Feb. 8, 1966 T. B. KENNEDY 3,233,812

MOLDED PULP CONTAINER

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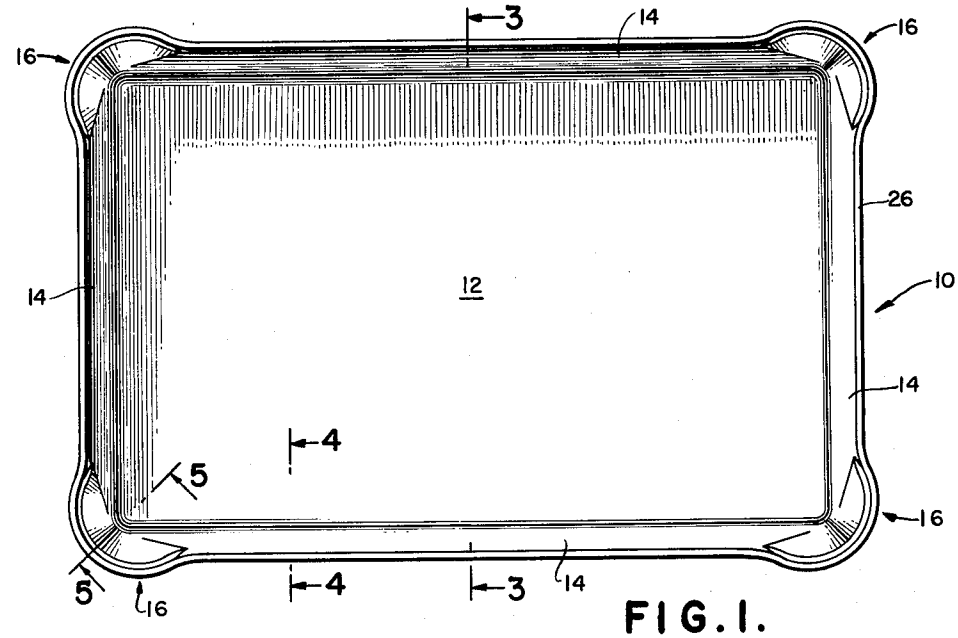


FIG. 1.

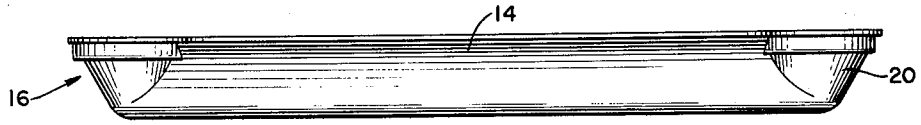


FIG. 2.

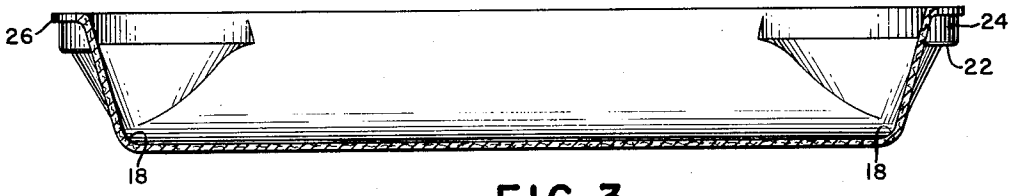


FIG. 3.

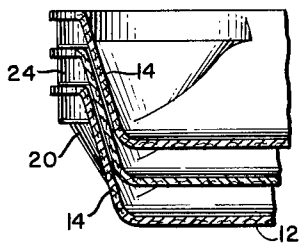


FIG. 4.

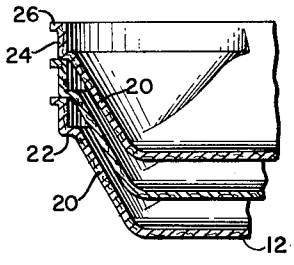


FIG. 5.

