April 5, 1938. A. B. WILSON 2,113,417

CONTAINER

Filed April 16, 1935

Fig. 1

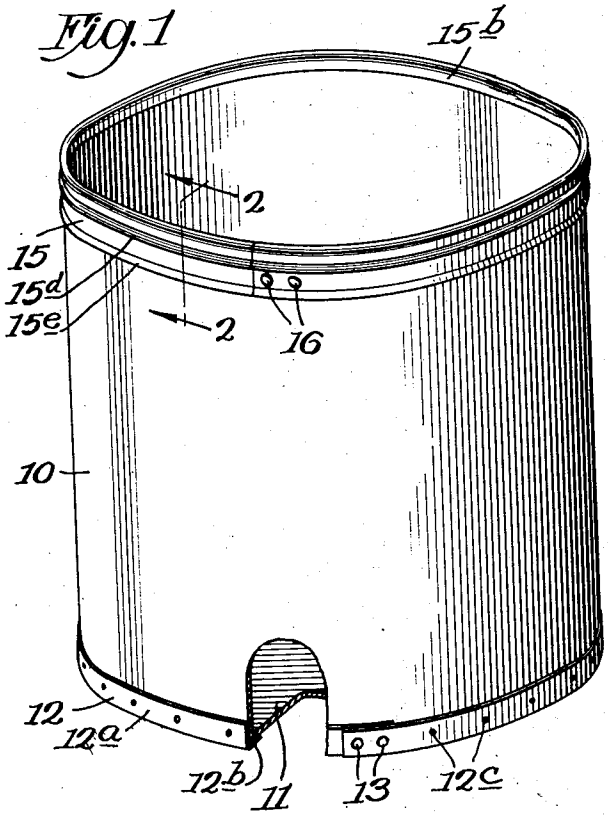


Fig. 4

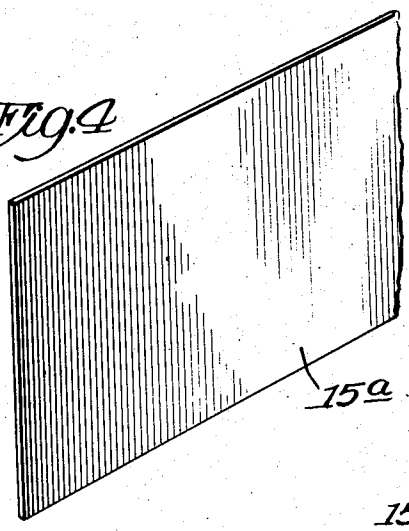


Fig. 5

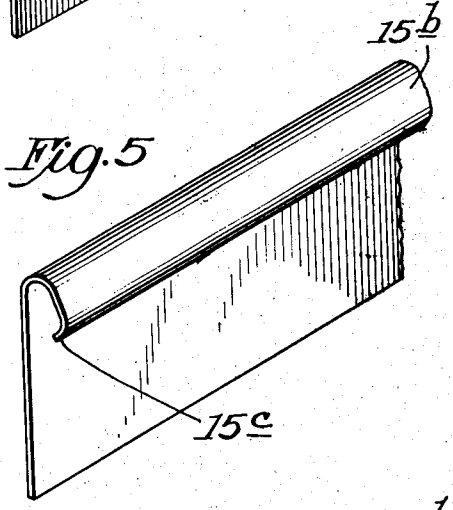


Fig. 2

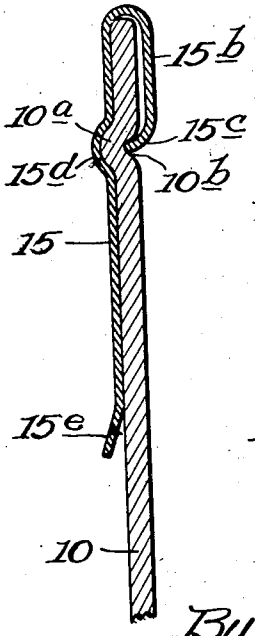


Fig. 3

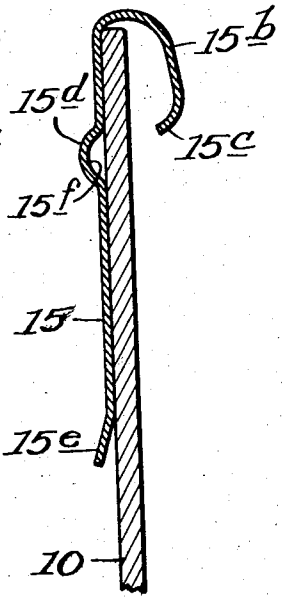
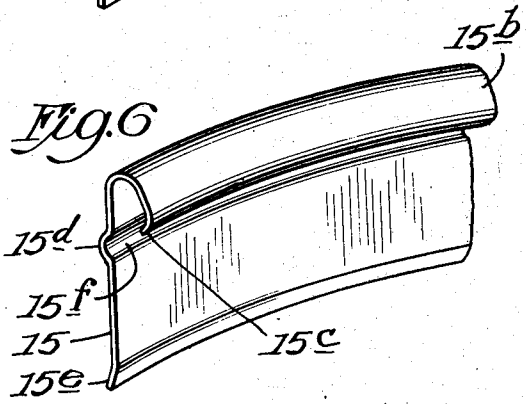


Fig. 6



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UNITED STATES PATENT OFFICE

2,113,417

CONTAINER

Allen B. Wilson, Evanston, Ill., assignor to Acme Steel Company, Chicago, Ill., a corporation of Illinois

Application April 16, 1935, Serial No. 16,641

2 Claims. (Cl. 229—4.5)

This invention relates to improvements in containers and it relates to that type of container in which an annular non-metallic wall and a non-metallic end wall are united with each other by means of an annular metallic rim and in which a rim is provided about the opposite end of the annular wall. Such containers are commonly employed for packing and shipping ice cream and other food products and it is desirable to provide the upper edge of the annular non-metallic wall of such a container with a protecting metallic rim which not only reenforces the non-metallic wall during the shipment of the container but also protects the edge of this wall against injury during the subsequent operation of gradually removing the contents of the container therefrom. The principal object of the present invention is to provide an improved container comprising an annular non-metallic wall provided at one end with an annular rim provided with complementary portions located on opposite sides of the annular wall and cooperating with each other to form an indentation in the wall whereby the rim is retained in place. Another object of the invention is to provide an improved container comprising an annular non-metallic wall provided at one end with an annular metallic rim having parts which embrace the edge of the annular wall and having an annular groove in one of these parts which is adapted to receive a portion of the annular wall which is projected into this groove by the edge of the other part so that an interlocking