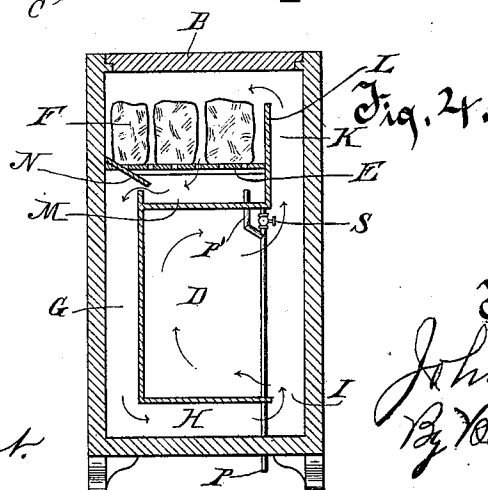
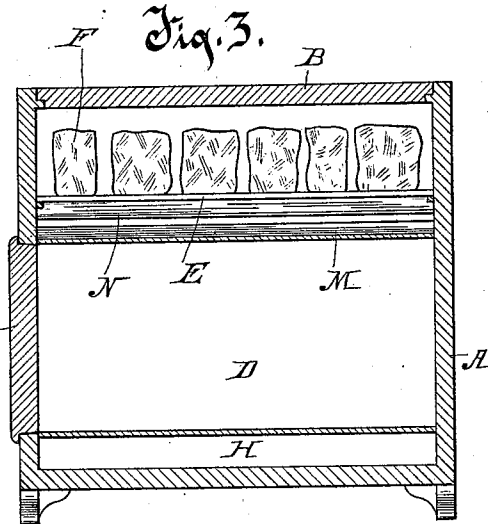
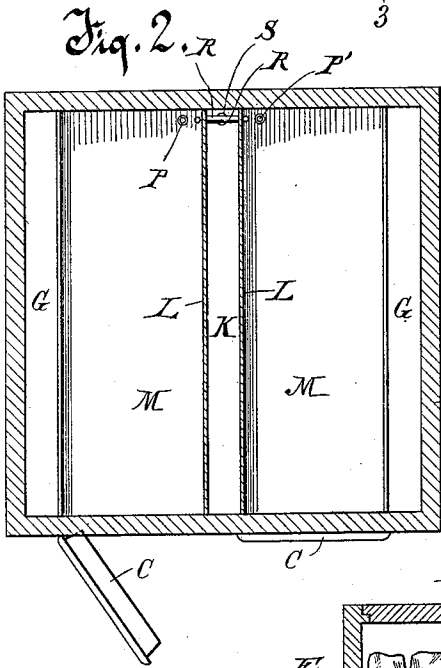
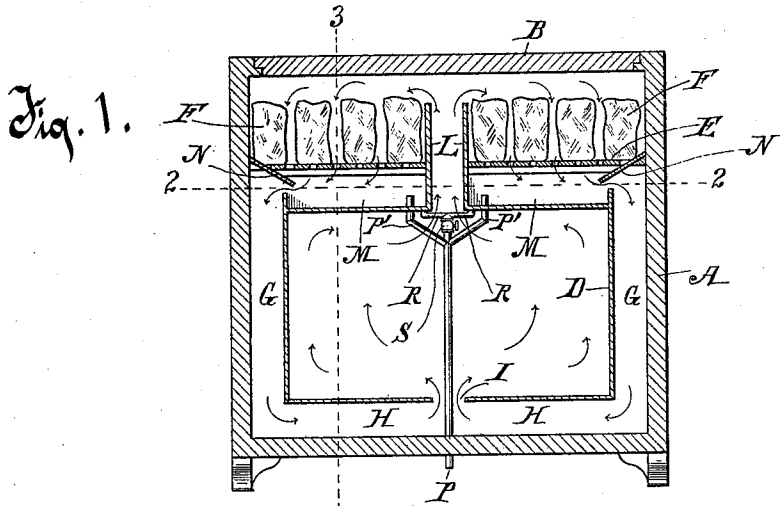


(No Model.)

J. H. HISE.
REFRIGERATOR.

No. 566,981.

Patented Sept. 1, 1896.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN HENRY HISE, OF OSHKOSH, WISCONSIN.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 566,981, dated September 1, 1896.

Application filed August 23, 1895. Serial No. 560,207. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY HISE, of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented a new and useful Improvement in Refrigerators, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention relates to improvements in refrigerators of the class that are usually made portable and are especially adapted for domestic purposes. My improved refrigerator may, however, be used in any place or for any purpose for which it is desired.

The especial object of my invention is to provide a refrigerator adapted to secure the maximum efficiency of the ice or refrigerant employed, both as to economy in the amount of ice used and the considerable extent of the cold or cooling results obtained therefrom.

