

June 4, 1957

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2,794,584

LOWER END CONSTRUCTION FOR FIBER DRUMS

Filed Feb. 8, 1956

FIG. 1

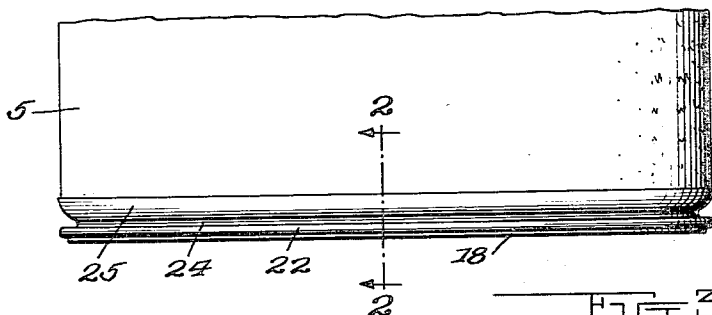


FIG. 2

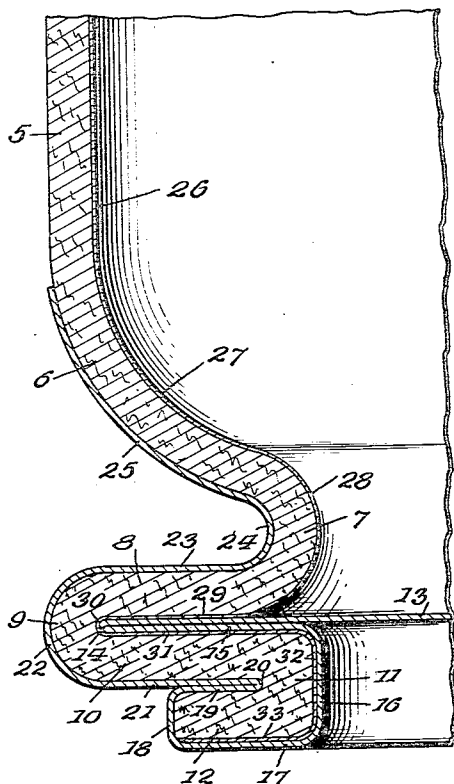


FIG. 3

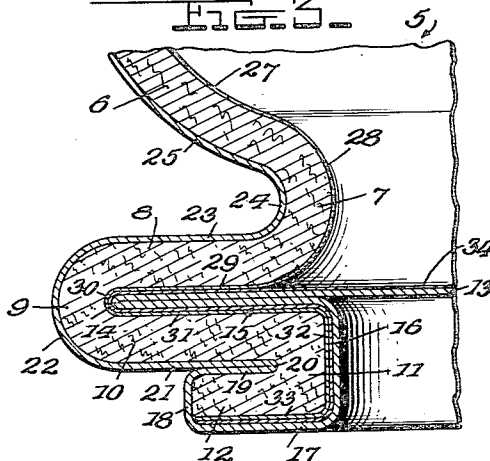
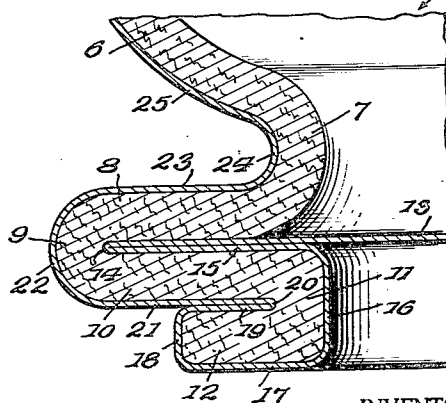


FIG. 4



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LOWER END CONSTRUCTION FOR FIBER DRUMS

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Application February 8, 1956, Serial No. 564,219

5 Claims. (Cl. 229—5.6)

This invention relates to drums and the like of the general type in which a sheet metal bottom is seamed to a side wall constructed from fiber board. Such drums have long been provided with metal reinforced seam and chime structures to guard against injury during rough handling and shipment but such structures have not been altogether adequate.

