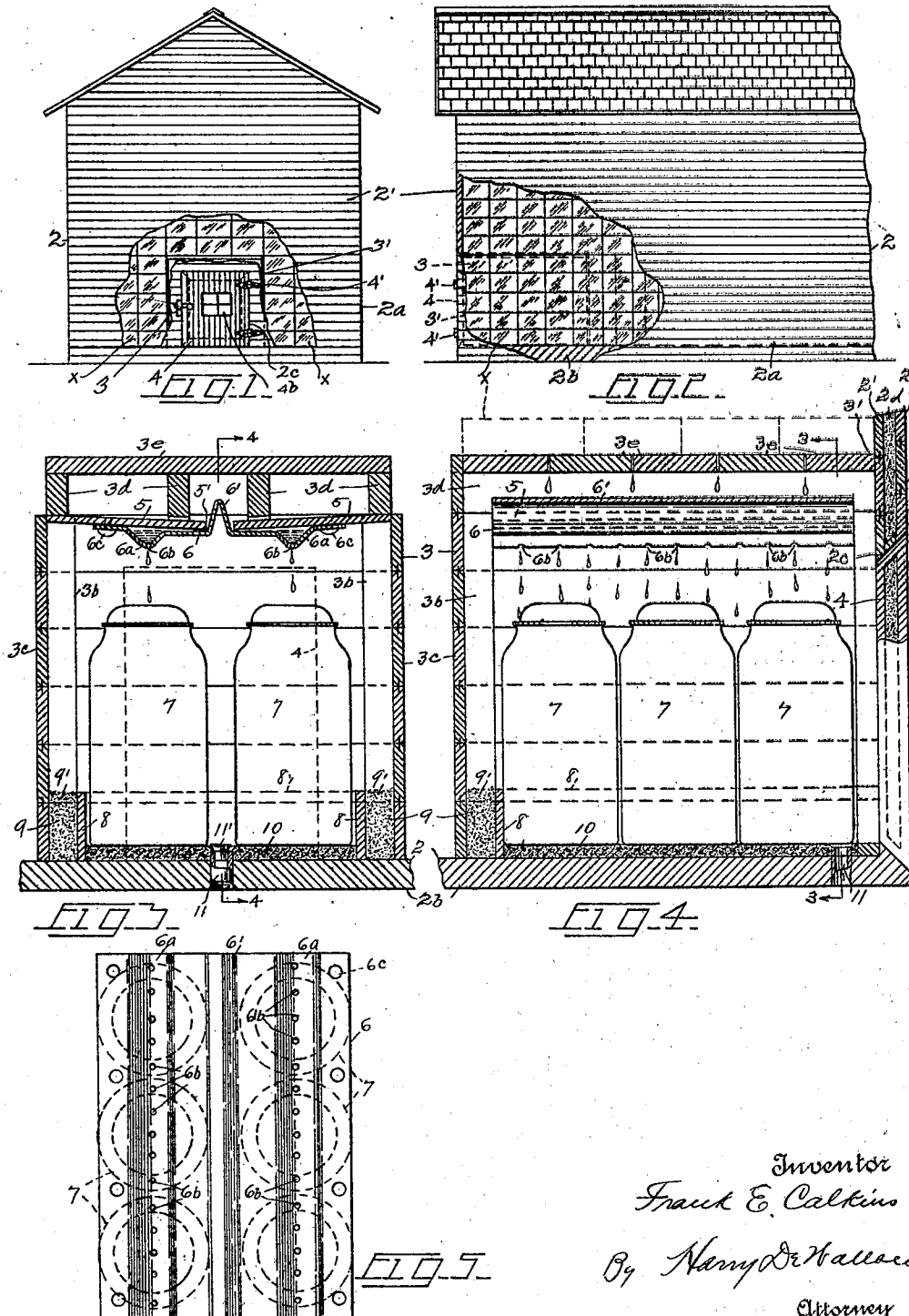


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F. E. CALKINS.
REFRIGERATOR.
FILED SEPT. 29, 1922.



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UNITED STATES PATENT OFFICE.

