

L. ANGSTER.
REFRIGERATOR FOR CONDENSING VAPORS FROM FERMENTING VATS
IN BREWERIES.

No. 104,814.

Patented June 28, 1870.

Fig. 1.

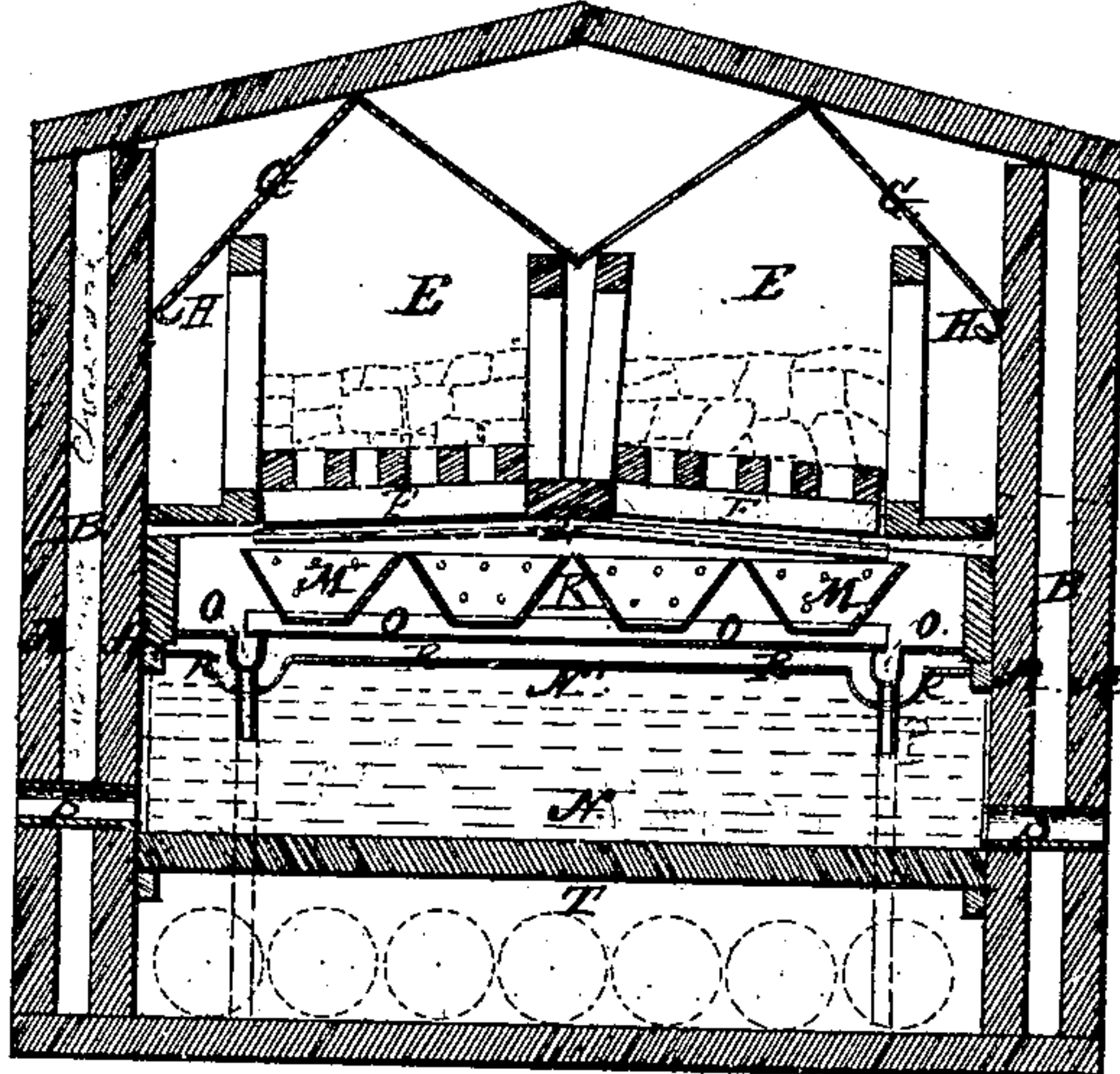


Fig. 3.

