United States Patent

[11] **3,545,666**

[72] Inventor **Pranas Visvydas**
South Gate, California

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[73] Assignee **Container Corporation of America**
Chicago, Illinois
a corporation of Delaware

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[54] **CONTAINER HAVING CORNER POST FOR TOP TO BOTTOM STACKING**
5 Claims, 7 Drawing Figs.

[52] **U.S. Cl.** **229/34,** 229/31, 229/49
[51] **Int. Cl.** **B65d 5/22,** B65d 57/00
[50] **Field of Search** ..... 229/34, 34(A,B, HW), 31(I), 49(stack)

[56] **References Cited**

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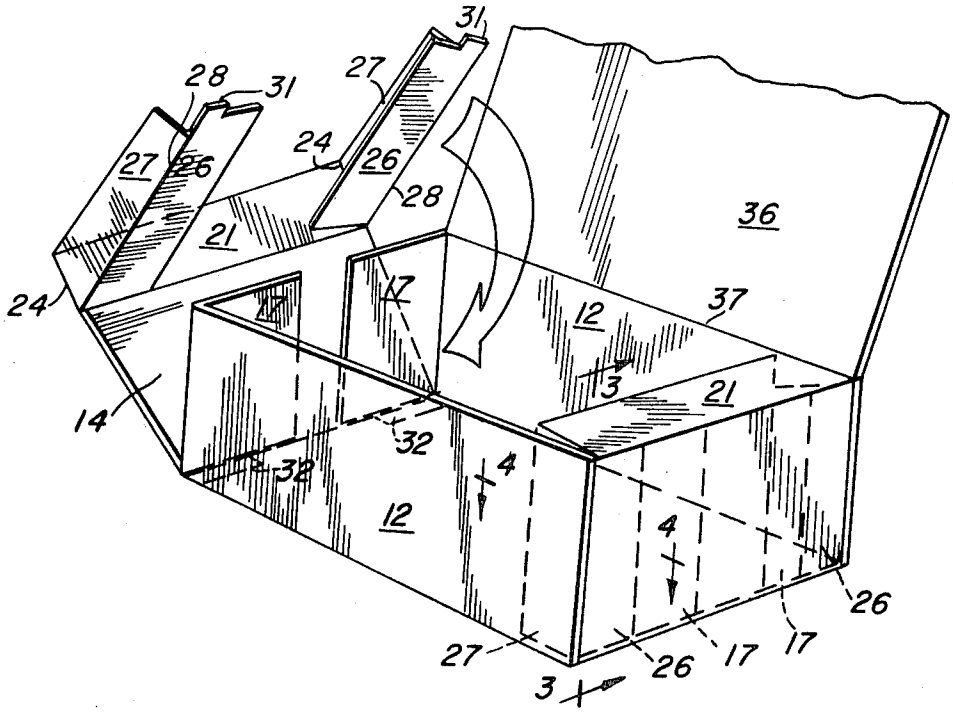
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Primary Examiner—Joseph R. Leclair
Assistant Examiner—Steven E. Lipman
Attorney—Carpenter, Ostis & Lindberg

ABSTRACT: A self-locking container formed from a unitary blank of paper board and characterized by a bottom panel with side and end panels connected to the bottom panel, the ends of the side panels having fold-in flaps extending along the inside of the end panels, each end panel being coextensive with a top panel which when folded into position is coplanar with the top edges of the side and end panels, each top panel having at each end thereof a corner post member capable of being folded along a score line and when in position at the folded juncture of the side panels and flaps thereof providing stiffening of the container. The lower ends of the corner post member may be arranged to enter slots or cut and crushed scores in the bottom panel. The top panels provide good stacking of the container.



