April 30, 1929. J. STRAMA 1,711,291

CONTAINER HAVING BUNG

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Fig. 1.

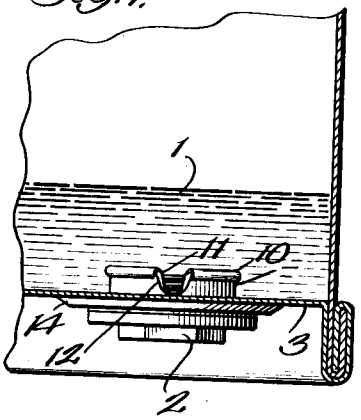


Fig. 2.

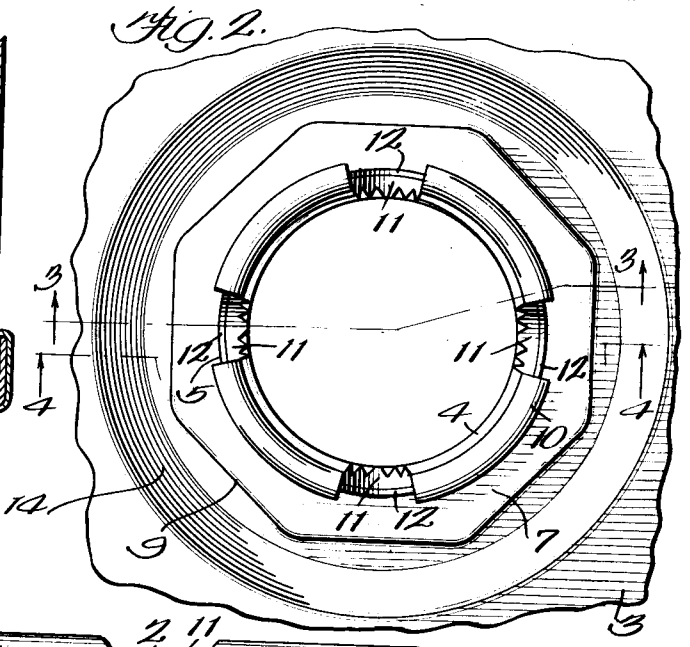


Fig. 3.

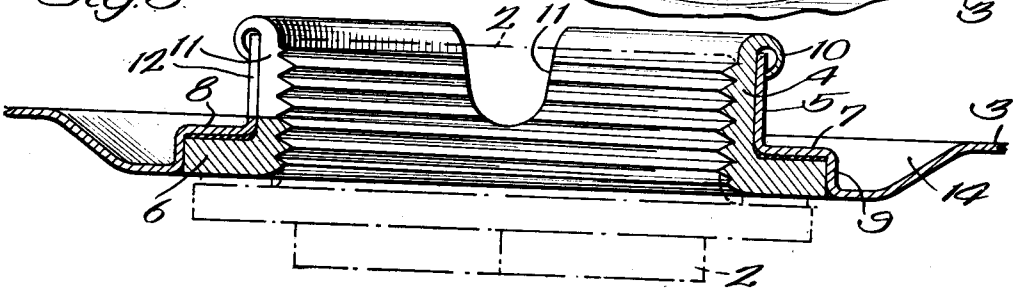


Fig. 4.

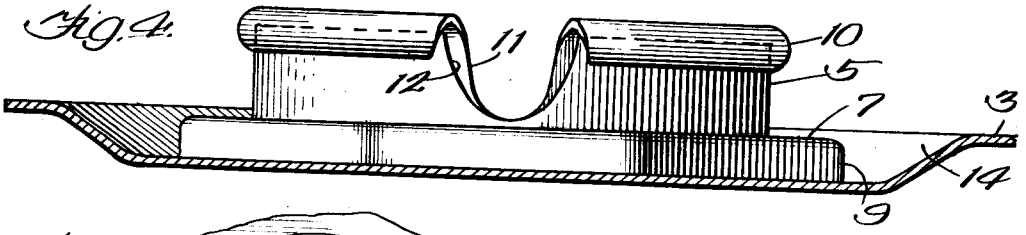
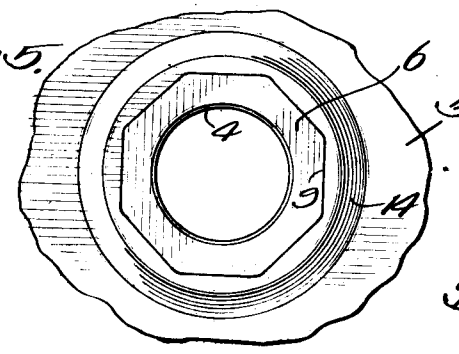


Fig. 5.



