

(No. Model.)

A. B. TAYLOR.
CAR DOOR.

No. 479,144.

Patented July 19, 1892.

Fig 1

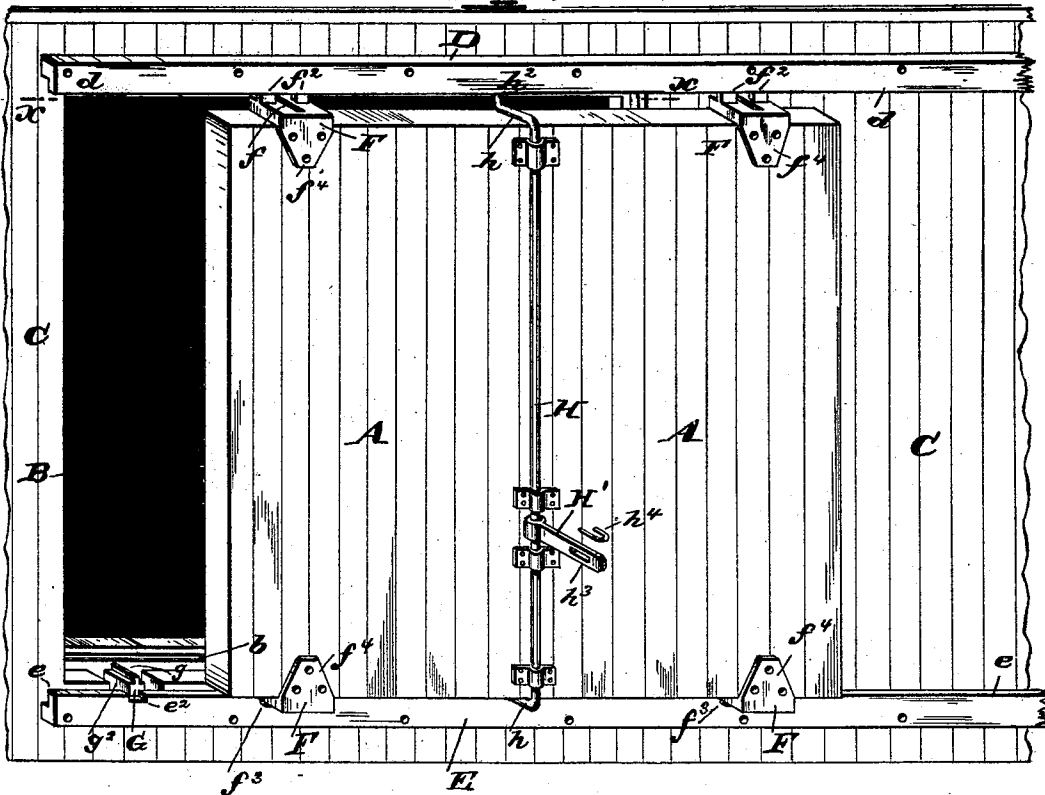


Fig. 2.

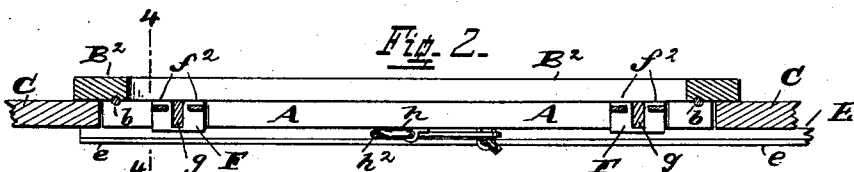


Fig. 3.

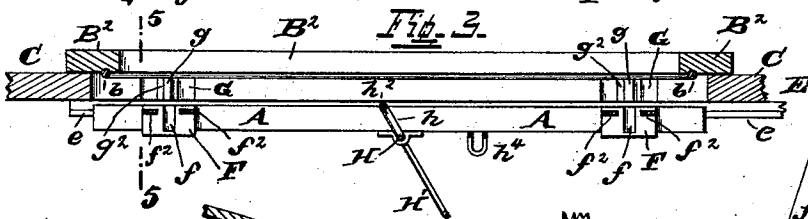


Fig. 6.

