July 15, 1958 W. M. ALTENBURG ET AL 2,843,496

MOLDED PULP PEAR TRAY

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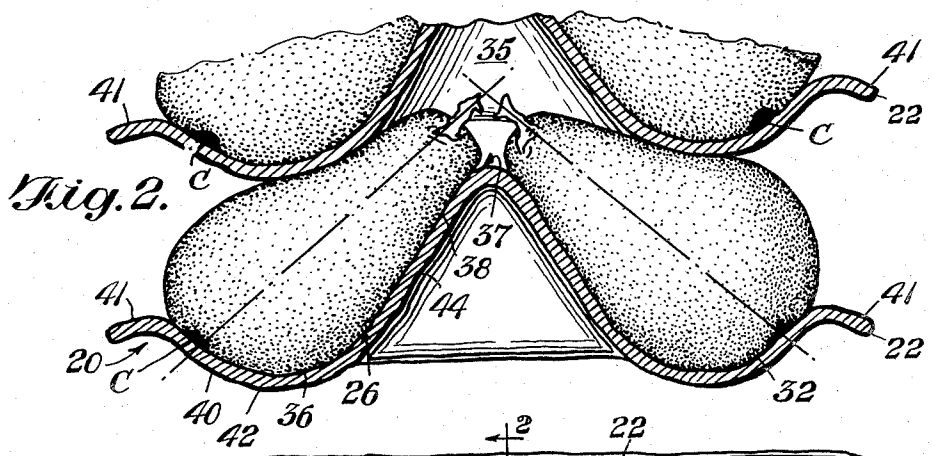

Fig. 2.

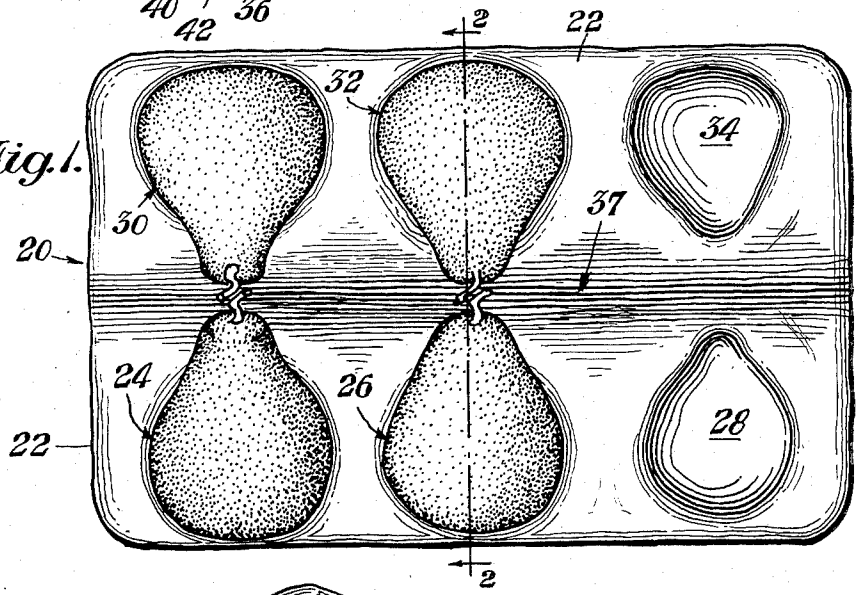

Fig. 1.

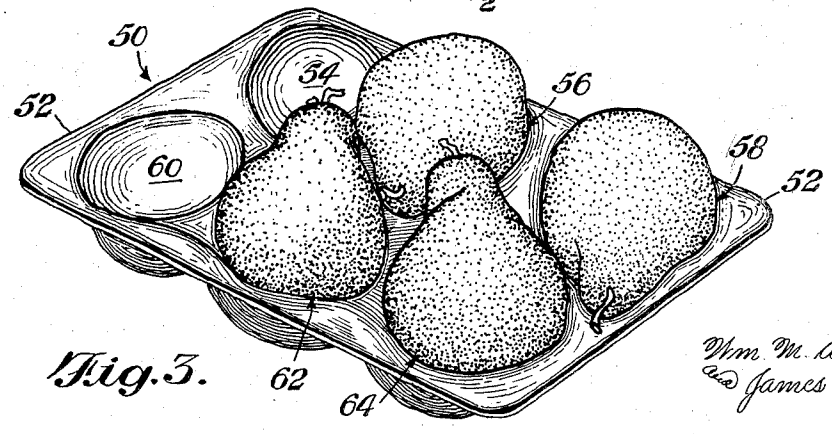

Fig. 3.