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CONTAINER HAVING BUNG

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Fig. 6.

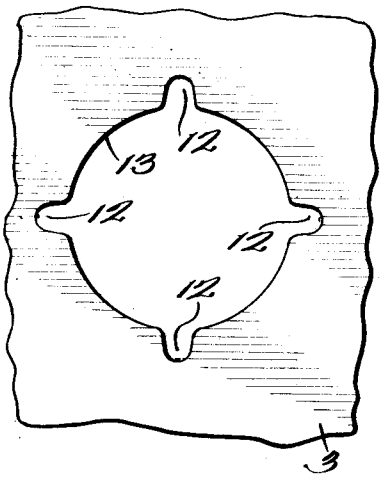


Fig. 7.

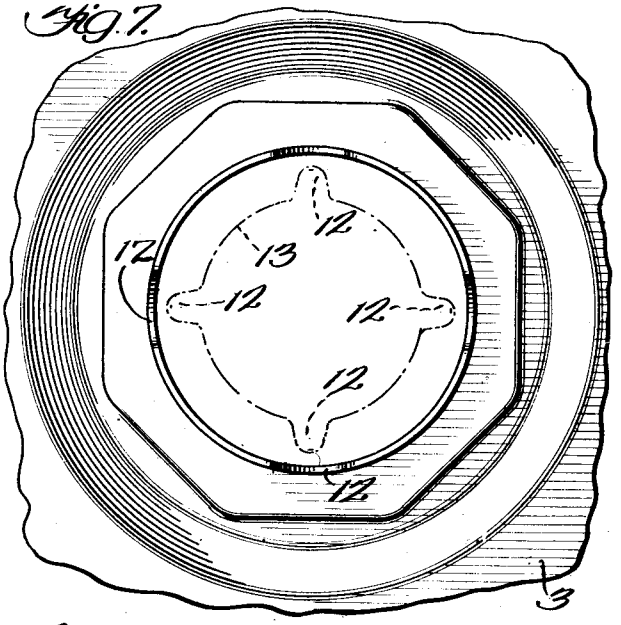


Fig. 8.

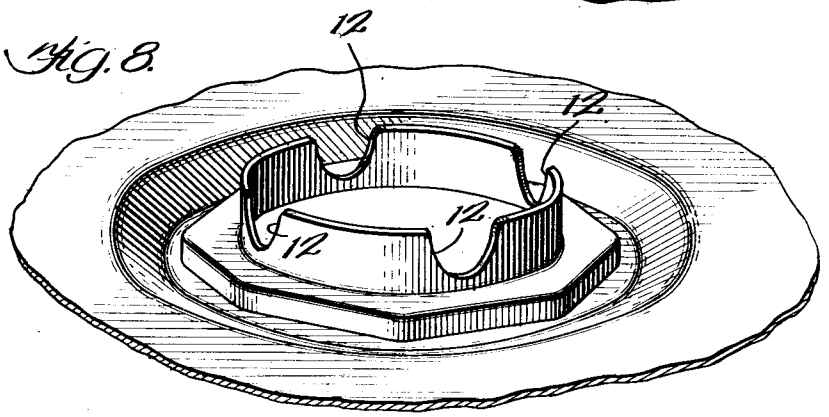
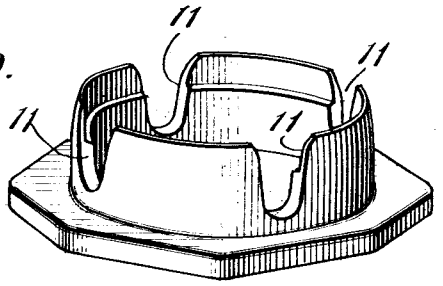


Fig. 9.



Inventor:
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By L. L. Gregg Atty.

Patented Apr. 30, 1929. 1,711,291

UNITED STATES PATENT OFFICE.

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CONTAINER HAVING BUNG.

Application filed November 25, 1927. Serial No. 235,577.

