

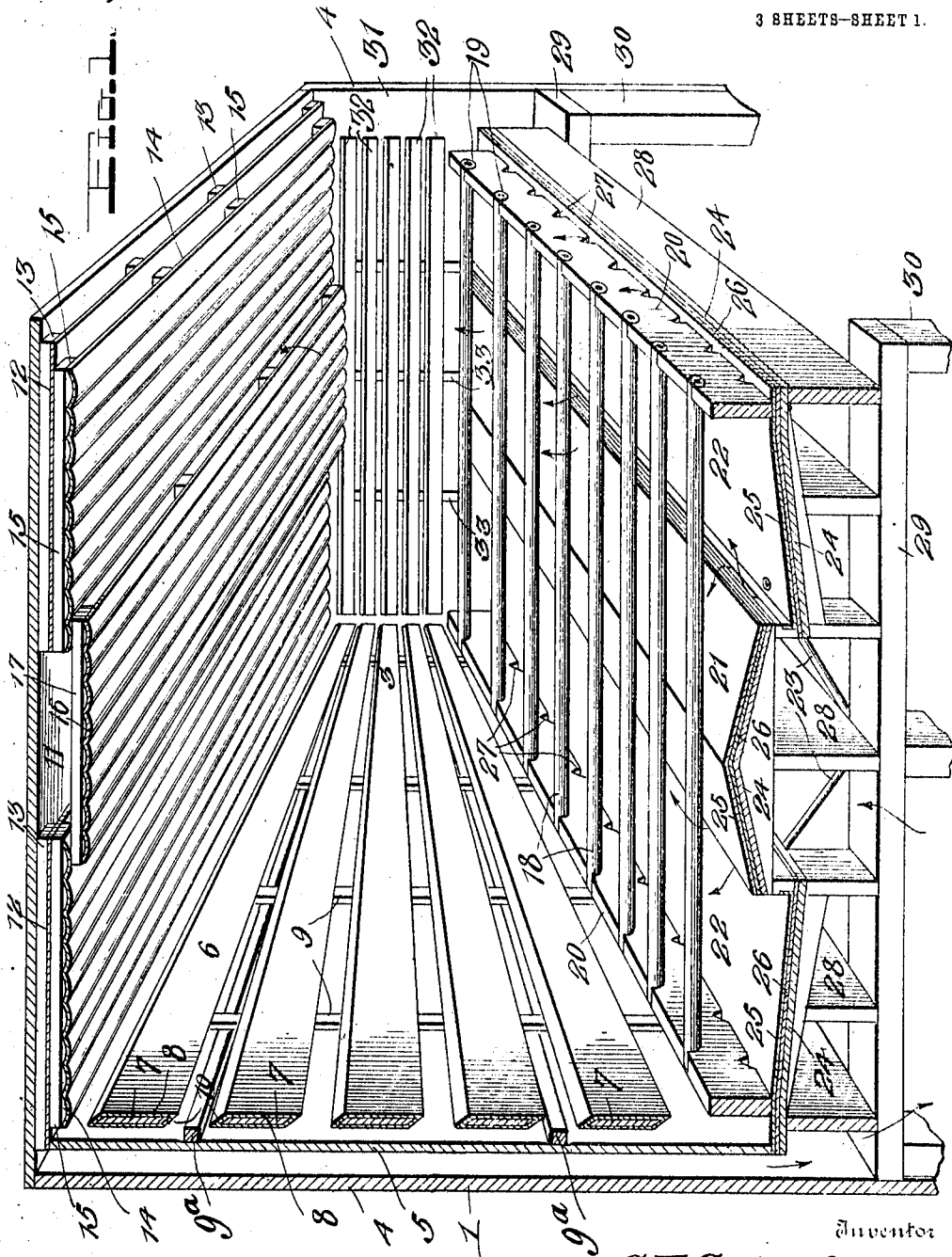
C. F. SCHAFER.
REFRIGERATOR.

APPLICATION FILED APR. 30, 1910.

978,492.

Patented Dec. 13, 1910.

