Dec. 24, 1968 P. STERN 3,417,909

BOX CONSTRUCTION

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FIG. 1

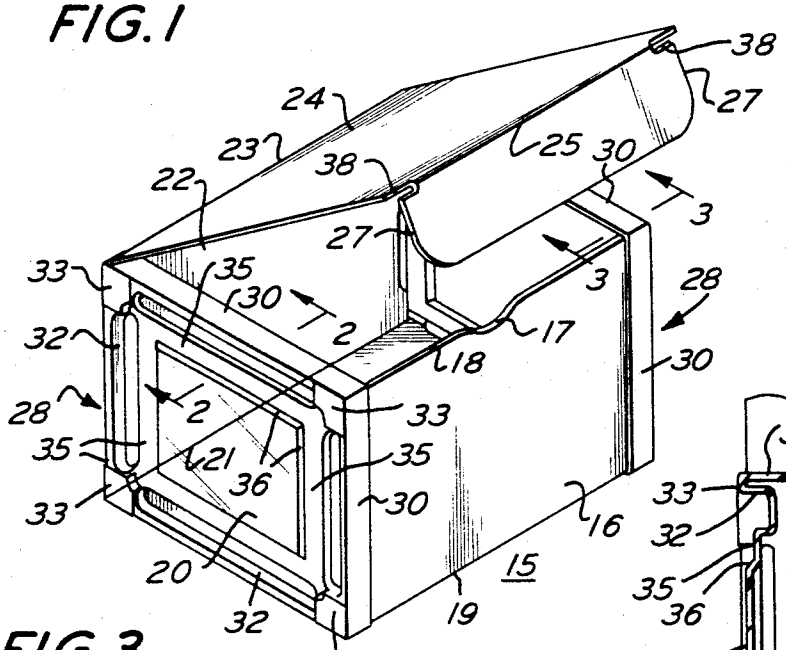


FIG. 2

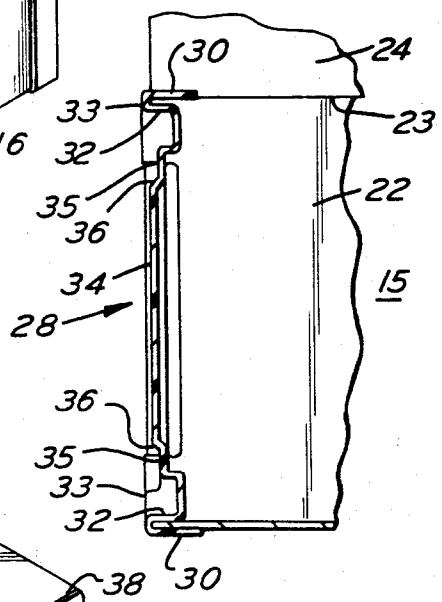
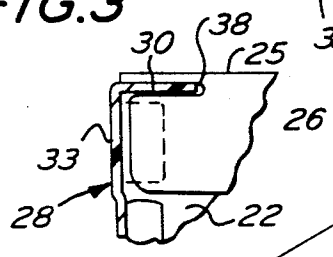


