United States Patent [19]

Lai et al.

[11] **3,877,631**

[45] **Apr. 15, 1975**

[54] **PAPER CONTAINER**

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[21] Appl. No.: **396,549**

[52] **U.S. Cl.** ..... **229/41 C;** 229/23

[51] **Int. Cl.** **B65d 13/04**

[58] **Field of Search** ..... 229/41 C, 39 R, 23, 31 FS, 229/31 B, 34 R

[56] **References Cited**

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Primary Examiner—Davis T. Moorhead

Attorney, Agent, or Firm—Shoemaker and Mattare

[57] **ABSTRACT**

An assembly for making a container for cake and the like, comprises an elongate paper blank having a plurality of fold lines therein and connecting portions at each end of the blank whereby the blank may be folded and the connecting portions interlocked to define a sleeve, and an end blank having a main portion with a plurality of peripheral flaps thereon foldable to define a peripheral wall, said end blank connectable with said sleeve to define an end wall, said sleeve and end wall defining a container, and said end blank being foldable and interconnectable with another folded end blank to define a transportation container for the elongate blank.

4 Claims, 17 Drawing Figures

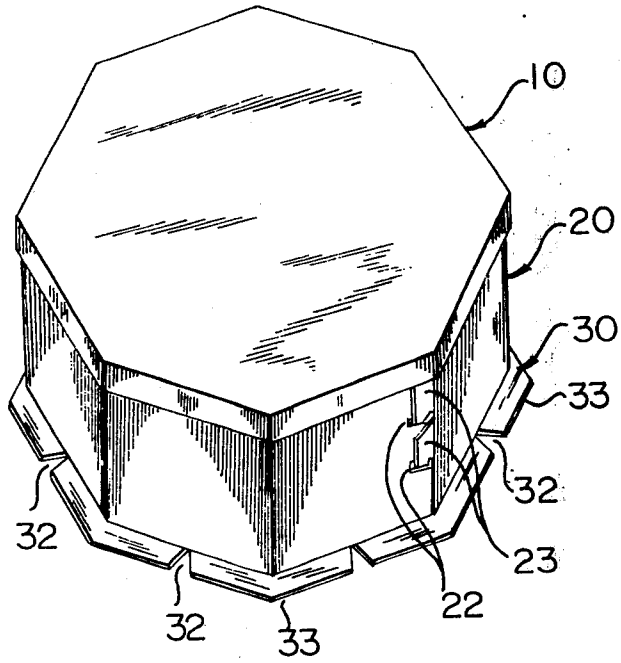


FIG. 1A

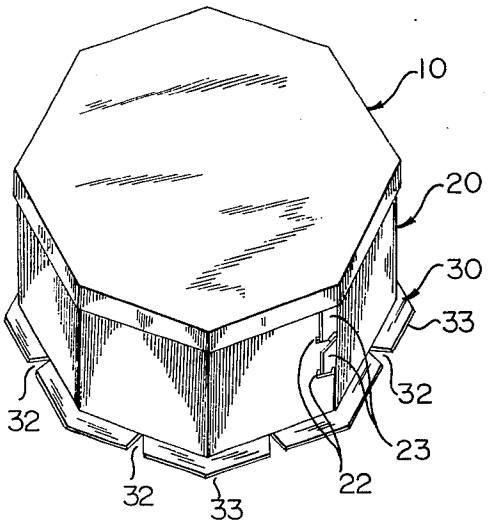


FIG. 1B

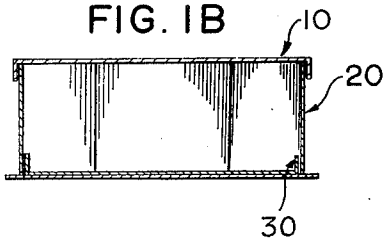


FIG. 2A

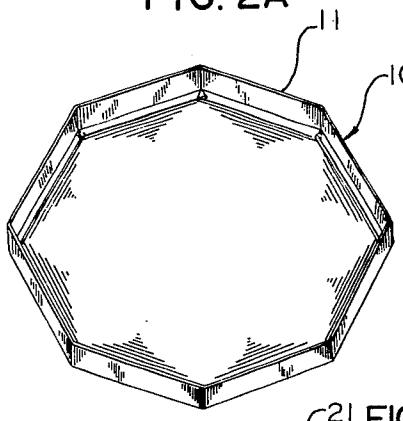


FIG. 2B

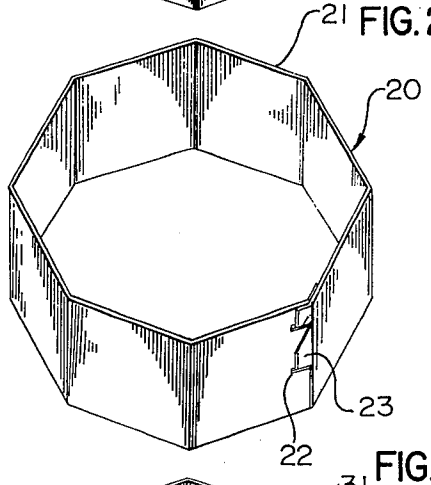


FIG. 2C

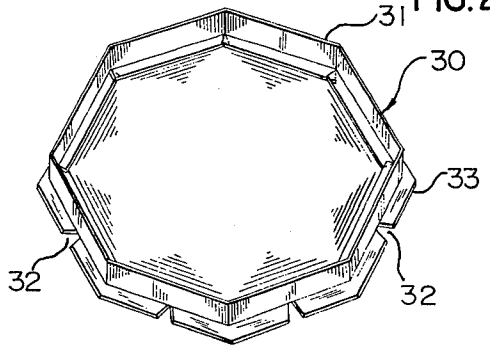


FIG. 3B



FIG. 3A

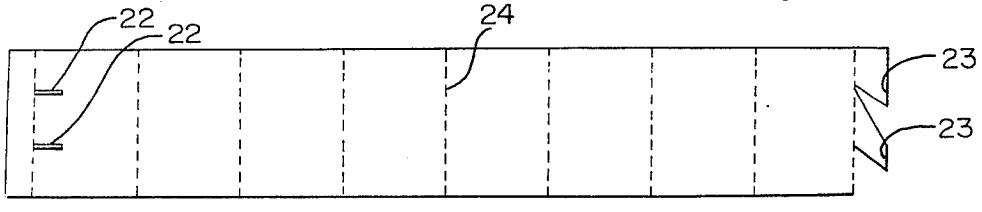
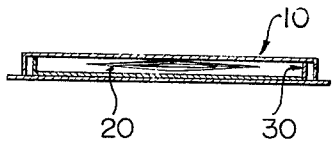


