

May 31, 1966

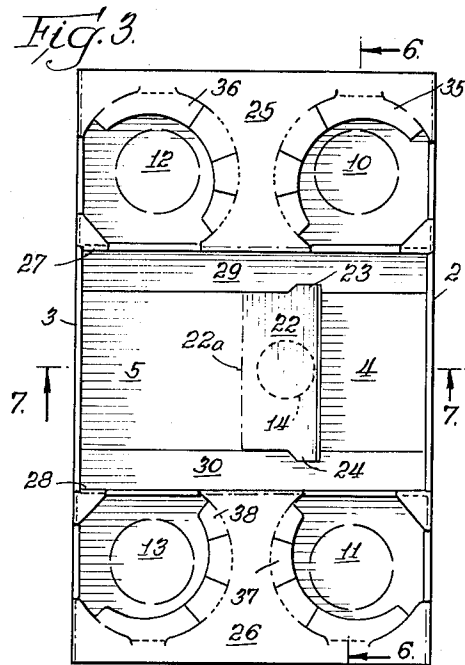
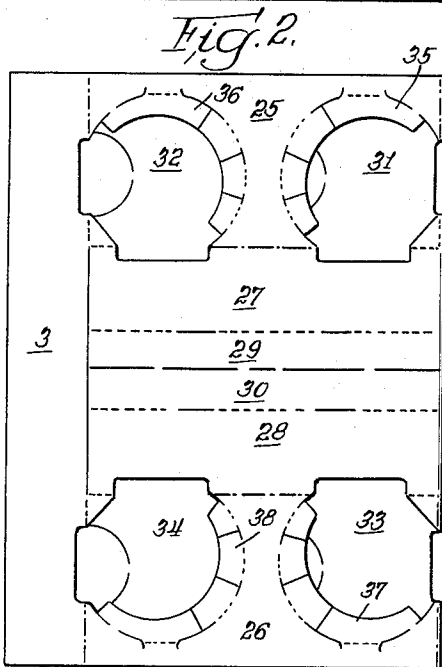
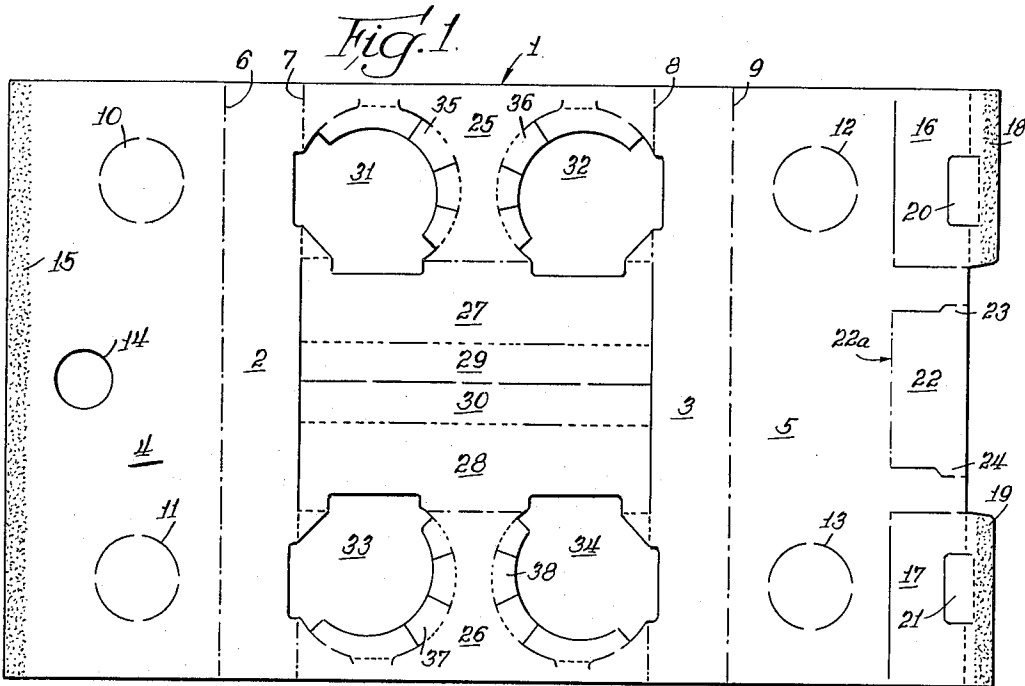
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3,253,766