FIG. 3



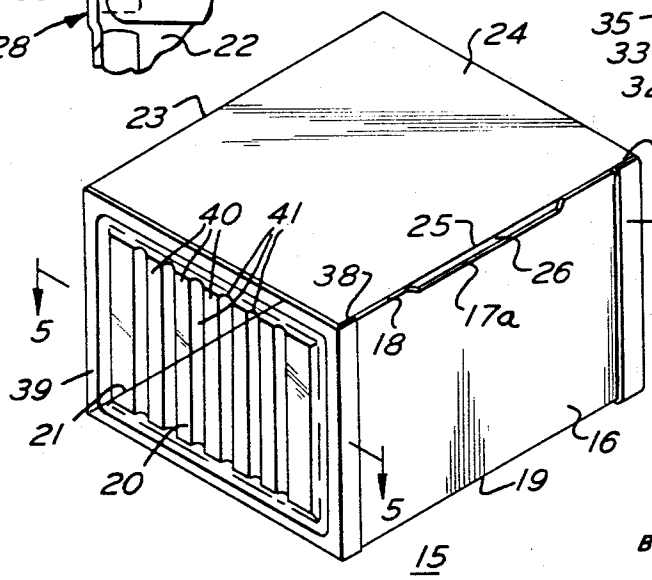


FIG. 4

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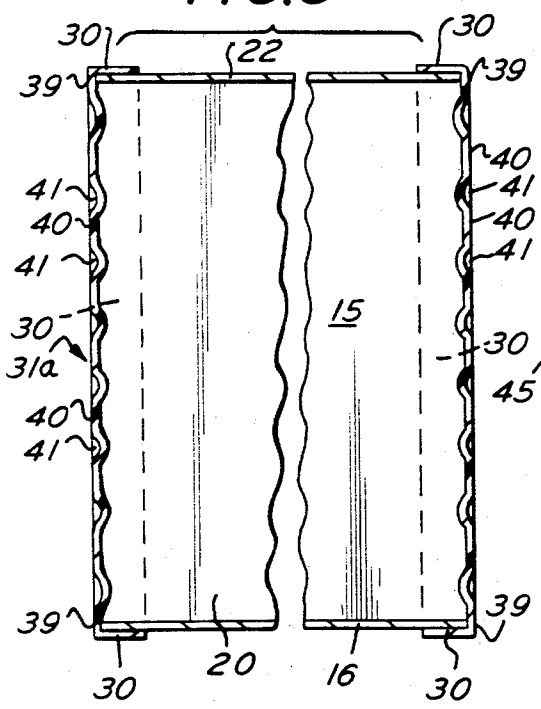
ATTORNEY

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BOX CONSTRUCTION

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FIG. 5



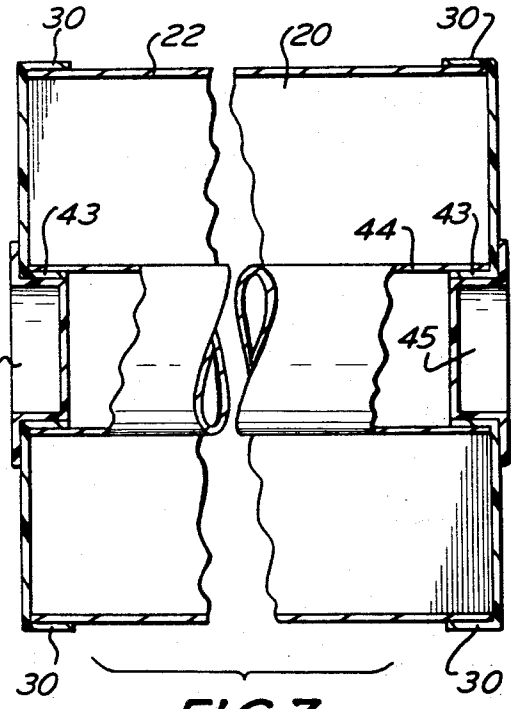
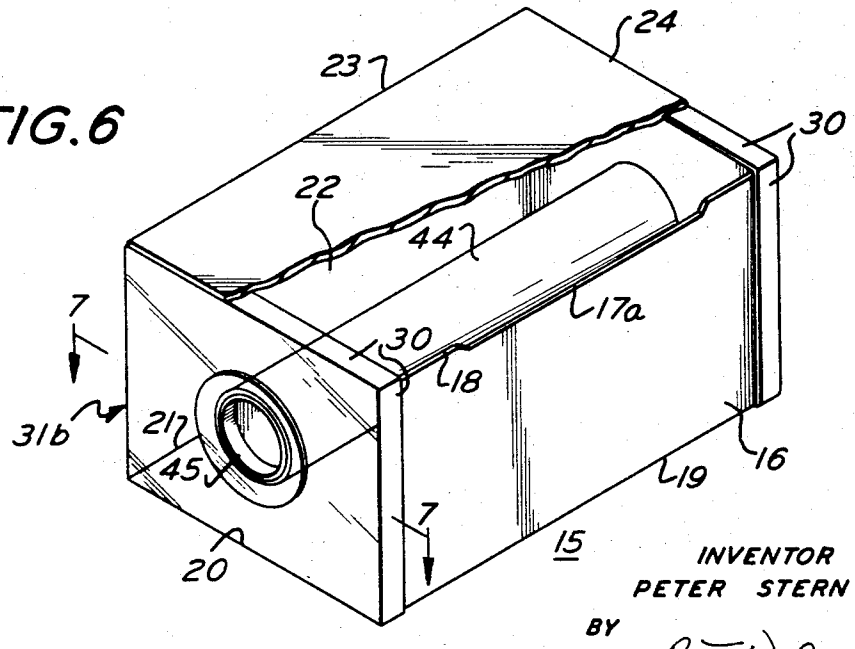


