

(No Model.)

J. G. MÜLLER.
Refrigerator Building.

No. 233,945.

Patented Nov. 2, 1880.

Fig. 1.

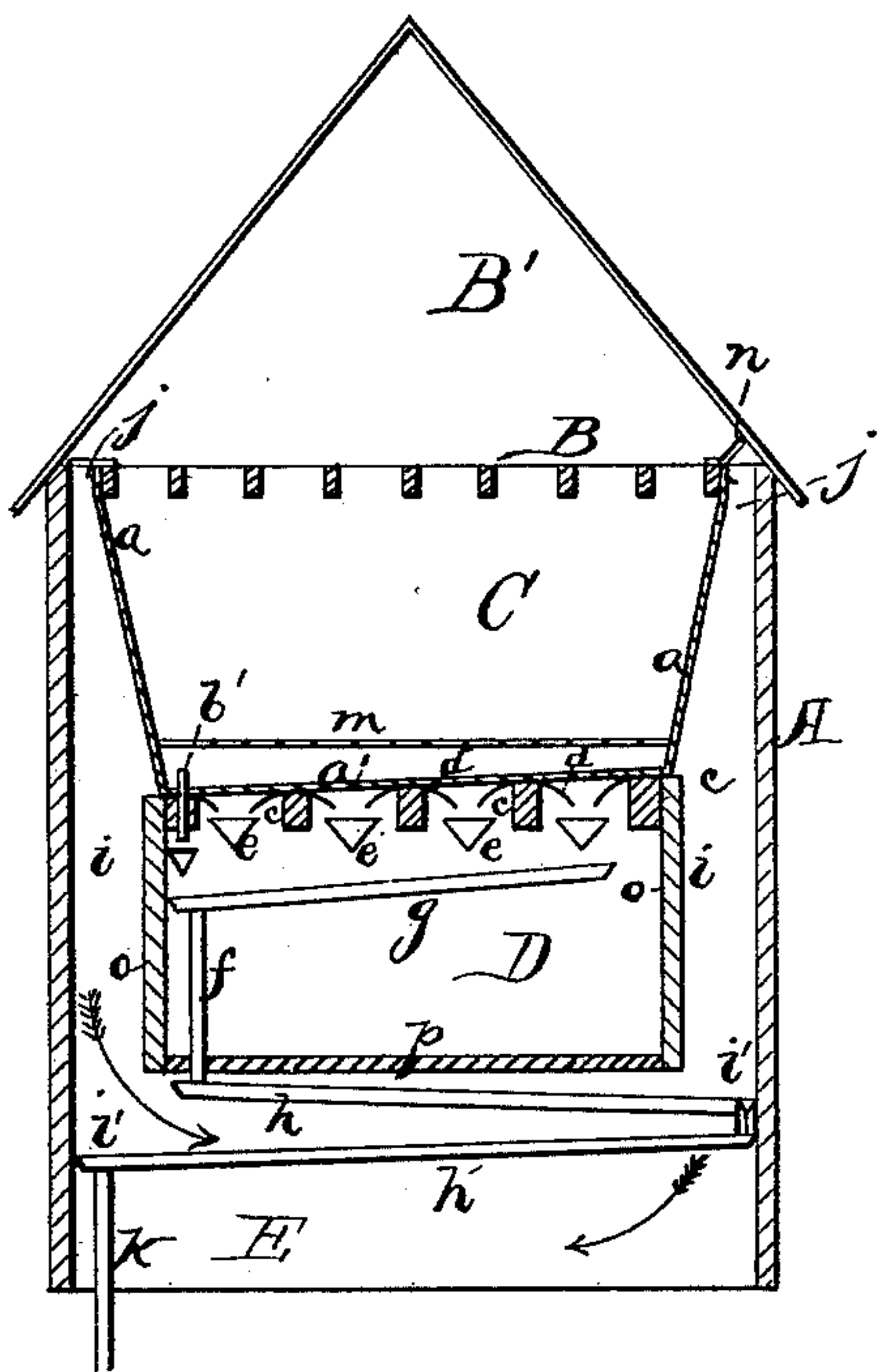


Fig. 2.

