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METALLIC CASK OR BARREL.

997,556.

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Application filed December 10, 1908, Serial No. 486,812. Renewed October 12, 1910. Serial No. 586,793.

To all whom it may concern:

Be it known that I, ISAIAH WELLINGTON HOYER, a citizen of the United States, residing at New York, in the city and county of New York, have invented certain new and useful Improvements in Metallic Casks or Barrels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The particular object of the invention is to provide a metallic cask or barrel, capable of retaining a considerable gas pressure, and serviceable as a delivery receptacle for gas-containing liquids, such as malt liquors, or the like, and one which is also preferably provided with heat insulation, whereby it tends to maintain the original temperature of its contents against changes from convection and radiation.

In the accompanying drawings, I have illustrated in three figures the preferred embodiment of my invention, using the same reference characters to indicate the same parts throughout.

Figure 1 is a central vertical section of my improved cask or barrel; Fig. 2 is an end elevation, and Fig. 3 is a sectional detail of the bung.

My improved barrel is characterized by the employment of a double metallic shell made up of an inner shell *a* and an outer shell *b*, this double shell affording a light and cheap construction which may be given insulating properties either by packing the space between the two cylinders with a non-conductor of heat such as asbestos or mineral wool, or the like, or by exhausting the air from the space between the two cylinders to create a partial vacuum therein. The degree of vacuum to be employed for this purpose would depend upon the limiting conditions arising from the difficulty of creating and maintaining the vacuum, as compared with the value of the insulation thereby secured, and it will be apparent that the space between the two cylinders, even if filled with air, would afford a substantial insulation.

In the particular form illustrated in the drawings, the barrel shape is produced by imparting a slight bulge to the inner and outer shells, the bulge being just enough so that the inner shell *a* may pass through the ends of the outer shell *b* when the parts of

the barrel are being assembled. It will be understood, however, that this particular degree of bulge is not an essential feature of the invention and may be modified to suit the requirements of any particular case, or the inner and outer shells may assume a truly cylindrical form.

The circular heads *c* and *d* of the barrel, which are preferably made of pressed steel, are provided around their circumference with continuous right-angle return sections *e*, preferably made integral with the head and merging into the circumferential portion thereof through a strengthened annular edge portion *f*. This strengthened annular edge portion *f* of the head is grooved as at *g* to receive the edge of the inner shell when the right angle return is placed over the outside thereof, as indicated in the drawings; and in assembling the barrel the inner shell is riveted to the inwardly extending flange of the right-angle return portion, as shown, and calking within the groove *g* is resorted to to make a gas tight joint. The inner shell carrying the heads is secured to the outer shell, and the space between the two shells is closed, by annular channel hoops *m* and *n*, the inner leg of each of which takes over the outwardly extending flange of the right-angle return *e* and is anchored in an annular groove *o* in the upper surface of the strengthened annular edge portion *f* of the head, permitting calking at that point. The outer leg of each channel hoop overlaps the outer shell and may conveniently be secured thereto along their meeting lines by brazing, welding or otherwise; and for greater security the bottom of the channel is preferably provided with grooves, as shown in Fig. 1, to engage the upper edges of the outwardly extending flange of the right-angle return *e*, and of the outer shell. In order to prevent an injurious attack upon the metal by the contents of the cask or barrel, I line the inner shell with a neutral or insoluble protecting glaze, as indicated at *p*, and which may be of any suitable material such as shellac or a silica glaze.

For the purpose of giving access to the interior of the cask or barrel, to permit repair of the lining and the like, I form in one of the heads *c*, an opening closed by an interposed closure *q* which is so constructed that the gas pressure tends to close it more tightly. The closure *q* is elliptical in form and may conveniently be provided with a

finger grip q' in the center. It may conveniently be made of pressed steel and its main body portion fits snugly within an opening formed in the head c and defined by a downwardly extending annular flange or tenon r . The main body portion of the closure carries around its entire edge an outstanding flange s having an annular groove machined to engage the depending flange or tenon r , a gasket being interposed between the flange or tenon and the bottom of the groove. The closure q is held in place by a series of blind-set countersunk screws t . This head c is also provided with a bung-hole u adapted to receive a bung-seat of any known construction. It will be observed that the closure q is so arranged that the internal pressure of the gases tends to close it more tightly, but it may be removed to permit access to the interior of the barrel by removing the screws t and turning the closure within the barrel so that the narrower portion of its elliptical section may pass through the wider portion of the elliptical opening and thereby be withdrawn.

