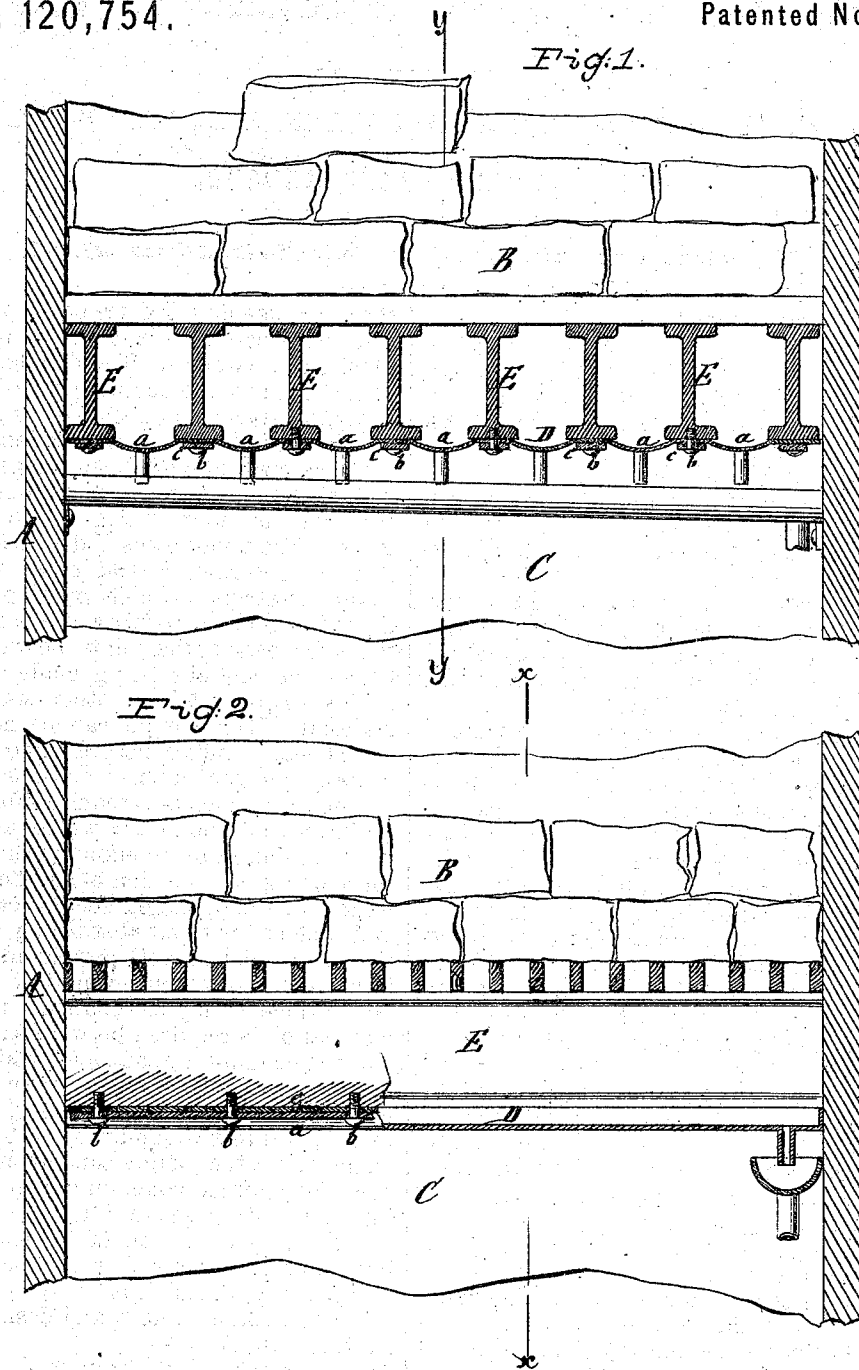


CHARLES LIEBMANN.
Improvement in Ice Houses.

No. 120,754.

Patented Nov. 7, 1871



Witnesses.
E. F. Kastenhuber
C. Wahlers.