CARRY-OUT TRAY

Filed Nov. 6, 1964

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

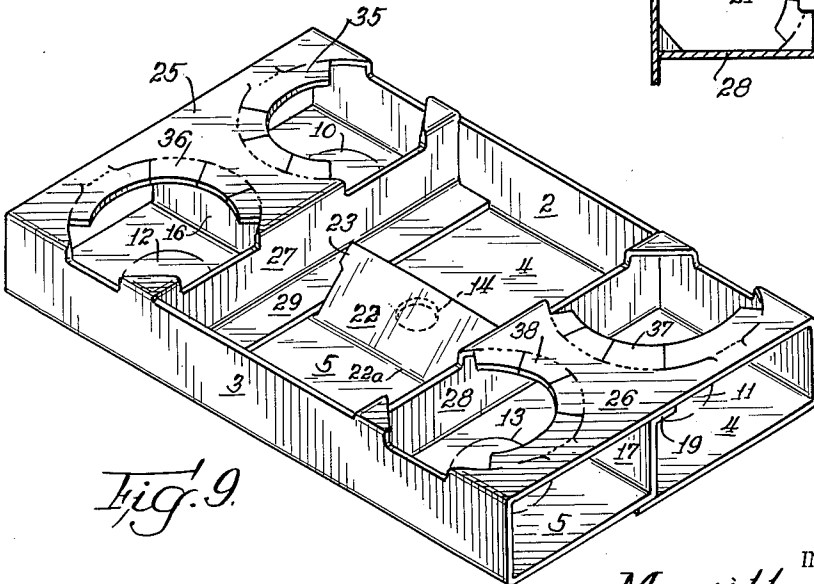
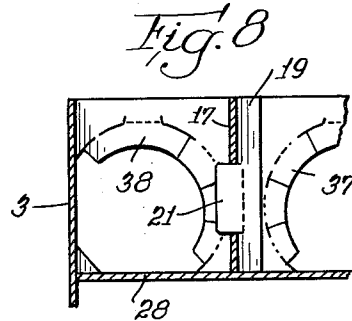
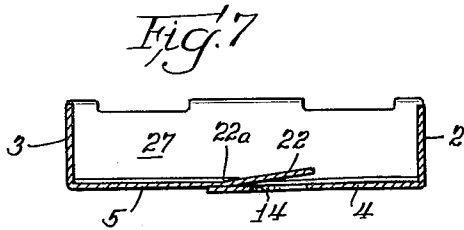
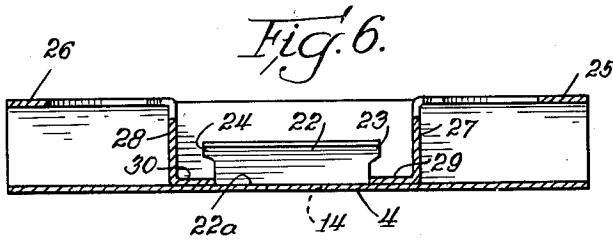
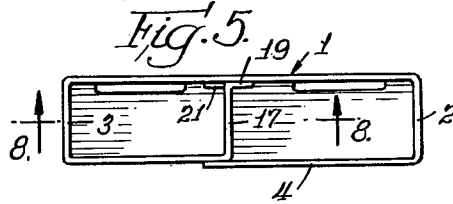


Fig. 9.

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3,253,766

CARRY-OUT TRAY

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14 Claims. (Cl. 229—28)

The present invention relates to a carry-out or serving tray which may be conveniently and simply fabricated from paperboard or like material, and is more particularly concerned with an improved tray of the type described which has means for locking the tray in erected condition.

