

Dec. 26, 1967

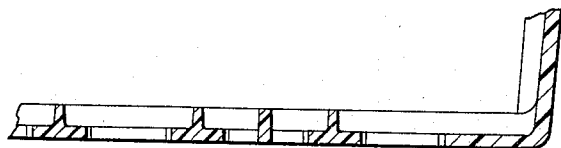
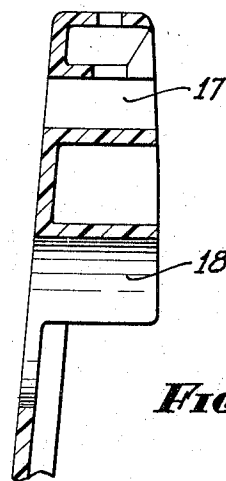
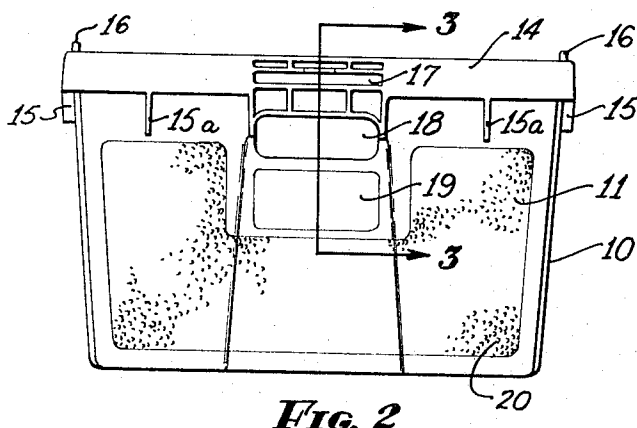
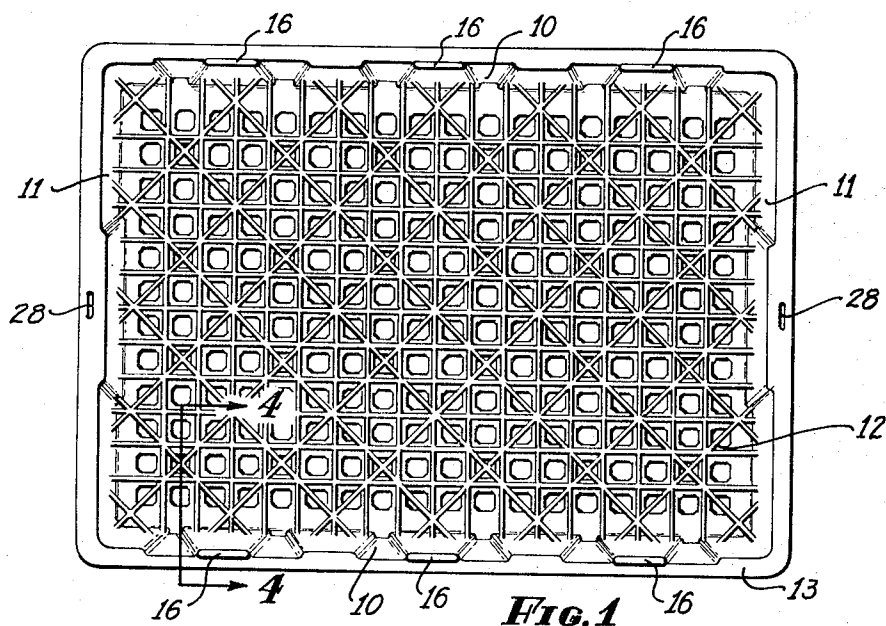
R. F. MILES

