Oct. 8, 1963 M. KURHAN 3,106,313

PACKING OR SHIPPING CONTAINER

Filed Oct. 19, 1961

Fig. 1.

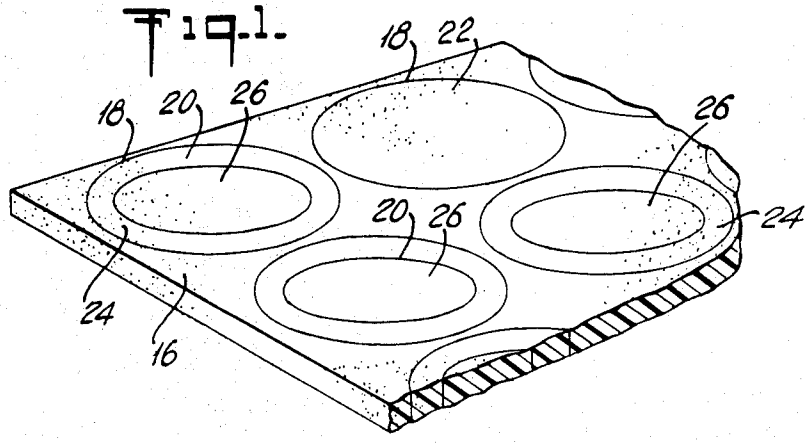


Fig. 2.

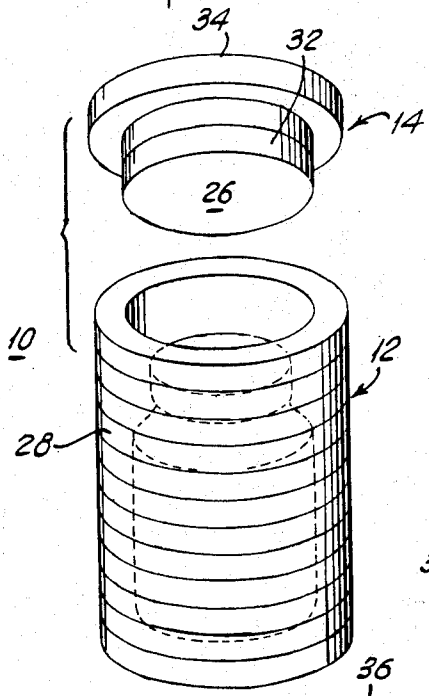


Fig. 3.

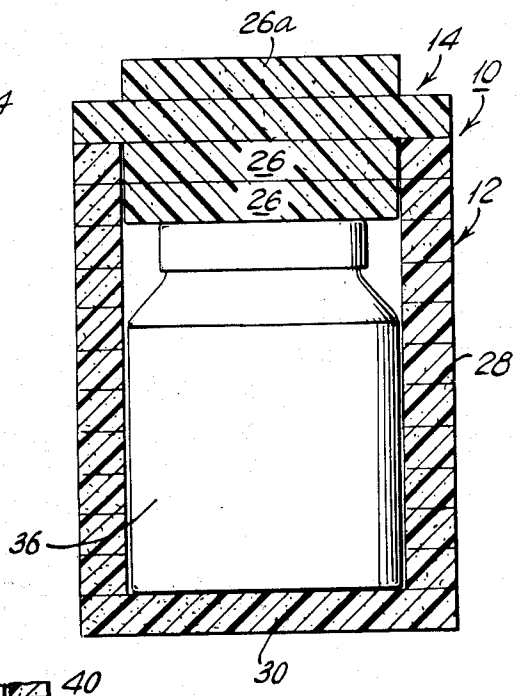
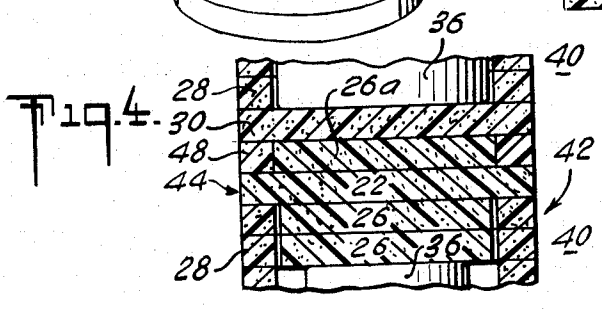


Fig. 4.



