Dec. 1, 1964 C. D. KEIM, JR 3,159,328

CASE FOR CONTAINERS SEVERABLE TO FORM TRAYS

Filed Feb. 6, 1963 2 Sheets-Sheet 1

Fig. 1.

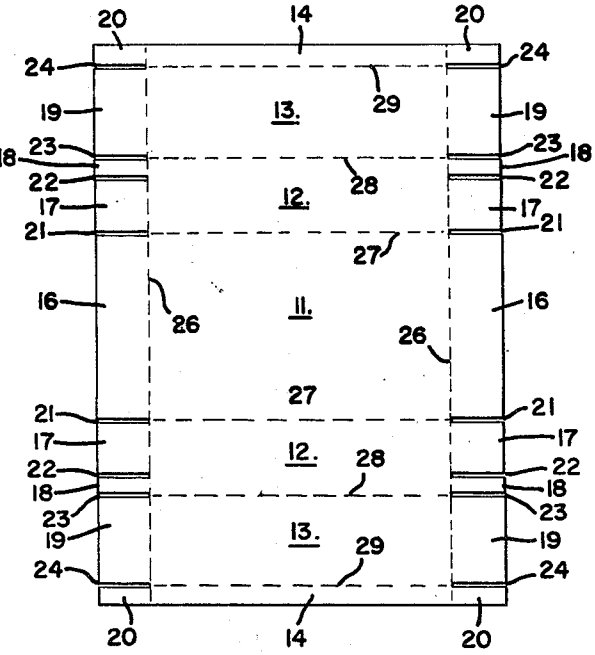
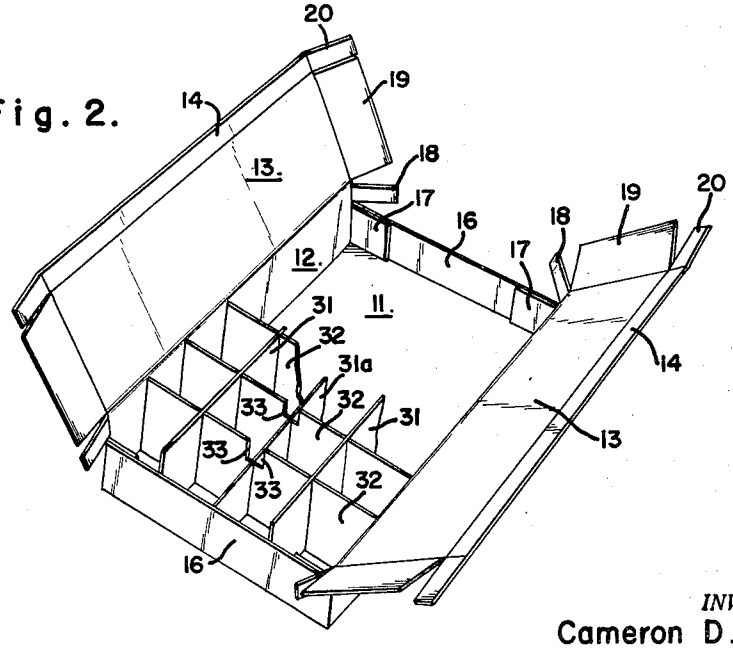


Fig. 2.



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Fig. 6

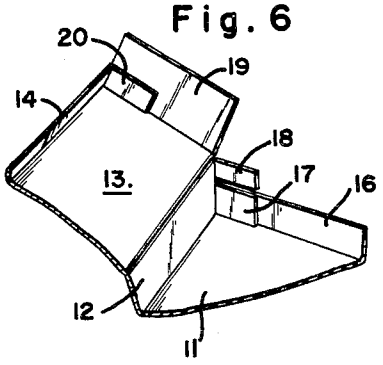


Fig. 3.

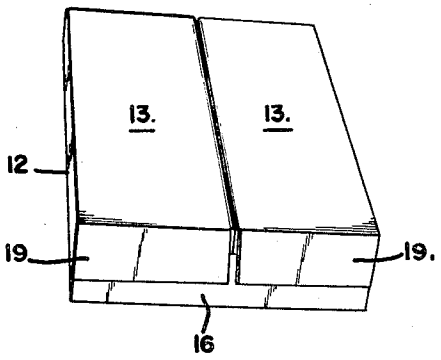


Fig. 4.