FIG. 4



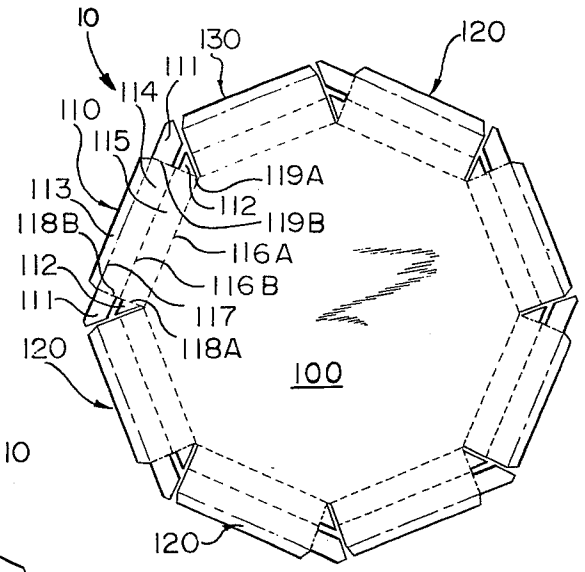


FIG. 5A

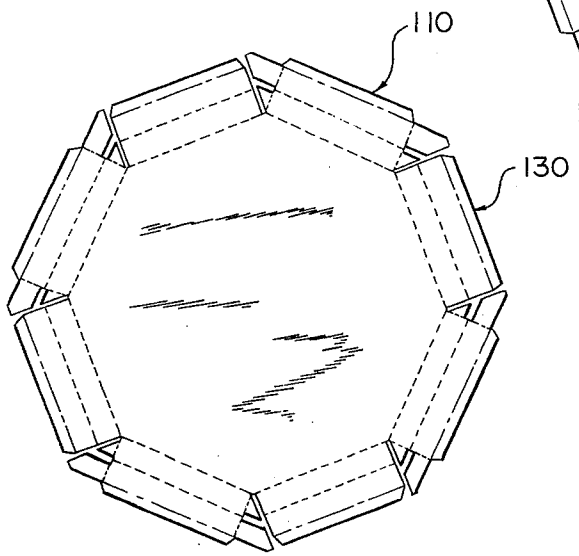


FIG. 5B

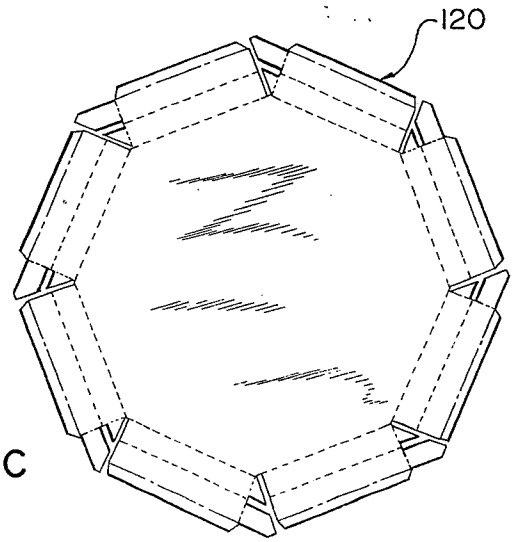


FIG. 5C

FIG. 6A

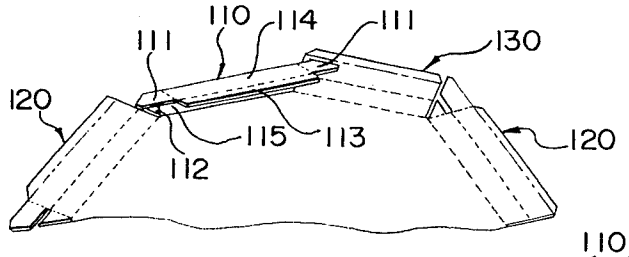


FIG. 6B

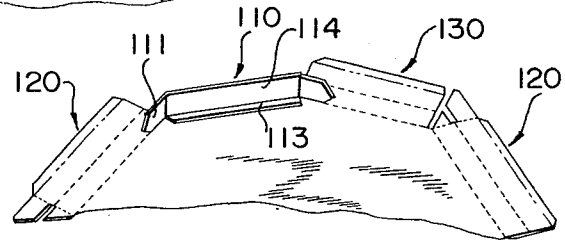


FIG. 6C

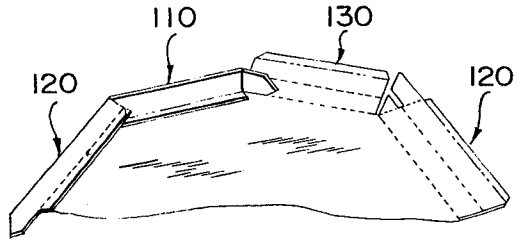


FIG. 6D

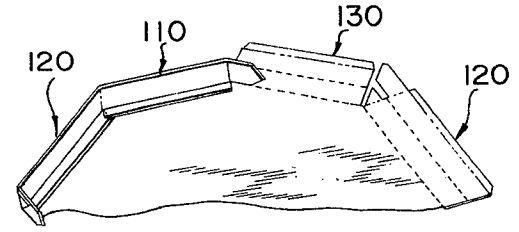


FIG. 6E

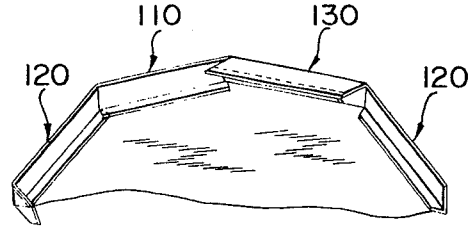
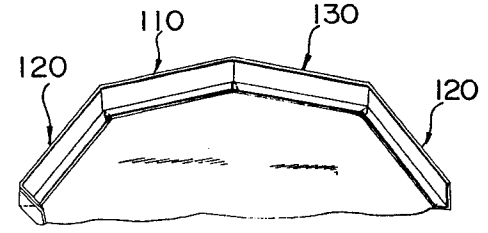


FIG. 6F



PAPER CONTAINER

This invention relates to an assembly for making a container, and is particularly concerned with making a cake container of polygonal cross section.

A known container for a cake is formed by a cover member with a long side wall formed integrally therewith, and a base member with a raiser as a surround. Both members are formed by the application of starch paste to bonding portions of the container. This type of container is difficult to make and overprint due to its volume, and it is incapable of being folded into a compact volume for transportation. In addition, the application of starch paste to portions of the container often causes colitis germs to spread to a cake in the container and is dangerous to humans consuming the cake.

