

No. 629,517.

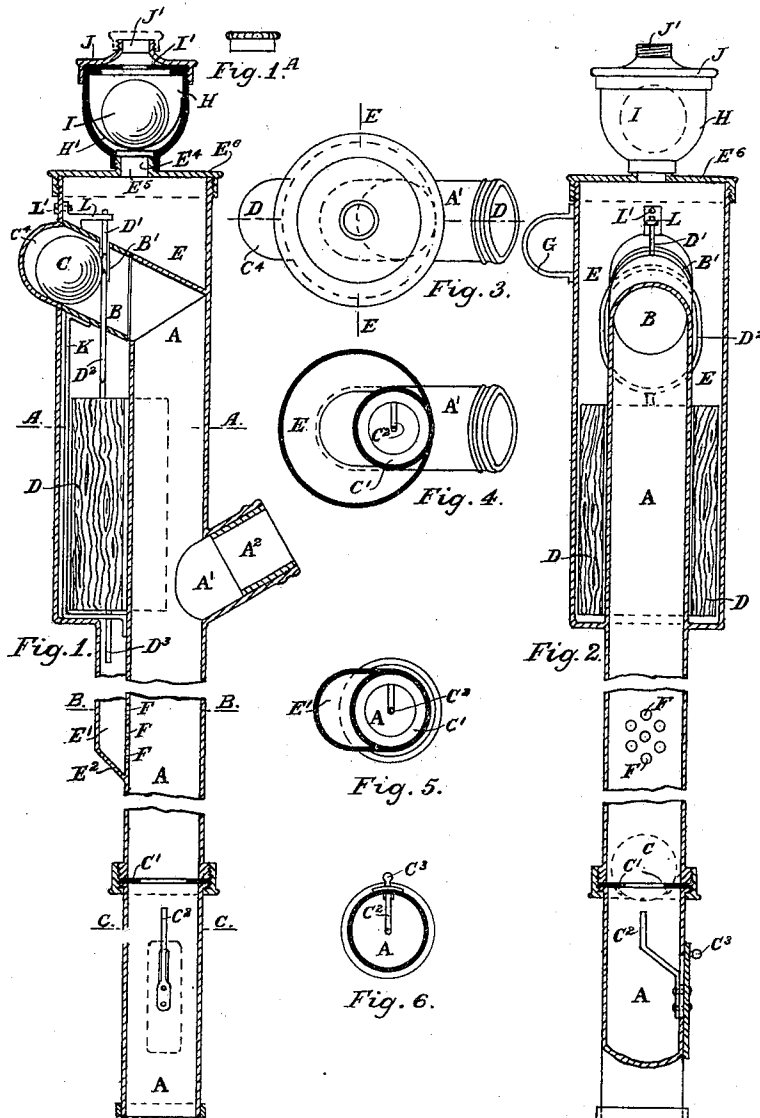
Patented July 25, 1899.

J. J. MARSHALL.  
BARREL OR CASK RACKING APPARATUS.

(Application filed Jan. 7, 1899.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

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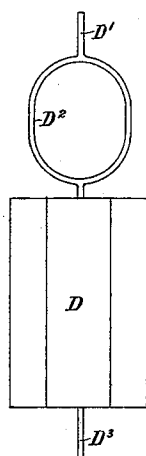


Fig. 9.

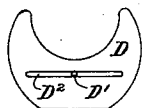


Fig. 11.

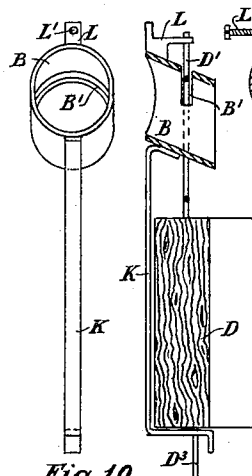


Fig. 10.

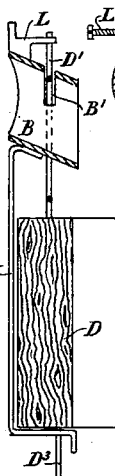


Fig. 8.

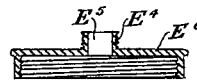


Fig. 12.

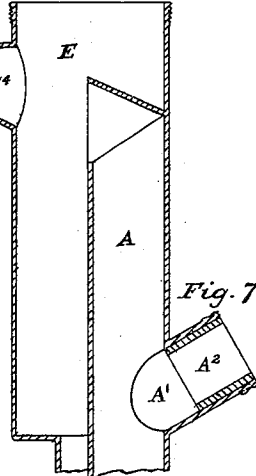


Fig. 7.

