

April 30, 1963

E. B. OLÉR
CONTAINER

3,087,668

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2 Sheets-Sheet 1

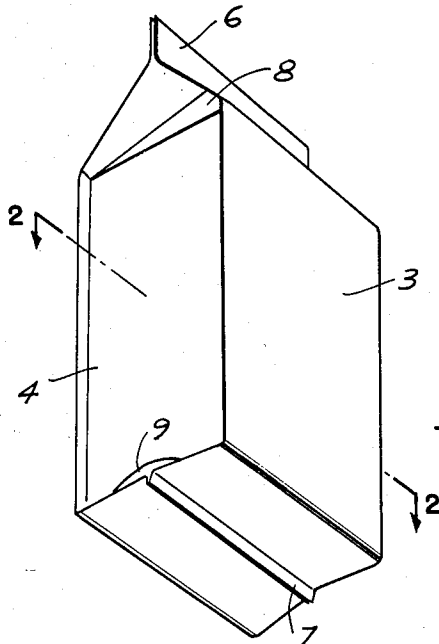


FIG. 1

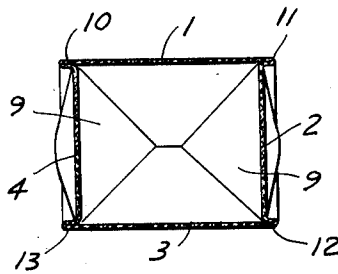


FIG. 2

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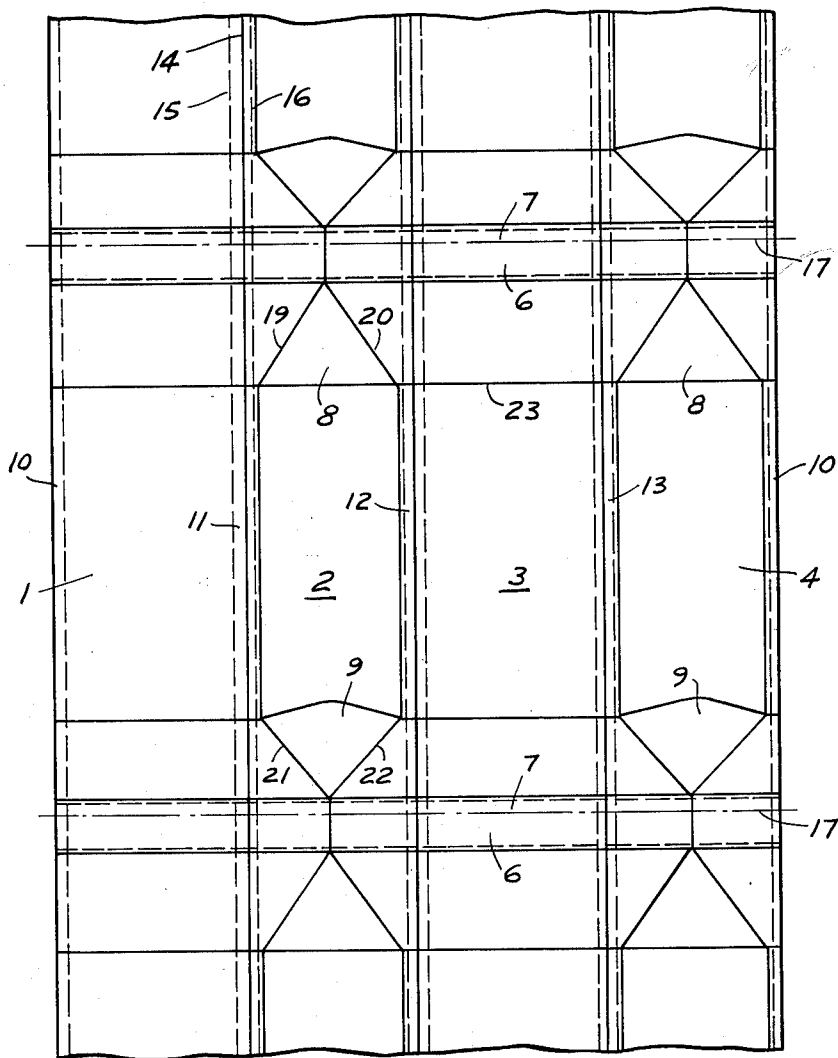


FIG. 3

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2 Claims. (Cl. 229—53)

The present invention relates to containers made of foldable sheet material such as paper and to a method of making such containers, and more particularly the invention relates to containers in the form of a generally prismatic tube closed at both ends by flaps folded inwardly and sealed together. Such containers are widely used for the storage of beverages.

There are known containers of the general kind above referred to which are produced from an appropriately precut and prescored blank by first folding the blank to form a prismatic tube having one side consisting of two lengthwise extending parts, then folding and joining flaps to form the bottom of the container, and finally sealing together the two side parts. After being filled, the container is closed by folding and joining suitably cut flaps at the top of the container. Such containers as heretofore known have the disadvantage that the sides of a filled container tend to bulge due to insufficient rigidity unless heavy sheet material is used and such material is expensive, and that the containers cannot be formed in continuous operation simultaneously with the filling thereof.

It is the broad object of the invention to provide a novel and improved method of forming and filling containers of the general kind above referred to, in continuous operation.

It is also the broad object of the invention to provide a novel and improved container of the general kind above referred to, the structural design of which permits manufacture and filling of containers in continuous operation.

A specific object of the invention is to provide a novel and improved, generally prismatic container of the general kind above referred to which possesses considerable rigidity even when made of comparatively thin gauge, foldable sheet material such as paper, due to being reinforced along each of its side corners.