The present invention aims to provide a new and improved construction which will possess greater strength yet may be inexpensively and expeditiously manufactured.

One of the primary objects of the invention is to provide a novel seam structure for joining a sheet metal bottom to a fiber drum body which will not tend to open up or rupture when the seam is struck unevenly, as may occur when a drum with contents is dropped in a tilted position.

A further object, which is a corollary of the preceding objective, is to provide a seam construction of the character hereinafter described in which the compressed constituents of the seam structure are again subjected to compression when a drum with contents is dropped onto its bottom from an elevated position.

In carrying out the above end, a further object is to provide a novel construction in which the lower end portion of the drum wall has a breast, an internal circumferential reinforcing rib at the lower end of said breast, and a box seam and chime structure below said rib, said seam and chime structure being covered by reinforcing metal which also extends upwardly and conforms to the outer side of said rib and breast.

Another object is to provide a novel construction in which the above mentioned reinforcing metal is integral with the drum bottom, the peripheral portion of the latter being multi-directionally bent in a novel manner to form elements of the seam and chime structure and then to provide the required reinforcements.

A further object is to provide a novel seam and chime structure which includes three thicknesses of fiber board and six thicknesses of metal, for unusual strength.

A still further object is to so include either the lower end portion of a drum wall liner as the peripheral portion of a bottom liner, or both of said portions in the seam and chime structure as to provide strong liner anchorage and tight sealing.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawing.

In the drawing:

Figure 1 is a side elevation of the lower end portion of a drum constructed in accordance with the invention.

Figure 2 is an enlarged vertical sectional view on line 2—2 of Figure 1.

Figure 3 is a similar view showing a bottom liner in addition to the wall liner of Figure 2.

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Figure 4 is a similar view showing a construction having no liner.

The lower end portion of the fiber drum wall 5 curves inwardly to form a breast 6, then turns downwardly and outwardly to form a channeled internal reinforcing rib 7, and then extends outwardly to provide an upper, annular channel wall 8. From this upper channel wall 8, the lower portion of the drum wall turns downwardly and inwardly to form a wall-connecting portion 9, and then extends inwardly to provide a lower, annular channel wall 10 closely underlying the upper wall 8. The lower end portion of the drum wall then turns downwardly to form a flange-carrying portion 11, and finally extends outwardly to provide an annular flange 12 which closely underlies the lower channel wall 10 and is preferably of about half the width thereof.

A sheet metal bottom 13 is provided. The peripheral portion of this bottom is folded downwardly and inwardly upon itself at 14 to provide a two-ply formation 15 which is tightly received in the channel between the upper and lower walls 8 and 10. The sheet metal then turns downwardly at 16 against the flange carrying portion 11 and then extends outwardly at 17 against the lower side of the flange 12. The metal turns upwardly at 18 around the outer edge of the flange 12 and then extends inwardly at 19 upon the latter. The metal is then folded upwardly and outwardly upon itself at 20 and then extends outwardly at 21 against the lower side of the lower channel wall 10. The metal then turns upwardly and inwardly at 22 around the wall connecting portion 9 and extends inwardly at 23 upon the upper channel wall 8. The metal then turns upwardly and outwardly at 24 against the outer side of the channeled rib 7 and finally curves outwardly and upwardly at 25 against the breast 6.

The construction above described provides an unusually strong box seam and chime structure tenaciously securing the fiber drum wall 5 and the sheet metal bottom 13 together and capable of withstanding severe impacts without loosening or serious deformation. Also the portion of the drum wall 5 immediately above this seam and chime structure is effectively stiffened and reinforced by the breast formation 6 and the rib 7, and the metal 25, 24 surrounding the same. This construction provides some resiliency to aid in absorbing shocks and it also effectively resists penetration and puncture.