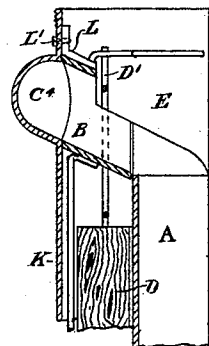


Fig. 13.

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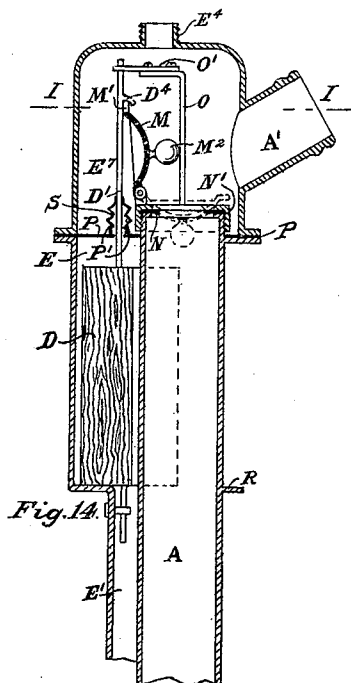


Fig. 14.

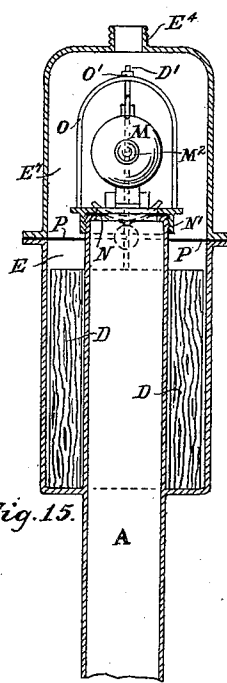


Fig. 15.

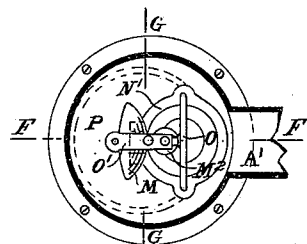


Fig. 16.

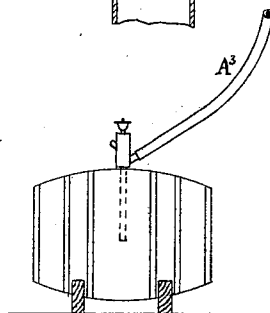


Fig. 17.

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# UNITED STATES PATENT OFFICE.

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## BARREL OR CASK RACKING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 629,517, dated July 25, 1899.

Application filed January 7, 1899. Serial No. 701,532. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES JOHN MARSHALL, brewer, a subject of the Queen of Great Britain, residing at Sydney, in the British Colony of New South Wales, have invented an Improved Barrel or Cask Racking Apparatus, (for which I have obtained provisional protection in the Colony of New South Wales, No. 8,499, bearing date of the 11th day of July, 1898,) of which the following is a specification.

My invention relates to improvements in barrel or cask racking apparatus; and it has for its object to provide new and improved means whereby excessive waste is avoided and the flow of liquor to the barrel or cask will be automatically stopped at the proper time. I attain this desired object by the apparatus illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of my apparatus on line D D, Fig. 3. Fig. 2 is a vertical section on line E E, Fig. 3. Fig. 3 is a plan. Figs. 4, 5, and 6 are horizontal sections on lines A A, B B, and C C, respectively, Fig. 1. Fig. 1<sup>A</sup> is an elevation of cap removed from the top of the air and gas escape valve chamber on the upper end of the filling-tube. Fig. 7 is a vertical section on line D D, Fig. 3, of the upper portion of the casing with the float and guide removed. Fig. 8 is a sectional elevation of float and ball-valve guide removed from their chamber. Figs. 9 and 11 are elevation and plan, respectively, of float and ball-valve releasing appliance. Fig. 10 is an elevation of float and ball-valve guide bracket. Fig. 12 is a vertical section of top cover. Fig. 13 is a vertical section of the upper portion of the casing, showing an alternative arrangement of ball-valve and float guide. Figs. 14 and 15 are vertical sections on lines F F and G G, Fig. 16, respectively, showing the application of a convex-shaped hinged flap-valve in place of the ball-valve shown in Figs. 1 and 2. Fig. 16 is a horizontal section on line I I, Fig. 14. Fig. 17 shows my apparatus as applied when racking off.

Similar letters refer to similar parts throughout the several views.

