July 27, 1937. C. H. WIDMAN ET AL 2,088,101

BARREL

Original Filed May 29, 1933

Fig. 1.

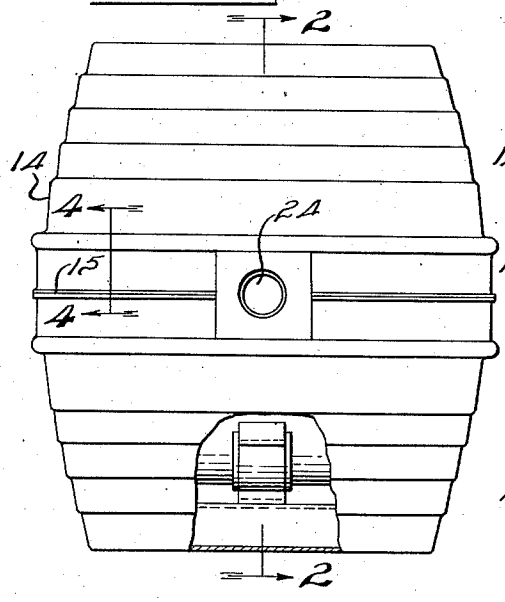
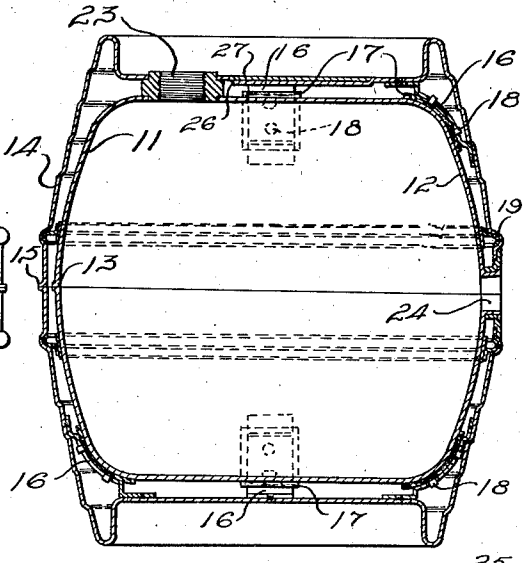


Fig. 2.



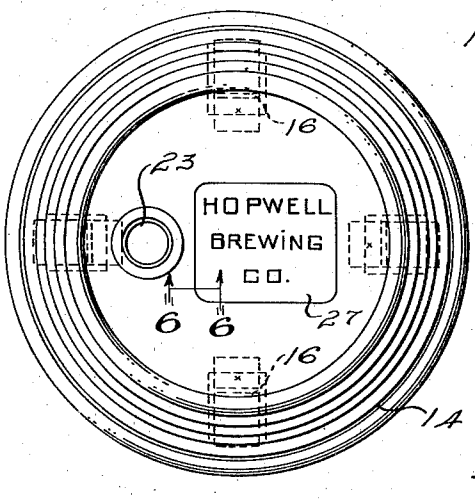
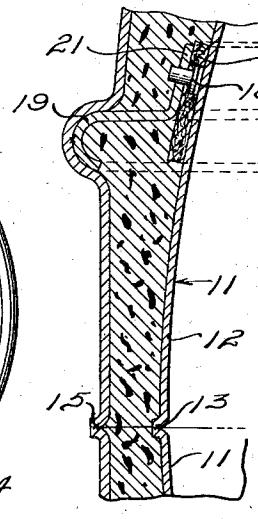


Fig. 3.



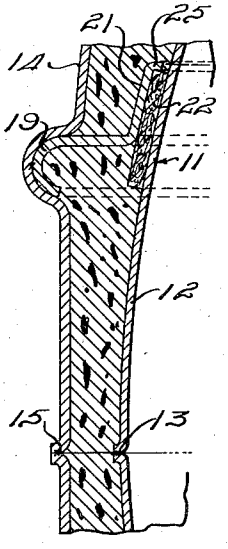


Fig. 4. Fig. 5.

