

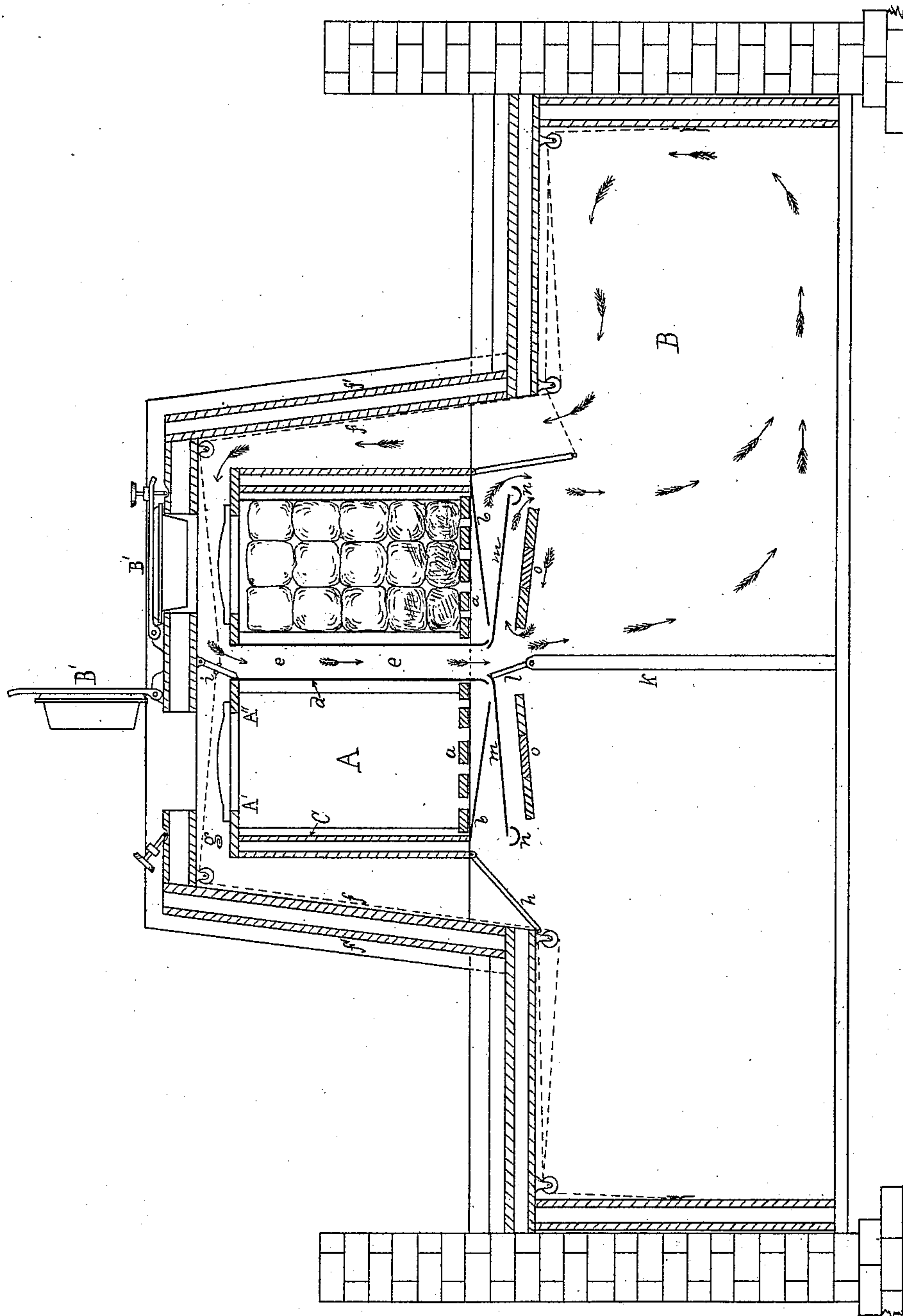
(No Model.)

G. C. ROBERTS.

COLD STORAGE CHAMBER OR REFRIGERATOR.

No. 336,949.

Patented Mar. 2, 1886.



Witnesses:

H. R. Snyder
Frank S. Hyatt

Inventor:

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UNITED STATES PATENT OFFICE.

GEORGE CLAPP ROBERTS, OF NEW HAVEN, CONNECTICUT.

COLD-STORAGE CHAMBER OR REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 336,949, dated March 2, 1886.

Application filed October 26, 1885. Serial No. 180,934. (No model.) Patented in Denmark June 17, 1885, No. 158.

To all whom it may concern:

Be it known that I, GEORGE C. ROBERTS, a citizen of the United States, residing in the city of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Cold-Storage Chambers or Refrigerators, (for which I have obtained Letters Patent in Denmark, bearing date June 17, 1885,) of which the following is the specification.