Carry-out trays are used extensively by concessionaires for mass spectator events such as football games, baseball games, and the like. Such trays are also used for carrying food and beverages from roadside stands to customers seated in automobiles, as at so-called "drive-ins." The primary requirement for such a tray is that it be relatively inexpensive, since it is generally intended that the tray be discarded after a single use. Consequently, it is generally the practice to fabricate such trays of paperboard or other inexpensive material of construction. However, although the tray must be inexpensive, it must still be sufficiently sturdy to withstand the various forces tending to deform it in the course of normal use. Further, the tray must be provided with several compartments adapted to receive and retain beverage containers, as well as to act as receptacles for food items such as sandwiches, potatoes prepared in various forms, and so on. It is further necessary that the tray be so constructed that it may be maintained in flat position for easy storage in restricted spaces, and that it be readily erectable from the folded form. It is of foremost importance that, once erected, the tray remain in erected condition during use. Trays currently available, although they have many of the enumerated desirable features, are either deficient in some respects, or else are rather complicated and costly to produce.

It is an object of the present invention to provide a carry-out or serving tray which may be constructed from paperboard. It is a further object to provide such a tray which may be constructed from a single integral blank. It is further an object to provide a tray of the type described which can be stored in flat and folded condition, and subsequently erected immediately prior to use. It is an additional object to provide such a tray which has sufficient strength and rigidity to withstand the rigors of normal use. It is still another object to provide such a tray which, when once erected, remains locked in erected condition. The accomplishment of the foregoing and additional objects will become more fully apparent hereinafter.

The invention in its preferred embodiment is illustrated by the accompanying drawings in which:

FIG. 1 is a plan view of an integral blank suitable for use in constructing a tray according to the invention.

FIG. 2 is a top view of the partially assembled tray in folded condition.

FIG. 3 is a top view of the partially assembled tray in erected form.

FIG. 4 is an end view of the structure shown in FIG. 2.

FIG. 5 is an end view of the structure of FIG. 3.

FIG. 6 is a cross-section taken at the line 6—6 of FIG. 3.

FIG. 7 is a cross-section taken at the line 7—7 of FIG. 3.

FIG. 8 is a cross-section taken at the line 8—8 of FIG. 5; and

FIG. 9 is an isometric view of the fully constructed and erected tray.

Reference is now made to the accompanying drawings for a better understanding of the invention, wherein all the parts are numbered and wherein the same numbers are used to refer to corresponding parts throughout.

In a preferred form, the tray of the invention is constructed from an integral blank as illustrated in FIG. 1. The blank comprises a top panel 1, side panels 2 and 3, and complementary bottom panel members 4 and 5. The several panels are connected together along score lines 6, 7, 8, and 9. The bottom panel members 4 and 5 are provided with push-out openings 10, 11, 12, and 13, to permit articles such as the ends of ice cream cones to seat therein, or to permit the use of a finger to aid in retrieving a beverage cup from the erected tray. A finger hole 14 is provided in the bottom panel 4 to permit a finger to be inserted for engaging the locking member. A glue strip 15 is provided at the edge of the bottom panel 4.

The bottom panel member 5 is cut and scored to provide vertical struts 16 and 17 having glue flaps 18 and 19 hingedly connected thereto, respectively. Tongues 20 and 21 are also provided therein to contribute to the mechanical strength of the erected tray.

Intermediate the vertical struts 16 and 17 there is provided a latching flap 22 having protuberances 23 and 24 disposed in the direction of the ends of the tray and a score line 22a to facilitate upward disposition of the end of flap 22.

The top panel 1 is cut and scored to provide top wall members 25 and 26, vertical partition struts 27 and 28 hingedly connected thereto and bottom engaging toe-flaps 29 and 30 hingedly connected to the respective vertical partitions. The top panel 1 is also cut and scored to provide push-out portions 31, 32, 33, and 34, which when removed provide receptacle openings for inserting articles such as beverage cups or ice cream cones. Compression sectors 35, 36, 37, and 38 are provided at a portion of the periphery of the push-out portions in order to engage and provide a retaining force against an inserted beverage cup, ice cream cone, or the like. As an alternative embodiment, the latching flap 22 may be provided with slits or notches which engage and secure the toe-flaps 29 and 30. In such embodiment, the latching flap is preferably of slightly increased width.

