(No Model.)

# P. ALLAIN.

## HANGER FOR CAR DOORS.

No. 457,691. Patented Aug. 11, 1891

Fig. 1.

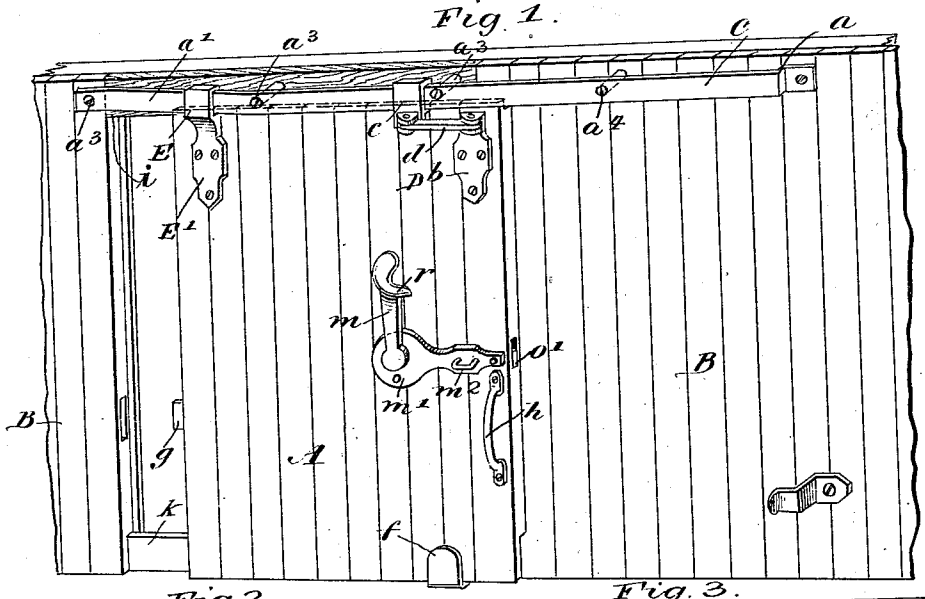



Fig. 2.

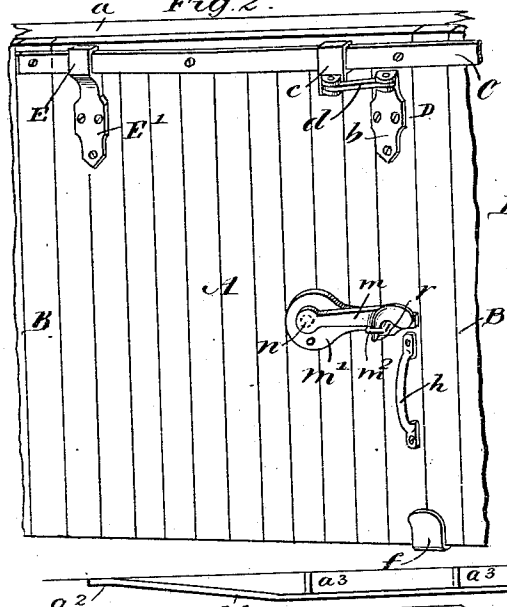
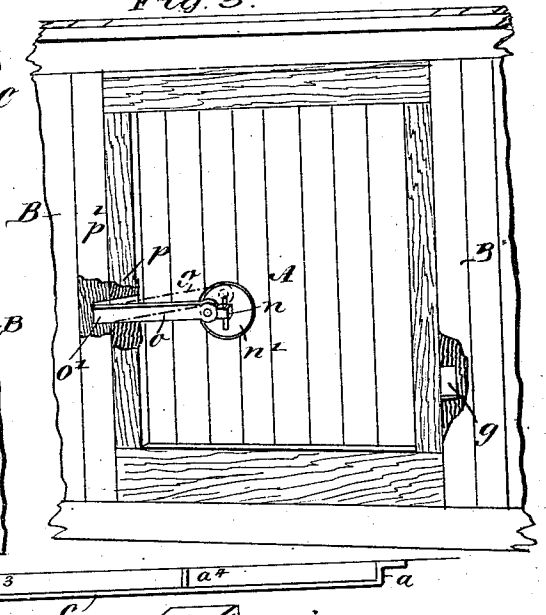



Fig. 3.



