Aug. 17, 1926. 1,596,367

W. R. MILLER

METALLIC CONTAINER AND CLOSURE THEREFOR

Filed Oct. 25, 1924

Fig. 1.

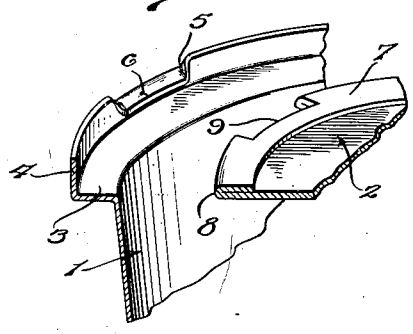


Fig. 2.

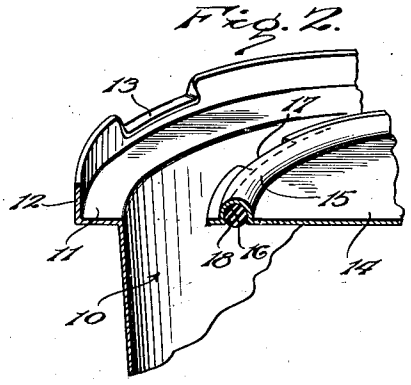


Fig. 3.

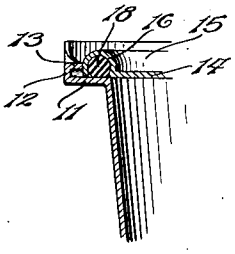


Fig. 4.

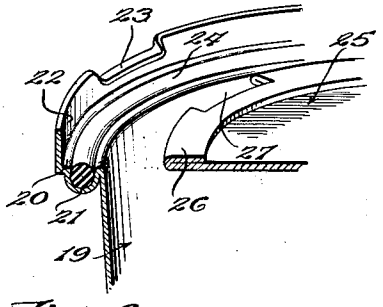


Fig. 5.

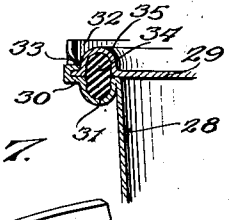


Fig. 6.

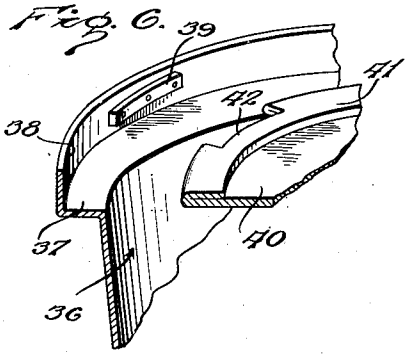
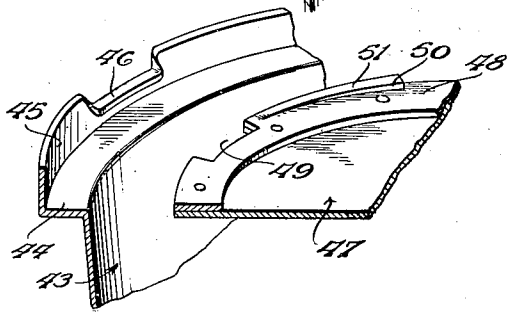


Fig. 7.



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UNITED STATES PATENT OFFICE.

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METALLIC CONTAINER AND CLOSURE THEREFOR.

Application filed October 25, 1924. Serial No. 745,879.

This invention relates to metallic containers and lids therefor, and more particularly to an improved means for holding the lids in place upon the containers.

One of the objects of the present invention is to provide a container and lid which may be readily formed from sheet metal and which parts of the container will embody coacting means for securely locking the lid in place upon the mouth of the container when the lid is applied and slightly rotated, so that the lid may be readily and quickly applied and as readily and quickly removed.

Another object of the invention, in one aspect thereof, is to provide means whereby the container may be so effectually sealed, when the lid is applied, as to adapt it to contain a liquid.

A still further object of the invention is to provide a construction in which the coacting locking parts are integrally formed with the container wall and the lid, thereby adapting the parts to be formed from integral sheet metal blanks.

In the accompanying drawings:—

Figure 1 is a perspective view illustrating portions of the body and lid of a container embodying the invention;

Figure 2 is a similar view illustrating a modified form of the invention;

Figure 3 is a vertical diametric sectional view through the structure shown in Figure 2, the lid and container being assembled;

Figure 4 is a view similar to Figures 1 and 2 illustrating a further modification of the invention;

Figure 5 is a view similar to Figure 3, illustrating another modification of the invention;

Figure 6 is a fragmentary sectional perspective view, illustrating another modification of the invention;

Figure 7 is a similar view illustrating a still further modification of the invention.