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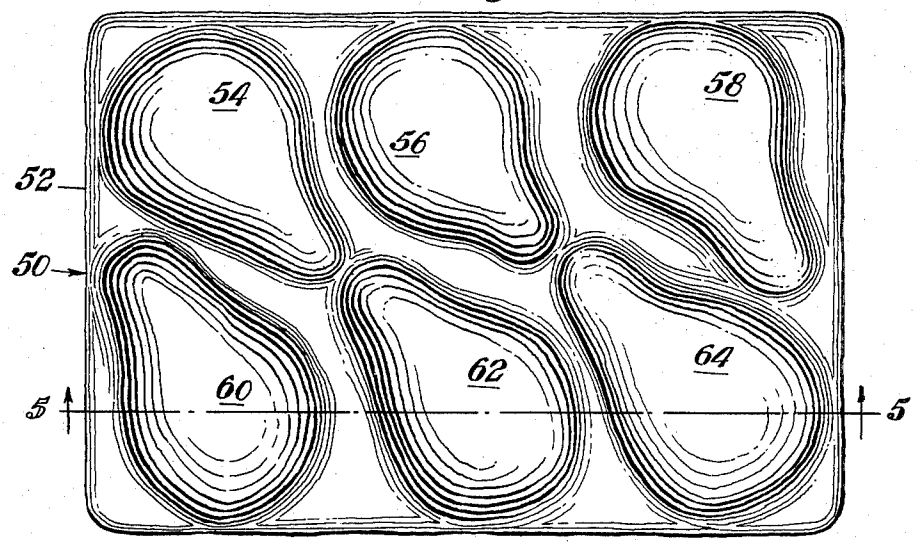
Fig. 4.



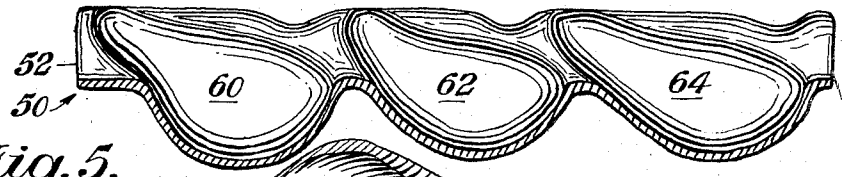


Fig. 5.

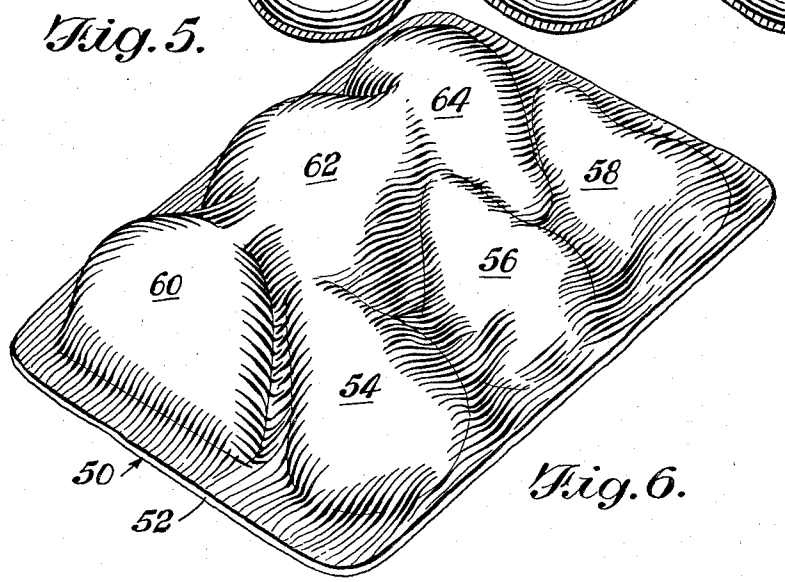


Fig. 6.

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Fig. 7.

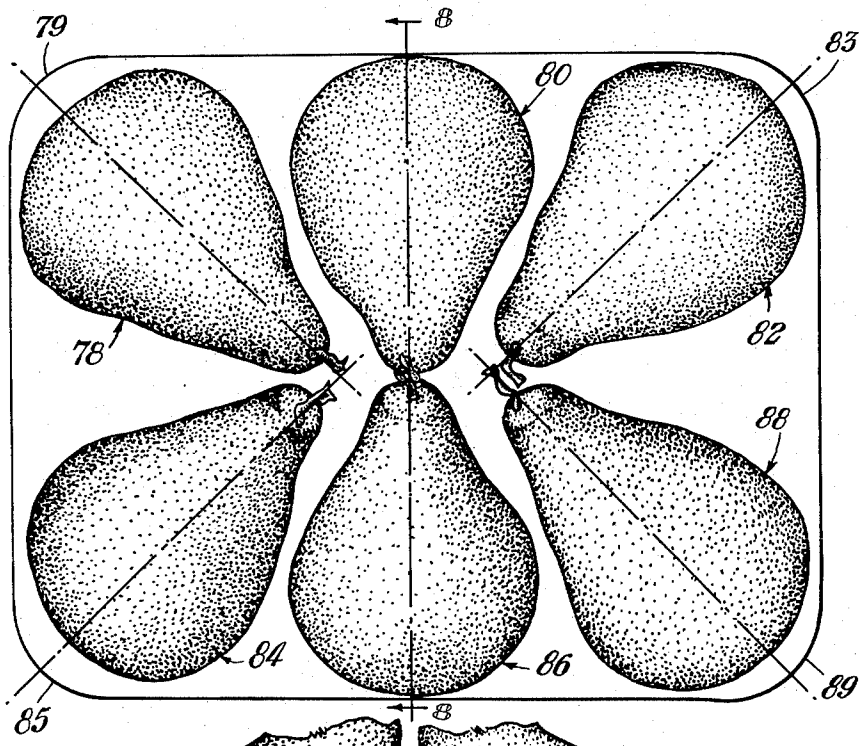

Fig. 8.

