Dec. 12, 1939. H. G. MANN ET AL 2,182,813

CONTAINER

Filed May 12, 1934

Fig. 1

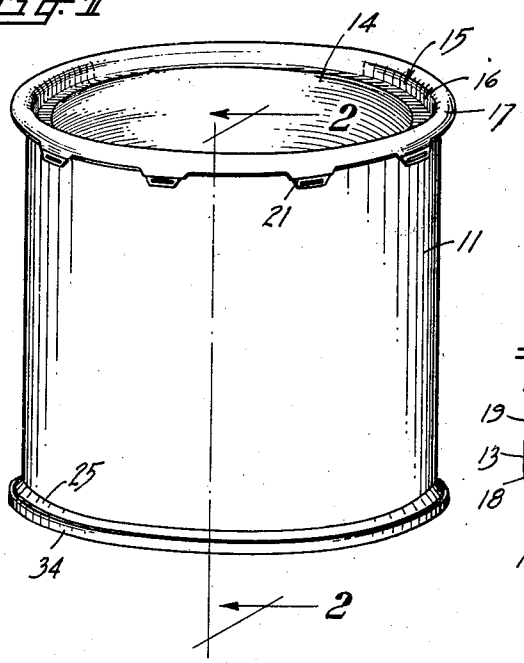



Fig. 2

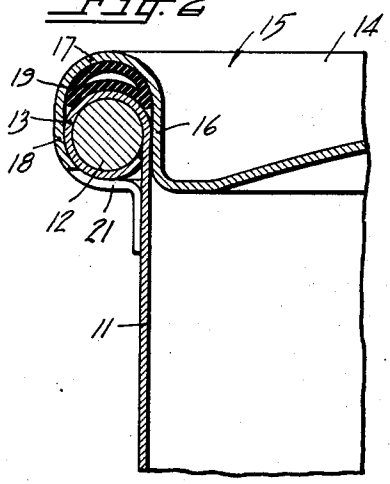
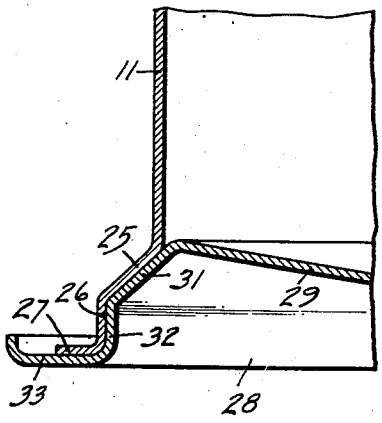
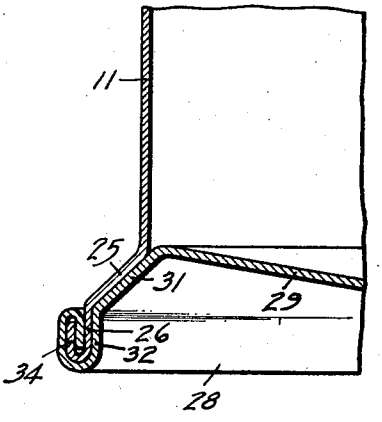



Fig. 3




INVENTOR
Harry G. Mann.
William F. Kinney
BY Ivan A. Thornburgh
Charles H. Cyphe
ATTORNEYS

Patented Dec. 12, 1939 2,182,813

# UNITED STATES PATENT OFFICE

2,182,813

## CONTAINER

Harry G. Mann and William F. Kinney, Toledo, Ohio, assignors to American Can Company, New York, N. Y., a corporation of New Jersey

Application May 12, 1934, Serial No. 725,400

5 Claims. (Cl. 220—67)

The present invention relates to the manufacture of heavy sheet metal containers and has particular reference to a reinforced end construction for such containers.

