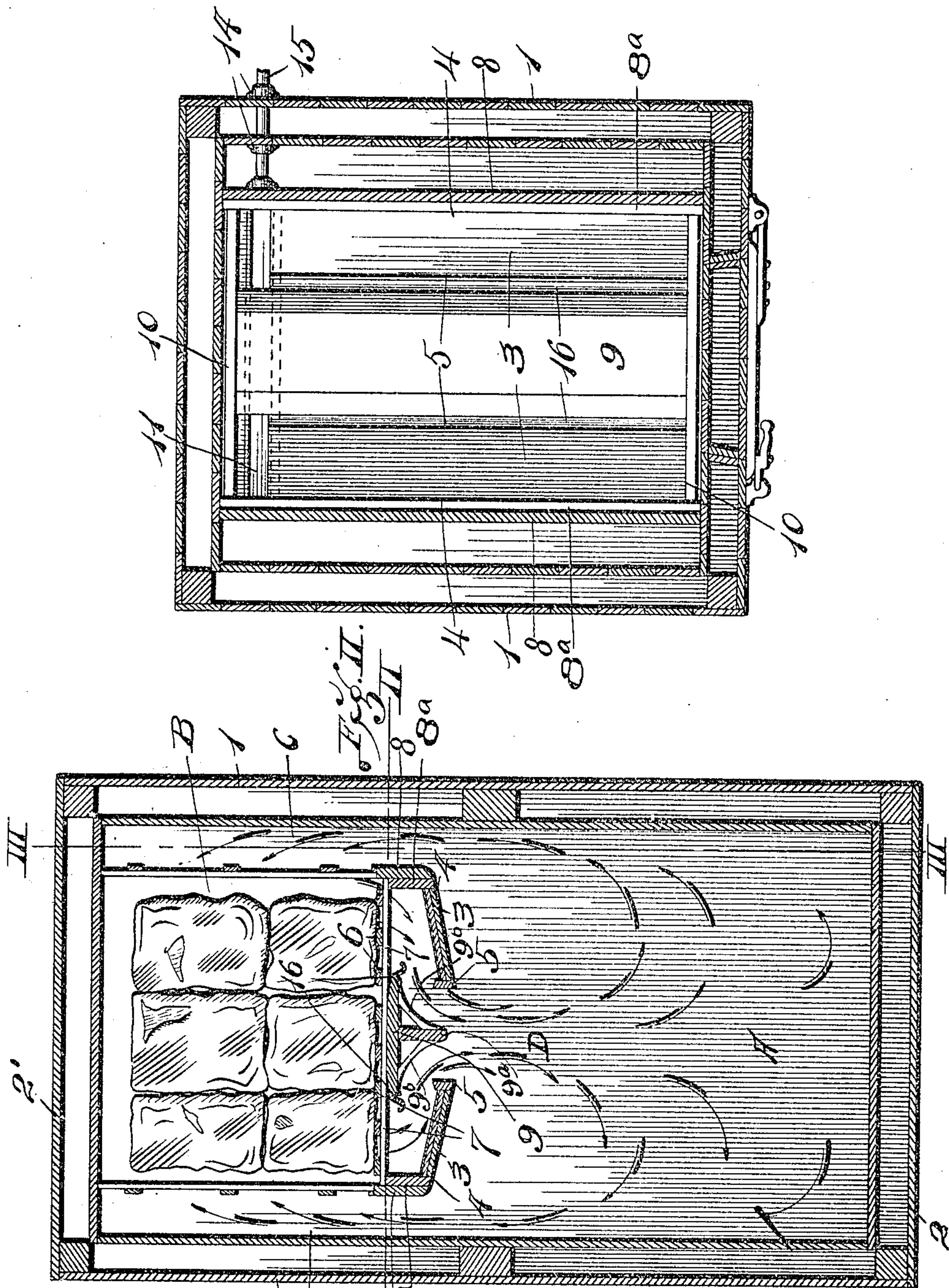


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APPLICATION FILED MAY 15, 1909.

944,117.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.



