair of openings 72.

These openings cooperate with the wire handles generally designated 75 (FIG. 7) as will later be explained, since the handles are not inserted until the tray is set up.

In forming the tray, assuming the blank 1 is on a horizontal surface facing upwardly as seen in FIG. 1, glue, as indicated in FIGS. 1 and 2, is applied to the upper surfaces of the flaps 25 and to the upper surfaces of the parts 20 of corner pieces 18, and to the portions of the oblong projections or portions 45 on side walls 7 that are bounded by edges 52, cuts 53 and creases 54. Glue is also applied to one side of the marginal portion 60 of the partition blank 2.

The glued side of the marginal portion 60 may then be adhered to the bottom wall 6 so that crease 55 is substantially centrally between the ends of the bottom wall 6, and at right angles to the creases 3 and equally spaced from said creases 3. The main body of the partition blank 2, when the marginal portion 60 is so glued to the bottom wall 6, will extend to the same side of the medial transverse line of blank 1 as the oblong portions 45. FIG. 3 shows the partition secured to bottom wall 6 and flat against the latter.

The side walls 7, corner pieces 18 and flaps 25 are next folded upwardly and toward each other so that the flaps 25 will be glued to the panels 10, and parts 20 of the corner pieces 18 will be guled to panels 11, while the portions of the projections 45 on side walls 7 will be glued to the part of partition blank 2 that is between creases 66, 65 and marginal portion 60, and the part so connected with the partition will be along the crease 66 (FIG. 3).

When side walls 7 and corner pieces 18 and flaps 25 are folded as above described, the tabs 24 will be in registration with the tabs 34 that are formed on the panels 11. FIG. 3 shows a blank, fully assembled, except for the wire handles 75, and these handles are usually inserted later on for the reason that they are not used on all trays.

To set up the tray, the side walls 7 are swung upwardly to vertical positions as seen in FIG. 6 and the portions 45 on walls 7 that are connected with the panel 68 of the partition will automatically swing the partition upwardly. It is then merely necessary to swing panel 67 of the partition over the portions 45 and to a position opposed to and substantially against the panel 68 when the projections 64 on panel 67 will spring into the head portions 61 of the T-slots formed in marginal portion 60.

The tab on marginal portion 60 merely gives additional gluing area for the marginal portion 60 at the center of the latter where the strain of a load on the bottom 6 is greatest.

The end panels 11 will also be automatically elevated upon the side walls 7 being swung upwardly, and the parts 21 of the corner pieces will fold along creases 19 to lapping relation relative to the parts 20 of the corner pieces as seen in FIG. 6.

The tabs 23 on each part 20 provide additional gluing surface for part 20.

The panels 10 are then folded inwardly over the inner sides of panels 11 and the tabs 28 on panel 10 and on flaps 25, which are in registration with each other at opposite ends of panel 10, will enter the openings 39 that are at the end edges of the bottom 6.

It is important to note that the tabs 34 and 24 project upwardly from the double end walls, and when in this

position (FIG. 4) and another tray is positioned on top of the set up tray, said tabs will enter the openings 39 in the upper tray so that the trays will be virtually locked together in vertical alignment against shifting laterally out of said alignment. Actually, tabs 34 will be flush on their outer surfaces with the outer surfaces of panels 11 so as to be in the recesses formed by the edges of the portions of openings 39 that are in panels 11.

The trays, when set up and filled with baskets having the strawberries or other produce therein, are normally stacked, one above the other. In such stacks, the wire bales or handles 75 are normally attached to alternate trays, starting with the lowermost tray and an even number of trays are in each stack, hence the uppermost tray does not have a handle (FIG. 4).

The upwardly projecting portions of each of the handles 75 of the lower tray of each pair project upwardly through the opening provided along each slit 40 in the tray thereover (FIG. 5) and the tab 35 also will enter the same opening, and the uppermost end of each handle will extend through the opening alongside each tab 35 to a distance above the upper edge of each end wall on the superposed tray of each pair. This enables the operator to lift two trays at a time by said handles, yet the superposed trays will stack on those below.

The upstanding tab 35 on each end wall, in conjunction with the upstanding tabs 24, 34 provides six upward projections adapted to enter the six openings or recesses along the lower ends of the bottom wall, three spaced projections and three openings being at each end of the tray. This forms a positive interengagement of means that firmly and positively holds the trays in a stack against lateral movement relative to each other, and eliminates the need for any corner rests.

As seen in FIG. 5, the tabs 46 along slits 40 (FIG. 1) extend upwardly out of the space between panels 10, 11 (FIG. 5) causing the flaps 32 to swing inwardly into the box where they will not be engaged by the handles, and the tabs 35 on the lower of a pair of trays enter the openings formed by the upward bending of material 46. The handle wires also extend through these openings.

