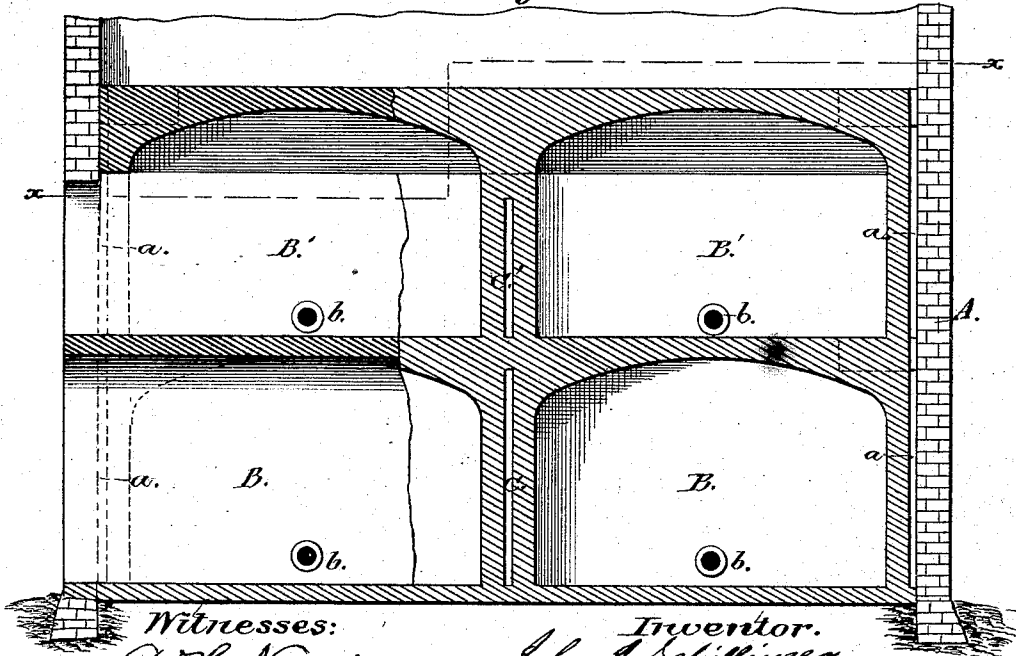
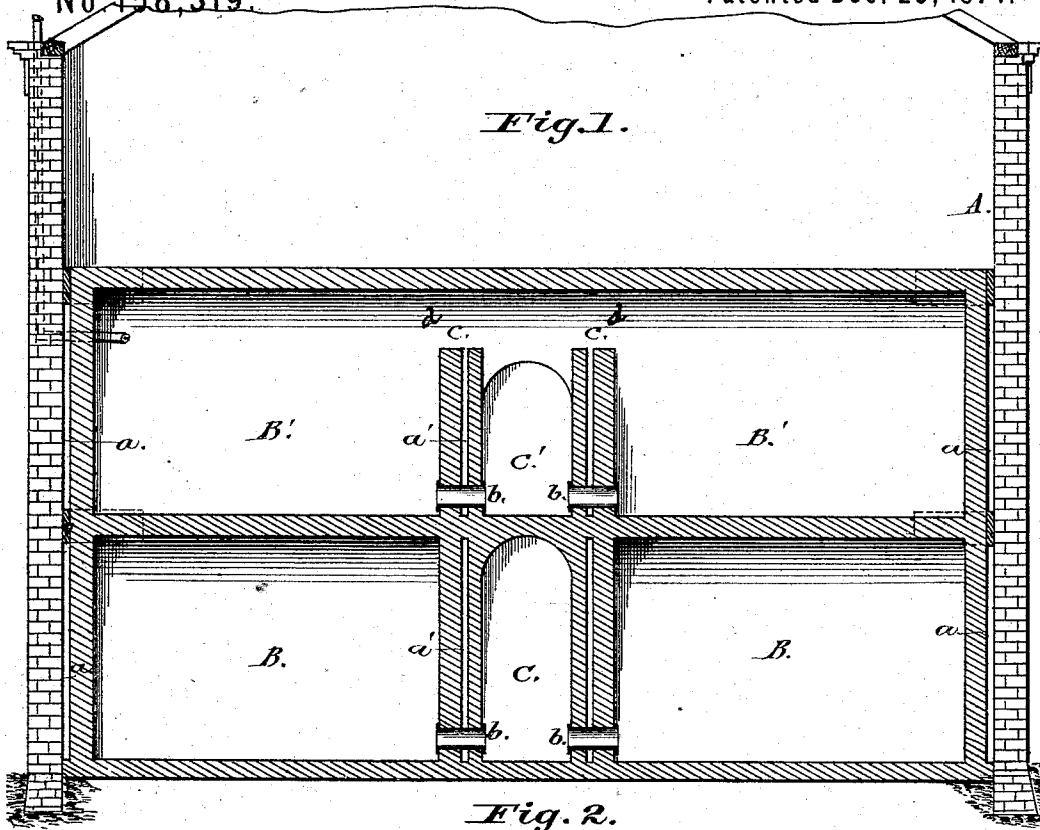


J. J. SCHILLINGER.

Cooling and Storing Houses for Beer.

