

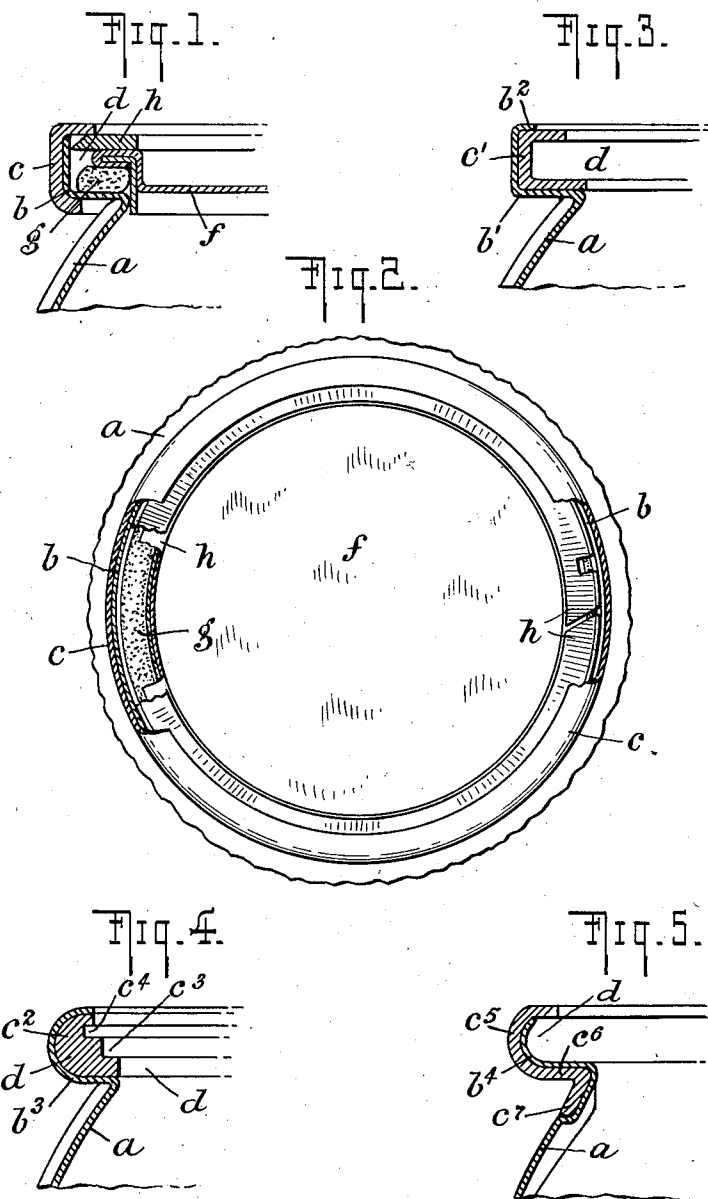
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METHOD OF FORMING COVER HOLDING RING SEATS FOR CONTAINERS

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WITNESS

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METHOD OF FORMING COVER-HOLDING RING SEATS FOR CONTAINERS.

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My present invention relates to the manufacture of containers having longitudinal corrugations and tapering toward one end or both ends, such containers being generally in the nature of barrels or drums. In connection with these containers there is employed at the end or at both ends a so-called ring seat which receives and holds the cover of the container and also the fastening or locking means by which said cover is secured. In my pending application, Serial No. 751,527, filed in the United States Patent Office on November 22, 1924, I have described a method according to which the ends of a longitudinally corrugated container body of the character referred to are converted by a combined pressure and drawing operation, into a smooth non-corrugated edge or end portion. My present invention relates to a further development of such earlier process.

According to my present invention the smoothed edge of the container is pressed outwardly to form a ring of angular or semi-circular cross-section which may constitute directly the support for the cover and which in conjunction with a ring placed in contact with its periphery, either inside or outside, will either form a two-part ring seat or serve to receive a unitary ring seat having the same purposes as referred to above and also described in my application for a patent filed in the United States Patent Office on November 6, 1924, Serial No. 748,032. When the ring seat is to be a two-part structure, the ring placed around the angular edge of the container may be used as a mold or guide for said edge, so that the ring and the edge of the container will be pressed together firmly and securely connected by the very act of shaping the edge of the container into the surrounding ring. The upper or outer flange of this ring serves as a backing for the expanding ring or other locking means which serves to secure the cover in position. When employing that form of my present invention in which the edge of the container is formed or molded into the surrounding ring, I prefer to provide said ring with a downwardly extending annular flange which is vertical or approximately so, to lie substantially in line with the corrugations of the container. The inner face of this flange is smooth and the pressing or smoothing out

of the corrugations begins at the lower edge of said flange so that the ends of the corrugations extend outwardly beyond and form a shoulder against which the said lower edge abuts. Thus the ring will have a firm bearing against the ends of said corrugations so that said ring will be firmly supported not only during the operation of shaping the edge of the container into it, but also after the shaping operation is completed.

Several satisfactory embodiments of my present invention are illustrated by the accompanying drawing, in which Fig. 1 is a partial longitudinal section of a barrel or like container embodying my present invention; Fig. 2 is a top view thereof, and Figs. 3, 4 and 5 are partial longitudinal sections illustrating three additional modes of carrying out my present invention. *a* indicates the longitudinally corrugated body of a container and *b* designates the smooth end portion of such body, which has been made smooth by a combined pressure and drawing operation such as referred to above. According to my present invention, this pressure and drawing operation is performed in such a manner as not only to smooth the end portion of the container but to give it at the same time a proper shape to cooperate with the ring seat. This shape may be a simple angular form of L-shaped cross-section, as in Fig. 1. The lower member of the L-shaped portion will form a seat for the packing *g* and will also be engaged on the opposite side by the lower flange of the ring *c*; the upper flange of which is engaged by the locking means, such as the expanding split ring *h*, which also engages the upper portion of the cover *f*. In Fig. 1, the L-shaped smooth end portion of the container together with the surrounding ring *c* forms the ring seat or pocket *d* for the reception of the packing *g*, the edge portion of the cap or cover *f* and the locking means *h*.

