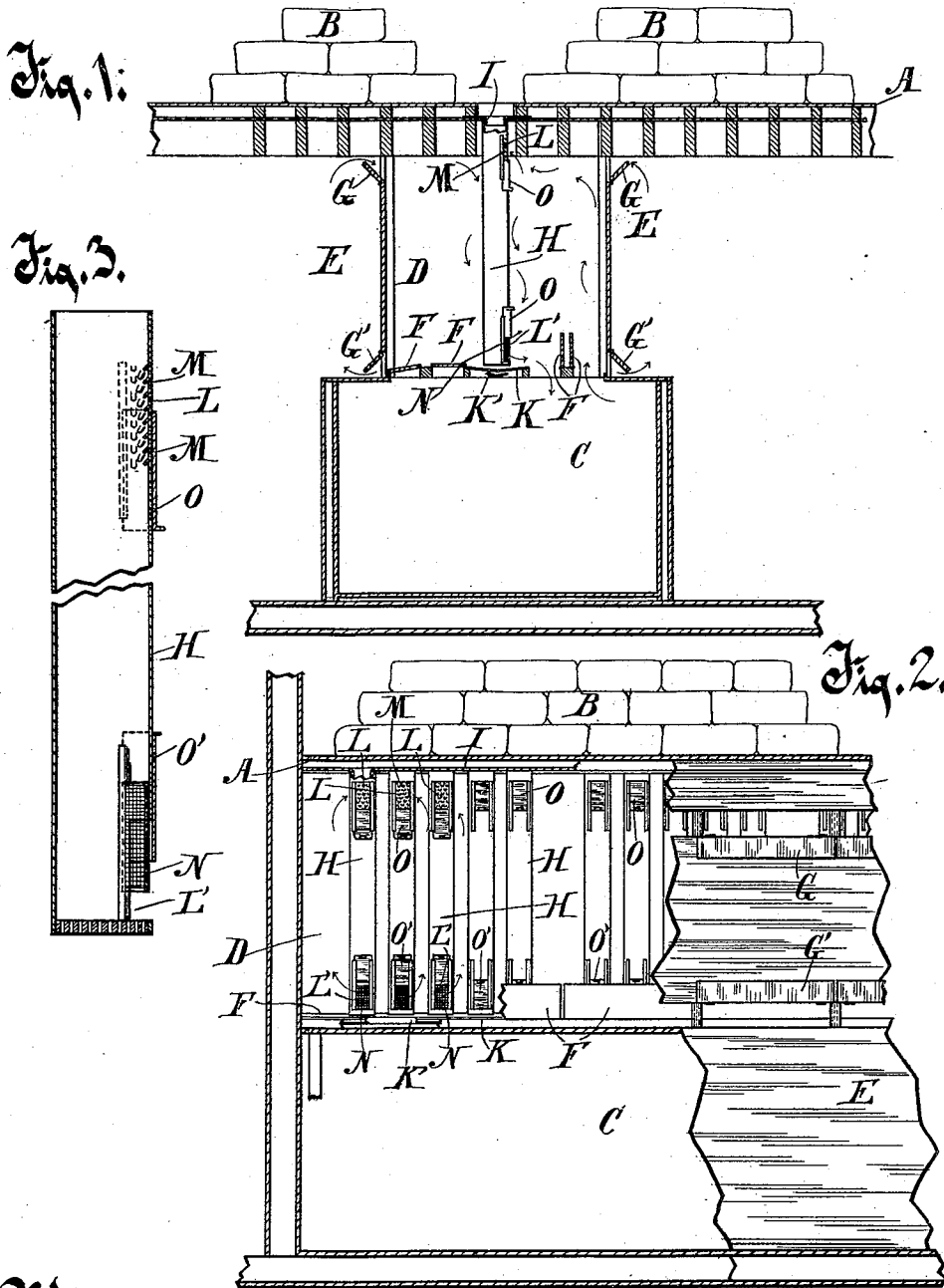


(No Model.)

A. I. DEXTER.
REFRIGERATOR.

No. 479,633.

Patented July 26, 1892.



Witnesses.

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UNITED STATES PATENT OFFICE.

AVELYN I. DEXTER, OF WHITEWATER, WISCONSIN.

REFRIGERATOR.

SPECIFICATION forming part of Letters Patent No. 479,633, dated July 26, 1892.

Application filed December 10, 1891. Serial No. 414,568. (No model.)

To all whom it may concern:

Be it known that I, AVELYN I. DEXTER, of Whitewater, in the county of Walworth 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 the class of refrigerators that are constructed on a large scale and comprise two or more stories of a building.

The essential object of the present invention is to provide a supply and circulation of air through cold-storage or freezing rooms, which air being or to be used in cold-storage or freezing rooms is passed through or over a mixture or material adapted to withdraw therefrom all moisture and deleterious matter therein that is objectionable in a cold-storage chamber or freezing-room in which fresh meats, butter, cheese, or other things liable to decay or injury in any other than a pure cold atmosphere are stored for preservation.

With this object in view my invention consists in the construction and arrangement of the refrigerator and its several parts, as hereinafter described and claimed.

In the drawings, Figure 1 is a vertical section of a fragment of a refrigerator, showing a method of constructing my improved device. Fig. 2 is a vertical section of the same fragment of a refrigerator shown in Fig. 1, taken at a right angle thereto, parts being broken away to show more fully interior construction. Fig. 3 is a central vertical section of a tube or tank holding the freezing mixture in my improved device, a portion being broken away for convenience of illustration.