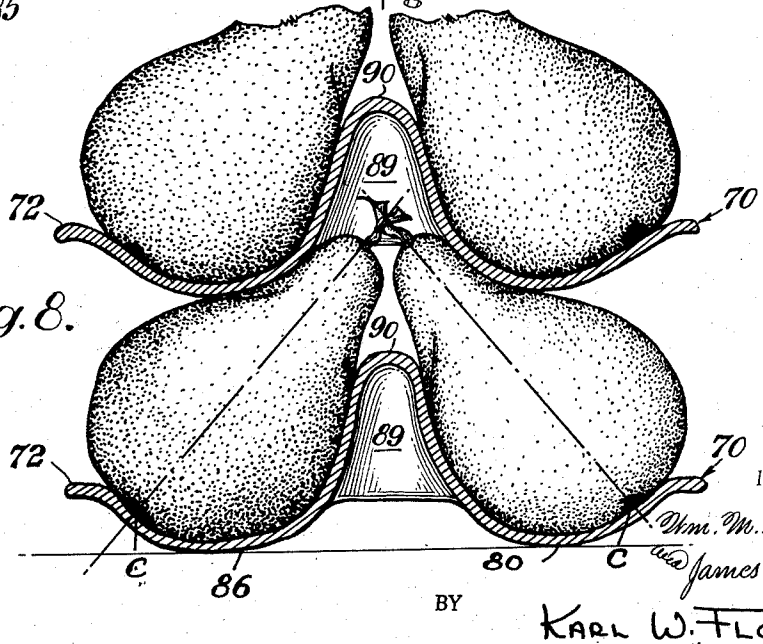

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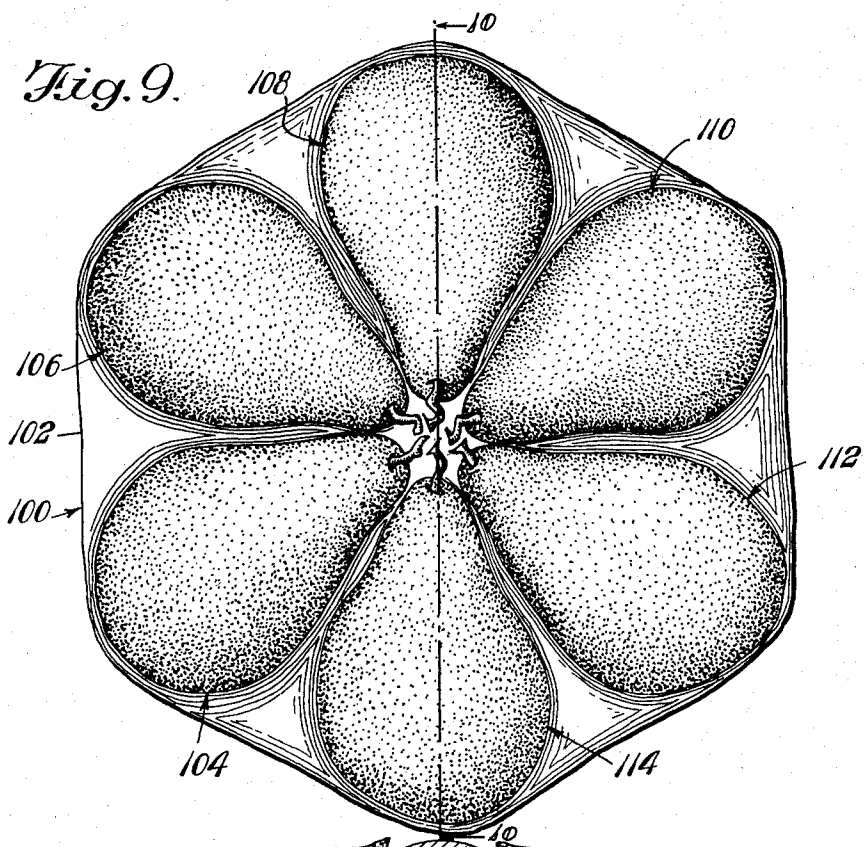
Fig. 9.



