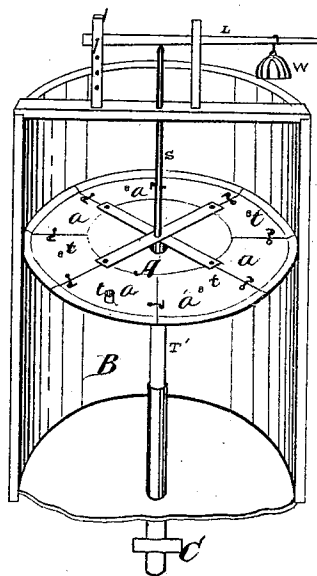


A. LANGELLIER.
Fermenting Vats.

No. 149,408.

Patented April 7, 1874.



Witnesses
Chas. C. Smith
Giles Wheeler

Inventor
Antoine Langellier

UNITED STATES PATENT OFFICE.

ANTOINE LANGELLIER, OF CONCORD, NEW HAMPSHIRE.

IMPROVEMENT IN FERMENTING-VATS.

Specification forming part of Letters Patent No. **149,408**, dated April 7, 1874; application filed November 12, 1873.

To all whom it may concern:

Be it known that I, ANTOINE LANGELLIER, of Concord, in the county of Merrimack and State of New Hampshire, have invented certain Improvements in Apparatus for Fermenting Malt Liquors, of which the following is a full and complete description, reference being had to the accompanying drawing.

My invention has for its object to keep the waste product of fermentation of malt liquors separated from the liquor during the process of fermentation, and to facilitate the removal of such waste product from the vat without the necessity of skimming. To these ends the invention consists in a weighted diaphragm, adapted to float on the surface of the liquid in a fermenting-vat. Said diaphragm is made smaller in diameter than the vat with which it is to be used, and is provided with an adjustable tube, extending downward through the bottom of the vat. The central portion of the diaphragm is depressed about two inches below the perimeter, the result of the whole construction being that the froth and waste product of fermentation pass through the annular space between the perimeter of the diaphragm and the tub, and accumulate upon the upper surface of the diaphragm until drawn off through the vertical tube, all of which I will now proceed to describe.

In the drawings, A represents the diaphragm, which is made about two inches less in diameter than the inside of the vat B, an annular space of about an inch in width being thus created between the diaphragm and vat. The diaphragm may be constructed in sections *a*, as shown, and its center is depressed somewhat below its perimeter. S represents a vertical standard, extending from the center of the diaphragm through a guide on the top of the vat. On the upper end of the standard S bears a weighted lever, L, having a movable weight, W, by means of which the pressure of the lever on the standard is adjusted. T' represents a vertical tube, attached to the diaphragm, and extending downward through the bottom of the vat, where it is provided with a cock, C. The upper end of the tube T' opens on the upper side of the diaphragm, as shown.

When the liquor is drawn into the vat and yeast added thereto to start the fermentation, my diaphragm A is to be placed in position, floating upon the liquor. As the process of

fermentation goes on, the froth and waste product of fermentation escapes around the sides of the diaphragm, and accumulates and deposits itself upon the top thereof, where it may be suffered to remain, or drawn off at pleasure through the tube T'.

By the use of my device the constant labor of skimming the liquor while in process of fermentation is avoided, the waste and objectionable product of the fermentation being kept separated from the liquor, and the liquor may be suffered to remain in the same vat or tun till it is drawn off into barrels for market.

The shaft S and lever L, with its sliding weight *w*, or any equivalent device, may be used to hold down the diaphragm in contact with and upon the surface of the liquor, and small tubes may be inserted in the diaphragm, as shown at *t t*, which may serve to conduct back any liquor which may be deposited from the froth into the vat again. These tubes should rise about one-half an inch above the top of the diaphragm.

The tube T', leading from the center of the diaphragm down through the center of the vat, is made in two parts—one part made fast in the bottom of the vat, and the other part made fast to the diaphragm, the latter part sliding up and down in the former as closely as may be without friction, to permit the diaphragm to adjust itself upon the surface of the liquor.

This device may be used in the manufacture of wine, or any liquor which is subjected to a process of fermentation.

I claim as my invention, and desire to secure by Letters Patent—

1. In a fermenting-vat, a floating weighted diaphragm having a lesser diameter than the vat, and provided with a sliding tube adapted to convey the froth and waste products of fermentation from the upper surface of the diaphragm away from the vat, substantially as described.

2. The diaphragm A, having the standard S and sliding tube T', in combination with the weighted lever L, substantially as and for the purposes specified.

3. The diaphragm A, having the short tubes *t*, arranged and operating substantially as described.

Witnesses: ANTOINE LANGELLIER.
CHAS. C. LUND,
JOSEPH WELCOME.