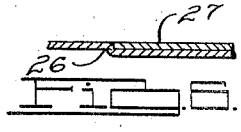


Fig. 6.

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UNITED STATES PATENT OFFICE

2,088,101

BARREL

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Application May 29, 1933, Serial No. 673,350
Renewed July 28, 1934

8 Claims. (Cl. 220—15)

Our invention relates to barrels and particularly to a tight barrel of the all-metal type having a central liquid container portion spaced from an outer reinforcing portion which are joined together by reinforcing elements provided with insulating material to completely insulate the inner liquid container portion from the reinforcing portion.

In the co-pending applications of C. H. Widman, Serial No. 665,139, filed April 8, 1933, and Ser. No. 670,663, filed May 12, 1933, and the application of C. W. Avery, Serial No. 672,618, filed May 24, 1933, all of which were assigned to the assignee of the present invention, several different types of barrels have been illustrated, described and claimed which are a material advance in the art of tight barrels of the type employed by wine and cider makers, brewers and distillers. In the above co-pending applications the barrels were provided with an inner liquid container portion made up of two like conoidal pressed metal members which were abutted together and like reinforcing elements which engaged and encompassed the conoidal portions and were welded together in various manners to form the barrel having the inner container portion substantially separate from the reinforcing portion to provide insulating properties thereto.

Our present invention embodies the provision of a like inner container portion which is made of two pot-like pressed metal elements which are welded together and like reinforcing elements which are welded together and maintained entirely separate from the liquid container portion, being spaced therefrom at all points. Bracing and reinforcing elements are provided between the reinforcing and liquid containing portions of the barrel to brace the two portions to provide strength thereto and to retain the inner liquid container portion in fixed spaced relation to the outer reinforcing portion. Insulating material is provided on the bracing elements so as to completely insulate the inner liquid container portion from the outer portion except for the bung at the top and bilge portion of the barrel which, even in the wooden barrels, were in contact with the contained liquid. When desirable, bungs of insulating material having spaced metal inserts to which the inner and outer portions are welded, could be employed.

Accordingly, the main objects of our invention are: to provide a metal barrel of a tight type which is completely insulated except for the bung at the head and bilge portion of the barrel; to provide a tight barrel made up of an inner and an outer container which are separated from each other; to provide a barrel having reinforcing members between the inner and outer metal container to produce strength thereto; to provide insulation on the reinforcing members to insulate the containers against a transfer of heat through the reinforcing members; to provide insulation in the space between the containers to completely insulate them one from the other; and, in general, to provide an insulated all-metal barrel which is simple in construction and economical of manufacture.

Other objects and features of novelty of our invention will be either specifically pointed out or will become apparent when referring, for a better understanding of our invention, to the following description taken in conjunction with the accompanying drawing, wherein:

Figure 1 is a broken view, in elevation, of a barrel embodying features of our invention,

Fig. 2 is a sectional view of the structure illustrated in Fig. 1, taken on the line 2—2 thereof,

Fig. 3 is a top plan view of the barrel illustrated in Fig. 1,

Fig. 4 is an enlarged sectional view of the structure illustrated in Fig. 1, taken on the line 4—4 thereof,

Fig. 5 is an enlarged broken sectional view of structure, similar to that illustrated in Fig. 4, showing a modified form thereof, and

Fig. 6 is an enlarged sectional view of the structure illustrated in Fig. 3, taken on the line 6—6 thereof.

The present barrel is similar in construction to the barrel illustrated and described in the above-mentioned co-pending applications in that an inner liquid container 11 is made up of two like inverted pot sections 12 which are welded together at their joined marginal edges, at 13, to form a liquid tight container. Outer reinforcing like shell portions 14 abut each other at the central bilge portion and are welded at 15 to form a shell which completely encompass the inner liquid container portion 11 and is spaced therefrom.