3 SHEETS—SHEET 1.



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Witnesses

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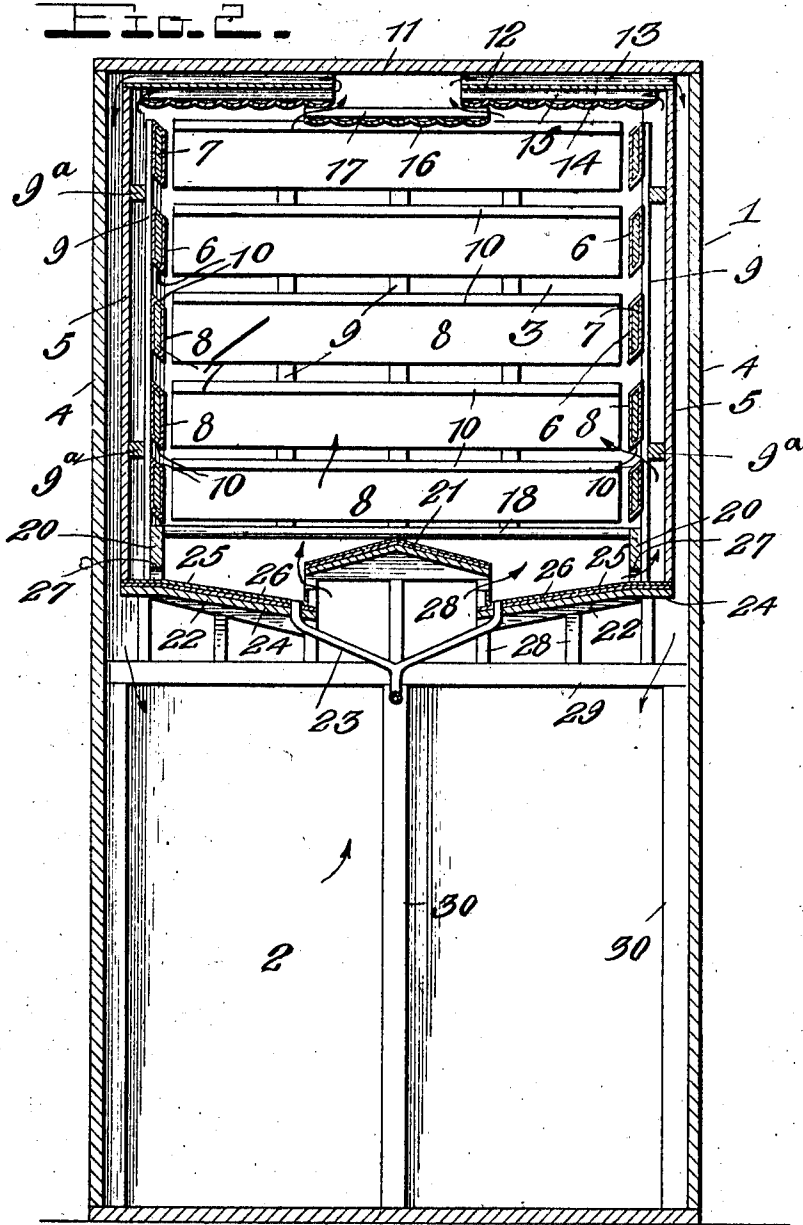
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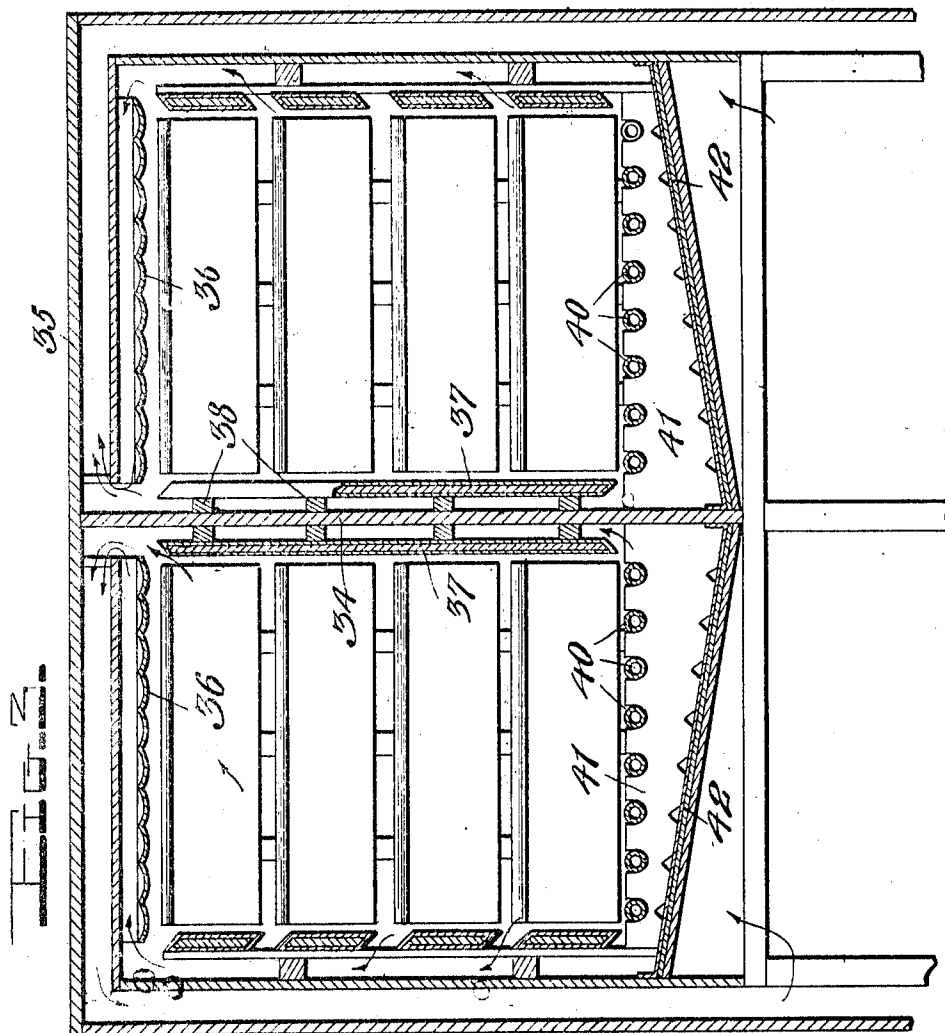
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

