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E. H. WITTENBERG

2,331,449

CONTAINER CONSTRUCTION

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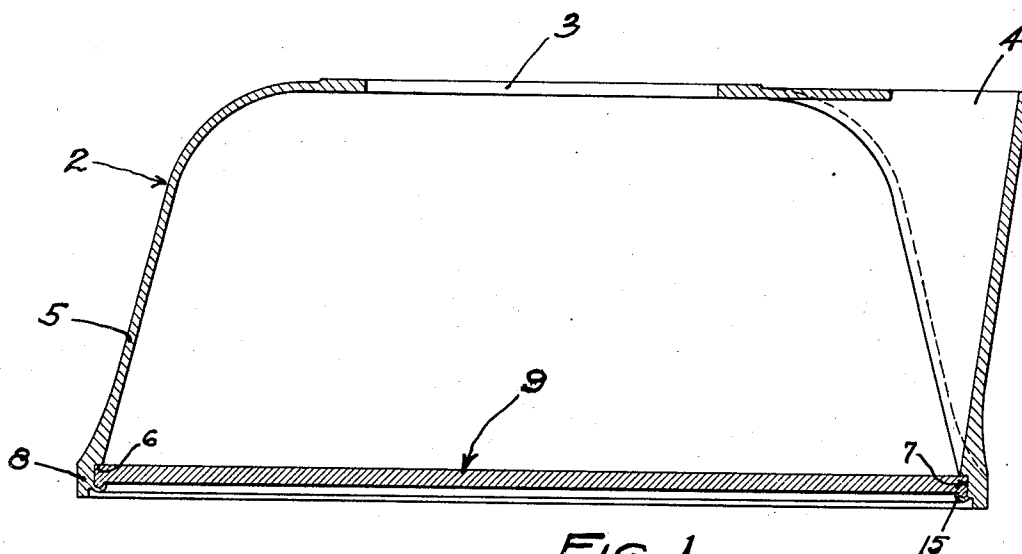


FIG. 1

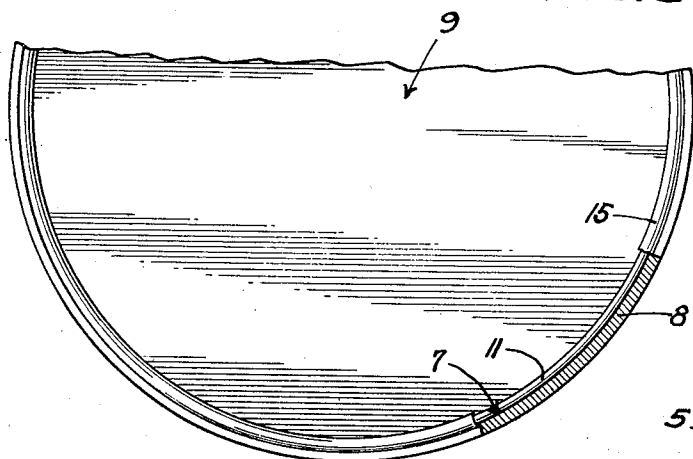


FIG. 2

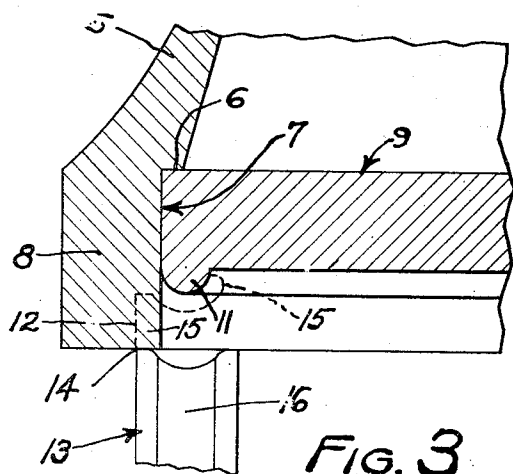


FIG. 3

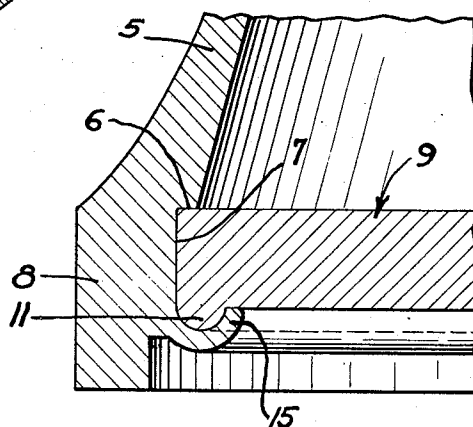


FIG. 4

INVENTOR
EDWARD H. WITTENBERG

By *Paul, Paul & Moore*
ATTORNEYS

UNITED STATES PATENT OFFICE

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CONTAINER CONSTRUCTION

Edward H. Wittenberg, Eau Claire, Wis., assignor
to National Pressure Cooker Company, Eau
Claire, Wis., a corporation of Wisconsin

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1 Claim. (Cl. 220—67)

This invention relates to new and useful improvements in containers and more particularly to a novel method of securing the bottom to the container, whereby the manufacture of the container may be facilitated.

