

(No Model.)

C. B. HUTCHINS.

DOOR FOR REFRIGERATING CARS.

No. 339,186.

Patented Apr. 6, 1886.

Fig. 1.

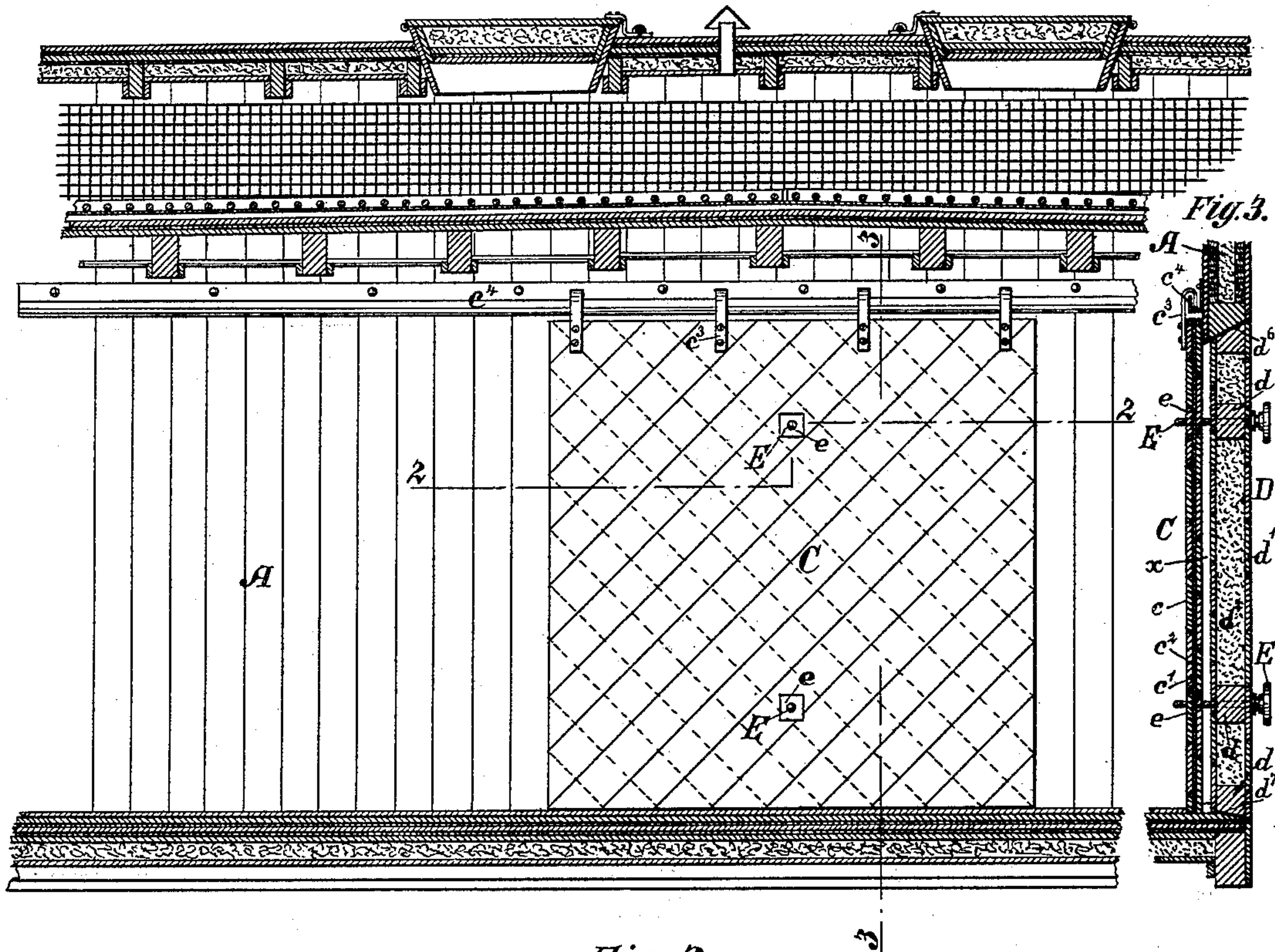
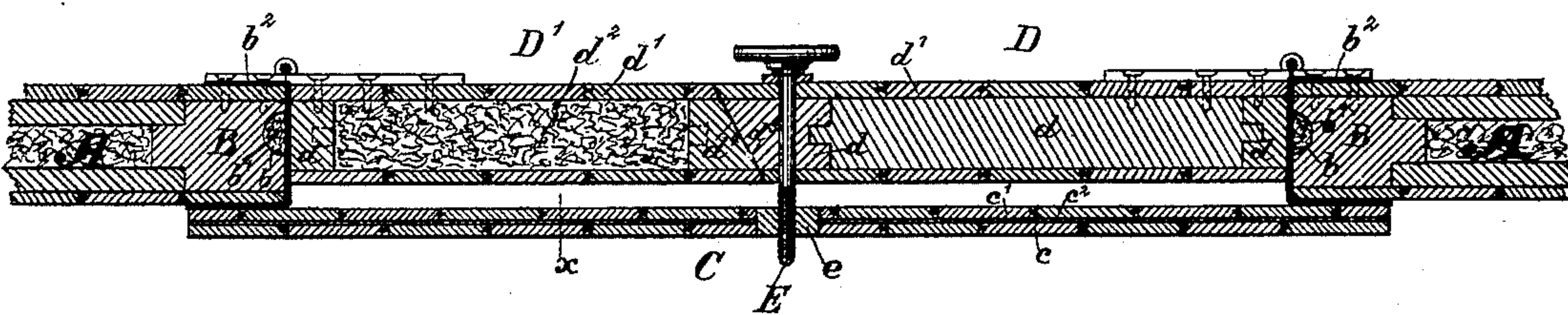


