Oct. 5, 1937. D. C. SHEPARD 2,094,683

CONTAINER

Filed June 3, 1935

Fig. 1

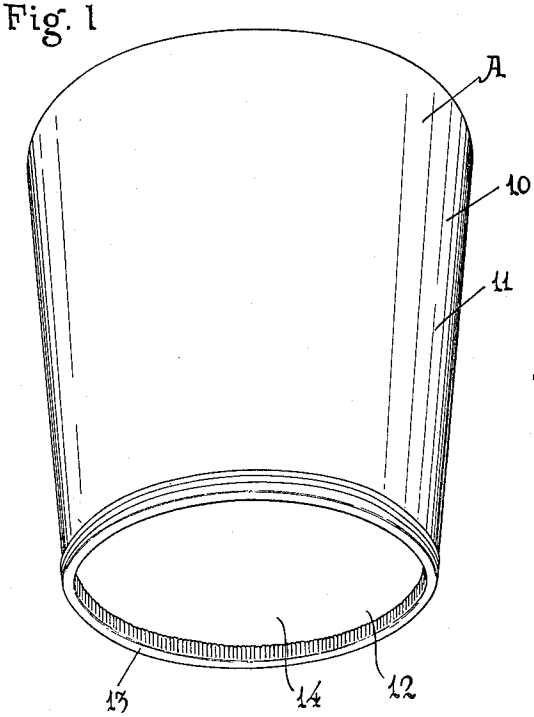


Fig. 2

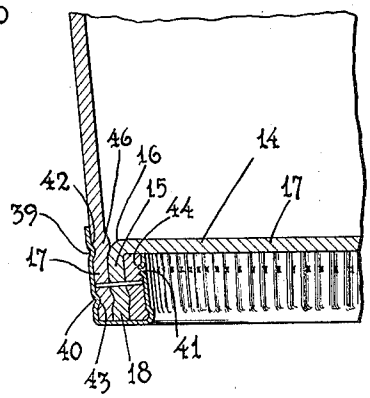


Fig. 3

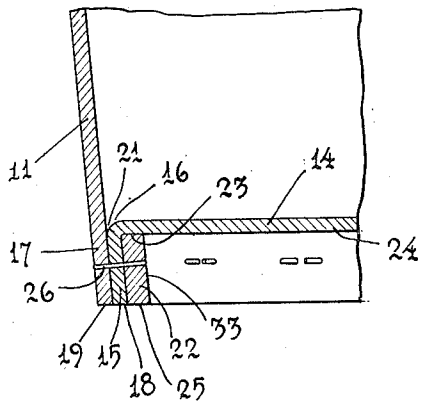
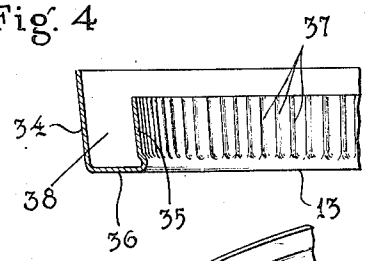


Fig. 4



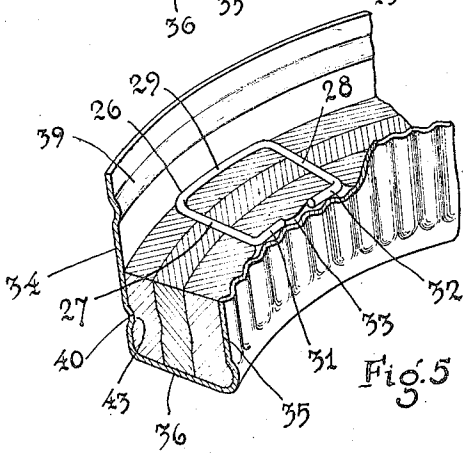


Fig. 5

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CONTAINER

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Application June 3, 1935, Serial No. 24,612

9 Claims. (Cl. 229—5.7)

My invention relates to containers and has for an object to provide a container whereby a separate wall structure and a bottom therefor may be securely and firmly attached to one another.