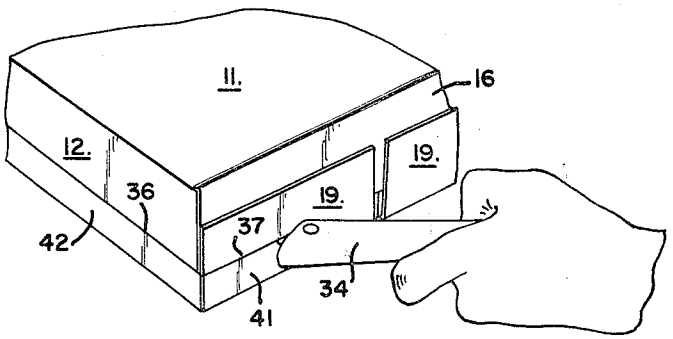


Fig. 7.

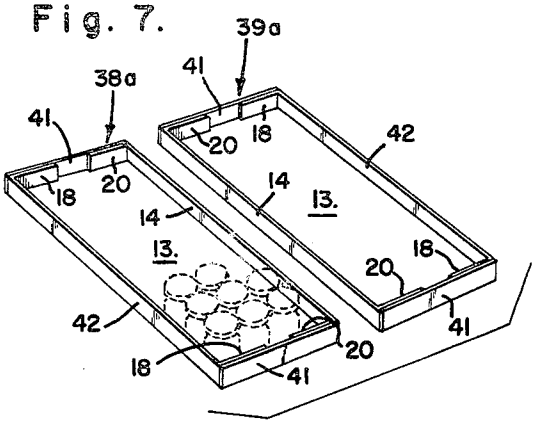
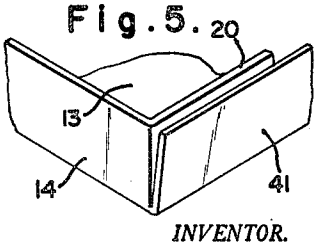


Fig. 5.



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United States Patent Office 3,159,328 Patented Dec. 1, 1964

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CASE FOR CONTAINERS SEVERABLE TO FORM TRAYS

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This invention relates to a new and improved case for containers severable to form trays. More particularly the invention relates to a shipping case of the type used to transport merchandise such as glass and plastic jars and cans and other containers to a retail store and wherein the case is cut down to form trays used to assist in stocking shelves and display racks.

A feature of the present invention is the fact that the shipping case as initially manufactured is itself severable to form the trays for the purpose intended. The remainder of the shipping case may then be used as a carry-out box for the customer.

A particular feature and advantage of the present invention is the forming in the end flaps of slots in addition to those conventionally cut to facilitate folding of the end of the case blank and side flaps, which slots coincide with a portion of the line of severance along which the case is subsequently to be cut to separate the trays from the major portion of the case. Thus, by means of conventional box making equipment, a standard case may be modified in accordance with this invention.

A particular feature and advantage of the present invention relates to the retailing of small containers, such as those in which baby foods are packaged, and further relates to more rapid shelf stocking methods to aid the salesman or store manager in merchandising such products. Although various techniques have been adopted to expedite shelf stocking, these have entailed certain problems which the present invention overcomes. Large chain stores, particularly, have adopted a policy of displaying merchandise in their original shipping cases by merely cutting around the perimeter of the case somewhere near the bottom and removing the upper portion of the case and the egg crate partitions which are frequently installed to protect fragile containers. The shelf stocker then uses the resulting tray comprising what remains of the bottom of the case (with the lower portions of the sides attached) to stock the merchandise. A primary objection to this method is that where the shipping case holds a large number of containers in a single layer the shelf stocker is limited in the number of individual facings he can set up on the retail sales shelf. Thus for a case holding 24 containers packed 4 x 6, the choice is to have 4 or 6 front facings. For 12 containers packed 3 x 4 in a case, the choice is 3 or 4 front facings. However, merchandise which does not move rapidly usually only merits one or two front facings on a grocery shelf and hence the use of trays formed from cases and which comprise the entire layer of the case are not readily usable as shelf stocking trays since they are too wide.

Another objection to prior methods of forming trays from shipping cases is that when the cases are short in comparison to their width (i.e. when arranged in patterns of 3 x 4 or 4 x 6) a considerable amount of corrugated board is duplicated or overlapped in the construction of the closing flaps. The type of shipping case necessary for shipping relatively squat jars requires top loading because of the necessary partitions between the fragile jars and such top loading is expensive because of overlapping or duplication of flaps.

A feature of the present invention is the fact that the case is of the regular slotted type of fabrication rather than the more expensive die cut type, and further that a minimum of corrugated board is required for the space enclosed. Further the case is a top loading, end opening shipping case with either full, partial, or meeting end flaps. Such a case has the advantage of being capable of saving a considerable amount of corrugated board while at the same time providing trays for merchandising the contents.

A further feature of the invention is the fact that the case may be manufactured on any corrugated board manufacturing equipment without substantial alteration and that the speed of fabrication of the cases is not reduced over conventional cases since there is no requirement for cuts or scores other than those used in conventional equipment for conventional case blanks.