A is the filling-tube, and A' its inlet branch,

to which the filling rubber hose A<sup>3</sup> is attached. (See Fig. 17.)

B is an angular inclined extension of the filling-tube A for the purpose of both guiding and retaining the ball-valve C, as will be hereinafter more fully explained.

C is a valve-seating formed of rubber or other flexible material placed toward the lower end of the filling-tube and forming a seat for the ball C. (Shown in dotted lines in Fig. 2.)

D is a float which may be made of wood or formed as a hollow casing of light sheet metal.

D' is a top guide-rod, while the oval-shaped loop portion D<sup>2</sup> (see Fig. 9) forms the ball-valve stop and releasing mechanism.

D<sup>3</sup> is a tail-guide, both the guides D' and D<sup>3</sup> being so arranged as to insure the float D working freely.

E is the float-chamber, formed at one side of the filling-tube, and E' an extension downward of the shape shown in Fig. 5, its lower end being closed on the outside, as at E<sup>2</sup>, though communication is made between the filling-tube A and extension E' by openings F F.

C<sup>2</sup> is a trigger arrangement which may be operated from the outside of the filling-tube by means of projection C<sup>3</sup> for the purpose of raising the ball-valve C from its seating C' when so desired.

A<sup>2</sup> is a thimble or ferrule which is inserted into the branch A' after the ball-valve C has been placed into the filling-tube, which thimble may be provided with a wire-gauze strainer.

G is a loop or handle by which the apparatus may be hung up when not in use.

H is a cup-shaped vessel screwed onto the nipple E<sup>4</sup> of the float-chamber cover E<sup>3</sup> for the purpose of containing a float ball-valve I, which valve may be made of wood or other light material. A rubber valve-seating I' is placed directly above the ball-valve I and is secured in position by screwed cap J. This valve is for the purpose of closing the air and gas discharge orifice J' in the cap J when the cask is full and which is brought about by the liquor rising to a sufficient height to float the ball I up to the seating I'. In order that air or gas may escape from the filling-tube dur-

ing the process of filling the cask, the float ball-valve I is supported on a wire cage II', attached to the inside of the cup-shaped receptacle H, which provides a free passage for the air or gas around its sides.

K is a bracket connected to the angular extension-pipe B and forming an eye for the float tail-guide D<sup>3</sup> to work in at its lower end.

L is a bracket attached to the top or crown of the extension-pipe B, one portion forming an eye through which the upper float-guide D' works, the other part being drilled and screw-threaded to take the screw-bolt L', by which the float and guide-bracket are kept in position, and thus by removing the cover E<sup>6</sup> and taking out screw-bolt L' the float D, bracket K, and extension-pipe B can be readily removed either for inspection or renewal. A slot B' is cut through the upper side of the extension-pipe B to allow of the upper part of the oval-shaped loop portion D<sup>2</sup> of the float-guide entering it, (see Figs. 1, 2, and 8,) which acts as a stop to retain the ball-valve C in the upper end of the extension-pipe B while the cask is being filled.

When making use of the apparatus as illustrated by Figs. 1 to 12, inclusive, the valves, float, and moving parts being in their respective positions, as shown in Figs. 1 and 2, the filling-tube A is inserted into the bung-hole of the barrel or cask up to the branch A', as shown in Fig. 17, and connected by rubber hose to the stop-cock of the vessel (which vessel is not shown in the drawings) at a higher level containing the liquor which it is desired to rack off, when upon opening the stop-cock the liquor will flow down the filling-tube A into the barrel until it is full or thereabout, at which time the liquor will also have entered the lower end of the float-chamber by the openings F F and have raised the float D, together with the oval-shaped loop portion D<sup>2</sup>, which frees the ball-valve C, which, rolling through the loop D down the filling-tube A onto the seating C', will stop the inflow of the liquor to the barrel. The liquor will then rise in the upper part of the filling-tube and float-chamber and lift the ball-valve I hard up against the rubber seating I', at which stage all passage of the liquor by the rubber hose A<sup>3</sup> will be stopped and will so remain until the attendant, after closing the stop-cock at the upper end of the rubber hose, lifts the apparatus from the barrel sufficiently far to enable the ball-valve C to be raised from its seating by pulling up the trigger C<sup>2</sup> by the projection C<sup>3</sup>, when the liquor remaining in the apparatus and the rubber hose will run in the barrel. The particular feature of the ball-valve I is that while allowing the free passage of the air and gas from the barrel through the orifice J' during the filling of same yet it will close J' immediately the barrel is full, or thereabout.

