

(No Model.)

2 Sheets—Sheet 1.

R. T. GARLAND.
CAR DOOR.

No. 531,110.

Patented Dec. 18, 1894.

fig. 1

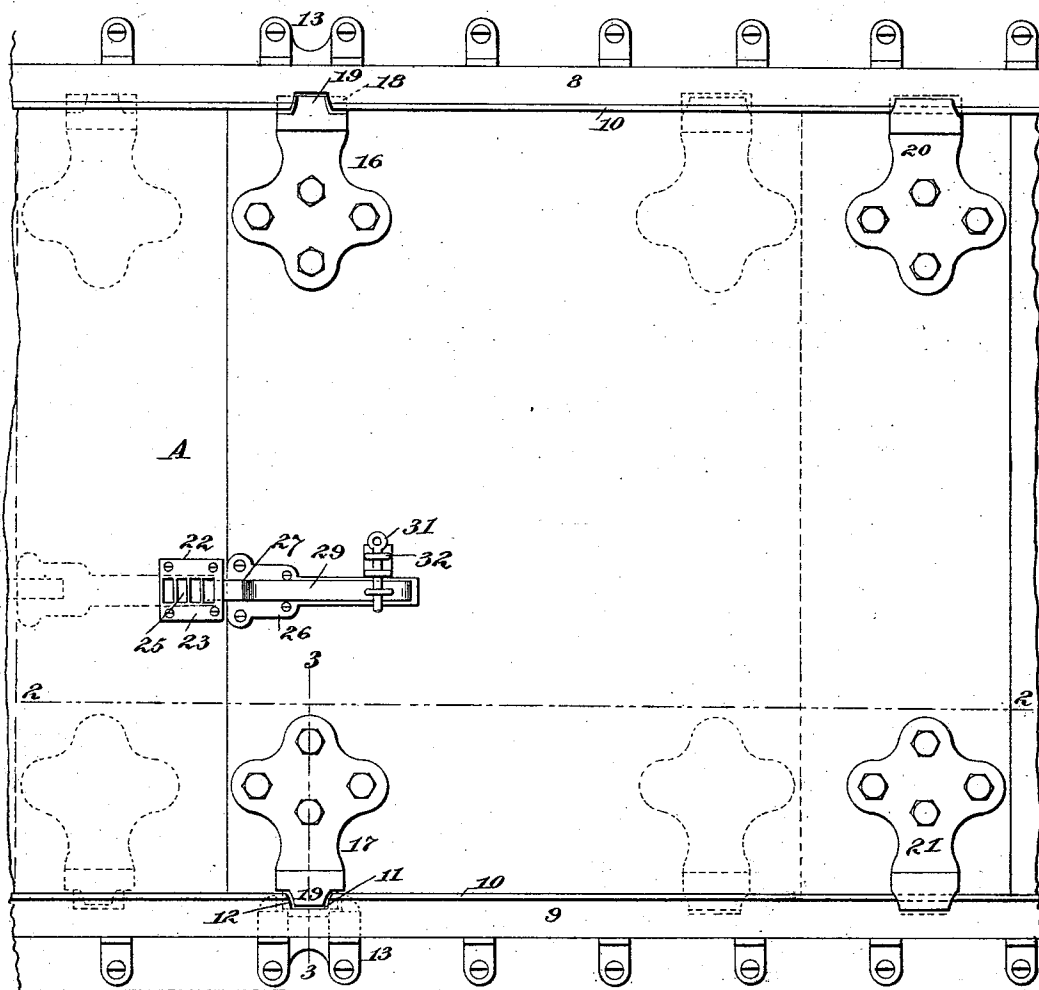


fig. 2

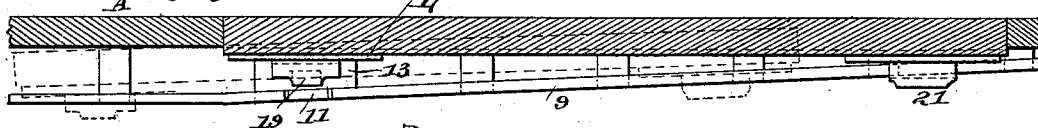


fig. 3

fig. 4

fig. 5



fig. 4

fig. 5

Witnesses;