FIG. 7

FIG. 6



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BOX CONSTRUCTION

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FIG. 8

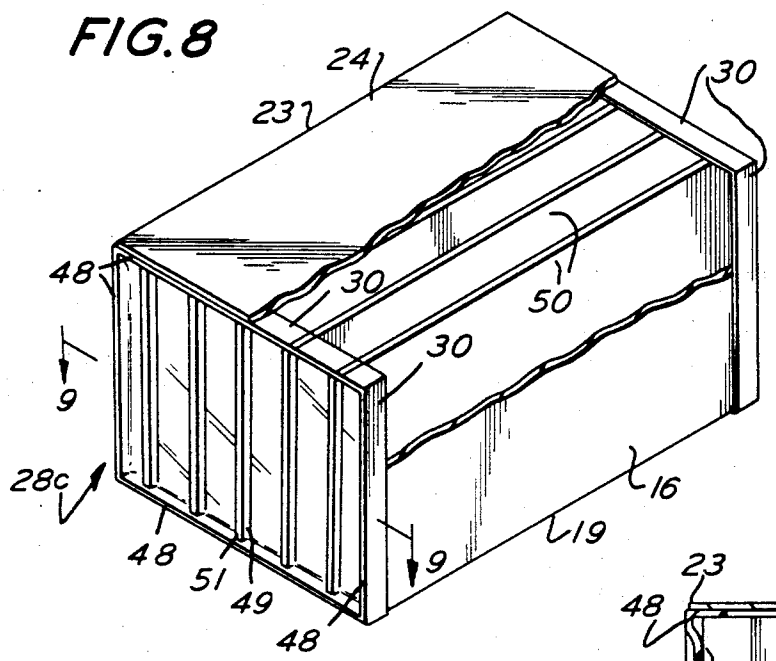
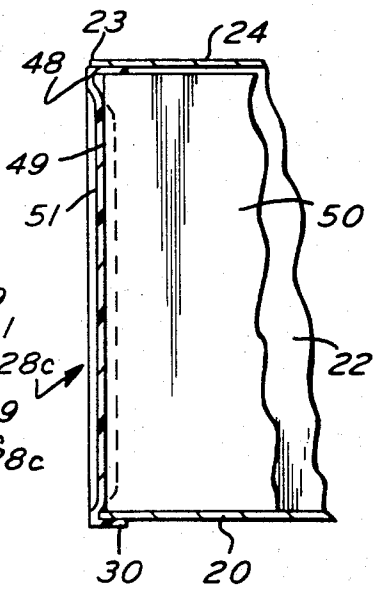


FIG. 10



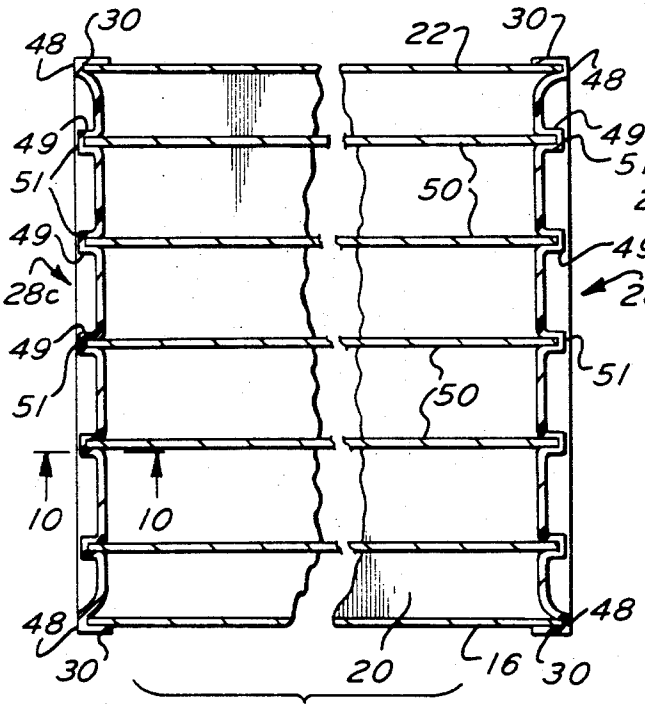


FIG. 9

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3,417,909

BOX CONSTRUCTION

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Filed May 18, 1967, Ser. No. 639,325
2 Claims. (Cl. 229—15)

ABSTRACT OF THE DISCLOSURE

Composite boxboard-plastic receptacles employing a boxboard body with relatively rigid transparent or translucent synthetic plastic ends, adhesively secured to the body, with the ends shaped to facilitate assembly and optionally having interior mounting provisions for articles, or partitions.

