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J. E. MURPHY ET AL

2,680,513

CONTAINER TRAY FOR FRUIT UNITS

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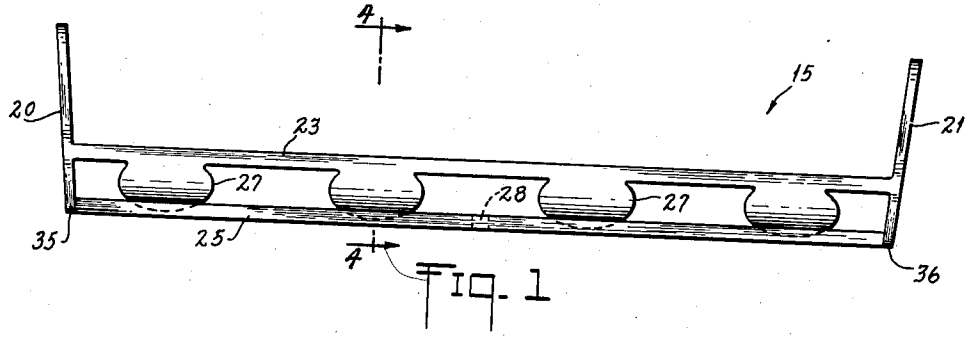


FIG. 1

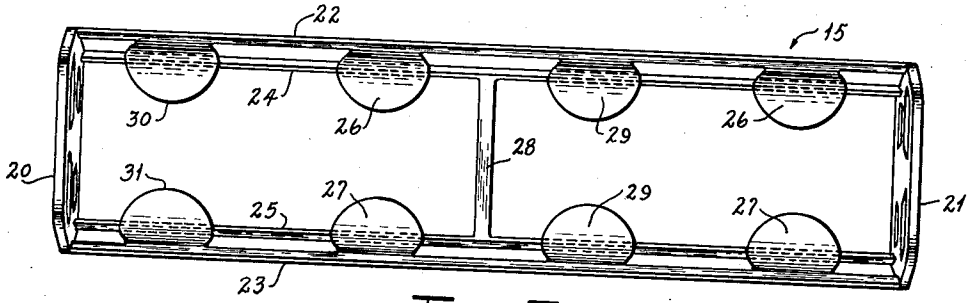


FIG. 2

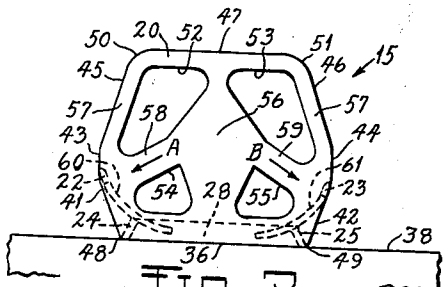


FIG. 3

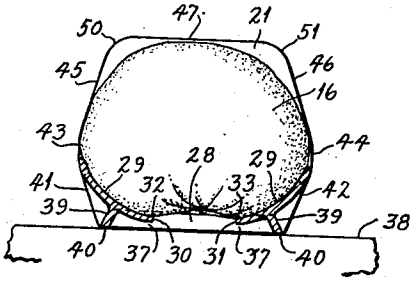


FIG. 4

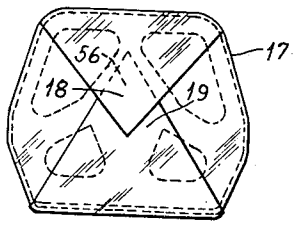


FIG. 5

INVENTOR.
JOSEPH E. MURPHY
MURRAY SCHNALL
BY
ATTORNEY

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CONTAINER TRAY FOR FRUIT UNITS

Joseph E. Murphy, Hicksville, and Murray Schnall, Brooklyn, N. Y., assignors to See-Qual Package Corp., Brooklyn, N. Y., a corporation of New York

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3 Claims. (Cl. 206—45.33)

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This invention relates to containers, more particularly to wrapped fruit trays of the category described in our prior patent application filed April 25, 1952, Serial No. 284,363.

It is within our contemplation to provide a package for housing a row of fruit units, of especial application to tomatoes, where a moulded tray member is employed having a minimum amount of material for the required structural strength, with optimum conditions for visibility of the contents, and so constructed as to be adapted for efficient wrapping processes.

In the form of our invention described in our said prior patent application, apertured lateral and base portions are provided which, while enabling substantial portions of the fruit units to be seen at the bottom and sides of the tray, give no visibility at the ends thereof. Merely to make the end walls transparent would not be satisfactory from a commercial viewpoint, for as long as said walls are solid, the amount of material therein would render the tray too costly in competition with the conventional cardboard carton. To remove some of the material in the said end walls would reduce the cost, but would also reduce the strength of said walls and make the tray unsafe for handling and general use. It is accordingly one of the objects of our invention to lighten the end walls of the said form of tray by employing a novel arrangement of apertures therein, leaving solid portions so disposed as effectively to resist not only end pressures resulting from forces directed longitudinally of the tray, but also lateral stresses resulting from forces directed transversely of the tray. And in this aspect of our invention, it is another object to provide one solid portion which will serve both as an undersupport during the process of sealing together the overlapping end flaps of the wrapping, and also as an effective retainer wall for preventing inward or outward sagging of the package at the ends thereof.

