J. A. O'CONNOR.

Apparatus for Forcing Beer from Casks.

No. 222,639. **Patented Dec. 16, 1879.**

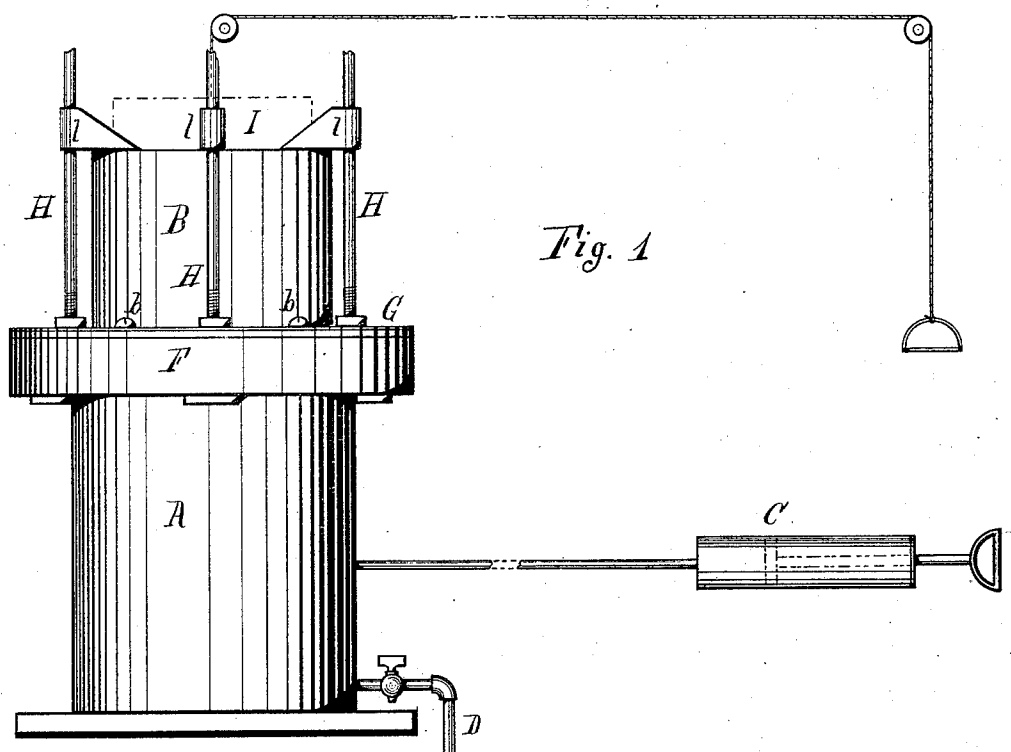


Fig. 1

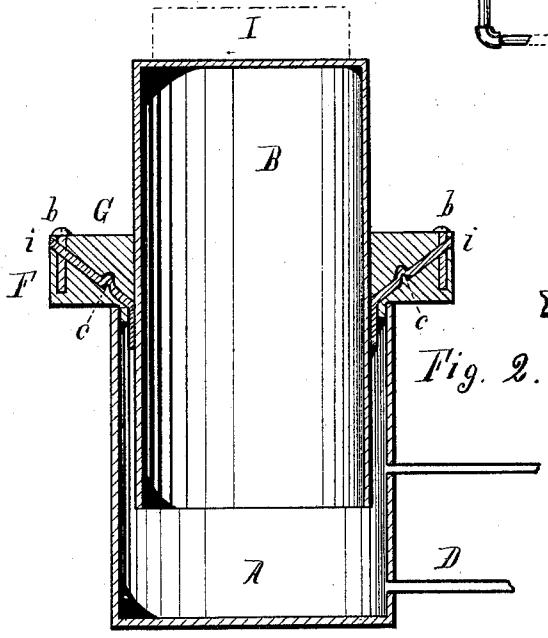


Fig. 2.

Witnesses.

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JAMES A. O'CONNOR, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN APPARATUS FOR FORCING BEER FROM CASKS.