Background of the invention

Field of the invention.—This invention relates to composite boxboard-plastic receptacles and more particularly to improved end constructions adherently secured to the receptacle body.

Description of the prior art.—It has heretofore been proposed to provide receptacles having a body with end caps adhesively or otherwise secured to the body. Usually such caps were of the same material as the body so that it was not possible to provide a transparent end panel. The prior receptacles of this type also, lacked adequate strength, such as has been available with receptacles having metal edges or stays.

It has also been proposed to provide a receptacle having end caps applied on a body but if a hinged lid or wall was desired no satisfactory locking provisions were available.

The receptacles with end caps applied on a body had numerous other disadvantages among which was the difficulty of assembly in quantities and by automatic machinery.

Summary of the invention

It is the principal object of the present invention to provide a receptacle having a central body of boxboard, one portion of which is hinged for interior access, and having adherently secured end caps of synthetic plastic material, the end caps permitting viewing of the interior, if desired, and optionally having provisions for stiffening and for interior engagement with other objects.

It is a further object of the present invention to provide, in a receptacle of the character aforesaid, of improved access along the edges of the end caps for sealing.

It is a further object of the present invention to provide, in a receptacle of the character aforesaid, of interior mounting provisions for articles to be packaged.

It is a further object of the present invention to provide, in a receptacle of the character aforesaid, of end caps with inturned portions for supporting a cylinder which carries articles within the receptacle.

It is a further object of the present invention to provide in a receptacle of the character aforesaid, end caps having portions contributing to an auxiliary or additional receptacle.

It is a further object of the present invention to provide, in a receptacle of the character aforesaid, end caps which have portions supporting interior partitions.

Other objects and advantageous features of the invention will be apparent from the description and claims.

Brief description of the drawing

The nature and characteristic features of the invention will be more readily understood from the following

description taken in connection with the accompanying drawings forming part thereof, in which:

FIGURE 1 is a view in perspective of a receptacle in accordance with the invention;

FIG. 2 is a fragmentary vertical sectional view, taken approximately on the line **2—2** of FIG. 1;

FIG. 3 is a fragmentary sectional view taken approximately on the line **3—3** of FIG. 1;

FIG. 4 is a view in perspective of another receptacle in accordance with the invention;

FIG. 5 is a horizontal sectional view, taken approximately on the line **5—5** of FIG. 4;

FIG. 6 is a view in perspective of another receptacle in accordance with the invention, parts being broken away to show the details of construction;

FIG. 7 is a horizontal sectional view taken approximately on the line **7—7** of FIG. 6;

FIG. 8 is a view in perspective of another receptacle in accordance with the intention;

FIG. 9 is a horizontal sectional view, enlarged, taken approximately on the line **9—9** of FIG. 8; and

FIG. 10 is a fragmentary sectional view taken approximately on the line **10—10** of FIG. 9.

It should, of course, be understood that the description and drawings herein are illustrative merely, and that various modifications and changes can be made in the structure disclosed without departing from the spirit of the invention.

Like numerals refer to like parts throughout the several views.

Description of the preferred embodiment

Referring now more particularly to FIGS. 1, 2 and 3 of drawing, the receptacle there shown includes a body **15**, preferably of boxboard, finished on one face and cut and creased to the desired size and shape.

The body **15**, as herein shown, has a rectangular front wall panel **16** having a cut out **17** on one marginal edge **18** to facilitate opening and closing.

The front wall panel **16** has connected thereto along a crease line **19**, a rectangular bottom wall panel **20**.

The bottom wall panel **20** has, connected thereto along a crease line **21**, a rectangular rear wall panel **22** and the rear wall panel **22** has, connected thereto along a crease line **23** which serves as a hinge, a rectangular top wall panel **24**.

The top wall panel **24** has connected thereto, along a crease line **25**, a front flap **26**. The front flap **26** is adapted to be disposed inwardly along the front wall panel **16** in the closed condition of the receptacle and has set backs **27** at each side.

The ends of the tube provided by the wall panels **16**, **20**, **22** and **24**, are preferably closed by end elements **28** which may be of dished shaped described, and preferably are of synthetic plastic material premolded before assembly to the body **15**. The end elements **28** can be of any desired color or colors, and embossed or debossed for descriptive purposes, if desired. Any desired synthetic plastic material may be used provided it is capable of being adhered to the material of the body **15** as hereinafter referred to. One suitable material is a vinyl plastic.