An object of the invention resides in constructing the wall structure and bottom from a flexible material such as paper and in forming on the bottom a flange integral with the bottom and bent downwardly therefrom, said flange being adapted to lie adjacent the lowermost marginal portion of said wall structure.

A feature of the invention resides in using fastening means such as staples or the like for securing the said flange to the lowermost marginal portion of the wall structure.

Another object of the invention resides in providing a metal hoop U-shaped in cross-section with inner and outer flanges and a connecting portion serving as a base, said hoop embracing the lowermost portion of said wall structure and said bottom flange and serving to cover and protect said fastening means.

An object of the invention resides in constructing said hoop so that the base of said hoop has a supporting area greater in width than the combined thickness of the lowermost marginal portion of the wall structure and the bottom flange.

Another object of the invention resides in attaching to the bottom flange an annulus which may be constructed of paper or other suitable material and which stiffens and reinforces the bottom construction of the container.

A still further object of the invention resides in constructing the hoop of such dimensions as to embrace the lowermost marginal portion of the wall structure, the bottom flange and the annulus.

This invention is an improvement of the invention disclosed in the application for patent of Swan Smith, Serial Number 759,212, filed December 26, 1934, and which was duly assigned to me December 17, 1934, and recorded in Transfers of Patents Liber T 161, page 642.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawing:

Fig. 1 is a perspective view of a container illustrating an embodiment of my invention.

Fig. 2 is a fragmentary sectional view of the body construction of the container taken on line 2—2 of Fig. 1.

Fig. 3 is a sectional view similar to Fig. 2 showing the construction and arrangement of the lowermost portion of the container prior to the application of the hoop thereto.

Fig. 4 is a cross-sectional view of the hoop detached from the container.

Fig. 5 is a fragmentary perspective view of a portion of the bottom structure of the container illustrating the manner of attaching the annulus and bottom to the wall structure of the container.

It has been found that the bottom structure of containers such as illustrated in the application for patent of Swan Smith, above referred to, will easily bend or become distorted when undue pressure is applied to the same, as would occur in the event that the filled container was dropped for any appreciable distance while inclined upon a concrete floor. The present invention overcomes this defect by providing a construction which reinforces the bottom construction of the container and which prevents bending or distortion of the hoop and associated structure when the container is roughly handled.

A container embodying my invention is shown in Fig. 1 and is indicated in its entirety by the reference numeral A. This container comprises a body 10 open at the top and having a separate wall structure 11, and a bottom 12 attached to the wall structure 11 through a hoop 13. These various parts will now be described in detail.

The wall structure 11 is preferably constructed of sheets of paper laid one upon the other and glued together to form a composite structure substantially homogeneous. The wall structure 11 when the container is used as a butter tub is preferably conical as shown in Fig. 1 and is open at the top and bottom, being continuous circumferentially. The top of the container may be closed by means of any suitable cover. Such construction forming no particular feature of the invention, has not been shown in the drawing.

The bottom 12 is constructed from sheets of paper disposed one upon the other and glued together. The assembled sheets are pressed in suitable dies to form the bottom proper 14 and a flange 15 extending downwardly therefrom. In the application of the bottom to the wall structure of the container, the bottom 12 is inserted into the interior of the container. The flange 15 of said bottom is of such dimensions as to cause the same to fit tightly within the lowermost marginal portion 17 of the wall structure 11 when the lower edge 18 of said flange is substantially flush with the lower edge 19 of the container wall structure 11. Due to the fact that the flange 15 is constructed by bending the material of the bottom, a rounded corner 16 is formed

between the bottom proper and the flange 15. This leaves an annular crevice 21 which extends about said bottom and which is disposed between the corner 16 and the wall structure 11 as best shown in Fig. 3.