Specification forming part of Letters Patent No. **222,639**, dated December 16, 1879; application filed April 26, 1879.

To all whom it may concern:

Be it known that I, JAMES A. O'CONNOR, of Rochester, Monroe county, New York, have invented an Improved Apparatus for Forcing Beer from Casks, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved beer-forcing apparatus as applied to a beer-cask, and Fig. 2 is a vertical section of the pressure-chamber.

My invention relates to an improved apparatus for maintaining the pressure in beer-casks, and for preserving the freshness of the beer while it is being drawn from the casks; and it consists in the combination, with an air-pump, of an air-reservoir connected to the beer-cask by a suitable pipe, the said reservoir being composed of two cylindrical or polygonal vessels, closed at their outer ends, and arranged to slide one within the other through a packed joint, as hereinafter more fully described.

In the accompanying drawings, A B is my improved air-reservoir for beer-forcing apparatus. C is the air-pump, and D the supply-pipe between the reservoir and the beer-cask E.

The reservoirs consist of two cylinders, the one, A, being stationary, and located in any convenient place with reference to the beer-cask E, and the other, B, being arranged to slide in the cylinder A through the packing-ring G.

The upper end of the cylinder A is provided with a ring, F, Fig. 2, cone-shaped on its inner edge, and having a rib or projection, *c*, Fig. 2, running around its conical face. A ring, G, is fitted to the exterior of the sliding cylinder B, and has its lower face cone-shaped, to correspond with the ring F, and is also provided with an annular recess, into which the rib *c* projects.

Between the two conical faces of the rings F and G an annular piece of sheet-rubber, *i*, is introduced. The inner or lower edge of the rubber passes below the rings F and G, and is forced against the cylinder B by the pressure of the air within the reservoir. By this arrangement a tight joint between the two cylinders is always secured—the greater the pressure in the reservoir the tighter the lower edge of the rubber packing is pressed against the cylinder B.

The rings F and G are secured together by screws or bolts *b b*. Vertical rods H rise upward from the rings and support the cylinder B in its elevated position, the upper part of the said cylinder being provided with ears or lugs *l l* sliding on the rods H H. A weight, I, placed above the sliding cylinder B, serves to maintain the requisite pressure in the air-reservoir.

I prefer to make the air-reservoir of a size equal, or nearly equal, to that of the cask E. The supply-pipe D communicates with the cask E by a hollow plug or connection driven through the bung. A portion of the supply-pipe may be of flexible tubing.

The air-pump C is employed to force air into the reservoir. The reservoir may, however, be filled by raising the cylinder B, by means of a rope passing over pulleys, or in any other convenient way, the reservoir being provided with a suitable inlet-valve for the admission of air; but in this case the reservoir should be made larger, in order to allow of the compression of the air by the weight I.

From the foregoing description the operation of my improved beer-forcing apparatus will be readily understood. The reservoir being properly charged with air of the desired pressure, the air is admitted by means of the cock or cocks in the pipe D to the cask E. As the beer is withdrawn from the cask more air will flow into it to supply the place of the beer, the pressure being kept uniform by the weight I in both the reservoir and the cask while the beer is being consumed. The beer in the cask will thus be prevented from becoming stale or flat, and the last glass drawn from the keg will be as fresh as the first.

The reservoir may be made of any desired shape or size. The upper cylinder, B, may be dispensed with by arranging the weight I, either with or without guides, to slide within the cylinder A, with a suitable rubber packing. I prefer, however, to construct my air-reservoir as shown in the drawings, or the cylinder B may be made of sheet metal.

A number of small grooves in the conical faces of the rings F and G may be substituted for the rib and recess *c*.

I claim—

In a beer-forcing apparatus, the combination, with the supply-tube D, of a weighted air-reservoir, consisting of cylinders A and B, sliding within each other, and provided with conical rings F and G, and rubber packing *i*, substantially as described.

JAMES A. O'CONNOR.

Witnesses:

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