

(No Model.)

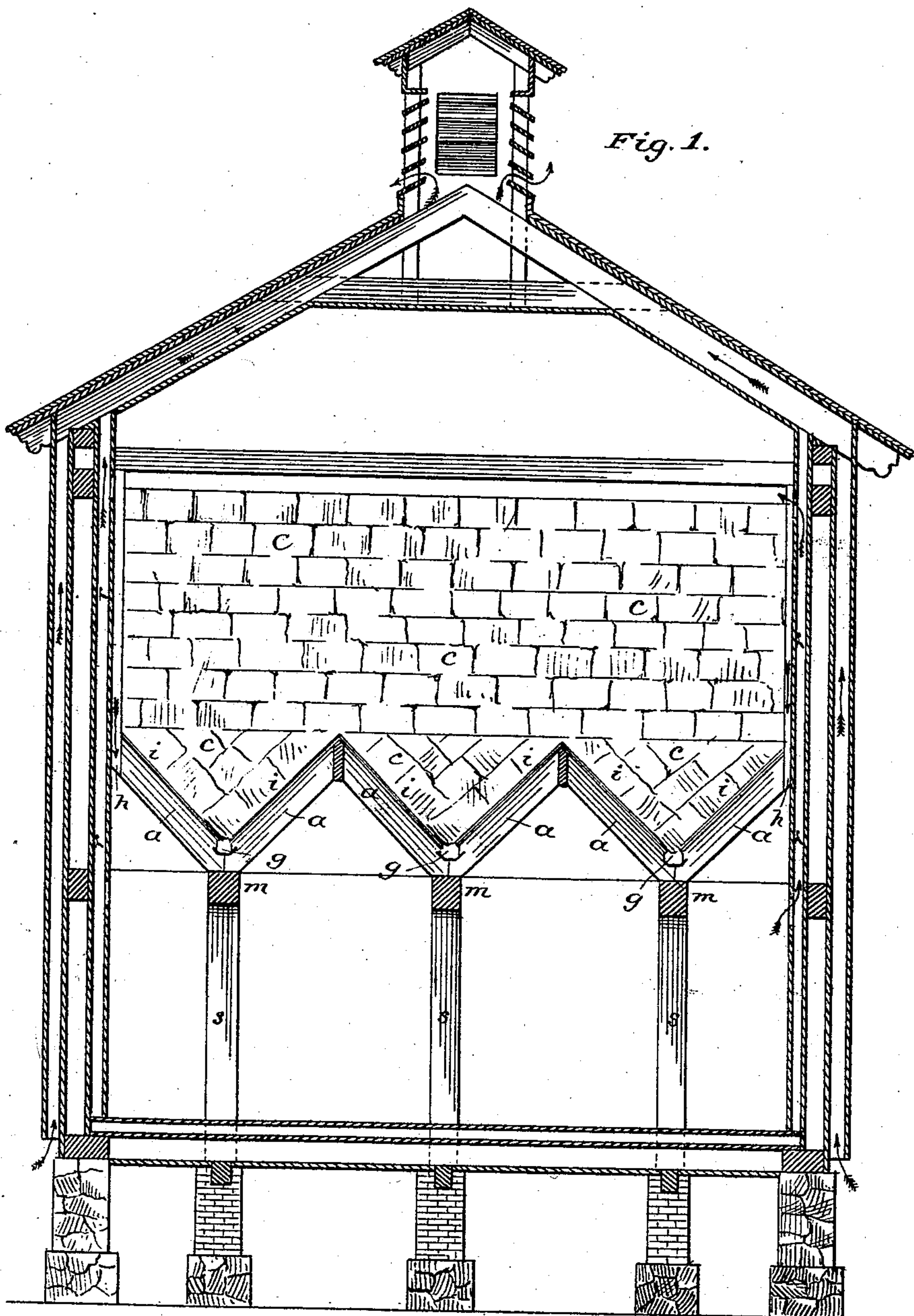
3 Sheets—Sheet 1.

J. TIFFANY.

Construction of Refrigerating Rooms, &c.

No. 236,111.

Patented Dec. 28, 1880.



