

No. 626,061.

Patented May 30, 1899.

R. GRAHAM & E. R. M. PIERCE.
ADJUSTABLE FLOOR FOR REFRIGERATOR ICE TANKS.

(Application filed Aug. 24, 1897.)

(No Model.)

Fig. 1.

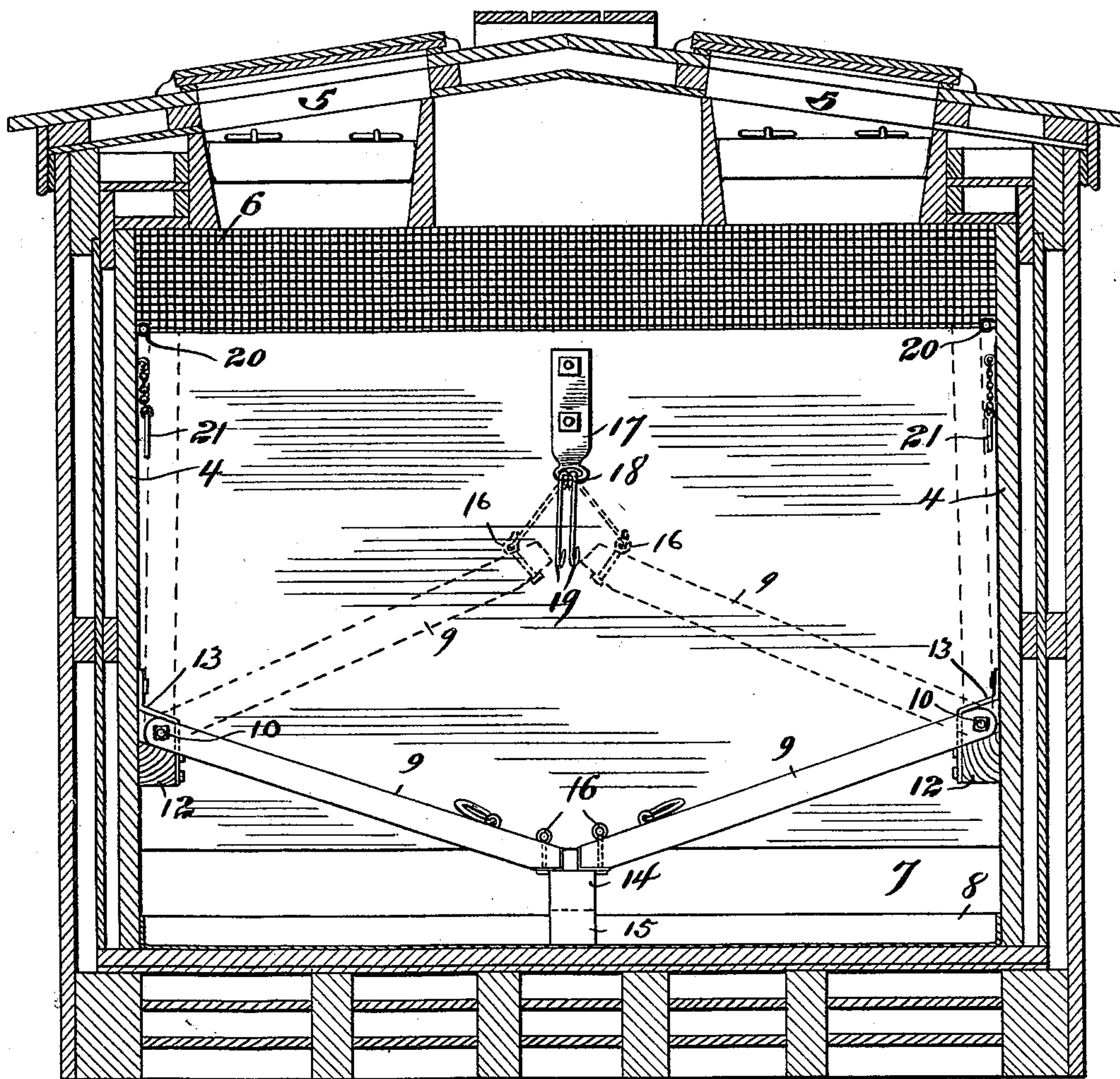
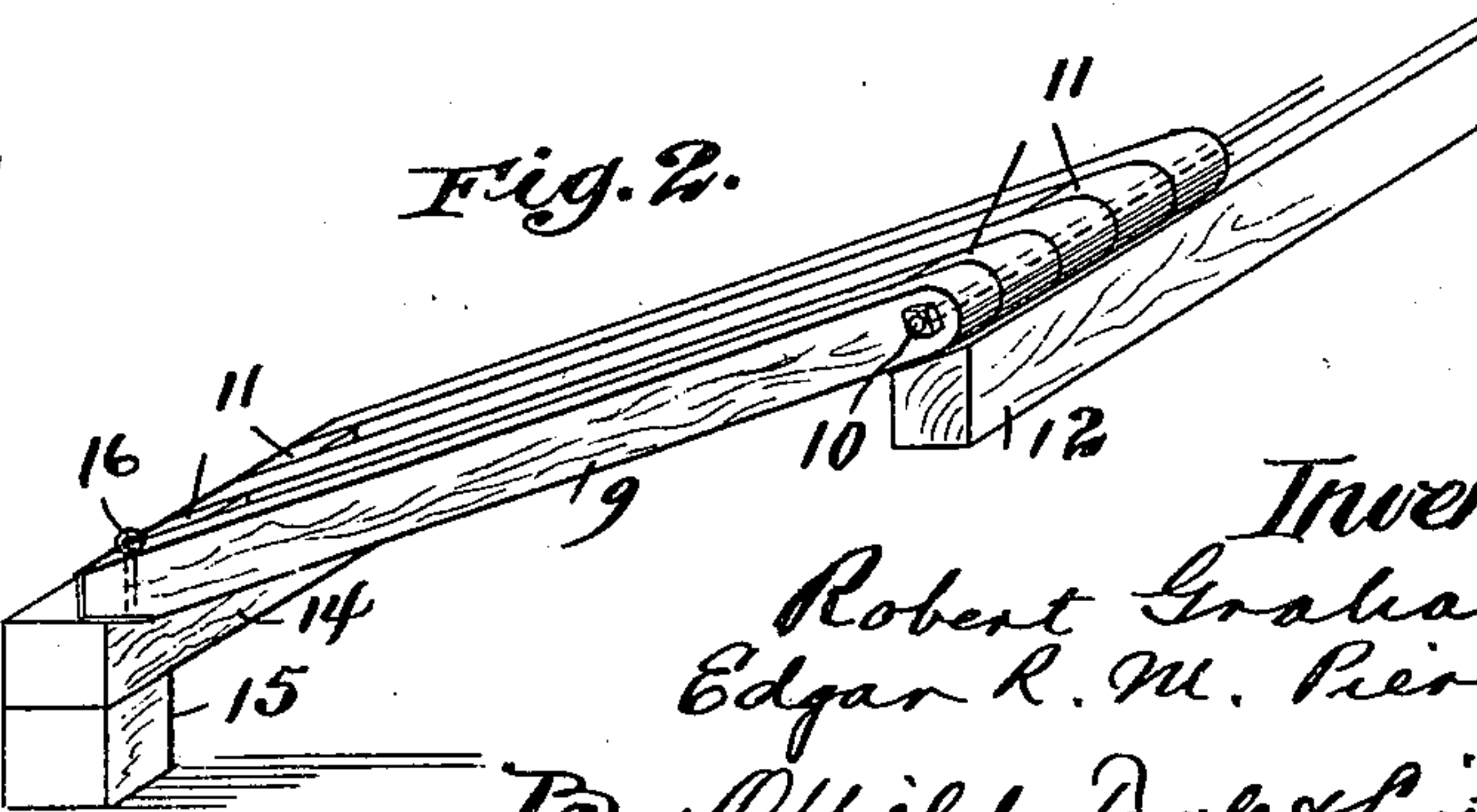


Fig. 2.