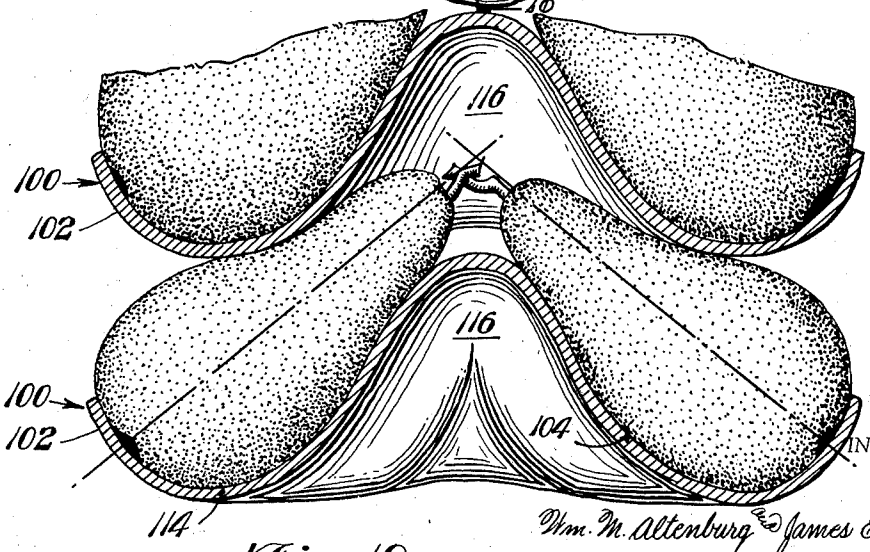


Fig. 10.

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2,843,496

MOLDED PULP PEAR TRAY

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Application July 26, 1956, Serial No. 600,243

17 Claims. (Cl. 99—171)

This invention relates to produce packaging and more particularly to an improved tray or container for holding small quantities of pears for retail display and distribution.

There is a need in the retail merchandising of pears in fruit markets, supermarkets and the like for a container which will hold a small quantity of pears, such as a half dozen, for example, for retail sale as a packaged unit. In displaying pears for retail sale, it is desirable that the cavity at the calyx end of the pears be concealed since the appearance of this cavity is aesthetically unpleasant and diminishes the sales appeal of the pears. While pear containers are known in the prior art, none of those of which we are aware are so constructed as to conceal the cavity at the calyx end of the pear.

It is also desirable that the pear tray be so constructed as to permit nested stacking of the trays when loaded with pears and also nested stacking of trays when in unloaded condition.

Accordingly, it is an object of this invention to provide a tray for the retail display and distribution of pears which provides an aesthetically pleasing display tending to promote the sale of the pears.

It is another object of this invention to provide a pear tray which is so constructed as to conceal the cavity at the calyx end of the pears supported by the tray.

It is still another object of this invention to provide a retail container or tray for pears having improved stacking characteristics both when loaded and unloaded.

In achievement of these objectives, there are provided in accordance with this invention several different embodiments of pear trays, preferably made from molded pulp, and each including a plurality of molded pear-shaped recesses. Each pear-shaped recess includes an enlarged recess portion for receiving the calyx end of the pear and a communicating narrower recess portion for receiving the stem end of the pear. Each pear-receiving recess is inclined upwardly from the calyx-receiving portion to the stem-receiving portion so that the stem of the pear is elevated above the calyx end of the pear. The surfaces of the recess are so dimensioned and contoured that the cavity at the calyx end of the pear is concealed. The upwardly inclined surface of the pear-receiving recess causes the calyx end of the pear to be rotated downwardly, permitting the outer wall of the calyx-receiving end of the recess to conceal the cavity at the calyx end of the pear. The plurality of upwardly inclined pear-shaped recesses slope upwardly toward the center of the tray with a resulting cone-shaped apex or apexes on the underneath surface of the container which facilitate nesting of the containers both in loaded and in unloaded condition.

Other objects and the nature and advantages of the instant invention will be apparent from the following description taken in conjunction with the accompanying drawings, wherein:

Fig. 1 is a top plan view of a pear tray in accordance with the invention;

Fig. 2 is a view in cross-section along line 2—2 of Fig. 1 and additionally shows a fragmentary sectional view of a second tray in superposed relation to the tray of Fig. 1;

Fig. 3 is a perspective view of a modified pear tray having four of its recesses filled with pears;

Fig. 4 is a top plan view of the modified pear tray of Fig. 3;

Fig. 5 is a view in vertical section along line 5—5 of Fig. 4;

Fig. 6 is a perspective view of the tray of Figs. 3–5 looking at the underneath surface of the tray;

Fig. 7 is a top plan view of a loaded pear tray in accordance with a still further modified embodiment of the invention;

Fig. 8 is a view in transverse vertical section along line 8—8 of the tray of Fig. 7 and additionally showing a fragmentary view of a similar tray stacked above the tray of Fig. 7;

Fig. 9 is a top plan view of a still further modified embodiment of the invention in which the tray has a perimeter of hexagonal shape; and

Fig. 10 is a view in vertical section along line 10—10 of Fig. 9, additionally showing a fragmentary view of a second similar tray in superposed relation to the tray of Fig. 9.

