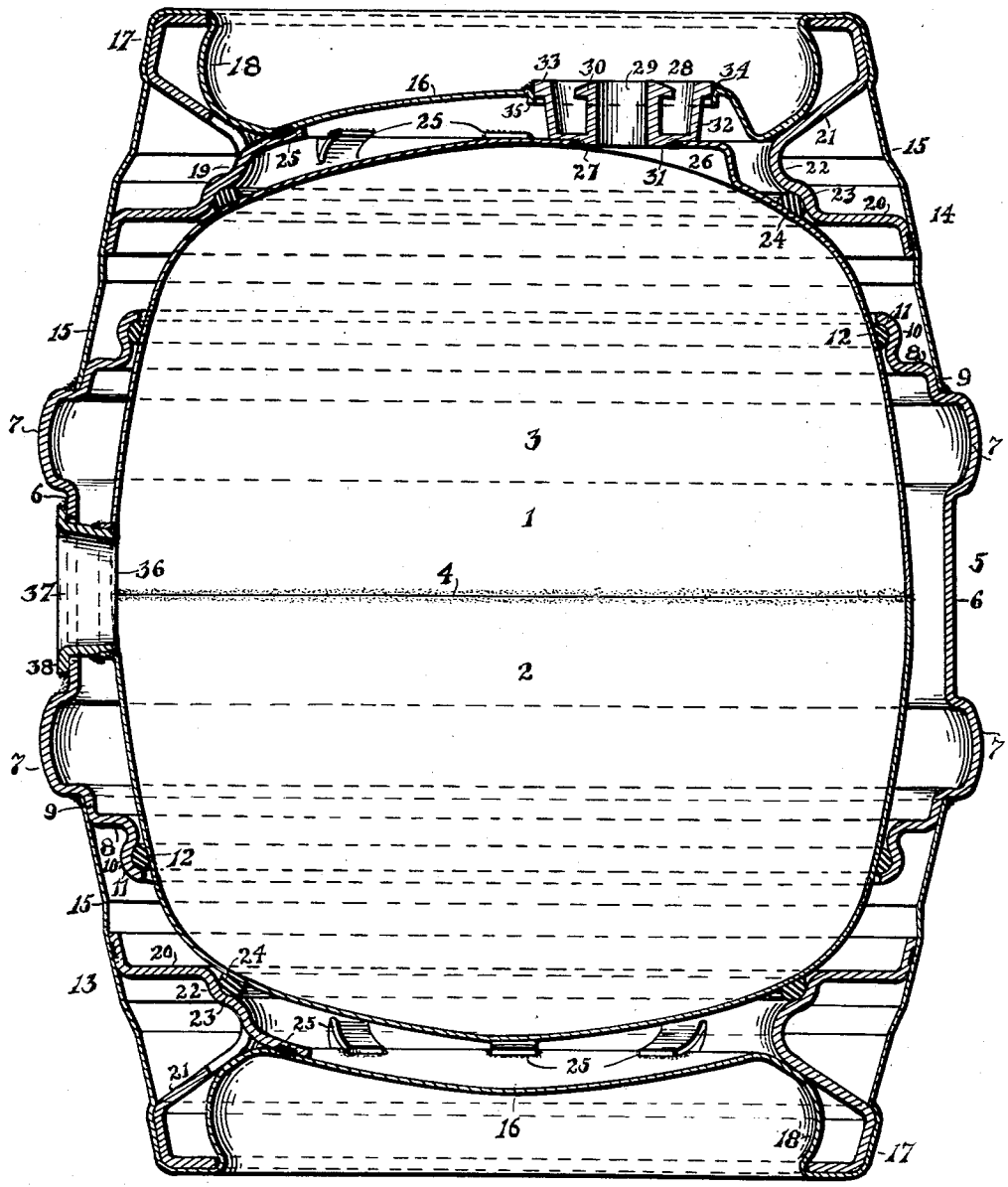
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METAL BARREL

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METAL BARREL

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The present invention relates to metallic double walled vessels, more particularly barrels in which there is an inner container and an outer casing spaced and insulated from the inner container. The invention is directed more particularly to beer barrels, although it may be used for the handling of any material requiring an insulated container.

