Feb. 24, 1959 R. H. HORNING ET AL 2,874,888

LIQUID TIGHT CONTAINER WITH FIBROUS SIDE WALL

Filed March 14, 1957 2 Sheets-Sheet 1

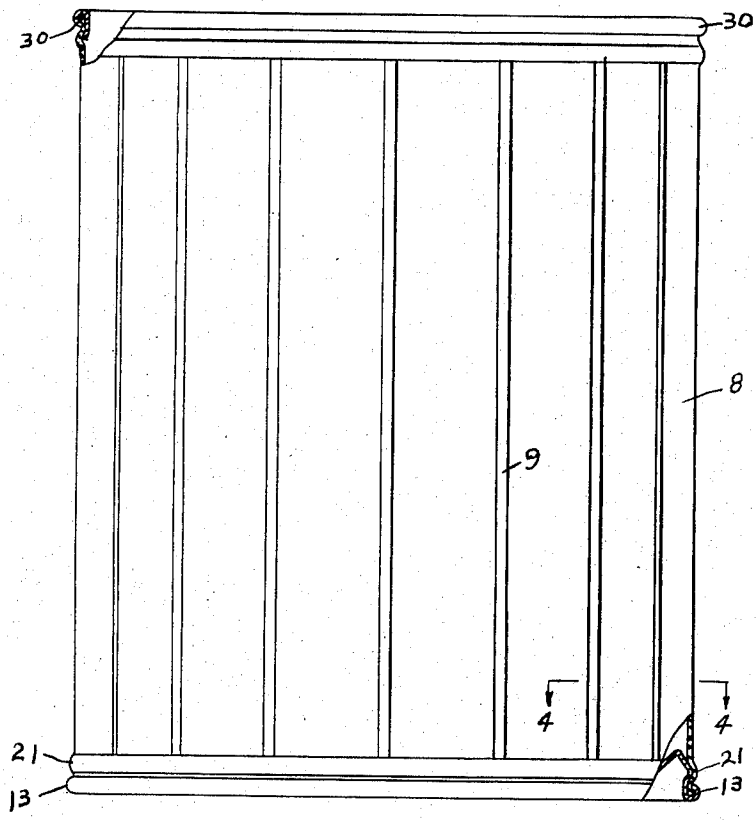


Fig-1

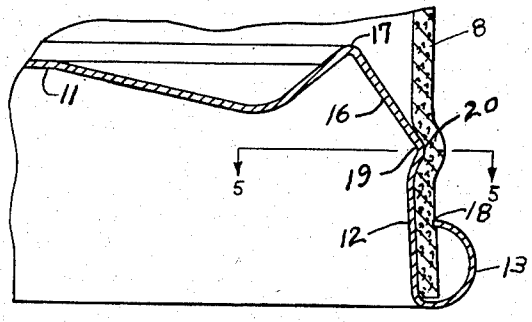


Fig-2

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2 Sheets-Sheet 2

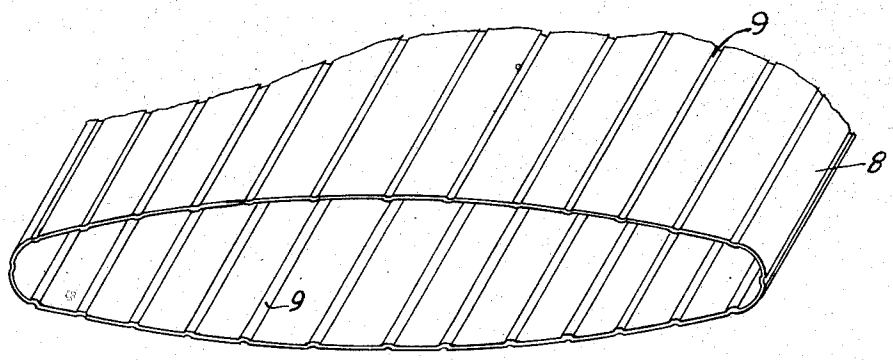


Fig. 3.

Fig. 4

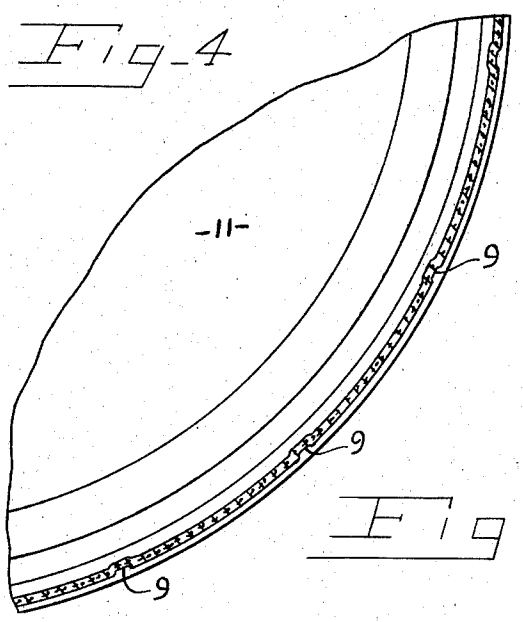
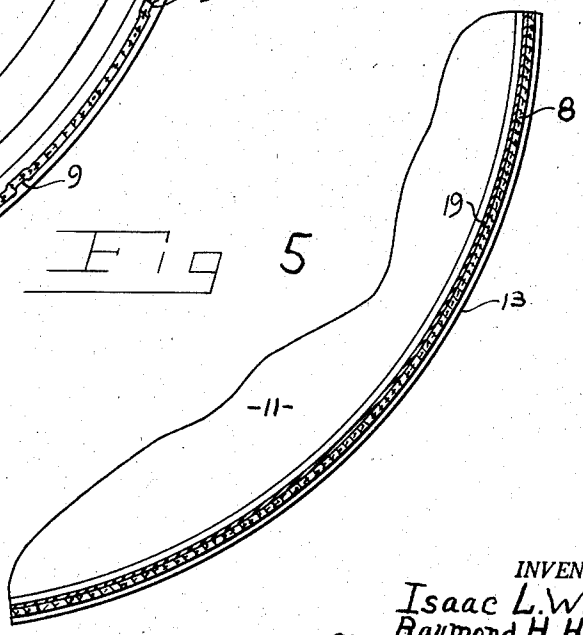


