(No Model.)

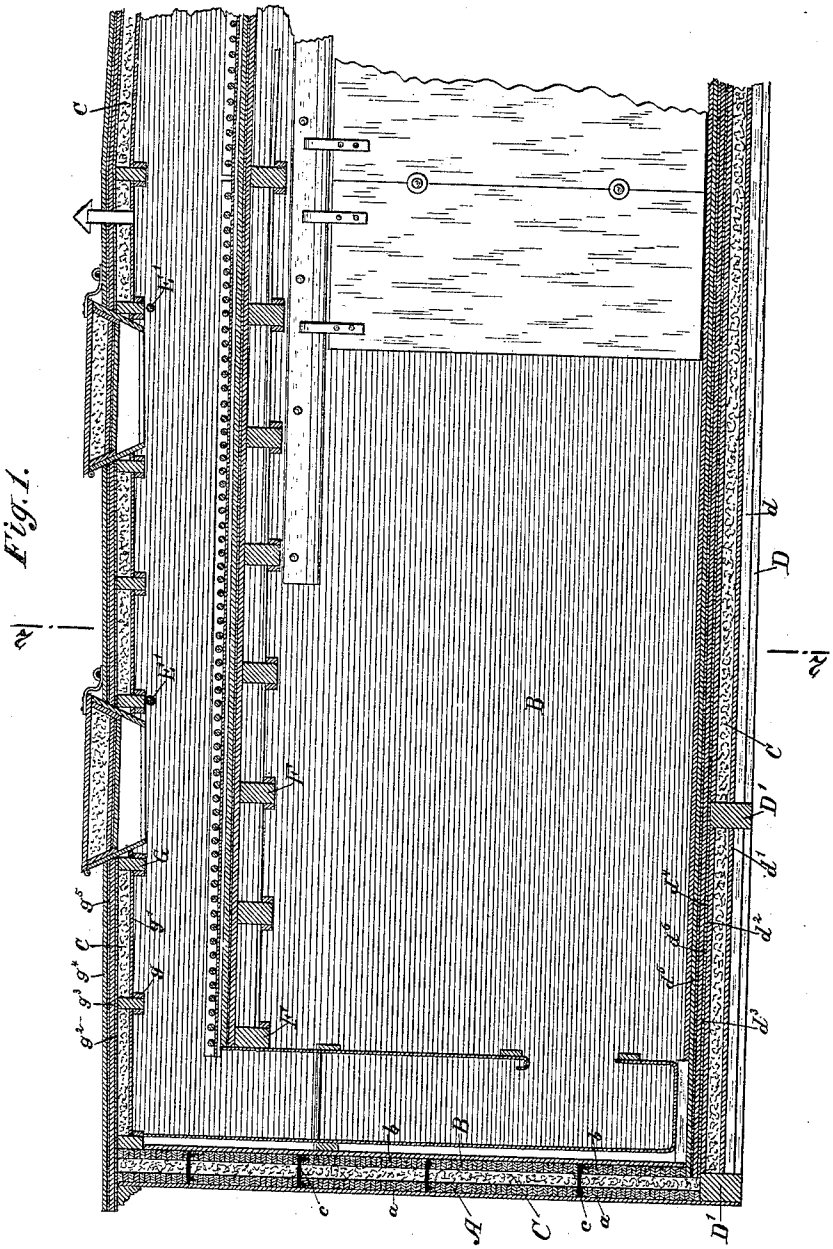
2 Sheets—Sheet 1.

C. B. HUTCHINS.

REFRIGERATOR CAR.

No. 339,185. Patented Apr. 6, 1886.

Fig. 1.



Witnesses:
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(No Model.) 2 Sheets—Sheet 2.

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REFRIGERATOR CAR.

No. 339,185. Patented Apr. 6, 1886.

Fig. 2.

