

Sept. 1, 1964

E. D. CARKHUFF ETAL

3,146,935

LOCKING BOX TOP

Filed Oct. 29, 1962

3 Sheets-Sheet 1

FIG. 1

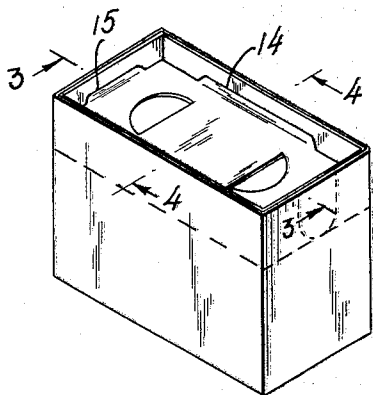


FIG. 2

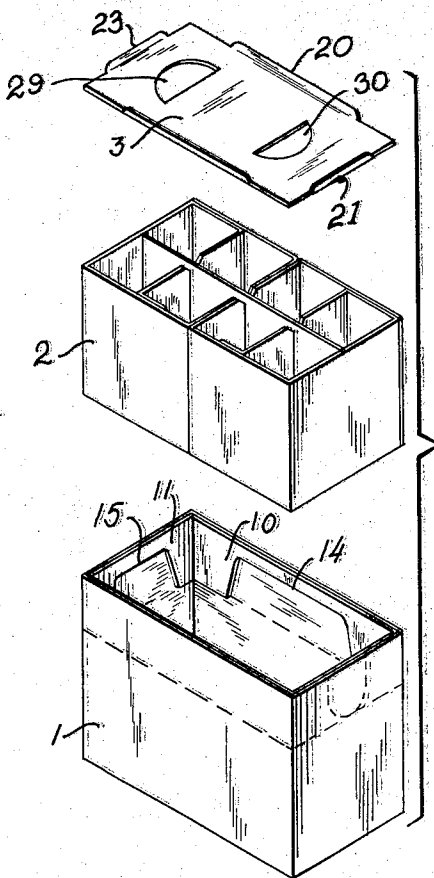


FIG. 10

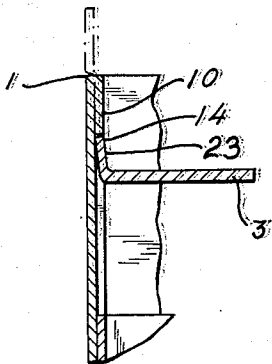


FIG. 11

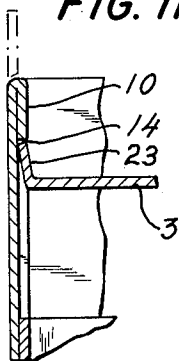
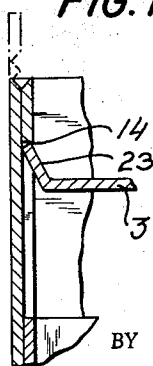


