

A. ZOLLER.
Refrigerator Buildings.

No. 151,645.

Patented June 2, 1874.

Fig: 1.

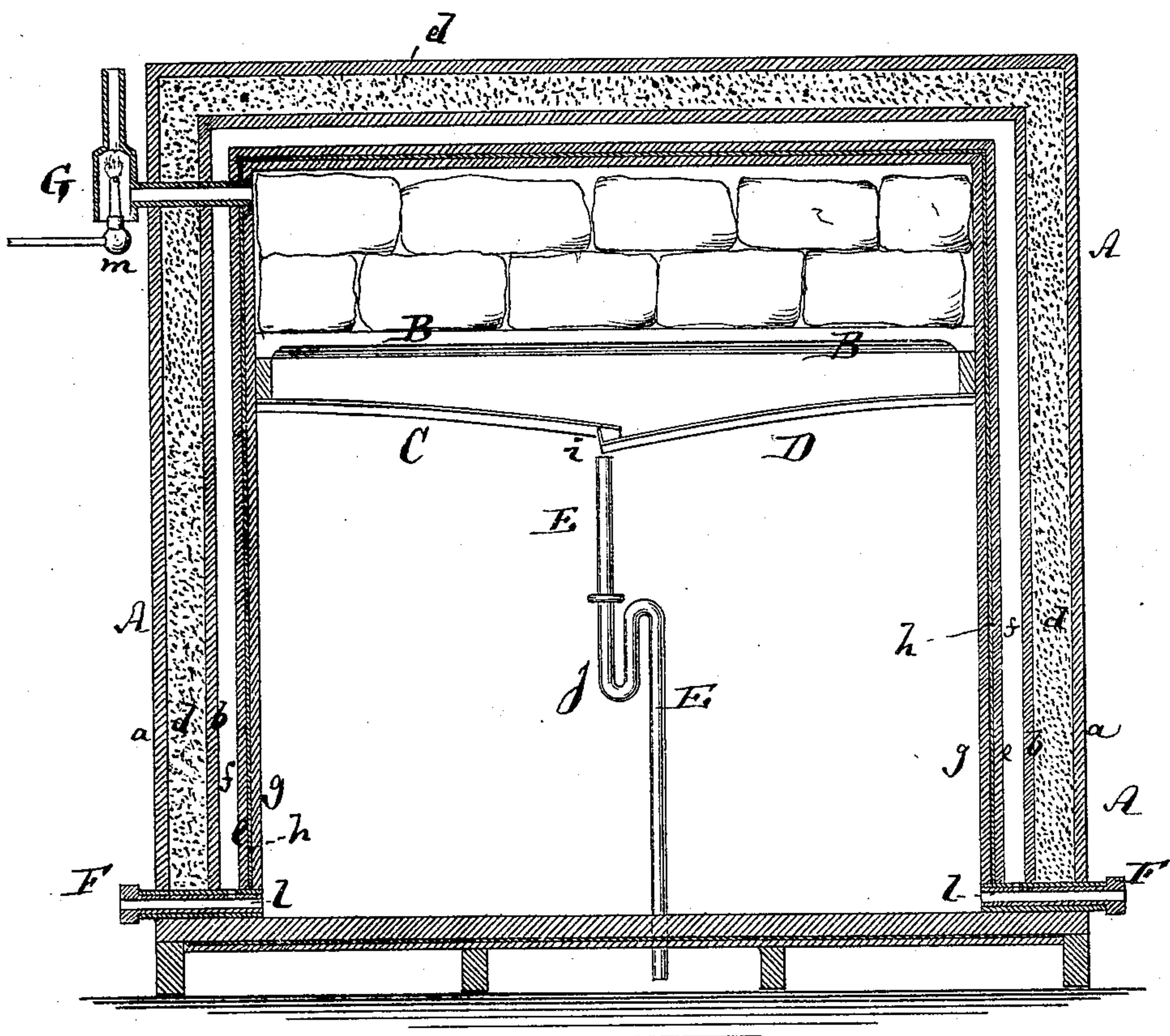


Fig: 2.



Witnesses:

Chas. Raettig.
F. v. Briesen

Inventor:

Albert Zoller
by his attorney
A. v. Briesen

UNITED STATES PATENT OFFICE.

ALBERT ZOLLER, OF HOBOKEN, NEW JERSEY.

IMPROVEMENT IN REFRIGERATOR-BUILDINGS.

Specification forming part of Letters Patent No. **151,645**, dated June 2, 1874; application filed March 23, 1874.

