

Oct. 8, 1935.

H. H. PINNEY ET AL

2,016,512

LIQUID CONTAINER AND METHOD OF MAKING SAME

Filed April 28, 1933

2 Sheets-Sheet 1

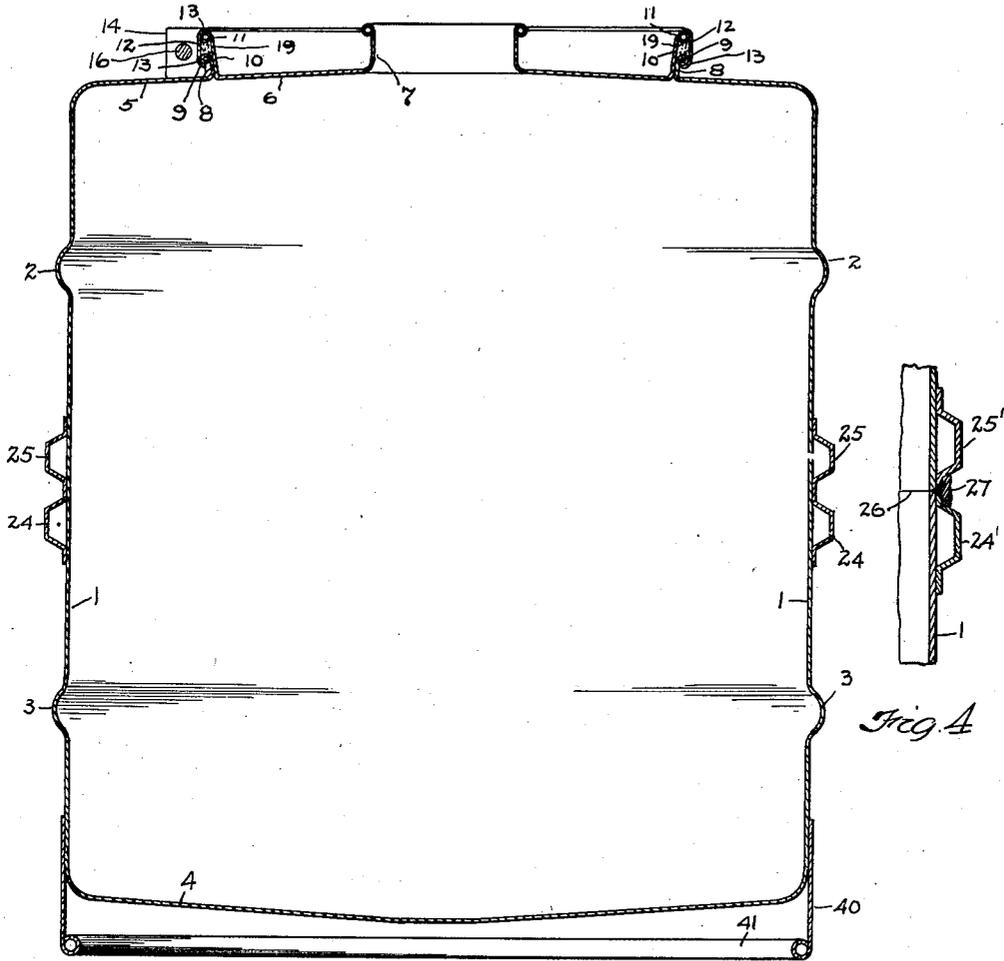


Fig. 1.

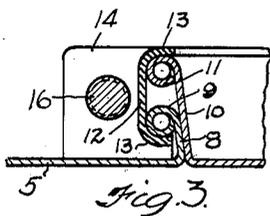


Fig. 3.

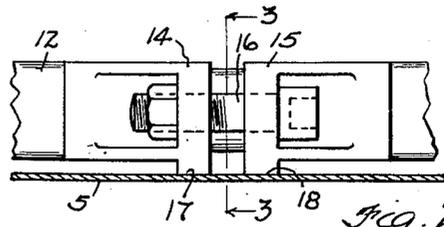


Fig. 2.

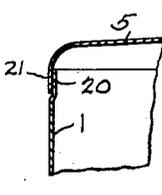


Fig. 5.

Fig. 7.

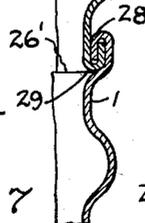


Fig. 6.