My invention consists of the apparatus and its parts and combination of parts, as hereinafter described and claimed, or their equivalents.

In the drawings, Figure 1 is a central vertical section, laterally, of my improved refrigerator. Fig. 2 is a transverse section on line 2 2 of Fig. 1. Fig. 3 is a vertical section at right angles to and on line 3 3 of the section shown in Fig. 1. Fig. 4 is a vertical section of a smaller and modified form of refrigerator in which my invention is embodied.

In the drawings, A is the outer case of the refrigerator. This case is substantially tight, being, however, provided with a door B in the top for supplying the refrigerator with ice. The case is also provided with a front door or doors C, that open directly into the interior provision-chamber D and provide the opportunity for introducing articles into and removing them from the provision-chamber. The provision-chamber D consists of top, side, and bottom walls, which extend from front to rear of the case A at a distance from the top, bottom, and lateral side walls of the case, but being secured to the front and rear walls of the case and thereby supported in it. The top of the provision-chamber D is at such distance from the top of the case as to provide a considerable space in the case above the provision-chamber, which space is divided

horizontally by a perforated floor E, supported on the case, which floor is adapted to receive and support ice F thereon. The provision-chamber D is of such size and so located in the case A as to provide passages for air from the ice-chamber above it, down in the flues G between it and the sides of the case, and underneath it through the flues H, continuous from the flues G, and therefrom the air passes through a central longitudinal aperture I in the floor of the provision-chamber into the chamber and thence upwardly through the central flue K into the ice-chamber above the ice. The flue K is formed by vertically-disposed walls L L, extending upwardly from the top of the provision-chamber at each side of an aperture therethrough, and preferably entirely across the interior of the case, through the ice-floor E, nearly to the top of the ice-chamber and substantially above the supply of ice therein. It will be understood that by means of such construction a circulation of air will be produced and kept up in the refrigerator so long as there is any variance in the temperature of the air in proximity with the melting ice and the air in other parts of the refrigerator, since the cold or colder air about the ice, being heavier than the air of a warmer temperature in other parts of the refrigerator, will settle down and pass into the flues G and thence into the flues H, and therefrom, as the warmer air is forced upwardly through the central flue K, will enter and spread itself out in the provision-chamber D, the warmer air being thereby assisted to and naturally rising into the top of the ice-chamber, to be in turn further cooled, and to return as cold air to the bottom of the refrigerator. The walls of the case and the walls of the provision-chamber and the walls L L of the flue K are preferably made double and suitably packed with material or provided with air-spaces to render these walls non-conductive of heat or cold, and as such constructions are common in refrigerators no effort has been made to indicate them on the drawings, nor is any claim of invention to be predicated thereon. The side walls of the provision-chamber are preferably continued upwardly a little above the top of the chamber, thus constructing water-tight pans M M on the top

of and practically covering the provision-chamber, into which the drip or water of the melting ice falls or is conducted by the aprons N N, where the water accumulates and helps to keep the provision-chamber cool. The water in the pans M M overflows into the discharge-pipe P, which is provided with branch pipes P' P', extending through the bottom of the pans (the top of the provision-chamber) to such height as to take the water off before it shall overflow the sides of the pans, and discharges it through the bottom of the case. The pipe P is also provided with other branch pipes R R, which lead from the bottoms of the pans M M into the pipe, and are adapted for entirely emptying the pans of water therein. A stop-cock S in the discharge-pipe, above the junction of the pipes P' P' and below the junction of the pipes R R; closes the pipes R R, except when they are to be used to entirely discharge the water from the pans M. In the modified form of device shown in Fig. 4 the interior of the refrigerator consists, substantially, of only so much of the refrigerator shown in Figs. 1, 2, and 3 as would be at the left of a vertical line drawn a little at the right of the center of the sectional view of Fig. 1. The parts of the apparatus and the method of its use and its functions are substantially the same as those shown in the larger and double form of apparatus.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

In a refrigerator, the combination, of a casing, a provision-chamber at a distance therefrom at its top, its lateral sides, and at its bottom, thereby forming side flues and a bottom flue, the bottom piece of the provision-chamber having an opening therein, and the top a transverse opening with parallel walls extending upwardly therefrom, said walls forming a vertical flue, and terminating a desired distance below the top of the case, and an ice-floor at a distance above the top of the provision-chamber, said floor extending laterally from medial points of the upwardly-extending walls, the construction and arrangement being such as to allow the cold air to pass into the space between the top of the provision-chamber and the ice-floor, thence down the side passages, thence to the lower passage, thence into the provision-chamber and finally into the passage formed by the upwardly-extending walls, for discharge into the upper portion of the ice-chamber, substantially as described.

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

JOHN HENRY HISE.

Witnesses:

J. C. THOMPSON,

DAVID C. PINKERTON.