Heretofore, in berry or produce trays having wire handles, such handles may be readily pushed downwardly in the space between the double end walls when a downward force is applied to the upwardly projecting portions. Such force is many times accidentally applied in a stacking operation by engagement of the upper tray with the upwardly projecting portions of the handles.

In the present instance, each wire handle 75 is generally of inverted U-shape providing a pair of generally parallel, vertical legs 76 in horizontally spaced side by side relation, having oppositely outwardly horizontally extending substantially aligned, extensions 79 (FIG. 9) at their lower ends, each extension being of the same length, but shorter than the length of each opening 33 that is alongside each tab 35.

The wire of the handle is relatively resilient, and in inserting the handle, first one extension is inserted through each opening 33 and is moved between the panels 10, 11 to one end of the opening 33, and then the leg carrying the other extension is sprung toward the already inserted extension until said other extension clears the opposite end of the opening 33, when said other extension is permitted to spring to a position between panels 10, 11 at said opposite end of opening 33. The legs 76 of the handle are substantially horizontal while the extensions are being so inserted, and the extensions are along creases 8, 9. Each extension 77 is formed with a pair of oppositely outwardly extending projections 80, 81 (FIG. 9) that projects at right angles to the plane in which legs 76 are positioned, hence these projections will be in a plane parallel with and between panels 8, 9 when said extensions are first positioned between the panels.

The projections in the form illustrated are bends in the wire forming extensions 77, and one of the projections 80 on each handle is substantially opposite to one of the openings 70 formed in each panel 10 while the other projection 80 on the other extension is opposite to one of the openings 72 in panel 11. Also, the projection 81 that is on the extension having the projection 80 that is opposite to opening 70 is opposite to opening 72 that is adjacent thereto, while the projection 81 on the other extension is opposite to the opening 70 that is adjacent to said other extension. This arrangement enables the handles to be reversible so no right or left hand positioning is required.

By merely swinging the handle upwardly, thus rotating the projections about the axis of the extensions, the said projections will spring into openings 70, 72 and thereafter the handle will be securely held against being forced downwardly should a downward force be applied thereto. The slits 71, 73 at each opening 70, 72 respectively facilitate the entry of the projections into each opening.

In order to preclude twisting of the handles, a horizontal straight bearing section 83 between projections 80 and the legs 76 will bear flat against the panels 10 and 11 (FIG. 9).

The terminating outer end portion 84 of one extension that is adjacent to one of the projections 81 will bear flat against the panel 11, while the other terminating outer end portion 85 will bear flat against the panel 10. These bearing portions 84, 85 will bear against the same panel as the one having the opening into which the adjacent projection 81 projects, while in the case of the bearing portions 83, they bear against the panel opposite to the one in which the adjacent projection 80 extends. When the handle is upright it not only will not twist about a vertical axis due to the above structure, but both panels 10, 11 cooperate with the projections to prevent downward movement of the handles 75.

It should be noted that when the flaps designated 46 and defined by the cuts 40 are bent upwardly to enable the tabs 35 to enter the opening formed by so bending said flaps 46, the upwardly projecting handles will pass through each such opening and out through the opening adjacent to the flap 35 on an upper tray superposed on the one carrying the handles. This bending of flaps 46 will swing flaps 32 inwardly so that the handles will not engage said flaps 32 and the latter will help to guide the handle between the panels 10, 11 (FIG. 5).

The spacing of the end edges of the partition between the side walls 7 not only provides for a better cross ventilation, but it greatly facilitates the automatic elevating of the partition upon upward swinging of the side walls from a collapsed position to an upright position. This is because there is no interference between the ends of the partition and the walls 7 as the partition moves upwardly.

Openings 90 in the bottom wall 6 and openings 91 formed in the partition will be in registration with each other when the partition is properly positioned for gluing to the bottom wall, and these openings are adapted to receive fixed pins (not shown) which insure their registration and consequently the accurate and correct positioning of the partition on the bottom wall.

A further advantage of the present structure is the fact that there are five layers of the material of the blank on each end wall at each corner of the tray when the tray is set up, thus providing the greatest strength where needed on the walls, since the corners are most easily injured.

The partition itself, being substantially integrally connected at its ends with the side walls by the portions 45, insures against expansion of the side walls when the tray is set up, and the double thickness of the said portions 45 (FIG. 8) extending between the side walls and the partition, strongly braces the side walls against inward movement, without said portions extending the full vertical width of the side walls.