3,360,162

TOTE BOX

Filed Dec. 23, 1966

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

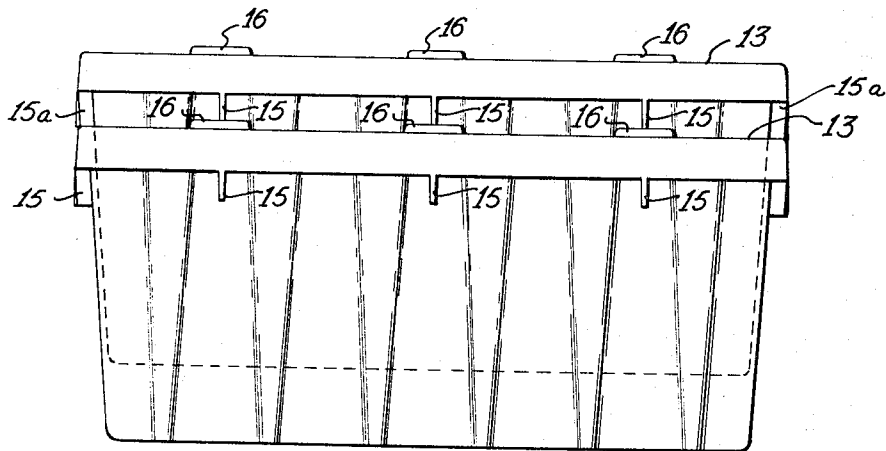


FIG. 5

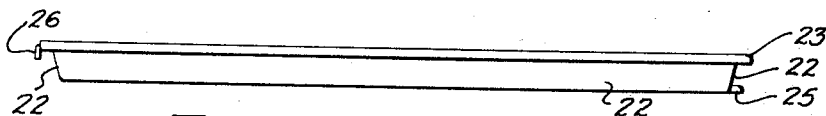


FIG. 6

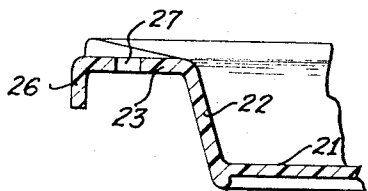


FIG. 8

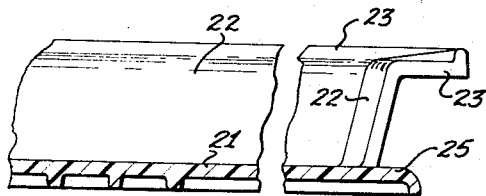


FIG. 9

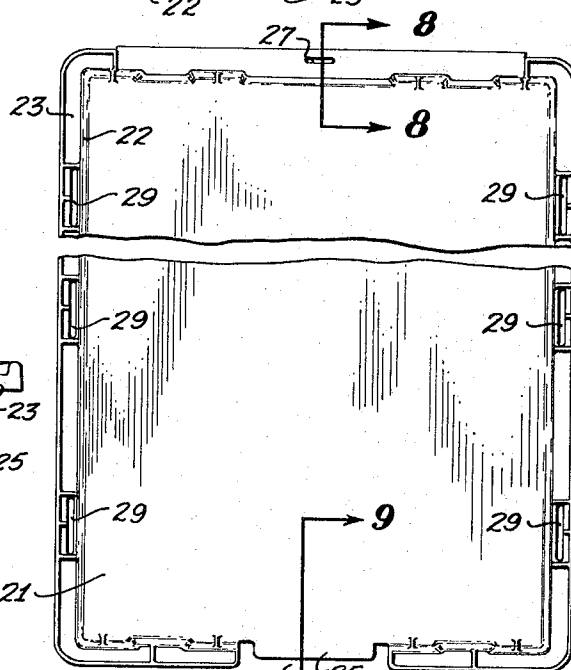


FIG. 7

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3,360,162
TOTE BOX

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3 Claims. (Cl. 220-97)

ABSTRACT OF THE DISCLOSURE

A tote box with separate lid, which, when the lid is removed, is nestable in another like tote box without regard to end-for-end orientation, and which, when the lid is in place, is stackable on another like tote box with its lid in place without regard to end-for-end orientation, the lid being attachable to the tote box without regard to end-for-end orientation.

Cross references to related applications

The ornamental design of the tote box herein disclosed is the subject matter of copending application for design patent Ser. No. D. 4,993, filed Dec. 12, 1966, now abandoned.

Background of the invention

I.

This invention relates to the field of tote boxes such as are generally used in the loading and transporting of packaged goods from a wholesale establishment or warehouse to a retail store such as a supermarket or the like.