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

CARLETON B. HUTCHINS, OF DETROIT, MICHIGAN.

DOOR FOR REFRIGERATING-CARS.

SPECIFICATION forming part of Letters Patent No. 339,186, dated April 6, 1886.

Application filed September 29, 1885. Serial No. 178,519. (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 Doors for Refrigerator-Cars, of which the following is a specification.

Heretofore great difficulty has been experienced in keeping the joints at the doors of refrigerator-cars tight, especially after the edges of the same become slightly worn from use.

It is the purpose of my invention to produce a double door for refrigerator-cars of a simple and inexpensive construction, not liable to get out of order, and having provision for taking up wear on their closing edges, so that the joints may be closed tightly at all times; and to this end the invention consists in a pair of outside doors hinged to the door posts or casing, and opening outwardly, in connection with an inner sliding door fitting against and overlapping the door-casing so as to break joints, and having a screw-connection with the outside doors, so that it may be pressed or forced slightly against its seat or the face of the door-casing, and at the same time exert the requisite pressure against the outside doors to render their joints tight. The outside doors have inwardly tapering or beveled edges at their ends, and their meeting edges or faces are inclined so that one overlaps the other. The back edges of the doors or the casings to which they are hinged are provided with grooves filled with hair or other yielding elastic packing. By reason of the inclined meeting edges of the outside doors and their beveled ends the screw-connection between the outside doors and the inside sliding door not only draws the latter tightly and firmly against its seat, but also wedges or presses the outside edges of the outside doors firmly against the casing, both at the sides, top, and bottom; and any wear that the edges of the doors may suffer will be readily taken up by simply giving the screw a few additional turns. The screw or screws connecting the inside and outside doors may be made to draw the same together with any degree of force desired and requisite to close them absolutely tight.

In the accompanying drawings, which form part of this specification, and in which similar letters of reference indicate like parts,

Figure 1 shows in elevation, from the inside of the car, a door embodying my invention. Fig. 2 is a horizontal section taken on line 2 2 of Fig. 1; and Fig. 3 is a vertical section taken on line 3 3 of Fig. 1.

In said drawings, A represents one of the side walls of a refrigerator-car; B, the door-posts or vertical casings; C, the inside sliding door, and D D' the outside hinged doors.