Fig 5



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2,874,888

LIQUID TIGHT CONTAINER WITH FIBROUS SIDE WALL

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Application March 14, 1957, Serial No. 646,087

2 Claims. (Cl. 229—5.6)

This invention relates to containers, the bodies of which are formed of paperboard and shipped in flat collapsed form to packaging plants where the bottom end closures are affixed to the container bodies preparatory to the containers being filled.

The container bodies are formed with a multiplicity of circumferentially spaced scores extending axially or lengthwise of the body, and the bodies are folded on a pair of the scores on diametrically opposite sides of the body. The bodies are expanded to tubular form at the packing plant, and heretofore a paperboard bottom closure was affixed to one end of the expanding body by a metallic ring being crimped into engagement with a flange at the bottom closure and the end portion of the container body.

This invention has as an object a container of the type referred to having a metallic bottom closure affixed thereto, the bottom closure embodying a structural arrangement whereby the closure is fixedly secured to the container body in liquid tight relation thereto.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

In the drawings—

Figure 1 is a side elevation of a container with my invention shown partly in section.

Figure 2 is a partial section of the bottom closure and contiguous portion of the sidewall.

Figure 3 is a perspective view of the container side wall structure.

Figure 4 is a partial cross section taken on line 4—4 of Figure 1.

Figure 5 is a partial cross section taken on line 5—5 of Figure 2.

In the drawings, 8 indicates the tubular body or side wall of a bulk container for ice-cream, frozen foods or the like. This side wall is formed with a plurality of longitudinally extending scores or grooves 9 so it may be conveniently collapsed to substantially flat form for shipment, as shown in Figure 3. Affixed to the lower end of the side wall 8, as by the apparatus disclosed in Patent 2,651,977 issued September 15, 1953 to Wilcox et al., as will be seen in Figure 2, is a bottom closure of inverted cup-shaped configuration. The bottom closure has a discoidal portion 11 and a depending flange 12. The depending flange 12 terminates in an upwardly and outwardly rolled rim 13 to receive the end of the container side wall 8, the flange 12 has an inwardly and upwardly divergent portion 16 which merges with the discoidal portion 11 at 17. This divergent portion 16

forms a lead to direct the end portion of the expanded container body 8 about the flange 12 and into the then open rim 13. With the bottom closure so positioned on the body 8, the rim 13 is crimped into engagement with the said side wall, as at 18, and simultaneously a groove 19 is formed in the flange 12 above the crimped ring. This groove 19 forms an external bead 20. The bead causes the side wall 8 to be distended or stretched outwardly as at 21. Accordingly in this assembly operation, which may be carried out by the apparatus of the type shown in Patent 2,651,977, the grooves 9 are ironed out, so the distended portion 21 is smooth and of uniform thickness, as shown in Figure 5. This effects a tight and continuous leak proof engagement with the bead 20 of the closure flange.

The bead formation of the flange 12 further serves to strongly interlock the bottom closure to the container body. The flange bead and the inclined portion 16 serve to add rigidity to the bottom closure. The divergent portion 16 acts somewhat as a truss for supporting the discoidal portion of the closure and in maintaining the bead structures 20, 21.

The opposite or top end of the container body has a metallic ring 30 crimped thereon to present a suitable top edge to receive a cover closure.

It will thus be seen that by my new and improved invention, I have provided a metallic bottom which gives a liquid tight bulk container as distinguished from previous paper closures, wherein said bottom also adds materially to the strength of the container and its load carrying capacity, and said bottom further aids in heat transfer where these containers are used for package food items which are to be frozen.

What we claim is:

1. A leak-proof bulk container or the like comprising a bottom having a discoidal portion formed at its periphery with a downwardly diverging portion merging with an external bead, said bottom having a cylindrical flange depending from said bead, the lower portion of said flange being formed with an upwardly and outwardly rolled rim forming a channel, a side wall encircling said flange, said channel being crimped on the lower edge portion of said side wall, said bead distending said side wall, whereby said side wall is stretched tightly over said bead to provide a smooth liquid tight seal between said bottom and side wall.

2. A leak-proof bulk container comprising a bottom formed of sheet metal and having a discoidal portion formed at its periphery with a downwardly diverging portion merging with an external bead, said bottom also having a cylindrical flange depending from said bead, the lower portion of said flange being formed with an upwardly and outwardly rolled rim forming a container side wall receiving channel, a container side wall formed of fibrous material with a plurality of circumferentially spaced axially extending grooves having its lower portion encircling said flange, and said channel being crimped onto the lower edge portion of said side wall, said bead distending said side wall, whereby said grooves are ironed out of said side wall at the point of contact with said bead, thereby giving a smooth liquid tight seal between said bead and side wall.

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