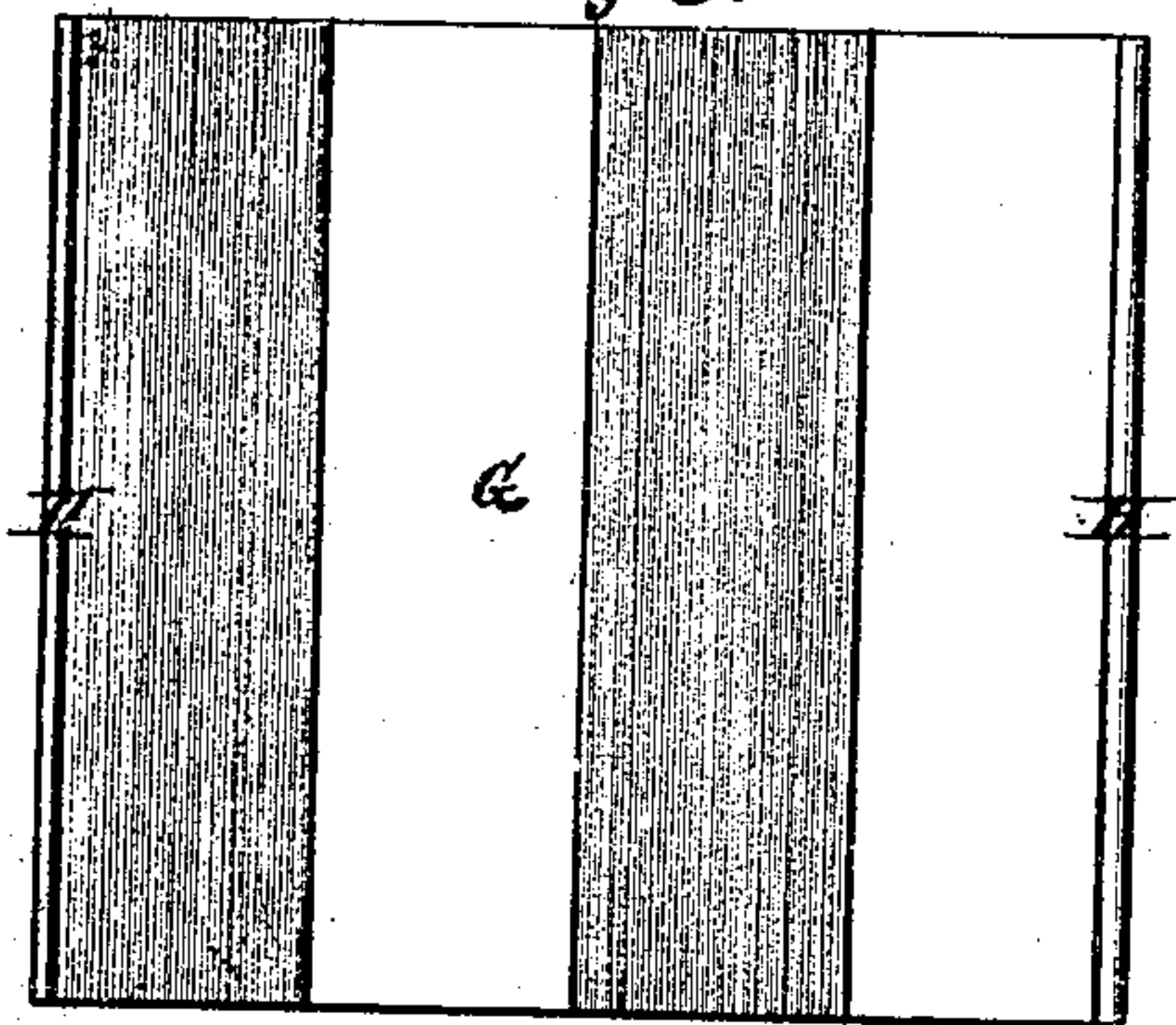


Fig. 2.

