

Dec. 10, 1946.

A. T. THOMPSON

2,412,434

PRESSURE VESSEL

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2 Sheets-Sheet 1

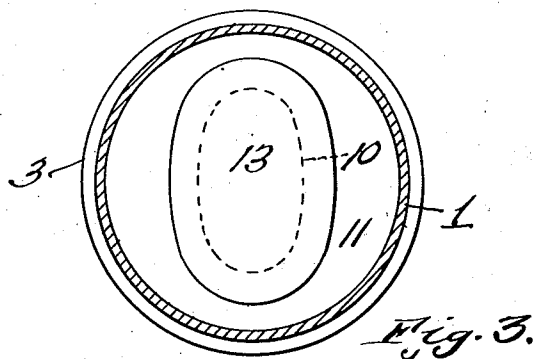
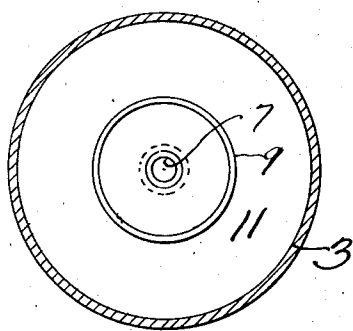
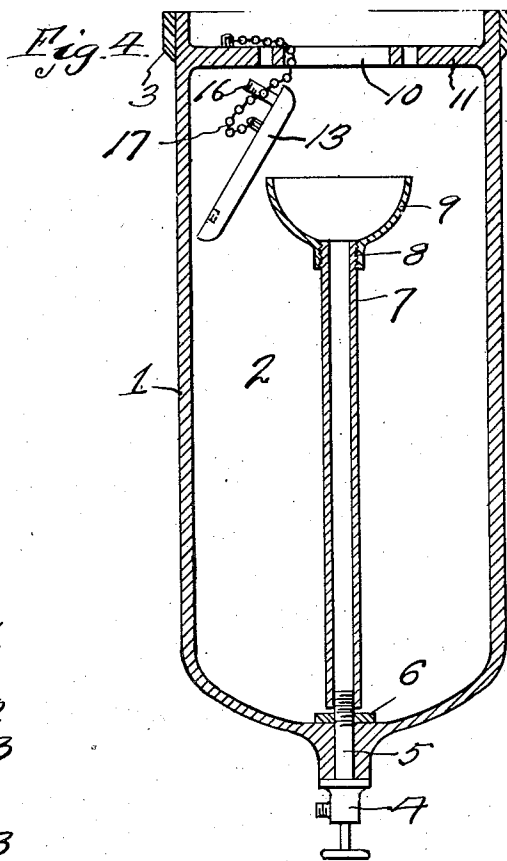
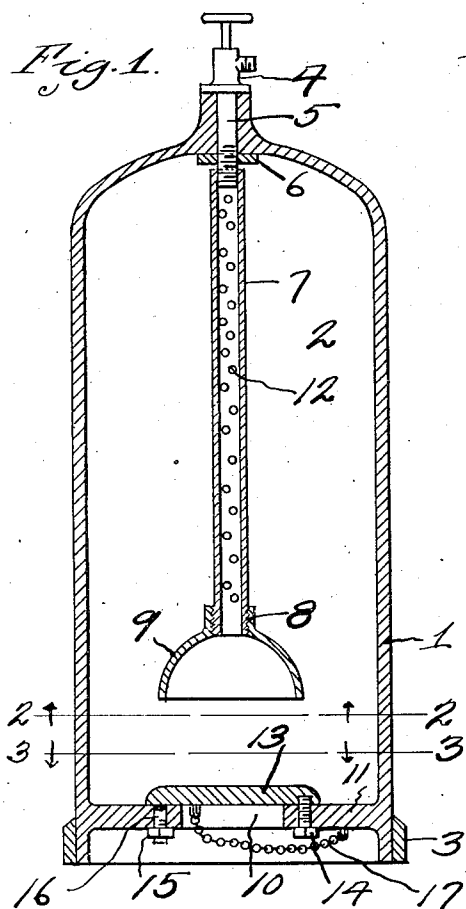


Fig. 2.