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United States Patent Office 3,106,313 Patented Oct. 8, 1963

3,106,313

PACKING OR SHIPPING CONTAINER

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Filed Oct. 19, 1961, Ser. No. 146,129
1 Claim. (Cl. 220—97)

The present invention relates generally to improvements in receptacles, and in particular it relates to an improved packing or shipping container and to an improved method for producing the same. The present application is a continuation-in-part of copending patent application of Maurice Kurhan, Serial No. 12,721, filed March 4, 1960, now Patent No. 3,027,826.

The foamed synthetic organic plastic materials, by reason of their light weight, shock-absorbing qualities, heat insulating properties and ease of working, are ideally suited for use as a packing material or for shipping containers, and are widely so employed. In the production of shipping containers from organic plastic foams, it is conventional to mold the foamed plastic material to the complementary configuration of the packaged article. While this procedure results in an eminently suitable packaging container for many applications, it leaves much to be desired. It requires the use of expensive equipment resulting in a container of a cost which does not justify its use in many cases.

It is, thus, a principal object of the present invention to provide an improved receptacle and an improved method for producing the same.

Another object of the present invention is to provide an improved shipping container formed of a foamed synthetic organic plastic material and an improved method for producing the same.

Still another object of the present invention is to provide an improved foamed synthetic plastic container which may be fabricated from the foamed plastic sheet in varying sizes and shapes, and from scrap pieces thereof.

A further object of the present invention is to provide an improved foamed synthetic plastic container which is readily stacked in readily releasable interlocking condition for shipping, storing and display purposes.

Still a further object of the present invention is to provide an improved receptacle and method of the above nature characterized by its simplicity, versatility and low cost.

The above and other objects of the present invention will become apparent from a reading of the following description taken in conjunction with the accompanying drawing, wherein

FIGURE 1 is a top perspective view of a sheet of foamed plastic material showing the cut lines delineating the components of the improved receptacle;

FIGURE 2 is a front perspective exploded view of the completed receptacle in open condition; and

FIGURE 3 is a vertical sectional view thereof in closed condition;

FIGURE 4 is a vertical sectional view, partially broken away, of a pair of stacked containers defining another embodiment of the present invention.

In a sense, the present invention contemplates the provision of a receptacle of the above nature, comprising a bottom wall and side walls defined by a plurality of coaxially aligned, vertically stacked end-to-end frame members formed of a foamed synthetic organic plastic material, the contiguous faces of said frame members being cemented or otherwise secured to each other, and the underface of the lowermost frame member being cemented to said bottom wall, the inner faces of said

frame members and bottom wall demarcating an article receiving well.

According to a preferred form of the present invention, the bottom wall of the container is formed of a foamed synthetic organic plastic disc, and the frame members are annuli of similar material having outer diameters equal to that of the bottom wall. There is also provided a foamed synthetic organic plastic cover member which includes a disc-shaped top and a depending concentric cylindrical plug formed of superimposed discs having diameters equal to or slightly less than the inner diameter of the annuli. In producing the improved receptacle, the discs and annuli are stamped or die cut from a sheet of the foamed plastic material, the cover plug forming discs being the cut-out center sections of the annuli. The various annuli and discs are cemented together in the arrangement above set forth.

In accordance with another form of the present invention the container cover member is provided with a hand grip coaxial interlock disc on its upper face having a diameter about equal to that of the inside diameter of the body forming annuli and formed of a plug produced as aforesaid. A coaxial interlock base annulus is mounted on the underface of the container bottom wall. Thus the closed containers may be vertically stacked in releasably interlocked positions by bringing the container interlock base annuli into engagement with the interlock discs of the next successive lower containers.

Referring now to the drawings, which illustrate a preferred embodiment of the present invention and an intermediate component in its production, reference numeral **10** generally designates the improved receptacle which includes a body member **12** and a mating cover member **14**. Receptacle **10** is fabricated from one or more sheets **16** of any suitable, preferably rigid foamed synthetic organic plastic material, which, if desired, may be scrap sheets or portions thereof. The plastic foams which may be employed are well known in the art and include foamed polystyrene, foamed saran, foamed polyvinyl chloride and other like materials. The thickness of the sheet **16** may vary as available but is preferably in the range of about ¼ inch to about 1 inch.

Employing any suitable conventional cutting device, which may be of the individual or multiple cutting type and of the continuous or intermittent type, a plurality of closely spaced first circular cuts **18** are formed therein, and concentric with most of cuts **18** there are formed second circular cuts **20**, of lesser diameter than cuts **18**. There are thus produced a plurality of large discs **22**, a plurality of annuli **24** having the same outer diameters as discs **22** and a plurality of small discs **26** having diameters substantially equal to the inner diameters of annuli **24**.