J. F. Coleman
J. F. Marshall

Inventor

R. T. Garland
by A. G. Heyman

Atty

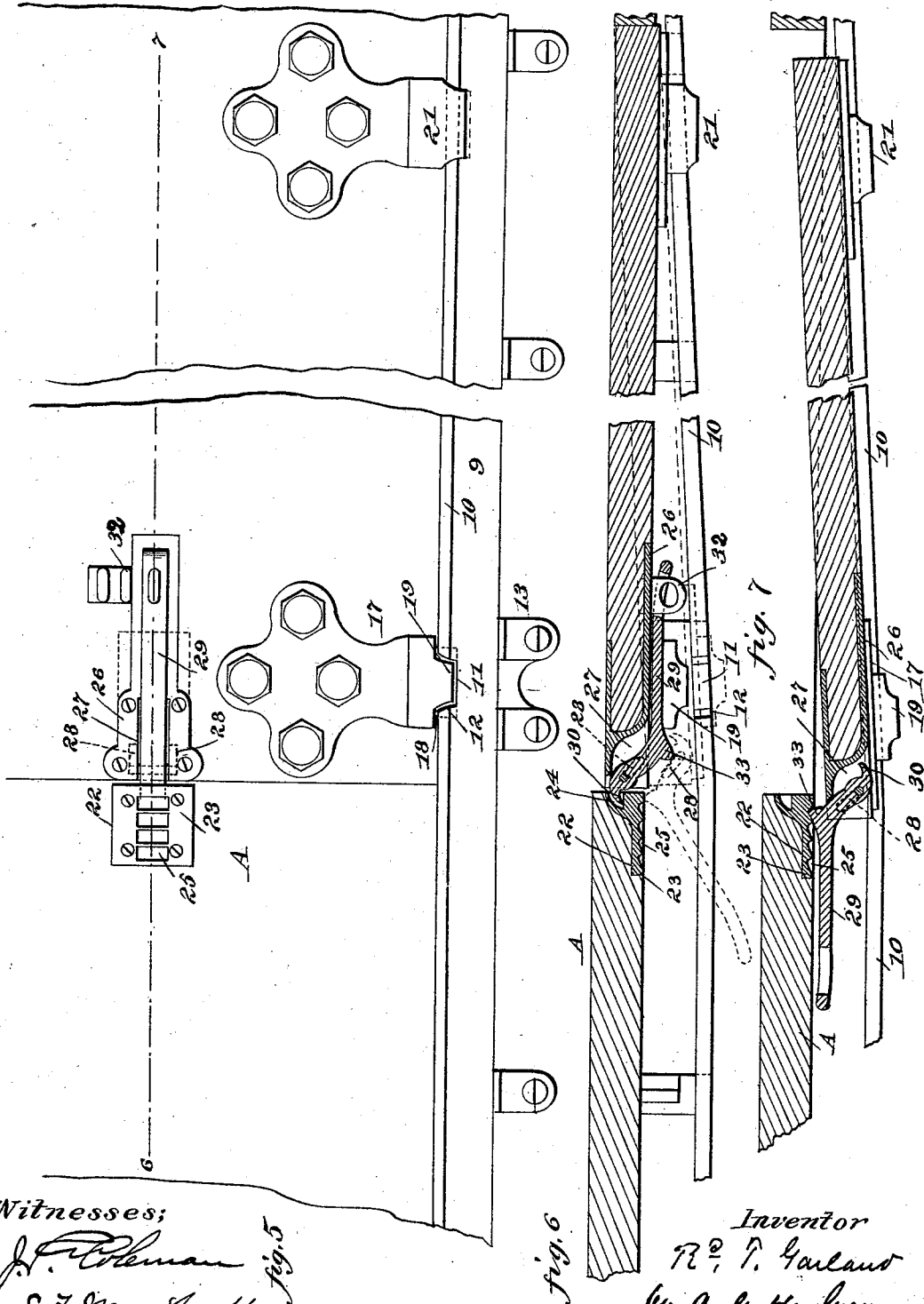
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2 Sheets—Sheet 2.