Referring now to the drawings, and more particularly to the views of Figs. 1 and 2, there is shown a pear tray generally indicated at 20, preferably formed of molded pulp, including a rectangular body portion 22 having six spaced open top pear-shaped molded recesses indicated at 24, 26, 28, 30, 32 and 34, respectively. Each of the pear-receiving recesses is alike, and recess 26 will be referred to as a typical recess. Each of the recesses includes an enlarged portion such as that indicated at 36 in recess 26 for receiving the calyx end of the pear. At its opposite end each recess is provided with a narrow neck portion indicated at 38 in recess 26 for receiving the stem end of the pear. The calyx-receiving portion of each recess is disposed adjacent an outer longitudinal edge of the tray while the stem-receiving portion is disposed adjacent the central longitudinal axis of the tray.

In accordance with an important feature of the invention, each molded recess is so shaped that the stem end of the pear is supported at a level above that of the calyx end of the pear so that the pear axis, which is hereby defined to extend from the calyx to the stem end of the pear, is at an inclination to the horizontal plane as best seen in the view of Fig. 2. To accommodate the arcuate contour of the pear, the molded wall of recess 26 curves downwardly in wall portion 40 from the inner boundary of flange portion 41 which forms the outer peripheral edge of body 22. The curved wall of recess 26 reaches its lowest level at 42 and then curves upwardly in a relatively sharp incline as indicated at 44. The inclination of wall portion 44 is such as to tilt the pear axis at an angle which raises the stem end of the pear above the calyx end of the pear and causes the upper surface of the pear, and the axis of the pear, to be inclined upwardly toward the central longitudinal axis of the tray.

An important advantage of the construction shown in the embodiment of Figs. 1 and 2, which is also true of all of the other embodiments of the invention described in this application, is the fact that the inclination of the wall portion 44 which elevates the stem end of the pear above the calyx end of the pear cooperates with the downwardly extending outer wall portion 40 of the recess to position the cavity C at the calyx end of the

pear in such manner that the cavity C is hidden from view, thereby making the display of the pears aesthetically pleasing and improving the sales appeal of the pears.

In the embodiment of Figs. 1 and 2, each of the recesses 24, 26, 28, 30, 32 and 34 is positioned so that the horizontal projection of its calyx-stem axis is perpendicular to the central longitudinal axis of the tray. Three of the pear-receiving recesses 24, 26, 28 lie on one side of the central longitudinal axis of the tray. Each recess on one side of the longitudinal axis is positioned directly opposite a corresponding recess on the opposite side of the longitudinal axis. Thus, recesses 24 and 30, 26 and 32, and 28 and 34 are respectively oppositely disposed to each other. The calyx-stem axis of each recess lies in a common plane transverse to the longitudinal axis of the tray with the calyx-stem axis of its corresponding oppositely disposed recess.

As best seen in the view of Fig. 2, each pair of oppositely disposed recesses such as 24 and 30, 26 and 32, and 28 and 34 incline upwardly toward each other and toward the central longitudinal axis of the tray to define a generally conical hollow recess 35 on the underneath of the tray having an apex such as that indicated at 37 between the pear-shaped recesses 26 and 32. This construction permits two or more loaded trays to be stacked in superimposed nested relation to each other, as shown in Fig. 2, with the elevated stem portions of each pair of oppositely disposed pears of the lower tray such as those in recesses 26 and 32, for example, being received in the lower portion of the hollow recess 35 of the tray above. Thus, successively superimposed loaded trays are in effect physically interlocked with each other to thereby resist any tendency of the superposed trays to become dislodged and providing a firm and stable stacking arrangement. Furthermore, the plurality of downwardly inclined projections such as 26 permit a plurality of unloaded trays to be stacked in nested relation to each other in a minimum of space. There is shown in Figs. 3–6 a modified pear tray generally indicated at 50, preferably made of molded pulp, and including a rectangular body portion 52 and a plurality of pear-shaped recesses indicated at 54, 56, 58, 60, 62, 64, respectively. The contours of the individual recesses are similar to those of the recess 26 previously described and will not be described again in detail. As in the case of the recess 26 of tray 20, each of the recesses of tray 50 is so shaped as to elevate the stem end of the pear above the calyx end of the pear so that the cavity at the calyx end of the pear is concealed from view.

The calyx-stem axis of each recess of tray 50 lies in a vertical plane perpendicular to the horizontal plane in which the longitudinal axis of the tray lies, and intersecting the longitudinal axis at an angle, such as the angle of approximately 45 degrees shown in the embodiment of Figs. 3–6. Expressed in a different manner, the horizontal projection of the calyx-stem axis of each of the recesses 54, 56, 58, 60, 62, 64 intersects the longitudinal axis of the tray lying in a horizontal plane at an angle of substantially 45 degrees. The calyx-receiving portion of each recess is disposed toward the outer longitudinal edge of the tray, while the stem-receiving portion of each recess is disposed adjacent the central longitudinal axis of the tray.

