May 14, 1940. J. F. PETERS 2,200,295

METHOD OF ASSEMBLING CONTAINERS

Filed Nov. 4, 1938

Fig 1

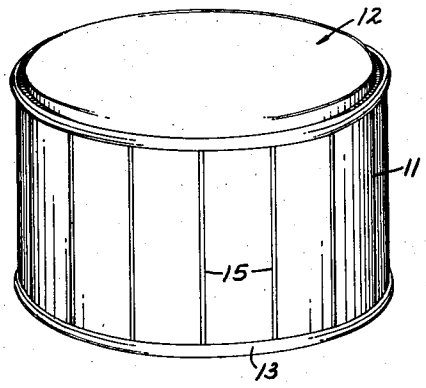



Fig 2

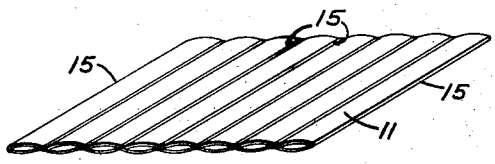



Fig 3

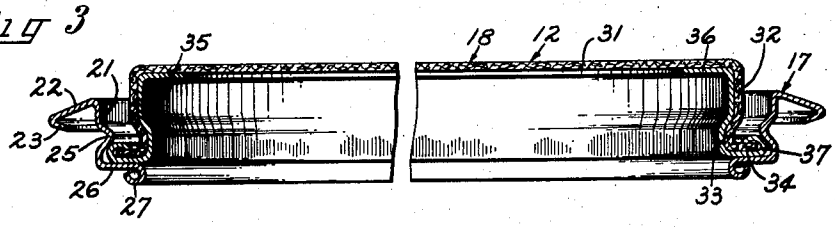



Fig 4

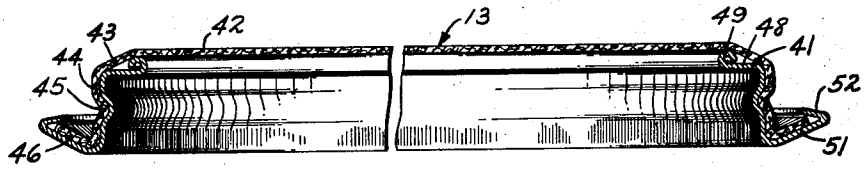



Fig 5

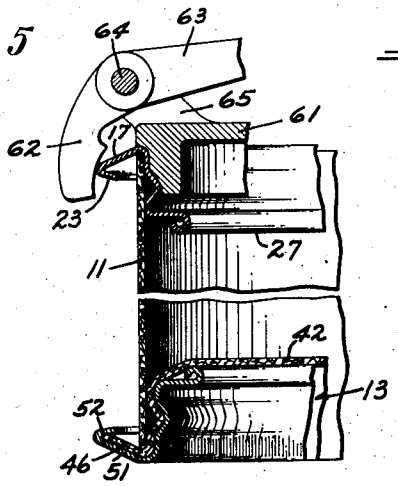
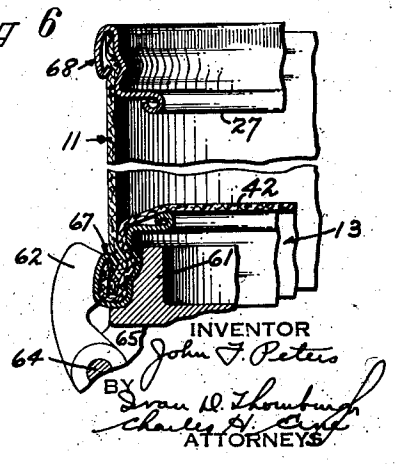



Fig 6



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# UNITED STATES PATENT OFFICE

2,200,295

## METHOD OF ASSEMBLING CONTAINERS

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3 Claims. (Cl. 93—55.1)

The present invention relates to a method of assembling containers and has particular reference to fibre containers of the collapsible character having metal binding strips and a removable cover.

Fibre containers used for shipping ice cream and the like are by nature rather bulky and fragile articles when empty and consequently considerable space and care in handling is required to deliver such containers without damage from the container manufacturing plant to the packer. To overcome this difficulty the present invention contemplates a method of making such fragile containers in parts which may be shipped to the customer in the flat and then assembled in the customer's plant.