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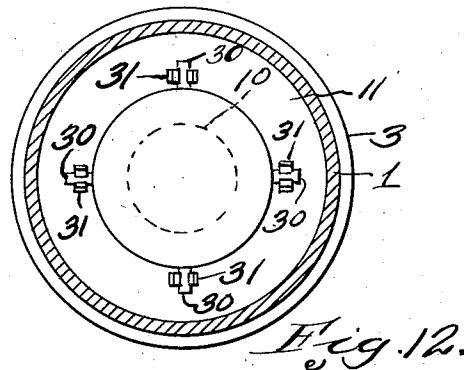
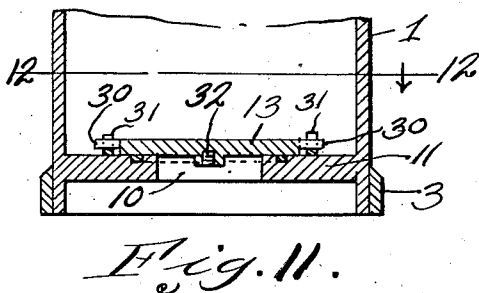
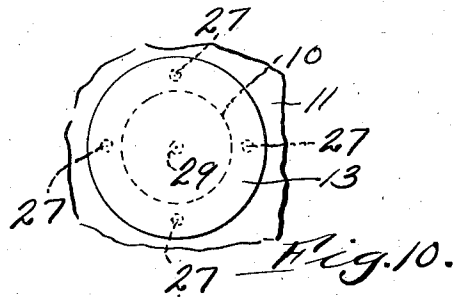
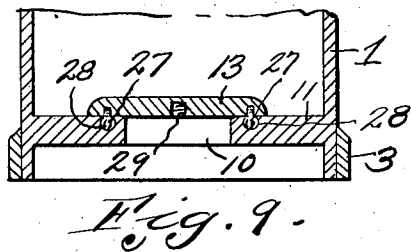
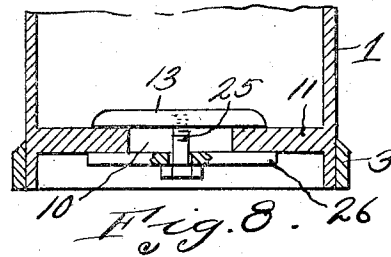
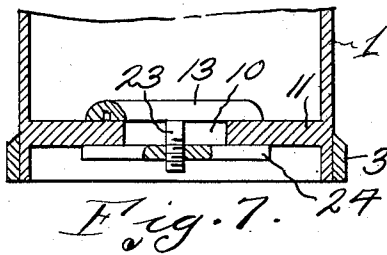
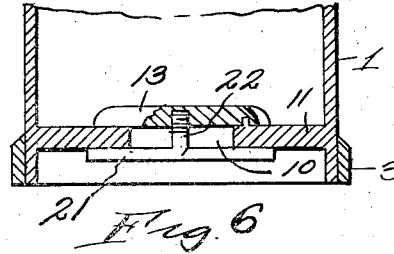
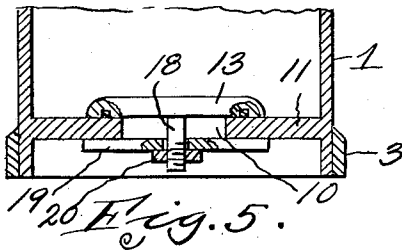
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Fig. 13.  31
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UNITED STATES PATENT OFFICE

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PRESSURE VESSEL

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1 Claim. (Cl. 225—17)

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The invention relates to receptacles adapted to be transported from place to place and particularly for use in connection with the storage of mixed beverages or liquefied gases, for instance carbon dioxide, oxygen and the like, and has for its object to provide a device of this type, bottom filled, and provided with an interiorly disposed cup or tray in which the carbon dioxide or oxygen is placed for liquefying so that the walls of the receptacle are not engaged by the material until after the liquefying operation, consequently are not damaged incident to the extreme low temperature of the liquefying or gasefying material. It has been found that the steel walls are weakened by the sudden change of temperature.

A further object is to support the cup on a tubular member extending downwardly into the receptacle and in some cases to perforate the tubular member so that the liquefied carbon dioxide or other chemical may gradually pass into the receptacle chamber while the receptacle is inverted.

A further object is to provide the bottom of the receptacle with an interiorly disposed closure and means for initially holding said closure in closed position against the inner side of the bottom until the pressure within the chamber of the receptacle builds up to maintain a seal between the closure and inner side of the bottom of the receptacle.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described, and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:

Figure 1 is a vertical transverse sectional view through the receptacle showing a perforated tube.

Figure 2 is a horizontal sectional view taken on line 2—2 of Figure 1.

Figure 3 is a horizontal sectional view taken on line 3—3 of Figure 1.

Figure 4 is a vertical transverse sectional view through the receptacle showing the same inverted and a non-perforated tube.

Figure 5 is a vertical transverse sectional view through the bottom of a receptacle, showing a modified form of closure.

Figure 6 is a view similar to Figure 5, showing a further modified form of closure.

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Figure 7 is a view similar to Figure 5 showing a further modified form of closure.

Figure 8 is a view similar to Figure 5 showing a further modified form of closure.

Figure 9 is a view similar to Figure 5 showing a further modified form of closure.