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2 Sheets-Sheet 2

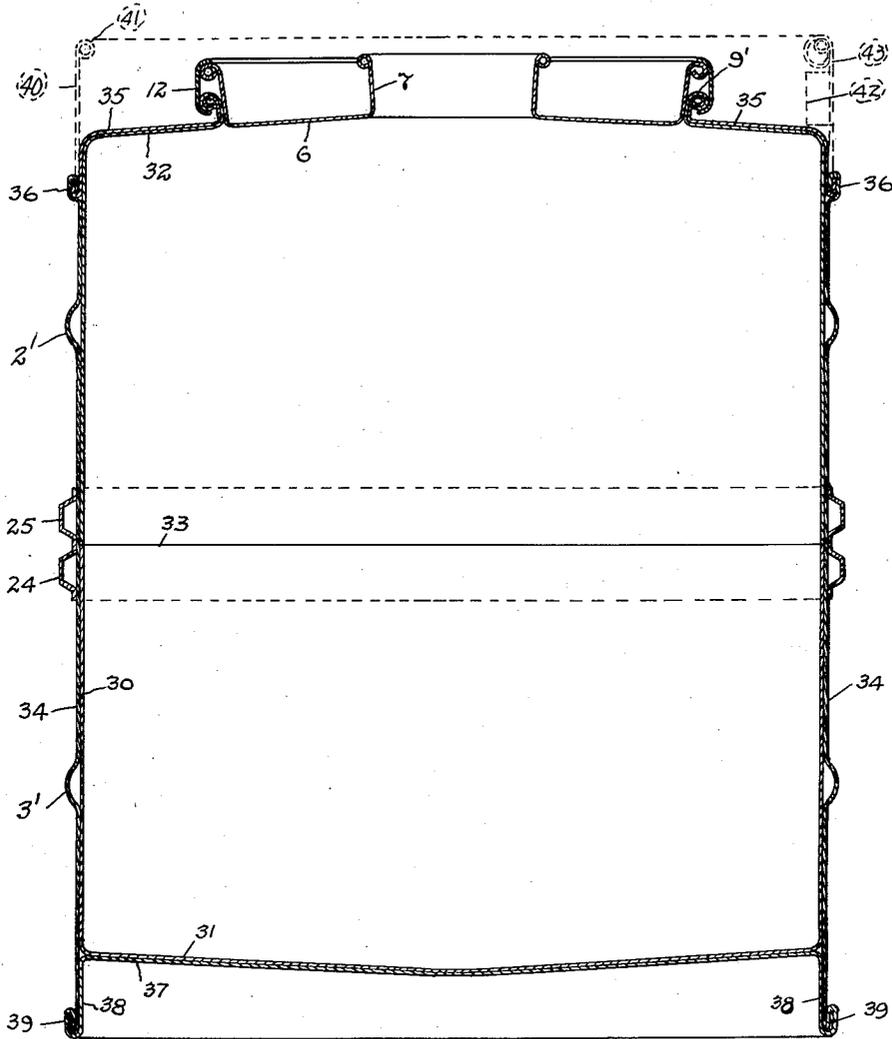


Fig. 8

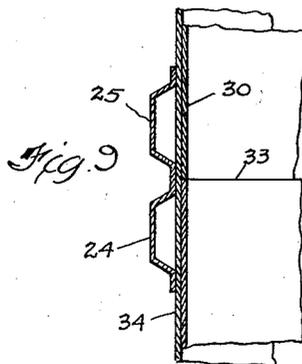


Fig. 9

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LIQUID CONTAINER AND METHOD OF MAKING SAME

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Application April 28, 1933, Serial No. 668,320½

3 Claims. (Cl. 220-63)

The present invention relating as indicated to liquid containers has more particular reference to a construction and method of fabrication of a metallic vessel which is manually portable and best adapted for the handling of beverage liquids such as milk and beer during the processing of which it is necessary to subject both the container and liquid to a heating treatment, such as a pasteurizing process.

It is the general object and nature of our invention, therefore, to provide such a container which shall be relatively light in weight, of durable and rugged construction, composed of a material, and particularly a metal, which is resistant to corrosive chemical action and which will simultaneously possess a relatively high thermo-conductivity.

It is a further object to provide a form of construction for such a container, which while possessing the above-named advantages and properties, will have the further attributes of economy of manufacture and simplified fabrication.

It is a still further object of the invention to provide a closure means for the container which will adequately serve to seal the interior of said container and be readily removable therefrom.