FRANK E. CALKINS, OF NEW HAVEN, NEW YORK.

REFRIGERATOR.

Application filed September 29, 1922. Serial No. 591,332.

To all whom it may concern:

Be it known that I, FRANK E. CALKINS, a citizen of the United States, residing at New Haven, (R. F. D. No. 2,) in the county of Oswego and State of New York, have invented certain new and useful Improvements in Refrigerators, of which the following is a specification.

This invention relates to improvements in refrigerators and has for its object to provide a novel construction and arrangement of ice-houses, wherein independent cooling chambers may be permanently built, and in which milk, butter, and other perishable articles may be stored and kept cool, without requiring any handling of the ice, after the ice-houses are filled with the season's supply. A further object is to provide a refrigerating chamber of the class, which is disposed adjacent one of the outer walls of the ice-house, and may be closely surrounded on three sides and on its top by the ice, and wherein the top of the chamber is so constructed that the drip resulting from the melting of the ice filters through and falls upon the milk-cans and other articles which may be disposed in the chamber, for heightening or intensifying the refrigeration. And a further object is to provide a door for affording access to the chamber, the said door having a window for lighting the interior of the chamber.

I attain these objects by the means set forth in the detailed description which follows, and as illustrated by the accompanying drawing, in which—

Figure 1 is an end elevation of an ice-house, with parts broken away for showing the disposition and arrangement of my improvement. Fig. 2 is a broken side elevation of the same. Fig. 3 is an enlarged transverse section, taken on line 3—3 of Fig. 4. Fig. 4 is an enlarged vertical longitudinal section, taken on line 4—4 of Fig. 3. And Fig. 5 is a top-plan view of the drip collector.

In the drawing, 2 represents generally the ice-house superstructure, 2' represents one end of said structure, and 2^a is one of the sides, which is broken away, in Fig. 2, for showing the floor 2^b. The foregoing may follow any of the usual constructions.

My improved refrigerating apparatus preferably comprises a substantially closed oblong chamber 3, which is disposed entirely within the house 2, one end 3' thereof preferably being closed by the adjacent end

wall, as 2', of the house, the said wall being formed with a rectangular opening 2^c, which is closed by a door 4, the latter being hinged at 4'. The walls of the ice-house 2 are usually constructed hollow and then filled with heat-insulating substance, such as saw-dust 2^d. The door 4 is preferably constructed in the same manner, as best seen in Fig. 4. The opening 2^c, as well as the door 4 are correspondingly mitred, in the usual manner, for suitably sealing the opening, and the door is preferably provided with a window 4^b, for lighting the interior of the box 3, and for preventing the breeding of certain germs.

The chamber 3 preferably rests upon the floor 2^b, which forms its bottom, and consists of similar uprights 3^b, which are sheathed on the three sides that are exposed to the ice *x*, by matched material 3^c, and horizontal top-beams 3^d, which are preferably covered by ice-supporting planks 3^e, the latter being loosely fitted, for allowing the water from the melted ice to drip into the chamber, as shown in Fig. 4. 5 represents a ceiling, which is supported by the underside of the beams 3^d, as shown in Fig. 3. This ceiling preferably declines from the opposite lateral sides of the chamber towards the middle, where a longitudinal gap 5' is provided for the escape of the drippings which flow down the said inclines. Beneath the ceiling 5 is disposed a simple sheet metal drip-collector 6, which extends substantially the full length of the said ceiling. The part 6 is provided with a longitudinal upwardly facing rib 6', which loosely projects through the gap 5', and serves to shed and to direct the drippings towards the opposite sides of the chamber, where they are collected by similar longitudinal troughs or valleys 6^a, which are provided at frequent intervals with perforations 6^b, by means of which the drippings are distributed upon and over the milk-cans 7, as best seen in Figs. 3 and 4. The collector 6 may be rigidly secured to the underside of the ceiling 5 by any kind of fasteners 6^c. The bottom portion of the chamber 3 is preferably provided with base-boards 8, which are secured to the inner faces of the uprights 3^b, the said base-boards extending around three sides, as shown in Figs. 3 and 4, and forming with the sheathing 3^c shallow open-top compartments 9. These compartments are preferably filled with saw-dust or like absorbent material 9',