Recesses 54, 56, 58 all lie in one row with their respective stem ends rotated substantially 45 degrees in a counterclockwise direction from a perpendicular relation with respect to the longitudinal axis of the tray. Recesses 60, 62, 64 all lie in a second row and have their respective stem ends rotated substantially 45 degrees in a counterclockwise direction from a perpendicular relation with respect to the longitudinal axis of the tray. Due to the angularly arranged position of the opposite rows or pear-receiving recesses as just explained, the tapered neck portion adjacent the stem end of each recess lies contiguous to but spaced from a similar portion of the oppositely disposed recess and in generally complementary relation thereto. Thus, the tapered neck portions of the respective oppositely disposed recesses 54—60, 56—62, and 58—64 lie contiguous to and in generally complementary relation to each other. Also, the pear axes of recesses 54 and 62 lie in a common vertical plane angularly transverse to the horizontal longitudinal axis of the tray and the axes of recesses 56 and 64 lie in another common vertical plane angularly transverse to the horizontal longitudinal axis of the tray. The angular arrangement of the recesses just described permits the longitudinal and transverse dimensions of the tray to be made smaller for a given number of recesses of a given size.

In the embodiment of Figs. 7 and 8, there is shown a pear tray generally indicated at 70, preferably made of molded pulp, and including a generally rectangular body member 72 having six molded pear-shaped recesses 78, 80, 82, 84, 86 and 88 which radiate from a central point defined by the intersection of the central longitudinal and transverse axes of the tray. The shape of each recess is similar to that of recess 26 decribed in connection with the embodiment of Figs. 1 and 2 and is so shaped as to elevate the stem of the pear above the calyx end of the pear to conceal the cavity at the calyx end of the pear.

The two recesses 80 and 86 have the horizontal projections of their respective calyx-stem axes perpendicular to the central longitudinal axis of the tray, while the other recesses 78, 82, 84, 88 have the horizontal projections of their respective calyx-stem axes inclined at an angle of substantially 45 degrees with respect to the longitudinal axis of the tray and in alignment with the four outer corners 79, 83, 85, 89 of the tray. Recesses 78, 80, 82 lie in a single row on one side of the central longitudinal axis of the tray, while recesses 84, 86, 88 lie in a single row on the opposite side of the central longitudinal axis of the tray. Recesses 78 and 82 are respectively rotated in a counterclockwise and a clockwise direction with respect to the perpendicularly positioned recess 80 and into alignment with the respective corners 79 and 83 of the tray. Recesses 84 and 88 are respectively rotated in a clockwise and a counterclockwise direction with respect to the perpendicularly positioned recess 86 and into alignment with the respective corners 85 and 89 of the tray.

The construction of the trays shown in Figs. 7 and 8 facilitates nested stacking of the loaded trays. The two central recesses 80 and 86 converge toward each other and toward the central longitudinal axis of the tray to define a generally conical recess 80 (Fig. 8) on the underneath of the tray having an apex 90 which permits the pears in a lower tray to be received in nested relation within the recess 89 of an upper tray. In a generally similar manner, the adjacent stem ends of each pair of recesses 78—84 and 82—88 define hollow recesses on the underneath surface of the tray which facilitate nested stacking of the loaded trays. The nested stacking provided by this construction in effect interlocks two superposed loaded trays to resist dislodgement of the two trays with respect to each other, thereby providing a more stable stacking arrangement. The construction of the trays of Figs. 7 and 8 also permits nested stacking when unloaded since the corresponding pear-receiving recesses of each tray nest into those of the superposed trays above and below it to permit a maximum number of unloaded trays to be stacked in a given height.

There is shown in Figs. 9 and 10 a pear tray generally indicated at 100, preferably made of molded pulp, having a body member 102 of substantially hexagonal perimeter. The hexagonal outer perimeter of tray 100 permits a plurality of similar trays to be positioned in side-by-side relation on a fruit stand with a maximum utilization of the available display space. Tray 100 includes a plurality of pear-shaped molded recesses 104, 106, 108, 110, 112,

114, respectively. Each of the recesses is similar to those previously described, such as recess **26** of the embodiment of Figs. 1 and 2, and is so shaped as to elevate the stem end of the pear above the calyx end of the pear to conceal the cavity at the calyx end of the pear. The six pear-shaped recesses radiate outwardly like the spokes of a wheel from the center of the tray, the stem-supporting end of each recess being positioned adjacent the central axis of the tray and likewise adjacent the stem ends of all of the other outwardly radiating recesses.