To all whom it may concern:

Be it known that I, ALBERT ZOLLER, of Hoboken, in the county of Hudson and State of New Jersey, have invented a new and Improved Ice-House, of which the following is a specification:

Figure 1 is a vertical central section of my improved ice-house, and Fig. 2 a detail transverse section of the lower ventilating-pipe therein.

Similar letters of reference indicate corresponding parts in both figures.

This invention has for its object to improve the construction of ice-houses used by brewers and others, so that the atmosphere therein will be constantly kept in a pure condition, and so that at the same time admission of heat to, or the accumulation of impure air within, the interior of the ice-house will be absolutely prevented.

The invention consists, first, in a new combination of parts for forming the walls of the ice-house; secondly, in a new arrangement for ventilating the hollow walls of the ice-house; and, finally, in the application of a purifying-heat generator to the upper part of an ice-house, for carrying away the impure and warm air, in combination with a ventilating-pipe at bottom of chamber, all as herein-after more fully described.

The walls A of the ice-house are made of four thicknesses of wood, or equivalent supporting material. Between the outermost thickness *a* of the wood and the next inner thickness *b* is applied the filling *d* of proper non-conducting substance, such as carbon, lime, or other material. Between the thickness *b* of the wood and the next inner thickness *c* is an air-space, *f*, which will make the escape of the heat through the wall of the ice-house more difficult. Between the thickness *c* of wood and the innermost wooden lining *g* I propose to introduce a layer of paper, *h*, saturated with tar, or equivalent substance, for preventing the escape of heat, and for keeping the parts that are outside of the paper dry and from decomposition.

This construction of the walls I consider of great advantage over those heretofore proposed, the combination of the non-conductor *d*, air-chamber *f*, and saturated paper *h* being,

so far as I know, original with me in the walls of a house having four thicknesses of wood.

The ice is supported on bars B B, that extend across the ice-house along the upper part of the same, as shown, and below these bars B are two inclined sheet-metal plates, C and D, which incline downwardly toward the middle of the ice-house and form a trough, *i*, that discharges into a drip-pipe, E. This drip-pipe is made in form of a siphon, as clearly shown in Fig. 1, and receives all the drippings from the ice; but its siphon shape causes it to retain within the downward bend of its neck *j* constantly a portion of water, and thus to prevent air from entering it, and passing through it toward the ice.

Heretofore the drip-pipes of ice-houses have always been made straight, and were open to the objection that they would serve as conduits for air, by which the dissolution of the ice was hastened.

The air necessary for ventilating the house is admitted at the bottom of the ice-house through tubes F F. Within each tube F is inserted a smaller tube, *l*, and both tubes, F and *l*, are perforated in line with air-space *f*, so that when it is desired to admit air into the air-space *f*, for purifying the air-space, it is only necessary so to turn the smaller tube *l* within the larger tube F, by hand or otherwise, as to bring the perforations of both in line with each other. The said space *f* will then be the recipient of fresh air.

This feature of my invention I consider of great importance, because I find that, in ice-houses of the ordinary construction, foul air will gradually, though slowly, accumulate within the air-space formed in their walls, and, finally, serve to make the whole wall a mass of impure matter, that would injuriously affect the contents of the ice-house.

G is a tube, connected with the upper part of the ice-house, leading therefrom to the outside. Within it is arranged either a small burner, *m*, for gas or other fuel, or a grate for solid fuel; and I propose to have, when the ice-house is in operation, a small flame constantly playing within the tube G, for the purpose of absorbing the foul and impure upper stratum of air of the ice-house, and of conveying the same slowly, but surely, away from

the latter. The innermost wooden layer *g* of the ice-house may, if desired, be properly saturated with creosote, tar, or other equivalent substance.

I am aware that ice-house walls have been constructed of layers of different non-conducting materials, but in none that I know of are they arranged with respect to each other, or in the same number, as in mine. I do not, therefore, lay claim, broadly, to the use of several layers; but

What I do claim is—

1. In the walls of an ice-house, the combination of the outer wooden layer *a*, non-conducting layer *d*, wooden layer *b*, air-space *f*, wooden layer *e*, saturated-paper layer *h*, and innermost wooden layer *g*, arranged with respect to each other substantially as and for

the purpose hereinbefore described and set forth.

2. The lower ventilating-pipe *F*, combined with the interior smaller pipe *l*, both being perforated, so that they will serve to conduct air into the ice-house, and also for ventilating the air-space *f* in the walls of the ice-house, as described.

3. The pipe *G* at the top of the ice-chamber, provided with the heating device *m* to carry off the air from the upper chamber of the ice-house, in combination with the ventilating-pipes *l* and *F*, substantially as and for the purpose hereinbefore described and set forth.

ALBERT ZOLLER.

Witnesses:

F. V. BRIESEN,
E. C. WEBB.