In certain widely employed wrapping machines (for enrobing filled trays with transparent wrapping sheets), there are strategically located triggers which are so constructed as to be engageable by flat portions of the tray bases, the actuation of these triggers determining the size of wrapping sheet delivered to the machine. In the forms of the invention shown in our said prior application, only the bottoms of the end walls are flat, so that the trays are not generally adapted for use with said wrapping machines. It is our objective to widen the use of our invention so as to make the trays thereof, in their various forms,

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adaptable for use with the type of wrapping machine above mentioned; and we have accordingly provided the tray with a novel form of base including two parallel runners constituting longitudinal supporting legs or walls, these being adapted to actuate the triggers on said wrapping machines substantially in the manner of the flat bases of conventional containers. And in this aspect of our invention it is a further object to enable the said runners to serve the additional purpose of giving stability to the tray, by preventing it from rolling or rotating about a longitudinal axis either during the wrapping process, or while it is being moved along a conveyor belt.

Still another object of our invention is to enable close enrobing of the upper portion of the fruit units with the wrapping sheet, an objective which we accomplish by means of the novel tapered upper edges of the end walls.

A further object of our invention is to keep the lowermost portions of the fruits operatively supported at a level where there will be no contact of the fruits with a table or conveyor belt, thereby further reducing the danger of bruising the fruit carried by the tray.

Other objects, features and advantages will appear from the drawings and the description hereinafter given.

Referring to the drawings,

Figure 1 is a front elevation of the tray of our invention.

Figure 2 is a top view thereof.

Figure 3 is an end view thereof, the device being shown resting on a supporting surface.

Figure 4 is a section of Figure 1 taken along line 4—4, showing a fruit unit operatively in place, and

Figure 5 is an end view substantially like Figure 3, but showing the tray operatively enrobed by a wrapping sheet.

In the form of our invention illustrated, the container tray 15 is a unitary moulded structure preferably of plastic material. It is adapted to contain therein a row of fruit units, like the tomato 16 illustrated in Fig. 4, the tray, in the completed package, being enrobed in a transparent wrapping sheet 17 folded to form overlapping end flaps 18 and 19 disposed against the respective outer surfaces of upwardly extending end walls 20 and 21. The said end walls are connected by a pair of parallel longitudinal laterally opposite upper rails 22 and 23, and by another pair of correspondingly extending base rails 24 and 25, respectively. The rails 22 and 24 on one side of the tray support a row of spaced pads

26, and the rails 23 and 25 on the other side of the tray support another row of correspondingly spaced and positioned pads 27. The base rails 24 and 25 are connected, preferably at their medial portions, by the transverse base bar 29 which serves not only as a reinforcing strut to add rigidity to the base rails 24 and 25 and consequent stability to the members supported thereby, but also to cooperate with said rails 24 and 25 in their functions as bases for the tray and as actuators of the wrapping machine triggers above referred to. The components of the tray are all integral with the structure thereof, and are preferably of greater stiffness than the components of conventional cardboard trays.

The said pads 26 and 27 serve as seats for the fruit units operatively disposed in the tray and, in the form illustrated, are slightly hollowed-out substantially circular discs, transverse sections of said discs being preferably of curved configuration presenting concave surfaces 29 facing the interior of the tray. The said pads 26 and 27 extend downwardly and inwardly from their respective top rails 22 and 23, and are supported by the respective underlying base rails 24 and 25 which are disposed laterally outwardly with reference to the respective innermost ends 30 and 31 of the pads. The arrangement is such that said ends 30 and 31 are in spaced relation, the lowermost edges 32 and 33 of the upper surfaces of said pads being spaced above the bases 35 and 36 of the respective end walls 20 and 21, it being preferred though not necessary that the entire edge portions 30 and 31 of each of the pads be at a level above the said bases 35 and 36, thereby providing spaces 37 separating the fruit supporting pads from the support 38 upon which the tray rests, in this way keeping the fruit out of engagement with said support and thus not subject to damage by contact therewith.

The said base rails 24 and 25 each comprises a wall 39 inclined laterally so as to extend in a direction substantially normal to the general transverse extent of the overlying pads (see Fig. 4), thereby giving maximum support to the pads. The base 40 of each of said walls 39 is substantially at the level of the bases 35 and 36 of the end walls, said last-mentioned bases being in a single plane.