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MOLDED PULP CONTAINER

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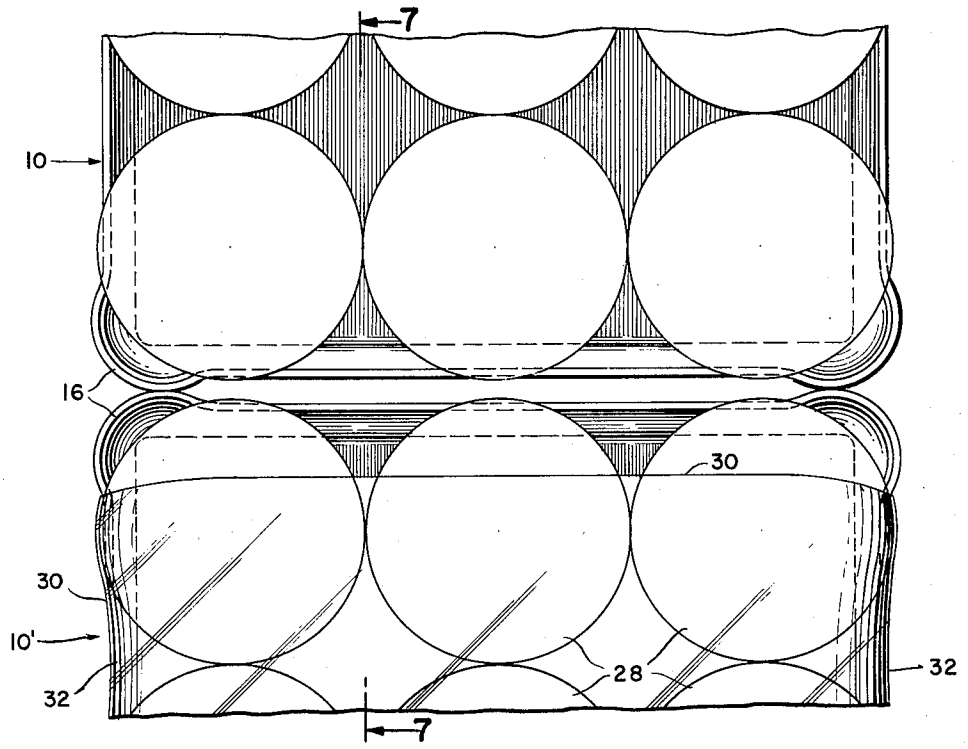


FIG. 6.

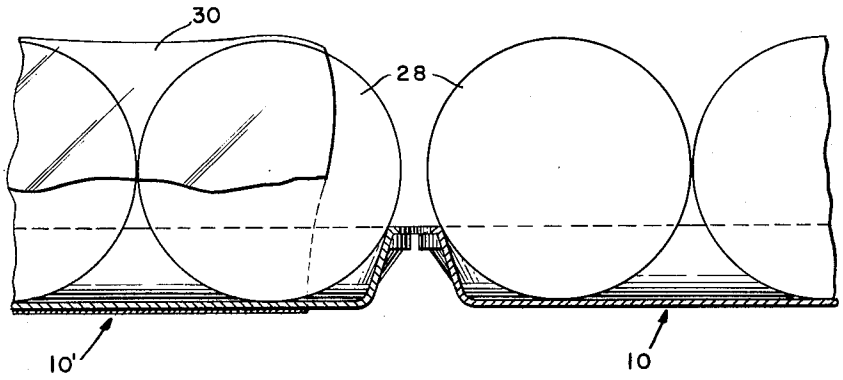


FIG. 7.

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MOLDED PULP CONTAINER

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5 Claims. (Cl. 229—2.5)

The present invention relates to molded pulp containers, and more particularly, it relates to molded pulp containers which are suitable for packaging fruit.

Until the present time a problem has existed in the provision of container for soft fruits. If a simple pulp molded container tray having low side walls is utilized to hold such fruits, which type tray is the most desirable from an economic standpoint, the soft fruits have a tendency to extend outwardly over the sides and rim of the pulp molded tray. This results in contact and "bumping" of the soft fruit in adjacent trays with the result that such fruit often becomes bruised. Where considered economically feasible, such a disadvantage has been overcome either by attaching separate "bumpers" to the outside walls of the fruit containers, or by molding the container with high side walls, but these provisions greatly increase the cost of the container and are therefore not entirely satisfactory.

Fruit containers and fruit baskets of the prior art, while generally quite satisfactory, have also suffered from not having as proper a relationship as is desired between rigidity, on the one hand, for protection, and flexibility, on the other hand, to tightly secure the fruit within the container. Therefore, if the container were provided in the form of a rigid structure, such as a box or a basket, and the fruit packed therein, the fruit was free to rattle since the dimensions of the container are constant and that of different pieces of fruit are variable. If, on the other hand, the container were flexible, such as a paper bag, then although the outer dimensions of the container could be varied to correspond to the size of the contents, the overall package did not provide sufficient rigidity to protect the contents from outside forces.

A common and conventional problem in the utilization of containers of any type resides in the storage of such containers. In order to store or ship containers, such as molded pulp containers, without utilizing a great deal of space, it is necessary that they be nested, one within the other, which practice is conventional. When one container is nested within another, the side walls of the one container tend to frictionally engage with the side walls of the other container. Unless some form of denesting is provided for, it is very difficult to separate one container from the other without damaging the containers.

