June 20, 1950 M. VAN MARWIJK KOOIJ ET AL 2,512,105

PRESSURE VESSEL FOR LIQUIDS SUCH AS BEER AND OTHER BEVERAGES

Filed May 8, 1946

Fig. 1.

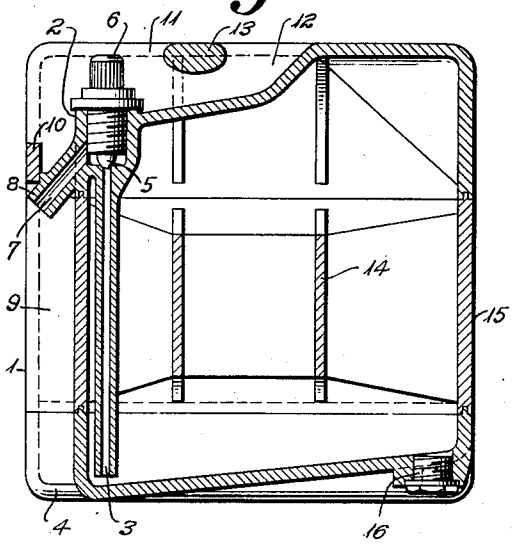



Fig. 2.

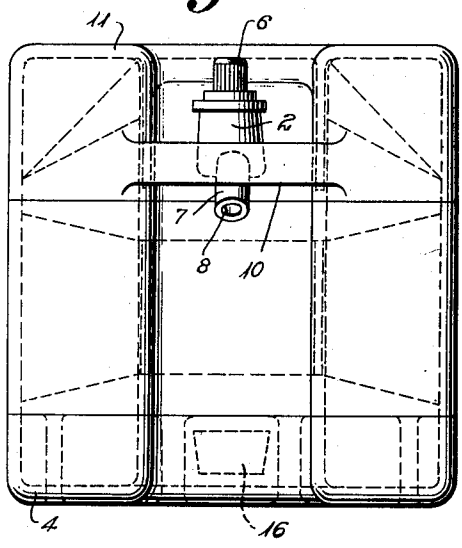
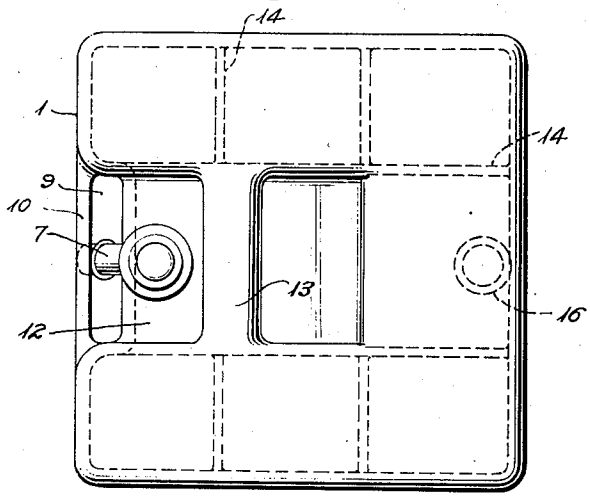



Fig. 3.




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## PRESSURE VESSEL FOR LIQUIDS SUCH AS BEER AND OTHER BEVERAGES

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3 Claims. (Cl. 222—540)

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The invention relates to a pressure vessel for liquids such as beer and other beverages.

Barrels of wood possess the disadvantage of being liable to shrinkage and swelling as a consequence of which they start leaking. Furthermore the wood offers opportunity to bacteria to multiply.

In order to do away with this drawback manufacturers have treated the inner side of wooden barrels with pitch and coated them with an insulating layer. However, due to the shrinkage and swelling this method is not entirely satisfactory.

An important progress already was the application of the glass bottle which can be better sterilized internally. This bottle can be used in coffeehouses and restaurants as well as by private persons. In these bottles there is a superatmospheric pressure of about 1.3 atmospheres so that dispensing or tapping is possible by means of an adequate cock without utilization of carbonic acid cylinders and beerpipes.

The said glass bottles, however, need a surrounding basket so as to prevent the danger of flying splinters in the event of bursting. Besides, the weight is very high: for a volume of 5 liters of beer the weight is approximately 7 kg. Moreover, owing to the excessive height these bottles cannot be stored in the usual refrigerators. Moreover, both the above mentioned barrels and the latter bottles require a large storing space when being conveyed, which space can only be partially used.

The invention now obviates these objections, makes the use of beerpipes with their objectionable cleaning superfluous (as with the glass bottles) and possesses a great number of important advantages. It is e. g. possible to pile the vessels embodying the invention in such a manner that the storing space is practically fully used or filled. Besides, the weight is small; 5 liters of beer can be contained in a vessel weighing not more than about 2 kg. Moreover, the vessels according to the invention can be placed in the usual refrigerators.

The invention is characterized in that the vessel has more or less the shape of a parallelepiped or cube and is manufactured of thermoplastic material. According to the invention the wall near which the tapping opening or outlet is positioned may be provided with an inwardly protruding substantially half-cylindrical cavity or recess.

