

No. 649,558.

Patented May 15, 1900.

C. W. VOLLMANN.

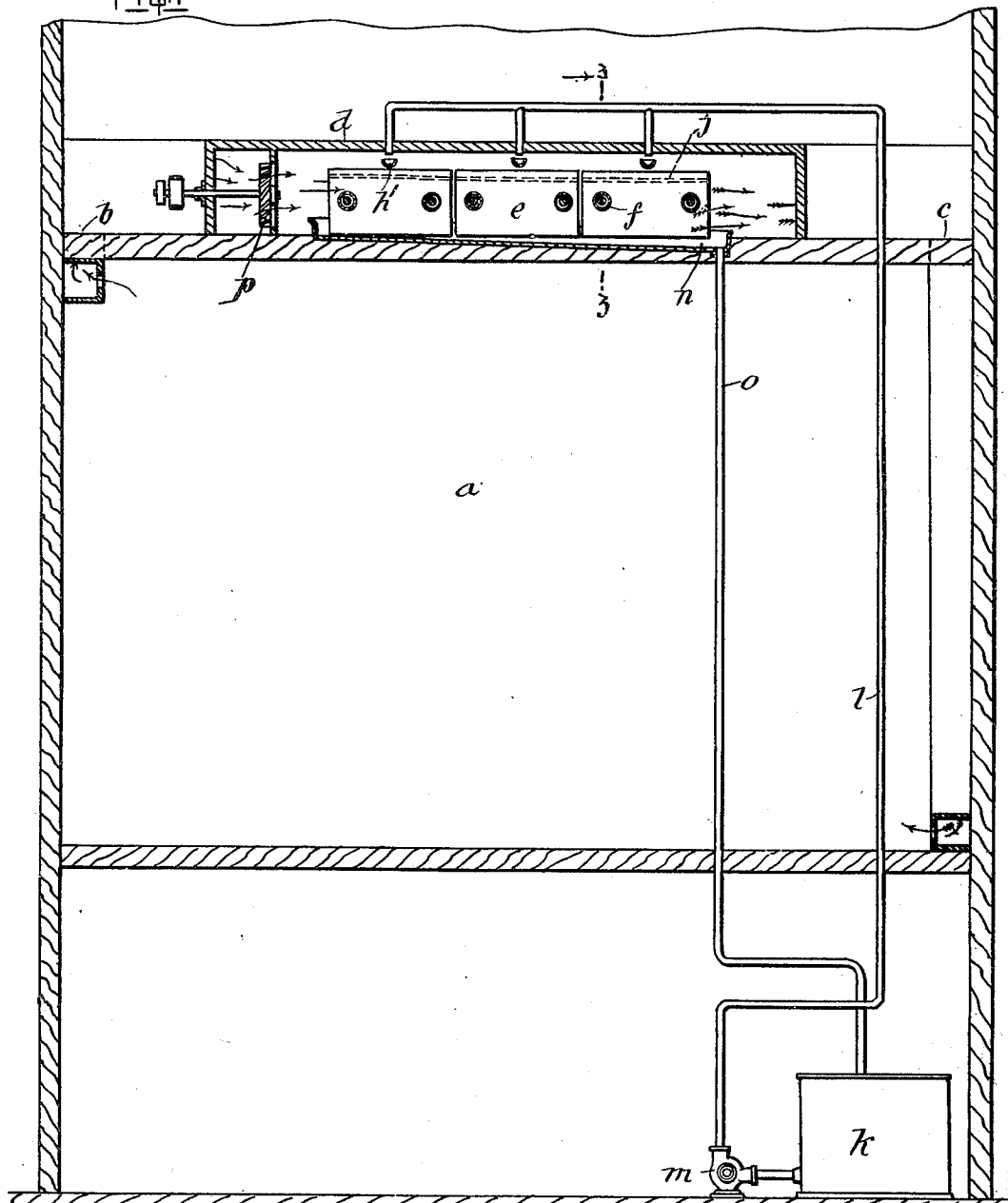
APPARATUS FOR COOLING AND DRYING REFRIGERATING OR FREEZING ROOMS.

(Application filed Mar. 25, 1899.)

(No Model.)