The receptacle openings are defined by a circle a portion of which is interrupted by the tray walls and vertical partitions which are positioned as chords of the circle. The compression sectors are positioned at the circumference of the uninterrupted portion of the circle. The tray walls and vertical partitions are preferably cut-away or recessed at the receptacle openings. This structure effectively prevents ripping or tearing when the receptacle openings are formed by removing the respective tear-off areas since the cut-away walls and partitions are no longer subject to tearing. Moreover, the compression sectors are thus best positioned for holding receptacles of varying sizes securely.

In constructing the tray, the blank 1 is placed on a flat surface with its bottom facing upward, as shown in FIG. 1. The bottom panel 5 is then folded over about the score line 9 and the flaps 18 and 19 glued to medial portions of the top panel members 25 and 26, respectively. The bottom panel member 4 and side panel 2 are then folded over about the score line 7, and the glue strip 15 is adhesively affixed to the bottom panel member 5. The resulting structure is shown in FIGS. 2 and 4. In this form the trays may be packed, stored, and shipped, since they occupy very little space. When it is desired to erect the tray for use in serving food and beverages, the edges of the folded tray are pushed toward each other, causing the structure to become erected as in FIG. 5. Insertion of a forefinger into opening 14 facilitates greatly the rapid erection of the tray walls. The bottom engaging toe-flaps 29 and 30 are then torn apart along the slit line dividing them, and the vertical partitions 27 and 28 folded down into place, causing the flaps 29 and 30 to be folded over and to engage the bottom,

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as shown in FIGS. 3 and 6. A finger may then be inserted through the opening 14 (if not still in place from the wall erection operation) to engage and raise the free end of the locking member 22, causing the protuberances 23 and 24 or equivalent means to be drawn past the edges of the flaps 29 and 30, respectively, and to overlappingly engage the upper sides of the flaps, securing them in position, as shown in FIGS. 6 and 7. The push-outs 31, 32, 33, and 34 may be removed at this point, if they have not been removed previously, placing the tray in condition for use as shown in FIG. 8. If desired, the locking member 22 can be made of sufficient length so that it can, once in place in locking engagement with the flaps 29 and 30, be further upwardly bent along score-line 22a to provide a further partition in the central tray compartment.

Items such as beverage cups or ice cream cones may be inserted in the openings 31, 32, 33, and 34, the ends of ice cream cones protruding through the holes 10, 11, 12, and 13. The latter openings may also be used as a means for aiding in disengaging beverage cups from the tray. The compression sections 35, 36, 37 and 38 engage and provide retaining pressure against the inserted articles. Other foods such as potato chips or sandwiches may be placed in the central compartment of the tray, which is shown in FIG. 9. The tray is light, strong, remains locked in place during use, and is relatively inexpensive to fabricate. The tray may also be quickly erected for use.

It is to be understood that the invention is not limited to the exact details of construction, operation, or exact materials or embodiments shown and described, as obvious modifications and equivalents will be apparent to one skilled in the art, and the invention is therefore to be limited only by the scope of the appended claims.

I claim:

1. A serving tray formed of an integral blank comprising a top, side walls hingedly connected thereto, and a bottom panel comprising complementary first and second bottom panel members hingedly connected to said side walls, said top comprising a pair of spaced-apart horizontally arranged top panel members defining a compartment therebetween, each top panel member being provided with receptacle openings and having a strut member hingedly connected thereto comprising a vertical partition strut and a horizontal toe-flap hingedly connected to said strut and engaging said bottom panel, said first bottom panel member being cut and scored to provide a pair of spaced-apart vertical struts each having a glue flap, hingedly attached thereto and adhesively affixed to medial portions of said top panel members, and a latching flap positioned between said vertical struts having latching means at the free edges thereof adapted to engage said toe-flaps and to secure said struts when said tray is in the erected condition, said second bottom panel member having the free edge thereof adhesively secured to said first bottom panel member.

2. A serving tray formed of an integral blank comprising a top, side walls hingedly connected thereto, and a bottom panel comprising complementary first and second bottom panel members hingedly connected to said side walls, said top comprising a pair of spaced-apart horizontally arranged top panel members defining a compartment therebetween, each top panel member being provided with receptacle openings and having a strut member hingedly connected thereto comprising a vertical partition strut and a horizontal toe-flap hingedly connected to said strut and engaging said bottom panel, said first bottom panel member being cut and scored to provide a pair of spaced-apart vertical struts each having a glue flap, hingedly attached thereto and adhesively affixed to medial portions of said top panel members, and a latching flap positioned between said vertical struts having latching protuberances at the free edges thereof adapted to overlap and engage said toe-flaps and to secure said struts when

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said tray is in the erected condition, said second bottom panel member having the free edge thereof adhesively secured to said first bottom panel member.