CHARLES F. SCHAFER, OF TERRE HAUTE, INDIANA.

REFRIGERATOR.

978,492.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES F. SCHAFER, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in refrigerators, cold storage structures and other receptacles using ice.

The object of the invention is to do away with the wooden ice racks which are now commonly used, and the parts of which rot and give forth disagreeable odors, and I accomplish the above and other objects by the improved combination and arrangement of parts, and the details of construction illustrated in the accompanying drawings in which:—

Figure 1 is a detail sectional perspective of portions embodying my invention; Fig. 2 is a vertical transverse section through the complete structure. Fig. 3 is a sectional view through another embodiment of my invention.

Referring more particularly to the drawings 1 denotes a refrigerator or other cold storage structure, the interior of which is divided horizontally into a lower cooling room or food chamber 2 and an upper ice chamber 3. The side walls of the ice chamber or compartment 3 consists of solid outer walls 4, solid inner walls 5, and open or slotted wall members 6, which latter are adapted to space the ice from the inner wall 5 and are composed of longitudinally extending boards 7 covered with galvanized sheet metal or analogous non-corrosive water-proof covering 8. The boards 7 are arranged longitudinally one above the other in spaced relation and are united to suitable spaced uprights 9, their top and bottom edges being downwardly and inwardly inclined or beveled, as shown at 10, whereby any moisture upon them will drain downwardly and drop off of their extreme lower edges. The spaced uprights 9 are themselves spaced from the inner walls 5 by means of horizontally disposed longitudinally extending cleats 9^a. Hence spaces for circulation of air currents are formed entirely around the uprights 9 and the boards 7, and the inner surfaces of the inner walls 5 are also

acted upon by such air currents, and moisture is prevented from accumulating thereon.

The roof of the ice chamber 3 is composed of a solid top 11, two horizontally disposed side plates 12 of galvanized sheet metal spaced from the top 11 by means of transverse cleats or strips 13, two longitudinally corrugated galvanized metal plates 14 arranged beneath and in spaced relation to the plates 12 and supported by transverse strips 15 and a centrally arranged corrugated plate 16 which is similar to one of the corrugated side plates 14 and is supported on transverse strips or cleats 17, said central plate being arranged across and beneath the space which separates the superposed spaced plates 12, 14. The upper most side plates 12 which are made of flat sheet metal have their outer edges engaged with the upper extremities of the inner walls 5 of the sides of the structure, while the outer edges of the corrugated plates 14 are spaced from the inner face of said walls 5, whereby air spaces are formed for the circulation of air upwardly through the ice chamber and then downwardly between the inner and outer walls 4, 5, as indicated by the arrows in the drawing. By making the top of the ice chamber as shown and using the corrugated metal plates 14, 15, the moisture in the air will condense on the bottom faces of said corrugated plates and will drip off of the same.

