

No. 649,558.

Patented May 15, 1900.

C. W. VOLLMANN.

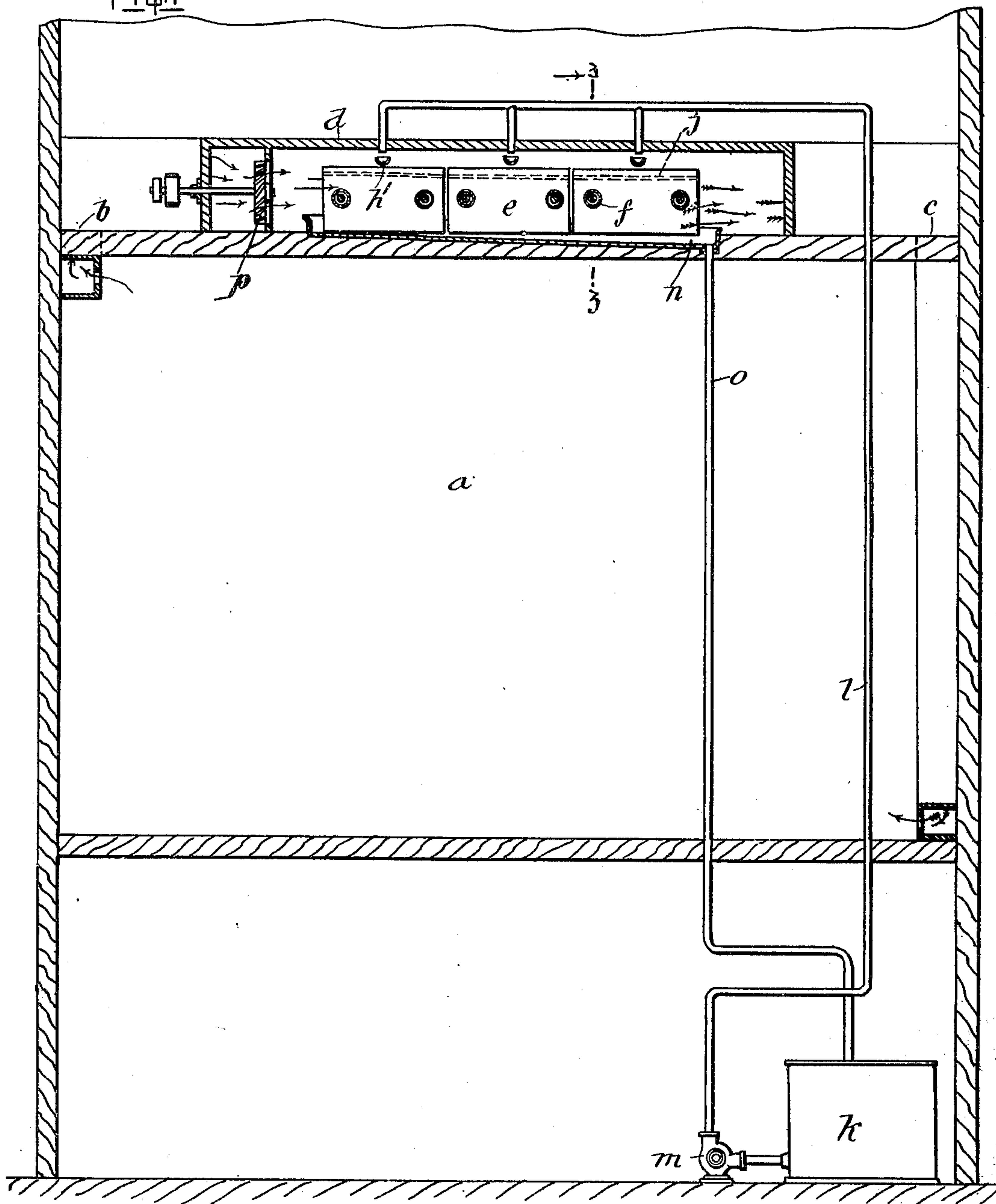
APPARATUS FOR COOLING AND DRYING REFRIGERATING OR FREEZING ROOMS.

(Application filed Mar. 25, 1899.)

(No Model.)