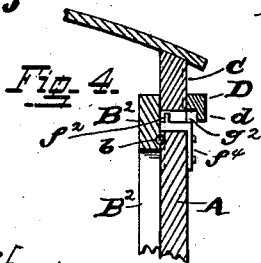
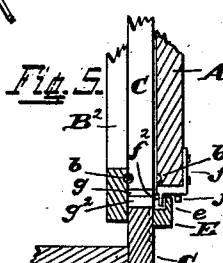
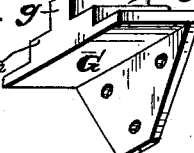
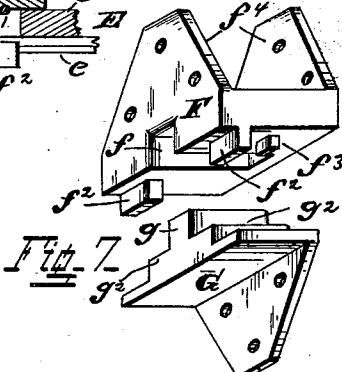


Fig. 5.



Feb 7



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UNITED STATES PATENT OFFICE.

ABRAHAM B. TAYLOR, OF MOUNT AIRY, OHIO.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 479,144, dated July 19, 1892.

Application filed September 14, 1891. Serial No. 405,644. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM B. TAYLOR, a citizen of the United States, residing at Mount Airy, in the county of Hamilton, State of Ohio, have invented certain new and useful Improvements in Car-Doors, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention is designed more especially for use in connection with doors for refrigerator-cars, but may be advantageously applied to ordinary freight-cars. The door is adapted to rest within its opening flush with the outer surface of the car and to be removed therefrom laterally onto a guide-rail, on which the door slides when removed from said opening, as will more fully hereinafter appear.

In the accompanying drawings, Figure 1 is a perspective view of a car-door embodying my invention in an operative position on a car, said door having been removed from and to one side of its opening. Fig. 2 is a horizontal section taken on the dotted line $x x$ of Fig. 1 just below the top guide-rail, showing the door within its opening in a closed position; and Fig. 3 is a similar sectional view showing the door removed from its opening in position to slide on the lower guide-rail. Fig. 4 is a vertical section taken on the dotted line 4 4, Fig. 2, through the top portion of the car, door, and guide-rail, showing said door in a closed position; and Fig. 5 is a vertical section taken on the dotted line 5 5, Fig. 3, through the lower portion of the car, door, and guide-rail, with the door removed from its opening onto the said guide-rail, said views showing one mode of packing the door and casings to render the same air-tight when closed. Fig. 6 is a perspective view of one of the lower recessed guide-lugs removed from the bottom of the door; and Fig. 7 is a similar view of one of the tongued guide-lugs removed from the casing or lower portion of the car-opening, the tongue on said lug being adapted to enter the recess or groove within the lug shown in Fig. 6, said two lugs serving as a guide or way on which the door is inserted and removed from its opening at right angles thereto.

The door A is adapted to fit and rest within the opening B in the side of the car C, the

outer face of said door coming flush with the outer face of the car when the door is in a closed position, as shown in Figs. 2 and 4. To the car are secured two guide-rails D and E, which extend, respectively, above and beneath the opening B, and sufficiently to one side thereof to permit the door to slide away from its said opening, as will more fully hereinafter appear. Said guide-rails are provided, respectively, with a downwardly-projecting flange d and an upwardly-projecting flange e , as shown.

To the top of door A are secured the guide-lugs F, (preferably two in number,) said lugs having a central groove f and upwardly-projecting lugs f^2 , the latter engaging at the rear of flange d on the top guide-rail when the door is removed from its opening, as shown in Fig. 1. The bottom of the door is provided with similar guide-lugs F, the downwardly-projecting lugs f^2 engaging at the rear of the upturned flange e on the lower guide-rail. The lower guide-lugs F are preferably provided with an additional lug f^3 , which latter engages on the outside of flange e , as shown in Fig. 5. These lugs F may be secured to the top and bottom of the door in any desired operative manner; but it is preferred to provide said lugs with the bracket extensions f^4 , as shown, said extensions being bolted to the door at each side thereof.

The top and bottom of the casing which surrounds the opening B have recessed portions, within which are secured guide-lugs G, corresponding in number with lugs F on the door, said lugs G having a central rib or tongue g , which latter is adapted to enter within the groove f of lugs F when the door is being put to place or while being removed therefrom. The weight of the door rests upon the lower guide-lugs F, the bottom face of which (between the lugs f^2) rests upon the shoulders g^2 of lugs G and slides thereon as the door is moved laterally. The flanges f^2 on lugs F engage at each side of the offsets formed by shoulders g^2 on lugs G.