FIG. 12



INVENTORS.
EDWIN D. CARKHUFF
DANIEL J. MYERS

BY

Harvey W. Edelblute

ATTORNEY

Sept. 1, 1964

E. D. CARKHUFF ETAL
LOCKING BOX TOP

3,146,935

Filed Oct. 29, 1962

3 Sheets-Sheet 2

FIG. 3

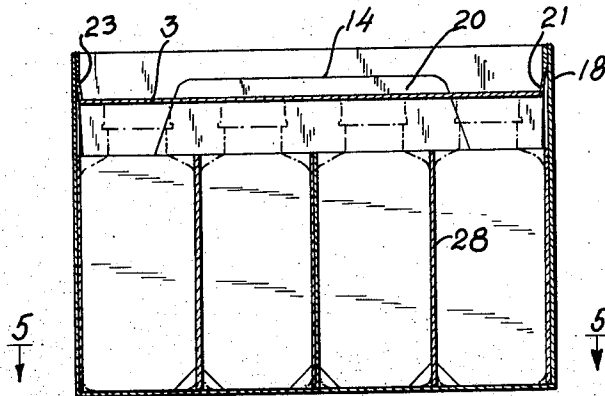


FIG. 5

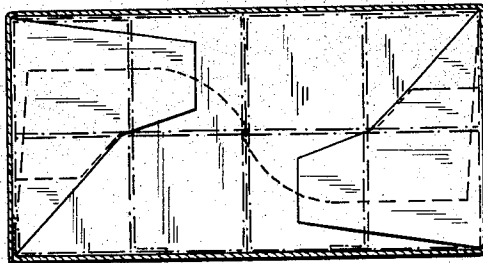


FIG. 4

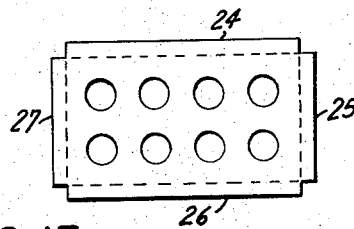
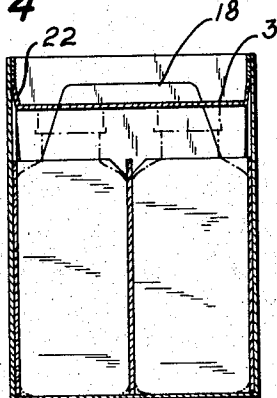


FIG. 13

INVENTORS.
EDWIN D. CARKHUFF
DANIEL J. MYERS
BY
Harvey W. Edelblute
ATTORNEY

Sept. 1, 1964

E. D. CARKHUFF ETAL

3,146,935

LOCKING BOX TOP

Filed Oct. 29, 1962

3 Sheets-Sheet 3

FIG. 6

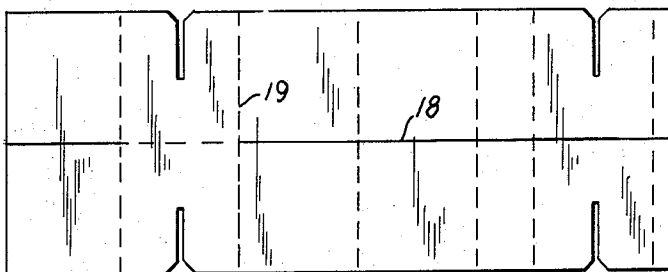


FIG. 7

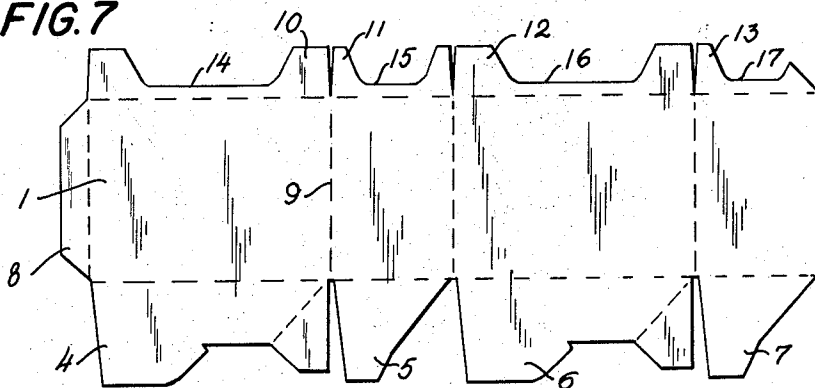


FIG. 8

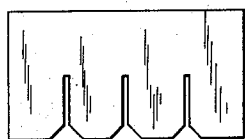


FIG. 9

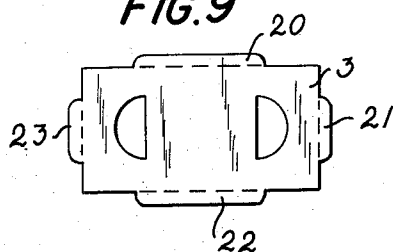
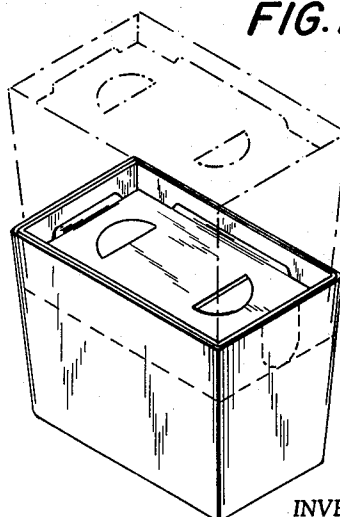


FIG. 14



INVENTORS.

EDWIN D. CARKHUFF
DANIEL J. MYERS

BY

Harvey W. Edmister
ATTORNEY

1

3,146,935

LOCKING BOX TOP

Edwin D. Carkhuff and Daniel J. Myers, Cincinnati, Ohio, assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

Filed Oct. 29, 1962, Ser. No. 233,733

6 Claims. (Cl. 229-45)

This invention relates to cartons or containers of the type commonly made of folded cardboard.