The bottom of the ice chamber comprises an ice-supporting rack and a sectional drip pan, which rack and pan separate the two chambers or compartments 2, 3. The rack is composed of a plurality of transverse, hollow, galvanized, metal bars or pipes 18, the ends of which are arranged in notches or seats 19 formed in the upper edges of two longitudinally extending galvanized metal supporting rails 20. The drip pan is composed of a central section 21 and two side sections 22, the latter being inclined downwardly and inwardly toward the central section, and said central section being of inverted V-shape and having its downwardly and outwardly inclined portions disposed above the lower inner portions of the side sections 22, whereby the drippings from the ice will accumulate on the lower inner portions of said side sections 22 and pass out of galvanized metal drain pipes 23. The central and side sections 21, 22, of the drip pan are each composed of supporting boards 24,

galvanized metal plates 25 and interposed packing material 26 which may be asbestos or any other material or substance that is a non-conductor of heat. The outer edges of the side sections 22 of the drip pan have the rack-supporting rails 20 arranged upon them and the bottom edges of said rails 20 may be formed with transverse notches 27 so that air may circulate freely around these parts and the drippings may pass beneath said rails 20. The outer portions of edges of said side sections 22 of the drip pan also have the bottom edges of the inner walls 5 engaged with them so that the air must circulate toward the center of the cooling room 2 and pass upwardly between the central and side sections of the drip pan, as indicated by the arrows. The drip pan sections are supported on longitudinally extending joists 28, which latter are in turn arranged on transverse joists or beams 29 secured to the upper ends of upright supporting posts 30.

From the foregoing it will be seen that owing to the peculiar construction of the structure above described, no wooden parts will be in contact with the ice and the water of condensation instead of collecting on the wooden parts of the structure will settle on the metal parts which may be galvanized or constructed of non-corrosive metal. Because of this, the wooden parts of the structure will not rot and give forth disagreeable odors which contaminate the food in the cooling room or chamber 2. It will be further noted that the continuous circulation of air through the structure will be maintained by reason of the peculiar construction and arrangement of the several parts.

The rear wall 31 of the ice chamber is preferably covered with horizontally extending boards or members 32 which are similar to the boards 7, and which are secured to upright cleats or strips 33 similar to the cleats 9 but secured directly on the outer wall 4, the inner wall 5 being omitted at the rear of the ice chamber.

In Fig. 3 of the drawings I have illustrated a slightly modified form of the invention which is especially adapted for use in large cold storage structures. In this embodiment of the invention I have illustrated a double ice chamber arranged above a suitable cold storage room or compartment, the two sections of the chamber being separated by a vertical partition 34. The two compartments or sections of this double ice chamber are quite similar to the one shown in Figs. 1 and 2 of the drawing, but the centrally arranged, corrugated plate 16 is omitted and the partition 34 extends directly to the top 35 of the structure and it is

spaced from the inner edges of the two corrugated top members or plates 36, whereby circulation is permitted, as indicated by the arrows. On opposite sides of the partition 34 are upright boards or members 37 which are similar to the boards 7 but vertically disposed and secured to horizontal cleats 38. The bottom of this double ice chamber is also different from the bottom of the single chamber first described. The bottom of this double chamber has the ice-supporting bars or tubes 40, which correspond to the bars 18 extending longitudinally, and they are arranged in seats of transverse supporting bars 41 which correspond to the bars 20, but which are arranged transversely and have their notched bottom edges inclined downwardly and inwardly and supported on two correspondingly inclined drip pan members 42, the latter corresponding to the side sections 22 of the drip pan, the central V-shaped section 21 being omitted in this double ice chamber, as will be readily understood on reference to Fig. 3.

Having thus described the invention, what is claimed is:

A refrigerator or cold storage structure comprising a body having a lower cooling chamber, an upper ice chamber, outer side walls for the ice chamber, inner side walls for the ice chamber spaced from the said outer side walls, means on the inner side walls for spacing ice therefrom, an outer top uniting the outer side walls and spaced from the inner side walls, cleats secured to the lower face of the top, top plates secured to said cleats and extending inwardly from the upper edges of the inner side walls, said plates being spaced from the top and having their inner edges arranged in spaced relation, other cleats secured to the bottom faces of said plates, corrugated plates secured to the last mentioned cleats and spaced from the first mentioned plates and the inner side walls, other cleats extending across the space between the first mentioned plates and said corrugated plates, a centrally arranged corrugated plate secured to the last mentioned cleats, and spaced from the first mentioned corrugated plates, means in the lower portion of the ice chamber for supporting ice, and means in the lower portion of the ice chamber for collecting drippings and permitting a circulation of air upwardly through the ice chamber.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

CHARLES F. SCHAFER.

Witnesses:

CLAUDE A. LANNING,
BRUCE HOLDAWAY.