Disposed adjacent the interior of the flange 15 of bottom 12 is an annulus 22. This annulus may be constructed of a strip of paper wound upon itself and glued together. The annulus 22 is of a thickness equal to or greater than the thickness of the wall structure 11 or the flange 15. This annulus is of the same height as the flange 15 so that the upper edge 23 thereof abuts against the lowermost surface 24 of the bottom proper 14 of bottom 12 and the lowermost edge 25 of said annulus lies flush with the edges 18 and 19 of flange 15 and wall structure 11. The annulus 22 is preferably glued to the flange 15. The said annulus is further attached to the container by means of a number of staples 26. These staples extend jointly through the annulus 22, bottom flange 15 and the lowermost marginal portion 17 of the wall structure 11. The said staples are formed with legs 27 and 28 and a cross-bar 29 which forms a connecting portion between said legs. In the application of the staples 26 to the bottom construction of the container, the ends 31 and 32 of the legs 27 and 28 are bent over upon the inner surface 33 of the annulus 22, as best shown in Fig. 5.

The hoop 13 is constructed from a straight narrow strip of sheet metal which is folded longitudinally along a medial line to form a straight U-shaped structure having two spaced flanges 34 and 35. These flanges are connected together by means of a connecting portion 36 which extends transversely of the hoop and which serves as a rim or base on which the container rests. The straight U-shaped structure so formed is then run through crimping rolls which engage the flange 35 and crimp the same to form corrugations 37 in said flange. By means of this method of construction the length of the flange 35 is reduced as compared to the length of the flange 34 and the formerly straight structure is converted into circular form. Thereafter the ends of the flanges are secured together as by riveting, soldering or welding to form a hoop of the desired circumferential dimensions. A portion of a hoop so formed is illustrated in Fig. 4.

In applying the hoop 13 to the container, the lowermost marginal portion 17 of the wall structure 11, the flange 15 of bottom 12 and the annulus 22 are jointly inserted into the space 38 of the hoop 13 formed between the flanges 34 and 35 and above the base 36. While the parts are so disposed, scoring rolls are applied to the outer flange 34 and a punching roll applied to the inner flange 35 of the hoop. These rolls are brought toward one another and as the bottom structure of the container passes between said rolls, the outer flange 34 of hoop 13 is formed with two inwardly extending beads 39 and 40. At the same time, the inner flange 35 is formed with a plurality of barbs 41 which extend toward the beads 39 and 40. This produces in the marginal portion 17 of the wall structure 11 grooves 42 and 43 which receive the beads 39 and 40 and in surface 33 of annulus 22 indentations 44 which receive the barbs 41. By means of this construction the various parts of the bottom construction of the container are held together and the hoop 13 secured to the container. Due to the fact that the material from which the wall structure 11 of the body 10 of the container A is constructed is somewhat flexible, a rib 46 is formed on said wall structure opposite the bead 39 which extends into the interior of the container. The bead 39 is so disposed that the rib 46 fills in the space 21 formed by the rounded corner 16 of the bottom 12 which serves as a fillet and at the same time assists in holding the parts attached to one another. It will be noted that the hoop 13 in addition to holding the parts attached to one another and restraining relative movement thereof, forms a guard which protects the lowermost edges 18, 19 and 25 of the flange 15, wall structure 11 and the annulus 22 respectively and which further covers and protects the cross-bars 29 of staples 26 as well as the turned over ends 31 and 32 of said staples. The rim or base 36 of the hoop 13 serves as a support for the container proper and also functions as a skid by means of which the container may be readily slid on the surface on which it rests.

Due to the fact that the lowermost construction of the container is increased in thickness through the use of the annulus and the enlargement of the hoop, a more rigid and substantial construction is provided. The annulus in addition to filling up the space occasioned through the increase in width of the base of the hoop, serves to reinforce and stiffen the bottom construction of the container. By the use of a hoop with a base of dimensions such as disclosed in this application, skidding of the tub upon the floor is greatly facilitated. At the same time wear on the rim or base portion of the hoop is considerably reduced.

With a container constructed in accordance with my invention, the bottom is firmly and securely held attached to the wall structure. Due to the particular form of the hoop and due to the annulus employed, a much more rigid and substantial construction is provided than would otherwise be possible. By means of the staples used for holding the various parts of the container attached to one another, part of the strain which would ordinarily be exerted upon the hoop is taken up by the staples. This prevents the hoop from becoming loosened. With my invention the flanges of the hoop are so designed as to cover and protect the staples, thereby preventing disengagement of the same and holding the parts of the container rigidly secured together.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. In a container having a separate wall structure, a bottom extending across said wall structure, a flange extending downwardly from said bottom and along the lowermost marginal portion of said wall structure, an annulus disposed adjacent the inner surface of said bottom flange, fastening means for securing the lowermost portion of said wall structure, bottom flange and annulus together, and a hoop U-shaped in cross-section, embracing the lower marginal portion of the wall structure, bottom flange and annulus, said hoop covering and protecting said fastening means.