According to one aspect of the present invention, there is provided an assembly for making a container, which assembly comprises an elongate blank having a plurality of fold lines formed thereon, and connecting means at each end of said blank, said blank being adapted to be folded along each of said fold lines to define a sleeve of polygonal cross section and so that said connecting means may interlock one with the other to retain the shape of said sleeve; and at least one end blank adapted for co-operation with an end of said sleeve, the end blank having a main portion with a plurality of peripheral flaps extending therefrom, the number of flaps corresponding to the number of sides of said sleeve, each flap being foldable with respect to said main portion and including a plurality of fold lines formed thereon. Each of said flaps also being adapted to be folded to define a peripheral wall portion extending from said main portion, and at least some of said flaps including means permitting interconnection of one said wall portion with another to define a wall adapted to co-operate with said sleeve and extending around said main portion; the arrangement being such that when each of said blanks is folded, said sleeve and the said wall may be received one by the other to define the container. A said end blank may have a bottom plate attached thereto, said plate having a plurality of notches disposed angularly about the marginal portion thereof. The assembly may comprise two end blanks, each adapted for co-operation with a respective end of said sleeve. One of the end blanks when folded may be adapted to receive the other said end blank when folded so as to define a transportation container for said elongate blank.

According to another aspect of the present invention, there is provided a container comprising the assembly according to said one aspect of the invention.

The invention will now be described by way of example only with reference to the accompanying drawings in which:

FIG. 1A is a perspective view of a container when the assembly in accordance with the invention has been assembled;

FIG. 1B is a cross-sectional view of FIG. 1A;

FIGS. 2A, 2B and 2C are perspective views of each of the portions of the container shown in FIG. 1;

FIG. 3A is a plan of the elongate blank to be formed into a sleeve;

FIG. 3B is a side view of the elongate blank folded up for storage or transportation;

FIG. 4 is a cross-sectional view of the container ends forming a transportation and the elongate blank folded up for accomodation therein;

FIG. 5A is a plan view of one form of an end blank ready to be folded; FIG. 5B is a plan view of another form of end blank;

FIG. 5C is a plan view of a further form of end blank ready to be folded; and,

FIGS. 6A to 6F are a series of illustrated steps for folding an end blank.

Referring to the drawings, an assembly in accordance with the invention is suitable for making a cake container as shown in FIGS. 1A and 1B. The container comprises a lid **10** covering one end of a sleeve **20** having an octagonal cross section, the other end of the sleeve **20** being mounted on a base **30.** The sleeve **20** is formed from an elongate rectangular blank (see FIG. 3A) having transverse fold lines **24** formed therein. The portion of blank between two adjacent fold lines **24** defines one side **21** of the sleeve when the blank is folded along each fold line **24.** To retain the folded blank in the form of the sleeve, connecting means are provided at each end thereof. The connecting means comprise two slots **22** at one end portion of the blank, the slots extending parallel with the axis of the blank; and two tabs **23** carried at the other end of the blank, the free end portion of each tab being arranged to engage a respective one of the slots **22** when the blank is folded to form the sleeve.

The lid **10** is formed from an end blank **100** having a main portion constituted by an octagonal planar member, each side of the member being connected to outwardly extending flap **110,** or, a flap **120,** or, a flap **130** (see FIGS. **5A, 5B** and **5C**). Each flap is bounded from the main portion of the member by a fold line **116A** permitting the flap to be folded with respect to the main portion. Each flap is of substantially elongate rectangular shape having a long edge adjacent the main portion. Each flap includes a fold line **116B** and a fold line **117,** each extending parallel with the fold line **116A** associated with the flap. The fold lines **116A** and **116B** have a flap section **115** lying therebetween; the fold lines **116B** and **117** have a flap section **114** lying therebetween; and the fold line **117** provides a boundary between a marginal flap section **113** and the remainder of the flap. The section **113** is in the form of a trapezoid arranged such that the longer of the two parallel sides is in juxtaposition with the fold line **117.**

Each side edge of each flap **110** supports two projections or tab means **111** and **112,** the projection **112** lying intermediate the projection **111** and the main portion of the end blank **100.** The projection **111** is longer than the projection **112,** each of the projections extending parallel with the long axis of the flap. The projections **111** and **112** are extensions of the flap sections **114** and **115** respectively, each projection being bounded from a respective section by fold lines **118B** and **119B,** and **118A** and **119A,** respectively.

Each flap **120** is similar to the flap **110** except that only one side edge of the flap **120** carries projections **111** and **112** (see FIG. **5C**).

Each flap **130** is similar to the flap **110** except that the flap **130** does not support any projections.

The arrangement is such that each of the flaps is folded about the respective fold lines, in a manner to be described hereinafter, to define a wall portion extending normal from the associated main portion. The

wall portions are interconnected by the projections and co-operate to constitute a wall **11** around the periphery of the main portion, the wall **11** co-operating with one end of the sleeve to close one end of the sleeve **20.**

The base **30** is formed, in similar manner to the lid **10,** from an end blank which has a main portion with a smaller surface area than the main portion of the blank **100.** One surface of the base end blank has an octagonal bottom plate **33** of greater surface area than, and attached to (see FIG. **1B**) the main portion thereof but arranged to permit folding of the flaps with respect to the main portion to define a wall **31** described previously with reference to the lid **10.** Each side edge of the bottom plate **33** includes a notch **32** located centrally with respect to the edge. Each edge of the plate **33** is parallel with the plane containing each respective portion of the wall **31** (see FIG. **2**). The notches **32** are provided to facilitate securing a plurality of assembled containers to each other by string or other elongate flexible element during transportion thereof.