My invention relates to containers, such as metallic barrels, having bung receiving bushings which extend into the barrels and are preferably surrounded by and snugly received in rims that project inwardly into the barrels. These bushings and rims by projecting into the barrels beyond the walls which carry them prevent all of the liquid from being discharged.

In accordance with one feature of my invention, I provide lateral openings or notches in the rims and also in the bushings. I also desirably provide positioning formations whereby the bushings are positioned in predetermined relation to the rims to bring the notches or openings in the bushings into register with the notches or openings in the rims. These notches or openings are sufficiently close to the bases of the rims as to drain practically all of the liquid from the barrels in the final discharge of the liquid.

The invention has for another of its objects the provision of a process for notching the rims. In carrying out this feature of my invention, I form a generally circular hole through a substantially flat sheet, notch said sheet at the margin of the hole and thereby form an enlargement of the hole terminating beyond the generally circular contour of the hole, and bend, at an angle to the body of the sheet, the annular portion of the sheet that is concentric with and adjacent said circular hole and through which the notch passes.

The invention will be more fully explained by reference to the accompanying drawings in which Fig. 1 is a view of a portion of a metallic barrel in section with the preferred embodiment of my invention shown in association therewith; Fig. 2 is an end view, on a larger scale, of the form of the invention shown in Fig. 1; Fig. 3 is a sectional view on line 3—3 of Fig. 2; Fig. 4 is a sectional view on line 4—4 of Fig. 2; Fig. 5 is an end view of a portion of the barrel wall with the plug or bung assembled; Fig. 6 is a view illustrating the first step in the process of forming a notched rim in a substantially flat sheet of metal; Fig. 7 illustrates the final step of the process; Fig. 8 is a perspective view illustrating the product of the process; and Fig. 9 is a perspective view of the preferred form of bushing before it is inserted.

I have illustrated a portion of the barrel or can which contains liquid as illustrated at 1 in Fig. 1. This barrel is made of sheet metal which is brought into the desired shape. As shown, the bung or closure plug 2 is provided in the sheet metal end wall 3 of the barrel, though the location of the bung is not to be limited. This bung or closure plug is screwed into the threaded interior of the bushing body 4 which is surrounded by an inwardly projecting cylindrical rim 5 integrally formed with the wall and projecting at right angles therefrom, this rim surrounding the hole in said wall which contains said bushing body and through which liquid may be passed into and out of the barrel.

The bushing has a flange 6, on the exterior of the container or barrel, the threading of the bushing being continued through the zone of the flange, this flange being received in a pocket that is contiguous to the aforesaid rim and is adjacent the hole surrounded by the rim, the bottom 7 of the pocket which, in a way, is also the base of the rim 5, constituting a seat for the aforesaid flange and the annular sealing gasket 8 which is desirably interposed between said flange and seat. The lateral wall 9 of the pocket is hexagonal in shape as is also the periphery of the flange which snugly fits this hexagonal pocket wall. Said lateral pocket wall 9 and the periphery of the flange 6 thus have engaging portions at unequal distances from the axis of the rim to prevent the bushing from being turned. The bushing flange is tightly clamped against the gasket 8 by curling the inner end of the bushing outwardly against the inner edge of the rim 5, as indicated at 10, the unattached end of this curled bushing portion desirably being in contact with the rim. The bushing and the container or barrel wall carrying it are thus firmly held in fixed relation.

The bushing and the rim 5 surrounding it are respectively formed with lateral openings 11 and 12 therethrough, each opening 11 having an opening 12 in register therewith. These openings are preferably in the form of notches extending inwardly from the region of the base of the rim 5. Care is required in forming the notches 11 in the bushing inasmuch as these notches pass through the interior threading of the bushing. It is, therefore, not desirable to form

these notches in the bushing after the bushing is fixed in position. Also, it is not practical to form the notches 12 in the rim 5 after the barrel has been made and it is difficult to form these notches in the rim after the rim has been struck into place. I, therefore, form the notches in the bushing before the bushing is assembled. I also form notches in the portion of the metal from which the rim is formed. The notches in the rim are formed in the metal of the rim before the rim is formed. Figs. 6 and 7 illustrate the preferred method of forming the notches in the rim. The metal sheet 3 which is to constitute an end wall of the barrel is formed with a generally circular hole 13 therethrough and this hole is radially extended or enlarged by forming the notches 12 that lead into the hole, the hole and notches being desirably formed in one punching operation. After the notches have been formed, an annular portion of the sheet that is concentric with the hole 13 and which is of a radial width to substantially include said notches is pushed into a position at right angles to the sheet to constitute the rim 5, said notches then constituting the lateral openings 12 therethrough, as illustrated in Figs. 1, 2, 3, 4 and 7.

