

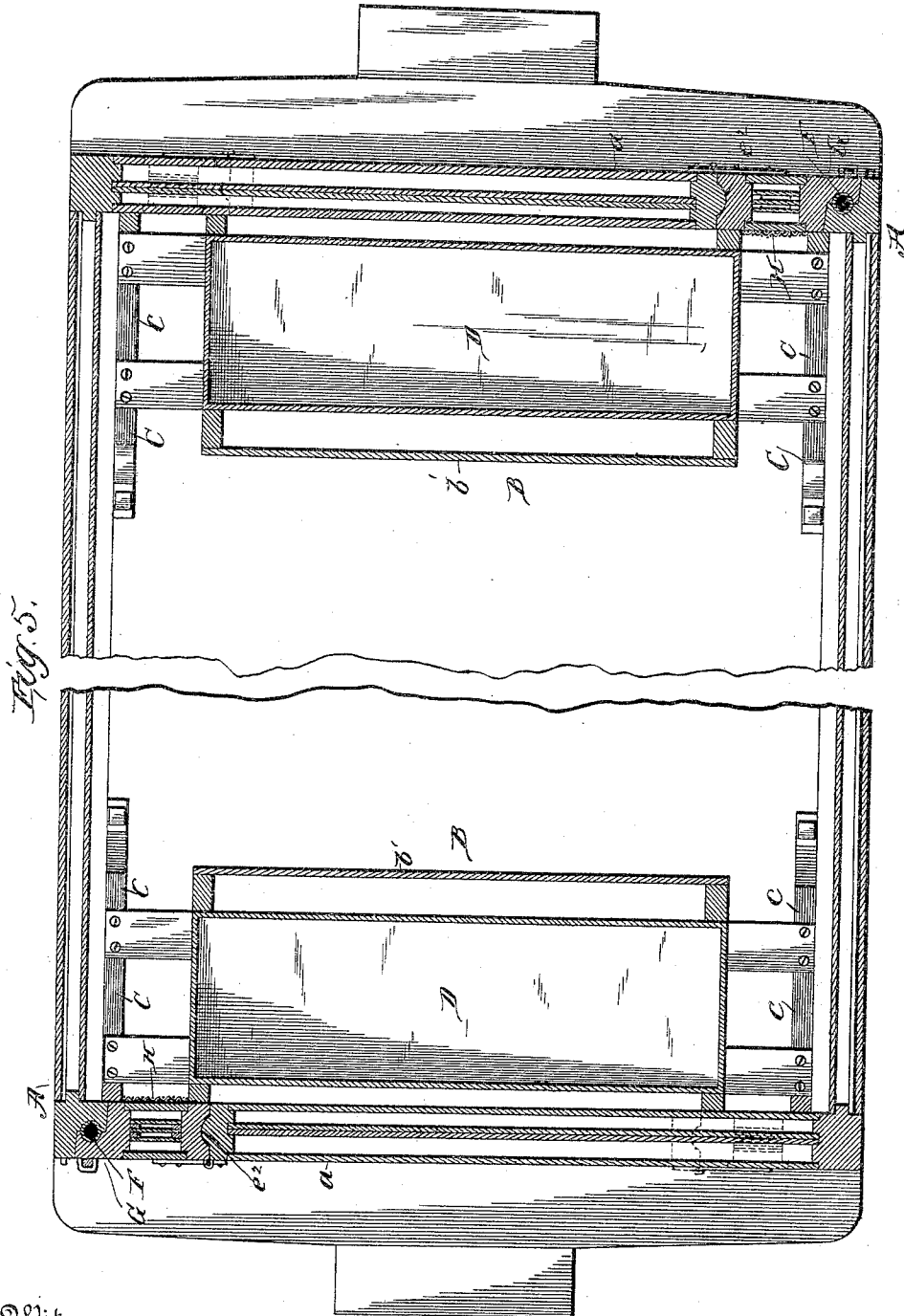
(No Model.)

2 Sheets—Sheet 2.

D. W. RIORDAN.
REFRIGERATOR CAR.

No. 436,545.

Patented Sept. 16, 1890.



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UNITED STATES PATENT OFFICE.

DENNIS W. RIORDAN, OF CHICAGO, ILLINOIS.

REFRIGERATOR-CAR.

SPECIFICATION forming part of Letters Patent No. 436,545, dated September 16, 1890.

Application filed January 27, 1890. Serial No. 338,183. (No model.)

To all whom it may concern:

Be it known that I, DENNIS W. RIORDAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Refrigerator-Cars, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a vertical section at one end of a car embodying my improvement, taken lengthwise of the car on the line 1 1 of Fig. 2; Fig. 2, an end elevation of the same partly broken away; Fig. 3, a plan section of the same, taken on the line 2 2 of Fig. 2; Fig. 4, a detail end elevation of a small portion at the lower corner of the car, the ventilating-door being thrown open, and on an enlarged scale; Fig. 5, a plan section of the entire car broken away centrally.

My invention relates to refrigerator-cars which are intended for the transportation of perishable substances long distances, which are capable of being preserved by a low degree of temperature in the car.

The object of the invention is to provide means for readily changing the car to a ventilated car adapted to transport fruits and other like products where ventilation is required.

The invention consists in providing small narrow doors in the ends of the car, extending from top to bottom, which are simply thrown open whenever it is desired to convert the refrigerator-car into a ventilated car.