The object of the invention is to provide such a barrel which is very strong and durable, and in which the inner container is completely protected from being deformed or otherwise injured by shocks or blows.

Another object is to provide novel means for the effective support and insulation of the inner container.

Another object is to provide a barrel similar in weight and handling characteristics to wooden barrels, and to provide such a barrel which will roll correctly without injuring its finish or appearance.

Still another object is to provide such a container, the inner surface of which is completely smooth and free from corners or projections, thus providing free drainage and permitting pitching.

In the accompanying drawing, the figure is a longitudinal section through the center of a barrel constructed in accordance with the invention.

Describing the drawing, the numeral 1 indicates the inner container. This container is somewhat spherical in shape, the walls on all sides being outwardly rounded and the corners being gradually rounded. It is made up of two sections 2, 3, which are produced by suitable drawing operations, and these sections are butted together and welded along their meeting edges, as at 4. The most satisfactory welding process for this purpose at present appears to be by the automatic carbon arc method, since this method produces a joint of great strength, free from porosity and other defects.

The outer casing, which surrounds and is spaced from the inner container 1 and supports it, is composed of three sections. The central section 5 is made of relatively heavy gauge material and is formed with a central region 6, spaced parallel rolling ribs 7 on each side of the region, and inturned flanges 8 at each end of the section.

The rolling ribs 7 are relatively broad and their outer surfaces are transversely crowned. This provides for accurate tracking of the barrel and minimizes the danger of marring the finish of the barrel and wearing the surfaces over which it is rolled.

Adjacent the outer edges of the rolling ribs 7 are formed shoulders 9 which are engaged by the end sections of the casing. From these shoulders, the flanges 8 are turned inwardly to points adjacent, but spaced from the outer surface of the inner container 1. At these points the flanges are angularly bent in a direction substantially parallel to the wall of the inner container to form rim-like portions 10. These rim-like portions 10 are formed to have channels 11 for the reception of non-metallic packing rings 12 interposed between the rim 10 and the container 1. The packings 12 are fireproof and operate both to heat insulate the inner container from the casing and to cushion the container against shocks.

The end sections 13, 14 of the casing are of material of substantially lighter gauge than the center section 5 and are generally pot-shaped, each comprising an annular side wall 15, and a head 16, both of these elements being spaced from the inner container 1. These end sections are telescopically engaged over the shoulders 9 of the central section 5, being butted against the outer sides of the ribs 7 and having their end portions welded to the said ribs.

A chime 17 is provided on each of the sections 13, 14, by extending the side wall 15 to a point beyond the plane of the head 16, bending it inwardly for a short distance and then bending it back toward the head. The inner surfaces of the chimes 17 are bowed, as shown at 18 to provide a safe hand grip for handling the barrel.

In order to support the end portions of the inner container 1 and to reinforce the end sections 13, 14, against deformation, reinforcing rings 19 are inserted in each of the sections. These rings 19 are generally U-shaped in section, having legs 20, 21 and central portions 22.

The legs 20 of the rings 19 are secured by welding to the side walls 15 of the end sections and the other legs 21 extend into the chimes 17 where they are reversely bent to closely fit the outer and end walls of the chimes to provide strong reinforcement therefor.

The central or apex portions 22 of the rings extend to a point closely adjacent but spaced from the end walls of the container 1 and are channeled as at 23 to receive non-metallic insulating packing rings 24 similar to the packing rings 12. Inasmuch as the rings 19 support the end walls of the inner container 1 and the flanges of the central section support the side wall, the inner container is maintained against both transverse and longitudinal movement relative to the outer casing.