Attest:

R. H. Barnes.
W. T. Cole

Inventor:

Joel Tiffany
By J. C. Jones
Attorney.

(No Model.)

3 Sheets—Sheet 2.

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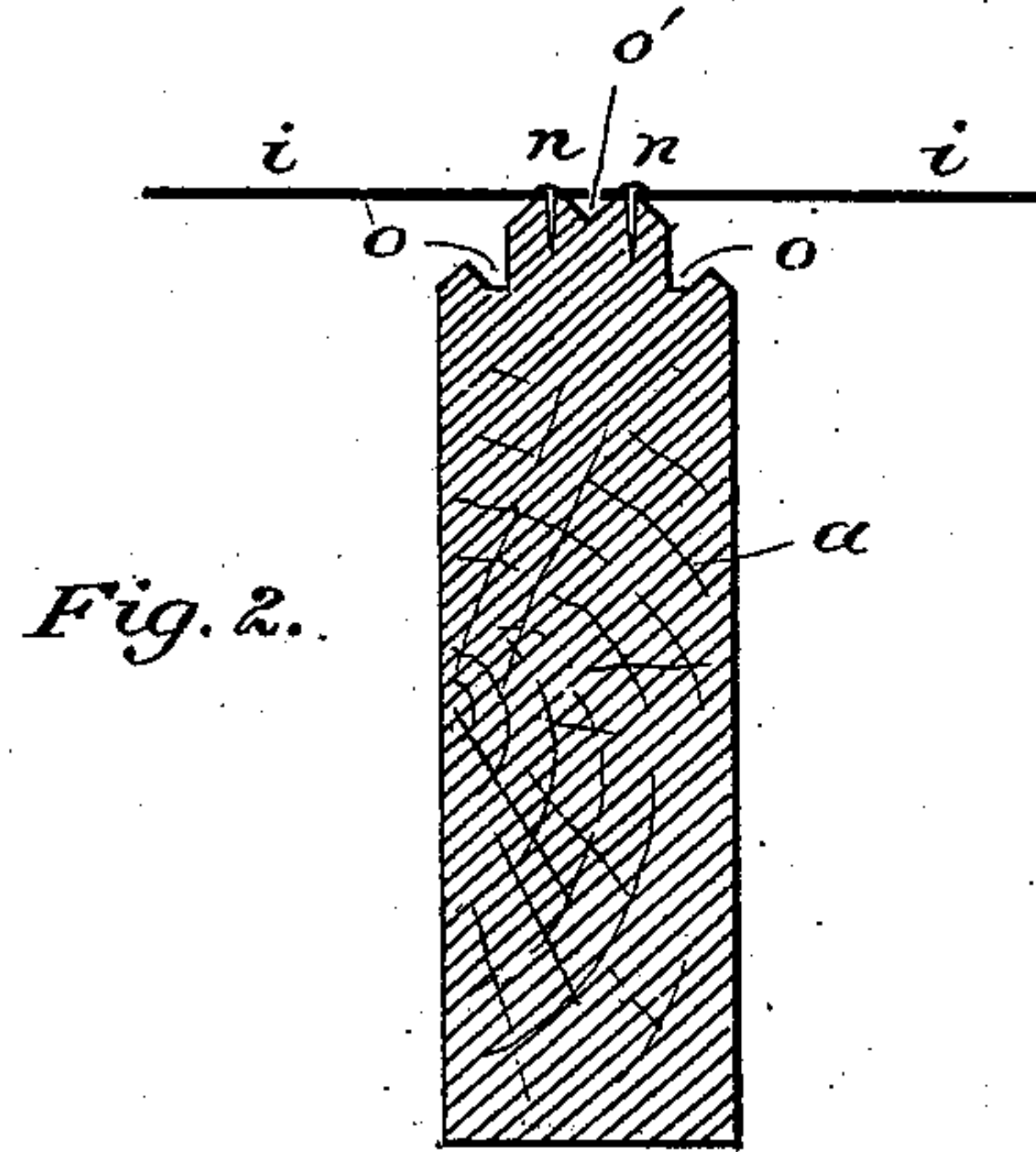


Fig. 2.