In that form of the invention illustrated in Figure 1 of the drawings, the wall of the body of the container is indicated by the numeral 1 and said container is of metal, as well as the lid which is indicated in general by the numeral 2. The body 1 of the container has its wall, at its mouth, formed to provide a horizontally outstanding circumferential shoulder 3 provided with an upstanding flange 4 extending about its outer edge, and at suitable intervals the said flange 4 is overturned in an inward direction as at 5 to provide a relatively flat inwardly projecting lug 6 occupying a plane parallel to the plane of the upper surface of the seating shoulder 3, but of a width less than the width of the said shoulder.

The lid 2 is of circular form and of a diameter to fit within the bounds of the flange 4 with its periphery substantially contacting the inner surface of the flange, and the peripheral portion of said lid 2 is overturned upon the upper face of the lid to provide a circumferential re-enforcing portion indicated by the numeral 7, the fold in the material comprising the lid providing a rounded margin to reduce friction in fitting the lid within the mouth of the container and likewise to obviate the presence of any sharp or ragged edges. At intervals in its periphery corresponding to the spacing of the lugs 6, the lid is formed both in its body portion and in its re-enforcing portion 7, with recesses 9, of dimensions to accommodate the lugs 6, so that in applying the lid to the mouth of the container, the recesses may be brought into registration with the lugs, and the lid may be then disposed upon the supporting shoulder 3, after which the lid may be bodily rotated so as to bring the recesses out of registration with the lugs, thereby bringing the intact portions of the periphery of the lid to position beneath the lugs 6 and confined between the same and the upper surface of the seating shoulder 3. In this manner the lid is securely held in place, but may be readily removed by rotating the same to again bring the recesses in registration with the lugs.

The form of the invention shown in Figures 2 and 3 of the drawings is especially adapted for employment where the container is to contain liquid or semi-liquid commodities, and in this embodiment the container body is indicated in general by the numeral 10 and is provided with a shoulder 11 and flange 12, corresponding to the shoulder 3 and flange 4 of the previously described form. Also in this embodiment the flange 12 is formed at intervals with lugs 13 corresponding to the lugs 6. The lid in this form is indicated by the numeral 14 and the same is formed to provide an upstanding substantially semi-circular bead 15 providing a groove 16 in the under side of the lid

extending circumferentially of the same immediately inwardly of the periphery of the lid. The peripheral portion of the lid between the outer side of the wall of the groove and the periphery of the same is formed at intervals with recesses 17 which correspond to recesses 9 in the previously described form. A packing ring 18 is fitted into the groove 16 and the said ring may be of rubber or any other material found suitable for the purpose and is of circular form in cross section so that the under side of the ring will project a greater or less distance below the plane of the under side of the lid 14 and will therefore be brought into snug contact with the upper surface of the seating shoulder 11 when the lid is applied to the container, the recesses 17 accommodating the lugs 13 as in the previously described form of the invention, and the intact marginal portion of the lid between the recesses being engageable beneath the lugs 13 through rotation of the lid. In applying the lid, in this form of the invention, a certain amount of pressure will require to be exerted in order to engage the intact portion of the periphery of the lid with the lugs 13, and therefore the packing ring or gasket 18 will be more or less compressed thereby insuring of an effectual sealing of the container.

In the form of the invention shown in Figure 4, the body of the container is indicated by the numeral 19, and the same is, as in the previously described form, formed of sheet metal and has its marginal portion at its mouth turned outwardly and formed to provide a seating shoulder 20 and a groove 21 in said shoulder, the groove opening through the upper side of the shoulder and being of approximately semi-circular form. The periphery of the shoulder 20 is provided with an upstanding flange 22 corresponding to the flange 4 previously described, and the flange is formed with a number of lugs 23 as in the previous instance. A packing ring or gasket 24 is arranged within the groove 21 and at its upper side projects a greater or less distance above the plane of the upper side of the shoulder 20. The lid, in this form of the invention, is indicated by the numeral 25, and the said lid is provided with an overturned marginal portion providing a re-enforcement 26 corresponding to the re-enforcement 7, the periphery of the lid being formed at intervals with recesses 27 corresponding to the recesses 9 of the first described form of the invention. In other words, the lid 25 is identical in construction with the lid 2, and may be interchangeably employed with the container shown in Figure 1 or the container shown in Figure 4. The recesses 27 accommodate the lugs 23, as previously described in connection with the recesses 9 and lugs 6, and it will be evident that when the lid is applied with its recesses registering with the lugs 23 and is pressed downwardly and is rotated or turned, the intact marginal portions thereof will ride beneath the lugs 23 thereby securing the lid in place and sufficiently compressing the gasket 24 to insure of a fluid-tight seal.

