

Aug. 24, 1965

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3,202,337

PAPERBOARD CONTAINER

Filed Nov. 23, 1962

3 Sheets-Sheet 1

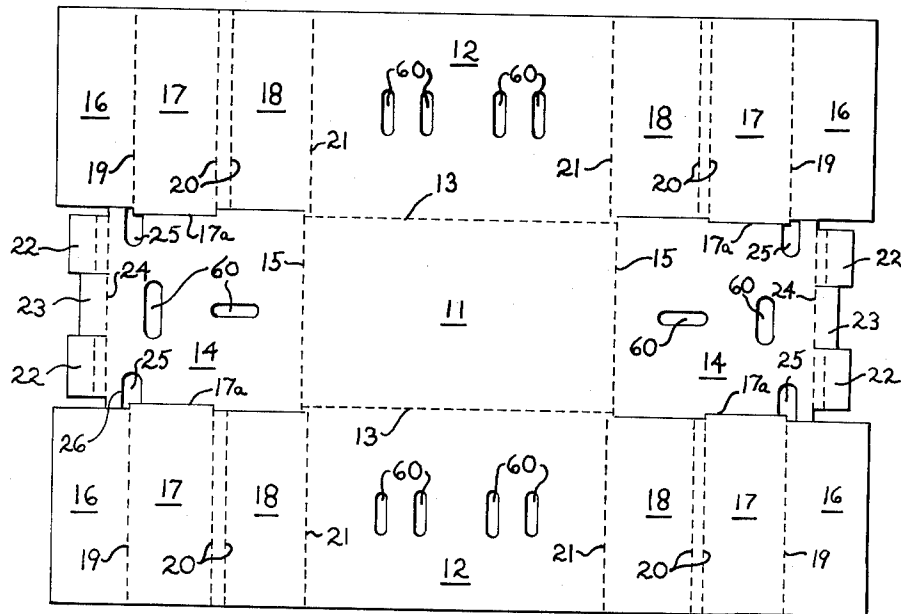


FIG. 1

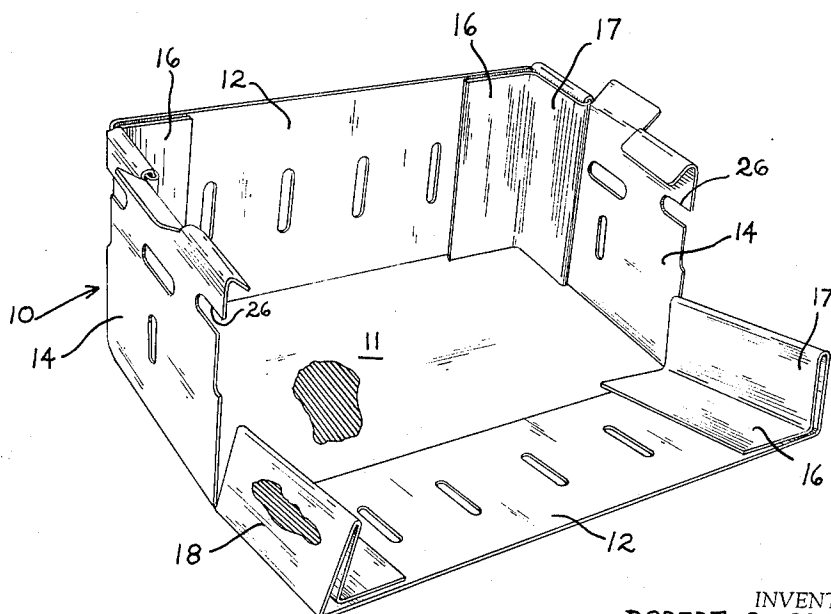


FIG. 2

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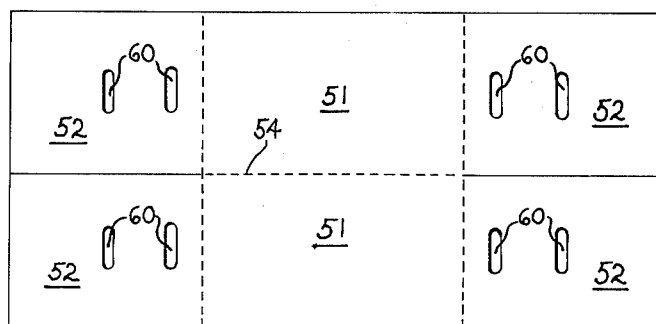