As best seen in Fig. 10, the construction of tray **100** permits superposed stacking of the loaded trays. The plurality of converging stem-receiving recess portions define a generally conical hollow recess indicated at **116** in Fig. 10 into which the stem ends of the pears supported by a lower tray can nest. This provides an interlocking engagement between the pears of the lower tray with the hollow conical portions of the tray above it, to resist shifting movement of the trays with respect to each other, thereby providing a stable stacking arrangement. The plurality of downwardly extending pear-receiving recesses also adapt the unloaded trays to be nested in stacked superposed relation to permit a maximum number of the unloaded trays to be stacked in a minimum height.

It can be seen from the foregoing that there are provided in accordance with this invention various embodiments of pear trays which permit pears to be displayed for sale in an aesthetically pleasing manner, since the trays are all so constructed as to conceal the unsightly cavity at the calyx end of the pear. Furthermore, the trays permit nested stacking of loaded trays in a more stable manner than heretofore possible with trays of the prior art, as well as permitting nested stacking of the unloaded trays.

It will be obvious to those skilled in the art that various changes may be made without departing from the spirit of the invention and therefore the invention is not limited to what is shown in the drawings and described in the specification but only as indicated in the appended claims.

What is claimed is:

1. A pear tray comprising a body member having a plurality of open top spaced recesses of pear shape, each recess including an enlarged recess portion for receiving the caylx end of a pear and a narrow recess portion for receiving the stem end of the pear, said narrow recess portion being elevated above said enlarged recess portion a distance such that a surface of the stem end of the pear is elevated above the highest surface at the calyx of the pear.

2. A pear tray comprising a body member having a plurality of open top spaced recesses of pear shape, each recess including an enlarged recess portion for receiving the calyx end of a pear and a narrow recess portion for receiving the stem end of the pear, said narrow recess portion being elevated above said enlarged recess portion for a dimension corresponding to elevating the stem end of the pear above the calyx end of the pear.

3. A pear tray comprising a body member having a plurality of open top spaced recesses of pear shape, each including a pear supporting surface, each recess including an enlarged recess portion for receiving the calyx end of a pear and a narrow recess portion for receiving the stem end of the pear, the pear supporting surface of each recess being inclined upwardly from said enlarged recess portion to said narrow recess portion sufficiently to raise the stem end of the pear above the calyx end of the pear, said body member including a peripheral portion bounding said enlarged recess portion and having a height such as to conceal the cavity at the calyx end of a pear supported in said recess but to permit observation of a substantial portion of the calyx end of the pear above the cavity therein.

4. A pear tray comprising a body member having a plurality of spaced molded open top recesses of pear shape, each recess including an enlarged recess portion directed toward the outer periphery of the tray for receiving the calyx end of a pear and a narrow recess portion directed toward the center of the tray for receiving the stem end of the pear, said narrow recess portion being elevated above said enlarged recess portion for a sufficient dimension to raise the stem end of the pear above the calyx end of the pear whereby the surface of the pear is inclined upwardly toward the center of the tray, said body member including a peripheral portion bounding said enlarged recess portion and having a height such as to conceal the cavity at the calyx end of a pear supported in said recess but to permit observation of a substantial portion of the calyx end of the pear above the cavity therein.

5. A pear tray comprising a body member having a plurality of spaced open top pear-shaped recesses, each recess having an enlarged portion for receiving the calyx end of a pear and a narrow portion for receiving the stem end of the pear, each recess being inclined upwardly from the calyx-receiving portion to the stem receiving portion thereof whereby a pear supported by said recess is inclined upwardly from its calyx end to its stem end, and a surface of said body bounding each recess at the calyx-receiving end thereof of sufficient height to conceal the cavity at the calyx end of a pear supported in said recess.

6. A pear tray comprising a body member having a plurality of molded open top recesses of pear shape, each recess including an enlarged recess portion directed toward the outer periphery of the tray for receiving the calyx end of a pear and a narrow recess portion directed towad the center of the tray for receiving the stem end of the pear, each recess being inclined sufficiently upwardly from the calyx receiving end to the stem receiving end thereof to raise the upper surface of the stem end of the pear received in said recess above the calyx end of the pear whereby the surface of the pear is inclined upwardly toward the center of the tray, said body member including a peripheral portion bounding said enlarged recess portion and having a height such as to conceal the cavity at the calyx end of a pear supported in said recess but to permit observation of a substantial portion of the calyx end of the pear above the cavity therein.

7. A pear tray comprising a body member having a plurality of molded open top recesses of pear shape, each recess including an enlarged recess portion directed toward the outer periphery of the tray for receiving the calyx end of a pear and a narrow recess portion directed toward the center of the tray for receiving the stem end of the pear, each recess being inclined upwardly sufficiently from the calyx receiving end to the stem receiving end thereof to raise the upper surface of the stem end of the pear received in said recess above the highest surface at the calyx end of the pear whereby the surface of the pear is inclined upwardly toward the center of the tray, said body member including a peripheral portion bounding said enlarged recess portion and having a height such as to conceal the cavity at the calyx end of a pear supported in said recess but to permit observation of a substantial portion of the calyx end of the pear above the cavity therein.

