J. J. Schillinger,

Refrigerator Building.

No. 98,638. Patented Jan. 4. 1870.

Fig: 1.

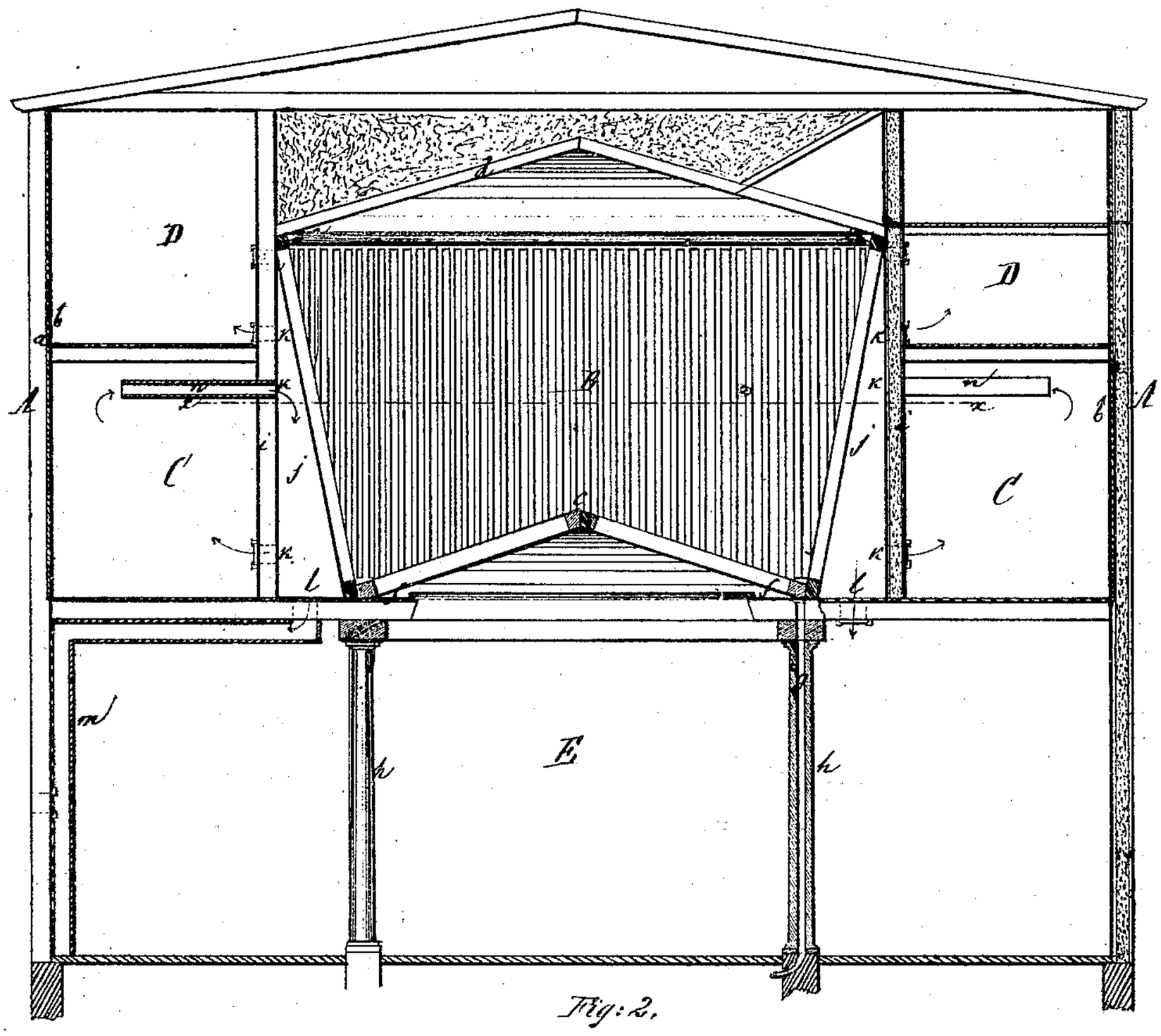
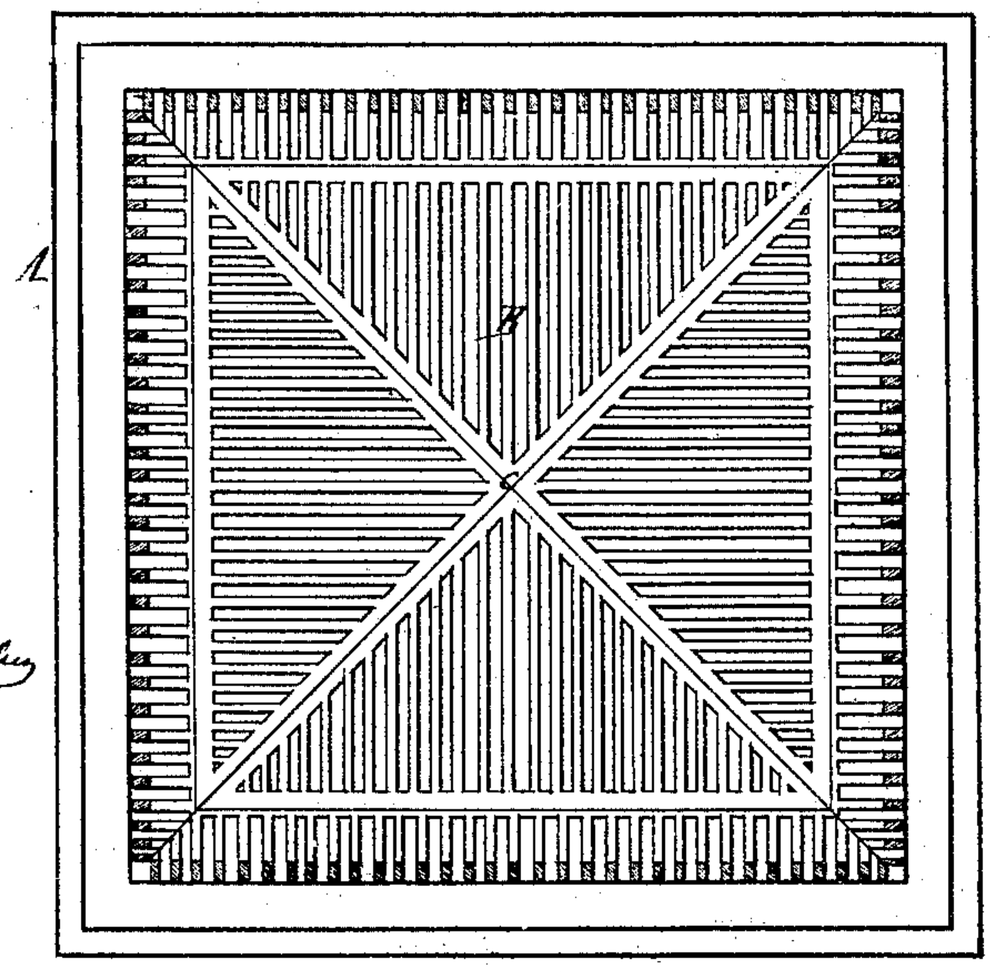