It is therefore an object of the present invention to overcome the difficulties of the prior art, such as indicated above.

It is another object of the present invention to provide pulp containers particularly suitable for packaging easily damaged fruit, which containers serve to protect the fruit under normal conditions.

It is another object of the present invention to provide a molded pulp container having corner portions which serve as bumpers to prevent the contents of one container from contacting the contents of an adjacent container.

It is another object of the present invention to provide molded pulp containers containing denesting ledges.

It is another object of the present invention to provide a molded pulp container having corner portions which provide rigidity and strength to the end portions of the container so that such container will maintain its overall dimensions, for protection from outside forces, but which permit the middle portions of the container to flex under

wrap to conform to the specific size of the contents of the container.

It is another object of the present invention to provide a container which is effective to protect fruit yet is very inexpensive to produce.

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 plan view of an empty pulp molded container in accordance with the present invention;

FIG. 2 is a front elevation of the container shown in FIG. 1;

FIG. 3 is a sectional view of an enlarged scale taken along line 3—3 of FIG. 1;

FIG. 4 is a partial sectional view of a stack of trays taken along line 4—4 of FIG. 1;

FIG. 5 is a partial sectional view of a stack of trays taken along line 5—5 of FIG. 1;

FIG. 6 is a plan view of two adjacent trays filled with fruit; and

FIG. 7 is a sectional view taken along line 7—7 of FIG. 6.

A shallow tray or container **10** in accordance with the present invention is formed of molded pulp into a generally rectangular shape and comprises a generally rectangular bottom wall **12** and four relatively low side walls **14** extending upwardly and outwardly from the four edges of the bottom wall **12**. The tray **10** is also provided at each corner with a corner portion or bumper **16** which extends outwardly beyond the side walls **14** and is preferably semi-circular in shape; such corner portions **16** project upwardly and outwardly from each corner of the bottom wall **12** to extend a greater distance outwardly than do the side walls **14**.

The four side walls **14** each extend upwardly, in a slightly outwardly inclined direction, from the bottom wall **12**, which is preferably flat and straight. As can be seen in FIG. 4, it is desirable that such side walls **14** extend only slightly outwardly from the edge of the bottom wall **12**. The junction between each side wall **14** and the bottom wall **12** is preferably rounded at **18**, as is conventional.

Each corner portion or bumper **16** extends upwardly and outwardly from the corner of the bottom wall **12** to provide a wall portion **20** which extends outwardly a greater distance than do the side walls **14**, noting FIGS. 4 and 5. Each corner wall **20** preferably defines a semi-cone, wherein horizontal sections taken through the wall from top to bottom define semi-circles of decreasing radius. However, any outwardly projecting and rigidifying shape would be suitable for such a sloping corner wall **20**. Each corner wall **20** terminates at its upper end in a semi-circular denesting ledge **22** which extends horizontally outwardly. At the outer extent of each denesting ledge **22** the corner portions **16** each comprise another wall **24** which extends upwardly and essentially vertically from the outward extent of the denesting ledge **22**.

The top of the vertical wall **24** of each of the corner portions **16** along with the top of each side wall **14** provides an edge which defines the open top of the container **10**. As shown in the drawings the open edge may comprise a horizontal rim **26** which provides the tray not only with a neat and decorative appearance but also provides additional strength.

The corner portions **16** of the tray are provided by using in the pulp mold a larger radius than would be suitable to provide the normal corner or by moving the corner radius outwardly on a 45° angle from its center until the desired degree of overhang is obtained. For ex-

ample, if the normal radius used on a tray the size shown in FIG. 1 were 0.919 inch, then the corner portions **16** could be obtained by moving the center point of the corner radius out on a 45° angle by 0.187 inch. This would produce a dimension of 3/16 of an inch between the outer extent of a corner portion **16**, such as defined by the wall **24**, and the outer extent of the side wall **14**; between contacting trays, such as shown in FIGS. 6 and 7, there would then be provided a gap of 3/8 of an inch between the side walls **14** of the adjacent trays **10** and **10'**.

As can be seen from FIGS. 6 and 7, a major feature of the present invention is the utilization of such corner portions **16** as "bumpers." Here trays **10** and **10'** are shown containing delicate fruit **28** which is easily bruised. As can be seen, the fruit **28** of such a dimension that it extends over the low side walls **14** of the trays **10** and **10'**. When trays containing such fruit **28** are placed adjacent one another, the bumpers **16** contact and prevent the trays from coming closer together so that the fruit **28** therein cannot be bumped against the fruit in the adjacent trays. While the provision of higher side walls i.e. deeper trays, might obtain the same solution to the problem, such trays would be more expensive due to the greater amount of pulp required to form the tray.