In the drawings I have shown a fragment of a three-story building, which is sufficient to illustrate my invention, the floor A of the top story being used to support a supply of ice B, stored in a room of the third story of the building. A room C in the lowest story I designate a "freezing-room." A room D in the second story, above the room C, I designate as the "cold-air room," in and through which a circulation of cold air is had. At both sides of the room D are cold-storage rooms E E, which are not shown otherwise

than by the sections of the walls at the sides adjoining the cold-storage room D and a portion of the floor and ceiling thereof. Apertures closed by the swinging trap-doors F F are provided from the floor of the cold-air room D into the freezing-room C. Other apertures closed by the swinging doors G G', opening from the cold-air room D to the cold-storage rooms E, respectively, at the top and bottom of the partition-walls, are provided to permit of a circulation of air through these rooms. The cold-storage rooms E E are especially adapted for preserving eggs, fruit, and similar articles which require a cold dry but not freezing temperature, while the room C is more especially adapted for preserving fresh meat, and even butter and cheese, which are best preserved in a freezing temperature.

A series of vertical tanks H H, conveniently constructed of boiler or galvanized iron, is suspended from the floor A through an aperture therefor in the floor in the cold-air room D. These tanks are conveniently suspended from a trough I, fixed in the floor A. The tanks are located at a little distance apart and extend downwardly near to the floor of the cold-air room D. Drip-troughs K K', located beneath the tanks H, are adapted to catch the water of condensation falling therefrom and the water resulting from the melting of ice therein and carry it to a waste-pipe, by which it is discharged from the building.

The tanks are each provided with apertures or air-passages at L L' near the ceiling and near the floor, respectively, of the room D, the lower aperture being near the bottom extremity of the tank. The upper air-passage at L is formed, preferably, of a series of openings constructed by punching tongues M M from the wall of the tank, which tongues are bent inwardly at their upper attached edges obliquely downwardly in such manner as to shield their openings on the inside and prevent the escape of ice or other material there-through, the tongues being also adapted to carry the drip of condensation inwardly into the tank, so that it will not escape through the openings.

A screen or grating N in the lower aperture L' is adapted to prevent ice or coarse material from escaping through the aperture, while permitting the comparatively free circulation

of air. Doors O O', sliding in ways therefor on the tank, are adapted, respectively, to close the apertures L and L' when desired, but are rarely used when the device is in use, except only for the purpose of preventing the escape of material in the tanks while being filled. The screens N are movable vertically in ways therefor to permit of the removal of the contents of the tanks through the apertures L'.

When used, the tanks are supplied with a freezing mixture—usually ice broken in small pieces and very coarse rock-salt—through which the air from the room D circulates with some freedom, the less-cold air entering at the top through the apertures L, and, descending as it becomes colder, escapes from the tanks through the apertures L', and thence when the trap-doors F F are open descending through the nearest door into the freezing-room C, a corresponding supply of less-cold air escaping at the same time through the more distant trap-door into the room D. In this manner a circulation is kept up between and through the rooms D and C and through the tanks H, the air that passes through the tanks which has come from the room C, if laden or carrying any moisture or deleterious matter, being deprived of the moisture and deleterious matter by condensation of the moisture either in the room D or in the tanks as it passes through them and being at the same time deprived of the deleterious matter, which commonly is absorbed by the moisture and condensed and carried off with it or is absorbed or eliminated by the mixture in the tanks. The material supplied to the tanks may for the purpose of absorbing or destroying this deleterious matter include any suitable substance or chemical product adapted for that purpose and not inconsistent or objectionable to be used with the freezing mixture. A substantially similar circulation of air between and through the cold-air room D and the cold-storage rooms E on either side of the cold-air room D is obtained by opening the doors G and G', the air passing from the cold-air room D through the lower doors G' into the cold-storage rooms E, while at the same time a corresponding amount of air passes from the cold-storage rooms to the cold-air room through the door G at the top of the rooms. This circulation between the cold-air room D and the cold-storage rooms E, or one of them, may be maintained at the same time with the circulation between the cold-air room D and the freezing-room C, or when the freezing-room C is shut off from the cold-air room D by closing the doors F.

In case the refrigerator is to contain more

than three stories, as illustrated in the drawings, the tanks may be extended from the ice-room through two or more stories in substantially the same manner as carried through the second story in the drawings, or they may be carried through the intervening story or stories as closed and impervious tanks, which may be covered with any suitable covering to prevent radiation of cold or withdrawal of heat from the surrounding atmosphere or may pass through cold-air rooms similar to the rooms D, if preferred.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A refrigerator comprising an ice-room arranged to hold a supply of ice, a cold-air room below the ice-room, a series of tanks suspended in the cold-air room from the floor of the ice-room and opening at the top into the ice-room, so as to be readily filled with ice therefrom, apertures in the walls of the tanks in the cold-air room near its floor and ceiling, respectively, cold-storage rooms in the same horizontal plane and adjoining the cold-air room, into which passages closed by doors open from the cold-air room near the floor and ceiling, respectively, a freezing-room below the cold-air room, and passages closed by doors through the floor of the cold-air room into the freezing-room below, the latter passages being arranged, respectively, near to and at a distance from the tanks suspended in the cold-air room, substantially as described.

2. In a refrigerator, an ice-chamber, a cold-air room below the ice-chamber, a tank suspended in the cold-air room from the floor of the ice-chamber, into which it opens at its top, which tank is adapted to be filled from the top with a freezing mixture, a series of openings near the top of the tank, adapted to permit the passage of air from the room into the tank, tongues punched from the wall of the tank in forming the opening, which tongues are bent inwardly obliquely at their upper attached edges, whereby the tongues are adapted to guard and partially cover the openings, so as to prevent the passage outwardly from the tank of the mixture within and to carry the drip on the interior of the tank inwardly into the tank away from the openings, and a screen over an aperture in the lower part of the tank, substantially as described.

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

AVELYN I. DEXTER.

Witnesses:

EDWIN K. DEXTER,
A. H. MEMMLER.