Witnesses,

F. O. Mann,
Frederick Goodman



Inventors,

Robert Graham
Edgar R. M. Pierce

By Offield, Dowle & Smith

Attys.

UNITED STATES PATENT OFFICE.

ROBERT GRAHAM AND EDGAR R. M. PIERCE, OF SACRAMENTO, CALIFORNIA,
ASSIGNORS TO ARMOUR & CO., OF CHICAGO, ILLINOIS.

ADJUSTABLE FLOOR FOR REFRIGERATOR ICE-TANKS.

SPECIFICATION forming part of Letters Patent No. 626,061, dated May 30, 1899.

Application filed August 24, 1897. Serial No. 649,295. (No model.)

To all whom it may concern:

Be it known that we, ROBERT GRAHAM and EDGAR R. M. PIERCE, of Sacramento, California, have invented certain new and useful
5 Improvements in Adjustable Floors for Refrigerator Ice-Tanks, of which the following is a specification.

This invention relates to adjustable floors for the ice-tanks of refrigerator-cars or other
10 refrigerators, but is particularly adapted to the ice-tanks of refrigerator-cars for the reason that such cars frequently require varying amounts of ice in different portions of the journey and at different seasons of the year.
15 The ice-tanks of refrigerator-cars have heretofore been provided with a supplemental ice-rack hinged to the side walls of the tank above the permanent slatted floor, such hinged sections being capable of folding against the side
20 walls of the car and also capable of being extended horizontally across the chamber, in which latter position they have been used to support ice, affording adequate refrigeration through a portion of the trip. Then when the
25 car with such an arrangement of ice-tank reaches a point where it is economical or desirable to re-ice the car the remnant of the ice on the tanks is moved from one section to the other, the freed section folded up and the
30 ice then pushed over the other section into the chamber below, and the second section thus freed folded up against the side of the car, when the filling of the chamber to the top with ice proceeds. This construction serves
35 in a crude way the main purpose of our invention; but our improvement has several advantages thereover, which will be fully explained hereinafter.

The general object of our invention is to secure the economical and desirable results attained by previous inventors with certain improvements thereon both in economy of construction and convenience of operation.

To attain the objects to which our invention
45 relates, we construct an ice-tank having upright side walls with the usual openings at top and bottom for the circulation of the air, all of which may be of the usual construction, except as required to be modified by the ad-
50 dition of our improved floor. Our floor is preferably made in two sections pivoted or

movably supported at their ends adjacent to the side walls of the car, being capable of assuming different angular positions relatively to said walls and occupying in their
55 two positions of use an inclined position with reference to the floor of the car. A permanent support for the floor is arranged across the ice-chamber near its bottom, which support may be a beam supported on suitable
60 blocks resting in the floor-pan, and when the floor is supported in position on this support the tank may be filled with ice to the extent of its cubical capacity, save the triangular spaces under the floor or hinged ends of the
65 floor-sections. These sections may, when a smaller quantity of ice will suffice in use, be raised to an inclined position and their inner ends elevated above their outer or hinged ends, thus reducing the size of the chamber
70 and supporting the ice in an elevated position.

In the accompanying drawings, Figure 1 is a transverse sectional view through the ice-tank of a refrigerator-car, looking toward the interior of the car. Fig. 2 is a broken per-
75 spective view of a part of one of the floor-sections.

In the accompanying drawings let 4 represent the side walls of a car having in its
80 roof the usual ice-tank opening 5.