The rings 19 at a point outside of the end walls

of the container 1, and adjacent the inner sides of the heads 16 are provided with inwardly struck tongues 25 which are welded to the heads 16 and serve to reinforce them.

The barrel is furnished with fittings as follows. The end wall of the section 14 is provided with an outwardly drawn portion 26, having an opening 27 therein for the reception of a tap fitting 28. The tap fitting 28 comprises a central annular nipple 29 outwardly terminating in a flange 30, a bottom wall 31 and a surrounding annular side wall 32 terminating at its outer portion in a flange 33. The bottom wall 31 is circularly chamfered about the opening of the nipple to a depth equal to the thickness of the wall of the section 14, and to the proper size to fit within the opening 27. The head 26 of the section 14 is provided with an opening 34 having an inwardly turned flange 35 about it for the reception of the flange 33. The tap fitting 28 is welded to the material of the section 31 about the edge of the opening 27, the innermost portion of the said fitting being flush with the inner surface of the section 34. The flange 35 of the head 16 and the flange 33 of the tap fitting 28 are welded together about the opening 34.

The inner container 1 is provided with an opening 36, with an outwardly turned flange surrounding it, for the reception of a central bung sleeve 37 in the side of the barrel. The central region 6 between the rolling ribs of the central section 5 is provided with an opening to receive the outer portion of the bung sleeve.

The bung sleeve 36 is tubular and tapers longitudinally toward its inner end. The outer end terminates in a flange 38 which overlies the material of the section 5 about the opening therein. The inner end of the sleeve 36 is flush with the inner surface of the container 1 and is welded to the container about the opening therein. The flange 37 of the outer end of the sleeve is welded to the material of the section 5, the material of the weld being below the surface of the flange. It is to be noted that the flange 37 is of a thickness less than the height of the rolling ribs 7 in order to allow the barrel to roll without the flange 37 or a bung inserted in the sleeve 36 coming in contact with the supporting surface.

The above described container has many advantages. The shape of the inner container gives maximum resistance to shocks tending to distort it and change its volume, as well as permitting thorough cleaning and efficient pitching of the interior. It also allows the container to be rigidly supported within the outer casing.

The air space insulation is comparative in effect with wood in maintaining beer at proper temperature for a given period without the necessity for extra cooling. Furthermore it allows the necessary operations of super-heating and pitching of the inner container without undue heating of the outer casing, which permits handling a greater number of barrels by brewery employes without discomfort. The flanges on the central section and the reinforcing rings divide the insulating space into seven air chambers and prevent the propagation of air currents.

The freedom from obstructions about the fittings permit free drainage and easy pitching. The flanged bung sleeve having the weld below the surface of the flange, and the tapered sleeve, allow perfect seating of the filling nozzle, easy entrance of the bung, and aid materially in the operation of racking and filling.

The heavy central section of the outer casing provides resistance to the deformation incident to normal handling, and the rolling ribs provide accurate tracking of the barrel and protect the finish thereof. Since the central portion of the barrel normally receives the shocks incident to handling, the end sections may be made of lighter material. Making the outer casing in three sections, makes it possible to manufacture the shells by relatively few drawing operations.

The reinforcing rings at the ends of the barrel, besides supporting the inner container, provide the chimes with the necessary strength to resist shocks and also reinforce the heads.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim, is:

1. In a double walled barrel having an inner container, an outer casing surrounding and spaced from the inner container and including a pot-shaped end section having a side wall, a head portion, and an outwardly extending chime portion, a substantially U-shaped reinforcing ring surrounding the end of the inner container and providing a support therefor, and having one leg extending into and reinforcing the chime portion of the end section, and the other leg secured to the side wall of the end section.

