A. J. ULSCHT, A. LINN & D. LANG.

Apparatus for Regulating Pressure in Fermenting-Casks.

No. 217,176. Patented July 1, 1879.

Fig. 1

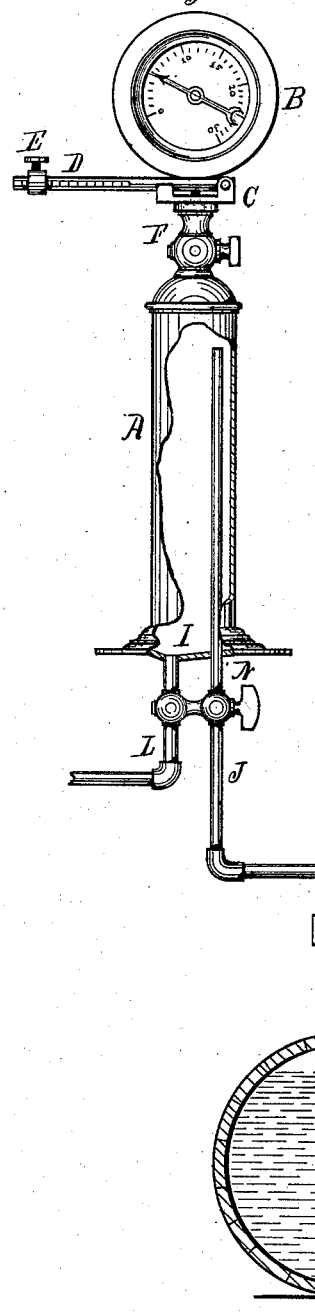


Fig. 3y

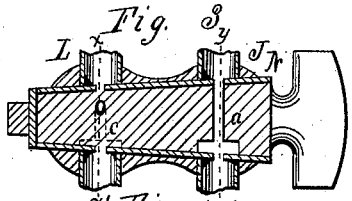


Fig. 4y

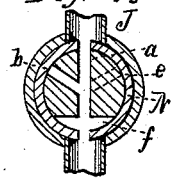


Fig. 5

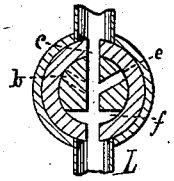


Fig. 6

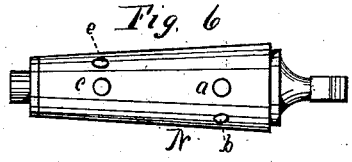
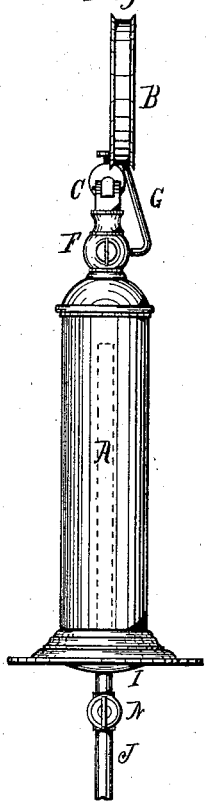


Fig. 2



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UNITED STATES PATENT OFFICE.

ADAM J. ULSCHT, ANDREW LINN, AND DAVID LANG, OF ROCHESTER, N. Y.

IMPROVEMENT IN APPARATUS FOR REGULATING PRESSURE IN FERMENTING-CASKS.

Specification forming part of Letters Patent No. **217,176**, dated July 1, 1879; application filed April 4, 1879.

To all whom it may concern:

Be it known that we, ADAM J. ULSCHT, ANDREW LINN, and DAVID LANG, residents of Rochester, Monroe county, New York, have jointly invented certain Improvements in Apparatus for Regulating Pressure during the Fermentation of Beer and other Liquids, of which the following is a specification, reference being had to the annexed drawings, in which—

Figure 1 is a front elevation, partly in section, of our improved pressure-regulator as applied to a series of casks containing beer in fermentation. Fig. 2 is a side view of the pressure-chamber; and Figs. 3, 4, 5, and 6 are detailed views, showing the construction of the valve for admitting pressure to the pressure-chamber.