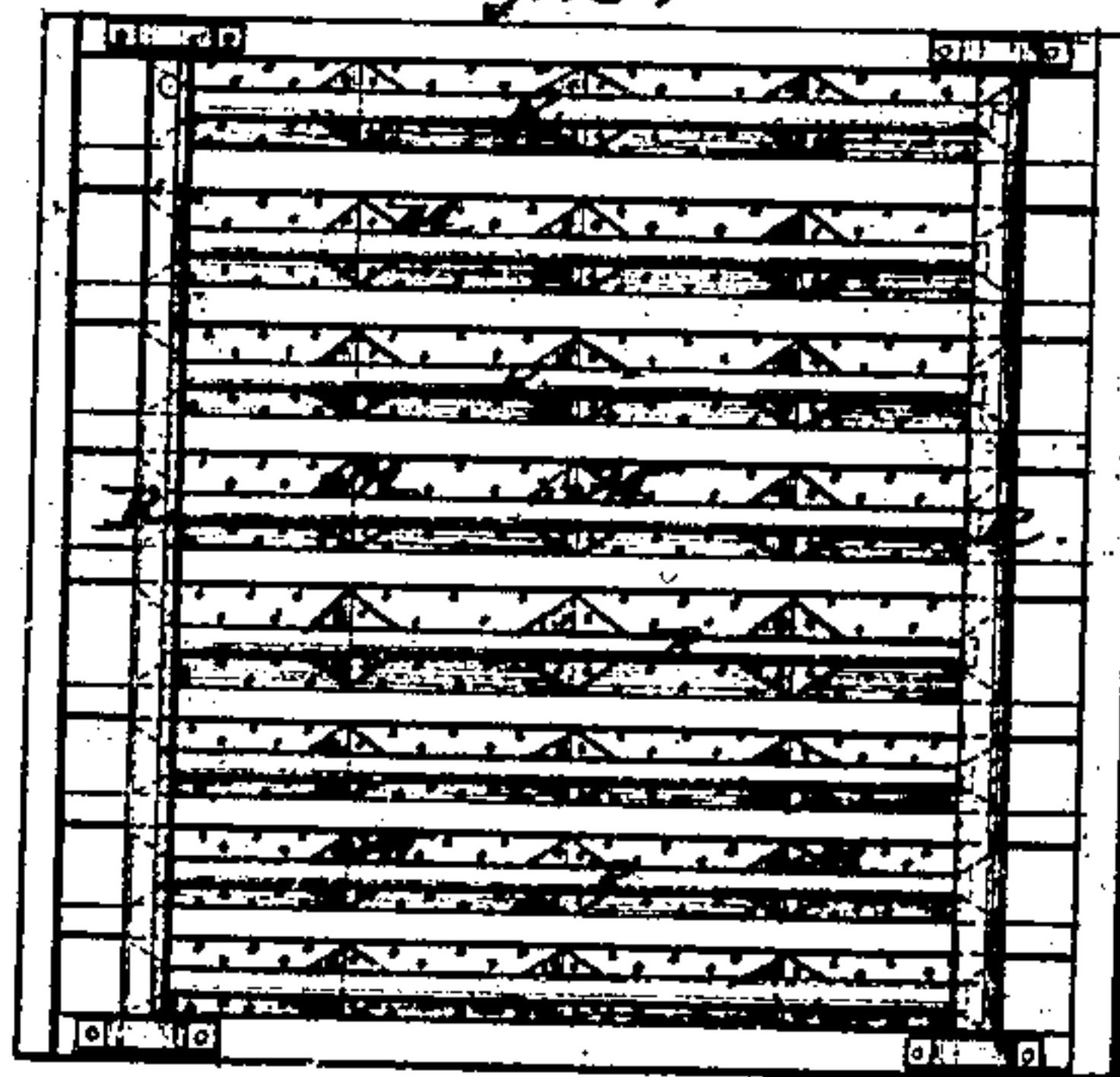