Each of the reinforcing shell portions 14 are provided with spaced corner portions 16 having their inner surfaces faced with an insulating material 17 which may be paper, felt, fiber, asbestos, cork and the like. Preferably, we employ a hard material so as to provide strength for reinforcing purposes. An insulating material is retained on the reinforcing portions by suitable means such as rivets 18, the heads of which are embedded in the insulation to avoid contact

with the inner liquid containing portion 11 of the barrel. Other means well known in the art may be employed such as adhesive material, or the like, for completely insulating the reinforcing corners from the liquid containing portion of the barrel.

Near the top inner edge of each of the reinforcing portions 14, annular reinforcing elements 19 may be provided having an extending flange 21 upon which an annular insulating member 22 is secured for bracing and insulating the barrel at the bilge portion. Insulating material, similar to the insulating material employed in the reinforcing corner portions 16, is retained by adhesion, rivets or other means, which will be described more fully hereinafter, on the flange 21. It is to be understood that the insulating material and the flange 21 are of such dimensions as to be press fitted over the bilge portion of the liquid containing portion 11 of the barrel so as to unite the inner and outer containers under pressure to completely reinforce the barrel. Two reinforcing elements 14, after being press fitted upon the barrel in the above described manner, are welded at the plane of joinder at 15.

It is to be understood that suitable insulating material may be provided between the inner container portion 11 and the outer reinforcing portions 14 to completely insulate the barrel. When no insulating material is provided therebetween the air trapped between the container portions provides an appreciable amount of insulation. It is to be understood that a liquid or plastic insulating material may be poured, as described in one of the above-mentioned co-pending applications, between the inner and outer container portions and which, after hardening, will further reinforce the portions of the barrel.

A bung 23 is provided in the top portion of the barrel, having recessed shoulders for receiving the metal of the heads of the sections 11 and 14, to which it is secured by a welding or other operation. A bung 24 is provided at the bilge portion of the barrel which has likewise been described in the above-mentioned co-pending applications and will not be further described herein.

In Fig. 3 it will be noted that four of the reinforcing corner portions 16 are illustrated, spaced about the barrel and more or less of the corner portions may be provided, and it is within the purview of our invention to provide a complete annular reinforcing portion at the corners of the barrel when desired. It is further within the purview of our invention to eliminate the corner portions where the bung 23 is mounted since reinforcement will be provided at this portion of the barrel thereby.

Referring to Fig. 4, we have illustrated, in enlarged section, a portion of the barrel to show more clearly the method of retaining the annular insulating portion 22 on the arm 21 of the reinforcing portion 19. It will be noted that the rivet 18 has the head thereof countersunk within the insulation so that it will not contact with the metal of the inner containing portion 11 of the barrel.

Referring to Fig. 5, we have eliminated the employment of rivets 18, by flanging over at 25, the arm 21 of the barrel to engage the upper end of the insulating material 22 so as to prevent it from moving out of alignment with the arm 21 when the reinforcing portions 14 are pressed down over the sides of the inner container portion 11 of the barrel. The flange 25 is of less depth than the thickness of the material 22 and prevents the edge of the flange from contacting with the metal of the liquid containing portion. It is to be understood that other means beside the rivets 18 or the flange 25 may be employed for retaining the insulating material in firm fixed relation to the arm 21 of the reinforcing member 19 to prevent their relative movement when the reinforcing portions 14 are pressed over the portion 11.

Referring to Figs. 2, 3, and 6, we have illustrated a preferred method of securing a medallion or identification mark on a barrel. The brewer's name is embossed or otherwise placed on a metal plate 27 and the metal name plate thus prepared is welded, brazed, riveted or otherwise secured to the head of the reinforcing section or sections 14. That is to say, the plate 27 may be attached to either or both heads of the reinforcing sections 14. The metal of the head or heads may be depressed over an area, the size of the plate 27, to have the plate flush with the head after assembly. It is to be understood that the plate may be disposed elsewhere on the barrel and either recessed therein or directly attached to the metal to project slightly thereabove. However, the preferred form is that illustrated.