Inventor.
Chas. Liebmann
per
Van Santvoord & Knapp
attys

UNITED STATES PATENT OFFICE.

CHARLES LIEBMANN, OF BROOKLYN, E. D., NEW YORK.

IMPROVEMENT IN ICE-HOUSES.

Specification forming part of Letters Patent No. 120,754, dated November 7, 1871.

To all whom it may concern:

Be it known that I, CHARLES LIEBMANN, of Brooklyn, E. D., in the county of Kings and State of New York, have invented a new and useful Improvement in Ice-Houses; and I do hereby declare the following to be a full, clear, and exact description thereof, 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 transverse vertical section of this invention, the line *xx*, Fig. 2, indicating the plane of section. Fig. 2 is a longitudinal vertical section of the same taken in the plane indicated by the line *yy*, Fig. 1.

Similar letters indicate corresponding parts.

This invention consists of a metallic dripping-floor, constructed of detached troughs, connected to the floor-beams by longitudinal strips and screws in such a manner that the cost of the dripping-floor is materially reduced, and that each section or trough can be readily taken out and replaced without disturbing the entire floor. It also consists of the combination of floor-beams, made of iron or other good conductor of heat, with the ice-chamber, cooling-compartment, and detached troughs forming the dripping-floor of an ice-house, all of which will hereinafter fully be set forth.

In the drawing, A designates an ice-house, the upper part of which forms the ice-chamber B, which is separated from the cooling-compartment C by the dripping-floor D. This dripping-floor is secured to metallic floor-beams E, which beams form the support for the ice in the ice-chamber. The floor-beams E, being made of iron or other good conductor of heat, form a portion of the effective cooling surface of the ice-chamber, and I have found that by substituting metallic floor-beams for the old wooden floor-beams in my ice-house a saving of twenty per cent. in ice is effected. My metallic floor-beams in a short time assume the temperature of the ice, and consequently they act as integral parts of the cooling-surface, while wooden floor-beams materially interfere with the cooling effect of the ice in the ice-chamber. And, besides this, my metallic floor-beams have another great advantage over wooden floor-beams in an ice-house, since the metallic beams are not affected by the moisture, while wooden floor-beams when used in an ice-house decay in the course of one or two years, and much time and money are ab-

sorbed in keeping the ice-house in repair. My metallic floor-beams last for a long time and no repairs are required. The dripping-floor D may be attached to the metallic floor-beams by any suitable means; but I construct said dripping-floor by preference of a series of detached troughs, *a*, which are made of sheets of galvanized iron, just wide enough to extend from one beam to the other, as shown in Fig. 1. In the under surfaces of the floor-beams I drill a series of holes to receive screws *b*, and these screws act on clamping-strips *c*, which overlap the edges of the troughs, so as to press the same up against the floor-beams, the joints between said floor-beams and troughs being made tight by interposing strips of felt or other suitable packing material. Each trough can be made of one or two sheets of metal, according to the length required; but the labor of constructing my floor is much less than that required for a floor of the ordinary construction, in which all parts of the floor are united by rivets and solder. And furthermore, if any portion of my floor corrodes or wears out the damaged section can be removed and replaced without disturbing any other portion of the floor. Another great advantage arises from the fact that on account of the large cooling surface of my ice-chamber no direct communication is required between said ice-chamber and the cooling-compartment, while in ordinary ice-houses, where the cooling surface is diminished by the wooden floor-beams, it is necessary to have a direct communication between the ice-chamber and the cooling compartment, and whenever such direct communication is opened the ice melts with great rapidity.

I am aware that metallic floors and beams have before been used in ice-houses; such I do not, broadly, claim; but

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

1. A dripping-floor for an ice-house, constructed of a series of troughs, which are fastened to the floor-beams by clamping-strips and screws, substantially in the manner set forth.

2. The floor-beams E, constructed substantially as described, with the metallic floor made up of a series of detached troughs, in combination with the ice-chamber and cooling-compartment of an ice-house, as set forth.

CHARLES LIEBMANN.

Witnesses:

W. HAUFF,
E. F. KASTENHUBER.

(58)