The notches 12 desirably terminate above the base 7 of the rim wherefore the aforesaid annular portion that is bent to form the rim 5 is preferably of a radial width which extends outwardly beyond the bases of the notches, the rim base 7 being preferably slightly below the level of the body of the wall 3 as is also the entire pocket 7, 9, whereby an annular basin 14 is formed around said pocket and below the level of the body of said wall. In other words, the wall 3 is outwardly bulged to form the basin 14 which is below the level of the body of the wall. By this arrangement, the notches 11 in the bushing, which are substantially coextensive with the notches 12 in the rim, terminate materially short of the zone of the flange 6 so that the interior threading of the bushing is not interrupted, by the notches 12, immediately adjacent the bushing flange, this threading extending from the flanged end of the bushing uninterruptedly into the interior of the bushing to a sufficient extent to prevent the threading from being impaired and prevent the bushing from being weakened, the bushing thus fully performing its prime function of holding the bung or closure plug in place while the notches 12 at the same time terminate at the level of the body portion of the wall to drain all of the contents of the barrel through the bore of the bushing, the plug being removed, except the very slight quantity retained in the basin 14.

When the openings or notches 11 and 12 are formed before the bushing is assembled, a construction is employed whereby said openings or notches in the bushing are brought into exact register with the openings or notches in the rim when the bushing and rim are assembled. To this end, the notches in the bushing and the notches in the rim are in similar positions with respect to the portions of the bushing flange and the bushing flange receiving pocket that hold the bushing from turning whereby the notches in the rim and bushing are brought into register when the bushing is placed in position. The process herein disclosed forms the subject matter of a division of the present application, Serial Number 304,728, filed Sept. 8, 1928.

Having thus described my invention, I claim:

1. The combination with a container having a sheet metal wall formed with a circular hole therethrough and an inwardly projecting cylindrical rim integrally formed with said wall and margining said hole, said wall having holding portions at unequal distances from the axis of said rim, said rim having a lateral opening therethrough for drainage of container contents; of a bushing received in said rim and formed with a flange having parts spaced apart from the common axis of bushing and rim similarly to the spacing of the aforesaid wall portions from such axis and engaging these wall portions to define the location of the bushing with respect to said rim, the bushing having a lateral opening, said openings in the rim and bushing being spaced apart substantially equal distances from the aforesaid engaging wall and flange portions to cause these openings to be substantially in register when the bushing is placed in position.

2. The combination with a container having a sheet metal wall formed with a circular hole therethrough and an inwardly projecting cylindrical rim integrally formed with said wall and margining said hole, said wall having holding portions at unequal distances from the axis of said rim, said rim having a lateral notch therethrough for drainage of container contents; of a bushing received in said rim and formed with a flange having parts spaced apart from the common axis of bushing and rim similarly to the spacing of the aforesaid wall portions from such axis and engaging these wall portions to define the location of the bushing with respect to said rim, the bushing having a lateral notch, said notches in the rim and bushing being spaced apart substantially equal distances from the aforesaid engaging wall and flange portions to cause these notches to be substantially in register when the bushing is placed in position.

3. The combination with a container having a sheet metal wall formed with a circular hole therethrough and an inwardly pro-

jecting cylindrical rim integrally formed with said wall and margining said hole, said rim having a lateral opening therethrough for drainage of container contents; of a bushing received in said rim and formed with a flange, the bushing having a lateral opening substantially in register with the opening in the rim.

4. The combination with a container having a sheet metal wall formed with a circular hole therethrough and an inwardly projecting cylindrical rim integrally formed with said wall and margining said hole, said rim having a lateral notch therethrough for drainage of container contents; of a bushing received in said rim and formed with a flange, the bushing having a lateral notch substantially in register with the notch in the rim.

In witness whereof, I hereunto subscribe my name.

JOSEPH STRAMA.