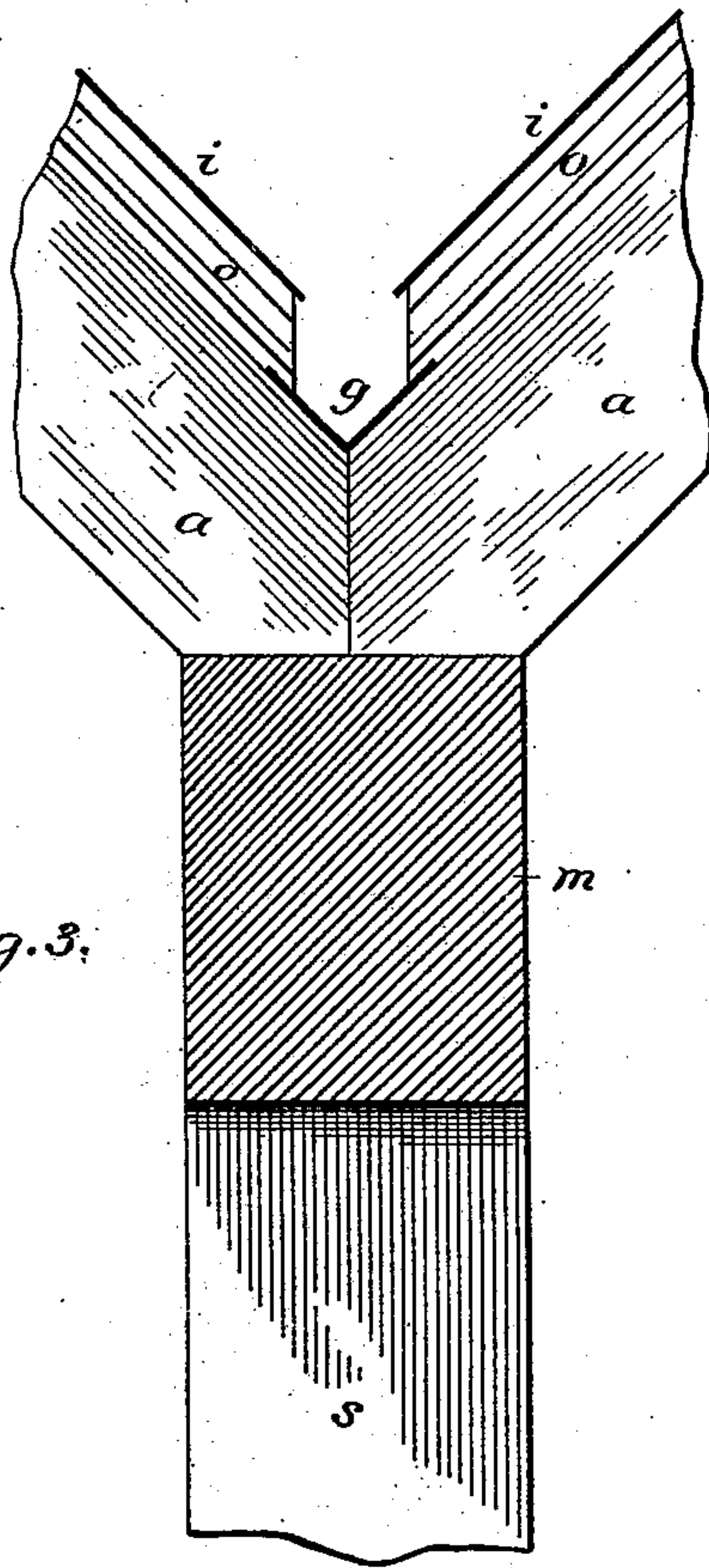


Fig. 3.

