

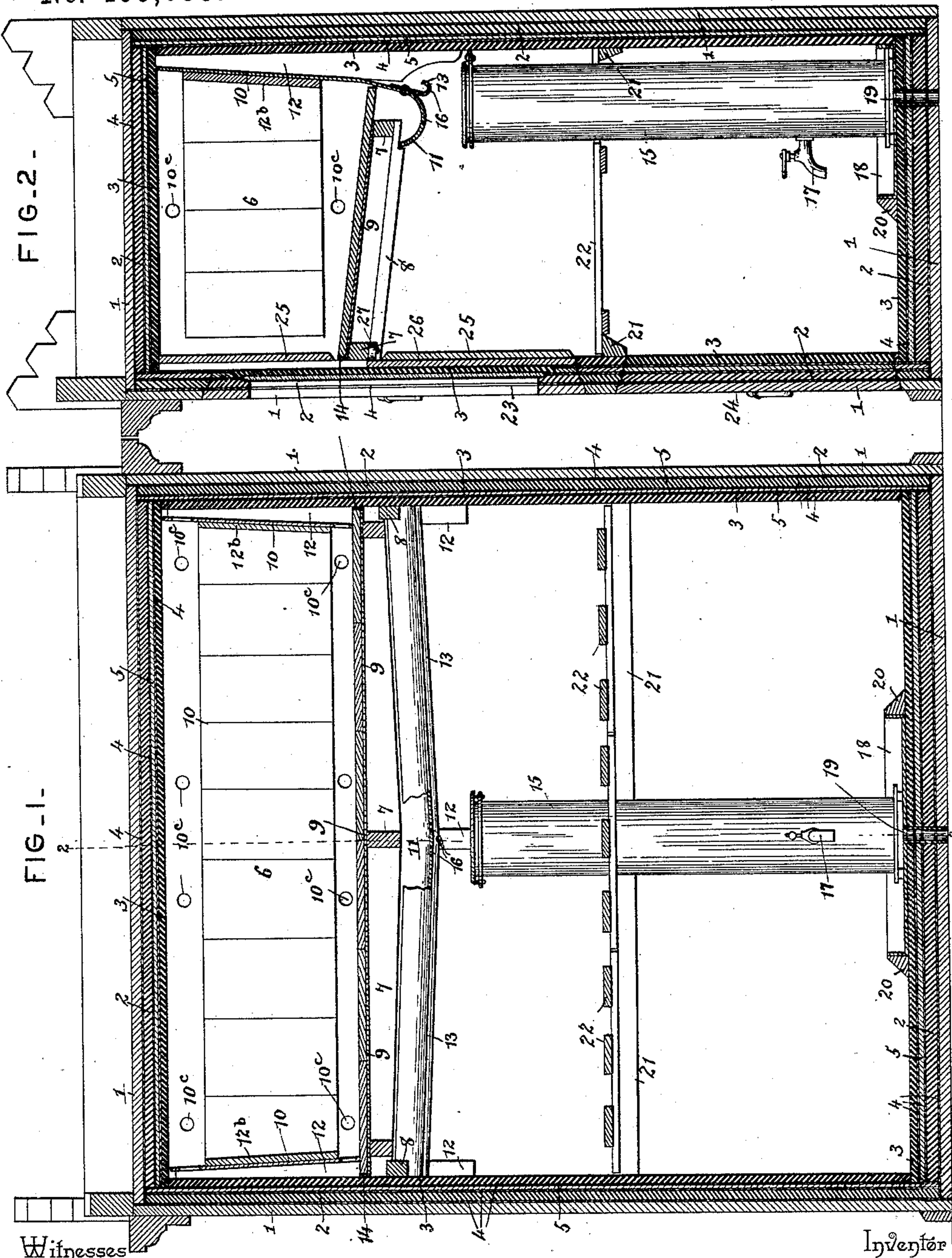
(No Model.)

2 Sheets—Sheet 1.

D. P. EDGAR.
REFRIGERATOR.

No. 465,055.

Patented Dec. 15, 1891.