A further feature of the invention is the cutting or slotting of certain of the end flaps so that only one thickness of material must be cut with the shelf stocker's knife at the time that the container is opened and the trays are formed.

Further features and advantages of the general construction of the present invention are set forth in Patent 3,043,490 of which the present invention is an improvement.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings in which similar characters of reference represent corresponding parts in each of the several views.

In the drawings:

FIG. 1 is a plan view of the blank from which the case is erected.

FIG. 2 is a perspective view showing the case partially erected.

FIG. 3 is a perspective view showing the case completely erected.

FIG. 4 is an enlarged, schematic, perspective view showing severing the case to form the trays and expose the contents of the case.

FIG. 5 is a perspective view showing the trays obtained by severing the case, the containers or jars being removed.

FIG. 6 is a fragmentary perspective view similar to FIG. 2 of a modified construction.

FIG. 7 is a view similar to FIG. 5 of modified trays formed in accordance with FIG. 6.

In the form of the invention shown in FIG. 1, there is provided a blank for the shipping case which is rectangular in form and dimensioned to accommodate twenty-four containers in rows of four and columns of six, it being understood that the dimensions of the case and the number of containers which it will hold are subject to considerable variation. The rectangular blank illustrated in FIG. 1 has a rectangular bottom panel 11 dimensioned in accordance with the foregoing capacity. Proceeding outwardly from the center of bottom panel 11 toward either end are rectangular side forming panel 12, a half top forming panel 13 and a tuck-in edge flap 14. The various panels are defined by transversely extending score lines 27, 28, 29 in conventional manner.

Each of the panels 11 to 14 inclusive has associated therewith at either end one or more rectangular end flaps. Thus bottom flap 11 has associated therewith end flaps 16 which have a length equal to twice the width of flap 13 and a width substantially less than the width of panel 12. Panel 12 has two end flaps 17 and 18 associated therewith. Flap 17, which is nearest panel 16, is approximately square, its dimensions being equal to the width of panel 16. The width of flap 18 is approximately 1 inch, this width being equal to the height of the edge of the tray subsequently to be formed when the case is cut cut by the shelf stocker. Panel 13 has associated there-

with end flap 19, and panel 14 has associated therewith flap 20. The various flaps are separated one from the other by slots 21 to 24 inclusive extending inwardly from the side margin to the longitudinally extending score lines 26 which defines the side edges of panels 11 to 14 inclusive, all as shown in FIG. 1. Slots 21–24 are routinely formed in standard case making machines by saw cuts and do not require dies for fabrication. It will be noted that the end flaps 16, 19 and 20 are conventional but that flaps 17 and 18 replace the conventional single end flap and hence the case differs by the extra slot 22 which divides the end flaps 17 and 18 of side 12 into two separate flaps.

The blank shown in FIG. 1 may be used to form either the container shown in FIG. 2 or that shown in FIG. 6. The difference in construction resides in whether or not end flaps 20 are glued to end flaps 19. In addition to the form shown in FIG. 6, it will be apparent that end flaps 18 may also be glued to end flaps 19, although not herein illustrated.

To erect the case, sides 12 are folded perpendicular to bottom 11 and flaps 17 are glued to flaps 16 approximately in the form shown in FIG. 2. At this time an egg crate type partition made up of longitudinally and transversely extending members 31 and 32 respectively may be installed within the case and resting on bottom 11. The use of such partitions is optional depending upon the containers to be packed. Such egg crate partitions are conventional in the box making art and well understood by those familiar with this industry. The partitions shown in FIG. 2 are conventional aside from the fact that the center longitudinal partition 31*a* is of lesser height than the other partitions 31 and notches 33 are cut in partitions 32 at the center to accommodate inward folding of the tuck-in flaps 14 as hereinafter explained.

Containers of the glass jar type or other fragile containers may be inserted in the pockets of the egg crate partition. Such containers are loaded from the top, this being a top loading case. It is desirable that the containers be inserted in inverted position since they then are in proper position on the trays to be formed. In other words, the tops of the containers should be pointed downward when packed in the containers shown in FIG. 2 so that when the trays are cut the containers are upright.

In FIG. 3 the completed case is shown. It will be apparent that the tuck-in flaps 14 have been folded at 90° angles to the half tops 13 and the notches 33 in the egg crate partitions accommodate the tuck-in flaps. End flaps 19 partially overlap flaps 16 and are glued thereto in order to close the container.

In the retail store the container may be opened in conventional fashion, preferably from one end, although it may also be opened from the top. However, where trays are to be formed the shelf stocker uses a knife to cut the case along lines 36 and 37 on the sides and ends of the case respectively. Lines 36, 37 may be marked on the container by printing, scoring or the like or tear-strip may be installed in the material at the time of manufacture as explained in said Patent 3,043,490. It will be noted that line 37 corresponds in height to the width of flap 18 and that line 36 is of a similar elevation. It will further be seen that with this construction the knife 34 need cut only through a single thickness of material at the side or end.