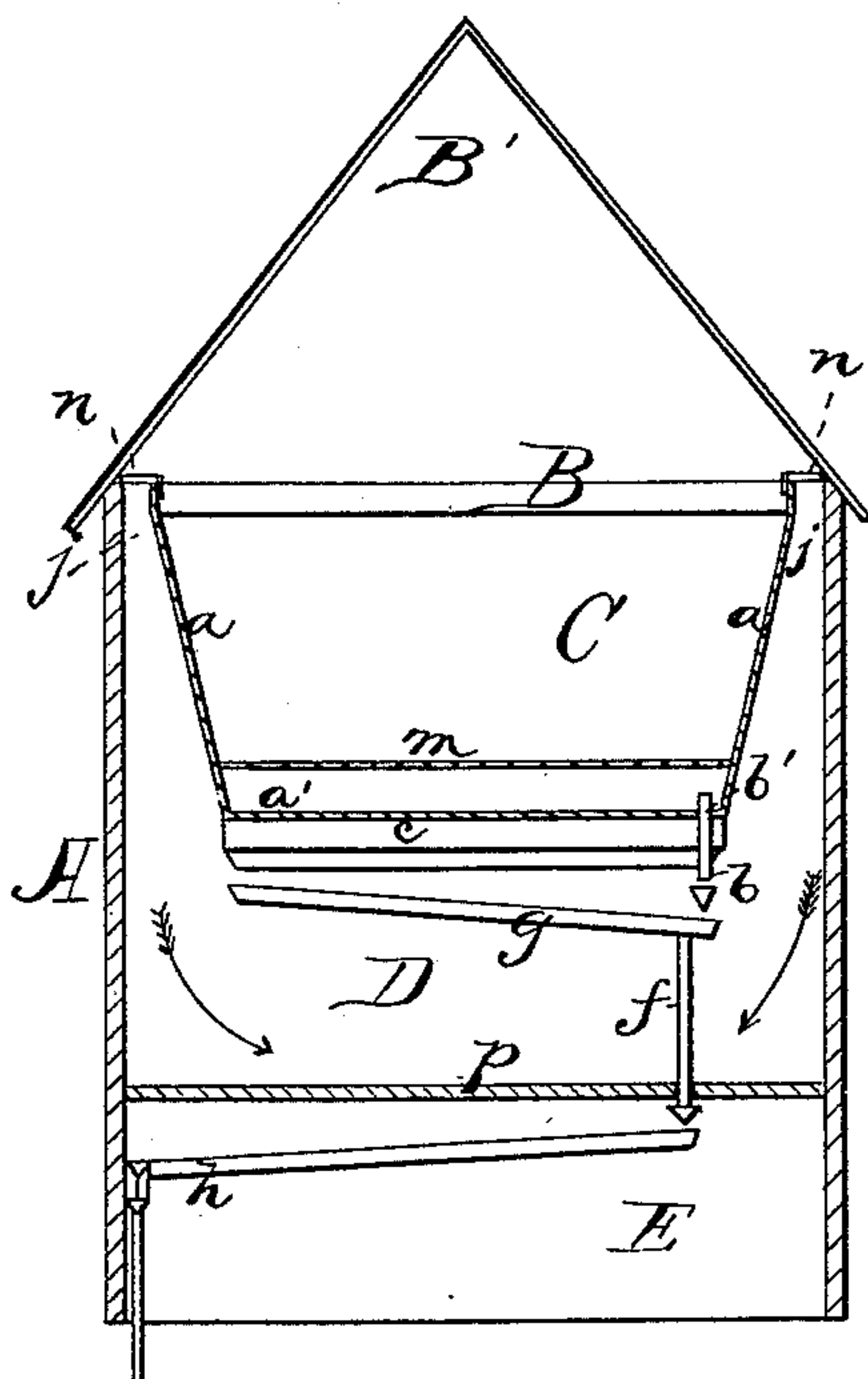
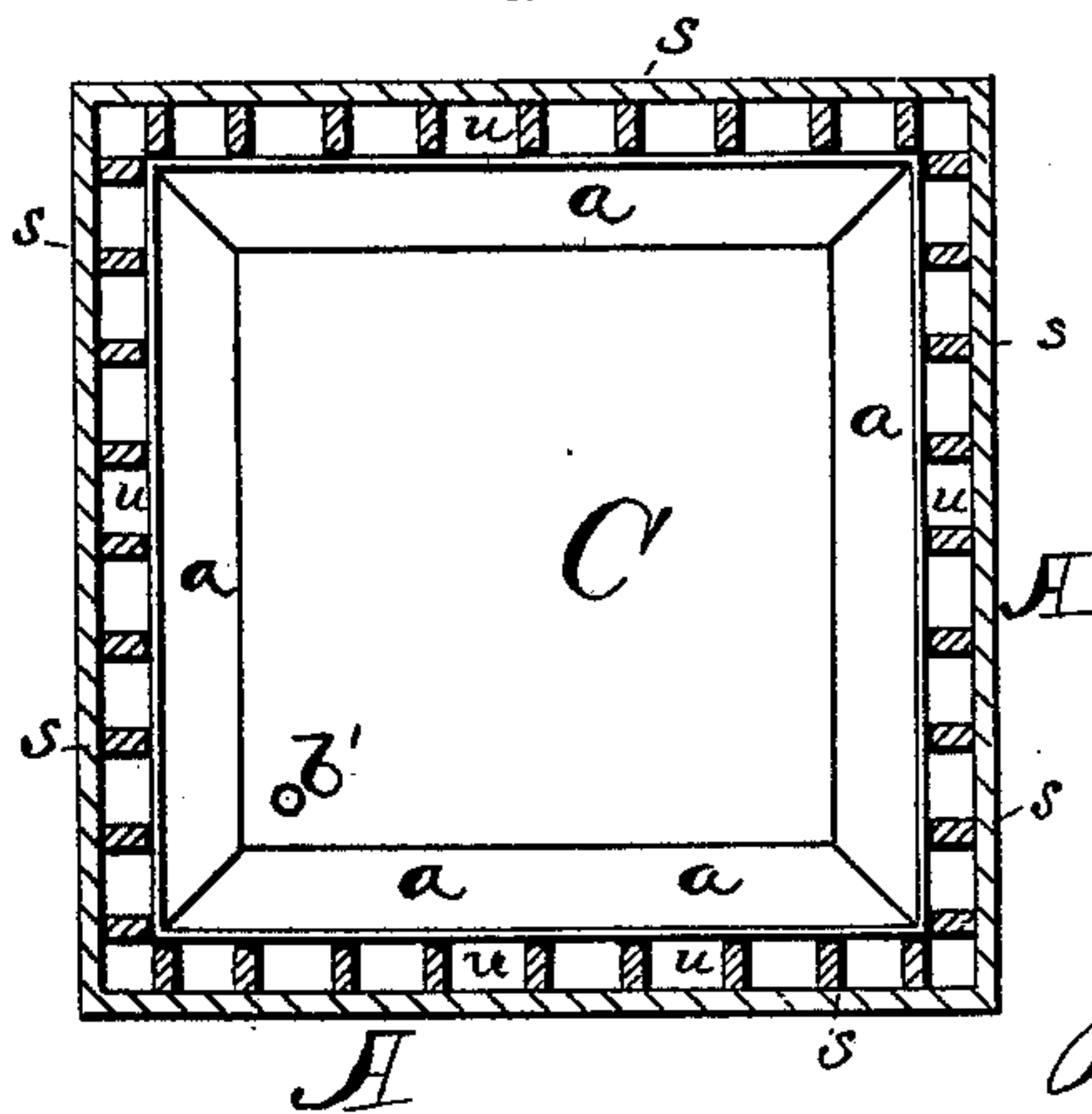