2. In a container having a separate wall structure, a bottom extending across said wall structure, a flange extending downwardly from said bottom, a hoop U-shaped in cross-section embracing the lowermost portion of said wall structure and bottom flange and having flanges spaced

apart a distance greater than the combined thickness of said wall structure and bottom flange to provide a space between said hoop flanges, and an annulus disposed within said space and serving as a filler therefor and in conjunction with said wall structure and bottom flange completely filling up the entire space between said hoop flanges.

3. In a container having a separate wall structure, a bottom extending across said wall structure, a flange extending downwardly from said bottom and along the lowermost marginal portion of said wall structure, fastening means for securing said bottom flange to the lowermost marginal portion of the wall structure of the container and a hoop U-shaped in cross-section and embracing said bottom flange and the lowermost marginal portion of the wall structure of said container, said hoop concealing and protecting said fastening means.

4. In a container having a separate wall structure, a bottom extending across said wall structure, a flange extending downwardly from said bottom and along the lowermost marginal portion of said wall structure, staples extending through the bottom flange and lowermost marginal portion of said wall structure and a hoop U-shaped in cross-section and embracing said bottom flange and the lowermost marginal portion of the wall structure, said hoop covering and protecting the cross-bar and ends of the legs of said staples.

5. In a container having a separate wall structure, a bottom extending across said wall structure, a flange extending downwardly from said bottom and along the lowermost marginal portion of said wall structure, an annulus disposed adjacent the inner surface of said bottom flange, staples extending through the annulus, bottom flange and the lowermost marginal portion of the wall structure and a hoop, U-shaped in cross-section embracing the lower marginal portion of the wall structure, bottom flange and annulus, said hoop having flanges, covering and protecting the cross-bar and ends of the legs of said staples.

6. In a container having a separate wall structure, a bottom extending across said wall structure, a flange extending downwardly from said bottom and along the lowermost marginal portion of said wall structure, a hoop having a flange extending along the outer surface of the wall structure and a base extending inwardly therefrom and beneath the lowermost edges of the wall structure and bottom flange, said base having a supporting surface of a width greater than the combined thickness of the wall structure and bottom flange.

7. In a container having a separate wall structure, a bottom extending across said wall structure, a flange extending downwardly from said bottom and along the lowermost marginal portion of said wall structure, a hoop U-shaped in cross-section having spaced flanges embracing said bottom flange and the lowermost marginal portion of the wall structure and further having a base connecting said flanges, said base being of a width greater than the combined thickness of the lowermost marginal portion of the wall structure, bottom flange and hoop flanges.

8. In a container having a separate wall structure, a bottom extending across said wall structure, a flange extending downwardly from said bottom and along the lowermost marginal portion of said wall structure, an annulus constructed of paper and disposed adjacent the inner surface of said bottom flange, a hoop U-shaped in cross-section embracing the lower marginal portion of the wall structure, bottom flange and annulus and having spaced flanges engaging the outer surface of the wall structure and the inner surface of the annulus, said inner hoop flange having parts imbedded in the annulus to secure the annulus and hoop together.

9. In a container having a separate wall structure, a bottom extending across said wall structure, a flange extending downwardly from said bottom and lying along the inner surface of said wall structure, a hoop U-shaped in cross-section embracing the lowermost portion of said wall structure and bottom flange, and having a base of a width greater than the combined thickness of the wall structure and bottom flange and further having flanges extending upwardly therefrom, the outer of said hoop flanges engaging the wall structure upon the exterior thereof and the inner of said hoop flanges being disposed inwardly of the inner surface of the bottom flange to form a space therebetween, and an annulus disposed within said space and filling said space between said inner hoop flange and wall structure and cooperating therewith to reinforce the bottom flange of the container.

DAVID C. SHEPARD.