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SHEET 1 OF 2

FIG - 5

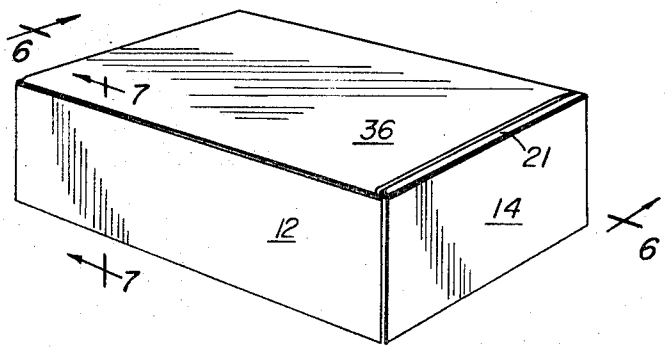


FIG - 6

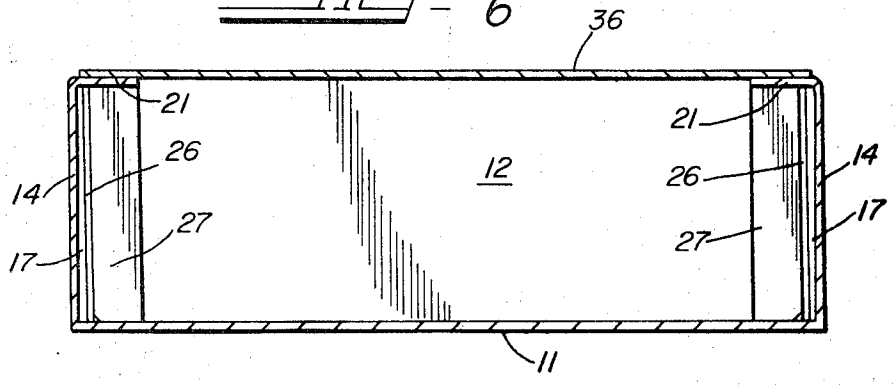
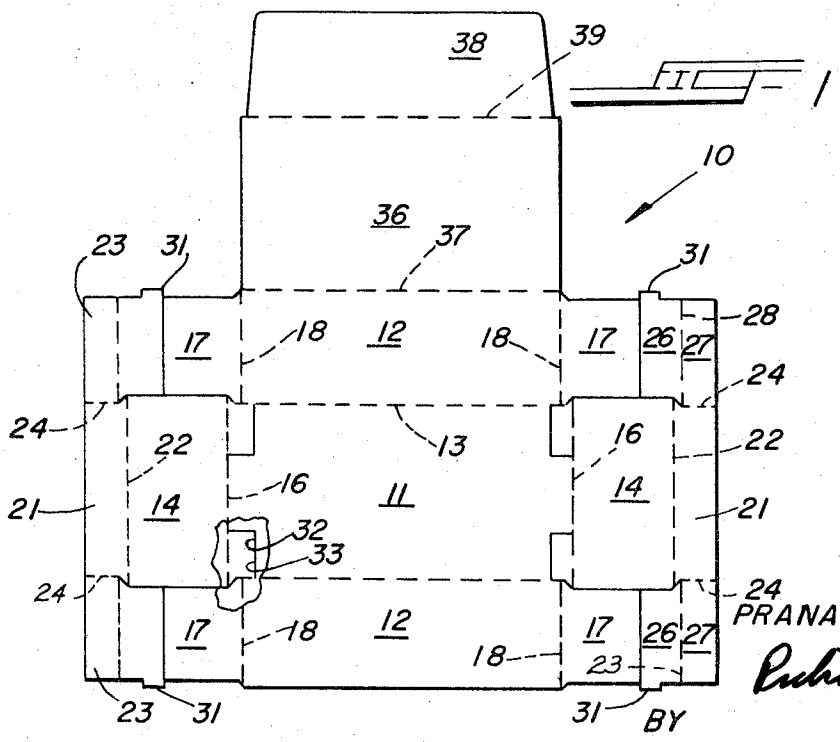


FIG - 1



INVENTOR.
PRANAS VISVYDAS
BY
Richard W. Carpenter
Atty.