It is another object to provide an auxiliary member which may be called a protecting and stacking ring which is adapted to interengage over the ends of the container and to facilitate the handling, transportation, storage, and nesting or interpacking of the containers.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims, the annexed drawings and the following description setting forth in detail certain means and one mode of carrying out the invention, such disclosed means and mode illustrating, however, but one of various ways in which the principle of the invention may be used.

In said annexed drawings:

Fig. 1 is a sectioned elevational view illustrating a container constructed according to the principles of our invention; Fig. 2 is an enlarged fragmentary view of a portion of the container cover retaining band; Fig. 3 is a section taken substantially along the line 3-3 of Fig. 2; Fig. 4 is an enlarged sectional view of the medial portion of the wall of the container showing a modified form of construction; Figs. 5 and 6 are enlarged detail sectional views each showing a step in the fabrication of the juncture between the top and bottom walls with the side walls of the container;

Fig. 7 is a view similar to Fig. 4 and showing still another modified form of construction for the side wall of the container; Fig. 8 is a sectioned elevational view illustrating an alternative form of construction for the entire container; and Fig. 9 is an enlarged detail sectional view of the medial portion of the container shown in Fig. 8.

Now referring more particularly to the drawings, the container as illustrated in Fig. 1 consists of the cylindrical side wall portion 1 having the reinforcing beads 2 and 3 rolled therein; and the bottom wall 4 and the top wall 5. The top 5 of the container has an opening therein which is adapted to be closed by the cover member 6. The cover 6 may, in turn, have a second and smaller aperture 7 positioned therein. The customary type of plug or bung (not shown) may be driven into the opening 7.

The margin of the opening in the top 5 is surrounded by an up-turned, slightly tapered flange 8, which at its outermost edge is rolled into the beaded form 9. The cover 6 likewise, has a tapered flange 10 which is complementary to and adapted to engage with the flange 8 of the top 5. A bead 11 is also positioned upon the edge of the flange 10.

A compressible and expansible ring 12 having the inwardly directed flanges 13 is adapted to surround the flanges of the opening and cover 6 and to retain the latter in position.

It will be noted that the flanges 15 have their inner surfaces disposed in a slightly divergent direction. The purpose of this latter construction is to effect a wedging action tending to draw the beaded edges 9 and 11 of the flanges 8 and 10 respectively towards each other, thereby insuring a sufficiently tightly seating fit between the cover and the container flange.

The collar or ring 12 is split at one portion of its periphery. Adjacent the split ends of the ring 12 are secured the outwardly projecting lugs 14 and 15 which are adapted to receive a fastening bolt 16. The lugs 14 and 15 also carry the downwardly projecting portions 17 and 18 which are adapted to bear against the surface of the top 5 and to properly position the retaining ring 12 with respect to the flanged opening and cover 6. A resilient packing 19 may be positioned in the interior space between the ring 12 and the flanges 8 and 10 for the purpose of more thoroughly sealing the cover 6 to the top 5 of the container.

It is contemplated that the above described structure be fabricated from sheet metal stock, preferably composed of stainless steel which is resistant to corrosion. Such sheet metal stock,

of course, may be readily rolled, drawn and stamped to various forms and shapes which it is desired to produce.

Now referring to Figs. 5 and 6, the top and bottom members 4 and 5 respectively of the container may be secured to the side wall portion 1 in the following manner. The upper end of the side wall portion 1 is rolled into an inwardly offset portion 20 which is adapted to tightly engage with the downwardly turned flange 21 on the top 5. The bottom edge of the side wall 1 is likewise rolled into the inwardly offset portion 22 which is adapted to tightly engage with the upwardly extending flange 23 of the bottom wall 4. In order to insure a thoroughly satisfactory and more integral joint, the interfitting portions 20, 21, 22 and 23 are then welded one to the other, resulting in a substantially integral structure.

It is also contemplated that channel-shaped reinforcing rings, which are fabricated from sheet or strip stock be shrunk onto the medial portion of the side wall 1. Where it is desired, for the sake of economy or facilitating fabrication from smaller pieces, the side wall portion 1 of the container may be fabricated in two halves which are adapted to join each other along the meeting line 26. In this instance, two channel-shaped reinforcing rings 24' and 25' are positioned adjacent the meeting line 26 and a bonded joint consisting of the metal 27 deposited by means of the welding process serves to join the two half portions of the container.

In Fig. 7, there is shown still another alternative manner in which the two half portions of the container may be joined one to the other. In this instance, two reversely folded crimps 28 and 29 are rolled upon the meeting lines 26' of the two half portions of the container. The crimps 28 and 29 are complementary and adapted to interfit with each other, and are then tightly rolled into adjoining relationship whereby a double seam joint is provided which joins the two halves of the container.