Figure 10 is a top plan view of the closure shown in Figure 9.

Figure 11 is a view similar to Figure 5 showing a further modified form of closure.

Figure 12 is a horizontal sectional view taken on line 12—12 of Figure 11.

Figure 13 is a perspective view of one of the U-shaped clips shown in Figures 11 and 12.

Referring to the drawings, the numeral 1 designates the metallic receptacle and 2 the chamber therein.

The lower end of the receptacle 1 has welded, or otherwise secured thereto a reinforcing band 3 and the upper end of the receptacle is provided with a discharge faucet 4, through which faucet gas from the chamber 2 may be dispensed for soda water fountain purposes or for any other purpose desired. Faucet 4 is provided with a threaded extension 5, which terminates in the upper end of the chamber 2 and has threaded thereon a nut 6. Any type of gasket means may be used.

Threaded on the member 5 is a downwardly extending tube 7, which tube terminates adjacent the lower end of the chamber 2, and has threaded thereon at 8 a chemical receiving cup 9 for the reception of carbon dioxide or other low temperature chemicals when the receptacle is inverted as shown in Figure 4, and at which time the chemical is passed through the opening 10 in the bottom 11 of the receptacle. The chemical sublimates or gasefies and passes downwardly through the apertures 12 in the tube 7, Figure 1, and gradually into the chamber 2 so that the temperature of the receptacle is gradually lowered, thereby avoiding sudden low temperature, which would be the case if the chemical is in direct contact with the walls of the receptacle. In the case of some chemicals the perforations 12 may be eliminated as shown in Figure 4.

For preparing and transporting to a dispensing point, beverages, the ingredients are placed in the chamber 2 with the receptacle in inverted position, then the carbon dioxide is placed in the cup 9. After this the captive closure 13 is placed over the filling opening 10 and the pressure built up from the chemical within the chamber 2 will securely seal the chamber, then the receptacle is turned right side up, after the bolt 14 and nut 15

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have been tightened. It will be seen, Figures 1 and 4, that the bolt 14 extends upwardly through the bottom 11 into the closure 13 and the closure 13 is provided with a bolt 16 which extends downwardly through the bottom 11 and onto which the nut 13 is threaded. Closure 13 is preferably provided with a chain 17, anchoring the same to the bottom 11 so it can be easily handled and manipulated into and out of position.

In Figures 5 to 13, modified forms of closures are shown. In Figure 5 the closure 13 is provided with a bolt 18, which bolt extends downwardly through the opening 10 and through a cross bar 19 on the outer side of the bottom 11. The cross bar is held in engagement with the bottom 11 by a nut 20 threaded on the bolt 18.

In Figure 6 the closure 13 is held in closed position by means of a cross bar 21 engaging the outer side of the bottom 11 and having a threaded extension 22 extending through the opening 10 and threaded into the closure 13.

In Figure 7 the closure 13 is provided with a threaded member 23 extending downwardly through the opening 10 and on which the cross bar 24 is threaded, and it will be seen that this cross bar can be rotated into binding engagement with the bottom 11.

The closure 13, in Figure 8, is held in closed position by means of a bolt 25 extending through an aperture in the cross bar 26, and when the bolt 25 is tightened against the cross bar 26, the closure 13 is held in closed position.

In Figures 9 and 10 the under side of the closure 13 is provided with snap fasteners 27, which fasteners are received in similarly shaped recesses 28 in the inner side of the bottom 11. The closure 13 is provided with a threaded tool receiving recess 29 so that the cover can be snapped in closed position.

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In Figures 11 to 13 the closure 13 is provided with outwardly extending lugs 30, which are received in U-shaped clips 31, welded or otherwise secured to the inner side of the bottom 11. Closure 13 is provided with a tool receiving member 32 so that the closure can be snapped in closed position after the filling operation.

From the above it will be seen that a pressure receptacle is provided, particularly for use in connection with low temperature chemicals, which is simple in construction, provided with means for maintaining the chemical out of engagement with the walls of the receptacle during the initial filling operation, and one in which beverage ingredients may be placed and carbonated, and the mixed beverage transported to a dispensing point.

The invention having been set forth what is claimed as new and useful is:

A chemical receiving receptacle, said receptacle having a filling opening in the bottom thereof, a discharge valve at the upper end of said receptacle, said discharge valve having a threaded extension extending partially into the upper end of the chamber of the receptacle, a downwardly extending perforated pipe threaded on said threaded extension of the valve, a lock nut on said threaded extension, and a cup shaped chemical receiving member carried by the lower end of the perforated pipe in inverted position and positioned adjacent the filling opening in the bottom of the receptacle, whereby when the receptacle is inverted chemical may be placed in the cup shaped member through the filling opening.

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