

Dec. 25, 1956

H. A. BERGSTROM

2,775,384

DRUM FOR LIQUIDS AND SEMI-LIQUIDS

Filed July 27, 1951

INVENTOR

Harold A. Bergstrom

BY *Mason, Porter, Diller & Stewart*
ATTORNEYS

1

2,775,384

DRUM FOR LIQUIDS AND SEMI-LIQUIDS

Harold A. Bergstrom, Van Wert, Ohio, assignor to Continental Can Company, Inc., New York, N. Y., a corporation of New York

Application July 27, 1951, Serial No. 238,789

1 Claim. (Cl. 229—5.5)

The invention relates to new and useful improvements in heavy duty fiber drums of large capacity and especially adapted for storing and shipping of liquid or semi-liquid products.

An object of the invention is to construct a heavy duty fiber drum wherein the body is convolutely wound and has incorporated therein a ply of metal for preventing puncturing or rupturing during handling and shipping.

A further object of the invention is to provide a fiber drum of the above type wherein the bottom heading is constructed so as to prevent puncturing during handling and shipping.

In the drawings:

Figure 1 is a vertical sectional view through a formed cylinder having a metal ply imbedded therein, which cylinder is to form the body wall of the improved fiber drum;

Figure 2 is a view showing diagrammatically the method of forming the cylinder and incorporating the metal ply therein;

Figure 3 is a sectional view through the upper portion of the body wall and showing the metal ply imbedded therein;

Figure 4 is a vertical sectional view through the bottom portion of the container showing the body wall and bottom heading joined by a liquid tight beading; and

Figure 5 is a view in horizontal section through the completed wall of a portion of the container.

In my prior application Serial No. 204,007, filed January 2, 1951, patented December 7, 1954, No. 2,696,340, there is shown a heavy duty fiber drum of large capacity which is especially adapted for storing and shipping of liquid and semi-liquid products. In order to strengthen the bottom heading and provide a liquid tight connection of the heading to the body wall, a metal tray is incorporated in the bottom heading and is rolled with the body wall and the bottom chime into a very tight bead abutting the bottom end of the container. The body wall of the container of my prior application is made solely of fiber board and is liable to being punctured or ruptured during shipping.

The present invention has to do with a means for strengthening the body wall and for preventing rupturing or puncturing thereof during shipping. The body wall of the drum is built up to a suitable thickness of fiber board by convolutely winding a sheet of fiber board into a cylindrical shape of proper dimensions and thickness to form the body wall of the improved fiber drum.

In Figure 1, a cylindrical body member is shown in vertical section. It consists of a series of inner plies 1, a series of outer plies 2, and a metal ply 3, all formed into one unitary convolute structure.

2

In Figure 2 of the drawings there is shown diagrammatically the preferred method of making this cylindrical body and the imbedding of a metal ply in the body. The metal sheet 4 is attached to the fiber board sheet 5 which is fed in to form the first ply or plies by means of an adhesive or by means of adhesive tape 6 and the last ply or plies of fiber board 7 are attached to this metal sheet by a tape 8. In other words the ply of metal is inserted somewhere in the fiber sheet used for winding the drum and attached to it so that the entire unit making up the side wall can be wound and glued into place as one continuous sheet. If this sheet were not attached to the paper board it would be very difficult to cause it to adhere to any previous plies placed on the mandrel or the succeeding plies without obtaining blisters inasmuch as there is no constant tension as the plies are convolutely wound. The metal sheet 4 is preferably a sheet of steel of comparatively light gauge. It extends from one end of the formed cylinder to the other and is of sufficient length to constitute at least one ply or convolution.

This cylinder wall is used in the making up of the improved heavy duty fiber drum. The usual chime 9 is applied to the upper end of the cylindrical body after which the body wall is beaded inwardly as indicated at 10 and the chime is rolled over the upper edge of the body wall as indicated at 11 in Figure 3.

The bottom heading is preferably preformed and includes a filler disk 12, a liner 13 and a metal tray 14. A protective covering 15 of moisture resisting material may also form a part of the bottom heading. As shown in the drawings, the body wall is provided with a liner 16. When a liner is used it may be coated with a liquid resisting material such as polyethylene or any other type of coating which will resist the liquid materials which are to be packaged and which are also strong and flexible enough to withstand the final forming of the body as well as shipping abuses. The lining 13 of the bottom heading may be made of similar liquid resisting material. This bottom heading, as illustrated, is similar to the bottom heading illustrated in my prior patent supra and is attached to the body wall in the manner shown and described in said application. A metal chime 17 is placed on the body portion after which the chime, body wall and the flanges of the bottom heading are all rolled into a very tight bead 18 which is forced against the bottom heading and clamps the same tightly against the shoulder 19 formed by inwardly beading the chime 17 and the body wall.

The metal ply 3 imbedded in the body wall extends upwardly in the chime 9 at the upper end of the drum and it also extends downwardly and into the bead 18 at the lower end of the drum. This interlocking of the flange of the bottom heading with the metal ply of the body wall in the bead 18 makes a very strong container which is puncture proof and especially adapted for storing and shipping liquids or semi-liquids.

It is obvious that minor changes in the details of construction may be made without departing from the spirit of the invention as set forth in the appended claim.

I claim:

A heavy duty fiber drum including a convolutely wound body wall comprising a sheet of fiber board forming one or more inner plies of the body wall, a sheet of fiber board forming one or more outer plies of the body wall and a sheet of light gauge steel forming at least one ply of the body wall, said ply of steel being disposed between

3

the inner ply or plies of fiber board and the outer ply or plies of fiber board, said plies of fiber board and steel being in end to end relation and in intimate contact and glued together in a single puncture proof body unit, a bottom heading fitting within said body wall and secured thereto by rolling the body wall into a holding bead, said sheet of steel in the body wall extending from end to end of the body wall and into said holding bead, said bottom heading having a tray of steel provided with a flange extending into and interlocking with the metal ply of the body wall in said holding bead.

5

679,171
1,439,890
1,935,074
2,113,417
2,131,343
2,280,239
2,320,764
2,350,271
2,623,681

15

2,953

4

References Cited in the file of this patent

UNITED STATES PATENTS

Jones	July 23, 1901
Heron et al.	Dec. 26, 1922
Brandon	Nov. 14, 1933
Wilson	Mar. 5, 1938
Cordiano	Sept. 27, 1938
Karl	Mar. 21, 1942
Ullrich	June 1, 1943
Braloff	May 30, 1944
Wilcox	Dec. 30, 1952

FOREIGN PATENTS

Great Britain	Feb. 6, 1909
---------------	--------------