connection is formed between the annular wall and the rim. A further object of the invention is to provide an improved method of forming a container according to which the annular non-metallic wall of a container is brought into engagement with a surrounding metallic rim having an outwardly projecting annular groove and having an overhanging lip or flange on the inner side of the container which is then projected outwardly so that the edge of this overhanging part projects a portion of the annular wall into engagement with the groove. Other objects of the invention relate to various features of construction and arrangement and to details of the method which will appear more fully hereinafter.

The nature of the invention will be understood from the following specification taken with the accompanying drawing, in which one embodiment of the invention and one example of the improved method are illustrated. In the drawing,

Fig. 1 is a perspective view of the improved container of the present invention with a portion thereof broken away to illustrate the method of uniting the annnuar wall with the bottom wall of the container;

Fig. 2 is an enlarged vertical section through the upper portion of the annular wall and the top rim, taken on the line 2—2 of Fig. 1;

Fig. 3 is a sectional view similar to that of Fig. 2, showing the relative positions of the parts of the rim preliminary to projecting the inner annular flange or lip of the rim outwardly to cause a portion of the non-metallic wall to engage the groove which is formed by an annular bead in the rim;

Fig. 4 is a perspective view of a flat metallic strip or band from which the top rim of the container is formed;

Fig. 5 is a perspective view of a portion of the band shown in Fig. 4 after the top edge thereof has been curled inwardly to form an overhanging lip or flange; and

Fig. 6 is a perspective view of a portion of the completed annular rim showing the formation of an annular bead or groove therein and an outwardly flared portion of the bottom of the rim and illustrating the curvature which is imparted to the rim during the process of forming the bead and the outwardly flared part.