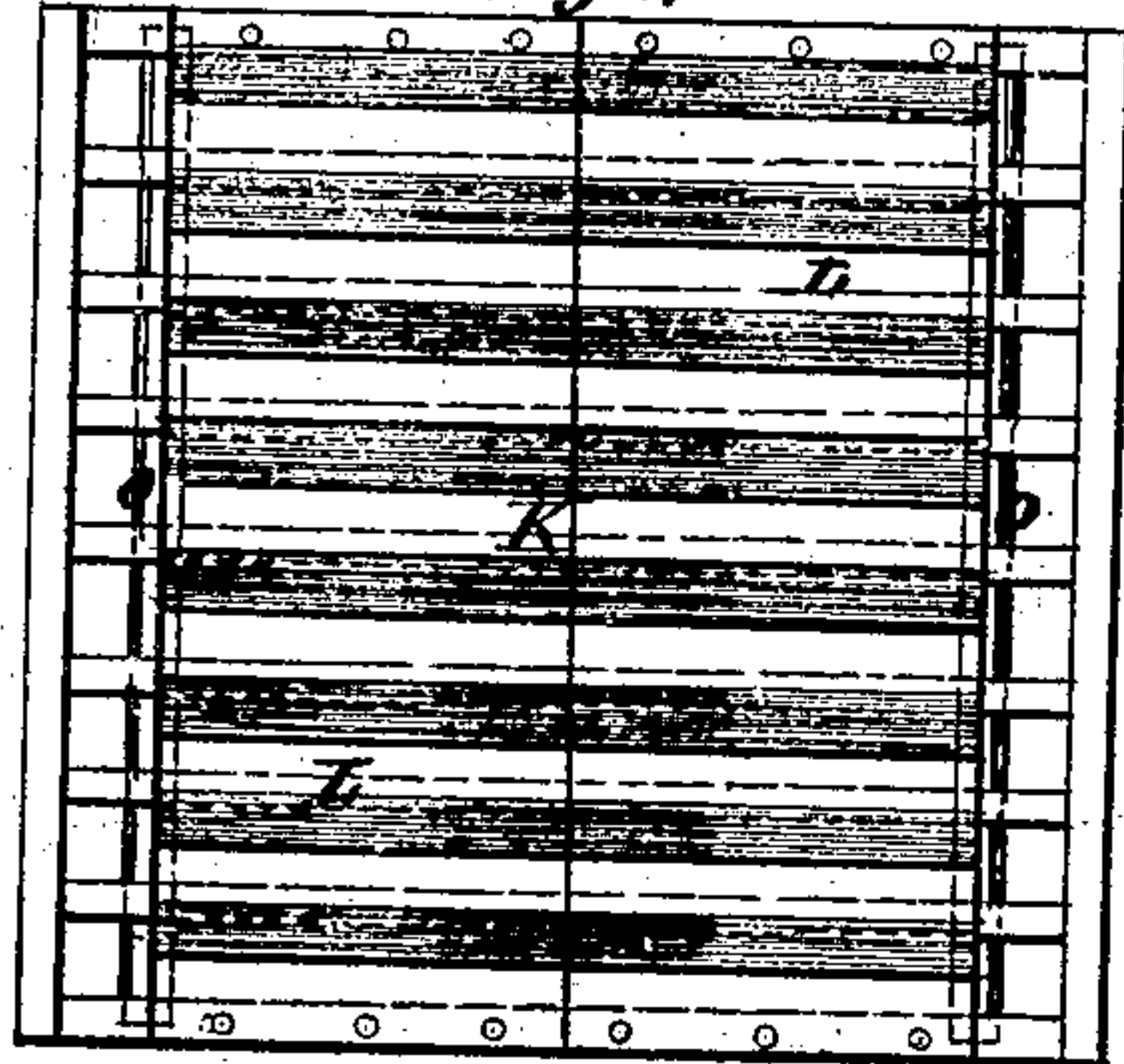