Sheet metal containers used for storing and shipping white lead or similar heavy materials are usually made in sizes to contain 25, 50 or 100 pounds of these heavy products. In transportation these heavy containers are roughly handled and are frequently dropped and thrown around and because of their great weight the ends and especially the bottoms of these containers are bent out of shape and sometimes caused to leak unless suitable reinforcing means are provided. In order to strengthen such containers for this rough handling the present invention contemplates the provision of a reinforced bottom construction preferably flared outwardly to substantially the same outer diameter as the outer diameter of the top closure of the container, thereby enabling the container to be rolled on its side in a straight line instead of being thrown around.

An object of the present invention is therefore the provision of a container having an enlarged reinforced bottom construction which protects the container against deformation and leaks.

Another object of the invention is the provision of a container having such a reinforced bottom construction which flares outwardly to substantially the same outer diameter as the outer diameter of its top closure providing two spaced rolling surfaces which enable the container to be rolled on its side in a straight line.

A further object is the provision of a container having a straight body wall and wide open mouth so that it may be readily and completely emptied of its contents without waste and in tilting it may be readily grasped by its enlarged and flaring bottom.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawing, discloses a preferred embodiment thereof.

Referring to the drawing

Figure 1 is a perspective view of a closed container embodying the present invention;

Fig. 2 is an enlarged vertical sectional view taken substantially along the line 2—2 in Fig. 1; and

Fig. 3 is a sectional view similar to the lower part of Fig. 2 illustrating the body and bottom end before they are united together.

As a preferred embodiment of the invention the drawing illustrates a container having a straight annular body wall 11. The upper edge of this body wall 11 is preferably rolled outwardly over a stiffening wire 12 (Fig. 2) in a curl 13 providing a wide open, unobstructed mouth for the upper end of the container.

This end of the container may be closed preferably by a detachable cover 14 utilizing the curl 13 as a cover seat. The cover 14 preferably fits within the container mouth and for this purpose is provided with a countersunk central recess 15 having a vertical peripheral wall 16 engaging the interior surface of the body wall 11 adjacent the curl 13. Vertical wall 16 merges into a curved wall 17 which terminates in a vertical depending wall 18. These walls form an inverted U-shaped annulus which overlies the curl 13 when the cover is in place and which is adapted to hold an annular gasket 19 for engagement with the cover seat 13. When in closed position the cover is clamped on its seat 13 by a series of clamping lugs 21 formed as extensions of the vertical wall 18 and bent under the curl 13 to securely lock the cover in place.

The bottom end of the container is partially reinforced by an outwardly flared and shaped marginal zone formed in the body wall 11. In order to provide this reinforcement, the material of the body's marginal zone is bent outwardly and downwardly in a sloping straight wall annular shoulder 25. The wall 25 merges into a short vertical straight wall 26 which terminates in an external flange 27 (Fig. 3).

This end of the container is closed by a countersunk end closure 28 fitting within the shaped marginal zone of the body wall and having a formed peripheral wall for cooperating with the inclined body wall 25 to provide the full reinforcement of the container bottom. This closure 28 is formed with a dome shaped central panel 29 which merges into a sloping straight wall 31.

This wall extends parallel with and tightly hugs and supports the inclined body wall 25 when the end closure is in place. Wall 31 merges into a short vertical wall 32 which is parallel with and which rigidly supports the body wall 26 at such a time. The wall 32 terminates in a flange 33. This flange 33 is folded and interlocked with the body flange 27 to form a tight seam or joint 34 (Fig. 2) which includes the vertical walls 26, 32.

It will be seen that an exceptionally strong end or bottom construction is obtained by the body and end parts 26, 32 being held tightly together in the joint or seam 34 and the walls 25, 31, rigidly braced by the dome 29, which mutually cooperate, support and reinforce each other.