An object therefore of the invention is the provision of a method of making fibre container parts having metal binding edges so that they may be shipped and stored as flat articles and thence assembling the parts into a container and reforming the metal binding edges to secure the parts together.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

Referring to the drawing:

Figure 1 is a perspective view of a fibre container assembled in accordance with the method steps of the instant invention;

Fig. 2 is a perspective view of the fibre body of the container in a flattened condition ready for shipment and storage, the view being drawn to a smaller scale than that of Fig. 1;

Figs. 3 and 4 are cross sectional views on an enlarged scale of the container top and bottom members, respectively, with parts broken away; and

Figs. 5 and 6 are section views taken substantially through one side of the container formed by assembling the top and bottom members with the body, the views showing steps in completing the assembling of the container with the aid of a tool, parts of the members and body being broken away.

As a preferred embodiment of the invention the drawing illustrates the parts for and the method of assembling a fibre ice cream container which includes a collapsible body member 11 and flat completely formed top and bottom members 12, 13, respectively.

The body member 11 is made entirely of fibre in the form of a cylinder and is provided with a plurality of equally spaced crease or score lines 15 which extend the full length of the body. When ready for shipment the body is collapsed into a nearly flat form as shown in Fig. 2, the wall of the body bending along the score lines 15, the sections between the score lines remaining in their curved or arched condition.

The top member 12 (Fig. 3) includes an annular metal ring 17 which carries a removable metal bound fibre cover 18. The ring is formed with a substantially vertical side wall section 21 which at its upper edge merges into an angularly disposed flange 22. The flange terminates in a started curl 23. Intermediate its height the side wall section 21 is provided with an inwardly projecting bead 25. At its lower end the side wall section merges into an inwardly extending horizontal flange 26 which terminates in a downwardly and outwardly bent curl 27 thus providing a smooth inner edge for the flange.

The cover 18 is preferably made of fibre and includes a flat top wall 31 which at its outer edge merges into a depending wall section 32. Adjacent its lower edge the wall section merges into a necked-in annular portion 33 which terminates in a right-angled outwardly bent flange 34.

The side wall section 32 of the cover is reinforced by a metal edge band or binding strip 35 which is disposed inside the cover and which conforms to the shape of the side wall. At its upper end the edge band is provided with an inwardly bent flange 36 which backs up and thus also reinforces the cover top wall 31. Adjacent its lower end the edge band is shaped to fit the necked-in portion 33 of the cover and extends under the flange 34. Its outer edge is bent around the outer end of the flange 34 and is further bent back on itself against the top of the flange thus forming a smooth edge curl 37.

When the cover is in assembled position with the ring 17, the metal bound flange 34 of the cover seats against the top surface of the horizontal flange 26 of the ring. The cover edge curl 37 fits tightly under the ring bead 25. Thus the cover is held in place but may be readily snapped out of and into position within the ring 17. When ready for shipment the cover is in assembled position with the ring and thereby provides a flat structure which takes up little space.

Like the top member 12 the bottom member 13 is preferably made of fibre and is reinforced by a metal edge band 41 (Fig. 4). The bottom member is preferably formed in the shape of an inverted cup with a bottom wall 42 which at

its outer edge merges into an outwardly beveled or downwardly inclined wall section 43. The outer edge of the beveled wall section merges into a depending side wall section 44 containing an inwardly bent bead 45. The lower edge of the side wall section merges into an outwardly and upwardly inclined flange 46.

The edge band 41 is disposed inside the bottom member adjacent to and conforming with the side wall section 44. At its upper edge the band is provided with an inwardly bent right angle flange 48 which terminates in an upwardly and outwardly formed edge curl 49. The top of this edge curl is above the surface of the flange 48 and is in engagement with the bottom wall section 42 of the bottom member. It is this edge curl and the upper edge of the band which supports and holds in form the bevel wall portion 43.

At its lower edge the band 41 is formed with an outwardly and upwardly inclined flange 51 which conforms to the shape of and which supports the fibre flange 46. The metal flange 51 extends beyond the outer edge of the fibre flange and terminates in a started curl 52. This construction of bottom member provides a flat structure which is in condition to assemble with the body member and which is readily shipped and stored with a minimum of occupied space.

In accordance with the method steps of the instant invention the container parts, i. e., the body member 11 and the top and bottom members 12, 13 are shipped to the customer in the flat as hereinbefore mentioned. At the customer's plant the body member is expanded into its original cylindrical form. It is easier to put on the bottom member while making the container upside down and accordingly the bottom member is inverted and placed in position over the end of the body member. In this position the side wall section 44 of the bottom member tightly fits into the body in engagement with its side wall. The flanges 46, 51 fit over the edge of the body side wall. Fig. 5 at the bottom shows this, the container having then been placed in an upright position.