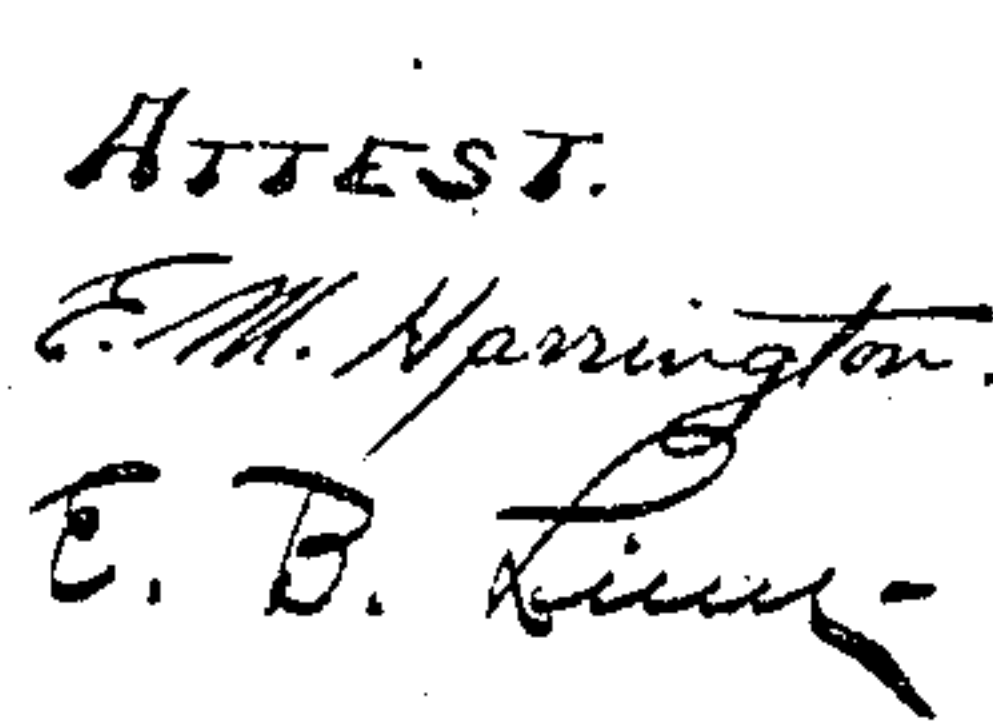
ATTEST.
F. M. Harrington.
E. B. Rine

INVENTOR
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

EDWARD J. WIRFS, OF MEMPHIS, TENNESSEE.

REFRIGERATOR OR COLD-STORAGE ROOM.

944,117.

Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed May 15, 1909. Serial No. 496,200.

To all whom it may concern:

Be it known that I, EDWARD J. WIRFS, a citizen of the United States of America, residing in Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Refrigerators or Cold-Storage Rooms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a refrigerator or cold storage room for the preservation of provisions, or other articles which it is necessary to keep at a low temperature, and with the air in a dry condition for the preservation of such articles. It is essential to every refrigerator or cooling room that it be provided with a chamber for a refrigerating agent, and heretofore, in so far as I am aware, chambers of this nature have not been perfect and satisfactory, due to the fact that they permit of the condensation of moisture in the warm air in the refrigerator or cooling room, which, striking against parts of the chamber, results in the formation of sweat, (so-called), as a consequence of which, after continued service, there results mold and decay of the parts, and in addition a deteriorating effect upon the goods placed in the room for preservation. In order to preserve the various articles, such for instance as meats, butter and eggs, in a refrigerator or cooling room, it is highly essential that the air circulating in the room be maintained in as nearly as possible a dry state, so that the articles, as well as the interior parts of the refrigerator or cooling room will be kept dry to avoid the occurrence of mold, and it is to this end that I have devised my present improvement in which, by so constructing the parts and providing continual circulations of air without its becoming at any time stagnant, I avoid condensation of moisture in the warm air and therefore eliminate the possibility of the production of mold and natural decay within the refrigerator or cooling room.

Figure I is a vertical transverse section taken through a refrigerator or cold storage room constructed in accordance with my improvement. Fig. II is a horizontal section taken on line II—II, Fig. I. Fig. III is a vertical longitudinal section taken on line III—III, Fig. I. Fig. IV is an enlarged section taken through a fragment of the

drain trough and the drain pipe, parts being broken away to utilize space. Fig. V is an enlarged vertical section taken across the drain trough.

In the drawings, 1 designates the hollow double walls of my refrigerator or cooling room and 2 and 2', respectively, the double floor and double ceiling thereof.

A designates the lower cold storage chamber and B the upper ice chamber.

3 indicates a pair of longitudinally arranged drip shelves which are inclined from the highest outer edges 4 to the lowest inner edges 5. Said drip shelves are also inclined slightly from the front to the rear, so as to cause the water that drips from the ice rack above to flow freely to the lowest point at the rear, at which point is a transversely arranged drain trough, which will be clearly described later.

