(No Model.)

S. P. CONNOR.

BUNG BOTTLE.

No. 287,908. Patented Nov. 6, 1883.

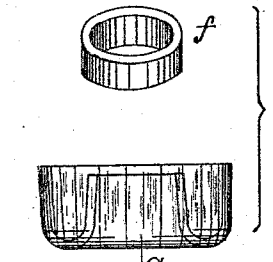


FIG. 3.

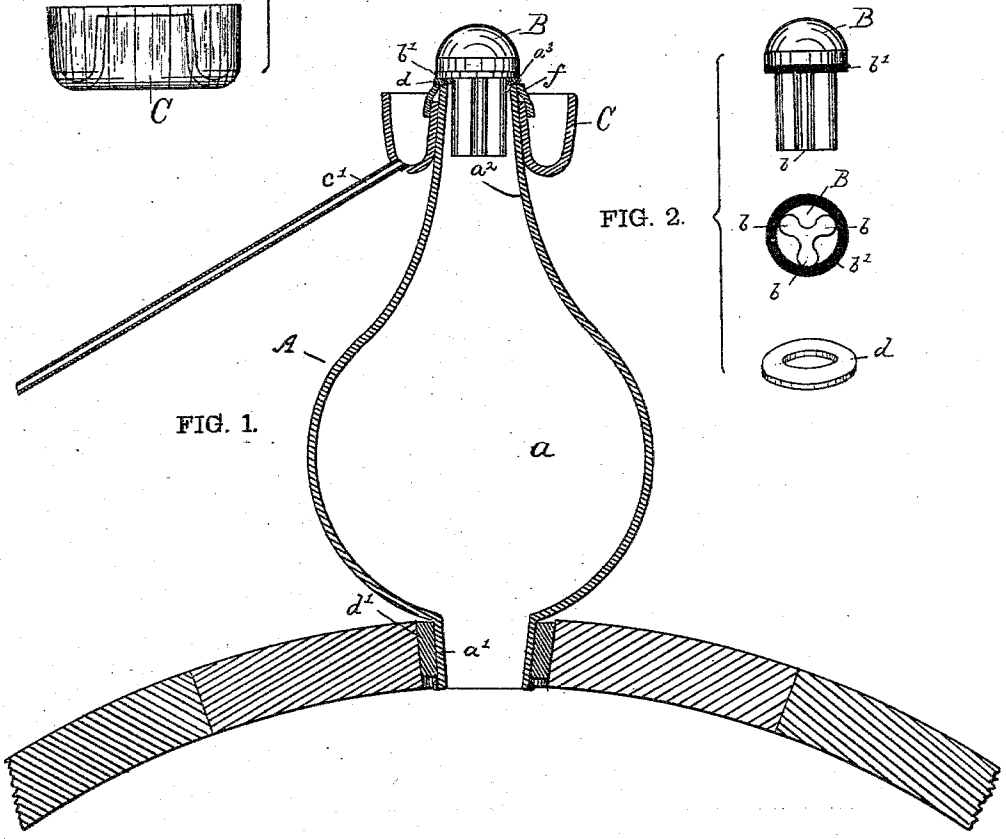


FIG. 1.

FIG. 2.

WITNESS:

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By his Att'y., Edwd. J. Coburn.

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UNITED STATES PATENT OFFICE.

SIMON P. CONNOR, OF ST. HELENA, CALIFORNIA.

BUNG-BOTTLE.

SPECIFICATION forming part of Letters Patent No. 287,908, dated November 6, 1883.

Application filed July 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, SIMON P. CONNOR, a citizen of the United States, residing at St. Helena, in the county of Napa and State of California, have made and invented certain Improvements in Bung-Bottles; and I do hereby declare that the following is a full, clear, and exact description of the nature of my said invention, and of the manner in which I proceed to construct, apply, use, and carry out the same, the accompanying drawings, hereinafter referred to, forming a part of the specification.

This invention relates to devices for insertion into the apertures of casks, barrels, and like receptacles, to provide for overflow and escape of liquid by expansion or the escape of generated gases without permitting access of external air.

My invention provides a device more especially adapted for the nursing or treatment of wines, and it includes a means for reducing to a small area the surface of liquid that is exposed to the action of the atmosphere, of permitting overflow of the liquid under expansion and the ready replenishment thereof after contraction, and particularly of exposing to view at all times the condition of the liquid at the surface.

It consists of a bottle-shaped vessel having an open bottom surrounded by a rim or circular flange, and a bulging body contracted at the top into a tubular neck. The bottom rim is adapted to fit tightly into a bung-hole or the aperture of the liquid-receptacle, and the open top of this tubular neck is fitted with a valve having an air-tight seat upon the top of the neck, and kept in place by virtue of its own weight. Immediately below this valved outlet there is fixed a trough having a discharge-spout to catch and lead off the overflow from the outlet beneath the valve.