While in this upright position the flanges are bent inwardly as shown in Fig. 6 in a suitable manner. The drawing illustrates this bending action being effected by a suitable tool having a chuck member 61 which bears against the inner side wall surface of the bottom member and a movable squeezer jaw 62 which operates against the outer edge of the flanges. The squeezer jaw is preferably formed on one end of an operating handle 63 (see Fig. 5) which is mounted on a pivot pin 64 carried in a lug 65 projecting out from and formed on the chuck.

The squeezing action of the tool reforms the bottom member flanges 46, 51, bending them upwardly and inwardly against the side wall of the body member. During this flange reforming operation, the started curl 52 of the metal band is squeezed down over the outer edge of the fibre flange 46 and is embedded into the body side wall, the whole being forced inwardly into the bead 45 formed in the bottom member side wall section. This bending action results in a tight end seam 67 (Fig. 6) which unites the bottom member with the body side wall in a tight leak-proof joint.

In a similar manner the top member 12 is united with the opposite end of the body member. The removable cover is first snapped out of assembled position within the ring 17. The ring is then placed over the open end of the body as shown in Fig. 5. In this position the ring side wall section 21 fits tightly in engagement with the inside surface of the body side wall and the ring flange 22 overhangs the edge of the body.

While in this position the reforming tool is applied to the ring as shown in Fig. 5 and its flange is reformed or bent downwardly and inwardly against the body side wall. This reforming action bends the started curl 23 back on itself and embeds it into the body side wall pushing the latter into the bead 25 of the ring side wall section. The ring is thus tightly united with the body in a leak-proof end seam or joint 68 (Fig. 6).

Uniting the ends or top and bottom members 12, 13 with the body 11 completes the container assembly and the container is then ready to receive its product. After filling the container the removable cover 18 is again snapped into position within the ring 17 to provide a closure. There is thus provided in a simple and efficient manner from its knockdown parts, a sturdy leak-proof fibre container suitable for many purposes.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the steps of the process described and their order of accomplishment without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the process hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. The method of assembling knock-down fibre containers, which comprises providing a collapsible completely formed body which may be shipped in the flat, providing completely formed end members for said body, each of said end members comprising a metallic annulus having formed outwardly inclined flanges for attaching them to said body and an intermediate inwardly pressed peripheral channel, reforming said collapsed body by expanding it into body shape, placing said end members on said body over the open ends thereof, and reforming said flanges by bending them inwardly by radially exerted pressure against the sides of the body to embed the reformed flanges into the body side wall and pressing said body side wall into said inwardly pressed peripheral channels of said end members, thereby producing end seams which unite the end members with the body.

2. The method of assembling knock-down fibre containers, which comprises providing a collapsible preformed body which may be shipped in the flat, providing a preformed top member having a removable cover for said body, said top member comprising a metal annulus having an intermediate inwardly pressed peripheral channel providing a bead for yieldably retaining said removable cover, providing a preformed bottom member for said body, said bottom member including a metallic annulus having an intermediate inwardly pressed peripheral channel, said top and bottom members having flanges for attaching them to said body, reforming said collapsed body by expanding it into body shape, placing said end members on said body over the open ends thereof, and reforming said flanges by bending them inwardly by radially exerted pressure against the sides of the body to embed the reformed flanges into the body side wall and simultaneously pressing said body side wall into said inwardly pressed peripheral channels of said top and bottom members, thereby producing end

seams which unite the top and bottom members with the body.

3. The method of assembling knock-down fibre containers, which comprises providing a collapsible preformed body which may be shipped in the flat, providing a preformed bottom member having an outwardly inclined metal flange part, providing a preformed top member comprising an annulus having an outwardly inclined metal flange part and an inwardly projecting bead yieldably retaining a metal bound removable cover, said bottom and top members each including an intermediate inwardly pressed peripheral channel, expanding said collapsed body into body shape, removing said cover from said top member, placing said top member and said bottom member on said body over the open ends thereof, reforming said metal flanges by bending them inwardly by radially exerted pressure against the sides of the body the while embedding the reformed flanges into the body side wall, and simultaneously pressing said body side wall into said inwardly pressed peripheral channels of said bottom and top members, thereby forming end seams which unite the top and bottom members with the body, and replacing said cover into position within the top member and beneath said inwardly projecting bead, thus producing a completely assembled closed container.

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