Fig. 3.



Witnessed:
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UNITED STATES PATENT OFFICE.

JACOB G. MÜLLER, OF BUFFALO, NEW YORK.

REFRIGERATOR-BUILDING.

SPECIFICATION forming part of Letters Patent No. 233,945, dated November 2, 1880.

Application filed April 19, 1880. (No model.)

To all whom it may concern:

Be it known that I, JACOB G. MÜLLER, of Buffalo, in the county of Erie and State of New York, have made certain Improvements in Ice-Houses, of which the following is a specification.

This invention relates more particularly to ice-houses for cooling beer and other refrigerating purposes, the object of the invention being to get better ventilation and dry-rooms in which to keep the barrels, casks, &c., especially in the fermenting-room, and to keep the whole place clean and sweet by preventing the clogging of the gutters, pipes, &c., as is now often the case; and the invention consists in the construction, as hereinafter fully described.

In the drawings, Figure 1 is a vertical sectional elevation of one-half or side of an ice-house constructed on my plan; Fig. 2, a vertical section through the building in the opposite direction; Fig. 3, plan view in cross-section, showing the draft-openings and supports to the ice-room.

A A represent the outside walls; B, the floor of the upper story or attic B'. C is the refrigerating-room, of corrugated iron or other metal, and in which the ice is packed and put in through suitable openings. Its sides *a a* slant inward, as shown, and the floor *a'* slants down at one end, as is usual. The melted ice is carried off by pipe *b*, whose mouth *b'* comes above the floor, so that a certain amount of ice-water is always there, which aids in keeping the whole cool. The sediment settling on the floor does not get into the pipe *b*. The ice sets on gratings *m* or racks, as is customary. The floor beneath is supported by the ordinary joists *c c*.