2 Sheets—Sheet 1.

—Fig. 1—



Witnesses

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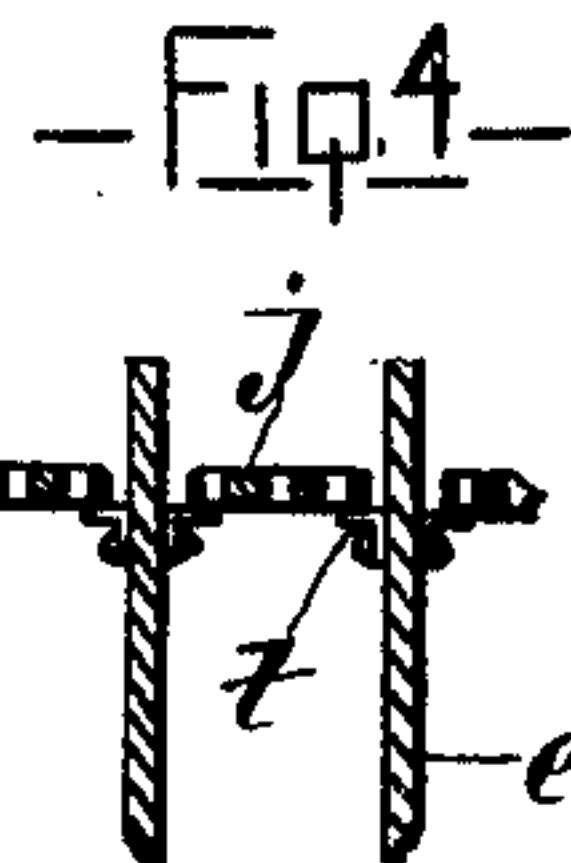