No 158,319.

Patented Dec. 29, 1874.



Witnesses:

W. H. Norrie.
Geo. W. Cushing Jr.

Inventor.

John J. Schillinger.
By Van Bantvoorn & Hauff.
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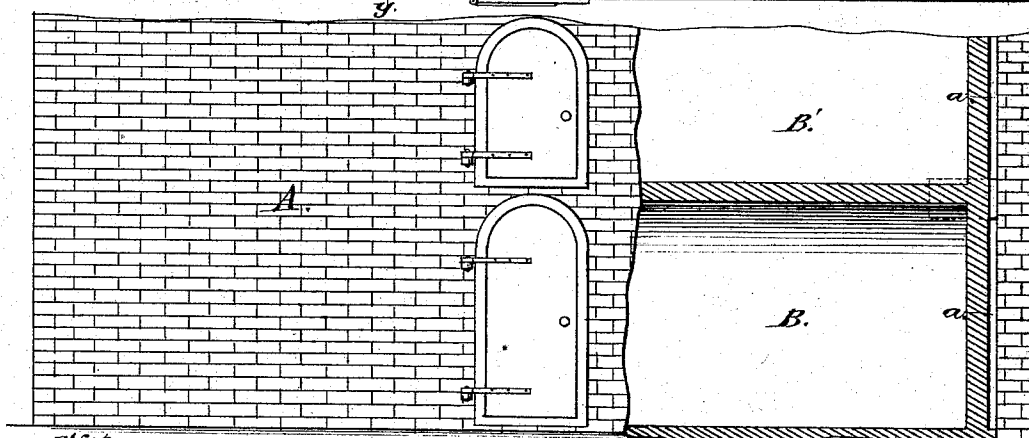
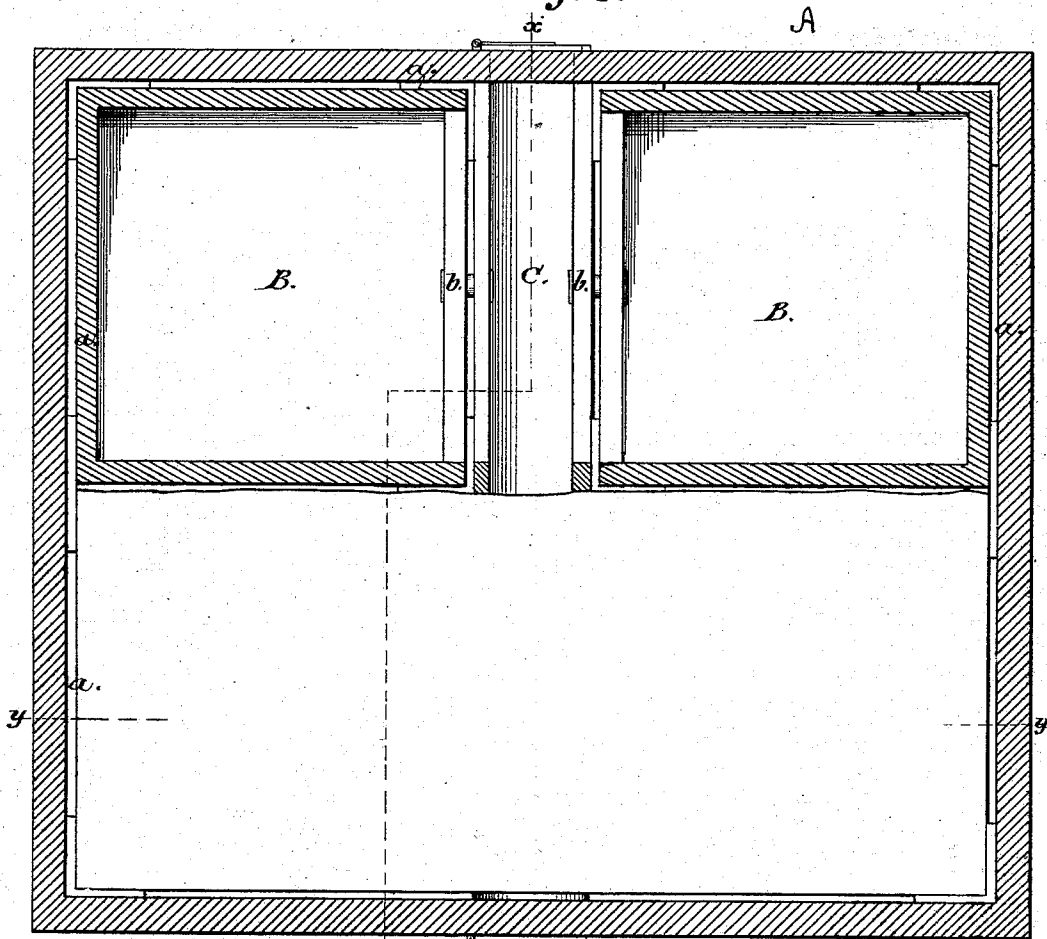
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Fig. 3.