FIG. 2

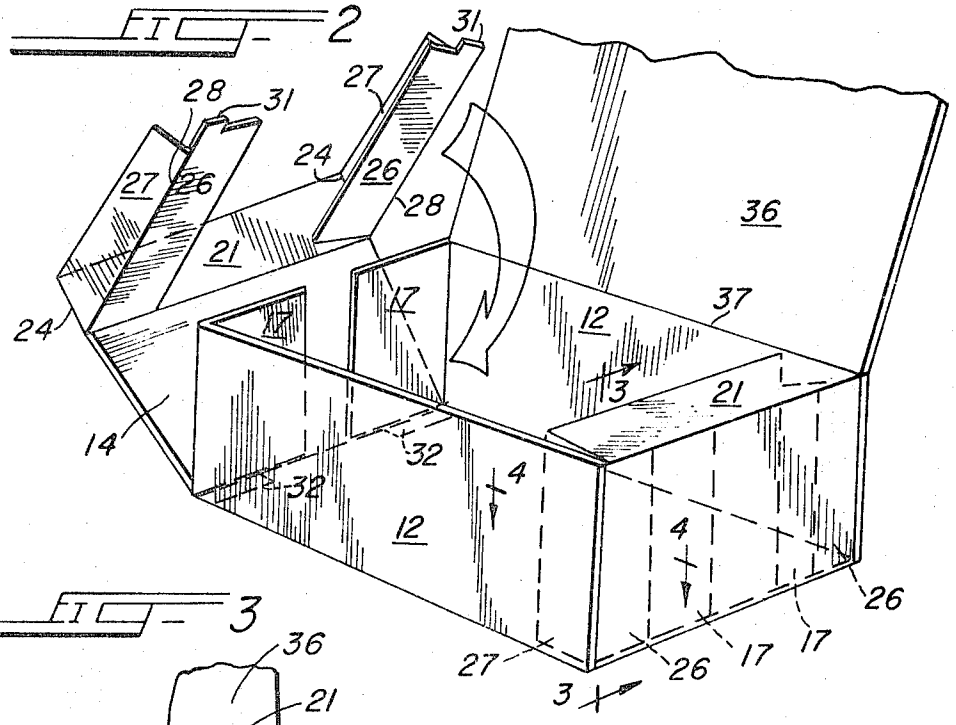


FIG. 3

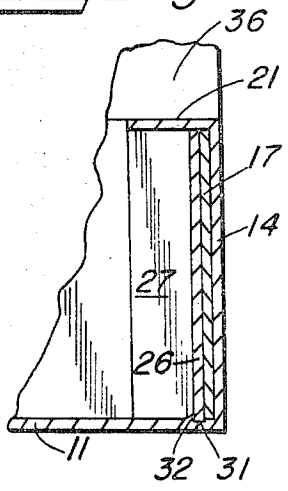


FIG. 4

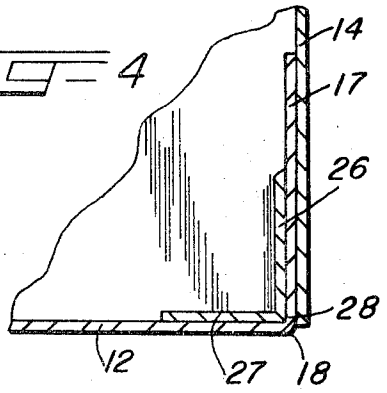
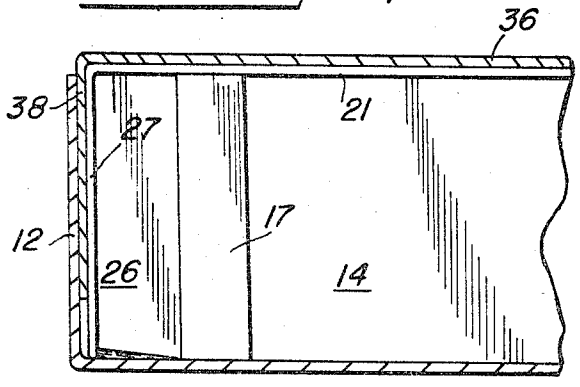


FIG. 7



INVENTOR

PRANAS VISVYDAS

Richard W. Carpenter

BY Atty.

ECL

CONTAINER HAVING CORNER POST FOR TOP TO BOTTOM STACKING

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to a self-locking container formed from a unitary blank of paperboard or fibre, and more particularly to a container having provision for stiffening the corners thereof to provide good stacking properties.

2. Description of the Prior Art

Heretofore, structures for stiffening containers for vertical stacking have required glued flaps (Fallert 2,857,090), a multiplicity of extra panels requiring extra paperboard (Agler, 2,963,211) or extra thicknesses of board stock in the end panels (Morgan 3,116,867).

SUMMARY OF THE INVENTION

The structure according to the present invention comprehends a corner post for a self-locking container, said corner post having elements flanking both the side and end panels and having bearing contact with a top panel and the bottom panel of the container, to the end that the container has good stacking properties.