In Fig. 13 a modification of my apparatus is shown in which a portion of the upper side of the guide-tube B is cut away, and in sub-

stitution therefor the bracket L is extended across the chamber E.

As the several operations brought about when using my apparatus with the modification shown by Fig. 13 and described therewith will be similar to those relating to Figs. 1 and 2, it will not be necessary to again here describe the same.

Figs 14 and 15 are vertical sections on lines F F and G G, respectively, Fig. 16, and Fig. 16 is a horizontal section, all three of which figures illustrate a further modification (the upper portion) of my apparatus. The remaining parts—that is, the lower portion of the tube A and the extension-chamber E—will be as shown by Figs. 1 and 2 and in which M is a hinged flap-valve. N is a rubber or other flexible seating secured in position by cap N'. M' is a projection upon valve M, which engages with the hook or catch D<sup>4</sup>, formed on the top guide D', and retains M in position shown in Fig. 14, and in which position the valve M is open. O is a bridge-shaped bracket secured to the cap N' on the opposite sides, as shown more particularly in Fig. 15, for the purpose of supporting a guide-plate O', through which the top guide D' is free to move. P is a metal disk or plate having a hole through which the guide D' will pass and a larger hole to fit the upper end of the filling-tube A, over which it will pass upon the removal of screw-cap N'. P is secured in position between the two flanges, as shown. S is an india-rubber sleeve, the upper end of which clips tightly onto a slight enlargement of guide-rod D' and the lower end onto a small nipple upstanding on plate P. The object of this rubber sleeve is to prevent leakage of any liquor through the hole P' into the float-chamber. In this modification of my apparatus although the float-valve I and its chamber H are not shown yet it must be understood that their application to and operation with will be precisely the same as that hereinbefore described and shown in connection with Figs. 1 and 2.

When making use of my apparatus arranged with the modifications shown by Figs. 14, 15, and 16 and with all the moving parts as illustrated thereby, it is inserted into the bung-hole of the barrel or cask up to the bracket R and connected to the vessel at a higher level containing the liquor which it is desired to rack off by the rubber hose, one end of which is attached to the stop-cock of the upper vessel and the other end to the inlet branch A', when upon the stop-cock being opened the liquor will flow down the filling-tube A into the barrel until it is full or thereabout, at which time the liquor will have entered by holes F F into float-chamber and have raised float D, thereby releasing valve M from catch D<sup>4</sup>, which valve, by virtue of weight M<sup>2</sup>, will fall upon its seat and stop the flow of liquor into the barrel. The liquor will then rise in the chamber E' and up to the

ball I of the chamber II, which, it must be understood, is supposed to have been screwed onto the nipple E<sup>1</sup>, when the valve I will be floated hard up against the rubber seat I', at which stage all passage of the liquor by the rubber hose will have stopped and so remain until the attendant after closing the stop-cock at the upper end of the rubber hose and lifts the apparatus from the barrel sufficiently far to enable the valve M to be raised from its seat by pulling up the trigger C<sup>2</sup> (which trigger in this modification will necessarily be longer than that shown in Figs. 1 and 2) by the projection C<sup>3</sup>, when the liquor remaining in the apparatus and the rubber hose will run into the barrel.

For the purpose of returning the valve and float to their respective positions ready for further racking off it is only necessary for the attendant or user to turn the lower end of the apparatus upward, when the valve will fall away from its seat and return to the position shown in Figs. 1, 14, 15, and 16 and in which it will be retained by the descent of the float when the lower end of the apparatus is turned downward.

It will be noted that in Figs. 1, 4, 5, and 6 and also in Figs. 14 and 16 sections of some parts are shown in dead-black and others in hatched or sectional lines. This has been done with the object of more clearly distinguishing the different parts one from another.

Having thus particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I claim—

1. A barrel or cask racking apparatus, consisting of a filling-tube having a float-chamber at one side and an internal valve-seat, a valve-chamber rising from the top portion of the filling-tube and having an air and gas escape orifice communicating with the atmosphere, a valve arranged in said valve-chamber and raised by the liquor rising therein to close said orifice, a movable valve to close against the internal valve-seat of the filling-tube and stop the flow of liquor to the barrel or cask, a trigger for lifting said movable valve, at will, from said internal valve-seat, and a float arranged in the float-chamber and provided with means for holding said movable valve away from the internal valve-seat of the filling-tube, substantially as described.