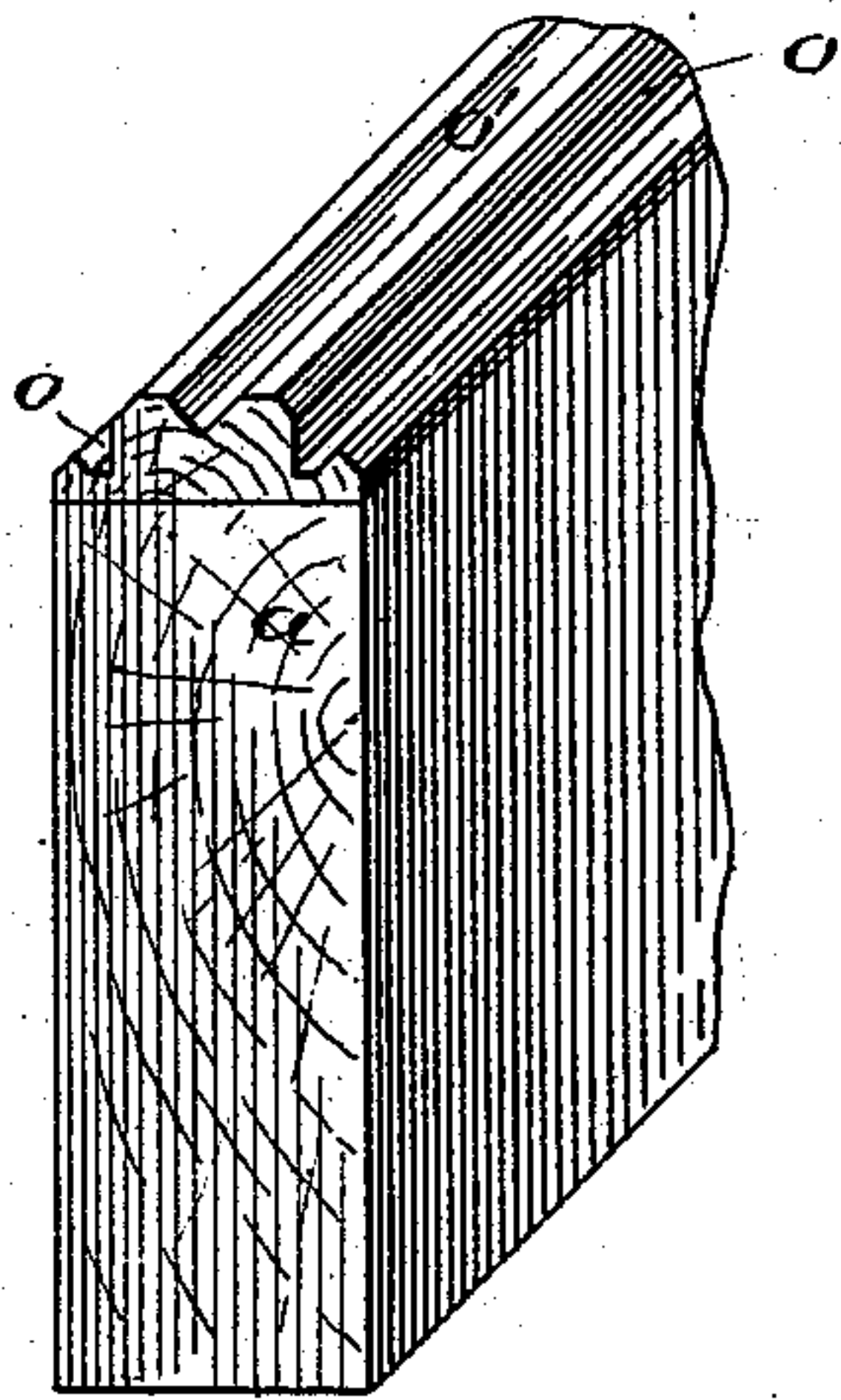


Fig. 4.