6 represents the air-inlet opening of the tank, usually screened, and 7 the cold-air outlet at the bottom. Upon the floor is placed the usual floor-pan, (indicated at 8,) and above said permanent floor are movably supported
85 the ice-racks 9. Said ice-racks may be conveniently formed of slats or scantlings strung upon the rods 10, with suitable filling-blocks 11. Upon the side walls of the car are se-
90 cured the cleats or stringers 12, their upper faces being preferably beveled, and upon said beveled surfaces the outer ends of the ice-racks rest. Said outer ends are preferably rounded, and the racks are confined by the straps 13, passing over the filling-blocks and
95 secured to the side wall and stringer, although any other suitable means for holding the racks against separation from their supports may be employed. A permanent support for the ends of the rack-sections may be provided
100 by the cross-timber 14, supported upon suitable blocks 15, resting in the ice-pan, and

said rack-sections may have eyebolts 16 near their free ends.

17 represents a hanger provided with an eye 18 to receive the hooked rods 19, whose lower ends are hooked into the eyebolt 16.

20 represents a ring with eyebolt, with which each section is provided as a convenient means for raising them, and said sections may be lifted and there supported from the hook-bolts to the intermediate position shown by the dotted lines in Fig. 1. These two adjustments of the floor-sections give the necessary variation in cubical capacity required and take the place of the permanent floor and adjustable floor heretofore employed and above referred to. For the purpose of cleaning the ice-tank the sections may be thrown up into the vertical position shown by the dotted lines in Fig. 1 and the eyebolts 16 secured to the eyebolts 20 by means of the pins 21.

While we prefer the particular construction above described, variations may be made therein so long as the feature of floor-sections capable of being maintained in the two positions inclined to the horizontal, herein shown and described, is preserved. The advantages of this construction are numerous. The original cost of construction and the continual cost of hauling an extra or supplemental floor are avoided and the space occupied thereby is utilized for the storage of ice. The sections being placed at an angle in both of their positions in use, the force of the shock in filling the tank with ice is much lessened. The particular point at which the floor-sections are hinged at the outer ends may be varied; but we prefer to support such outer ends in such a position that when raised the space above the floor-sections will be slightly greater than the chamber or space below. It is obvious that the ice-chamber may be expanded and contracted as to its cubical capacity to the extent of the space inclosed between planes passing through the pivotal lines and the upper and lower central supports of the floor-sections. While we have shown means for supporting the floor-sections in only one elevated position, it is obvious that by using hook-bolts of different lengths or by using adjustable hangers the angle of inclination

of the floor-sections in their elevated positions may be varied.

Without limiting our invention, therefore, to the precise details of mechanical construction, we claim—

1. An adjustable floor for refrigerator ice-tanks comprising sections movably supported at their outer ends and capable of swinging above and below a horizontal plane at their inner ends, whereby the size of the ice-tank may be varied, and means for supporting the inner ends of said sections in both their raised and lowered positions, substantially as described.

2. An adjustable floor for the ice-tanks of refrigerator-cars comprising in combination two sections hinged at their outer ends and capable of being moved at their inner ends in diagonal positions respectively above and below a horizontal plane passing through their pivots, and means for supporting the inner ends of said sections in both their raised and lowered positions, substantially as described.

3. The combination, with an ice-tank having upright walls, of an adjustable floor constructed in sections, said floor-sections being movably supported at the outer ends, a permanent support for their inner ends located below the points of support and a retaining or suspending means arranged above the said points, substantially as described.

4. The combination, with the ice-tank of a refrigerator-car, of adjustable floor-sections hinged at their outer ends to the side walls of the car, a support for the inner ends of said sections extending transversely of the ice-tank and below their pivotal points, a hanger for said inner ends adapted to support said inner ends at a point above their pivots, and said sections being capable of folding into a vertical position, with means for retaining them in such position to afford access to the floor of the tank for cleaning, substantially as described.

ROBERT GRAHAM.
EDGAR R. M. PIERCE.

Witnesses:

E. L. HAWK,
C. D. HAWK.