Witnesses

Inventor

Jas. K. McLathran

Dennis P. Edgar

By his Attorneys,
Cory C. Bowen.

C. A. Snow & Co.

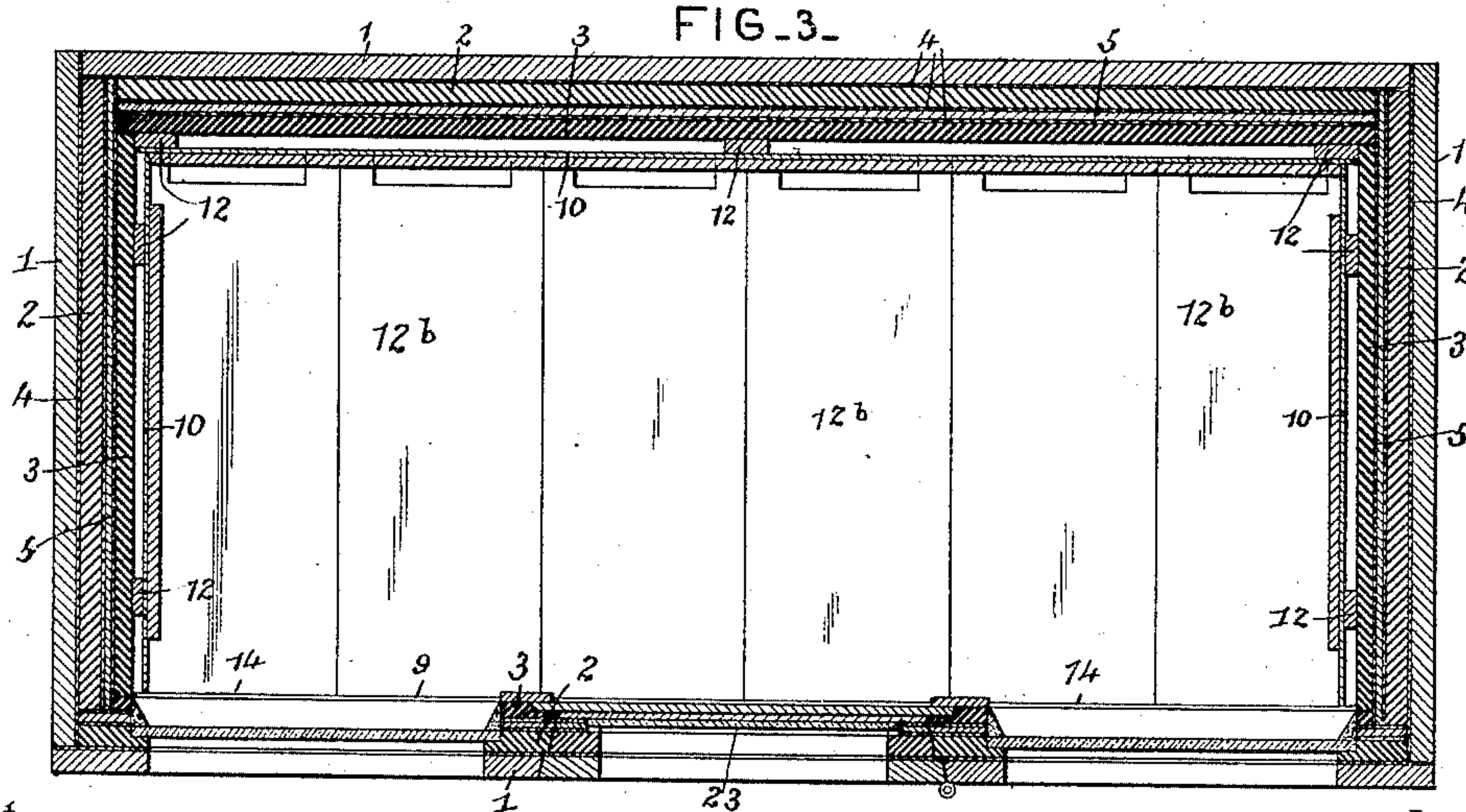
2 Sheets—Sheet 2.