the said absorbent having for its object the collection and retention of more or less of the ice-drippings, and thereby serving to intensify the refrigeration. Inside the base-boards 8 is arranged a concrete floor 10, which directly supports the milk-cans 7, and near the door 4 is disposed a drain-pipe 11, for carrying-off the accumulated drippings, the said pipe being normally closed by a stopper 11'. When the house 2 is filled with ice, the cakes or blocks x are preferably placed in close contact with the three exposed vertical walls of the chamber 3, and the ice is also piled upon the top 3^e, as shown in Figs. 1 and 2. The chamber 3 is preferably made of relatively heavy and stout material for withstanding the great weight of the ice which is placed upon the top 3^e. By the foregoing construction and arrangement of the refrigerating chamber 3, dairy products, vegetables and fruits may be kept at the proper temperature, for indefinite periods, without perceptible variation, and without requiring any handling of the ice. The provision of the chamber 3 furthermore obviates the necessity of opening the ice-house 2, especially during hot weather, for obtaining the usual daily supply of the ice for cooling the milk and other articles, as heretofore practiced. The value of the latter feature will be appreciated when it is understood that the stock of ice melts and wastes away very rapidly during the summer months, when the ice-houses are open daily, as explained. By combining my refrigerating chamber with the ice-house, not only effects a great economy, but a refrigerating temperature between 50° and 60°, or even lower, may be maintained in the chamber 3 during the entire summer season, without the expenditure of any time or labor, after the refrigerating means is once installed.

Having thus described my invention, what I claim, is—

1. The combination with an ice-house, of a refrigerating chamber comprising a hollow structure disposed entirely within the ice-house adapted to be partially surrounded by and covered with ice, the water resulting from the melting of the ice on top of the structure adapted to filter through said top, a split ceiling adapted to carry the water towards the middle of the structure, and a drip-collector carried by the ceiling having a rib disposed between the sections of the ceiling for shedding the water away from the middle of the structure and having perforated valleys for collecting and discharg-

ing the water upon receptacles disposed within said structure.

2. The combination with an ice-house of a refrigerating chamber disposed entirely within the ice-house adapted to be partially surrounded by and covered with ice and having one end that abuts one wall of the ice-house, the top of said chamber being formed with loosely arranged planks between which the drippings from the melted ice gravitate into the chamber, a split ceiling in said chamber, the halves of said ceiling declining towards the middle of the chamber, and a drip-collector supported by the underside of the ceiling having a water-shedding rib projecting upwardly between the halves of the ceiling and having spaced perforated valleys for collecting and distributing the drippings over various receptacles disposed in said chamber.

3. The combination with an ice-house of a refrigerating chamber comprising an oblong box adapted to be partially surrounded and covered by ice, one end of said box abutting a wall of the ice-house, a door containing a window disposed in said wall, the top of said box being provided with crevices for the dripping of water resulting from the melting of the ice into the box, a ceiling beneath said top arranged in spaced sections, a drip-collector comprising a horizontally disposed plate having a central rib which is disposed between said sections and having troughs disposed at the opposite sides of said rib for collecting the drippings from the melted ice, the said troughs having perforations for the escape of the drippings, and a series of base-boards forming compartments near the bottom of the box adapted to collect portions of said drippings.

4. The combination with an ice-house having a door opening in one wall, a refrigerating chamber comprising a hollow structure adapted to be partially surrounded by ice and having one end facing said wall, of a cover for said chamber comprising spaced members through which the ice water drips into the chamber, a drip-collector disposed beneath and parallel to said cover, adapted to shed the water towards the opposite sides of the chamber and having a plurality of perforated valleys which collect and discharge the drippings towards different parts of the chamber, and a door for closing the opening in said wall, said door having a window for lighting the interior of the chamber and for destroying certain germs.

In testimony whereof I affix my signature.
FRANK E. CALKINS.