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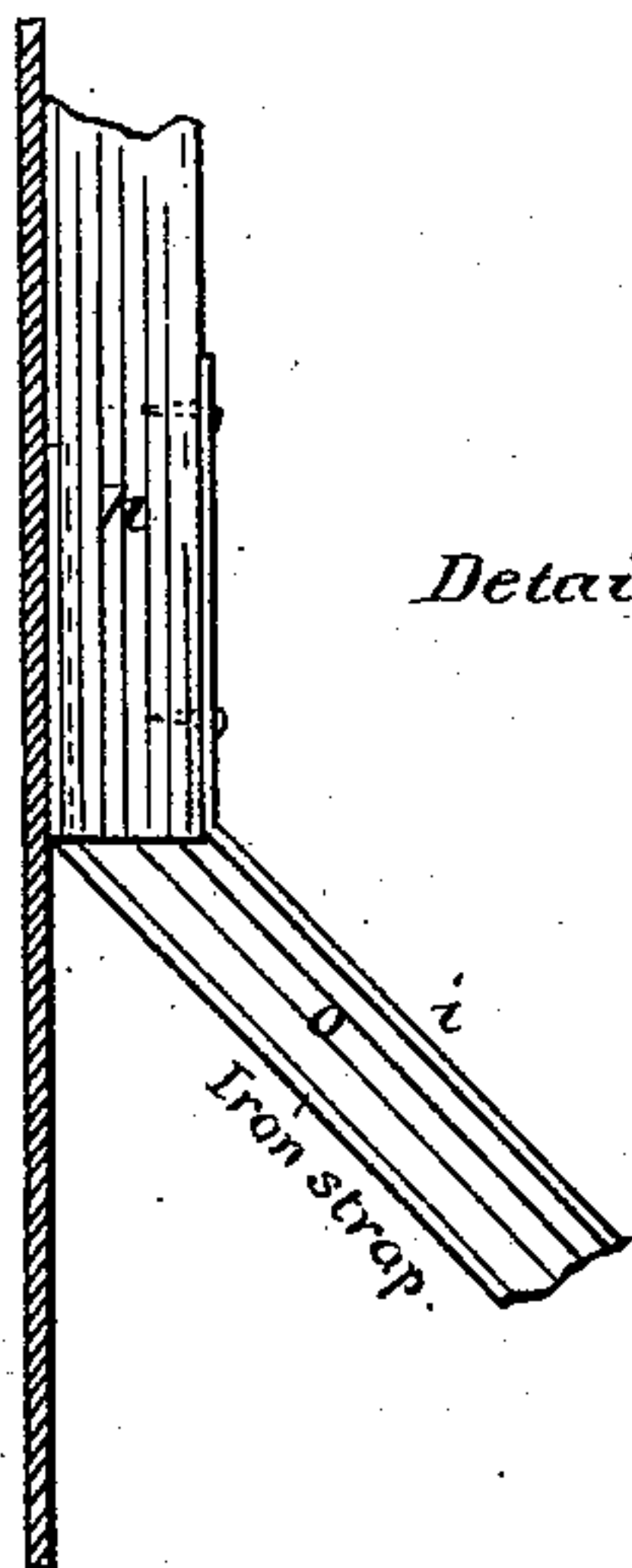
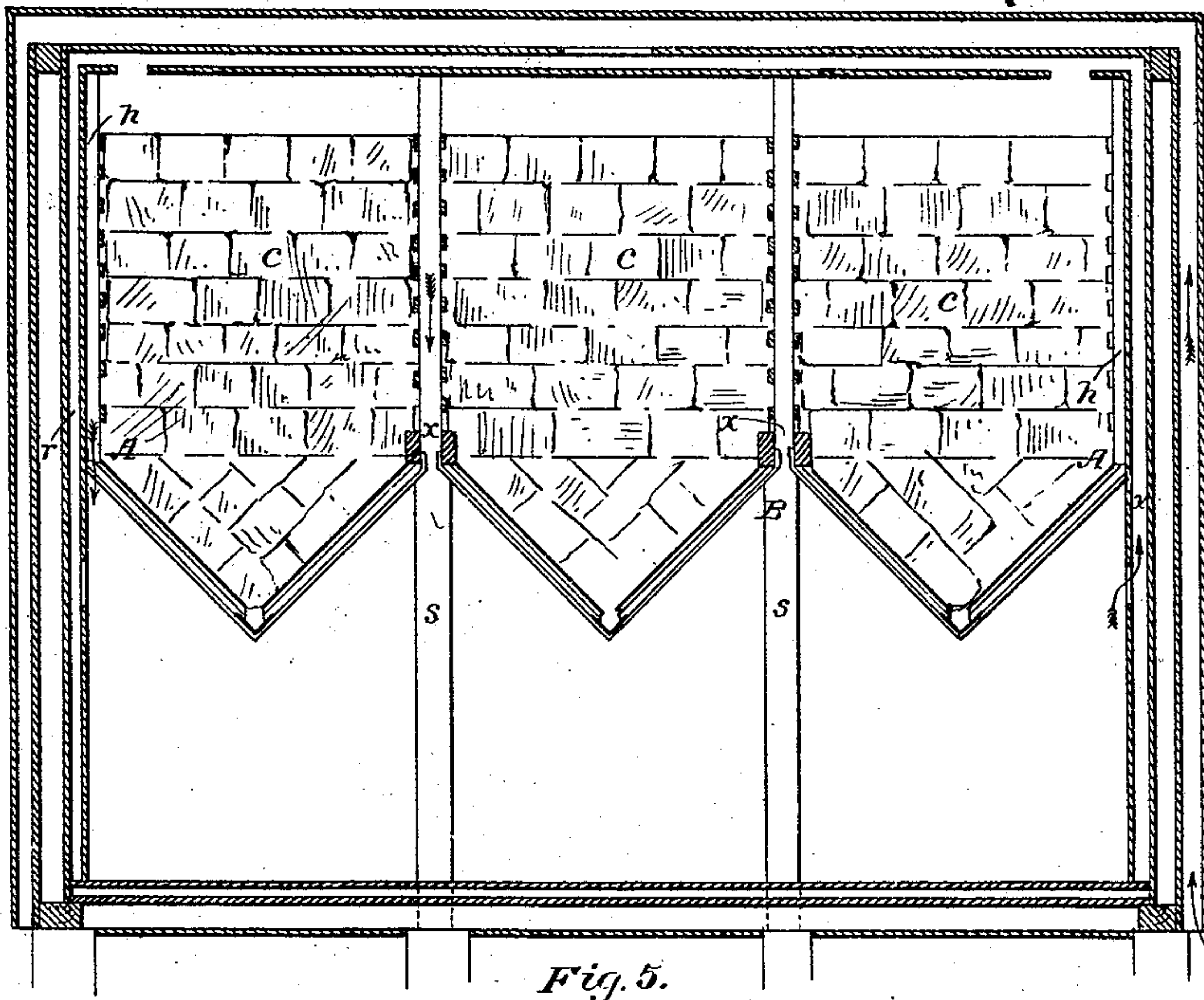
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3 Sheets—Sheet 3.