The casings B are each provided with vertical grooves *b*, filled with hair or other non-heat-conducting elastic material, *b'*, each casing being also faced with sheets of canvas, cloth, or other yielding material, *b*², which serves to retain the filling *b'* in place, and also affords a smooth and yielding seat or surface for the doors D D' and C to fit against. The cloth or canvas *b*² should extend around the whole casing, as shown.

The doors D and D' may be of any suitable internal construction, but they are each preferably made to consist of an inner frame-work, *d*, sheathed upon the outside and inside with matched boards *d'*, and the space between packed with non-heat-conducting or insulating material *d*², preferably consisting of woolen rags cut into fine shreds. The meeting faces or edges *d*³ *d*⁴ of these doors are cut upon an incline, preferably about as shown in Fig. 2, so that the door D will overlap the door D', and so that when the doors are driven together they will wedge or spread each other laterally, and thus be forced snugly against their respective casings B. The meeting edges *d*³ *d*⁴ of the doors are also lined with canvas, rubber, or other yielding material. The top and bottom edges, *d*⁵ *d*⁷, of the doors are also beveled inwardly, so that when they are forced closed they will form a tight joint at top and bottom, and they should also be lined with canvas or other yielding material.

The inside sliding door, C, is preferably composed of two thicknesses of matched boards, *c* *c'*, arranged diagonally and crossing each other, as indicated in the drawings, with sheets of paper, felt, or other non-conducting material, *c*², interposed between them. The door C is preferably suspended by suitable hangers, *c*³, from a guideway or track, *c*⁴, secured upon the inside of the car above the doorway, in the usual manner.

The sliding door C is firmly pressed or forced

against its seat—that is to say, the canvas-lined margin or face of the door-casing—by means of one or more screws or threaded bolts, E, which at the same time serve to force the doors D and D' out against their casings at top, bottom, or sides. The screws or bolts E are inserted through suitable holes in the vertical frame-piece of the overlapping door D, and enter nuts e, rigidly fixed in the sliding door C. The nut e, however, instead of being fixed in the sliding door, as shown, may, by simply reversing the bolt, be applied upon the outside; but the construction shown is the preferred one, as by this means both the nut and the bolt may be permanently attached to the car, the former to the inside door, and the latter to the outside door. The inside door by this means being pressed out forcibly against the casing, makes a tight joint in itself, and also breaks joints with the outside or hinged doors; and a dead-air space, as X, is also left between the inner and outer doors, which materially aids the insulation or non-heat-conducting qualities of the doors.

With doors constructed according to my invention I find that the temperature of that portion of the car immediately opposite the doors may be kept as low and as uniform as other portions of the car, while with doors heretofore in use in many refrigerator-cars it is found unsafe to place fresh meat or other extremely perishable articles close to the doors, thus materially lessening the actual capacity of the car.

In my pending application No. 178,517, filed of even date herewith, my improved door is shown applied to my improved refrigerator-car, a part of which car is also shown and described in this application. This application,

however, only relates to the door, and I hereby disclaim as forming no part of this application the improvements in the refrigerator-car as distinguished from the door, as the same constitutes the subject-matter of said application No. 178,517, to which reference is hereby made.

I hereby expressly disclaim the double sliding doors shown and described in the patent to Ridgeway, No. 270,126, of January 2, 1883.

I claim—

1. The combination of the outer hinged doors, D and D', having inclined meeting edges, with an inner sliding door, and a screw-connection between the two, substantially as specified.

2. The combination, with the door-casing of a refrigerator-car, having vertical grooves b filled with an elastic material, of outwardly-opening doors D D' hinged thereto, and provided with inclined meeting edges and beveled ends, an inner sliding door, C, and a screw or threaded bolt connecting the inner and outer doors, substantially as specified.

3. The combination, with a door-casing, of an inner sliding door fitting against the inner face or side of said casing, a pair of outwardly-opening hinged doors, and means for binding the inner and outer doors together, substantially as specified.

4. The combination, with the double walls of a refrigerator-car, of a pair of outwardly-opening hinged doors, and an inner sliding door, substantially as specified.

CARLETON B. HUTCHINS.

In presence of—

W. M. LILLIBRIDGE,
E. R. HUTCHINS.