Besides, according to the invention the upper wall may be provided with a downwardly directed more or less half-cylindrical cavity or recess extending from the front wall to or slightly beyond the center of the upper wall. Also, according to the invention the inwardly protruding cavity or recess may be provided with a protecting shield opposite or near the tapping opening, the external surface of such shield being flush with the front wall.

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According to the invention the downwardly directed cavity may be provided with a crossmember situated in or adjacent to the centre of the topwall, the surface of said cross-member being flush with the outer surface of the upperwall.

Finally the vessel according to the invention may be provided with internal reinforcing ribs or plates.

When applying the invention not only a fine-appearing but above all a pre-eminently practical unit is obtained which is very strong, light and hygienic and can be easily handled and conveyed. Owing to the half-cylindrical cavity in the frontwall tapping or dispensing of the liquid is facilitated very much because the drinking glass to be filled can be placed in an upright position under the countersunk tapping-cock or spout. Owing to the shape of the glass bottles the drinking-glass is to be kept in a slanting position when being filled. The protecting shield prevents damage of the tapping-cock during transport. The half-cylindrical cavity in the topwall with a crossmember which serves as a handle facilitates the handling and displacement of the vessel largely. Though the tensile strength of the material used is very high the internal re-inforcing ribs or plates may be of great use in view of the overpressure. With a certain super-atmospheric pressure these reinforcing elements allow for a smaller wall thickness. Owing to the lack of protruding parts the piling and stowage is possible without lost space.

As thermoplastic materials are to be considered e. g. polysterols, superpolyamides, polyvinyl compositions and the like. The application of transparent, possibly coloured materials may also be useful.

By way of elucidation an embodiment of the invention is shown in the drawings.

Fig. 1 is a vertical section perpendicular to the frontwall.

Fig. 2 is a front view and

Fig. 3 a plan view.

As appears from the drawings the vessel according to this embodiment consists of a hollow

cube with rounded off corners or edges. Adjacent to the frontwall 1 there is a tapping or dispensing device 2 consisting of a vertical tube 3 with its opening near the bottom 4 of the vessel. The tapping device 2 furthermore is provided with a valve 5 which can be operated or screwed up and down by means of the knob 6.

Owing to the pressure of the carbonic acid in the vessel when the valve 5 is open the beer is forced out of the vessel through the discharge tube or spout 7. The end 8 of the discharge tube 7 is positioned within the outer surface of the frontwall 1 in an internally extending half-cylindrical cavity or recess 9.

So as to prevent damage of the tapping device 2, opposite or near this device a protecting shield 10 is arranged, the outer surface of which is flush with the frontwall 1. In the upperwall 11 there is a downwardly sloping cavity or recess 12 provided with a cross-member 13, serving as a handle. The outer surface of this cross-member is flush with the external side of the upperwall 11.

The interior of the vessel is provided with reinforcing ribs, ridges or plates 14, thus materially increasing the strength of the unit with a certain wall thickness. In order to permit completely emptying the vessel the vertical tube 3 terminates near the bottom 4 of the vessel, whereas this bottom 4 is slanting towards the front side. Finally in this bottom 4 near the rear wall 15 an aperture with a screw cap 16 is provided for cleaning purposes.

In the drawings the pressure vessel is shown by way of example as having the form of a cube. In practice generally the form of a parallelepiped may be chosen, e. g. so that the height will be about twice the length and the width.

In manufacture the unit can be cast in two, three or four parts which are welded together. When making the vessel out of four pieces the two central parts will be equal. One or two of said central parts can be applied at will or a vessel without intermediate parts can be manufactured according to the desire of making a higher or lower vessel.

We claim:

1. A container for liquids having gas under pressure therein comprising a body of plastic material generally in the form of a parallelepiped, said body having a vertically extending hemi-cylindrical recess in one portion of the vertical wall structure, a downwardly directed discharge spout lying wholly within the recess and being located near the top thereof, a shield bridging the recess in protective relation to the spout and lying flush with the main outer contours of the body, a standpipe connecting said spout to the interior of said body near the bottom thereof



and a valve controlling flow through said standpipe and spout.

2. A container for liquids having gas under pressure therein comprising a hollow body of plastic material generally in the form of a rectangular prism, said body having a vertically extending recess in one portion of its vertical wall structure, a downwardly directed discharge spout lying wholly within the recess and being located near the top thereof, a standpipe connecting said spout to the interior of said body near the bottom thereof, a valve controlling the flow through said standpipe and spout, said body having a recess in the top surface thereof and a member bridging said recess to provide a carrying handle, said bridging member lying flush with the main top surface of the body so that the contours convenient for storage are not deleteriously modified, the operating portion of the valve lying in said recess.

3. A container for liquids having gas under pressure therein comprising a hollow body of plastic material generally in the form of a parallelepiped, said body having a vertically extending recess in one portion of the vertical wall structure, a downwardly directed discharge spout lying wholly within the recess and being located near the top thereof, the inner surface of the bottom wall of said body sloping downwardly in the direction of the recess, a standpipe connecting said spout to the interior of said body near the lowest point of the inner bottom surface and a valve controlling the flow through said standpipe and spout, said bottom being provided with a drain plug in the area of the highest point of the inner bottom surface.

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