DRAWINGS

FIG. 1 shows a unitary cut and scored paperboard blank for forming into a container according to the present invention;

FIG. 2 is an isometric view showing some of the steps in setting up the container;

FIG. 3 is a vertical section taken along the line 3–3 of FIG. 2 looking in the direction of the arrows;

FIG. 4 is a horizontal section taken along the line 4–4 of FIG. 2 looking in the direction of the arrows;

FIG. 5 is an isometric view of the container with the closure flap thereof in position;

FIG. 6 is a vertical section taken essentially along the line 6–6 of FIG. 5 looking in the direction of the arrows; and

FIG. 7 is a vertical section taken along the line 7–7 of FIG. 5 looking in the direction of the arrows.

A unitary blank of paperboard or similar material for forming the container according to the present invention is denoted by the reference numeral **10** and comprises a bottom panel **11**, opposed side panels **12** foldably connected to bottom panel **11** along score lines **13**. Opposed end panels **14** are foldably connected to bottom panel **11** along score lines **16**.

Each of the side panels **12** is provided at the ends thereof with flaps **17** foldably connected thereto along score lines **18**. Flaps **17** are adapted to be folded at right angles to side panels **12** along the inside of the end panels **14** when the latter are folded to erect position.

End panels **14** are each provided with a top panel **21** hingedly attached thereto along a score line **22**. Each end of the top panels **21** has a corner post extension **23** therefrom, the latter including a side element **27** foldably connected to top panel **21** along a score line **24**. An end element **26** is hingedly attached to a side edge of element **27** along a score line **28** and extends downward adjacent the inside of a related side panel flap **17**.

Elements **26** and **27** provide structure for lending stiffness to the corners of the container as well as good stacking qualities. Moreover, elements **26** and **27** provide additional support for the top panel **21** when the same is in the setup position seen in the several views.

In the setup position of the container, element **26** is adapted to stand along the flap **17** of sidewall **12**, while element **27** is adapted to stand along the inner face of sidewall **12**, as seen more particularly in FIG. 4.

Structure is provided for locking element **26** in position if desired, and to this end the bottom panel **11** may be scored and crushed as at **32** and **33**, (commonly known as a "Walker Lock") at the corners thereof, while element **26** is provided with a locking tab **31** adapted to be in locking engagement with "Walker Lock" **32**.

It will be seen from the description thus far, that the elements **26** and **27**, together with the side panel **12** and the flaps **17** thereof, provide extra thickness layers at the corner of the container. By reason of element **27** having good bearing against bottom panel **11**, and element **26** having good bearing both against bottom panel **11** and against the underside of top panel **21**, good vertical stiffness is provided.

Top panel **21** also enables the container to be stacked one atop another. If desired, the container may be open-topped for display of the contents thereof. If desired, however, it can be provided with a top closure panel **36** foldably connected by a fold line **37** to one of the side panels **12**. A tuck-in flap **38** is foldably connected along a fold line **39** to closure panel **36**.

I claim:

1. A self-locking container formed from a unitary blank of foldable paperboard and including a bottom panel, opposed side panels and opposed end panels folded to upstanding position along score lines at the edges of said bottom panel:

a. said opposed side panels having flaps hingedly attached at the ends thereof and folded inwardly at right angles thereto against the inside of their corresponding end panels;

b. said opposed end panels each having a top panel hingedly attached and folded inwardly from the upper edge thereof into a position substantially coplanar with the top edges of said side and end panels;

c. each of said top panels having at each end thereof a corner post member comprising:

i. a side element hingedly attached to the side edge of said top panel and extending downwardly along the inside of a related sidewall;

ii. an end element hingedly attached to a side edge of said side element and extending downwardly adjacent the inside of a related side panel flap;

d. each of said elements extending the entire distance between said top and bottom panels and providing a corner post for support of said top panel and stacking strength of said container.

e. each of said end elements being provided with locking means at the lower end thereof engageable with said bottom panel for holding said flaps and said panel in position.

2. A self-locking container according to claim **1**, wherein said bottom panel is provided with an opening for reception of the lower end of said end element to lock the latter to said bottom panel.

3. A self-locking container according to claim **1**, wherein said bottom panel is scored and crushed in the corners thereof for reception of the lower end of said end element to lock the latter to said bottom panel.

4. A self-locking container according to claim **3**, where said end element has a locking tab extending therefrom adapted to be received in the scored and crushed corners of said bottom panel.

5. A self-locking container according to claim **1**, wherein at least one of said elements has the upper and lower extremities thereof in bearing contact with the underside of said top panel and the said bottom panel.