FIG. 3

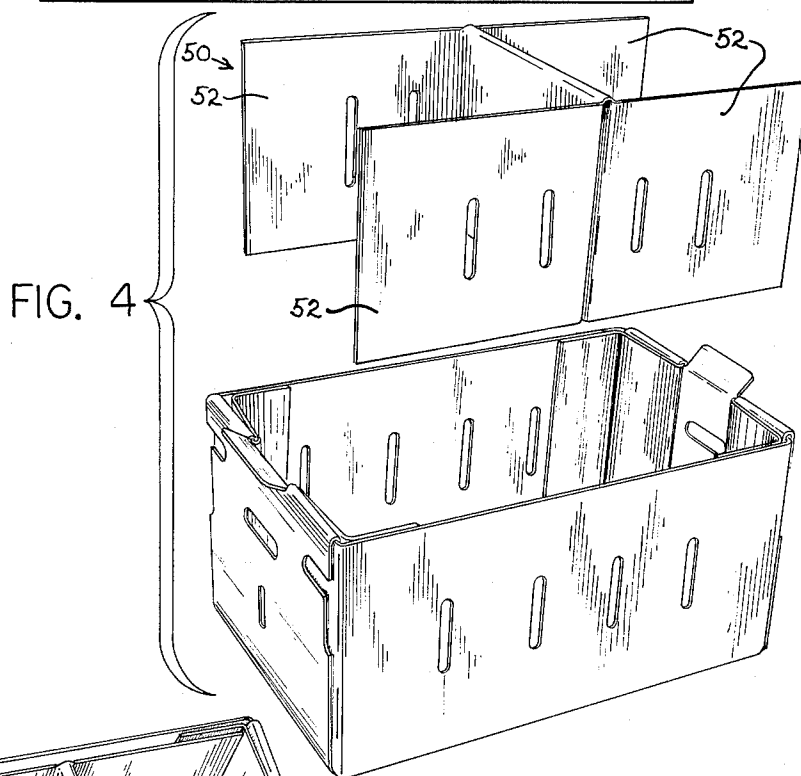


FIG. 4

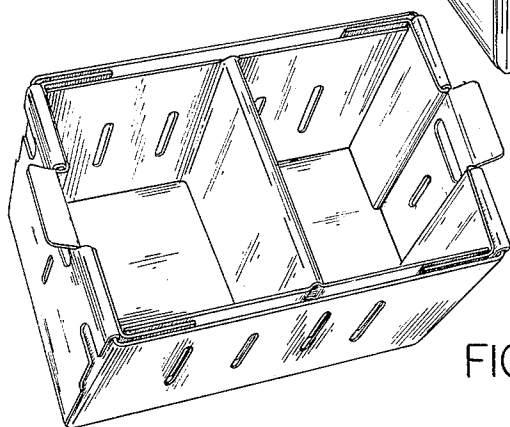


FIG. 5

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3 Sheets-Sheet 3

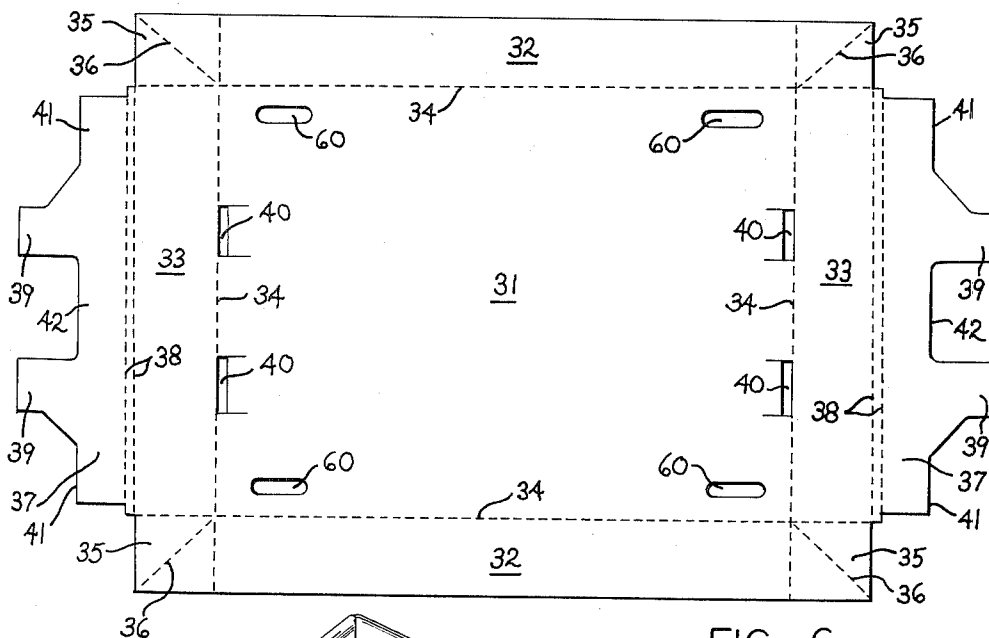


FIG. 6

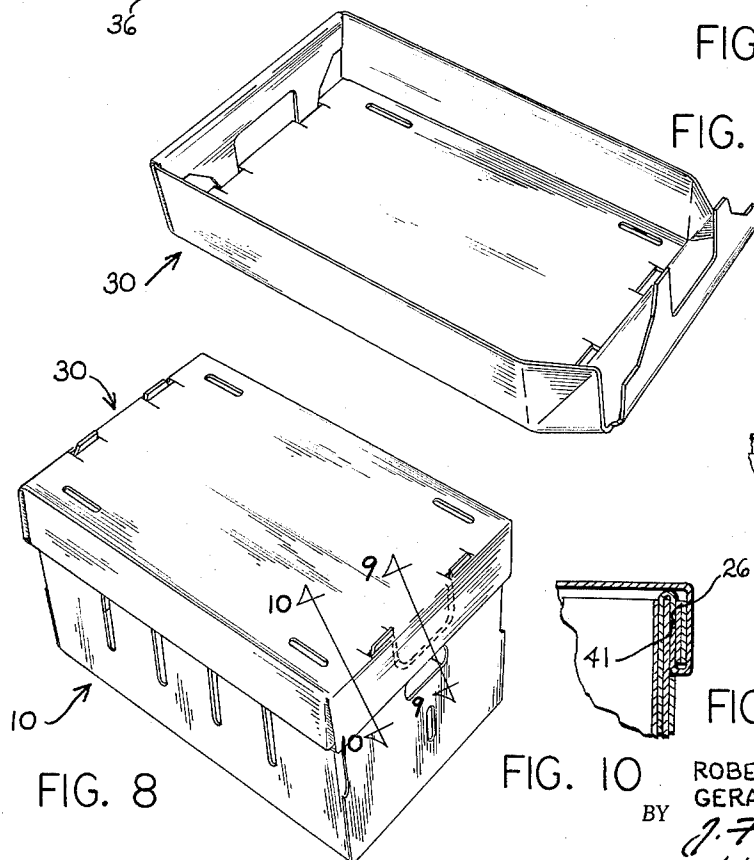


FIG. 7

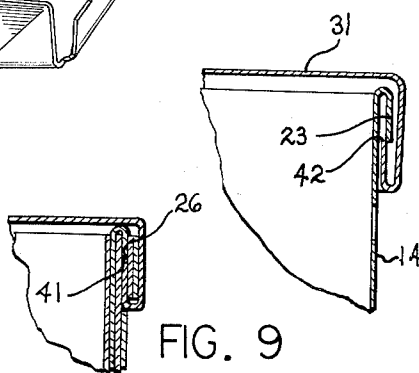


FIG. 8

FIG. 10

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3,202,337

## PAPERBOARD CONTAINER

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1 Claim. (Cl. 229—32)

This invention relates to a paperboard container.