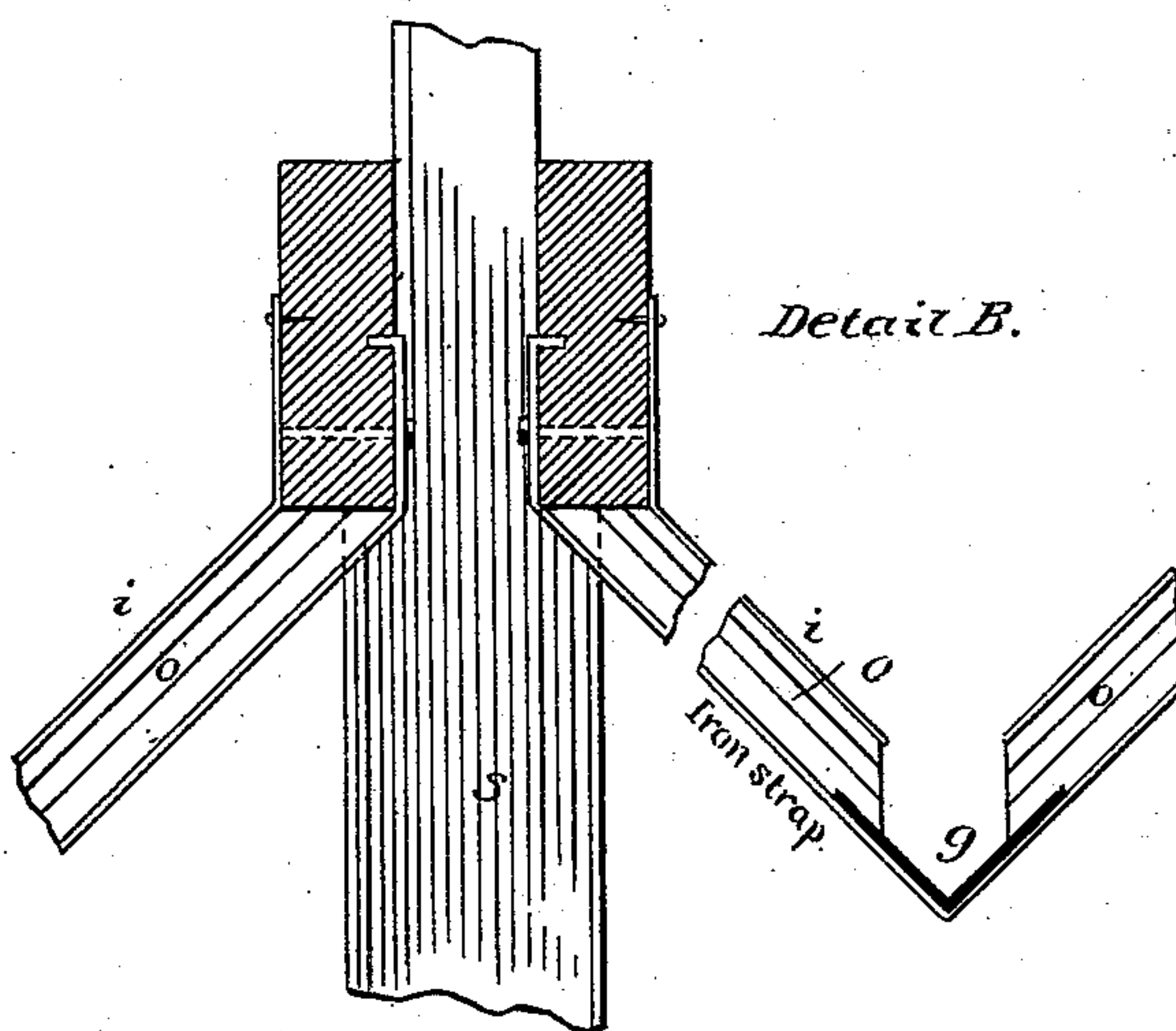
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Detail A.