In the accompanying drawings, herein referred to by figures and letters, Figure 1 is a vertical section of my device, showing its attachment to a cask. Fig. 2 shows details of the valve B. Fig. 3 is a view of the trough C.

A may represent my device inserted into the bung-hole of a wine-cask, in readiness for operation, of which *a* is the body and chamber, *a'* the bottom flange or neck to fit the cask, a^2 the contracted tubular part, and a^3 the outlet.

B is the valve, and C the overflow-trough, having the conductor *c'*.

I form the entire part A of glass of the character or quality suitably transparent to expose the liquid within to view and inspection. The flange or neck around the bottom opening is fitted with a rubber or other suitable packing-ring, *d'*, which, being compressed and inserted into the bung-hole, will seal the joint between the cask and the neck and prevent entrance of air. Upon the top, and surrounding the edge of the outlet, is fitted a disk, *d*, of rubber or elastic substance, to form a seat for the valve B, while the face of the valve is surfaced with similar substance, *b'*, the contact of which two surfaces will give a close air-tight joint. The valve is formed of metal or of glass, as may be best adapted for the purpose. It has three radial ribs, *b b b*, projecting from the face or bottom side, and the top is made sufficiently heavy to hold it to its seat against ordinary pressure from within. The ribs *b* fit into the neck *a'*, and serve to guide the valve in its perpendicular movements, sufficient space being afforded between the ribs for free passage of the liquid during periods of overflow.

I prefer to make the outside of the contracted neck portion of the vessel somewhat tapering, so that a thick rubber ring, *f*, may be slipped on over it as a means of fixing the overflow-trough to the neck. This trough is simply an annular gutter with the outer rim somewhat higher than the inner one, and with an outlet and spout leading from one side. The shape of the inner rim conforms to the shape of the tapering neck, and when slipped down over the neck the rubber ring serves as a clasp, as well as a packing, to hold the rim to the neck and cover over the joint between them. Whatever liquid escapes over the top of the neck is caught by the trough and carried off to any point of discharge through this outlet-tube. This trough may also be formed of glass or of metal, as may be more suitable to the character of the liquid under treatment.

Now, as thus constructed, the device, or, as I have termed it, the "bung-bottle," is prop-

erly fixed in the bung-hole of a cask, and a quantity of liquid is poured in through the top aperture, to raise the surface of the liquid from the cask up into the body of the vessel. The valve is then placed on its seat, and connection of the trough-spout is made with a suitable receiver to save the overflow. When expansion takes place within the cask, the valve is lifted and the pressure is relieved by overflow of the liquid. The quantity escaping is caught by the trough and conveyed to any receiver placed conveniently for the purpose. After such discharge, the valve returns immediately to its seat by virtue of its own weight, and shuts off access of air to the cask. Contraction of the body of the liquid is indicated by the height at which the liquid stands in the vessel A, and when the surface falls, a sufficient quantity of liquid to bring the level up again is supplied through the top aperture, the valve being raised up or taken out for the purpose.

In addition to its office and action of allowing overflow of liquid without ingress of air, and of bringing the surface of the liquid to view and inspection at all times, my device is of especial value in serving to reduce the area of surface that is exposed to contact with air, and consequent oxidizing action thereof, for as the amount of oxidation in liquids of this character takes place in proportion to the breadth of surface exposed, it will be noticed that the liquid being brought up into the body of the bottle by filling up the cask after the bottle is fixed in place, the surface exposed to the air is contracted within the limits of the vessel to a much smaller area than it is possible to obtain within a cask.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The vessel A, adapted for connection with the bung-hole of a cask or like aperture in other receptacles, having an enlarged transparent body, a, contracted neck a^2, and outlet a^3, controlled by a valve, B, normally closing the inlet, and the inlet a', for admission into the body a of the liquid contained in the cask or other receptacle, substantially as and for the purpose herein described.

2. The combination together of the vessel A, having the contracted neck a^2 and outlet a^3 at the top, and an inlet below surrounded by a projecting rim that is adapted to fit the bung-hole of a cask or other like aperture, and the overflow-trough C, having a discharge-spout, c', substantially as and for the purpose herein described.

3. An improved bung-bottle for wine-casks and like situations, consisting of the body A, with inlet in the bottom surrounded by the projecting rim a', and having the contracted portion terminating in an outlet, a^3, the gravity-valve B, having suitable guides, b, and the overflow-trough c, surrounding the neck below the top thereof, and provided with a discharge-spout and conductor.

In witness whereof I hereunto set my hand.

SIMON P. CONNOR.

Witnesses:
CHARLES KRUG,
H. KIRCHWEGER.