

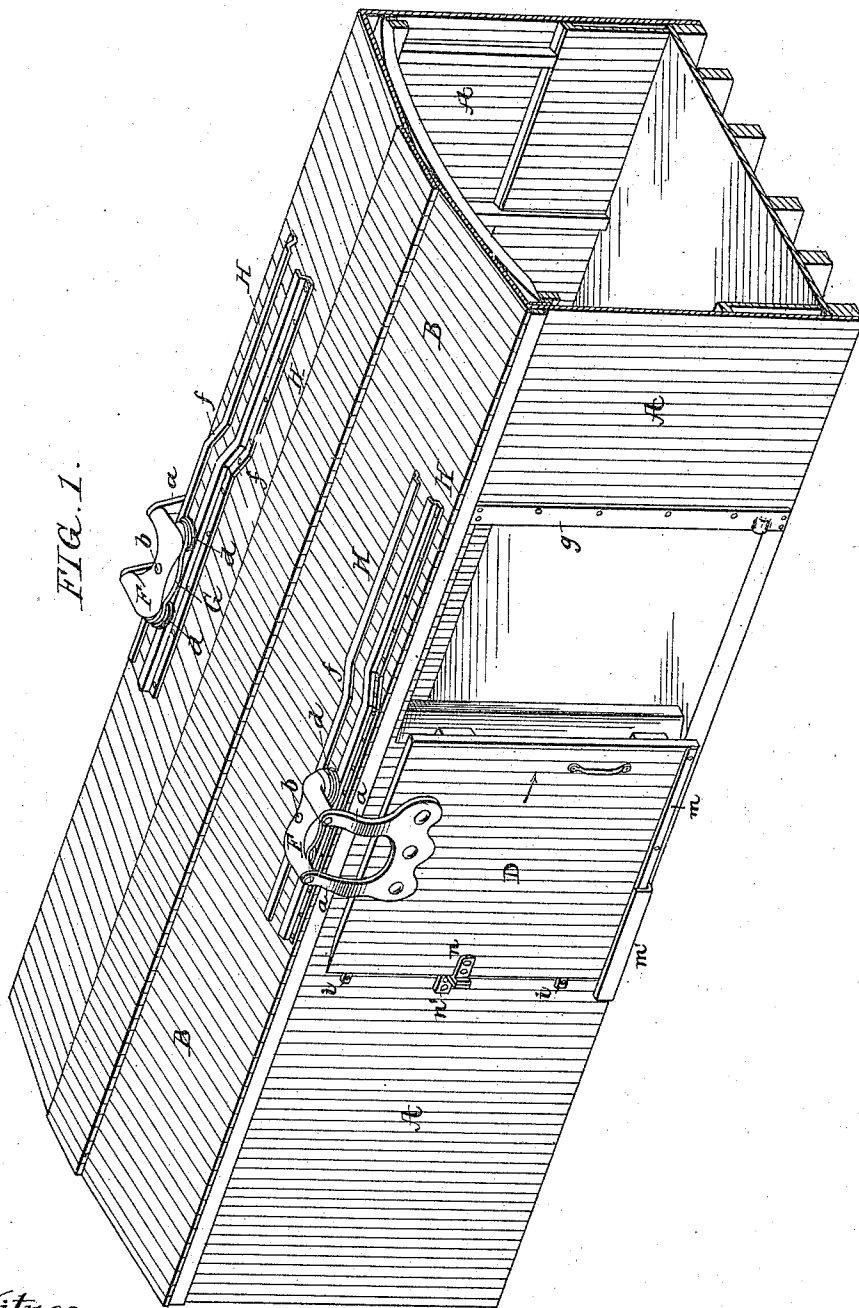
(No Model.)

H. J. SCHMICK.
CAR DOOR.

2 Sheets—Sheet 1.

No. 575,173.

Patented Jan. 12, 1897.



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Murray C. Boyer

Inventor:
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FIG. 5.