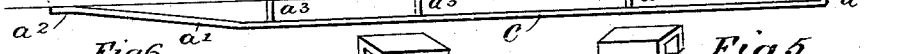




Fig 6.

Fig 5.

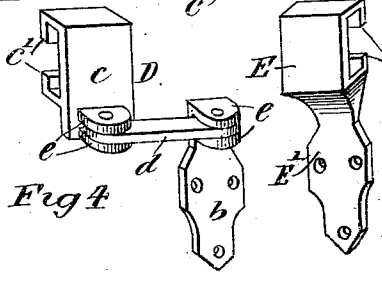



Fig 4

WITNESSES:

Paul Jahst

C. Sedgwick

INVENTOR:

P. Allain

BY Munn & Co

ATTORNEYS

# UNITED STATES PATENT OFFICE.

PETER ALLAIN, OF RUTLAND, ASSIGNOR TO HIMSELF, AND EDWARD MERRILL, OF PROCTOR, VERMONT.

## HANGER FOR CAR-DOORS.

SPECIFICATION forming part of Letters Patent No. 457,691, dated August 11, 1891.

Application filed January 27, 1891. Serial No. 379,231. (No model.)

*To all whom it may concern:*

Be it known that I, PETER ALLAIN, of Rutland, in the county of Rutland and State of Vermont, have invented a new and useful Improvement in Hangers for Car-Doors, of which the following is a full, clear, and exact description.

This invention has for its objects to provide a novel, simple, convenient, and secure means for the support of a freight-car door, which will permit it to receive a sliding movement laterally.

To these ends my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a portion of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a broken perspective side elevation of one side of a freight-car, showing a door supported thereon in accordance with my invention, a locking-latch being also shown in position unlocked and the door partly open. Fig. 2 is a similar view of the car-door in closed adjustment. Fig. 3 is a perspective view of the inner side of the car-door in its closed position. Fig. 4 is a detached enlarged perspective view of one of the supports for the car-door. Fig. 5 is a similar view of the other support for the car-door, and Fig. 6 is a plan view of the hanger-bar.

The car-door A is of the usual form, being a rectangular battened structure conforming in appearance exteriorly with the side of the car B, and for efficiency in service the door should extend at the bottom to the line of the lower edge of the car-siding, so that when closed the line of the lower edge of the car will be unbroken.

Across the top of the car-side B a horizontal hanger-bar C is secured at each end, spanning the door-opening therein and extending beyond said opening a distance equal to the width of the door, which is to slide thereon when it is opened.

The hanger-bar C is preferably made rectangular in cross-section, and has an offset formed on it at *a* near one end, which affords a pad for engagement with the side of the car-body B, whereon it is secured by a screw-bolt. The opposite end portion *a'* of the bar C is bent at an obtuse angle inwardly, so as to locate the pad $a^2$ upon the jamb-timber of the door-aperture, to which timber it is secured. At proper intervals the spacing-studs $a^3$ $a^4$ are introduced between the bar C and side of the car, so as to support said bar and prevent lateral displacement.

The door A is hung on the bar C by two supporting devices of different construction, one support D consisting partly of a bracket-plate *b*, that is flat and sufficiently extended to be substantially secured by screws or bolts upon the exterior of the door, said plate being attached thereto near one side edge and a proper distance from the top edge to adapt it for service. On the bar C another part *c* of the door-support D is loosely mounted, and, as shown, this piece or hanger-clip is formed with jaws *c'*, that hook over the top and bottom edges of the hanger-bar C, loosely embracing it, free to slide longitudinally thereon. The hanger-clip *c* and bracket-plate *b* are connected by a link-bar *d*, pivotally secured at each end to the ears *e e*, that project from the upper and lower ends of said clip and plate, respectively, as shown in Fig. 4. The other suspending device for the door A consists of a loop or clip E, which is formed to embrace the bar C loosely, in the same manner as does the clip *c*, both clips having an opening between their jaws *s*, which will permit them to slide upon the bar C and avoid contact with the studs $a^3$ $a^4$. The clip E is furnished with an integral bracket-plate E', which is suitably perforated for the insertion of screws, by which it is affixed to the door.