2. A barrel or cask racking apparatus, consisting of a filling-tube having a float-chamber at one side and a valve-seat in its interior, a valve-chamber attached to the top portion of the filling-tube and provided with an air and gas escape orifice, a valve arranged in said valve-chamber and raised by the rise of liquor therein to close said orifice, a movable valve adapted to close against the interior valve-seat of the filling-tube to stop the flow of liquor to the barrel or cask, and a float arranged in said float-chamber and provided with means for holding said movable valve away from the interior valve-seat of the fill-

ing-tube, substantially as and for the purposes described.

3. A barrel or cask racking apparatus, consisting of a filling-tube having a liquid-inlet, a float-chamber at one side and a valve-seat in its interior, a valve-chamber attached to the top of the filling-tube above the liquid-inlet and provided with an air and gas escape orifice, a valve arranged in said valve-chamber and raised by the rise of the liquor therein to close said orifice, a movable valve adapted to close against the interior valve-seat of the filling-tube, and a float arranged in said float-chamber and having a vertical rod extending from its upper end and constructed to bear directly against said movable valve to hold it away from said interior valve-seat, substantially as described.

4. A barrel or cask racking apparatus, consisting of a filling-tube having a lateral nipple to connect with a supply-hose, a laterally-projecting float-chamber at one side, and an interior valve-seat, a valve-chamber rising from and supported by the upper end of the filling-tube and provided with an air and gas escape orifice, a float-valve arranged in said valve-chamber and floated upward by the liquor rising in the filling-tube and valve-chamber to close said orifice, a movable valve constructed to close against the interior valve-seat of the filling-tube to stop the flow of liquor to the barrel or cask, and a float arranged in the float-chamber and having at its upper end a guided, vertically-movable extension housed within the top portion of the filling-tube and constructed to bear directly against and hold said movable valve away from the interior valve-seat of the filling-tube, substantially as and for the purposes described.

5. A barrel or cask racking apparatus, consisting of a filling-tube having lateral openings near its lower end, a lateral nipple to connect with a supply-hose, a lateral float-chamber extending below said lateral openings, and an interior valve-seat, a valve-chamber surmounting the filling-tube and provided with an air and gas escape orifice, a valve arranged in said valve-chamber and raised by the rising liquor to close said orifice, a movable valve constructed to close against the interior valve-seat of the filling-tube to stop the flow of liquor to the barrel or cask, a float arranged in the float-chamber and having guide-pieces at its upper and lower ends, and guides for said guide-pieces, said upper guide-piece constructed to bear directly against and hold the movable valve away from the interior valve-seat of the filling-tube until the float is raised, substantially as and for the purposes described.

6. A barrel or cask racking apparatus, consisting of a filling-tube having lateral openings, an interior valve-seat, a lateral float-chamber having an extension below the lateral orifices, and an inclined extension in its upper part, a valve-chamber attached to the top portion of the filling-tube and provided with an

air and gas escape orifice, a valve arranged in said valve-chamber and raised by the liquor in the valve-chamber to close said orifice, a ball-valve designed to lie in said inclined extension of the filling-tube and to roll therefrom upon the interior valve-seat of the latter, and a float located in the float-chamber and having means at its upper end to hold the said ball-valve in said angular extension and to release said ball-valve when the float rises, substantially as and for the purposes described.

7. A barrel or cask racking apparatus, consisting of a filling-tube having an interior valve-seat, a lateral float-chamber, and an inclined lateral extension, of a valve-chamber surmounting the filling-tube and provided with an air and gas escape orifice, a valve arranged in said valve-chamber to close said orifice when the liquor rises in the filling-tube and valve-chamber, a ball-valve designed to lie in said inclined extension and to roll therefrom onto the interior valve-seat of the filling-tube, and a float located in the float-chamber and having a loop on its upper end working in the inclined extension to retain the ball-

valve therein until the float is raised, substantially as and for the purposes described.

8. The combination, in a barrel or cask racking apparatus, of a filling-tube A having lateral openings F near its lower end, an interior valve-seat and a lateral float-chamber at one side communicating at its lower end with the interior of the filling-tube through the said lateral openings thereof, a valve-chamber connected with the top portion of the filling-tube and having an air and gas escape orifice communicating with the atmosphere, a valve arranged in the valve-chamber and raised by the liquor rising therein to close said orifice, a movable valve designed to close against the interior valve-seat of the filling-tube, and a float arranged in the float-chamber provided with top and bottom guides the top guide constructed to bear directly against and hold the said movable valve away from the interior valve-seat of the filling-tube, substantially as and for the purposes described.

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