I have shown only so much of a car in the drawings as is necessary to an understanding of this improvement, and shall describe the structure only as may be necessary for the same purpose, for the main construction of the car, whereby it is made a refrigerator-car, constitutes no part of my present improvement, and may be like any of the refrigerator-cars known and in use.

In the drawings, A represents the body of a refrigerator-car, *a* being the end walls and *a'* the side walls.

In the construction shown in the drawings, which represent a refrigerator-car of my construction, there is provided in each end a compartment B, which extends from the top of the car nearly to the bottom and rests on suit-

able supports C. Within this compartment are arranged the ice-tanks D, which are somewhat smaller than the interior of the compartment, so as to leave a free space all around them. The front *b* of the compartment does not extend to the bottom thereof, thereby leaving a free wide opening out from the bottom of the compartment into the car, as seen in Fig. 1 of the drawings. There is also a door or doors *b'* in this front of the compartment, which are double-walled, so as to close a corresponding opening cut in the front of the ice-tanks, as seen in Fig. 1 of the drawings. This door provides means for icing the tanks from the front. A narrow opening *a*² is provided in the end of the car close to the outer corner and extending from top to bottom of the car. This opening is closed by a door E, which is long and narrow, corresponding to the opening. On the inner edge it is hinged to an upright post *e*, set in the end of the car, which answers as the door-post, and at the outer edge closes against the corner-post *e'* of the car.

It is well understood that the walls of refrigerator-cars must be constructed so as to thoroughly insulate the interior from the effects of the outside atmosphere. This is accomplished in various ways, ordinarily by having dead-air spaces with suitable partitions and linings, some of which are preferably impervious to air. A particular description is not required here; but on reference to the drawings it will be seen that the walls of my car are thus constructed. Now, it is obvious that this narrow door E must be constructed in a similar way, for it is intended to close the opening when the car is to be used as a refrigerator-car, and of course must protect the interior of the car from the effect of the outside atmosphere. It will be seen on reference to Figs. 1 and 3 of the drawings that the door is thus constructed by making the door double-walled and inserting in the space between partitions of any suitable material and in any number desired. It is also necessary to make the joint practically airtight when the door is closed. This is done by grooving the hanging stile *e*² of the door and providing a rib upon the corresponding post of the casing, so that the two lock together, as seen in Fig. 3 of the drawings. The

remaining parts of the door-frame are rabbeted, as seen in Figs. 1 and 3 of the drawings, the parts of the casing against which they fit being similarly rabbeted, and between these parts I place a rubber gasket F, so that when the door is closed a perfectly-tight joint will be formed. This gasket may be of any suitable form, though I prefer a rubber tube, as shown in the drawings.

10 The door is provided with any suitable fastening and locking device G, the particular construction of which need not be described here. It may be of any construction suitable for the purpose of securely locking the door

15 when closed. At the inside of the door-opening is a sheet H of wire-gauze or perforated metal, which is fastened to the door-case and completely covers the opening. When the car is used as a refrigerator, these doors are

20 of course closed and locked, as described. The car is practically the same as though there were no doors, and its successful use as a refrigerator-car is in no way impaired by the presence of the doors. It often happens,

25 however, that it is desirable to use the refrigerator-car as a ventilated car for the transportation of fruits or other like products, for which regular refrigerator-cars are not adapted. For instance, it will frequently occur that these

30 cars are desired for refrigerators in one direction and as ventilated cars in the other direction on the same lines of transportation. Now, whenever occasion demands the use of this car as a ventilated car it is sufficient simply to

35 throw open these narrow doors in opposite ends of the cars. It will be seen that air will then be admitted at one end of the car through this opening, passing into the ice-compartment and thence out into the interior of the

40 car, and then through the latter, escaping at the corresponding opening at the other end of the car. A thorough ventilation of the car is thus provided without addition of any special devices and without removing or in

45 any way disturbing the ordinary refrigerating devices. The screens H prevent the entrance of dirt, so that the interior of the car will be kept comparatively clean. These ventilating doors may be provided at each corner

50 of the car, so that there will be two at each end, as shown in Fig. 5 of the drawings, or

there may be but one at each end, in which case, however, it will be desirable to arrange them diagonally opposite each other. When opened, the doors are thrown inward back against the end of the car, where they are secured in place, and, being very narrow, they are entirely out of the way and form no obstacle to use in the usual way.

Changes may be made in details of construction, of course, and I do not wish to be understood as limiting myself to the precise details of the structure herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a refrigerator-car, the car-body A, provided with an ice-compartment B at each end, in combination with ice-tanks D, arranged within these compartments, and narrow hinged doors E, provided in the ends of the car at the corners thereof to open into the ice-compartment at one side of the ice-tanks and adapted to completely close and insulate said openings when the car is used as a refrigerator, and to be thrown open to permit air to circulate through said car from end to end when the car is to be used as an ordinary ventilated car, substantially as and for the purposes specified.

2. In a refrigerator-car, the body A, the walls of which are provided with air-spaces, and insulating material to adapt it for use as a refrigerator, and also provided with narrow openings a^2 in the end walls near the corners and extending from top to bottom, in combination with the ice-compartment B, into which the said openings a^2 extend, the ice-tanks D, arranged in said compartments and between the corner-openings a^2 , the hinged doors E, constructed like the car-walls for insulating purposes, the gaskets F, arranged within the door-casing at the closing-joint between the doors and the casing, and the screens H, arranged just within the doors and covering the corner-openings from top to bottom, substantially as and for the purposes specified.

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Witnesses:

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