3. A serving tray according to claim 2 wherein an opening is provided in said second bottom panel member positioned below said latching flap and adapted to permit a finger to be inserted therethrough for engaging and lifting said latching flap to cause the protuberances thereof to overlap the upper surfaces and secure the toe-flaps of said struts in place.

4. A serving tray according to claim 2 wherein said receptacle openings are provided along a portion of their peripheries with compression sectors adapted to provide compression engagement of articles placed therein.

5. A serving tray according to claim 2 wherein said bottom panel is provided with openings coaxially arranged below said receptacle openings when said tray is in erected condition.

6. An integral blank adapted to be assembled to form a serving tray comprising a top, side walls hingedly connected thereto, and a bottom panel comprising complementary first and second bottom panel members hingedly connected to said side walls, said top comprising a pair of spaced-apart horizontally arranged top panel members adapted to define a compartment therebetween, each top panel member being provided with receptacle openings and having a strut member hingedly connected thereto comprising a partition strut and a toe-flap hingedly connected to said strut and adapted to engage said bottom panel, said first bottom panel member being cut and scored to provide a pair of struts adapted to be arranged in spaced-apart vertical position, each having a glue flap, hingedly attached thereto and adapted to be adhesively affixed to medial portions of said top panel members, and a latching flap positioned between said struts having latching means at the free edges thereof adapted to engage said toe-flaps and to secure said struts when said tray is in the erected condition, said second bottom panel member having means for adhesively securing the free edge thereof to said first bottom panel member.

7. An integral blank adapted to be assembled to form a serving tray comprising a top, side walls hingedly connected thereto, and a bottom panel comprising complementary first and second bottom panel members hingedly connected to said side walls, said top comprising a pair of spaced-apart horizontally arranged top panel members adapted to define a compartment therebetween, each top panel member being provided with receptacle openings and having a strut member hingedly connected thereto comprising a partition strut and a toe-flap hingedly connected to said strut and adapted to engage said bottom panel, said first bottom panel member being cut and scored to provide a pair of struts adapted to be arranged in spaced-apart vertical position, each having a glue flap, hingedly attached thereto and adapted to be adhesively affixed to medial portions of said top panel members, and a latching flap positioned between said struts having latching protuberances at the free edges thereof adapted to overlap and engage said toe-flaps and to secure said struts when said tray is in the erected condition, said second bottom panel member having means for adhesively securing the free edge thereof to said first bottom panel member.

8. An integral blank according to claim 7 wherein an opening is provided in said second bottom panel member adapted to be positioned below said latching flap to permit a finger to be inserted therethrough for engaging and lifting said latching flap to cause the protuberances thereof to overlap the upper surface and secure the toe-flaps of said struts in place.

9. An integral blank according to claim 7 wherein said receptacle openings are provided along a portion of their peripheries with compression sectors adapted to provide compression engagement of articles placed therein.

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10. An integral blank according to claim 7 wherein said bottom panel is provided with openings adapted to be coaxially arranged below said receptacle openings when said tray is in erected condition.

11. A serving tray according to claim 4 wherein said receptacle openings are defined by a circle a portion of which is interrupted by the tray walls and vertical partitions positioned as chords of said circle, and wherein said compression sectors are positioned at the circumference of the uninterrupted portion of said circle.

12. A serving tray according to claim 4 wherein the edges of said tray walls and said vertical partitions are recessed below the surface of said top panel member at said receptacle openings.

13. An integral blank according to claim 9 wherein said receptacle openings are defined by a circle a portion of which is interrupted by the tray walls and vertical

partitions positioned as chords of said circle, and wherein said compression sectors are positioned at the circumference of the uninterrupted portion of said circle.

14. An integral blank according to claim 9 wherein the edges of said tray walls and said vertical partitions are recessed below the surface of said top panel member at said receptacle openings.

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