Detail B.

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UNITED STATES PATENT OFFICE.

JOEL TIFFANY, OF CHICAGO, ILLINOIS.

CONSTRUCTION OF REFRIGERATING-ROOMS, &c.

SPECIFICATION forming part of Letters Patent No. 236,111, dated December 28, 1880.

Application filed November 10, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOEL TIFFANY, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in the Art of Constructing Ice-Houses, Refrigerating-Rooms, and Cold-Storage and Fermenting Rooms; and I hereby declare the following to be a true, full, and accurate description of the same, reference being had to the accompanying drawings, and to the letters and figures marked thereon, and forming a part of this specification.

My said improvement has reference to the manner of arranging my ice-floor or ice-pan so as to secure, among other things, the following advantages, to wit: first, to increase the ice and condensing surface both above and below the same by means of a metallic floor laid at angles, so as to form corrugations having openings from fifty to ninety degrees, the upper side of which corrugations forms the ice-floor, and the under side of which a condensing-surface; second, the condensing-surface is thereby placed directly overhead, where the ascending moist and warm air comes in contact with the same without interruption from intervening gutters or other devices to catch the drip of condensation; third, the condensing-surface is placed in the only position possible to be in a direct line of the ascending currents of warm air as carried by the force of gravitation from every part of the chill-room.

Another part of my said improvement has reference to the manner of laying the iron floor, so as to secure the advantage of a tight floor without the labor and expense of riveting and soldering the same, and at less expense of laying an iron floor by one-half where the same is to be riveted and soldered.

Another part of my said improvement has reference to suspending an iron floor of the like pattern under circumstances where the first kind of floor cannot be laid for want of sufficient room, &c.

In the accompanying drawings, Figure 1 represents a section of an ice-house and cold-storage room constructed according to said improvements in the form and position of the iron floor.