II.

Such tote boxes are now frequently made of one of the plastics. Many designs have been provided whereby the full tote boxes may be stacked one upon another and whereby the empty tote boxes may be nested one within another for return to the starting point in order to conserve space in transport and in interim storage. Generally, such boxes have been of the open top type and the cooperating stacking elements at the tops and bottoms of the boxes have been asymmetrical so that in one position of orientation stacking is accomplished and it is necessary to rotate one box either 90° or 180° with respect to the other to permit nesting. Thus, whether the boxes are being stacked or nested regard must always be had to the end-for-end orientation of the boxes.

Summary

The tote boxes of the present invention are provided with separate lids. With the lids removed, the boxes nest one within another and the separate lids which are substantially flat may simply be stacked together. Thus, the space requirements for storage and empty return are reduced. The boxes nest within each other without regard to end-for-end orientation since they are symmetrical.

With the lids in place, the boxes may be stacked one upon another; and the stacking elements at the top of one box cooperate to hold the lid in place, and the recessed upper side of the lid constitutes a seat to fit the bottom of another box stacked thereon. The lid may be placed on the box without regard to end-for-end orientation and means are provided to releasably seal a lid to a box whereby pilferage may be readily detected.

Brief description of the disclosure

FIG. 1 is a top plan view of a tote box according to the invention.

FIG. 2 is an end elevational view of the same.

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FIG. 3 is a fragmentary cross sectional view on an enlarged scale taken on the line 3-3 of FIG. 2.

FIG. 4 is a fragmentary cross sectional view on an enlarged scale taken on the line 4-4 of FIG. 1.

FIG. 5 is a side elevational view of two tote boxes according to the invention in nesting relation.

FIG. 6 is a side elevational view of a lid.

FIG. 7 is a top plan view of a lid.

FIG. 8 is a fragmentary cross sectional view on an enlarged scale taken on the line 8-8 of FIG. 7.

FIG. 9 is a fragmentary cross sectional view on an enlarged scale taken on the line 9-9 of FIG. 7.

FIG. 10 is a fragmentary side elevational view of two tote boxes according to the present invention with a lid on the lower box supporting the upper box.

FIG. 11 is a fragmentary cross sectional view on an enlarged scale taken on the line 11-11 of FIG. 10.

FIG. 12 is a fragmentary cross sectional view on an enlarged scale of a box with the lid in place taken through the center of one of the end walls.

FIG. 13 is a view similar to FIG. 12 but taken through the center of the opposite end wall.

Description of the preferred embodiment

The tote box disclosed herein is made of a suitable plastic although it will be understood that it could be made of sheet metal or other suitable material. Basically the box is generally rectangular in horizontal cross section and has side walls, end walls and a bottom. The bottom is of smaller dimensions than the top so that the side and end walls slope downwardly and inwardly. Referring more particularly to the drawings, the side walls are shown at 10 and the end walls at 11. Since the box is completely symmetrical, there is no need to distinguish between the two side walls. The bottom is indicated at 12 and in the particular embodiment disclosed it has a grid-like construction as best seen in the lower left-hand corner of FIG. 1 and in the fragmentary view of FIG. 4. It will preferably be provided with strengthening ribs but the specific structure of the bottom does not constitute a part of the present invention. In some applications a solid bottom wall may be desirable and it is within the scope of the present invention to make the bottom solid. As perhaps best seen in FIG. 11, the box is provided with a peripheral outwardly directed flange 13 and a downwardly extending flange 14. As best seen in FIGS. 2 and 5, a plurality of buttress members 15 extend downwardly below the flange 14 and provide limiting stops when one box is nested within another. Extending upwardly from the flange 13 are a plurality of stacking elements 16. When two boxes according to the invention are nested as best seen in FIG. 5, the buttress members 15 of the upper box rest on the stacking elements 16 of the lower box to prevent the upper box from becoming jammed in the lower box. It will be noted that the buttress members 15a at the end walls of the box are slightly longer than the buttress members 15 for the reason that the box does not have stacking elements 16 at its ends. Therefore the buttress members 15a are longer than the members 15 by the height of the stacking elements 16. The elements 15a simply rest upon the flange 13 at the ends of the box.