When it is desired to construct a container in which the proportion of stainless steel is substantially reduced, the structure illustrated in Fig. 8 is employed. In Fig. 8, there is shown an inner lining for the container composed of stainless steel and in the form of the cylindrical side wall 30, and the bottom and top walls 31 and 32. The bottom and top walls are joined in the side walls in substantially the identical manner as heretofore described in connection with the structure shown in Figs. 1, 5 and 6. The inner lining of stainless steel may also be fabricated in two half portions meeting along the line 33 and then welded one to the other.

An outer wall 34 of relatively inexpensive ordinary steel is then press-fitted to the inner wall 30. The outer wall also possesses reinforcing beads 2' and 3' rolled therein similar to the beads 2 and 3 shown in Fig. 1, as well as the reinforcing channel-shaped rings 24 and 25. The upper end of the outer wall 34 is joined to an outer top 35 by means of the crimped double seam joint 36. The top outer portion 35 closely contacts and overlies the inner lining 32 and is joined therewith around the beaded flange 9'. The cover 6 and retaining ring 12 are positioned upon the top of the container in the same manner as the analogous structure heretofore described in connection with Fig. 1.

A bottom protecting cover 37 is adapted to interfit and closely contact with the bottom 31 of

the inner lining. Flanges 38 extend beyond the bottom wall of the container and are secured to the end of the outer wall 34 by means of crimped double seam joints 39.

In order to facilitate the handling, transportation, and stacking of the above described containers, there has been provided an auxiliary protecting ring 40 which is adapted to interfit over the top or the bottom of the container as shown in dotted lines in Fig. 8 and in full lines in Fig. 1, respectively. A rolled bead 41 is placed on the outer edge of the protecting ring 40. The rolled bead 41 presents a smooth, even edge which not only reinforces the protecting ring 40, but prevents the workmen from cutting their hands when handling the container. A hand hole 42 may be provided in the side of the protecting ring 40. The hand hole 42 is made of sufficient size for the insertion of a workman's fingers. A curved piece of strip metal stock 43 20 may be welded to the protecting ring at a locality immediately above the hand hole 42 and functions as a convenient grip for removing the protecting ring 40 or manipulating the entire container.

The auxiliary ring 40, as will be seen, may be positioned on either the top or bottom of the container, and not only serves as a means for protecting the end walls thereof, but presents a flange which readily engages with the end of a second container and thereby greatly facilitates the stacking or packing of a plurality of such containers with respect to each other.

Other modes of applying the principle of our invention may be employed instead of the one explained, change being made as regards the means and the steps herein disclosed, provided those stated by any of the following claims or their equivalent be employed.

We therefore particularly point out and distinctly claim as our invention:

1. A liquid container fabricated from sheet metal stock comprising the combination of an inner lining of non-corrosive metal, an outer cylindrical shell press fitted to said inner lining, said outer shell having a portion extending beyond the bottom of said inner lining, an end wall member for said shell, said member having an outwardly projecting flange fitting against the inner side of said extending portion and the outer edges of said flange being joined to the outer ends of said shell, and the body portion of said end wall member being in contact with and supporting the bottom of said inner lining.
2. A liquid container fabricated from sheet metal stock comprising the combination of an inner lining of non-corrosive metal, an outer cylindrical shell press fitted to said inner lining, said outer shell having a portion extending beyond the bottom of said inner lining, an end wall member for said shell, said member having an outwardly projecting flange fitting against the inner side of said extending portion and the outer edges of said flange being joined to the outer ends of said shell, the body portion of said end wall member being in contact with and supporting the bottom of said inner lining, and an auxiliary ring adapted to fit over the top of said outer shell, the outer edge of said ring extending beyond the top of said container.

3. A liquid container fabricated from sheet metal stock comprising the combination of an inner lining of non-corrosive metal, an outer cylindrical shell press fitted to said inner lining, 75

said outer shell having a portion extending beyond the bottom of said inner lining, an end wall member for said shell, said member having an outwardly projecting flange fitting against the inner side of said extending portion and the outer edges of said flange being joined to the outer ends of said shell, the body portion of said end wall member being in contact with and support-

ing the bottom of said inner lining, an auxiliary ring adapted to fit over the top of said outer shell, the outer edge of said ring extending beyond the top of said container, and handholds adjacent the outer edge of said ring for handling and moving said container.

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