It will be seen that the tongue-and-groove lugs F and G form a guide and way, on which the door slides into and out of its opening B at right angles thereto, and so soon as the door is slid outward it rests on the upturned flange e , the latter engaging between the lugs

f^2 and f^3 , as shown in Fig. 5, in which position the door is free to slide away from and to one side of the opening. The flange e is cut away at e^2 in order to permit the lugs f^3 5 to pass over said flange as the door is operated into and away from its opening.

Any suitable operative device may be employed for sliding the door in and out of the opening on the guide-lugs, one form of such device being shown, which latter consists of a 10 rod H, rotatably connected to said door in a vertical position, said rod having the angular-bent portions h at each end thereof, the latter terminating in the extensions h^2 at right angles thereto, said extensions h^2 engaging between the outer surface of the car and the flanges d e at the rear of the latter, the function of said extensions h^2 being to slide the door into and out of its opening by means of 15 rod H. To the rod H is rigidly connected a lever H', the latter preferably being provided with an opening h^3 to encircle a suitable staple h^4 on the car. The operation of this feature is as follows: Having slid the door to the 20 left hand, (when constructed as shown in Fig. 1,) opposite its opening B, the operator grasps the lever H' and pushes it inward toward the door, which operation will cause the extensions h^2 on rod H to slide along the inner 25 face of flanges d e on the top and bottom guide-rails, and in this manner the door slides into its opening laterally at right angles to the face of the car. The tongue-and-groove guide-lugs F and G at the lower portion of 30 the door and opening serve to properly and evenly guide said door into and out of its opening.

The door is retained and locked within its opening by means of lever H', which encircles 35 or slips over the staple h^4 at the opening h^3 , a suitable pin or padlock (not shown) being inserted within said said staple in the usual manner.

When used in connection with a refrigerator-car, it is desirable that all openings shall 40 be closed tightly as possible, and to this end I have provided casing-strips B², attached to the inner face of the car, which strips project over the opening B at all sides thereof. 45 Within each strip is provided a semicircular groove, having secured therein a strip of rubber or other elastic packing b , which packing is adapted to fit within corresponding grooves b^2 on the inner face of the door and surrounding 50 the latter, which will render the opening comparatively air-tight when said door is in a closed position.

The advantages of my invention consist of its simplicity of construction and operation 55 and cheapness of manufacture. By the use of the guide-lugs F and G and guide-rails D and E, I am enabled to dispense with hinged or pivoted hangers. By the use of said rails and lugs the horizontal and lateral move-

ments are accomplished by a sliding motion. 65 The lower lugs F being the only portions which rest upon the edge of flange e , the longitudinal sliding movement is easily accomplished, the lugs f^2 and f^3 serving to retain 70 said door in position on said flange.

It will be seen that the movements of the door consist of a longitudinal sliding movement on the lower guide-rail E and a lateral sliding movement at right angles thereto 75 within its opening.

Another valuable feature of my invention is that the tongues and grooves on lugs F and G serve to retain the door in proper position within its opening and will not permit said door to strike or impinge against the 80 jambs of its opening while being inserted or removed therefrom. All lateral movement of the door is overcome by the use of said tongues and grooves while said door is being 85 slid within or from its opening in the car.

What I claim as new, and desire to secure by Letters Patent, is—

1. A car having a suitable cased opening with guide-rails connected thereto above and below said opening, in combination with a 90 door provided at top and bottom with lugs F, having a groove f therein, and lugs G, connected to the top and bottom casing of said opening, said latter lugs having a tongue 95 g , and suitable means for sliding said door out of its opening onto the lower rail and for retaining said door thereon in a sliding position, substantially as set forth.

2. In combination with a car having a suitable opening therein, the rails D and E, connected to said car, said rails having flanges d 100 and e , respectively, door A, having lugs F connected to the top and bottom thereof, said lugs having the extensions f^2 and groove f , the lower lugs having an auxiliary extension f^3 , 105 lugs G, connected to the top and bottom casing of said opening, said lugs having a tongue g , the lower rail having a recess e^2 , the tongues g resting and adapted to slide within the grooves f , and suitable means for 110 operating and locking said door.

3. A car having an opening with flanged guide-rails connected thereto above, below, and extending to one side of said opening, 115 lugs F, connected to the top and bottom of said door, with grooves f in said lugs, lugs G, connected to the top and bottom casing of said opening, with tongues g on said latter lugs, and rod H, connected to said door, said rod 120 at each end having the angular portions h h^2 , the portions h^2 engaging at the rear of the flanges on said guide-rails, for the purposes set forth.

ABRAHAM B. TAYLOR.

Witnesses:

W. B. BRICE,
O. M. HILL.