When the door is hung, the hanger-clips *c* and E are placed on the bar C, the bracket-plates *b* E' of each supporting device being screwed or bolted upon the outer surface of the door, as before indicated, in such a relative position from the upper edge and the opposite side edges of the door that the link-bar *d* will be free to vibrate, the weight of the door being then imposed on the hanger-clips, a keeper-plate *f*, which is attached to the lower side of the car, preventing an outward displacement of the door.

From the peculiar construction of the door-supporting devices, as described, the door A may be swung outwardly by lateral pressure, so as to permit it to slide in the space between the outside of the car B and the inner surface of the hanger-bar C, as before stated, or be moved opposite the door-opening in the car-side and be swung inwardly to align therewith, thus sealing the aperture in the car-side and aligning the outer face of the door with its general exterior surface.

The securing device for the car door consists, in part, of a fixed lug *g*, which projects from one side edge of the door opposite a socket formed to receive it in the door-jamb toward which the door is to be slid to close it, which lug will enter the socket as the door is moved inward against the frame-timbers *i k*, the complete insertion being effected simultaneously with the lateral movement of the entire door to align it with the car-side, a handle *h* being provided to facilitate the manipulation of the car-door, as stated. The locking device for the other side edge of the door A is comprised of a locking-arm *m*, which is supported on a latch-plate *m'*, that is secured on the outer face of the door at a suitable height. Said plate *m'* has a locking-staple $m^2$ on its outer face near the end adjacent to the edge of the door, and is transversely perforated at a proper point in the opposite end portion to loosely receive a laterally-projecting stud *n* on the inner face of the arm *m*, the end of which is shown in Fig. 3.

A disk *n'* is securely mounted upon the squared inner end of the stud *n*, and one end of a locking-bolt *o* is pivoted to the disk near its edge, so as to be longitudinally projected when the disk is partly rotated.

The locking-bolt *o* is supported to slide endwise by its loose engagement with a slot formed in the vertical bar *p* of the door-batten frame, the free end *o'* of the bolt being adapted to enter an aligning socket cut in the upright jamb-timber *p'*, as shown in Fig. 8.

To effect the locking connection of the bolt *o* from the exterior of the car, the arm *m* is swung downward to project its depending finger *r* through the staple $m^2$, thereby throwing the bolt outwardly into engagement with the socket *o'*, so as to fasten the door A. The door may be further secured by the attachment of a sealing device or a lock upon the inserted end of the finger *r*.

When the door A is to be released, it is only necessary to free the finger-piece *r*, so that it may be removed from the staple $m^2$ and then rock upwardly to the limb *m*, when the door may be drawn outwardly by pulling upon the handle *h*, which will withdraw the door and allow it to slide laterally.

The fastening mechanism forms no part of the present invention, and is not claimed in this application.

It will be noticed that the door A is hung a short distance below the roof of the car, so as to allow its upper edge to clear the studs $a^3$ $a^4$, and, further, that the lower edge of the car-door is in alignment with the lower edge of the car-siding, the last-mentioned feature affording freedom of movement to the door and avoiding the usual obstruction to its sliding movement. It also protects the car-sill from the elements, so as to obviate injury that results thereto when unprotected.

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

1. In a car-door, the hanger D, comprising the vertical clip *c*, having upper and lower jaws *c'* on its inner face to hook over the upper and lower edges of a rail and provided on its outer face at its lower end with two transverse ears *e e*, the vertical bracket-plate *b* having transverse ears *e e* at its upper end, and the link *d*, pivoted at its ends between the said pairs of ears, substantially as set forth.

2. The combination, with a car having a track C, supported, as at $a^4$, over its door-opening and inclined inward at *a'*, of the sliding door fitting said opening and provided at its upper end near its forward edge with a hanger E', having a clip E at its upper end provided on its inner face with spaced jaws *s*, hooking over the upper and lower edges of the rail, and at its rear edge with a hanger D, comprising the clip *c*, having spaced jaws *c' c'* on its inner face embracing the upper and lower edges of the rail, ears *e e* at the lower end of clip, the vertical bracket-plate *b*, secured to the door nearer its inner edge than the clip *c* and formed at its upper end with ears *e e*, and the link *d*, pivoted at its ends in said pairs of ears, substantially as set forth.

his
PETER × ALLAIN.
mark

Witnesses:
THOS. C. ROBBINS,
WILLIAM P. CLARK.