Our invention has for its object the production of a simple, cheap, and effective apparatus for regulating the pressure in a series of casks in which ale, beer, or other liquids are allowed to ferment; and it consists in the combination, with a suitable receiver, of an inlet-pipe connecting the casks with the receiver and a discharge-pipe from the receiver, the said pipes being provided with valves so arranged that the closing of one pipe necessarily opens the other, or vice versa.

Our invention also consists in the combination, with a gas-receiver provided with an escape-valve, of an inlet-pipe entering through the bottom of the receiver and opening at or near the top thereof, and an outlet-pipe connecting with the receiver at its lowest point, for the purpose of conducting away any sediment from the receiver into a suitable place of deposit.

Our invention also consists in an improved construction of the inlet and outlet valves.

Our improved apparatus for regulating pressure in beer-casks during the process of fermentation is represented in the accompanying drawings.

A, Figs. 1 and 2, is the gas-receiver; J, the inlet-pipe, and L the outlet-pipe, through which any sediment is discharged from the receiver. C is an escape-valve for relieving an excess of pressure, and B a pressure-gage. N is the valve by which the admission of gas and the discharge of sediment are regulated.

The inlet-pipe J is connected with a main pipe, having branch pipes communicating with one or more casks containing the fermenting liquid. The pipe J enters the receiver A through its bottom, and terminates at the upper part thereof. The outlet-pipe L opens at the bottom I of the receiver, which may be made with an inclination toward the pipe in order to secure the complete discharge of the sediment. The pipes J and L are opened and closed, either together or independently, by the conical valve N, which passes through a suitable valve-seat, to which each of the pipes is attached.

The valve N is shown in vertical section in Fig. 3 and in plan view in Fig. 6.

Figs. 4 and 5 are transverse sections through the valves on the lines yy' and xx', respectively.

The openings *a* and *c*, Fig. 6, are drilled entirely through the valve parallel to each other, and they serve to allow the free passage of liquids or gases through both pipes in one position of the valve N. A diagonal passage, *b*, communicates with the opening *a*.

Another diagonal passage, *e*, Figs. 5 and 6, is connected with the opening *c*. The passages *b* and *e* are drilled on opposite sides of the openings *a* and *c*, so that when the valve N is turned into such a position that the pipe J is open through the passages *a* and *b* the pipe L is entirely closed, (see Fig. 3,) and when the pipe L is open through the passages *c* and *e* the pipe J is closed. A portion of the conical surface of the valve is cut away to form recesses, as shown at *f*, Figs. 4 and 5, in order to allow the pipes J and L to communicate with the passages through the valve when it is rotated slightly. By this arrangement we are enabled, by turning the valve N, to permit free communication between the fermentation-casks and the receiver, while the outlet-pipe is either closed or open, or we can open the outlet-pipe while the inlet-pipe is closed. There are also two positions of the valve N in which both of the pipes J and L are entirely closed.

The exterior of the receiver may be finished in any ornamental way. At its upper end it is provided with a cock, F, by which the pressure is admitted to the escape-valve C and to the pressure-gage B through the pipe G. The escape-valve C is provided with an adjustable

weight, E, which may be placed on the rod D, so as to allow the receiver to blow off at any desired pressure.

Any sediment which collects in the receiver A may be blown off through the outlet-pipe L into any suitable place of deposit for waste products.

We are aware that it is not new to hold beer during fermentation under a regulated pressure of the gases evolved, and such process we do not claim.

We claim—

1. The combination of the receiver A, inlet and outlet pipes J and L, and the valve N, having openings to open and close the said pipes simultaneously, substantially as described.

2. The combination of the receiver A, having inlet-pipe J, opening at or near the top thereof, and outlet-pipe L, opening at the lowest point of the inclined bottom I, substantially as set forth.

3. The combination of the receiver A, provided with escape-valve C, inlet-pipe J, passing through the bottom of the receiver, and opening at or near the top thereof, and an outlet-pipe connected with the receiver at its lowest point, substantially as described.

4. The double valve N, provided with recesses *f*, openings *a* and *c*, and diagonal passages *b* and *e*, substantially as and for the purposes set forth.

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