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Witnesses;

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S. F. Marshall

fig. 6

Inventor

R. T. Garland
by A. G. Heyman,

Atty

UNITED STATES PATENT OFFICE.

RICHARD T. GARLAND, OF ALTOONA, PENNSYLVANIA.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 531,110, dated December 18, 1894.

Application filed December 14, 1893. Renewed November 21, 1894. Serial No. 529,534. (No model.)

To all whom it may concern:

Be it known that I, RICHARD T. GARLAND, a citizen of the United States of America, residing in Altoona, in the county of Blair, in the State of Pennsylvania, have invented a new and useful Car-Door, of which the following is a specification.

My invention has relation to improvements in car-doors, of that class or construction, wherein the door is carried inward flush with the side of the car when closed, and which is moved outward from the opening at starting and then slid on ways or tracks bearing obliquely from the car side for a distance and then lying parallel with the side of the car; and the invention consists in tracks of particular construction in combination with supporting and guiding brackets, and improved means for fastening the door and for moving it laterally, and starting it on the tracks.

The invention is hereinafter fully described, and particularly pointed and distinctly claimed.

In the accompanying drawings illustrating my invention: Figure 1 is a side view in elevation of the car-door, showing the top and bottom supporting rails, the guide brackets, and the fastener as locking the door in position in the car. Fig. 2 is a section on the line 2—2 of Fig. 1 showing the direction of the track. Fig. 3 is a section on the line 3—3 of Fig. 1 showing the door moved outward with the guiding bracket in alignment with the lip of the track. Fig. 4 is a section on the line 3—3 of Fig. 1 showing the door moved inward and closed. Fig. 5 is a side elevation of the lower portion of a car door having my improvements attached, and drawn to a larger scale than Fig. 1. Fig. 6 is a section on line 6—7 of Fig. 5 showing the position of the fastener when the door is closed and its position in dotted lines when operating to carry the door outward on the track. Fig. 7 is a section on the line 6—7 of Fig. 5 showing the door moved clear out and the lever of the fastener in position as having started it on the track. Fig. 8 is a detail of one of the twin slide brackets.

A designates the side of the car which is of the usual plane construction, composed of upright boards, or other layer of plain stuff.

In the side of the car is made a door-opening of the dimensions desired, and made to be completely and snugly closed by the door when adjusted and arranged in the opening. The door frame has vertical rabbeted uprights or posts as usual against which the door lodges when closed, and which prevents the door from moving inward through the door opening. Along the side of the car, parallel with the top and bottom of the door and opening are secured the tracks 8, 9, formed with a lateral edge flange 10, along their outer edges under which the lips or catches of the guiding-brackets engage, and prevent the door from being jarred, lifted, or moved from its position on the tracks when being slid thereon. In each guide-rail of the door track adjacent to the closing side of the door, is formed a notch 11, made with flaring or outwardly curved sides, 12, substantially as shown in the drawings, and to guide the lug on the door which passes through the respective notches, a twin-slide bracket 13, is secured to the rail, having a way 14, therein to guide the door-bracket, and also formed with passages or grooves 15 to permit the inner flanges of the door brackets to move through when the door is slid along. Adjacent to the closing edge of the door, at a point to register with the flaring-notches of the rails, and ways in the twin-brackets, are secured the guide-brackets 16, 17, at the top and bottom of the door. These brackets 16, 17, have a vertical depending flange 18 on the inner side, and a curved or hooked flange 19, on the outer side, the opening between them conforming to the shape of the rails, so that the hook-flange 19 takes under the flange of the rails and holds the door securely on the track. The hooked-flange 19, is tapered, as shown, to fit loosely the flaring-notch in the rail, and the flange 18, is substantially rectangular and made longer than the notch in the rail, so that when the door is moved outward preparatory to sliding it open, it lodges against the wall of the rail on either side of the notch, and stops the door from being thrown from the track, and brings the opening in the bracket in alignment with the rail ready to permit the door to be slid open. At the other end of the door at the top and bottom, are secured two other guide-brackets 20,

21, the rail passage through them being identical to those described as formed in the brackets on the other end of the door. Both the flanges of the brackets 20, 21, are longer
 5 than the notches in the rails, so that in passing across or over the notches the door will not be thrown from the rails. By making the notches of the rails flaring and the flanges of the brackets which enter them tapering,
 10 there is very little prospect of lodgment of the parts when moving the door out or in. In square flanges and corresponding notches there is likelihood of contact of the edges lodging against each other.