Each of the said end walls has two opposite lower side edges 41 and 42 diverging upwardly from the respective bases of said end walls to the respective intermediate outermost portions 43 and 44 thereof, wherefrom the two upper side edges 45 and 46, respectively, converge upwardly to meet the upper edge of the end wall, such as edge 47. The arrangement is hence such that the lower and upper corners, 48, 49 and 50, 51, respectively, are disposed inwardly of said outermost portions 43 and 44, thereby enabling the wrapping to follow generally the lateral contour of the fruit in the container, for space-economical and effective packing. The effectiveness of the packing is further enhanced by having the upper supporting rails 22 and 23 disposed substantially at the level of said outermost portions 43 and 44 of the end walls, whereby said upper rails serve to support the fruit at the region of maximum width of said end walls.

Each of the end walls is provided, in the preferred form illustrated, with four apertures 52, 53, 54 and 55, apertures 52 and 53 being of substantially similar configuration and being disposed at the upper portion of the wall, aper-

tures 54 and 55 also being alike but being disposed at the lower portion of the wall, preferably at regions not below the level of the pads 26 and 27. The said apertures are so arranged as to provide a solid central portion 56, and marginal portion 57 disposed between the perimeter of the wall and the outermost portions of the said apertures, and connecting portions between said central portion 56 and said marginal portion 57. Two of these connecting portions 58 and 59 extend in downwardly and outwardly directions, thereby constituting inclined structural arms extending generally in the direction of arrows A and B. It is preferred that said arms 58 and 59 extend towards the respective upper portions 60 and 61 of the correspondingly positioned pads 26 and 27, directions A and B being substantially normal to the general transverse extent of said upper portions 60 and 61. The arrangement is hence such that these arms 58 and 59 will aid in resisting any outward movement of the upper rails 22 and 23 due to pressures applied by or through the fruit supported by the pads. In other words, any outward pressure applied against the upper portions of the pads would tend to cause a pivotal outward movement of the upper portions of the pads about the base rails 24 and 25, thereby causing a corresponding outward movement of the upper rails 22 and 23. Since the upper rails are connected to the end walls 20 and 21, the said arms 58 and 59 will serve to resist such movement, since the arms are located, as aforesaid, in the region of said upper portion of the pads. Hence, although the end walls contain apertures 52, 53, 54 and 55, they are nevertheless provided with structural means adequately to support the upper rails 22 and 23.

The said apertures are, as above set forth, effective in reducing the weight, and consequently the cost, of the device. Furthermore, in the event the end walls are made of opaque material, the apertures provide end visibility. It is accordingly obvious that with this construction, not only is there a firm support for the fruit contained therein, but there is also visibility through the ends of the tray, as well as at the sides and bottom of the tray because of the spaced arrangement of pad seats 26 and 27.

The solid central wall 56 constituting part of each of said end walls serves as a backing for effecting the sealing of the two overlapping flaps 18 and 19. In other words, when said flaps are folded into the position shown in Figure 5, a sealing pressure is applied against said overlapping portions in known manner; and since these portions are backed by the solid wall 56, there is adequate provision for the required support necessary to receive the pressure of the sealing implements.

It will further be noted that the entire peripheral portion of the base is of rectangular construction, formed by the base rails 24 and 25 and by the bases of the end walls. Furthermore, the transverse bar 29 has its base also at the lowermost level of the base rails and end walls. The underside of the tray thus consists of a rectangular peripheral wall with an intermediate transverse bar connecting the opposite longitudinal walls. This not only provides a stable structure which will resist a rolling tendency during the wrapping operation, but is also adapted to engage the conventional triggers of wrapping machines at any portion along the longitudinal extent of the tray.

In the above description, the invention has been disclosed merely by way of example and in preferred manner; but obviously many variations and modifications may be made therein. It is to be understood, therefore, that the invention is not limited to any specific form or manner of practicing same, except insofar as such limitations are specified in the appended claims.

We claim:

1. In a moulded container tray of the type adapted to constitute part of a wrapped housing for a row of selected fruit units, two opposite upright end walls, a pair of laterally opposite longitudinally extending rails joined to said end walls, two parallel rows of spaced fruit seating pads supported by said rails, the innermost portions of said pads being disposed in a plane adjacent the plane defined by the bottommost edges of said two end walls, said end walls each having a substantially diamond-shaped central portion with a relatively wide medial section and relatively narrow top and bottom sections, four apertured portions disposed about said central portion, and two arms extending in opposite directions from said medial portion to the lateral edge portions of the end wall, whereby each of said central portions may serve as a supporting wall for an adjacent fruit unit within the tray and for overlapping side flaps of the wrapping for the tray on the outer surface of said central portion.

2. In a moulded container tray of the type adapted to constitute part of a wrapped housing for a row of selected fruit units, the combination according to claim 1, the upper lateral edges of said central portion converging upwardly and the lower lateral edges thereof converging downwardly.

3. In a moulded container tray of the type adapted to constitute part of a wrapped housing for a row of selected fruit units, the combination according to claim 1, said arms being inclined and diverging downwardly.

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