Witnesses:

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Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN J. SCHILLINGER, OF NEW YORK, N. Y.

IMPROVEMENT IN COOLING AND STORING HOUSES FOR BEER.

Specification forming part of Letters Patent No. 158,319, dated December 29, 1874; application filed October 15, 1874.

To all whom it may concern:

Be it known that I, JOHN J. SCHILLINGER, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cooling and Storing Houses for Beer and other fermenting liquids, of which the following is a specification:

This invention consists in a cooling and storing house for beer and other fermenting liquids, in the interior of which are built up, of brick-work or cement, a series of tanks or vats with intervening air-channels, and with passage-ways between the tanks, in such a manner that, when the space above the upper tier of tanks is filled with ice, the cold air circulates around said tanks, and the liquid contained therein is cooled, and, by means of pipes which pass through the walls of the passage-ways and of the tanks, the contents of each tank can be conveniently drawn off.

Figure 1 is a transverse section of my improved cooling and storing house, illustrating the air-passages, the tanks, and passage-ways. Fig. 2 is a longitudinal section of the same. Fig. 3 is a top or plan view of the interior of the same. Fig. 4 is a side view, partly in section.

Similar letters indicate corresponding parts in each figure.

In the drawing, the letter A designates the outside wall of a cooling and storing house for beer and other liquids, in the interior of which are built up a series of tanks, B B', in several tiers, one above the other, each of the tiers containing four or more tanks. Said tanks are built up of brick-work or of cement, and the tanks on each tier are separated from each other, and form the outside walls of the cooling and storing house by air-channels *a*, so that the air can freely circulate around each tank. Between the tanks on each tier are passage-ways C C', also built up of brick-work or of cement, the walls of said passage-ways being separated from those of the adjoining tanks by air-channels *a'*, so that if the doors of the passage-ways are opened the temperature of the external air will have no influence upon the temperature of the liquid in the tanks. Through the side walls of the passage-ways and through the adjoining walls of

the tanks extend pipes *b*, through which the contents of the tanks can be drawn off. The tanks B in the lowest tier are entirely closed, with the exception of the openings for the pipes *b*, and they may be provided with man-holes, through which access can be had, for the purpose of charging, and for the purpose of cleaning them; but such man-holes will be kept hermetically closed when the tanks are filled. These tanks are intended for cooling and storing tanks, and the air-channels surrounding them may be contracted, since the liquid contained in the same is not liable to heat, and the temperature of the surrounding atmosphere remains practically unchanged. The tanks B' of the upper tier are intended for fermenting-tanks, and they are provided with large apertures *c*, Figs. 1 and 3, which correspond to corresponding apertures *d* in the walls of the passage-way C', so that the carbonic acid rising from the liquid during the process of fermentation can escape, and further admit of a workman entering through such opening for the purpose of cleansing or repairing the tanks. Suitable channels will be provided to carry off the carbonic acid. The apertures are always open, and they also serve to give access to the interior of the tanks, for the purpose of cleaning.

It is obvious that one or more tiers of storing-tanks, and one or more tiers of fermenting-tanks, may be built up in the same cooling and storing house.

On the top of the upper tier of tanks I place the ice, which may be supported by a suitable grate, and, in order to prevent the ice-water from running down into the air-channels, the channels of the upper tier will be protected by suitable traps, or otherwise, the ice-water being conducted out through a hole or holes in the outside wall of the cooling and storing house.

By these means a cooling and storing house is obtained with permanent storing and fermenting tanks, and a comparatively small quantity of ice is sufficient to keep the temperature in the interior of the house down to the desired point.

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

A cooling and storing house for beer and other liquids, provided upon its interior with a series of permanent storing and fermenting tiers of tanks or vats, one above the other, and with passage-ways C C', having openings *d*, corresponding with openings *c* in the tanks, and each of said tanks surrounded by an air-

space, *a*, all constructed substantially in the manner herein shown and described.

JOHN J. SCHILLINGER.

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.