2 Sheets—Sheet 1.

-Fig. 1-



Witnesses

*Reckmiller*  
*W. J. Jones*

Inventor

*Carl Wilhelm Vollmann*

By his Attorney

*John N. Swan*

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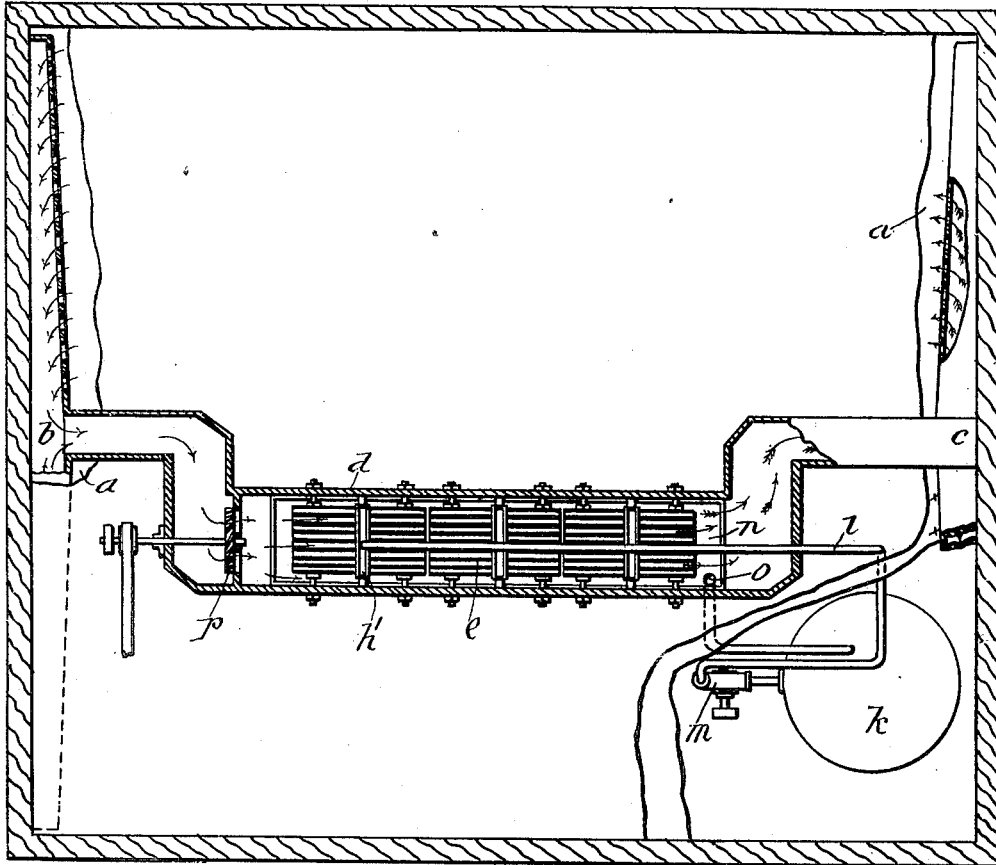
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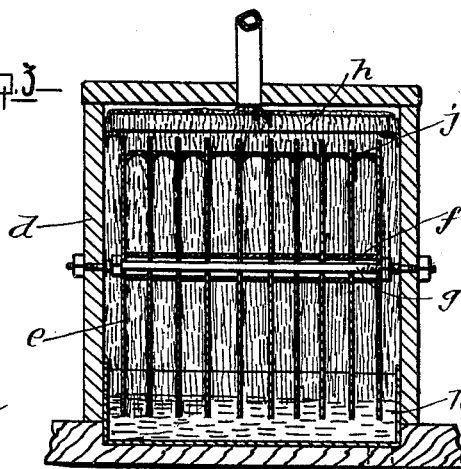
(No Model.)

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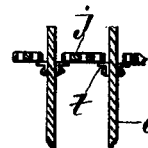
—Fig. 2—



—Fig. 3—



—Fig. 4—



Witnesses  
*W. J. Schuler*  
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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 26, 1899. Serial No. 710,503. (No model.)

*To all whom it may concern:*

Be it known that I, CARL WILHELM VOLL-  
MANN, 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 fol-  
lowing 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 du-  
rability 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 in-  
vention 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 build-  
ing in which it is situated. Fig. 2 is a hori-  
zontal 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 distribut-  
ing-plates between them.

30 *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.

35 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  
by sleeves *f* and held together by bolts *g*,  
threaded through such sleeves and eyes *h* in  
the plates, while horizontal perforated dia-  
phragms *j* (of slightly less width than the

spaces between the plates) are supported upon  
projections *t* in such spaces near the upper  
edges of the plates to receive the brine, which  
falls from transverse overhead supply-gut-  
ters *h'*, and direct it against the sides of the  
plates, through overflowing the edges of the  
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  
*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  
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  
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 there-  
fore 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  
cooling appliance and enters the room *a*, which  
is to be cooled, and by a continual transfer-  
ring of the cold air to this room and taking  
up fresh moisture and heat therefrom the  
room becomes thoroughly cooled and dried.

What I claim is as follows:

Apparatus for drying and cooling refriger-  
ating or freezing rooms, consisting of a box *d*,  
located above the room to be dried and cooled,  
air-conductors *b* and *c*, communicating respec-  
tively 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  
series of horizontal perforated plates *j* each  
of which occupies a central position in the  
space between said vertical plates at their up-  
per end so as to leave an open space between  
its edges and two adjoining vertical plates;  
a supply-gutter *h'* extending transversely over  
each of said series of vertical plates and the  
horizontal plates between them; a tank *k* lo-

ated 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.