In Fig. 3 the ring *c'* having upper and lower flanges, is placed within the smooth end portion *b'* of the container body *a* and said container portion is extended inwardly at its edge to overlap the upper flange of said ring, as shown at *b''*. In this construction, the packing *g* does not engage the body of the container but the lower flange of the

ring c' , and the ring seat or annular groove for the reception of the parts g , h and of the edge of the cover f is formed exclusively by the ring c' ; in other words, the ring seat is formed by a single member.

Fig. 4 shows another construction in which the ring seat is formed by a single member c^2 , the outer periphery of which is of circular curvature, as shown, and the inner surface of which has a seat c^3 for the cover and a groove c^4 for the expanding ring or equivalent locking means. The smooth end portion of the body is of substantially semi-circular curvature in cross-section to fit around the correspondingly curved outer surface of the ring c^2 .

In Fig. 5, as in Fig. 1, the ring surrounds the smooth end portion of the container body. Said end portion b^4 is partly flat to form a seat for the packing g and partly round, as shown, to lie within the curved portion of the surrounding ring c^5 . While in Fig. 1 the flat portion of the container body engaged by the packing g is substantially unsupported by the surrounding ring, according to Fig. 5 the ring is extended at c^6 to support the corresponding portion of the smooth container end at every point, and furthermore said ring is formed with a downward extension or flange c^7 which fits against the ends of the corrugations of the container body whereby the ring c^5 is given a firm support during the operation of molding the smooth end portion of the container body into said ring.

It will be understood that the smooth portion of the container body is to be given the more or less angular or profiled section illustrated, by the same pressure and drawing operation which smooths out said portion, it being understood that originally the corrugations extend to the very edge of the container body and are smoothed or flattened out by an operation combining pressure and drawing. The smooth portion of the container might be given this profiled form first, and the ring c , c' , c^2 or c^5 subsequently placed around or into the profiled portion of the container end. However, I prefer to use the said ring c , c' , c^2 or c^5 as a mold or die against which the edge portion of the container body is forced, during the operation combining the pressure and drawing which smooths out the corrugations in said edge or end portion, so that there will be effected at the same time the following three steps or operations:

1. The smoothing out of the corrugations on the end portion of the container body.
2. The giving of a profiled section to such end portion.
3. The securing of a connection of such profiled portion with the correspondingly shaped annular surface of the ring c , c' , c^2 or c^5 , said ring together with said profiled

portion forming the ring seat for the reception of the container cover, the packing and the locking means.

Various changes in the specific forms shown and described may be made within the scope of the claims without departing from the spirit of my invention.

I claim:

1. The herein described method of shaping and strengthening the end portion of a container body, provided with longitudinal corrugations and contracted toward such end portion, which consists in placing a ring having a predetermined profile on one of its faces with said face in engagement with said end portion, applying pressure and a drawing operation to smooth out the longitudinal corrugations on such end portion and at the same time shape such end portion into an annular profiled shape corresponding to the predetermined profile of said ring whereby said end portion is forced into interlocking engagement with said ring, and together with it, forms a ring seat for the reception of a cover with its packing and locking means and the ends of the corrugations adjacent to said end portion form a shoulder against which the inner edge of said inner ring abuts.

2. The herein described method of shaping and strengthening the end portion of a container body, provided with longitudinal corrugations, which consists in placing a ring having a predetermined profile on one of its faces with said face in engagement with said end portion, applying pressure and a drawing operation to smooth out the longitudinal corrugations on such end portion and at the same time shape such end portion into an annular profiled shape corresponding to that of said ring whereby said end portion is forced into interlocking engagement with said ring, and together with it, forms a ring seat for the reception of a cover with its packing and locking means.

3. The herein described method of shaping and strengthening the end portion of a container body, provided with longitudinal corrugations, which consists in holding a strengthening ring adjacent to such end of the container body and exerting a combined pressure and drawing upon the metal of said end portion toward such ring to force the material of the end portion to conform to the adjacent surface of the ring and thereby shape such end portion and connect it securely with said ring, while at the same time smoothing out the corrugations on said end portion.

4. The herein described method of shaping and strengthening the end portion of a container body, provided with longitudinal corrugations, which consists in placing a grooved ring around such edge portion of the container body and forcing the said

5 end portion outwardly by a combined pressing and drawing operation against such ring thereby to conform the edge portion to the ring and connect it therewith while at the same time smoothing out the corrugations on such edge portion.

10 5. The herein described method of shaping and strengthening the end portion of a container body, provided with longitudinal corrugations, which consists in placing a grooved ring within such edge portion of the container body and forcing the latter inwardly by a combined pressing and drawing operation against such ring thereby to conform the edge portion of the container body to the adjacent outer surface of the ring and at the same time smooth out the longitudinal corrugations on such end portion.

20 6. The herein described method of shaping and strengthening the end portion of a

container body, provided with longitudinal corrugations, which consists in placing around such edge portion a ring provided with an extension or flange toward the central portion of such body, and pressing such end portion outwardly against said ring including the flange thereof, so as to form a shoulder to support said flange against the ends of the corrugations and smooth out the corrugations on that portion which engages the inner surface of said ring, while at the same time conforming the end portion of the container body to the inner surface of the ring and connecting such end portion securely with said ring.

In testimony whereof I have hereunto set my hand.

ALFONS MAUSER.