This invention is directed to the provision of a paperboard container having exceptional stacking strength. A feature of the container of this invention, in addition to its high stacking strength, is that it is erectable from a one-piece paperboard blank that is formed with a minimum of waste material. Another feature of this container is that it is self-locking and therefore, can be assembled in the field without fastening means. A further feature of the container of this invention is that it is provided with a cover that locks automatically with the body portion of the container. A further feature of the container of this invention is that when it is formed from corrugated paperboard, each corner of the container is provided with two plies of material which extend the full height of the container and which have their corrugations running vertically.

The container of this invention is especially adapted to be used in the produce trade where it is desirable to erect the container in the field without fastening means, and where the containers are stacked ten and twelve high and subjected to conditions of high temperature and humidity.

Other objects and advantages of this invention will become apparent from the following description taken in conjunction with the accompanying drawings wherein are set forth, by way of illustration and example, the preferred embodiments of this invention.

FIG. 1 is a top plan view of the blank used to form the container of this invention;

FIG. 2 is a perspective view showing the container of this invention partially assembled;

FIG. 3 is a top plan view of the blank used to form the divider;

FIG. 4 is a perspective view showing a divider about to be placed in a container;

FIG. 5 is a perspective view showing a divider in place in a container;

FIG. 6 is a top plan view showing the blank used to form the cover;

FIG. 7 is a perspective view showing the cover partially assembled;

FIG. 8 is a perspective view showing an assembled container;

FIG. 9 is a sectional view taken along the line 9—9 of FIG. 8 showing the relationship of the locking elements of container and cover; and

FIG. 10 is a sectional view taken along the line 10—10 of FIG. 8 showing the relationship of other locking elements of the container and cover.

In its preferred form the container of this invention comprises three components, a container or body portion 10, a divider 50, and a cover 30. Each of the components is preferably formed from corrugated paperboard. The weight of linerboard and flute-size are selected with regard to the needs of a particular application.

Referring to FIG. 1, the blank from which the container 10 is erected comprises a blank of corrugated paperboard that is slit and scored to form a series of foldably connected panels. The blank comprises a bottom panel 11. A pair of opposed side wall panels 12 are foldably connected to opposed marginal edges of the bottom panel 11 along score lines 13. A pair of opposed end wall panels 14 are foldably connected to the bottom panel 11 along score lines 15. A series of three corner flaps

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16, 17 and 18 which are serially connected together along score lines 19 and double score lines 20, are connected to the end edges of the side wall panels 12 along scores 21. Each of the end panels 14 has foldably attached to its end edge a pair of spaced-apart locking flaps 22 and a locking tab 23, all of which are secured thereto along score lines 24.

The container 10, as well as the cover 30 and the divider 50 which will be described hereinafter, are provided with ventilating apertures 60 which are arranged in a conventional, suitable manner to permit ventilation of the contents of the container. These ventilating openings may be omitted where there is no need to ventilate the product being packaged.

The container 10 is assembled by folding the end panels 14 and the side wall panels 12 to standing positions. The corner flaps 18 are folded normal to their associated side wall panel. The corner flaps 17 are reversely folded into parallel relationship with their associated corner flaps 18. The corner flaps 16 are folded normal to their associated corner flaps 17 and into parallel relationship with their associated side wall panels 12. The locking flaps 22 are reversely folded to lie between the corner flaps 17 and 18 thereby locking the end and side wall panels together. Referring to FIG. 2, it may be noted that the corrugations of the paperboard are placed so that they extend vertically through the corner flaps and side wall panels. The second and third corner flaps form, in effect, a right angle corner support for each corner of the container. The locking tabs 23 are outwardly folded into parallel relationship with the exterior surfaces of their associated end panels. They interlock with portions of the cover 30 in a manner to be described hereinafter. The end panels 14 have cutouts 25 formed in their marginal side edges. These cutouts interlock with portions of the cover in a manner to be described hereinafter.