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FIG. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

DENNIS P. EDGAR, OF MANCHESTER, MICHIGAN.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 465,055, dated December 15, 1891.

Application filed November 13, 1890. Serial No. 371,346. (No model.)

To all whom it may concern:

Be it known that I, DENNIS P. EDGAR, a citizen of the United States, residing at Manchester, in the county of Washtenaw and State of Michigan, have invented a new and useful Refrigerator, of which the following is a specification.

This invention relates to refrigerators; and it has for its object to provide a device of this class which shall be simple and comparatively inexpensive, and which shall be free from that humidity which is such an objectionable feature in most refrigerators as ordinarily constructed.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claim.

In the drawings hereto annexed, Figure 1 is a vertical sectional view of a refrigerator constructed in accordance with my invention. Fig. 2 is a vertical sectional view taken on the line 2 2 in Fig. 1. Fig. 3 is a horizontal sectional view taken through the ice-chamber and looking in a downward direction. Fig. 4 is a front elevation.

Like numerals of reference indicate like parts in all the figures.

The casing of my improved refrigerator is constructed of three layers of wood, designated by 1, 2, and 3. The outer layer 1 is preferably of hard wood, and the inner layer 3 of any suitable durable but porous and absorbent material, while the intermediate layer 2 may be merely a cheap filling to give body to the casing. Between the outer and middle layers 1 and 2 is interposed a sheet 4 of parchment paper. Between the middle and inner layers is placed a lining of sheet metal 5, on each side of which a sheet of parchment paper 4 is likewise placed. The sheet-metal lining is for the purpose of rendering the casing practically air-tight. The paper linings are well-known non-conductors of heat.

The wooden lining 3 of the casing is treated with an antiseptic solution in the manner described in my pending application for Letters Patent, Serial No. 333,642, filed March 25, 1889. This is for the purpose of causing the said wooden lining to repel the noxious vapors and humors which arise in the refrigerator from the articles placed therein for pres-

ervation. The wooden lining, if it were not thus treated, would absorb all the vapor and moisture arising in the refrigerator, and the latter would eventually become moldy and unfit for use. By treating the wooden lining with an antiseptic compound or solution of salt, saltpeter, carbonate of ammonia, and carbolic acid, as described in my former application above referred to, these ingredients will fill the pores of the wood, with the result of repelling the noxious vapors and humors, which are disposed of as will be presently described.

In the upper end of the box or casing is constructed an ice-chamber 6, which consists, essentially, of a wooden frame 7, supported upon suitable cleats 8 and supporting a rearwardly-inclined plate of sheet metal 9, terminating short of the back wall of the chamber. Sheet-metal plates, such as 10, are also placed at the ends and at the back of the ice-chamber, and the back plate is extended downwardly so as to form a trough 11, which is slightly inclined from the ends toward the center, and which bears under the rear ends of said cleats 8 forward of the terminal of the downwardly-inclined bottom plate. The end and back plates 10 are mounted upon cleats 12, whereby they are held a short distance from the inner walls of the casing, and the bottom, back, and end plates are provided with linings of wood, as 12^b. Said end and back plates are also inclined upwardly toward the top of the casing to facilitate the running of the drippings to the inclined bottom plate and directly to the drip-troughs, as will be apparent; but the linings of said end and back plates do not entirely cover the same, as does the bottom-plate lining, in order to allow space for the ventilating-openings and to provide a greater condensing-surface. Upon the rear side of the trough 11, at the lower end of the back plate 10, is formed a supplemental drip-trough 13. The front side and the ends of the bottom plate 9 are provided with upturned flanges, as shown at 14, so as to receive the drippings from the end plates 10 and convey the latter with the drippings resulting from the melting ice to the trough 11.

15 designates a tank, which may be cylindrical or of any other suitable shape, and which is placed vertically in the refrigerator adjacent to the back wall of the latter. The

upper end of said tank, which is open, is arranged directly below the drip-openings 16 in the troughs 11 and 13, and the said tank is provided with a suitably-arranged spout 17, through which its contents may overflow. The tank 15 is placed in a drip-pan 18, which receives the overflow and which has a downwardly-extending spout 19, extending through an opening in the bottom of the refrigerator. Cleats 20 are secured around the drip-pan 18 to keep the latter in place.