It is convenient to provide in the cask or barrel so constructed a bung-hole in the double shell thereof, for purposes which will readily be understood, and to this end I proceed as follows, it being understood that the bung-hole may be located in any convenient part of the shell. The bung-hole is formed by interposing three members in the shell, these members being inner and outer threaded sections v and w supported in alinement with one another and in engagement with the shells by the annular floating nut or union x . The threaded sections v and w are turned over at their opposite ends to infold the edges of the inner and outer shells, and the meeting ends of the sections are ground to accurate contact with each other when driven in on their threads to a meeting point within the annular nut or union x . The overturned end portions of the sections v and w preferably have double annular shoulders as indicated at x' so that the inner shoulders seat against the floating union and the edges of the shells are anchored between the inner shoulders and the ends of the said union. In constructing the barrel the threaded section v is placed within the inner shell and projecting therethrough, the annular nut is then screwed onto the threaded section until it seats against the shoulder thereon and the inner shell. Then after the outer shell has been put in place the outer section w is passed therethrough and tightly screwed into place within the union.

By this construction the sections v and w are accurately centered by the union, and, by virtue of the fact that their meeting ends are brought into contact with one another, they form a continuous bung-hole with a smooth bore and the screw threads are pro-

ected from injury, by blows occurring when a spigot is inserted. Furthermore, in the preferred construction illustrated, a double ground joint is provided at each end of the union, one between the union and the inner shoulder on the member v or w , and the other between the outer shoulder and the shell; and any necessity for accurately grinding the opening in the shell is avoided.

What I claim is:—

1. In a metallic cask or barrel, an inner shell, a head member provided around its periphery with a right-angle return section e the inwardly extending flange of which is secured to the inner shell, an outer shell spaced apart from the inner shell, and a U-shaped channel-hoop spanning the outer shell and the outwardly extending flange of the right-angle return section of the head.

2. In a metallic cask or barrel, an inner shell, a head member provided around its periphery with a right-angle return section e the inwardly extending flange of which is secured to the inner shell, an outer shell spaced apart from the inner shell, and a U-shaped channel-hoop spanning the outer shell and the outwardly extending flange of the right-angle return section of the head, the inner leg of the U-shaped channel-hoop being anchored in a groove in the head adjacent to and inside of the upstanding flange.

3. In a metallic cask or barrel, an inner shell, a head member provided around its periphery with a right-angle return section e the inwardly extending flange of which is secured to the inner shell, and a U-shaped channel-hoop spanning the outer shell and the outwardly extending flange of the right-angle return section of the head, the inner leg of the U-shaped channel-hoop being anchored in a groove in the head adjacent to and inside of the upstanding flange, said U-shaped channel-hoop having grooves engaged by the edges of the upstanding flange and of the outer shell.

4. In a metallic cask or barrel, an inner shell, a head member provided around its periphery with a right-angle return section e merging into the body of the head through a strengthened annular edge portion f containing a groove, the inwardly extending flange of the return section being secured to the inner shell, an outer shell spaced apart from the inner shell, and a U-shaped channel hoop spanning the outer shell and the outwardly extending flange of the return section of the head, the inner leg of the U-shaped channel-hoop being anchored in the groove in the strengthened annular edge portion f of the head.

5. A barrel head having an elliptical opening and a closure section fitting within said opening and having a laterally extending peripheral flange the flange and the in-

ner surface of the closure section along the edge of the opening having a coacting groove and tenon, counter-sunk screws distributed along the edge of the opening and engaging the flange of the closure section, the major diameter of the opening being larger than the minor diameter of the closure section, whereby the closure section may be detached and removed.

6. In a cask or barrel having an inner and outer shell spaced apart a bung comprising two externally screw-threaded sections each adapted to project into and seat against the edge of an opening in one shell, and an internally screw-threaded floating union connecting the two screw-threaded sections between the shells and spacing the shells apart.

7. In a cask or barrel having an inner and outer shell spaced apart, a bung comprising

two externally screw-threaded sections each having a double annular shoulder and being adapted to project into an opening in one shell, and an externally screw-threaded floating union connecting the two screw-threaded sections between the shells and spacing the shells apart, the screw-threaded sections being of such length that their inner annular shoulders seat on the ends of the union, their ends meet within the union, and they clamp the shells between the ends of the union and their outer shoulders, when they are screwed home.

In testimony whereof I affix my signature, in presence of two witnesses.

ISAIAH WELLINGTON HOYER.

Witnesses:

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