Referring to FIG. 3, the divider 50 is formed from a blank of corrugated paperboard that is scored and slit to form a plurality of foldably connected panels. The divider 50 comprises a pair of center panels 51 foldably connected along a score line 54. Each of the center panels 51 has foldably attached to its end edges a pair of wing panels 52. The divider is erected by reversely folding the center panels along the score line 54 into parallel relationship and the wing panels normal to their respective center panels.

Referring to FIG. 4, the divider is telescoped into the container, with the wing panels being parallel to the side wall panels and frictionally engaging the corner flaps. The corner flaps are thereby positively maintained in place. It is to be understood of course that other conventional types of dividers may be utilized with this invention. The divider can also be omitted if desired. The corner flaps can be maintained in place by the contents of the container, or by extending slightly the lower edges of the corner flaps 17 at 17a. See FIG. 1. If desired, the corner flaps 16 can also be secured to the side wall panels 12 by conventional fastening means. FIG. 5 shows the assembled relationship between the divider and container.

Referring to FIG. 6, the cover 30 is erected from a blank of corrugated paperboard that is slit and scored to form a series of foldably connected panels. The cover 30 comprises a central panel 31 which has foldably attached to its marginal edges pairs of opposed side and end flaps 32 and 33 respectively, along score lines 34. The side and end flaps are foldably connected along their marginal edges to common corner flaps 35. The corner flaps 35 are bisected by a diagonal score 36 to provide a bellows-type connection between the side and end flaps, 32 and 33, respectively. A pair of inner wall members 37 are foldably secured along double score lines 38 to

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the end flap 33. The inner wall members have projecting tabs 39 that are adapted to interlock with slots 40 formed in the central panel 31. The inner wall members 37 are also formed with locking edges 41 and 42 that interlock with portions of the container 10

Referring to FIG. 7, the cover 30 is assembled by folding the side and end flaps 32 and 33 to an upstanding position, normal to the central panel 31. The corner flaps 35 are reversely folded about the score lines 36 and positioned interiorly of the cover and parallel to the end flaps 33. The inner wall members 37 are reversely folded about the double score lines 38 and the tabs 39 interlocked with the slots 40.

The cover 30 is telescoped over the container so as to close the upper end of the container. The cover is maintained in place by two separate types of locking arrangements. Referring to FIG. 9, an initial lock is created by the locking tab 23 engaging the locking surface 42 of the cover. A second locking arrangement is provided by inter-engagement of the locking surfaces 41 of the cover with one of the edges 26 provided by the cutouts 25 provided in the marginal edges of the end panels 14.

It is to be noted that while the preferred embodiment of the container of this invention has been illustrated there are various modifications that would be readily apparent to a person skilled in the art. For example, the divider and cover are representative of a number of conventional designs that would be appropriate. Also, it would be obvious to vary the dimensions and relative sizes of the various panels of the container to suit a particular application.

It will, of course, be understood that various details of construction may be modified through a wide range without departing from the principles of this invention, and it is not, therefore, the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claim.

We claim:

A corrugated paperboard container comprising:

(a) a bottom panel;  
(b) four side wall panels foldably connected to said bottom panel and folded to upstanding relationship to form a continuous rectangular side wall for said container;

(c) means for securing adjacent pairs of side walls together, said means including a first corner flap foldably secured to a side edge of one of said pair of side wall panels, a second corner flap foldably secured to the side edge of said first corner flap, a third corner flap foldably secured to the side edge

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of said second corner flap, said corner flaps extending the full height of said container;

(d) said first corner flap folded into parallel contact with the interior surface of the other of said pair of side wall panels, said second corner flap reversely folded into parallel contact with said first corner flap, and said third corner flap folded into parallel contact with said one of said pair of side wall panels, said corner flaps thereby forming a corner support for said container;

(e) a locking tab foldably secured to the upper free edge of the other of said pair of panels and folded to interlock between said first and second corner flaps;

(f) closure means for closing the upper end of said container; and

(g) an H-shaped divider disposed within said container and having each of its parallel sides disposed parallel to said one of said adjacent pairs of side wall panels and closely adjacent thereto and extending substantially the full length thereof, whereby portions of said divider are in positive engagement with said corner flaps and act as retaining means for retaining said corner flaps in said folded positions.

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