Fig: 2.



Witnesses.
C. Wahlers
E. F. Kastenhuber

Inventor.
J. J. Schillinger
Per Lothrop & Haigh
Attys

United States Patent Office.

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

Letters Patent No. 98,638, *dated January* 4, 1870; *antedated October* 7, 1869.

IMPROVED REFRIGERATOR FOR BUILDINGS.

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

To all whom it may concern:

Be it known that I, JOHN J. SCHILLINGER, of the city, county, and State of New York, have invented a new and useful Improvement in Refrigerator-Buildings; and I do hereby declare the following to be a full, clear, and exact description of the same, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents a vertical section of this invention.

Figure 2 is a horizontal section of the same, the line *x–x*, fig. 1, indicating the plane of section.

Similar letters indicate corresponding parts.

This invention relates to a refrigerator-building or ice-house, the ice-chamber of which is surrounded by a cold-air space, provided with suitable ducts and valves leading to the adjoining provision-chambers, in such a manner, that when the ducts are closed, the cold-air space being filled with a very bad conductor of heat, preserves the ice in the ice-chamber against the external influence, and, if the ducts are opened, a circulation of cold air takes place from the cold-air space through the adjoining provision-chambers.

The bottom of the ice-chamber is raised in one or more points, so that the ice is kept as much as possible free from contact with the water resulting from the molten ice.

The water resulting from the condensation of the moisture in the air coming in contact with the exterior surface of the ice-chamber, is collected in a gutter under the bottom of the ice-chamber, and thence carried off by a suitable pipe, and the interior of the roof is covered with sheet-metal, and it inclines from one or more points down toward a gutter, which serves to collect the water resulting from the condensation of the moist or foul air in the interior of the ice-chamber.

The external walls of the building are rendered air-tight by a covering of paper and sheet-metal combined.

In the drawing—

The letter A designates the outside walls of my refrigerator-building, which are covered on their inner surfaces with a layer, *a*, of paper, and a second layer, *b*, of sheet-metal, so that, by the paper, all the crevices are covered, and the walls are rendered comparatively air-tight, and, by the sheet-metal lining, the paper is protected against abrasion, or injury from other causes. In practice, the walls are made hollow, and filled with sawdust or other suitable material.

The central space of my building is occupied by the ice-chamber B, which is constructed of slats, and the side walls of which are covered, on the inside or outside, with plain or corrugated sheet-metal.

The bottom of my ice-chamber is raised at one or more points, *c*, and it is covered on the outside with sheet-metal, so that the water resulting from the molten ice will run down toward the edges and be kept as much as possible from coming in contact with the ice in the chamber, and, furthermore, the cooling-surface of the bottom is thereby increased, and the ice, as it melts away, becomes a compact mass, whereby a great saving in ice is effected.

If desired, the bottom may be made in sections, so that it can be easily handled.

The roof *d*, of my ice-chamber, conforms in its shape to the bottom, and it is lined on its inside with sheet-metal plates, which terminate over a gutter, *e*, so that the water resulting from the condensation of the foul or moist air in the ice-chamber will collect in said gutter, and be prevented from dripping down upon the ice in the ice-chamber.

A similar gutter, *f*, is also applied under the bottom of the ice-chamber, so that the water, resulting from the condensation of the moisture of the air coming in contact with the external surface of said bottom, will be collected in the gutter, and the space below the ice-chamber will be kept dry.

The water which collects in the gutters *e f* is carried off by means of a pipe, *g*, which may pass down through one of the pillars *h*, as shown in fig. 1 of the drawing.

The sides of the ice-chambers B are flaring outward, so that between them and the walls *i*, of the room enclosing the ice-chamber, a triangular air-space, *j*, is formed, which communicates with the adjoining provision-chambers C D by means of ducts *k*, provided with suitable valves, and with the vault E below, by means of ducts *l*, which can also be opened or closed by suitable valves.

If these air-ducts are open, a circulation of cold air takes place from the air-space *j*, through the vault and the provision-chambers, as indicated by the arrows in fig. 1; but if the ducts *k* and *l* are closed, the air in the cold-air space *j*, being a bad conductor of heat, preserves the ice in the ice-chamber against the influence of the external atmosphere.

In this case the metal plates covering the bottom of the ice-chamber form the only cooling-surface, which, being in contact with the air in the vault E, serves to keep the temperature in said vault down to the desired point.

The cold air contained in the air-space *j* may, if desired, be conducted through pipes or ducts *m* into adjoining vaults.

The space above the roof of the ice-chamber is filled with sawdust, or other suitable material, and a suitable opening or hatchway in said roof serves to introduce the ice.

The circulation of the cold air through the pro-

vision-chambers C is facilitated by means of pipes *n*, which compel the cold air to pass through the entire space of said chambers before it is allowed to return to the cold-air space *j*.

By this arrangement, I am enabled to produce a refrigerator-building which is particularly valuable for brewers and provision-dealers, and in which the ice is used with the greatest possible economy.

What I claim as new, and desire to secure by Letters Patent, is—

1. The air-space *j*, in combination with the ice-chamber B, air-ducts *k l*, pipes *n*, vault E, and provision-chambers C C, all arranged, constructed, and operated as set forth.

2. The employment of layers *a a*, of paper, on the walls, when used in connection with a layer, *b*, of sheet-iron or other metal, to prevent injury to the paper, as set forth.

JOHN J. SCHILLINGER.

Witnesses:
W. HAUFF,
C. WAHLERS.