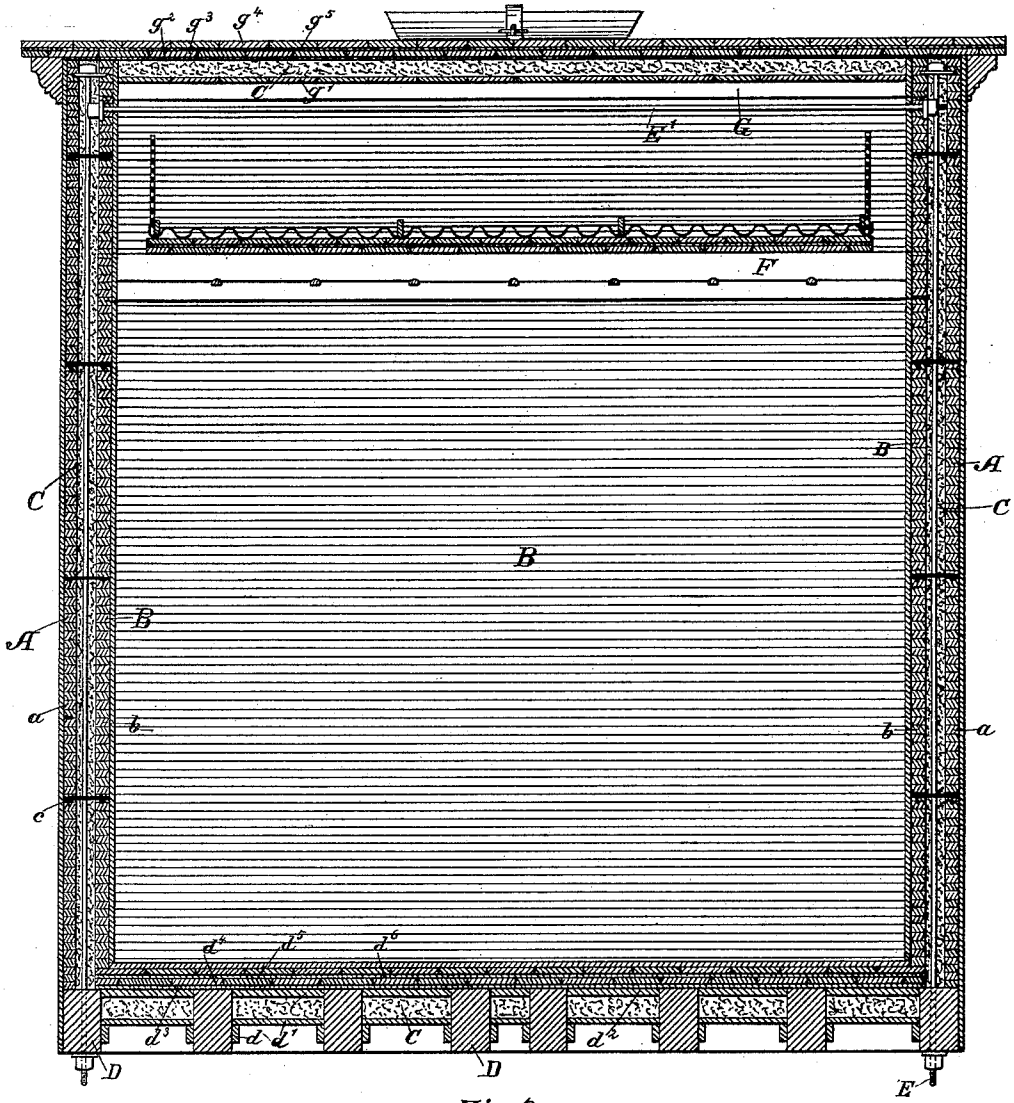
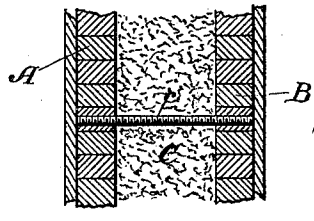


Fig. 3.



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UNITED STATES PATENT OFFICE.

CARLETON B. HUTCHINS, OF DETROIT, MICHIGAN.

REFRIGERATOR-CAR.

SPECIFICATION forming part of Letters Patent No. 339,185, dated April 6, 1886.

Application filed September 29, 1885. Serial No. 178,518. (No model.)

To all whom it may concern:

Be it known that I, CARLETON B. HUTCHINS, a citizen of the United States, residing in Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Refrigerator-Cars, of which the following is a specification.

This invention consists in certain improvements in the construction of the double walls of refrigerator-cars and the base or platform upon which they rest, as will be more particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a central longitudinal vertical section of a car embodying my invention. Fig. 2 is a cross-section on line 2 2 of Fig. 1, and Fig. 3 an enlarged view of the stay.

In the drawings, A and B represent, respectively, the outside and inside walls of the car, each composed of flat pieces or strips *a b*, laid one on top of another. These flat pieces *a b* are built up straight, without any curve or camber, both at the side and end walls of the car. The requisite pitch or curve is given to the roof by employing a number of short and tapering pieces, *a b*, at the top of the side walls.

C represents the non-heat conducting or insulating material, preferably consisting of woolen rags cut into fine shreds packed into and filling the space between the walls A and B.

The walls A and B are provided with stays or braces *c* at intervals to connect and bind the same together. The flat pieces *a b* should be nailed or spiked down as they are laid up one at a time.