In Figures 2 and 3 the drum wall 5 includes a liner 26 which may be of polyethylene, Saran, Pliofilm or other type of film. The lower portion of this liner conforms at 27 and 28 to the breast 6 and rib 7, and it extends outwardly at 29 at the lower side of the upper channel wall 8, downwardly and inwardly at 30 around the fold 14, inwardly at 31 at the upper side of the lower channel wall 10, downwardly at 32 at the inner side of the flange carrying portion 11 and outwardly at 33 at the lower side of the flange 12.

In Figure 3, the bottom 13 also includes a liner 34. The peripheral portion of this liner follows the portions 29, 30, 31, 32 and 33 of the wall liner 26. A corresponding bottom liner may of course be used without a wall liner, if desired.

By including the lower portion of the wall liner 26 or the peripheral portion of the bottom liner 34, or both of said liner portions, in the improved box seam and chime construction, strong liner anchorage and tight sealing are accomplished. Moreover, the construction well protects the liner against rupture.

From the foregoing, it will be seen that novel and advantageous construction has been provided for attaining the desired ends. Attention is invited, however, to the possibility of making variations within the scope of the invention as claimed.

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I claim:

1. A fiber drum wall having its lower end portion curved inwardly to form a breast, then turned downwardly and outwardly to form a channeled internal rib, then extended outwardly to form an upper annular channel wall, then turned downwardly and inwardly to provide a wall connecting portion, then extended inwardly to form a lower annular channel wall which closely underlies said upper annular channel wall, then turned downwardly to form a flange carrying portion, and finally turned outwardly to form an annular flange which closely underlies said lower annular wall; and a sheet metal bottom having its peripheral portion tightly received between said upper and lower annular walls, said sheet metal bottom having integral portions which tightly engage said flange carrying portion, said annular flange, said upper and lower annular walls, said wall connecting portion, said channeled rib and said breast.

2. A fiber drum wall having its lower end portion curved inwardly to form a breast, then turned downwardly and outwardly to form a channeled internal rib, then extended outwardly to form an upper annular channel wall, then turned downwardly and inwardly to provide a wall-connecting portion, then extended inwardly to form a lower annular channel wall which closely underlies said upper annular channel wall, then turned downwardly to form a flange carrying portion, and finally turned outwardly to form an annular flange which closely underlies said lower annular wall; and a sheet metal bottom having its peripheral portion folded downwardly and inwardly upon itself to form a two-ply formation which is tightly received in the channel between said upper and lower annular channel walls, the metal being then turned downwardly against said flange carrying portion and then extended outwardly against the lower side of said annular flange, the metal being then turned upwardly around the outer edge of said flange and extended inwardly upon the latter, the metal being then folded

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upwardly and outwardly upon itself and extended outwardly against the lower side of said upper wall, the metal being then turned upwardly and inwardly around said wall connecting portion and extended inwardly upon said upper wall, the metal being then turned upwardly and outwardly against the exterior of said channeled rib and being finally curved outwardly and upwardly against said breast.

3. A structure as specified in claim 1, in which said drum wall includes a liner extending downwardly against the inner sides of said breast and rib, said liner extending outwardly at the upper side of said peripheral portion of said bottom, being folded inwardly around the outer edge of said peripheral bottom portion, then extending inwardly at the lower side of said peripheral bottom portion, then extending downwardly at the inner side of said flange carrying portion and then extending outwardly at the lower side of said flange.

4. A structure as specified in claim 1, in which said bottom includes a liner, the peripheral portion of said liner being extended outwardly at the lower side of said upper channel wall, then downwardly and inwardly at the upper side of said lower channel wall, then downwardly at the inner side of said flange carrying portion, and then outwardly at the lower side of said flange.

5. A structure as specified in claim 1, in which said drum wall and said bottom include a wall liner and a bottom liner respectively, said liners jointly extending outwardly at the upper side of said peripheral portion of said bottom, being folded inwardly around the outer edge of said peripheral bottom portion, then extending inwardly at the lower side of said peripheral bottom portion, then extending downwardly at the inner side of said flange carrying portion and then extending outwardly at the lower side of said flange.

No references cited.