I claim:

1. A collapsed tray of cardboard folded to a substantially flat condition and adapted to be unfolded to set-up position, comprising:

(*a*) a rectangular bottom wall having side and end edges,

(*b*) side and end walls respectively integrally and hingedly connected along one of their edges with said side and end edges of said bottom wall,

(*c*) said side walls being folded along said side edges to collapsed positions overlying the marginal portions of said bottom wall along said side edges thereof and being swingable upwardly from said collapsed positions to upright vertical positions along lines coincidental with said side edges,

(*d*) a partition wall extending across said bottom wall intermediate and parallel with said end edges, and positioned flat against said bottom wall,

(*e*) means hingedly securing said partition wall along one of its edges to said bottom wall for swinging said partition from its said position against said bottom wall to upright position relative to the latter, and

(*f*) means connecting said partition wall with said side walls for so swinging said partition wall to said upright position upon swinging said side walls to their said vertical positions.

2. In a construction as defined in claim 1,

(*g*) said partition wall being formed with a folding crease extending thereacross parallel with said one edge thereof providing a pair of panels at opposite sides of said folding crease,

(*h*) said means hingedly connecting said partition wall with said bottom wall being an extension on one panel of said pair remote from and extending parallel with said folding crease, and

(*i*) the other panel of said pair being foldable about said folding crease to a position in face to face opposed relation to said one panel when said partition wall is swung to its said upright position.

3. In a construction as defined in claim 1,

(*g*) said partition wall being spaced between said side walls when said side walls are in said vertical positions, and

(*h*) said means connecting said side walls with said partition wall extending between the upper edges of said side walls and points adjacent to the upper edges of said partition wall when said side walls are in said vertical positions and said partition wall is in its said upright position.

4. A produce tray comprising:

(*a*) a rectangular horizontal bottom wall and side walls and end walls upstanding from said bottom wall in set-up position, said bottom wall, side walls and end walls being formed from a single sheet of cardboard,

(*b*) said side walls and said end walls being integrally and swingably connected with said bottom wall along the outer edges of the latter for swinging from collapsed positions in which said end walls are substantially in outward extension of said bottom wall coplanar therewith and said side walls are in positions overlying two of the opposite marginal portions of said bottom wall to said set-up position,

(*c*) an upright partition wall parallel with and intermediate said end walls,

(*d*) said partition comprising a pair of opposed, vertical, partition panels connected along their upper edges,

(*e*) means along one of the lower edges of one partition panel of said pair hingedly securing said one partition panel to said bottom wall for swinging said one partition panel from a position flat against said bottom wall when said side walls are in their said collapsed position to its vertical position,

(*f*) means respectively on the lower edge of the other partition panel of said pair and on the said bottom in releasable engagement for releasably holding said other partition panel in its vertical and opposed relation to said one partition panel.

5. In a construction as defined in claim 4,

(*g*) means connected with said one partition panel and said side walls for swinging said one partition panel from its said position against said bottom wall when said side walls are in said collapsed position to its said vertical position under the influence of said side walls upon swinging said side walls to set-up position thereof.

6. In a construction as defined in claim 4,

(*g*) said end walls each comprising an outer panel integrally connected with said bottom panel along its lower edge and an inner panel integrally connected with the upper edge of said outer panel,

(*h*) said inner panels of said end walls being over the opposedly facing sides of said outer panels and innermost relative to the inside of said tray,

(*i*) means connecting each of said outer panels with the ends of said side walls for automatically swinging said outer panels from their positions in outward extension of said bottom wall when said side and end walls are in said collapsed position to said set-up position upon swinging said side walls to said set-up position thereof, whereby said outer panels and said one partition panel will be simultaneously swung to their upstanding set-up positions upon said side walls being swung to their said set-up positions.

7. A produce tray comprising:

(*a*) a retangular horizontal bottom wall, and side walls and end walls upstanding from said bottom wall in set-up position, said bottom wall, side walls and end walls being formed from a single sheet of cardboard,

(*b*) said side walls and said end walls being integrally and swingably connected with said bottom wall along the outer edges of the latter for swinging from substantially horizontally disposed collapsed positions to said set-up positions;

(*c*) an upright partition wall parallel with and intermediate said end walls,

(*d*) means inseparably securing said partition wall all along the lower edge thereof to said bottom wall from points spaced from but adjacent to said side walls, whereby said partition wall will hold said bottom wall against bottom sag under a load on said bottom wall,

(*e*) said partition wall having end edges adjacent to but spaced from said side walls to permit free circulation of air from one side of said partition to the other around said end edges,

(*f*) connecting means integral with said side walls at their upper edges extending to and connecting with the ends of said partition wall adjacent to the upper edges of the latter for holding said side walls against bowing apart at their upper edges.