The outside diameter of the joint 34 is substantially the same as the outside diameter of the cover wall 18, enabling the container to roll in a straight line when it is laid on its side and when supported on these two surfaces.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

We claim:

1. In a shipping container for heavy substances the combination of a cylindrical body, a bottom seamed thereto, a stiffening wire enclosed within the outwardly bent top margin of said body, a detachable cover fitting within the top of the body and partially enclosing the top margin of said body and bent to engage below the wire-enclosing part of the body, said bottom being elevated above the bottom margin of the container, the outer portions of the body and bottom being united in a double seam, intermediate portions of the body and bottom being outwardly flared to constitute with said bottom an obtuse angle to reenforce said container when lying or rolled on its side, said intermediate portions of the body and bottom being disposed in contact with each other and inclined downward and outward to said double seam, to strongly support said container and contents when it stands erect and to locate said double seam in vertical line with the top closure of the container, so that the top and bottom ends of the container are of the same circumference, for supporting said container for rolling in a straight line when the container is lying on its side.

2. In a shipping container for heavy substances the combination of a cylindrical body, a bottom seamed thereto, a stiffening wire enclosed within the outwardly bent top margin of said body, a detachable cover fitting within the top of the body and partially enclosing the top margin of said body and bent to engage below the wire-enclosing part of the body and having lugs bent inward at intervals against and downward along said body, said bottom being elevated above the bottom margin of the container, the outer portions of the body and bottom being united in a double seam, intermediate portions of the body and bottom being outwardly flared to constitute with said bottom an obtuse angle to reenforce said container when lying or rolled on its side, said intermediate portions of the body and bottom being disposed in contact with each other and inclined downward and outward to said double seam, to strongly support said container and contents when it stands erect and to locate said double seam in vertical line with the top closure of the container, so that the top and bottom ends of the container are of the same circumference, for supporting said container for rolling in a straight line when the container is lying on its side.

3. A reenforced metal shipping container for relatively heavy commodities, comprising a cylindrical body wall member provided at its top end with a removable peripherally reenforced top closure spaced radially outwardly from said body wall, the bottom end of said body wall being inclined outwardly and downwardly, and a bottom member inclined outwardly and downwardly adjacent its periphery to conform to the inclined portion of said body wall and nesting tightly thereagainst to provide therewith an annular reenforcing truss to strengthen the container against shock, said inclined portions of the body and bottom walls terminating in outer flanges interlocked with one another in a tight fitting joint disposed radially outwardly from and immediately adjacent said inclined portions to cooperate with said truss to reenforce the container body and to radially locate said joint in alinement with the periphery of said removable closure so that they have the same diameter, whereby to insure rolling of the closed container in a straight line when lying on its side.

4. A reenforced sheet metal shipping container for relatively heavy products comprising a body having an inclined outwardly and downwardly sloping reenforcing shoulder wall terminating in a seaming flange, and a counter-sunk bottom end member having a conforming outwardly and downwardly inclined sloping shoulder wall terminating in a seaming flange, said body and end member flanges being united in a tight joint to provide anchorage for said inclined reenforcing shoulder walls, a detachable cover fitting within the top of the body and secured thereto in a joint the outer wall of which is disposed entirely outside of the body wall, said bottom body joint being also disposed entirely outside of the body wall its outer circumference being in alinement with the outer circumference of said cover joint for supporting said container for rolling in a straight line.

5. In a shipping container for heavy substances the combination of a cylindrical body, a bottom seamed thereto, a detachable cover fitting within the top of the body, said bottom being elevated above the bottom margin of the container, the outer portions of the body and bottom being united in a double seam, intermediate portions of the body and bottom being outwardly flared to constitute with said bottom an obtuse angle to reenforce said container when lying or rolled on its side, said intermediate portions of the body and bottom being disposed in contact with each other and inclined downward and outward to said double seam, to strongly support said container and contents when it stands erect and to locate said double seam in vertical line with the top closure of the container; so that the top and bottom ends of the container are of the same circumference, for supporting said container for rolling in a straight line when the container is lying on its side.

HARRY G. MANN.
WILLIAM F. KINNEY.