In some kinds of packaging operations it is necessary to pack a number of individual units of an article in a small cardboard carton and then place a number of these in a larger box, which serves as the ultimate shipping case. Most of the small paperboard cartons are provided with flaps which are folded down to close the carton when it has been filled. The filling of these cartons with bottles, closing the flaps, and inserting the closed cartons in larger shipping cases is usually done with automatic machinery. There are occasions, however, when it is found desirable to place the individual cartons in the larger case prior to filling the bottles or placing them in the carton. In such instances the protruding flaps which form the top closure of the carton interfere with the automatic closing mechanism and make this operation difficult or impossible. Generally, it is necessary to close the smaller cartons individually before they are placed in the shipping case.

One of the objects of the present invention is to provide a paperboard carton capable of holding a plurality of individual bottles or cans which can be placed in a larger shipping case alongside of other similar units and thereafter closed rapidly by hand or with the aid of available automatic machinery. Other objects of the invention will appear from the drawings and the following description.

In the drawings,

FIG. 1 is a perspective view of one embodiment of the container of the present invention in which the closing member is in place.

FIG. 2 is an exploded view of the container showing the component members thereof.

FIG. 3 is a vertical cross section of the container taken along the line 3-3 of FIG. 1.

FIG. 4 is likewise a vertical cross section but taken along the line 4-4 of FIG. 1.

FIG. 5 is a horizontal sectional section of the container of FIG. 1 taken along the plane represented by 5-5 of FIG. 3.

FIG. 6 is a plan view of a blank properly cut and scored for forming a partition member to fit within the carton.

FIG. 7 is a plan view of a blank properly cut and scored for forming the body of the carton.

FIG. 8 is a plan view of a cut blank which together with the blank of FIG. 6 makes up the partitioning member.

FIG. 9 is a plan view, properly cut and scored for forming the insertable closure of the container of the present invention.

FIGS. 10, 11 and 12 are enlarged cross sectional views through an upper side portion of the container showing the top member locked in place and alternate means of scoring and forming a turned down flap member which serves to hold the top in place.

FIG. 13 is a plan view of a cut and scored blank forming a variation in design of the insertable closure.

FIG. 14 is a perspective of a tapered carton made in accordance with the present invention and, showing in phantom, how these tapered boxes may be stacked.

Referring again to FIG. 2, it will be seen that the

2

novel carton of the present invention comprises a body portion 1, a partitioning member 2 and a closure member 3. The body member is cut from paperboard, pasteboard, cardboard, chipboard, or the like, as is customary in the carton-making art.

The lower flaps 4, 5, 6 and 7, FIG. 7, are of a conventional type commonly used in the manufacture of paperboard boxes intended for assembly on automatic machinery. Likewise, flap 8 is conventional and is simply a flap for gluing the carton together. The dotted lines 9 are creases pressed into the blank to provide fold lines. These elements of the container are conventional. The flaps 10, 11, 12 and 13 are cut in accordance with the present invention.

In the manufacture of the body portion of the carton of the present invention, flaps 10, 11, 12 and 13 are turned down and glued along the inner wall of the carton. These provide relatively long bearing edges 14, 15, 16 and 17 on the inner surface of the carton which is parallel with the upper edge 15 of the box which extend a distance of at least one-half the width of the carton. At least two of these bearing edges 14, 16 or 15, 17 are provided, on opposite sides of the carton. However, as shown in the drawings, there may be four of these bearing edges so that the inserted closure member is supported on its sides and ends.

Portions of these flaps may extend down into the carton beyond the bearing edge when glued in place so as to make for easier gluing on automatic machinery. If desired, the turn-down portion could be in one continuous downwardly extending flap which would provide a bearing surface for the inserted top around its entire periphery.

The partitioning member 2 is composed of the blank elements shown in FIGS. 6 and 8. The solid lines 18 represent cuts which extend through the cardboard blank and the dotted lines 19 represent scored portions. The manufacture and assembly of these partitioning members are well known in the art and need not be elaborated upon.

The closure member 3 of the present invention may be cut and scored as shown in FIG. 9. The flaps 20, 21, 22 and 23 are cut so as to fit in the space provided by the turned-in upper edges 14, 15, 16 and 17 of the body member.

An alternate design for the closure member is shown in FIG. 13. In this design the flaps 24, 25, 26 and 27 extend the entire width and breadth of the closure member to provide greater holding power. It will be understood that in using a closure of this kind the flaps 10, 11, 12 and 13 of FIG. 7 would be omitted so that the bearing edges 14, 15, 16 and 17 would extend over the entire periphery of that section which is turned in and glued to the inner wall of the carton. The circular holes shown in this view make it possible for the necks of the bottles to stick through the closure. This has the advantages of making it possible to see that bottles are within the container in proper number and to provide a surface for marking the selling price or other identification. These holes also allow the bottles to extend the full height of the carton, thus making it possible to stack filled cartons on top of each other.