6 designates the inner slats of the ice rack or grating which are arranged uniformly to provide a level surface for the ice to rest upon, and on which it may be readily moved when placed in the ice chamber. These inner slats 6 are supported by similar outer slats 7 which extend in the opposite direction to the inner slats 6, said outer slats 7 being supported at each end by lining pieces 8^a secured to joists 8 and forming the outer sides of the drip shelves and in the center by a T-shaped support 9, which extends the full length of the cooling room and is supported at the front and rear walls by front and rear joists 10, which joists extend across the ice rack and to each end of which is fastened in any suitable manner the lining pieces 8^a and the side joists 8, the joists 10 in turn being supported by a pair of angle irons 10^a fixed upon the front and rear walls of the cooling room. The vertical longitudinal strip 9^a of the T shaped support 9 is braced by brackets 9^b.

It will be noted that in so constructing my ice rack, it is strong and durable and entirely independent of the walls of the cooling room, in that none of the parts are nailed to the said walls, and by removing the angle irons, it can be taken down as a whole without taking it apart.

At the rear end of the ice rack is a drain trough 11, which is supported by a plurality of sections having insulating layers 12 located between them, whereby the conduction of heat through the drain trough from the storage chamber is prevented. This insulation

beneath the drain trough also prevents the passing of cold from the surmounting ice chamber through the drain trough so that the warm air in the storage chamber will
 5 not rise into contact with a surface of lower temperature than the temperature in the storage chamber, an occurrence that would result in the condensation of moisture due to the warm air striking the drain trough.
 10 The drain trough 11 has connected to it an outlet or drain pipe 13 which leads to the exterior of the refrigerator or cooling room, through one of its hollow walls 1. At the point where the drain pipe 13 passes through
 15 the hollow wall are rubber gaskets 14 that prevent the ingress or egress of air around said pipe through said double wall. For the purpose of preventing the condensation of moisture upon the drain pipe 13, I incase
 20 it within an insulating covering 15 which may be of any suitable material.

The central support 9 which is in cross section, of T-shape, as previously mentioned, in addition to its service as a support for
 25 the ice rack has the utility of providing a shed for the water resulting from the melting of the ice in the ice chamber, and from which said water is discharged in a manner to prevent its descent through the air pas-
 30 sageway between the drip shelves. The head or horizontal top member of this support is sloping adjacent to its side edges and attached to said head are gutters 16 into which the water that falls onto said head
 35 flows, after passing over the sloping portions of the head to be conducted to the drain trough 11. The water descending onto the central support is, therefore, prevented from falling onto the drip shelves
 40 and splashing therefrom, with the result of being deposited in the storage chamber A, as it would be in the absence of the gutters 16. The central T-shaped support further serves to divide the space beneath the
 45 ice rack and above the drip shelves into two passageways or down-ducts D, through which the currents of cooled air pass after the air has ascended through the up-ducts C and gained access to the ice chamber B.

50 It will be seen that in the practical use of my refrigerator or cooling room, the warm air rising in the storage chamber A passes into the warm air up-ducts C, from

which it circulates into the ice chamber B, and the air being cooled in the ice chamber
 55 moves therethrough without cessation of circulation and returns over the drip shelves and enters the down-duct D between the drip shelves to circulate downwardly there-
 60 through into the storage chamber. It is therefore obvious that the circulating air being kept continuously moving will not become permeated with any more moisture than that naturally gathered by its passage
 65 over the ice in the ice chamber, which is very slight, due to the temperature in said chamber, and as a consequence the air is returned to the storage chamber in practically a dry condition, or so nearly dry that any
 70 small percentage of moisture therein is insufficient to lodge upon the parts of the refrigerator or cooling room surrounding the storage chamber. As a natural result of the
 75 absence of condensation in the storage chamber, the parts with which the air contacts therein remain dry and the formation of mold is eliminated.

I claim:—

A refrigerator comprising walls, transversely arranged supports secured to the
 80 front and rear walls, front and rear joists located on the supports parallel therewith, longitudinally arranged side joists spaced from the side walls and supported by their
 85 ends on the front and rear joists, lining pieces secured to the side joists, an ice rack mounted on the lining pieces, a pair of drip shelves secured to the lining pieces, spaced apart, and extending from front to rear be-
 90 neath the ice rack, a rear drain trough with which the drip shelves are connected, a drain pipe extending from the drain trough to the exterior of the refrigerator, a centrally ar-
 95 ranged support for the ice rack of T shape in cross-section extending from front to rear between the drip shelves and constructed with a head having sloping side edges, a
 100 vertical longitudinal strip and bracing brackets and providing down ducts in connection therewith, and gutters secured to the sloping side edges of the head and over-
 hanging the inner edges of the drip shelves.

EDWARD J. WIRFS.

In the presence of—

W. A. TATUM,

W. D. BRIDGFORTH.