The front and rear walls of the refrigerator are provided with suitably-arranged cleats 21 to support shelves 22, upon which provisions may be placed. The front wall of the refrigerator is also provided with suitably-arranged doors 23 and 24, affording access to the ice-chamber and to the provision-chamber, respectively. The front wall is provided behind the door 23 with cleats 25 to guide a vertically-movable slide 26, which when raised in front of the ice-chamber may be supported by a turn-button 27, swiveled to the under side of the frame 7, thus closing the ice-chamber more perfectly. A portion of the front wall may, if desired, be provided with glass windows for the inspection of the contents.

In operation the ice is placed in the chamber constructed for its reception, and the articles to be preserved are placed in the provision-chamber. The drippings from the ice pass into the trough 11 and from thence into the tank 15, which latter is thereby cooled. The ice likewise thoroughly cools the metal plates 9 and 10, forming the bottom and sides of the ice-chamber, eventually causing the wooden strips 12^b to freeze onto said metal plates. Any vapors and humors arising from the contents of the provision-chamber will be instantly condensed against the under side of the bottom plate 9 and the rear sides of the end and back plates 10 of the ice-chamber, as well as against the condensing-tank 15, the outer side of which is kept quite cold by the ice-water contained therein. As fast as it condenses the moisture from the plate 9 and the end plates 10 will be conducted to the trough 11, and from thence pass into the tank 15. In like manner the moisture that condenses upon the rear side of the back plate 10 will pass into the supplemental trough 13, and thence into the tank 15, the overflow of which is eventually conducted off through the spout 19. By thus providing chilled condensing-surfaces I insure the condensation of all moisture, vapors, and humors arising from the contents of the refrigerator and provide for the carrying out of the moisture thus condensed. The inner wooden lining of the refrigerator being treated with an antiseptic compound, as described, will repel the vapors and humors, and thus render the operation of the device perfect.

The condensing-plates 10, that form the ends and back wall of the ice-compartment, are preferably provided with perforations,

such as 10^c, in order that the gases, vapors, and humors emanating from the contents of the refrigerator may also come in direct contact with the ice to assist in the condensation of such vapors, &c.

While I have in the foregoing described my invention as applied to a refrigerator, I would have it understood that it may very readily be adapted to buildings constructed for cold-storage purposes, in which a supply of ice sufficient to last an entire season is placed. When the invention is used in this manner, the walls of the building may be either of brick or of other suitable material, and between the outer walls and an inner lining, which is composed of wood treated with antiseptic material, packing of any suitable material is to be interposed to form a non-conducting lining. In other respects the construction is to be the same as hereinbefore described, excepting, of course, that doors or means of access are to be arranged in the most convenient manner, and that the relative proportions of the provision and ice chambers are to be such as may be deemed most suitable and convenient.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

In a refrigerator, the combination, with the inclosing box or casing, of an ice-compartment located in the top of said casing and comprising a rearwardly and downwardly inclined supporting-frame supported upon side cleats similarly inclined, a sheet-metal bottom plate supported upon said frame and having drip-catching flanges at its front side and ends and terminating short of the back wall of the casing, a closely-laid lining completely covering said bottom plate, the opposite sheet-metal side plates supported upon cleats at a distance from the sides of the casing and overlapping the sides of the bottom plate and outwardly inclined therefrom, a sheet-metal back plate supported at an incline from the back of the casing between the same and the rear end of the bottom plate and extending below said bottom, terminating in an integral drip-trough projecting forward of said end of the bottom plate and resting upon the side cleats, the said drip-trough being inclined from the ends toward the center and having a discharge-opening, a supplemental drip-trough secured to the lower end of the back plate and reversely disposed to the main drip-trough, the same being similarly inclined and provided with a central discharge-opening, linings partially facing said end and back plates, and a suitable drip-collector, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

DENNIS P. EDGAR.

Witnesses:

S. M. CASE,

A. F. FREEMAN.