8. In the structure as defined in claim 7,

(*g*) said means inseparably securing said partition wall to said bottom wall being a flange integral with said partition wall and at right angles to the latter glued to said bottom wall, said partition wall being swingable relative to said flange from said upright position thereof to a collapsed position against said bottom wall,

(*h*) said connecting means and said side walls being swingable relative to each other for movement of said side walls to said collapsed position upon

movement of said partition wall to its said collapsed position.

(*i*) interengaging means respectively on said end walls and said bottom wall, and interengaging means respectively on said partition wall and on said bottom wall for holding said side and end walls and said partition wall in upright position on said bottom wall against movement to said collapsed positions.

9. A folding produce tray comprising:

(*a*) a rectangular horizontal bottom wall and side walls and end walls upstanding from said bottom wall in set-up position, said bottom wall, side walls and end walls being formed from a single sheet of cardboard;

(*b*) said end walls each comprising an outer panel integrally and hingedly connected to said bottom wall along its lower edge for swinging from a position coplanar with said bottom wall to said upstanding position and said inner panels being integrally and hingedly connected with said outer panels along the upper edges of the latter for swinging to positions over the opposedly facing surfaces of said outer panels from positions substantially coplanar with said outer panels when the latter are in upstanding positions;

(*c*) means hingedly securing said side walls to said bottom wall for swinging said side walls from positions overlying said bottom wall when said outer end panels are coplanar with said bottom and when said inner panels are coplanar with said outer panels;

(*d*) corner pieces hingedly connecting said side walls and said outer panels for so swinging said outer panels to their said upstanding positions upon swinging said side walls from their positions overlying said bottom wall to their said upstanding positions;

(*e*) a pair of spaced projections rigid and coplanar with said outer panels along their edges that are remote from said bottom wall movable therewith to positions projecting upwardly from said outer panels and from said inner panels upon swinging said outer panels to their upstanding positions and upon swinging said inner panels to said positions over said opposedly facing surfaces of said outer panels;

(*f*) a partition wall extending across said bottom panel intermediate said end walls swingable from a position substantially flat against and overlying said bottom wall when said side walls are in said positions overlying said bottom wall, to upstanding position parallel with said end walls when said side walls are swung to their said upstanding positions;

(*g*) means hingedly connecting said partition at its ends to said side walls for swinging said side walls to their upstanding positions and for thereby swinging said outer panels and the projections thereon to their said upstanding positions upon moving said partition from its position flat against said bottom wall to its said upstanding position.

10. A folding tray as defined in claim 9:

(*h*) openings formed in said tray along the junctures between said outer panels and said bottom wall adapted to receive the upstanding projections on the outer panels of a corresponding tray positioned therebelow when a pair of such trays are stacked with their respective end walls in vertical alignment.

11. A folding tray as defined in claim 9:

(*h*) said corner pieces each including projections substantially corresponding to the projections on said outer panels, flat against and in register along their edges with the edges of the latter;

(*i*) openings formed in said end walls along the junctures between said inner and outer panels through which said projections on said corner pieces extend when said end walls are upstanding with said inner panels over the opposedly facing surfaces of said outer panels;

(*j*) openings formed in said tray along the junctures between said outer panels and said bottom wall adapted to receive the upstanding projections on the outer panels and corner pieces of a corresponding tray positioned therebelow when a pair of such trays are stacked with their respective end walls in vertical alignment.

12. A folding produce tray comprising:

(*a*) a rectangular horizontal bottom wall and side walls and end walls integral therewith and rigidly connected thereto along the side and end edges of said bottom wall for swinging said side walls from overlying positions overlying said bottom wall to upstanding positions and for swinging said end walls from coplanar positions coplanar with said bottom wall to upstanding positions;

(*b*) corner means at the ends of said side walls and end walls hingedly connecting them for simultaneously swinging said end walls from coplanar positions to their said upstanding positions upon swinging said side walls from said overlying positions to their said upstanding positions;

(*c*) a partition wall over said bottom wall intermediate said end walls;

(*d*) means hingedly connecting said partition wall with said side walls and with said bottom wall for swinging from a collapsed position overlying said bottom wall and substantially flat against the latter when said side walls are in their said overlying positions to an upright position simultaneously with swinging said side walls to their said upright positions.

13. A tray as defined in claim 12:

(*e*) separate means on said end walls and bottom wall movable into locking relation one with the other when said end walls are in said upstanding positions for holding said end walls in their said upstanding positions.

14. A tray as defined in claim 12:

(*e*) separate means on said partition wall movable into locking relation one with the other when said partition wall is in its said upstanding position for holding said partition wall and said side walls in their said upstanding positions.

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