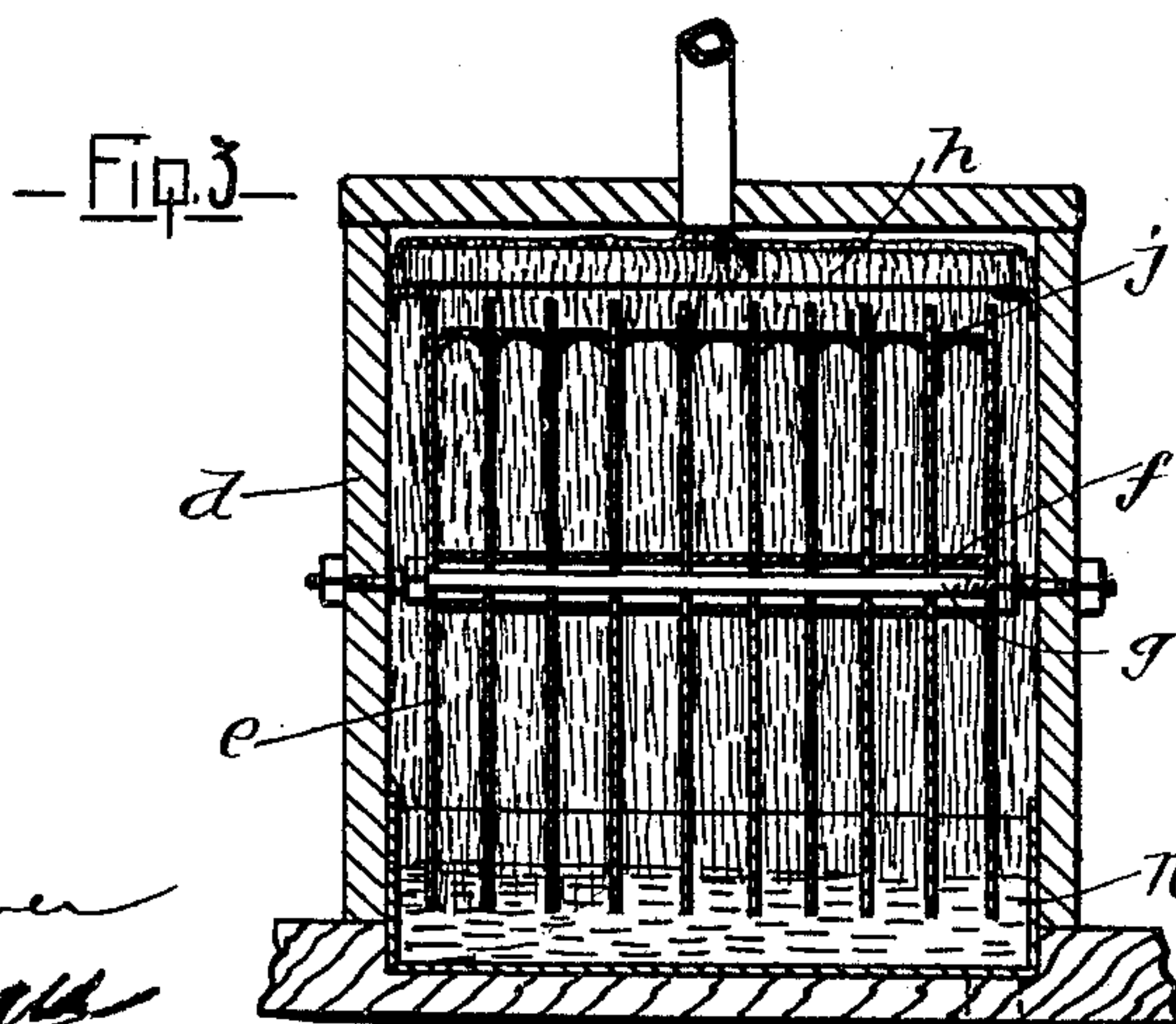
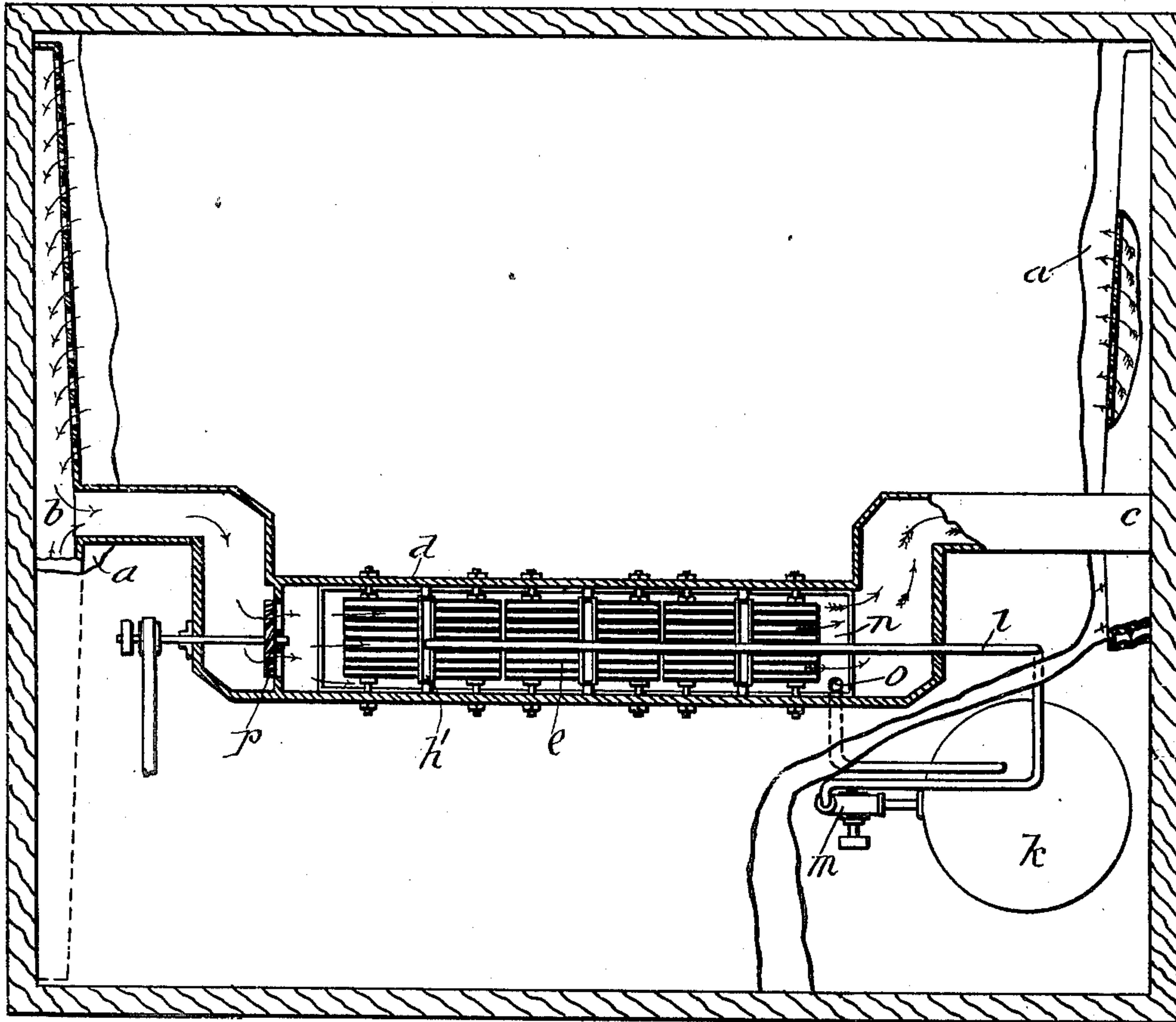
APPARATUS FOR COOLING AND DRYING REFRIGERATING OR FREEZING ROOMS.

