

A. W. DE NEEN.

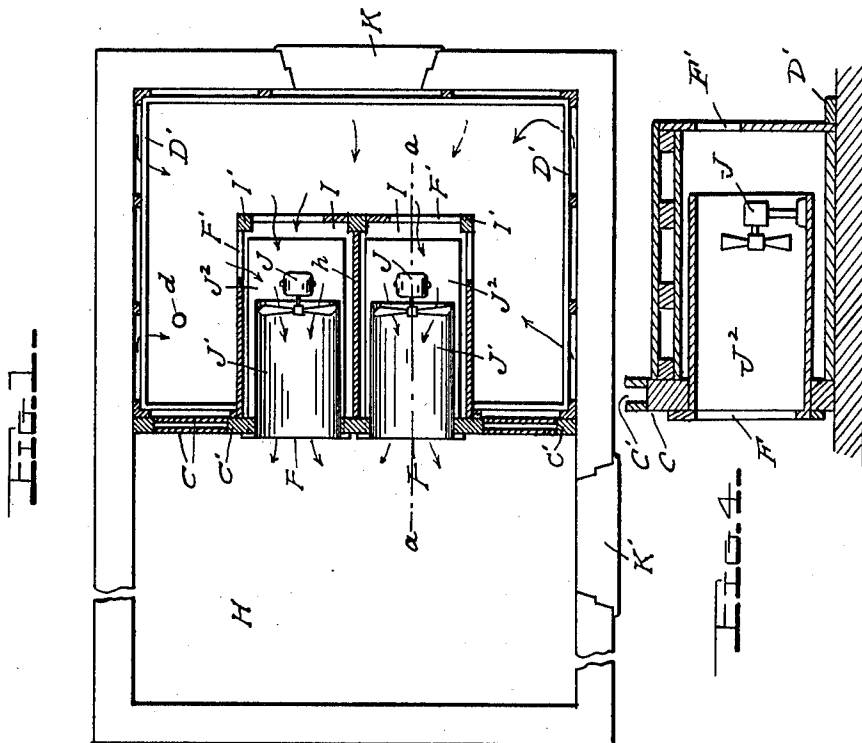
REFRIGERATOR.

APPLICATION FILED AUG. 4, 1910.

1,020,482.

Patented Mar. 19, 1912.

2 SHEETS—SHEET 1.



WITNESSES:

J. B. Cornelius
E. O. Libbons

INVENTOR:

Albert W. De Neen
BY *Eugene Ayres*,
ATTORNEY.

A. W. DE NEEN.
REFRIGERATOR.

APPLICATION FILED AUG. 4, 1910.

1,020,482.

Patented Mar. 19, 1912.

2 SHEETS—SHEET 2.

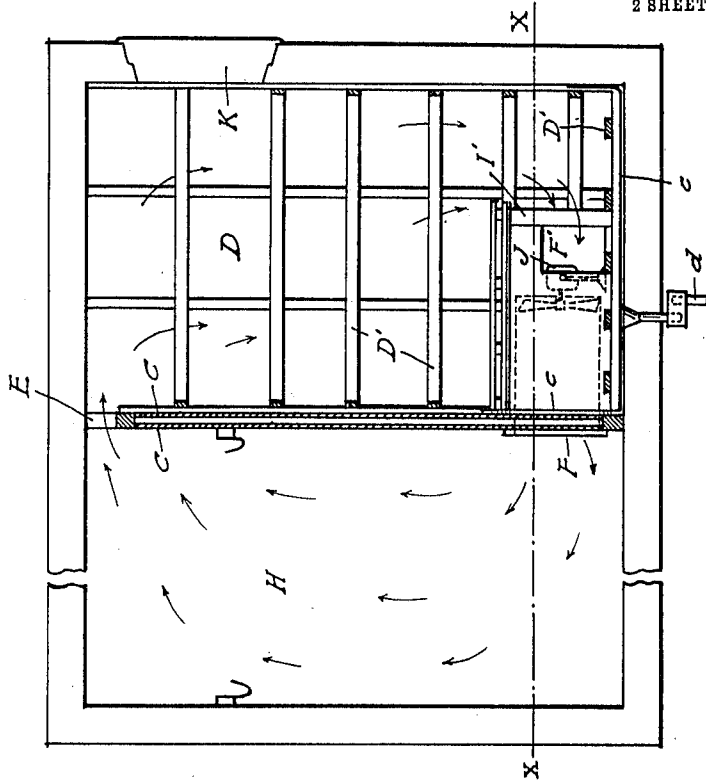


FIG. 2.

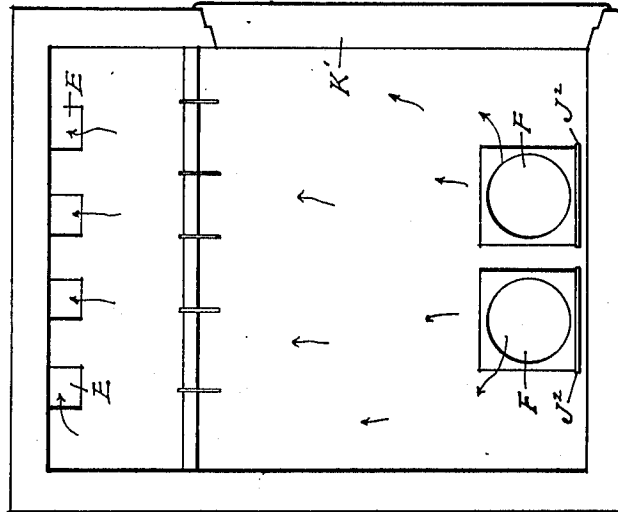


FIG. 3.