To prevent any condensations or dampness which works through the floor of the ice-house penetrating these joists *c c*, thereby ultimately rotting them and making the whole place damp, I set completely over each joist, between their tops and the bottom of the floor above it, a curved metal cap or shed-pieces, *d d d*, extending their whole length. By these whatever moisture gathers on the under side of the floor drops into the gutters *e e* placed between each joist beneath the edges of two of the shed-pieces *d*, as shown. These are connected by

smaller pipes, and all empty into one large trough or gutter *g* just beneath them, which, by a pipe, *f*, communicates through the floor of the room D to a gutter, *h*, in the room or cellar E below, and which goes nearly or entirely around the room or cellar. This receives all the drippings of the ice-room C, also the leakage and condensations from the walls *a a* or floor *a'*, and all the water from the pipe *b*, gutters *e e* and *g*. This is ice-cold water, and the gutters *h h*, being usually full, aid in keeping this room and the floor above cold, making this an excellent refrigerating-room also. The water runs off by pipe *k*.

In Fig. 1 it will be seen that there is a space, *i i*, all the way down the two sides between the walls of the two cooling-rooms D E and the outer walls, A A, of the building itself. This space is left at two sides only of the room D, (see Fig. 2,) and is closed on the opposite sides by the walls *o o*. (See Fig. 1.) The next room below is left open at two opposite sides, leaving a space, *i' i'*, (see Fig. 1,) so that any warm air generated in the room E will escape clear up these two side openings, *i i* and *i' i'*, and out through the space *j j*, between the upper floor, B, and walls A A, into the attic B', where it is let out by draft-holes or through the skylight. There will be valves or long slats *n n* over these openings to close them when desired, and these openings will be all around the upper room or ice-receptacle, C. (See Fig. 3.)

By this construction two sides of the refrigerating-room D are closed and two sides open to the draft of cold air down and warm air up—that is, on two sides it gets the benefit of the ice-room C by the cold air therefrom, as shown in Fig. 2 by arrows. As shown in Fig. 1, the opposite sides are open clear down to the lower room, E, giving a direct downward draft of cold air from the ice-room C to room E, as shown by arrows, and a free escape up from room E of all warm air, and out at the openings *j j* in the top of the building into the attic B', as stated.

This alternate opening of the rooms D and E at the sides is a novelty, I believe, and is important in preventing a circulation of air around the four sides of the refrigerating-rooms, as is now usual, which is often warm

air, causing dampness, besides melting the ice very quickly.

To further aid this object and prevent this circulation of air around the four sides of the ice-room C, I put vertical joists *s s s* all around
5 between the walls *a a* of the ice-house and the walls A of the building, leaving spaces *u u* between, which act as direct flues for the separation of the currents of either cold or warm
10 air, and also as supports for the walls *a a* of the ice-room, which are usually suspended.

This construction gives clean, sweet, and dry rooms, retards the melting of the ice, and no moisture can get into the rooms outside of
15 what is in the gutters. No packing is used, and no dirt, mud, or debris of any kind can accumulate in the gutters. The trouble usually in most ice-houses for refrigerating purposes is that the gutters become clogged and offen-
20 sive to the smell, and the whole series have occasionally to be cleaned out at considerable labor and cost. The pipe *b* having the mouth *b'* above the level of the floor prevents the carrying off of the sediment, which settles in-
25 stead on the bottom of the floor, besides retaining several inches of ice-water on the floor, which aids in keeping the whole place cool, as stated.

I am aware that spaces around four sides
30 between the walls of ice-houses are not uncom-

mon; but I wish to avoid the disadvantages of those by making only openings on two sides, alternating the openings in each story, and getting a direct draft instead of a circulation of air, which I find disadvantageous. 35

I also know that drip-shelves have been used; but I am not aware that any of curved metal completely covering the top of the joists and of my shape have been used.

I claim— 40

In an ice-house having the three cooling-chambers C D E and the upper attic, B', the upper chamber, C, having the corrugated sloping walls *a*, the slanting bottom *a'*, and the false bottom *m*, forming an ice and provision
45 chamber, the second chamber, D, situated beneath the chamber C, and the third chamber, E, below the second, the two latter being traversed with drip-water pipes, and the three surrounded by a communicating space through
50 which a current of cold air flows, all arranged and combined within a common wall, substantially as set forth.

In testimony whereof I have hereunto signed my name in the presence of two subscribing
55 witnesses.

JACOB G. MÜLLER.

Witnesses:

J. R. DRAKE,

T. H. PARSONS.