The present invention relates to molded pulp articles, and more particularly to molded pulp containers which have relatively high side walls with slots therein.

This application is a continuation-in-part of applicant's copending application Serial No. 38,354, filed June 23, 1960, now Patent No. 3,075,872.

Molded pulp containers which are relatively deep and have a plurality of slots in the side walls have heretofore presented several problems. First of all, the slots in the side walls have resulted in a loss of rigidity and strength in the side walls. Further, it is necessary that such containers be nested during storage and shipment. Due to the high side walls with the resulting friction it has been found difficult to separate the nested containers one from another without damaging them.

It is therefore an object of the present invention to provide a molded pulp container suitable for the packaging of fruit and vegetables which has ventilating slots in the side walls and yet has the necessary rigidity and strength.

It is a further object of the present invention to provide a molded pulp container with relatively high side walls which can be nested within one another and can be subsequently withdrawn therefrom without damage to the container.

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

FIG. 1 is a top plan view of a molded pulp container in accordance with the present invention;
FIG. 2 is a cross-sectional view along the line 2—2 of FIG. 1;
FIG. 3 is a cross-sectional view along the line 3—3;
and
FIG. 4 is a side elevational view partly in section showing a plurality of containers in nested relationship.

Referring to FIG. 1, there is shown a molded pulp container 10 which is substantially square in shape and which is provided with rounded corners 12. The container is provided with four side walls 14, 16, 18 and 20, each of these side walls extending upwardly in a slightly outwardly inclined direction, from a flat bottom wall 22. The juncture between each of the side walls and the bottom wall is slightly rounded.

In each of the side walls, at the junction of each side wall and the bottom wall are a plurality of slots 24. As shown in FIG. 1, three slots 24 are provided in each side wall. Each of the slots 24 are positioned so that a portion thereof extends into the bottom wall and a portion extends upwardly into the side wall. As shown the slots extend only a slight distance into the bottom wall but extend upwardly approximately one half of the height of the side wall.

Between each adjacent pair of slots 24 in the side wall is a fluted rib 28 which extends from the bottom wall upwardly to a shoulder 30 which extends around the entire upper periphery of the container. As shown, with three slots 24 in a side wall, there are provided two fluted ribs 28. The ribs give sufficient strength to the side walls even with the long slots therein.

The portion of the side walls from the shoulder 30 to the upper edge of the container 32 has an inward slope as shown at 34. This inward slope in the upper portion of the side wall acts to permit nesting without frictional engagement of the side walls so that adjacent containers in the stack can be readily separated.

Such articles with reverse angles or negative drafts as at 34 cannot be molded directly due to the difficulty of removing the article from a forming die having such a negative draft. Containers of this type can be molded using the method of "memory after forming" as described in applicant's copending parent application, Serial No. 38,354, filed June 23, 1960, Patent No. 3,075,872.

This method provides for first molding the container in a mold with the upper side wall portion vertical. The preform is transferred to a transfer die having the desired inward sloping upper surfaces as shown at 34, and suction is applied to lock the wet preform to the configuration of the transfer die. The container is then blown from the transfer die with the upper portion being dragged over the inwardly extending projections of the die. During the subsequent drying process, the article returns to the shape it had assumed on the transfer die through the memory of being in that position.

When two or more of the containers 10 are nested as shown in FIG. 4, the upper edge 32 of each container engages the shoulder 30 of the container above while the corresponding side walls are maintained out of frictional engagement. This spacing of the side walls prevents sticking together of the containers, and the contact between the upper edge and the shoulder is merely a support contact where the only force exerted is the force of gravity.

The container described herein is particularly suited for the packaging of fruit such as berries where extremely good ventilation is required.

Although the container illustrated is shown as being generally square in shape, the invention is not limited to such shape since it may be rectangular, oval or even round.

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 molded fibrous article having increased rigidity and strength comprising a substantially flat bottom wall, side walls extending in an upwardly and outwardly inclined direction from each side of the bottom wall, each of said side walls having a plurality of slots thereby extending into the bottom wall with a portion extending upwardly into the side wall, each said slot extending partially into the bottom wall partially into the side wall and a fluted rib located...
between each pair of slots, said rib extending from said bottom wall and terminating at the top at said shoulder, each of said slots being of a length of at least about one-half the length of said ribs.

2. An article in accordance with claim 1 wherein the portion of the side wall from the shoulder to the upper end of the article is inclined upwardly and inwardly so that when nested the upper end of the article contacts the shoulder of the article thereabove and the side walls of the adjacent articles are in spaced relationship.

References Cited in the file of this patent

UNITED STATES PATENTS

1,509,549 Freeland Sept. 23, 1924
1,701,238 Kennedy Feb. 5, 1929
2,348,725 Chaplin May 16, 1944
2,739,914 Hatch Mar. 20, 1956
2,814,427 Emery Nov. 26, 1957
2,889,072 Lapham June 2, 1959

FOREIGN PATENTS

359,928 France Feb. 7, 1906
226,245 Australia May 7, 1959