Fig. 4.



Witnessed:
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LAWRENCE ANGSTER, OF NEWARK, NEW JERSEY.

Letters Patent No. 104,814, dated June 28, 1870.

IMPROVEMENT IN REFRIGERATORS FOR CONDENSING VAPORS FROM FERMENTING VATS IN BREWERIES, &c.

The Schedule referred to in these Letters Patent and making part of the same.

I, LAWRENCE ANGSTER, of Newark, county of Essex and State of New Jersey, have invented certain Improvements in Refrigerators for Condensing Vapors from Fermenting Vats in Breweries, of which the following is a specification.

The nature of my invention consists in constructing a brewer's refrigerator in such manner that when the boiled wort and hops are put together into tuns or vats for the purpose of fermentation, the volatile gases arising from the same will be permitted to escape, and not return in condensed form to the fermenting vat, while the lupulin, or flavoring-property of the hops, shall be retained in the fermenting beer, which result I accomplish by placing immediately over the tuns or vats containing the fermenting beer an ice-chamber, against which the gases impinge, and being thereby condensed are prevented to return to the vats by means of a double gutter, which receive both the condensed vapors arising from the vat and the melted ice, and carries them outside of the refrigerator, while a constant supply of fresh air is admitted to the fermentation-chamber, as I will further explain by reference to the drawing, in which—

Figure 1 represents a sectional elevation of my brewers' refrigerator, showing the beer-vault, fermentation chamber, ice-chamber, and double gutter, for preventing return of the gases to the vat;

Figure 2 is a view showing the under side of the ice-chamber, which is employed as a condenser to the vat, and also the double gutters, which prevent return of the condensed gases to the vat,

Figure 3, a view of inside of roof of condensing chamber; and

Figure 4, a top view of the ice-floor.

In the said drawing—

A A indicates the double walls of the refrigerator, the intervening space B being filled with charcoal, shavings, or other non-conductor of heat, and

C is the roof.

E is the ice-chamber, containing a rack, F, on which the ice is placed, said rack being surmounted by a condenser, G, for condensing the vapor arising from the ice, and conducting the same into the gutters H H, from which the melted ice is conducted by pipes outside the refrigerator.

K is the floor of the ice-chamber, (see fig. 4,) which has a metallic surface, L. The under side or ceiling of this floor is provided with inverted hollow pyramids M, against which the volatile gases arising from the fermenting beer (placed in vats N in the chamber N') impinges, and, being condensed, drop into a series of gutters, O, which run below the pyramids, and thence conducted by pipes P outside the refrigerator.

R is an auxiliary gutter, or casing to the gutter O, for the purpose of preventing return of the gases condensed on the colder gutter O, by dropping into the fermenting vat.

S are ventilators, for supplying the vat-chamber with fresh air, and

T is a vault containing barrels, into which the beer, after fermentation, is run.

I am aware that a patent had been granted to me, November 30, 1869, for an improved refrigerator for condensing vapors from fermenting vats in breweries, which, in the absence of the metallic floor L and secondary gutters R, I found was partially inoperative, inasmuch as the volatile gases, after striking the cold gutters O and being condensed thereby, dropped back into the fermenting vat, this defect being overcome by the warmer auxiliary gutter R, receiving the dripping from the colder gutter O, and conducting the condensed gases and melted ice outside the refrigerator; and also the open floor, which permitted access of the volatile gases to the ice, is in like manner remedied by the metallic floor, which aids in keeping the ice intact, condenses the gases, returning them by the inverted pyramids to the gutters O

What I claim is—

The auxiliary gutter R, metallic floor L, and inverted hollow pyramids M, when used in combination with the ice-chamber E G H, gutters O, and fermenting vat N, substantially as and for the purposes described and set forth.

In testimony whereof I have hereunto set my signature this 2d day of May, 1870.

LAWRENCE ANGSTER.

Witnesses:

ARTHUR NEILL,
EMILE MOLTZ.