The barrel thus constructed is completely insulated except for the bung portion of the barrel which contacts with the liquid in the same manner as the bungs contacted heretofore with the barrel contents when the barrel was made of wood. In this manner we have constructed a metal barrel which is more economical of manufacture, which is much sturdier and which is embodied with all of the insulating properties of the wood barrel. The barrel is much lighter in weight than the wood barrel and is therefore easier to handle and permits a greater amount of liquid to be carried relative to the maximum weight capacity of the carrier.

While we have described and illustrated but two embodiments of our invention, it will be apparent to those skilled in the art that various changes, omissions, additions and substitutions may be made therein without departing from the spirit and scope of our invention, as set forth in the accompanying claims.

We claim as our invention:

1. An all-metal barrel including, in combination, an inner liquid container made entirely of metal, an outer entirely encompassing reinforcing portion made entirely of metal, reinforcing corner elements of conducting material provided between the inner and outer portions, and insulating material provided on the reinforcing portions to insulate the corners of the inner and outer portions at the point of reinforcement.

2. An all-metal barrel including, in combination, an inner liquid container portion made entirely of metal, an outer entirely encompassing reinforcing portion made entirely of metal, reinforcing corner elements of conducting material provided between the inner and outer portions, insulating material provided on the reinforcing portions to insulate the corners of the inner and outer portions at the point of reinforcement, and additional insulating material provided in the space between the inner and outer portions of the barrel.

3. A barrel of the all-metal type including, in combination, an inner liquid containing portion, outer reinforcing portions entirely encompassing the inner liquid containing portion in spaced relation thereto, reinforcing corner elements of

conducting material provided between the corners of the inner and outer portions of the barrel, and insulating material on the reinforcing portions for insulating the corners of the portions from each other.

4. A barrel of the all-metal type including, in combination, an inner liquid containing portion, outer reinforcing portions entirely encompassing the inner liquid containing portion in spaced relation thereto, reinforcing corner elements of conducting material provided between the corners of the inner and outer portions of the barrel; insulating material on the reinforcing portions for insulating the corners of the portions from each other, reinforcing portions provided at the bilge portion of the barrel, and insulating material provided on the reinforcing members to additionally reinforce and insulate the inner and outer portions of the barrel.

5. A barrel of the all-metal type including, in combination, an inner liquid container portion, outer reinforcing portions entirely encompassing the inner liquid container portion in spaced relation thereto, reinforcing corner elements of conducting material provided between the corners of the inner and outer portions of the barrel, insulating material on the reinforcing portions for insulating the corners of the portions from each other, reinforcing members provided between the portions near the bilge of the barrel, insulating material provided on the reinforcing members to additionally insulate and reinforce the inner and outer portion of the barrel, and an insulating material provided in the space between the inner and outer portions of the barrel.

6. A barrel of the all-metal type having an inner liquid containing portion, outer reinforcing portions in spaced relation thereto, annular reinforcing elements fixed to one of the barrel portions, insulating material provided on the unsecured portion of the reinforcing element for engagement with the other portion of the barrel to reinforce and insulate the barrel, said reinforcing portion having a bent over flange which engages the insulating member to prevent their relative movement.

7. A sheet metal container comprising co-axial inner and outer shells in spaced relation, metal bilge rings inserted at intervals along the length of the inner shell in said space, outward hooplike offsets in said outer shell, said bilge rings comprising portions fitting into said hooplike offsets and further portions on said rings cooperating with the inner shell to hold the shells against relative axial and lateral displacement.

8. A sheet metal container comprising co-axial inner and outer shells in spaced relation, metal bilge rings inserted at intervals along the length of the inner shell in said space, outward hooplike offsets in said outer shell, said bilge rings comprising portions fitting into said hooplike offsets and further portions on said rings cooperating with the inner shell to hold the shells against relative axial and lateral displacement, and insulating means positioned between the bilge ring and one of the shells.

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