D and D′ represent the longitudinal and cross frame-pieces of the base or platform of the car.

The longitudinal beams D, which extend from one end of the car to the other, are provided with cleats *d* at their sides, upon which is laid the lower floor, *d′*. The insulating material C is then packed in on top of the floor *d′*, preferably to the thickness of about three inches, and then the floor d^2 is laid thereon. The floors d' d^2 should be made of short matched boards, and the floor d^2 should be just flush with the frame-work D D′. Sheets of paper, felt, or like material d^3 are next laid down, and then the floors d^4 and d^5, with water-proof paper or like material d^6 between the same. The outer wall, A, is laid directly upon the outer frame-pieces, D D′, and the inner wall, B, should be laid upon the outer margin of the floor, as shown. In this way the packing material C will rest directly upon the outer frame-pieces, D D′. The space between the walls A B, which is filled with the insulating material C, should preferably be about two and one-half inches.

Vertical tie-rods E extend from the walls A B down through the outer frame-pieces, D D′, and serve to bind or press the flat pieces *a b* firmly together and to strengthen the walls. Similar tie-rods, E′, extend horizontally across the car between the opposite walls, B B, and greatly serve to strengthen the whole structure. The beams F, which support the ice-pan, and also from which the carcasses or other articles to be transported are suspended, rest upon the inner walls, B B, at each end. The cross-beams G of the roof also rest upon the inner walls, B B, at each end. These cross-beams G are furnished with cleats *g* at their sides, upon which rest the lower roofing-boards, *g′*. The insulating material C is then packed in until it is about flush with the upper surface of the beams G. Sheets of roofing or other paper, felt, or like material g^2 are next laid down, and then the roofing-boards g^3 and g^4. Roofing composition and paper g^5 are inserted between the roofing-boards g^3 and g^4. The cross-beams G, in connection with the cross tie-rods E′, afford a very strong and rigid construction and serve to brace and strengthen the walls A B at the sides of the car.

The wall A is lined upon the outside with matched boards *a′*, and the wall B is lined upon the inside with similar matched boards, *b′*.

According to my previous patent, No. 245,070, the side flat pieces or strips, *a b*, forming the side walls of the car, are given a curve or camber from one end of the car to the other, in order to give the car the requisite strength and rigidity, and this at the date of said patented invention I deemed necessary; but I have since discovered that the flat pieces *a b* of the side walls may be laid up straight, without any curve or camber, by providing the walls A B with stays or braces at intervals be-

tween them, especially when in connection with a roof and floor structure of the kind herein described, and the vertical and transverse tie-rods.

The stays *c* preferably consist of wood-screws, which extend through suitable threaded holes in the opposite strips, *a b*, of the walls A B. Holes are first bored through the walls A B with an ordinary auger, and the threads are then cut therein, when the screws may be easily and quickly applied. The screws having thus a firm bearing in both the walls brace the same in both directions, both to and from each other, and hold them firm and rigid. The screws being of wood contract and expand with the wooden walls in which they are inserted, and have no tendency to attract frost or moisture, and thus become rusty and imperfect or otherwise deteriorate the walls, as is the case where iron or metal is inserted in the wooden walls of refrigerator-cars; nor do the wood stays tend to conduct heat through the walls, as is the case with metal.

I hereby expressly disclaim as forming no part of this application the subject-matter shown, described, and claimed in my pending application, No. 178,517, filed of even date with this application, and to which other application reference is hereby made.

I also wish it to be expressly understood that I am aware it is customary to use iron stay bolts or screws to strengthen the double walls of steam-boilers, &c., and that I make no claim, broadly, to the use of stay bolts or screws for strengthening double walls.

I claim—

1. The combination, in a refrigerator-car, with the bottom or base frame-work, D D′, of double walls A B, consisting of straight flat pieces *a b*, laid one on top of another, roof-supporting beams G, vertical tie-rods E, and cross tie-rods E′, substantially as specified.

2. A refrigerator-car having double walls A B, each consisting of straight flat strips laid one on top of another, without frame-work, and stays or braces *c*, extending between and connecting said walls, substantially as specified.

3. The combination, with the double walls A B of a refrigerator-car, consisting of flat strips *a b*, laid one on top of another, of wooden stays or braces *c*, extending between and rigidly connecting said double walls A B, substantially as specified.

4. The combination, with the double walls of a refrigerator-car, of stays between the same consisting of wood-screws, forming rigid connections between the two parts of said double walls, substantially as specified.

5. The combination, with double walls of a refrigerator-car having screw-threaded holes therein, of wood-screw stays inserted in said threaded holes, substantially as specified.

CARLETON B. HUTCHINS.

Witnesses:
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