(Application filed Mar. 25, 1899.)

(No Model.)

2 Sheets—Sheet 2.

—Fig. 2—



Witnesses
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UNITED STATES PATENT OFFICE.

CARL WILHELM VOLLMANN, OF MONTREAL, CANADA.

APPARATUS FOR COOLING AND DRYING REFRIGERATING OR FREEZING ROOMS.

SPECIFICATION forming part of Letters Patent No. 649,558, dated May 15, 1900.

Application filed March 25, 1899. Serial No. 710,503. (No model.)

To all whom it may concern:

Be it known that I, CARL WILHELM VOLLMANN, of the city of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Apparatus for Cooling and Drying Refrigerating or Freezing Rooms; and I do hereby declare that the following is a full, clear, and exact description of the same.

10 This invention relates to means for cooling and drying rooms used for refrigerating or freezing purposes, and has for its object to simplify and improve same, whereby at a low initial cost for plant great efficiency and durability may be secured.

The invention consists of the construction and combination of parts substantially as hereinafter described, and pointed out in the claim.

20 For full comprehension, however, of the invention reference must be had to the annexed drawings, forming a part of this specification, in which like symbols indicate corresponding parts, and wherein—

25 Figure 1 is a vertical longitudinal section of the cooling apparatus and part of the building in which it is situated. Fig. 2 is a horizontal section of same on line 2 2, Fig. 1; and Fig. 3, an enlarged vertical transverse section on line 3 3, Fig. 1; Fig. 4, a detail sectional view of the upper end of a pair of the vertical cooling-plates and the horizontal distributing-plates between them.

35 *a* is the room to be cooled, and on the floor above the cooling appliance proper is located and communicates with the room *a* through vents *b c* in the flooring.

40 The cooling appliance is in the form of an oblong box or inclosure *d*, extending along the upper flooring and communicating at either end with the vents *b c*, while within it is arranged a series of vertical metal plates *e*, extending longitudinally thereof and with sufficient space between each to allow brine to fall between them. The plates *e* are spaced 45 by sleeves *f* and held together by bolts *g*, threaded through such sleeves and eyes *h* in the plates, while horizontal perforated diaphragms *j* (of slightly less width than the

spaces between the plates) are supported upon 50 projections *t* in such spaces near the upper edges of the plates to receive the brine, which falls from transverse overhead supply-gutters *h'*, and direct it against the sides of the plates, through overflowing the edges of the 55 diaphragms, and also in the form of spray through the perforations in the diaphragms. The brine is supplied to the gutters *h'* from a tank or reservoir *k* (generally located in the basement of the building) through feed-pipes 60 *l* by pump *m*, and it is collected in an inclined pan *n* beneath the plates and returned to the tank through return-pipe *o*. The air is drawn from the room *a* and passed between the plates and through the brine-spray in the direction 65 of the arrows by means of a fan *p*, located at one end of the cooling appliance and operated through suitable shafting extending outside of the boxing *d*. As the liquid by running 70 down the plates is coldest at the top, the warmest air is brought into contact with the coldest part of the liquid and plates and therefore rapidly cooled. At the same time the moisture of the air is absorbed by the cold liquid, and only cold and dry air leaves the 75 cooling appliance and enters the room *a*, which is to be cooled, and by a continual transferring of the cold air to this room and taking up fresh moisture and heat therefrom the room becomes thoroughly cooled and dried. 80

What I claim is as follows:

Apparatus for drying and cooling refrigerating or freezing rooms, consisting of a box *d*, located above the room to be dried and cooled, air-conductors *b* and *c*, communicating respectively one with each end of said box; a fan *p* located within the conductor *b*; one or more transverse series of longitudinally-arranged vertical cooling-plates *e*; bolts *g* and sleeves *f* for supporting and localizing said plates; a 85 series of horizontal perforated plates *j* each of which occupies a central position in the space between said vertical plates at their upper end so as to leave an open space between its edges and two adjoining vertical plates; a 90 supply-gutter *h'* extending transversely over each of said series of vertical plates and the horizontal plates between them; a tank *k* lo-

cated below the room; a pump *m*; flow-pipes *l*
connecting said tank to said pump and said
pump to said gutters; a collecting-pan *n* lo-
cated beneath said series of plates; and a re-
5 turn-pipe *o*, connecting said pan to said tank,
substantially as described and for the pur-
pose set forth.

In testimony whereof I have affixed my sig-
nature in presence of two witnesses.

CARL WILHELM VOLLMANN.

Witnesses:

WILLIAM P. McFEAT,

FRED. J. SEARS.