WITNESSES:

A. B. Cornelius
E. O. Gibbons

INVENTOR:

Albert W. De Neen
BY *Emory C. Ayres*,
ATTORNEY.

UNITED STATES PATENT OFFICE.

ALBERT W. DE NEEN, OF ST. JOSEPH, MISSOURI.

REFRIGERATOR.

1,020,482.

Specification of Letters Patent.

Patented Mar. 19, 1912.

Application filed August 4, 1910. Serial No. 575,506.

To all whom it may concern:

Be it known that I, ALBERT W. DE NEEN, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification.

The object especially sought by me in the invention of the hereinafter described refrigerator is to provide retail butchers with as good refrigeration as that which the larger packing companies now possess per square foot with their larger and more expensive machines and to do this at an expense of operating the refrigerator that is very small in comparison with the average running expense of cooling machines.

I accomplish my object by the apparatus illustrated in the accompanying drawings, in which,

Figure 1 is a horizontal sectional view of the refrigerator cut on line $x-x$ in Fig. 2; Fig. 2 is a vertical sectional view of the device showing the interior arrangement thereof; Fig. 3 is an elevation of the dividing partition, and Fig. 4 is a detail, vertical, longitudinal, sectional view, on the plane indicated by the line $a-a$ of Fig. 1.

Similar letters refer to similar parts in the several views.

In my device A is the outside wall of the refrigerator which may be made of any suitable material and may be of any suitable construction. A double board partition C C supported by posts C' C' and fastened on opposite sides of the posts extends across the interior of the refrigerator reaching from top to bottom.

D is an ice chamber. The side of partition C next the ice is covered with metal c . The floor of said ice chamber and the other three sides thereof are also covered part way up with metal. The bottom of the refrigerator is provided with a drain pipe d . The top of said partition is provided with air ports E E . . . Said ice chamber is provided with grates D' D' . . . on the sides, back and bottom; the ice is thereby prevented touching the side and back walls and bottom and the air drawn in through air ports E E . . . passes down freely between said three walls and the blocks of ice as well as being drawn down through the cold air passage between the ice and the bottom of the ice chamber. The bottom grate not only thus provides an air passage but also holds

the ice above any drainage water in the bottom of said ice chamber.

F F are outlet ports in the lower part of double partition C C and H is the refrigerator chamber for the storage of meats and other products.

I I are duplicate chambers inside said ice chamber H, preferably arranged as shown in Fig. 1. Their roof is preferably composed of strong planks covered with metal supported by heavy joists, said joists and planks being supported by posts I' I' . . . of sufficient strength to bear up a heavy weight of ice. The floor of these duplicate chambers is elevated to correspond with the height of the grate resting on the floor of the surrounding ice chamber. These duplicate chambers are provided at the back and sides with inlet ports F' F' . . . just above said floor. Said duplicate chambers have a partition h and are planked at the sides and back. The inlet ports F' F' . . . in the sides and back of these inner chambers should together equal in size the number of square feet of outlet ports F F thereby preventing the choking of air at the rear of said inner chambers and permitting an uninterrupted exit of cold air from the ice chamber.

J J are fans ordinarily operated by electricity; they are set in tubes J' J'. The tubes and fans are held in position in drawers J² J² which are slipped into inner chambers I I, thus permitting the fan to be taken out or put back without disturbing the ice chamber.

The ice chamber receives its ice through door K; the ice rests upon a grate D' at the bottom of the ice chamber. Said ice chamber should be filled with ice up to a line near the air inlet ports E E . . . Door K' for the storage chamber should be at the side to prevent when opened the escape of the air that is being driven by the fans through said storage chamber.

These refrigerators may be constructed of any desired size and may be constructed with one inner chamber only or with a plurality of such inner chambers and be provided with a corresponding number of fans, but in the use for which, as I have already stated they are especially intended, they are preferably constructed about 18 feet long by 10 feet wide and 10 feet high with duplicate inner chambers each about 3 feet by 2½ feet and 2 feet 6 inches in height. A refrigerator of half the number of square feet above de-

scribed would only require one inner chamber and one fan. When built of the size described the refrigerator is adapted to hold about 5 or 6 tons of ice. To operate this refrigerator it is only necessary to start the fan or fans; the intensely cold air off the ice in said inner chambers is thereby driven through tubes J' J' and outlets F F into the storage chamber; this air is driven with great force and rapidity just above the floor into the storage chamber and is drawn thence back into the ice chamber through the inlets E E down into the ice from which intensified in coldness it is again driven into the storage chamber to repeat its journey. The oftener the air is drawn through the ice the colder it becomes until the temperature is reduced almost to freezing, and, by the application of salt on the ice, it may be reduced to a temperature much below freezing. Preferably I construct the ice chamber about one-fourth the size of the storage chamber.

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

The herein described refrigerator comprising a casing having a vertical partition dividing the casing into an ice chamber and a storage chamber, said partition having ports at its upper side and openings in its lower side, inner chambers in the lower portion of the ice chamber, extending from the partition, opposite the lower openings thereof, and having air inlet ports at their inner ends, drawers in said inner chambers, removable therefrom through the lower openings of the partition and each having an open ended tube extending through its front side and a fan at the rear end of said tube.

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

ALBERT W. DE NEEN.

Witnesses:

JOHN S. CLINKINHEARD,
H. W. KEENER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."