Figure 5 of the drawings illustrates a modification in which a container similar to the one shown in Figure 4 is employed in conjunction with a lid similar to the one shown in Figure 2. In this figure the container is indicated by the numeral 28, and the lid by the numeral 29, the container being formed at its mouth with an outstanding shoulder 30 shaped to provide a groove 31 corresponding to the groove 21 in Figure 4. Likewise the shoulder is provided with an upstanding circumferential flange 32 corresponding to the flange 22 and formed to provide lugs 33 corresponding to lugs 23. The packing ring 34 used in connection with this form of container is initially of substantially circular form in cross section, or of approximately this form, and it will be observed by reference to the figure that when the lid is assembled with the body of the container, the groove 35 of the lid will be disposed over the groove 31 of the container, and the packing ring 34 will be confined within the two grooves, the intact marginal portion of the lid 29 engaging with the lugs 32.

In the form of the invention shown in Figure 6, the container body is indicated by the numeral 36, and the same is provided with an outstanding shoulder 37 corresponding to the shoulder 3 of the first described form of the invention, this shoulder being provided at its outer edge with a circumferential upstanding flange 38. In this form, lugs or lug strips 39 are secured to the inner side of the flange 38 at intervals, by riveting or otherwise, and the said lugs are inclined in the direction of the seating shoulder 37 so that the space between the under side of each lug and the upper side of the seating shoulder 37 is decreased in height from one end of the lug to the other. In this form, the same type of lid is employed as in Figure 1, and is indicated by the numeral 40 and has its marginal portion overturned to provide a circumferential reenforcing portion 41 corresponding to the portion 7, and formed at suitable intervals with recesses 42 to accommodate the lugs 39 when the lid is disposed in place upon the seating shoulder 37, the lid being rotatable, as in the previously described form, so as to bring the marginal portion of the lid beneath the lugs 39. The re-enforced marginal portion of the lid is of a thickness somewhat greater than the shortest distance between the under side of the lugs 39 and

the upper side of the shoulder 37, so that as the lid is rotated, the said marginal portion of the lid will bind between the lugs and the seating shoulder, and the lid will thus be locked against any rotative displacement.

In the form of the invention shown in Figure 7 of the drawings, the body of the container is substantially identical with the body shown in Figures 1 and 2, and is indicated by the numeral 43, and is provided with a seating shoulder 44 and flange 45, corresponding to the shoulder 3 and flange 4 of the form shown in Figure 1, the flange being provided with lugs 46 corresponding to lugs 6. In this form the lid, which is indicated by the numeral 47, has secured upon its upper face, at its periphery, an annular re-enforcing ring 48, which registers with the margin of the lid, and said ring and the lid are formed at intervals with recesses 49 to accommodate the lugs 46. Formed upon the ring 48 at intervals in its circumference and in juxtaposition to respective ones of the recesses 49, are ribs 50, the upper surfaces of which are inclined upwardly from the plane of the upper side of the ring 48 and from the adjacent end of the respective recess 49, as indicated by the numeral 51. In assembling the lid 47 with the container body 43, the lid is disposed above the mouth of the body with the recesses 49 in registration with lugs 46 and lowered to position resting upon the seating shoulder 44. The lid is then rotated as in the previously described forms of the invention, and in this rotation the ribs 50 will be brought to position beneath the lugs 46, and due to the inclination of the upper sides of said ribs will wedge between the said lugs 46, and the seating shoulder, thereby securing the lid against accidental rotative displacement and binding the same firmly upon the seating shoulder.

Having thus described the invention, what I claim is:—

1. In combination, a container comprising a sheet metal body having an outstanding circumferential seating shoulder provided at its periphery with a circumferential upstanding flange, a fragment of the upper edge portion of said flange being inwardly overturned to provide a lug overhanging the seating shoulder and its ends connected with the upper edge portion of the flange to prevent vertical movement of the lug, and a lid disposable upon the shoulder and rotatable to engage at its periphery beneath the lug, the lid having a notch to accommodate the lug and permit of such disposal of the lid.

2. In combination, a container, comprising a sheet metal body having an integral outstanding circumferential seating shoulder provided at its periphery with an upstanding flange, a fragment of the upper edge portion of said flange being overturned inwardly to provide a lug overhanging the said shoulder and braced at its ends against vertical movement, and a sheet metal lid having its marginal portion overturned to provide a re-enforced rim, the said rim having a notch to accommodate the said lug and permit of the disposal of the rim of the lid upon the shoulder of the container whereby the lid may be rotated to bring an intact portion of its rim into engagement beneath the lugs.

In testimony whereof I affix my signature.

WALTER R. MILLER. [L. S.]