Although the shape of the closure member will be substantially the same and have the same dimensions as the open top of the carton, it may be advantageous in certain instances to make it slightly smaller so that the turned up edges will form a small angle with the sides of the container as shown in greater particularity in FIG. 12. Although this type closure is not as strong as the type shown in FIG. 10, it has the advantage of making removal of the closure easier.

FIG. 3 is a cross sectional view in elevation indicating how bottles would be loaded in the carton. The walls of

the partitioning member are shown in cross section, 28. The dimensions of the carton and the height of the bottles are such that when the closure 3 is pressed into the open top it comes to rest on the tops of the bottles as shown. The flaps 20, 21, 22 and 23 tend to spring outwardly and fit into the space provided in the glued-down flaps 10, 11, 12 and 13 as shown in several of the figures. This provides a very effective closure which can be removed only with difficulty.

If desired, the closure member 3 may be provided with openings 29, 30 (FIG. 2) in which the thumb and forefinger can be inserted to remove the closure. Also the upper section of the body member may be cut or scored as shown in FIGS. 1, 2 and 14 to provide tear lines by means of which the entire top of the box may be torn off when it is desired to remove the bottles from the carton.

Although FIGS. 3 and 4 show the closure member resting on the tops of the bottles within the container, a seat for the closure member may be provided in some other manner as, for instance, by increasing the height of the partition member 2 so that the closure will rest on the upper edge of the partition rather than on the bottle tops.

Also, as indicated in the discussion with reference to FIG. 13, tops of the bottles may protrude through holes formed in the closure member. When the tops of the bottles are flush with the top of the carton, several cartons may be stacked on top of each other. Also, closing the container in which they are packed would serve to hold them in place more effectively than would the light material of the closure member alone.

The cutting and scoring of the cardboard blanks and the assembly and gluing of them to form cartons is done on conventional machinery in accordance with processes common in the art and a detailed description of these steps appears to be unnecessary. As will be obvious from the foregoing, the cartons described may be filled with bottles or other containers and several of these may be placed in larger packing cases. Closure of the individual cartons is accomplished by simply pressing the closure member 3 down into the open top until the upwardly protruding flaps slip into place alongside the inner walls of the container and below the bearing edges provided by the turned-in flaps of the main body of the carton. The shipping cases may then be closed in conventional manner.

We claim:

1. An end closure for cartons having four side walls comprising holding means formed by flaps of carton side wall material turned in and fastened to the inner side

walls of the carton to form a bearing ledge extending a substantial distance across the upper side walls of the carton on the inner side and parallel to the top edge thereof, a flat insert of substantially the same shape as a cross section parallel to the edge of the carton at a point near said ledge having flaps extending upwardly from the outer periphery of the four edges of the flat surface of said insert a short distance upwardly and over a distance of at least one half the periphery of the flat insert engaging the inner side walls of the carton and abutting against the bearing ledge provided by the turned-in flaps of the side walls of the carton over a substantial length thereof.

2. An enclosure for cartons in accordance with claim 1 in which the flat insert is slightly smaller than a cross section of the carton at a point near said ledge so that the upwardly and outwardly extending flaps thereof meet the inner wall of the carton at a small angle.

3. An enclosure for cartons in accordance with claim 1 in which the flat insert has holes adapted to permit objects within said carton to protrude.

4. An enclosure for cartons in accordance with claim 1 in which the flat insert has a plurality of holes through which fingers may be inserted to remove the flat closure member.

5. An enclosure for cartons in accordance with claim 1 in which the turned-in side walls of the carton extended substantially all of the distance around the inner periphery of the carton, the lower most edges thereof forming a holding edge substantially parallel with the top of the carton and extending downwardly a short distance therein and in which the flat insert has upwardly and outwardly extending flaps of substantially the same length and width of the insert so as to provide holding means engaging the downwardly extending ledge of the carton around its entire periphery.

6. An enclosure for cartons in accordance with claim 1 which is also characterized by having a folded partition within said carton of substantially the same height as the lower most side of the flat insert when it is in position and the upwardly and outwardly extending flaps thereof are engaging the downwardly extending ledges on the inner walls of the carton whereby said flat insert is held in position.

References Cited in the file of this patent

UNITED STATES PATENTS

2,129,462	Brown	Sept. 6, 1938
2,418,248	Denton	Apr. 1, 1947
2,685,401	Guyer	Aug. 3, 1954