In Fig. 1 the floor-joists (marked *a a a a a*, &c.) are set at an angle of forty-five degrees, forming corrugations for receiving the ice, with

an angular opening of about ninety degrees, more or less. The black lines in said Fig. 1 represent the iron floor, (marked *i i i i i i*, &c.) and are laid upon the inclined joists for an ice-floor. This inclination is given to increase the surface of the iron floor, and likewise to drain the water of condensation into the gutters *g g g*, at the foot of the inclines, as seen in Fig. 1. The water from the melting ice and also from condensation is discharged into the gutters *g g g*, which gutters are connected with suitable pipes to discharge the water from the room or building.

In Fig. 1, *C C C C*, &c., represent the ice in the ice-chamber resting upon the iron floor.

The timber or girder upon which the feet of the floor-joists rest is seen at *m m m* in Fig. 1. These girders are supported by posts *S S S*, as seen in said Fig. 1.

Fig. 2 presents a sectional view of one of the floor-joists, showing the manner of preparing the joists for receiving the iron floor. The grooves on each side of the joists (marked *O O*) are designed to arrest any water which might leave the floor and come in contact with the upper edge of the joists. These gutters *O O* extend to the gutters *g*, and are discharged into the same. The gutter *O'*, in the middle of the upper edge of the joist, is placed directly under the edges of the sheets of iron forming the ice-floor. This middle gutter, *O'*, is only required on those joists where the sheets of iron meet in forming the floor. In Fig. 2, *i i* represent the sheets of iron meeting over the gutter in *O'*, and *n n* represent the nailing of the floor to the joists.

The gutters *O O* and *O'*, for protecting the joists, may be formed in a wooden cap of sufficient thickness, which cap may be placed upon the upper edge of the joists, instead of grooving the joists. This cap is represented at Fig. 4 of the accompanying drawings. The manner of draining this cap or the joists into the gutters *g g g* is represented at Fig. 3 of the accompanying drawings.

The ventilating-flues between the chilling-room and the ice-chamber are shown in Fig. 1. The cold-air flues are designated by *h h h h*, &c., and the warm-air flues *r r r r r*, &c. The warm-air flues may be discharged above the ice or out of the building, as represented in Fig. 1.

Fig. 5 represents the manner of suspending

the iron floor where a chamber above the chill-room will not admit of placing the floor above the floor-timbers. In Fig. 5 the timbers supporting the corrugations are composed of two
 5 joists of sufficient strength to sustain the suspended chamber with its ice, fastened together in such a manner as to leave an opening between them of any desirable width. (Marked X in such figure.) The iron bands or straps sup-
 10 porting the chamber are attached to the compound joists on the inside in the opening X, and a grooved cap of wood, like the one above described, is placed between the iron strap and the iron floor, as and for the purpose above
 15 described. This opening between the joists forming the compound joist is used as a means of ventilation between the chill-room and the ice-chamber, when so desired. In such case
 20 the timbers from which the floor is suspended, and by means of slats attached horizontally to such studding an ice-rack is formed above the suspended floor. If it is not desired to form such an ice-rack, the opening between the tim-
 25 bers may be omitted.

The walls and floors of the houses containing the above improvements should be thoroughly insulated from the influence of outside
 30 temperatures in any of the well-known methods of insulating.

Having thus fully described my said improvements, I will set forth my claims.

I claim—

1. A metallic ice-floor resting upon inclined joists prepared with beveled edges and fur- 35
 rowed in the edges, in the manner and for the purposes above described.

2. The gutter O' in an inclined joist, placed directly beneath the joining edges of sheets of iron composing an inclined iron ice-floor, for 40
 draining the water which leaks through between said edges into an escape-gutter, in the manner and for the purpose described.

3. The gutters O O and the gutter *g*, in combination with the inclined ice-floor *i i i*, as 45
 above described, and for the purpose herein set forth.

4. The gutter O', in combination with the gutter *g*, and the inclined ice-floor *i i i*, as and 50
 for the purpose described.

5. The above-described compound joists, arranged with the open space between them, in combination with the inclined iron floor 55
 suspended from said joists by means of iron straps capped with wooden caps, furrowed and guttered in the manner and for the purpose described.

In presence of— JOEL TIFFANY.

CHAS. F. PIERCE,
 HEMAN BALDWIN.