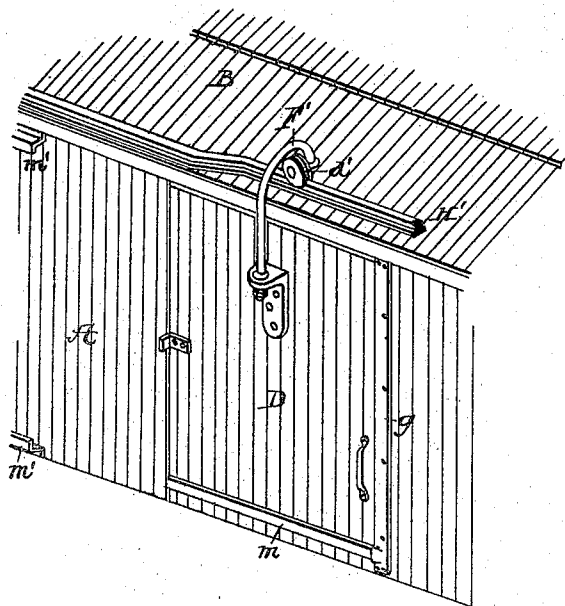


FIG. 2.

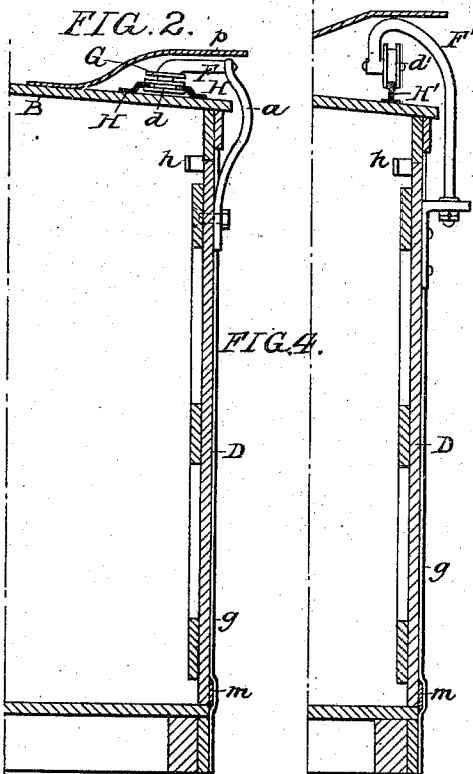


FIG. 4.

FIG. 8.

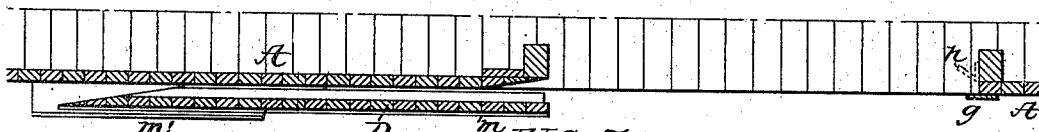


FIG. 7.

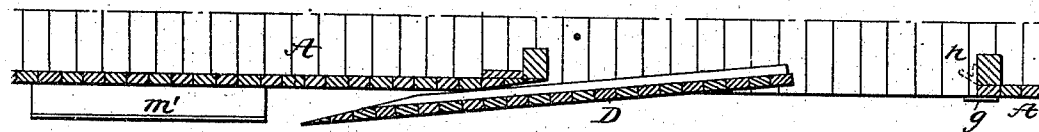


FIG. 6.

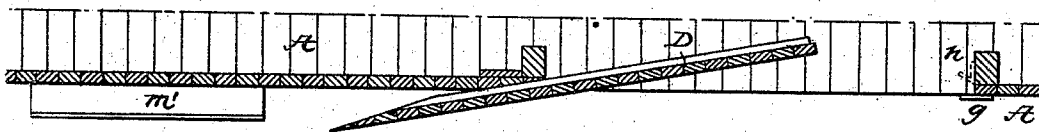


FIG. 3.