Another specific object of the invention is to provide a novel and improved container of the general kind above referred to which consists of a section of an initially continuous prismatic tube closed at the top and the bottom after filling the tube by inwardly folding the flaps provided for the purpose on the section.

A further specific object of the invention is to provide a novel and improved container of the general kind above referred to which is formed by folding a blank made of suitable sheet material and prescored to form reinforcing flanges along each side corner of the aforementioned tube section.

Other and further advantages of the invention will be pointed out hereinafter and set forth in the appended claims forming part of the application.

In the accompanying drawing a preferred embodiment of the invention is shown by way of illustration and not by way of limitation.

FIG. 1 is a perspective view of a completed and sealed container according to the invention.

FIG. 2 is a section taken on line 2—2 of FIG. 1, and FIG. 3 shows a blank for forming containers according to FIG. 1.

The container of FIG. 1 is shown as a container having a generally rectangular cross section, but the container may also have another suitable cross sectional configuration, provided the body of the container has the prismatic shape. The container may be visualized as being made of suitable paper impregnated or coated with

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a material appropriate for the intended content of the container.

As can be seen in FIG. 2, the tubular portion of the container is formed by longitudinally folding the blank according to FIG. 3 which will be more fully described hereinafter. FIG. 2 also shows that the long container walls 1 and 3 protrude slightly beyond the short container walls 2 and 4 to define flanges 10, 11, 12 and 13 along each side corner of the tube. The flanges are formed by doubling the sheet material during the folding operation and thus reinforce the container tube along each of its corners. As is further shown in FIG. 2, sealing of the tube is effected at one of the corners, namely at flange 10. Placement of the seam at a corner rather than in a side wall results in a marked increase of the strength of the seam as the pressure of the content acts upon a reinforced portion of the container. The sealing may be effected in a conventional manner by hot sealing or fusing the mated wall portions.

The top and bottom of the container are formed by bending inwardly appropriately cut flaps 8 and 9 of generally triangular configuration. The flaps are sealed along straight flanges 6 and 7.

Tests have shown that flanges 10 to 13 reinforce very effectively the rigidity of the container thus facilitating the pouring from the container. The provision of corner flanges also facilitates storage of the containers as the container will tend to abut against each other with their reinforced corners. The placement of the seam at one of the flanges not only increases the strength of the seal but it also enhances the aesthetic appearance of the container and makes all four side walls equally available for printing of advertising or informative material. Sealing along a reinforced flange can be more conveniently effected than along a seam in the middle of a side wall. Furthermore, the parts of the paper which are to be sealed together are on the same side of the blank prior to the folding of the same but face each other after folding. This results in a wider choice of the plastic coating material that can be used. Certain types of plastic coating material can be used only if both abutting surfaces are coated as is automatically the case in the structure of FIG. 2.

Containers as shown in FIGS. 1 and 2 can be formed and filled in continuous operation from a blank as shown in FIG. 3. This blank may be visualized as a web of any desired length which may be withdrawn from a supply reel. To form containers of rectangular cross section the web includes three longitudinal fold lines extending along the entire length of the web transversely spaced. As is evident, the fold lines define four panels to facilitate the formation of the corner flanges. Three closely adjacent and parallel fold lines 14, 15, and 16 separate each two panels. The web further includes severance lines 17 longitudinally spaced in accordance with the desired height of an individual container. The bottom and top flaps are defined by generally triangular fold lines 19, 20 and 21, 22 in alternate panels. The apices of each two triangles forming a bottom and a top flap respectively face each other across a severance line. Finally fold lines 23 and 24 including the bases of the triangles are provided to facilitate the inward folding of the bottom and top flaps.

To effect forming and filling containers in continuous operation, the web while travelling is continuously folded along its longitudinal fold lines and also sealed along flange 10 to produce the aforescribed continuous prismatic tube. This tube is filled, for instance, with a beverage and successive sections of appropriate length are closed at top and bottom by folding inwardly flaps 8 and 9, respectively and sealing the top and bottom at flanges 6 and 7. Finally, the individual containers

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thus formed, filled and sealed are severed along the severance lines 17. The folding, sealing and filling equipment should be visualized as being conventional.

While the invention has been described in detail with respect to a certain now preferred example and embodiment of the invention it will be understood by those skilled in the art after understanding the invention, that various changes and modifications may be made without departing from the spirit and scope of the invention, and it is intended, therefore, to cover all such changes and modifications in the appended claims.

What is claimed as new and described to be secured by Letters Patent is:

1. A container in the form of a tube of generally rectangular cross section formed of folded paper and terminating at both ends in inwardly turned flaps constituting a bottom and a top closure of the container, the side walls of the container being doubled along each longitudinal corner of said tube to form reinforcing, generally flat flanges protruding from the longitudinal edges of two opposite side walls of the tube, one of said flanges being formed by terminating end portions of said side walls.

2. A blank for forming several generally prismatic containers each closed at the top and bottom, said blank comprising a web of substantially constant width and made of foldable paper, said web including transversely spaced longitudinal fold lines along the length of the web

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to define several panels and a further longitudinal fold line on opposite sides of each of said panel-defining fold lines closely adjacent thereto, substantially straight transverse severance lines longitudinally spaced in accordance with the desired height of individual containers to be formed from the blank, slanted fold lines extending in alternate panels from said severance lines in both directions of the web to define bottom and closure-forming flaps for each individual container, said slanted fold lines in alternate panels defining triangles on opposite sides of the severance lines, the apices of said triangles facing each other across the respective severance line, and a further transverse fold line extending across the width of the web on opposite sides of each severance line, each of said further transverse fold lines including the base of the respective triangles.

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