As illustrated in Fig. 1, the container comprises an annular non-metallic wall 10 which may be formed by bending a sheet of fibreboard, cardboard or the like into cylindrical form and then uniting the overlapping edges thereof by cementing them together or by employing staples or the like. This annular non-metallic wall is united with a bottom wall 11, also preferably formed of a non-metallic material similar to that used in the construction of the wall 10, by means of an annular metallic rim 12 which is of angular cross-section, comprising a body portion 12a which surrounds the lower edge of the annular wall 10 and an inwardly directed flange 12b which underlies and supports the bottom wall 11. The overlapping ends of this rim are secured together by rivets 13 and the body portion 12a is provided with inwardly extending punched projections 12c which extend into the material of the wall 10 to hold this wall in assembled relation with respect to the rim 12. This construction and the method of forming it are described and claimed in my copending application Serial No. 759,838, filed December 31, 1934.

The present invention relates primarily to the top rim 15 which is provided around the top edge of the annular wall 10 and which has an inter-

locking engagement with this wall. The rim 15 is adapted to be formed from an elongated strip 15a of sheet steel or the like, shown in Fig. 4, which in the first step of the operation of forming the rim has its top portion curled inwardly by suitable rolls or the like to form an inwardly and downwardly turned flange or lip 15b which terminates in an angular part 15c directed outwardly toward the body portion of the band, as shown in Fig. 5. The band having this overhanging lip or flange along its top edge is then operated upon by other rolls to form an outwardly directed rib 15d in the body portion of the band opposite the extremity 15c of the lip or flange and to provide an outwardly flared lower edge 15e on the band, while at the same time imparting to it a curvature which corresponds to the curvature of the annular wall 10 to which it is to be applied. When the band or rim has been put into the form shown in Fig. 6, a section of this band of the required length is arranged with its ends overlapping and these ends are secured together by rivets 16 or the like, thus forming a complete annular metallic rim having an inwardly and downwardly extending flange or lip spaced from the body portion of the band, as shown in Fig. 3. The body portion of this band has an internal diameter which corresponds with the outer diameter of the annular non-metallic wall 10 and the rim is then placed downwardly over the upper edge of the wall 10, as illustrated in Fig. 3, this action being facilitated by the action of the outwardly flared portion 15e along the outer edge of the rim. When this has been done, the top edge portion of the container is rotated between rolls with the result that the applied pressure forces the flange or lip 15b outwardly and downwardly so that the body portion of this flange or lip lies parallel to the wall 10 while the extremity 15c of the flange or lip forces a portion 10a of the annular wall outwardly into engagement with the annular groove 15f which is formed in the rim by the rib 15d, while at the same time forming an indentation 10b in the wall 10 opposite this groove. An interlocking engagement is thus established which effectually prevents the metallic rim 15 from being removed from the wall 10 and the top edge of the annular wall as well as its inner and outer surfaces adjacent thereto, are thus protected by the complementary parts of the rim.

Although one form of the improved container and one example of the improved method of forming it have been shown and described by way of illustration, it will be understood that the invention may take various forms and that the method may be practiced in various ways, coming within the scope of the appended claims.

I claim:

1. The combination in a container, of an annular non-metallic wall and a metallic rim surrounding said annular wall and having an annular rib therein forming a groove on the inner side of said rim, said rim extending over the top edge of said annular wall and having an annular flange on the inner side of said annular wall provided with a lower edge portion which is projected outwardly to maintain a portion of said annular wall in engagement with said groove.

2. A rim for containers comprising an annular metallic band provided with an annular outwardly directed rib and a downwardly and inwardly directed annular flange terminating in an outwardly directed continuous annular edge portion positioned opposite said rib and adapted to be thrust outwardly when applied to a container wall to force a part of said wall into the groove formed by said rib.

ALLEN B. WILSON.