2. In a double walled barrel having an inner container, an outer casing surrounding and spaced from the inner container, and including a pot-shaped end section having a side, a head and an outwardly extending chime portion, a substantially U-shaped reinforcing ring surrounding the end portion of the inner container and having one leg secured to the side wall of the end section, the other leg extending into and reinforcing the chime, and the central portion providing a support for the inner container, the central portion of the ring adjacent the end of the inner container having inwardly struck tongues, secured to and reinforcing the head portion of the said end section.

3. In a double walled barrel having a generally spherical inner container, an outer casing surrounding and spaced from the inner container and comprising a central section having its ends inturned to provide means for supporting the central portion of the inner container, pot-shaped end sections engaged with the central section and having side walls and head portions, and substantially U-shaped reinforcing rings at the ends of the inner container, each ring having the legs thereof secured to the side walls of the respective end sections, and the central portion thereof extending inwardly and providing means for supporting the end portions of the inner container against both longitudinal and transverse movement.

4. In a double walled barrel having an inner container, an outer casing surrounding and spaced from the inner container, and including a pot-shaped end section surrounding the end portion of the inner container, the said end section having a side wall and a head portion, a reinforcing and supporting ring at the end of the inner container having an outwardly extending flange secured to the side walls of the end sections, and an inner rim adapted to provide sup-

port for the end portion of the inner container, means on the said rim to receive insulating packing interposed between it and the inner container, and packing held by said means and engageable with the container.

5. In a double walled barrel, an inner container and an outer casing enclosing the same, said outer casing comprising a central sleeve section having integral spaced outstanding annular rolling ribs, said central section further having marginal portions outside the ribs, and end sections having annular side walls fitted over the marginal portions and butting against the rolling ribs, said end portion being secured to the central sections at the bases of the ribs.

6. In a double walled barrel, an inner container and an outer casing enclosing the same, said outer casing comprising a central sleeve section having inset marginal flanges spaced from the inner container, and packing ribs carried by said flanges and surrounding and bearing against the container.

7. In a double walled barrel, an inner container and an outer casing enclosing the same, said outer casing comprising a central sleeve section of relatively heavy material having spaced outstanding rolling ribs, a bung structure for the inner container opening through the central sleeve section between the ribs, said central portion having marginal flange portions inset and provided with internal annular grooves, and packing rings in said grooves bearing against the inner container.

8. In a double walled barrel, an inner container, an outer casing including an end portion having a side wall and an end head forming a chime at their juncture, and a spacing and reinforcing ring interposed between the inner container and end portion and having an intermediate portion extending between the end of the inner container and the head and bearing against both of the same and supporting the container and spaced marginal portions bearing against the interior of the outer casing portion respectively beyond and inwardly of the longitudinal limit of the inner container, one of said parts being engaged in the chime.

9. In a double walled barrel, an inner container, an outer casing including an end portion having a head and a side wall joined thereto and forming a chime, and a supporting ring interposed between the inner container and said end portion of the casing, said ring having a bearing against the container and spaced internal bearings against the side wall, the chime and the head.

10. In a double walled barrel, an inner container, an outer casing including an end portion having a head and a side wall joined thereto, a supporting and reinforcing ring interposed between the end portion of the casing and the container, and a packing ring interposed between said reinforcing ring and the container.

11. In a double walled barrel, an inner container, an outer casing including an end portion having a head and a side wall joined thereto, a supporting and reinforcing ring interposed between the end portion of the casing and the container and comprising a central portion and outstanding flanges that have spaced bearings against the outer casing, and a packing ring seated in the central portion and surrounding and bearing against the inner container.

12. In a double walled barrel, an inner container, an outer casing comprising a central sleeve portion having inset flanges provided with internal annular grooves, packing rings in the grooves surrounding and bearing against the container, said casing also having pot-shaped end portions comprising heads and side walls, the latter being secured to said central sleeve section outside the packing rings, and reinforcements interposed between the ends of the inner container and the side walls and heads of the outer end portions and having bearings against the same, and reinforcing portions having internal grooves, and packing rings in the grooves bearing against the end portions of the container.

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