15 The track rails at that portion lying along the door opening are oblique to the side of the door, the end at the abutting edge of the door being closed to the car to carry the door in at that point, and from thence the rails
 20 bear out, to the other side of the door opening, from which point the rails run parallel with the side of the car and are placed far enough away, to give the door free and easy run-way, substantially as indicated in the
 25 drawings.

To lock the door, unlock it, move it inward and outward, and to start it on the tracks or rails, as well as to draw it tight when moved flush in the opening I have invented and devised the following described means:

30 In the jamb of the door is cut a seat 22, in which is fitted and secured a keeper 23, having a notch or recess 24, to take and hold the nose of the fastening lever, and on the outer
 35 face of the keeper are formed a number of depressions or notches 25, in which a lug or projection on the lever engages when used to throw the door outward and to start the door. In the door is mortised a bracket 26, having a
 40 recess 27, in the walls of which is formed a diagonally arranged slot 28 shown in dotted lines in Figs. 6 and 7 and in the slot 28, is fulcrumed a lever 29. This lever is formed with a nose 30 which takes in the recess 24,
 45 of the keeper 23, so that when the lever-handle is moved down parallel with the door, as shown in Fig. 6 of the drawings, the door is held tight, and the lever may be secured and locked by a pin 31, passed through staples 32, or other suitable locking appliances.
 50 When it is desired to open the door, the lever is released, and the handle turned outward, as shown in dotted lines in Fig. 6 of the drawings, until the lug 33, engages in one of
 55 the notches in the keeper, and then the movement of the lever being continued the door

is carried outward, the lugs on the door-brackets passing through the ways of the twin-brackets and through the notches of the rails, and then by carrying the lever clear
 60 down, as shown in Fig. 7 of the drawings, the door is moved clear out to its limit, and at the same time, started to slide open. If further power is required to start the door clear to
 65 slide, a new purchase is taken in an adjacent notch of the keeper, and the door will slide clear and free along the side of the car.

What I claim is—

1. The combination with a car and a car-door arranged to have one end moved off and onto
 70 guide-rails, of a fastening and starting means consisting of a keeper secured to the jamb of the door-opening formed with a recess and having notches or depressions in its outer surface, a bracket secured to the door formed
 75 with a recess having a slot in its opposite walls, a lever fulcrumed in the slot and arranged to engage in the recess of the keeper to lock the door and formed with a lug to engage the notches in the keeper, whereby the
 80 door may be moved onto the tracks and started thereon.

2. The combination with a car and a car-door of a fastening and opening lever formed with a lug on its outer edge and a notched plate
 85 on the jamb of the door whereby the lever-lug may engage the notches of the plate and start the door on its supports.

3. The combination with a car and a sliding car-door, of track-rails secured along the top
 90 and bottom of the door opening and arranged obliquely to the side of the car and formed with lateral edge flanges along their tread-faces and notches having flaring side-edges in the treads, brackets secured between the rails
 95 and the car and formed with ways registering with the notches of the rails, guide-brackets on the top and bottom of the door having their outer flanges formed to hook under and engage the lateral tread-flange of the rail and
 100 made with tapering side-edges to pass through the notches of the rails and into the ways of the brackets, and the inner flanges elongated to lodge against the notches in the guide-rails as and for the purpose specified.
 105

In witness whereof I have hereto set my hand in the presence of two attesting witnesses.

RICHARD T. GARLAND.

Attest:

A. L. BAILEY,
 A. G. HEYLMUN.