In assembling the body **12** of receptacle **10**, a plurality of annuli **24**—each resulting from a first and second cut—are stacked in coaxial end-to-end position, their contiguous abutting faces being secured to each other by any suitable cement or other means well known in the art, to produce a tubular member which defines the receptacle cylindrical side wall **28**. A large disc **22**—the result of the first cut—is then cemented in coaxial disposition to the bottom face of the side wall **28** thereby to define the receptacle bottom wall **30**. The cover member **14** is produced by assembling and cementing together a pair of small discs **26** to form the cover plug section **32** which is then cemented to, in coaxial relationship with, a large disc **22** which defines the cover top wall **34**. A hand grip may be provided by a small disc **26***a* cemented atop disc **22** and in coaxial relation thereto.

In employing the improved receptacle described above, an article, such as a closed bottle or jar **36**, is nested in

the body member well, and the receptacle 10 is closed by inserting cover plug 32 into the upper section of the body member wall, said plug 32 bearing against the top of the article 36 and the side walls of the well, and the under border of cover top 34 resting on the top face of the wall 28. As a consequence, the article 36 is supported in a substantially shock-protected position within receptacle 10 by reason of the material forming the receptacle 10 and by reason of the snug fit of the article within the closed receptacle cavity. Furthermore, the article 36 is also highly heat insulated by reason of the thermal properties of the foamed synthetic organic plastic material of which the receptacle 10 is made.

Referring now to FIGURE 4 of the drawing which illustrates another embodiment of the present invention, reference numeral 40 designates the container which includes a body member 42 and a mating cover member 44. Cover member 44 is identical in construction to cover member 14 above-described, and includes a cover top wall 46 formed of a large disc 22, a pair of cemented, depending coaxial small discs 26 which define a plug section and a hand grip-defining coaxial small disc 26*a* cemented atop cover wall 46.

Container body member 42 is similar to the body member 12, differing therefrom only in the provision of a base annulus 48 of the size and construction of the annuli 24 forming the container side wall. Base annulus 48 is coaxially cemented to the underface of the container bottom wall 30. The production of the various components, the discs and annuli, and their assembly are similar to those described in connection with the first embodiment, with the addition that the additional base annulus 48 is cemented to the underface of the container bottom wall 30.

The use of the container 40 is similar to that of the container 10. However, the containers 40 are provided with the further advantage that they may be firmly stacked in coaxial end-to-end relationship by engaging the cover grip disc 26 of one container 40 with the locking or base annulus 48 of the respective next upper container 40.

While there have been illustrated and described preferred embodiments of the present invention, it is apparent that numerous alterations and omissions may be made without departing from the spirit thereof, as for example,

there may be provided more than one disc as 26*a* to provide the hand grip interlock element, and more than one annulus as 48 at the bottom of the container.

I claim:

A plurality of stacked, interlocked receptacles, each comprising a body member and a removable cover member, the body comprising a bottom wall, side walls defined by a plurality of coaxially aligned, vertically stacked first frame members having their contiguous faces secured to each other with the underface of the lowermost frame member secured to the upper face of said bottom wall, a base frame member similar in size and shape to said first frame member, the upper face of said base frame member being secured to and coaxial with the underface of said bottom wall, the cover member including a top wall, a coaxial depending plug secured to the underface of the cover and extending into the body and having an outer periphery substantially matching the inner periphery of the side wall frame members, and an interlock member secured to and coaxial with the upper face of the cover member top wall and having an outer periphery substantially matching the inner periphery of its own base frame member and of the inner periphery of a base frame member of an adjacent receptacle, the interlock member of one receptacle extending into the opening of the base frame member of the next adjacent body member and the upper face of the top wall of the cover member substantially abutting against the lower face of the base frame member of the next adjacent body member, the outer margins of the frame, base and cover member being substantially longitudinally aligned.

References Cited in the file of this patent

UNITED STATES PATENTS

2,595,113	Taberer	Apr. 29, 1952
2,860,768	Smithers	Nov. 15, 1958
2,915,640	Grubel	Dec. 1, 1959
3,027,286	Kurhan	Mar. 27, 1962

FOREIGN PATENTS

647,364	Great Britain	Dec. 13, 1950
1,170,425	France	Sept. 22, 1958