The invention appertains more specifically to the manufacture of containers from cast metal as, for example, aluminum. Containers, such as tea kettles and other kitchenware, are frequently made from cast aluminum, with the bottom cast integral with the side walls of the kettle. This involves the use of cores in preparing the necessary molds for the molding operation, which sometimes results in the walls of the kettle varying more or less in thickness, because of the core slightly shifting in the operation of pouring the metal. To overcome this difficulty and to simplify and facilitate the molding operation, I propose to form the container body and its bottom independently of each other, whereby the use of a relatively large core in the molding operation is unnecessary. After the container body and bottom have been cast, the bottom is secured in position in the container in a novel and simplified manner, whereby the cost of making the container or kettle is greatly reduced, as compared to present methods of manufacture, and an article of superior quality is the result.

An object of the present invention, therefore, is to provide a novel method of securing a bottom in position in a container or kettle, whereby the bottom will be secured thereto in leak-proof relation and, when completed, may appear as an integral part of the walls of the container.

A further object is to provide a container body, open at its bottom, and provided with an annular seat adjacent the lower edge of its walls adapted to receive a suitable bottom, after which a portion of the metal of the side walls of the container is upset and inwardly rolled over the marginal edge of the bottom, thereby to secure it to the side walls of the container in leak-proof relation.

Other objects of the invention reside in the simple and inexpensive method of securing the bottom to the side walls of the container, whereby it is hermetically sealed thereto; and in the provision of an annular bead adjacent the peripheral edge of the bottom over which a portion of the metal of the side walls is rolled, under pressure, thereby to permanently secure the bottom to the body of the container.

Other objects of the invention will appear from the following description and accompanying

drawing and will be pointed out in the annexed claims.

In the accompanying drawing there has been disclosed a structure designed to carry out the various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown as various changes may be made within the scope of the claims which follow.

In the drawing:

Figure 1 is a cross sectional view of a container showing the bottom secured thereto in accordance with the novel method herein disclosed;

Figure 2 is a partial bottom view of Figure 1;

Figure 3 is an enlarged detail sectional view showing the bottom fitted to its seat; and

Figure 4 is a view similar to Figure 3, showing the bottom secured in position.

In the selected embodiment of the invention here shown, there is illustrated in Figure 1, a container in the form of a tea kettle, comprising the usual body 2 provided with a filling opening 3 and having a pouring spout 4.

The side wall 5 of the kettle is shown provided with an annular seat 6, spaced upwardly from the lower edge of the container wall. The seat 6 may be conveniently formed by providing an annular recess or bore in the lower enlarged edge portion 8 of the wall 5, having a cylindrical wall 7. The lower edge portion 8 of the container wall is preferably enlarged as shown in Figures 1, 3, and 4, whereby ample strength is provided, and also whereby sufficient metal is provided for forming the seal between the bottom and container walls, next to be described.

The important feature of the invention, as hereinbefore stated, resides in the novel method of securing the bottom, generally designated by the numeral 9, to the side wall of the container, whereby a leak-proof joint is provided between the bottom and container wall. The bottom 9, as shown, is preferably provided adjacent its outer peripheral edge with a downwardly facing bead 11. The outside diameter of the bottom 9 is substantially the same as the diameter of the recess or cylindrical wall 7, whereby the bottom may be fitted into the recess with its upper corner engaging the seat 6, as clearly illustrated in Figures 3 and 4.

After the bottom has been placed on the seat 6, the inner corner of the lower edge of the enlarged portion 8 of the side wall 5, is upset or sheared along the dotted line 12 by a suitable rotary cutting element 13, driven by suitable means, not shown. The cutting element 13 is

provided with a cutting edge 14 adapted to engage and shear a portion of the metal of the wall portion 8, after which the sheared portion 15 is inwardly bent or rolled over the bead 11, as indicated by the dotted and full lines in Figures 3 and 4. The inward bending and rolling of the sheared portion 15 is brought about as a result of the concaved periphery 16 of the rotary cutting element 13. The inwardly rolled or upset portion 15 is firmly pressed against the bead 11 by sufficient pressure to hermetically seal the connection between the bottom and container wall.

By securing the bottom 9 to the side wall of the kettle, as above described, the bottom becomes in effect, at least for all practical purposes, an integral part of the container body. The operation of securing the bottom in position, as shown in Figure 4, is comparatively simple, as the only machine work necessary, resides in the simple operation of boring the recess 7 to provide the seat 6, and then machining the periphery and bead of the bottom 9. The operation of upsetting and inwardly rolling the portion 15 over the bead 11, is comparatively simple by the use of the rotary tool 13, as will readily be understood by reference to Figure 3. The interlock

provided between the bead 11 and upset portion 15 assures a permanent bond between the bottom 9 and the side wall of the container, whereby there is little danger of the bottom ever becoming loose in its seat 6, even when the kettle is roughly handled.

I claim as my invention:

A kettle body having a cast metal wall whose lower edge portion gradually increases in thickness in a downward direction, whereby the lower edge of said wall is relatively thicker than its upper portion, said edge having a cylindrical bore therein terminating at its upper end in a horizontal seat, a bottom wall fitted into said bore and engaging said seat, said bottom wall being formed with an annular downwardly facing bead adjacent to its periphery, and the inner lower corner of said wall being upwardly sheared, and said sheared portion being inwardly rolled, under pressure, over the annular bead on the bottom wall, thereby to permanently secure the bottom wall to the cooker body in hermetically sealed relation, the lower edge of the thickened side wall providing a wide bearing surface for the bottom of the kettle.

EDWARD H. WITTENBERG.