At each end of the box a slot 17 is provided substantially centrally of the end wall adjacent the top for cooperation with the lid as will be described in more detail hereinafter. Additionally, at each end wall a hand hold 18 is provided to facilitate lifting of the box. The end walls may also be provided with a label space 19 and the surface 20 of the end walls may be pebbled or roughened so that indicia may be marked thereon in chalk or the like.

The lid member is shown in FIGS. 6 to 9 inclusive. It is generally rectangular and dished. Thus, it has a generally flat surface 21 and an upwardly directed peripheral flange 22 and an outwardly extending peripheral flange 23. The flange 23 is interrupted in the central region of one end of the lid as indicated at 24 and in this region the flat portion 21 is continued outwardly to form a tongue 25. Preferably there will be a downturned flange 26 around the periphery of the outwardly extending flange 23. Some reinforcing ribs are shown in FIG. 9 but these do not constitute a part of the invention and will not be described in detail. Centrally of the flange 23, at the end of the lid opposite the tongue 25, a slot 27 is provided and a cooperating slot 28 is provided in the flange 13 at each end of the box proper. The flange 23 is provided with the slots 29 to cooperate with the stacking elements 16.

Thus, it will now be clear that since the box proper is completely symmetrical with respect to the location of the stacking elements 16, and in having a slot 17 and a slot 28 at each end, the lid, which is non-symmetrical, can be placed on the box without regard to end-for-end orientation. In placing the lid on the box, the tongue element 25 is engaged in one of the slots 17 and the other end of the lid is then lowered so that the stacking elements 16 pass through the slots 29 of the lid and the slot 27 of the lid comes into alignment with the slot 28 of the box. The purpose of the slots 27 and 28 is that a suitable sealing member may be passed through the slots and sealed so that it will be ruptured if the lid is removed. In this way, pilferage of contents of the box is discouraged. The lid of course is removed simply by raising up the end of the lid opposite the tongue 25 and sliding the tongue 25 out of the respective slot 17.

The configuration of the bottom 21 of the lid and the sloping walls 22 is such that the bottom of another tote box may be seated therein as clearly shown in FIG. 11.

With boxes and lids according to the present invention in contrast to the conventional nesting-stacking tote boxes, it is unnecessary to pay attention to the end-for-end orientation either for application of a lid to a box or for stacking one box upon another with the lids in place or for nesting one box within another when the lids are removed. It will also be clear that when the boxes are nested, the separate lids neatly nest with each other and take up minimum space for storage.

It will be understood that numerous modifications may be made without departing from the spirit of the invention and no limitation is intended which is not specifically set forth in the claims which follow.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A tote box of generally rectangular shape in horizontal cross section, having side and end walls and a bottom, said side and end walls sloping inwardly from top to bottom, said box at the top of its opposed side walls having upstanding stacking elements and adjacent the top of each end wall having a central slot, said box being nestable with like boxes, and a lid for said box, said lid being flat and having an upstanding peripheral flange interrupted in the central portion of one end of said lid, and having in said central portion an outwardly extending tongue, and having a peripheral flange extending outwardly from the upper edge of said upstanding flange, said outwardly extending flange having slots adapted to mate with said stacking elements, said extending tongue being engageable at the central slot at either end of said box, said upstanding flange being nestable within said box and said outwardly extending flange adapted to rest on top of the box, said box being stackable on a like box with lid in place.

2. The article of claim 1, wherein said box is provided around the periphery of the top with a plurality of spaced outwardly extending buttress members adapted, when said box is nested in a like box, to rest on said stacking elements of said like box to limit the degree of nesting.

3. The article of claim 1, wherein said box at the top has a peripheral outwardly extending flange, a slot in said flange substantially centrally of each end of said box, and said lid at its end opposite said tongue having a like slot, the slot of said lid being aligned with the slot in the outwardly extending flange on said box at one end when said lid is assembled to said box, whereby a sealing element may be passed through said aligned slots to discourage pilferage from said box.

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