My invention relates to improvements in the construction of cold storage chambers or rooms, more particularly designed for preserving meat in the carcass, but also useful for preserving any other perishable articles, such as fruit, &c.

My invention has for its object to effect an economy in the consumption of ice, to maintain an efficient circulation of cold air throughout the refrigerating-chamber, and to regulate such circulation according to requirements; also, to carry off the water draining from the ice and utilize it for the purpose of cooling the air.

The invention comprises the general construction and arrangement of the refrigerator, and the special means of accomplishing the various objects above mentioned.

Reference is to be had to the accompanying drawing, forming part of this specification, wherein a transverse vertical section of the refrigerator is shown.

A A are the ice-chambers, in which the blocks of ice are stacked and rest upon a wooden floor with openings therein, or upon wooden gratings *a*, supported upon transverse girders *b* at suitable intervals. These gratings *a* of the wooden floor serve solely as supports for the ice. The openings between the gratings *a* or in the floor should only be sufficient to allow the water produced by the melting of the ice to pass through. The outer walls, C, of the said chambers are double, being constructed of two layers of matched boarding, with the intervening space filled with sawdust or other non-conductor of heat. The inner walls, *d*, between the two chambers are made of iron plates or sheets with a space, *e*, between, for the descent of a current of cooled air.

B is the chamber in which the meat, or other

provisions to be refrigerated, is stored. The sides and top of this chamber are also made of two thicknesses of matched boarding, with sawdust or other non-conductor packed between them.

The ice-chambers A are preferably situated above the main portion of the chamber B, the top of which is shaped to inclose the sides and top of the ice-chambers at a distance therefrom, so as to leave spaces *f* and *g* at the sides and top, for the circulation of air. As shown in the drawing, the passages *f* and *e* communicate below with the chamber B, and above with the top passage, *g*, and as the walls of the passage *f* are non-conducting, while those of passage *e* are highly conducting, the circulation of air is determined through the said passages, as indicated by the arrows, *f* being the upward and *e* the downward passages. To further aid the circulation, the walls *f'* of the passages *f* may be made without the packing, as represented in the drawings. In either case the top of the ice-chambers A would be provided with metal covers A', to prevent the air coming in contact with the ice and aid in determining the circulation. By this construction the air is prevented from coming into direct contact with the ice, whereby the waste of ice which would result from such contact is prevented without any material diminution of the refrigerating power. The lower ends of the passages *f* are provided with hinged valves *h*, whereby the thoroughfare through the said passages may be closed at will in case it is desired to use only one of the ice-chambers at a time. A valve, *i*, is hung from the top of the passage *g* centrally over the downward passage *e*, and may be swung to one side or the other, in order to cut off the communication of said passage with the passage above the ice-chamber not in use.

In case it is desired to use only the corresponding half of the storage-chamber B, a fixed or removable partition, *k*, would be placed beneath the downward passage *e*, and provided with a valve, *l*, which may be swung to one side or the other, as the case may be, to cut off communication with that part of the chamber not in use.

When both ice-chambers are in use, the valves *i* and *l* would stand in line, and the valves *h*

would hang down, as shown at the right of Fig. 1, in which position they serve to separate the ascending currents from those circulating beneath the ice-chambers. The water dripping from the ice-chambers is received upon a series of inclined trays or pans, *m*, discharging into gutters *n*. Beneath the lowermost tray or pan of the series, a wood partition, *o*, is fixed, about parallel to said tray or pan and at such distance therefrom as to leave space for the circulation of a current of air in contact with the under side of said tray, as indicated by the arrows, whereby the refrigerating power of the drip-water is utilized to the utmost.

What I claim as new and useful and my invention, and desire to secure by Letters Patent, is—

1. A refrigerator consisting of an inclosed ice and storage chamber, the former with metal cover and surrounded by air-passages from and to the latter, the passages for upward circulation formed with non-conducting walls, and the passages for downward circulation with conducting-walls, whereby circu-

lation around the ice-chamber and throughout the storage-chamber is automatically commenced and maintained without direct contact with the ice, beneath the ice-chamber a series of drip-pans, and outlets arranged for air-circulation, and the communication between the ice and storage chambers and the consequent circulation controlled by valves or dampers, all substantially as specified.

2. A double refrigerator consisting of corresponding pairs of ice and storage chambers, the ice-chambers with metal covers and surrounded by air-passages, between them a single air-passage with conducting-walls for downward circulation, and beneath each of them a series of drip-pans, and outlets arranged for air-circulation, the communication between the ice and storage chambers and the consequent circulation controlled by valves or dampers and divided by partitions, all substantially as specified.

GEORGE CLAPP ROBERTS.

Witnesses:

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