As seen in FIGS. 6 and 7, the fruit and tray may be covered or wrapped with a transparent plastic film, which may be heat shrinkable and heat sealable, to keep the fruit **28** within the tray **10'**. Due to the configuration of the corner portions **16** of the tray, which corner portions have walls **20**, **22** and **24** which quickly change direction from one another, such corner portions provide a great deal of strength and rigidity to the opposite ends of the tray. The wall portions **14**, on the other hand, due to their essentially flat nature, are relatively flexible. Thus, when the fruit **28** and the tray **10'** is tightly overwrapped with a transparent plastic film **30** the walls **14** will flex inwardly between the fruit **28** such as shown at **32** to accurately correspond to the shape of the fruit within the tray **10'** in a manner analogous to the manner in which a flexible paper or plastic wrap can be placed on an article and made to correspond to the general dimensions of that article.

In this manner the tray **10'** maintains its general overall shape and rigidity due to the corner portions **16** and is thus able to generally protect the fruit **28** contained therewithin from outside influences, yet at the same time, due to the flexibility of the side walls **14**, the sides of the tray **10'** are able to flex under the pressure exerted by the overwrap **30** to correspond to the general dimensions of the particular fruit **28** contained therewithin and maintain the fruit pieces in one tray from moving with respect to each other. Deeper trays would not have side walls of equal flexibility and absence of corner portions **16** would cause the flexibility of the corners to approach that of the side walls.

As best seen in FIG. 5 where a plurality of trays **10** in accordance with the present invention are nested within each other, the denesting ledge **22** of the corner portions **16** of the uppermost tray **10** rests on the terminal edge of rim **26** (at the corner portions **16**) of the container **10** immediately thereunder. This maintains each tray **10** in the nesting arrangement slightly spaced from the tray immediately above and below it as shown in FIGS. 4 and 5. This prevents the nesting trays from becoming frictionally engaged and obviates any difficult separation.

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

What is claimed is:

1. A molded pulp container comprising a substantially rectangular bottom wall, a side wall extending upwardly and slightly outwardly from each edge of said bottom wall, corner bumper means including a corner portion between each pair of adjacent side walls, said corner portions extending upwardly and outwardly from each corner of said bottom wall, said corner portion outward extension being greater than said side wall outward extension, a planar denesting ledge extending outwardly only along the upward extent of each said corner portion, said ledge not extending along said side walls, and an essentially vertical wall extending upwardly from the outward extent of each said denesting ledge joining with said side walls.

2. A container in accordance with claim **1** wherein each said corner portion is semi-conical and each said essentially vertical wall extending upwardly from each said denesting ledge is semi-circular.

3. In a molded pulp container having a generally rectangular configuration with upwardly and outwardly extending side walls, the improvement wherein said side walls are relatively flexible and are without rigidifying means, said container further comprising outwardly extending corner portions, each said corner portion comprising bumper means to prevent the side walls of adjacent containers from contacting, a denesting ledge only within each said corner portion, and rigidifying means at each corner to prevent substantial flexing of the end portions of said container.

4. A substantially rectangular, integral container comprising a substantially rectangular bottom wall; a flexible side wall extending continuously in an upwardly and slightly outwardly inclined direction from each edge of said bottom wall; corner bumper means including a rigid corner portion extending in an upwardly and outwardly inclined semi-circular direction from each corner of said bottom wall, then outwardly of said inclined direction essentially parallel to said bottom wall to form a semi-circular denesting ledge, then upwardly to form a wall portion which together with said side walls and the other corner wall portions terminates in an edge defining the open top of said container, said corner portions extending laterally outwardly from said bottom wall a greater amount than said side walls.

5. A package comprising a molded pulp container having a substantially rectangular bottom wall, a flexible side wall extending upwardly and slightly outwardly from each edge of said bottom wall, a corner portion between each pair of adjacent side walls, said corner portions extending upwardly and outwardly from each corner of said bottom wall, said corner portion outward extension being greater than said side wall outward extension, a planar denesting ledge extending outwardly only along the upward extent of each said corner portion, said ledge not extending along said side walls, an essentially vertical wall extending upwardly from the outward extent of each said denesting ledge joining with said side walls; soft, easily damaged goods within said pulp container extending above and over the top of said side walls; and a transparent plastic film wrap enclosing said goods and said pulp container between said corner portions and effecting sufficient pressure on said side walls of said pulp container to flex said side walls inwardly to grip said goods.

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