The end elements **28** may be of transparent or opaque material, dependent upon the field of use, but for certain purposes at least one end element **28** is transparent.

As shown in FIGS. 1, 2 and 3 the end elements **28** have outer rims **30** one or more of which may function as a hinged glue flap which may be connected at their meeting locations, may be separated at the crease line **23** where the top wall panel **24** extends from the rear wall panel **22** at each end to permit the hinging of the top wall panel **24** at this location with the top wall panel **24** disposed above

the contiguous rim **30** in closed position, or if connected at their meeting locations may extend into slits (not shown) at the ends of the crease line **23**.

The rims **30** extend from and are integral with a central panel portion **31** which preferably includes inner rim portions **32** parallel to the rims **30** and spaced therefrom to receive the ends of the wall panels **16**, **20** and **22**. The central panel portions **31** also includes corner panels **33**, and a central panel **34** framed by flat marginal panels **35** and inclined margins **36**. This shape adds to the rigidity of the end element **28**. The elongated simultaneous access, available to rim **30** and inner rim portions **31** permits of the application of heat and pressure therealong from one or both sides as hereinafter pointed out.

The crease line **25**, at its ends, has slots **38** to provide with the set backs **27**, a lock from the top wall panel **24** by engagement of the rims **30** in the slots **38**, the flap **26** resiliently yielding to permit locking and release.

Referring now to FIGS. 4 and 5 the body **15** there shown is similar to that previously described except for a different shape of cutout **17***a* in the marginal edge **18**.

The central panel portion **31***a* preferably has framing panel portions **39** and vertically extending alternating flat face portions **40**, in the same plane as or inwardly of the plane of the panel portions **39**, and inwardly extending arcuate grooves **41**, to increase the stiffness.

Referring now to FIGS. 6 and 7, the central panel portion **31***b* preferably has a central inwardly extending circular flange **43** which with the corresponding flange **43** at the opposite end provides a support for a cylindrical tube **44**. The tube **44** can serve as a support for various articles (not shown) such as bandages, tape, ribbon or the like. The interior of the tube **43** can be closed, to provide an auxiliary receptacle, by end closure caps **45** in frictional engagement in the flange **43**.

Referring now to FIGS. 8, 9 and 10, the body **15** there shown, is similar to that previously described but different end elements **28***c* are employed.

The end elements **28***c* have rim portions **30** and an outer frame **48** against the inner face of which the ends of the wall panels **16**, **20** and **22** engage.

The central panel portion **31***c* of the end elements **28***c* have a plurality of hollow vertical ribs **49** which receive slidably inserted vertical spacers **50** for separating the interior into a plurality of compartments. The outer faces **51** of the ribs preferably are in a plane inwardly of the plane of the frame **48**.

The end elements **28** in their various configurations as shown in FIGS. 1 to 10, inclusive, are preferably applied to the body **15** in any desired manner and are secured

thereto by a suitable adherent action either derived from the plastic, if a plastic capable of heat sealing is employed, or by the use of a suitable heat responsive adhesive which may be applied over the entire surface of the box body **15** for use at the location engaged by the rims **30**, or by stripes applied along those portions of the body **15** engaged by the rims **30**, the rims **30** being secured either exteriorly or interiorly as desired.

In the form of receptacle shown in FIGS. 4 to 10, inclusive, an interior mandrel (not shown) may be employed so that upon the application of heat and pressure on the rims **30** at their locations in engagement with the wall panels **16**, **20** and **22**, a firm adherent engagement will be obtained at these locations.

The construction shown in FIGS. 1, 2 and 3, permits of squeeze engagement of the inner rim portions **32** and rims **30** for the application of heat and pressure for obtaining the desired adherence.

It will thus be seen that receptacles have been provided for carrying out the objects of the invention.

I claim:

1. A receptacle comprising

a body of boxboard having a plurality of panels, providing enclosing walls on four sides,

end elements of synthetic plastic at the ends of said body having rims respectively adhesively engaged with a plurality of said wall panels,

one of said panels being hinged with respect to said body and being movable into receptacle closing relation with respect to said other walls,

said end elements having inwardly extending mounting portions, and

an interiorly disposed tubular member carried on said mounting portions.

2. A receptacle as defined in claim **1** in which end closures are provided for said tubular member.

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MARTHA L. RICE, *Primary Examiner.*

U.S. Cl. X.R.

206—45.34, 47, 52; 229—23