8. A pear tray comprising a body member having a plurality of molded open top recesses of pear shape, each recess including an enlarged recess portion directed toward the outer periphery of the tray for receiving the calyx end of a pear and a narrow recess portion directed toward the center of the tray for receiving the stem end of the pear, said narrow recess portion being elevated above said enlarged recess portion whereby the stem end of the pear is elevated above the calyx end of the pear and whereby the surface of the pear is inclined upwardly toward the center of the tray, and a surface of said body bounding each recess at the calyx receiving end thereof of sufficient height to conceal the cavity at the calyx end of a pear supported in said recess.

9. A pear tray comprising a body member having a plurality of spaced recesses of pear shape each including

a pear supporting surface, each recess including an enlarged recess portion for receiving the calyx end of a pear and a narrow recess portion for receiving the stem end of the pear, the pear supporting surface of each recess being inclined upwardly from said enlarged recess portion to said narrow recess portion, said body member including a peripheral portion bounding said enlarged recess portion and having a height such as to conceal the cavity at the calyx end of a pear supported in said recess but to permit observation of a substantial portion of the calyx end of the pear above the cavity therein said recesses being arranged in two spaced rows each including a plurality of recesses, the recesses of each row being respectively aligned with the corresponding recesses of the other row and having their respective stem receiving portions facing and aligned with the stem receiving portions of the respective corresponding recesses of the other row.

10. A pear tray comprising a body member having a plurality of spaced recesses of pear shape each including a pear supporting surface, each recess including an enlarged recess portion directed toward an outer longitudinal edge of the tray for receiving the calyx end of a pear and a narrow recess portion directed toward the central longitudinal axis of the tray for receiving the stem end of the pear, the pear supporting surface of each recess being inclined upwardly from said enlarged recess portion to said narrow recess portion, said body member including a peripheral portion bounding said enlarged recess portion and having a height such as to conceal the cavity at the calyx end of a pear supported in said recess but to permit observation of a substantial portion of the calyx end of the pear above the cavity therein, the horizontal projection of the calyx-stem axis of each recess being inclined to the horizontal longitudinal axis of the tray, said recesses being arranged in two rows each including a plurality of recesses, the recesses of each row being interfitted with the recesses of the other row.

11. A pear tray comprising a substantially rectangular body member having a plurality of spaced recesses of pear shape each including a pear supporting surface, each recess including an enlarged recess portion for receiving the calyx end of a pear and a narrow recess portion directed toward the central longitudinal axis of the tray for receiving the stem end of the pear, the pear supporting surface of each recess being inclined upwardly from said enlarged recess portion to said narrow recess portion and toward the central longitudinal axis of the tray, said body member including a peripheral portion bounding said enlarged recess portion and having a height such as to conceal the cavity at the calyx end of a pear supported in said recess but to permit observation of a substantial portion of the calyx end of the pear above the cavity therein, said plurality of recesses being arranged in two rows, said rows respectively lying on opposite sides of the central longitudinal axis of the tray, each row including a recess positioned intermediate the ends of the row and having the horizontal projection of its calyx-stem axis lying substantially perpendicularly to the central longitudinal axis of the tray and a recess at each end of the row having the horizontal projection of its calyx-stem axis positioned at an angle to the central longitudinal axis of the tray and directed toward the corner of the tray.

12. A pear tray as defined in claim 11 in which the recess positioned intermediate the ends of each of said rows is aligned with the corresponding recess of the other row.

13. A pear tray comprising a body member having a plurality of spaced recesses of pear shape each including a pear supporting surface, each recess including an enlarged recess portion for receiving the calyx end of a pear and a narrow recess portion for receiving the stem end of the pear, the pear supporting surface of each recess being inclined upwardly from said enlarged recess portion to said narrow recess portion, said body member including a peripheral portion bounding said enlarged recess portion and having a height such as to conceal the cavity at the calyx end of a pear supported in said recess but to permit observation of a substantial portion of the calyx end of the pear above the cavity therein, said plurality of recesses being positioned with their respective stem-receiving portions radiating outwardly from a common center.

14. A pear tray as defined in claim 13, in which the outer perimeter of said body member is of substantially hexagonal shape.

15. A molded pulp pear tray comprising a planular body provided with at least two recesses, each of said recesses having an axis inclined upwardly and inwardly with respect to said planular body and said axes intersecting each other in the form of an inverted V, said recesses being contoured for the reception of pears, the axis of inclination being such that the stem end of each pear is higher than the calyx end of each pear.

16. The pear tray recited in claim 15, said tray being loaded with pears, a second loaded tray similar to said first loaded tray, said second loaded tray being superimposed on said first loaded tray with the points of intersection of the inclined axes of each tray lying in a common vertical plane passing through said points of intersection.

17. The structure recited in claim 15, said planular body recesses being sufficiently deep and coordinated with said axes of inclination to conceal the calyx end cavity of pears to be supported by said tray.

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