As shown in FIG. 5, cutting along lines 36 and 37 produces two separate trays 38, 39. The bottom of each said tray is a half top panel 13. One longitudinal side edge is tuck-in flap 14. The other longitudinal side edge 42 is formed of the material originally in panel 12 which was severed from the remainder thereof by cut line 36. Each end 41 of the tray at the outside is a portion of end flap 19 severed from the remainder of the flap by cut line 37. Immediately inwardly of the remaining portion 41 are flaps 20 and 18 respectively.

After the cutlines 36, 37 have been formed, the case is opened by pulling upward on the portion of the case remaining above said lines 36, 37. This portion of the case may be used as a carry-out container for customers as in conventional usage. The contents of the case are then exposed and the egg partitions 31, 32 may be lifted away if they have been previously installed in the case. Accordingly two trays 38, 39 are formed upon each of which rests one-half the contents of the case. Such trays may be used to transport the containers from the stock-room to the shelf and the trays themselves may be used in the shelves or bins to hold the cases while displayed and waiting sale. One of the two trays thus formed may be retained in the store room to store partial loads if desired. The trays also may be stacked on top of each other if desired.

In the modification of FIG. 6 the flap 20 is glued to the inside of flap 19 and later in the stage of the erection of the case the flap 18 is desirably glued to the inside of flap 19 although such latter gluing operation is optional. Hence, as shown in FIG. 7, the trays 38*a*, 39*a* are essentially the same as the corresponding trays shown in FIG. 5 except that the end edges of the trays are more stable because of the fact that the flaps 18 and 20 are glued to portions 14. Hence the containers are more securely held on the tray but in other respects the trays are identical.

It will further be understood that, as an additional modification, flaps 18 and 20 may be eliminated. Such construction has the advantage of easier assembly and handling on conventional box erecting equipment. The absence of such flaps would reduce the rigidity of the tray, but if the material of construction is sufficiently light and the glue sufficiently strong, such construction is satisfactory.

What is claimed is:

1. A rectangular blank for a shipping case formed of a unitary piece of material divided into a plurality of rectangular panels each having end flaps at either side thereof comprising a central bottom panel, and, proceeding outwardly at either end of said bottom panel, a side panel, a half-top panel approximately half the length of said bottom panel, and a tuck-in panel, said panels being separated from each other by transverse fold lines and being separated from their adjacent end flaps by longitudinal fold lines, said end flaps being of substantially uniform width, the lengths of the bottom, half-top and tuck-in end flaps being of the same length as their respective associated panels, each side panel at each end thereof having a first and a second side end flap, said first end flap being adjacent one end bottom end flap and being substantially longer than said second end flaps, said end flaps being separated from each other by cuts extending from the longitudinal margin of the blank inward to the adjacent longitudinal fold line.

2. A blank according to claim 1 in which the width of said end flaps is less than the length of said side panels but substantially greater than one-half the length of said side panels.

3. A blank according to claim 1 in which the lengths of said second side end flaps and said tuck-in end flaps are substantially equal.

4. A blank according to claim 1 in which the lengths of said first side end flaps are substantially equal to the width of said end flaps.

5. A shipping case formed from a blank according to claim 1 in which the several panels and end flaps are folded at approximately 90° along the several fold lines, said tuck-in panels being inserted inside the case between the adjacent inner edges of said half-top panels, said bottom end flaps being outside said tuck-in and first and second side end flaps, said half-top end flaps being outside and adhered to said bottom end flaps.

6. A shipping case according to claim 5 in which said tuck-in end flaps are adhered to the inside of said half-top end flaps.

7. A shipping case according to claim 5 in which said second side end flaps are adhered to the inside of said half top end flaps.

8. A shipping case according to claim 5 which further includes a cut line established along said side panels and said half-top end flaps at the elevation of the cuts separating said first and said second end flaps whereby said shipping case may be separated into a container and a pair of shelf stocking trays.

9. A shipping case according to claim 8 in which said tuck-in end flaps and said second side end flaps are inside said half-top end flaps.

10. A shipping case according to claim 6 which further includes a cut line established along said side panels and said half-top end flaps at the elevation of the cuts separating said first and second side end flaps whereby said shipping case may be separated into a container and a pair of shelf stocking trays.

11. A shipping case according to claim 7 which further incluudes a cut line established along said side panels and said half-top end flaps at the elevation of the cuts separating said first and second side end flaps whereby said shipping case may be separated into a container and a pair of shelf stocking trays.

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