The dimensions of the lid **10** are such as to permit receipt of one end of the sleeve **20** within the wall **11**; the dimensions of the wall **31** are such as to permit receipt of the wall **31** within the other end of the sleeve **20.** The folding operation with respect to each end blank is as follows, with reference to FIGS. **5A**, and **6A** to **6F**. In respect of each flap **110,** the section **115** is folded inwardly towards the main portion along the fold line **116A**, and the section **114** is folded inwardly towards the main portion along the fold line **116B** so as to lie parallel with the section **115** such that the sections **114** and **115** extend normally from the surface of the main portion to define one wall portion. The projections **111** and **112** are folded towards the main portion along their respective fold lines. The section **113** is folded along the fold line **117** so as to extend inwardly with respect to the main portion and parallel therewith (see FIG. **6B**). An adjacent flap **120** (see FIG. **6C**) is folded in similar manner so that the projection **112** of the adjacent flap **110** is located between the sections **114** and **115** of the flap **120.** Referring to FIG. **6D**, the other flap **120** is folded in similar manner. Referring to FIGS. **6E** and F, the flap **130** is folded in similar manner so as to locate respective projections **112** of the adjacent flaps **110** and **120** between the sections **114** and **115** of the flap **130.** When each flap of the end blank has been folded with respect to another, the wall portions so formed define the respective wall **11** or **31,** and with the formed sleeve, the assembly is ready to be formed into a container having a lid and a base. A similar folding operation is carried out in respect of the end blanks shown in FIGS. **5B** and **5C** respectively where the flap configurations vary from that shown in FIG. **5A**.

Referring to FIG. **4** of the drawings, the lid **10** and the base **30** may be used to define a storage of transportation container for the sleeve folded in concertina fashion therein. It will be appreciated that the storage container enclosing the collapsed sleeve takes up less storage space than a fully assembled container, and that it takes a short period of time only to fully assemble the container from its stored state.

Each of the blanks is made from stiff paper or cardboard; other suitable materials such as kraft paper may be used.

What we claim is:

1. An assembly for making a container for cake and the like, comprising an elongate paper blank having a plurality of parallel fold lines therein extending parallel to a pair of opposite end edges thereof, said blank having slots and cooperating tabs at the opposite end edges thereof whereby the blank may be folded at the fold lines and the tabs and slots interlocked to define a sleeve, a pair of end blanks each having a main portion and a plurality of peripheral flaps thereon at the side edges thereof, each flap joined along a fold line at the side edge thereof to the main portion and having a further fold line spaced between the side edges thereof and extending parallel to the side edges and defining a pair of flap sections, a pair of locking tab means projecting from at least one end edge of the flaps, whereby the flaps may be folded about the fold lines inwardly toward the main portion with the flap sections contiguous to one another and perpendicular to the plane of the main portion, one of the tab means of one flap received behind the flap sections of an adjacent flap and the other tab means of said one flap received between the flap sections of said adjacent flap, to define an upstanding peripheral wall secured only by the interlocked tab means and flaps, one of said end blanks having a bottom plate secured thereto on the side thereof opposite the peripheral wall and having edge portions projecting outwardly beyond said wall, the peripheral wall of said one end blank having a size such as to be received in one end of the sleeve with said one end of the sleeve supported on the outwardly projecting edge portion of the bottom plate, and the peripheral wall of the other end blank having a size such as to receive the other end of the sleeve therein, said sleeve being foldable to a collapsed position and the end blanks cooperable with one another to define a container for the collapsed sleeve.

2. An assembly for making a container as in claim **1,** wherein all but two adjacent flaps have a pair of tab means projecting from only one end thereof, one of said two flaps has tab means projecting from both ends thereof.

3. An assembly for making a container as in claim **1,** wherein every other flap around the periphery of the main portion has a pair of tab means projecting from both of the opposite ends thereof, and the remaining, alternate flaps are free of tab means.

4. An assembly for making a container as in claim **1,** wherein a pair of tab means project from one end only of each flap, said tab means all projecting in generally the same direction around the circumference of the main portion, and the outwardly projecting edge of the bottom plate has a plurality of angularly disposed notches therein about the margin thereof.

* * * * *