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UNITED STATES PATENT OFFICE.

HENRY J. SCHMICK, OF HAMBURG, PENNSYLVANIA, ASSIGNOR OF ONE-SIXTEENTH TO JOHN P. MARTIN, OF PINE GROVE, PENNSYLVANIA.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 575,173, dated January 12, 1897.

Application filed August 28, 1896. Serial No. 604,184. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. SCHMICK, a citizen of the United States, residing in Hamburg, Pennsylvania, have invented certain
5 Improvements in Car-Doors, of which the following is a specification.

The object of my invention is to provide simple and efficient means for supporting and guiding the door of a car so that it can be
10 moved longitudinally in either direction, so as to open or close the doorway, can be closed into the doorway flush with the side of the car, or withdrawn from said opening and supported in a position close to the car side when
15 the doorway is open. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of part of a
20 car having doors mounted in accordance with my invention. Fig. 2 is a transverse vertical section of part of the car, showing the door closed into the doorway. Fig. 3 is a sectional plan view, also showing the door closed into
25 the doorway. Fig. 4 is a transverse section illustrating a modified form of hanger for the door. Fig. 5 is a perspective view of said modified form of hanger, and Figs. 6, 7, and
30 8 are sectional plan views showing the door in different positions.

A represents part of the car side, and B part of the roof of the car, D being one of the sliding doors intended to close the doorway in the side of the car.

The door D is suspended by means of arms
35 *a a* from a block *F*, which is centrally pivoted at *b* to a carriage *G*, provided with grooved wheels *d*, which are adapted to angular rails *H*, secured upon the roof of the car, so that the carriage is free to move longitudinally along but is confined vertically to
40 said rails. Each of the rails has at one point in its length an offset *f*, the offsets of each pair of rails being parallel with each other, so that as the carriage *G* is traversed longitudinally it will, during one portion of its movement, occupy a position close to the
45 outer edge of the roof of the car and during the other portion of its movement will occupy

a position farther inward from said edge, 50 these inwardly-extending portions of the rails being in line with the doorway-opening in the side of the car.

The operation of opening the door will be understood on reference to Figs. 3, 6, 7, and
55 8, Fig. 3 showing the door closed, Fig. 6 showing it when the carriage has reached the end of its run on the inner portions of the guide-rails, Fig. 7 showing it when the carriage is passing from the inner to the outer portions
60 of the guide-rails, and Fig. 8 showing it when the carriage is traversing the outer portions of said guide-rails.

As the door is moved its rear end is swung outward and its front end inward until the
65 carriage reaches the end of the inner run of the guide-rails, a reverse swing of the door being effected as the carriage runs from the inner to the outer portions of the guide-rails until the door finally assumes a position parallel with the car side, as shown in Fig. 8. 70

When the door is closed, outward movement of the front end of the same is prevented by a projecting plate *g* on the front door-jamb and inward movement by a guard-rail *h* on
75 the inside of the car at the top of the doorway, so that the hanger-arms *a* are relieved from strain.

Chafing-bands *i* are applied to the car side in order to prevent contact of the battens of
80 the door with the boarding on the car side as said door is moved back and forth, and a chafing-plate *m* is applied to the outer face of the door at the bottom of the same, this chafing-plate serving by engagement with the
85 guard-rail *m'* to prevent any outward swinging of the bottom of the door when the latter is opened, the door when open being thus held close to the car side. A similar guard-rail
90 may be used at the top of the door, if desired.

Suitable stops *n n'*, located, respectively, on the door and car side, serve to limit the sliding movement of the door in opening the same.

In order that the door may be moved backward to open it without first pulling the rear
95 edge of the door laterally out of the doorway, said rear edge of the door, as well as the rear jamb of the doorway, are beveled or in-

clined, as shown in Fig. 3. Hence on imparting a rearward sliding movement to the door the rear edge of the same will be automatically forced out of the door-opening, as shown in Fig. 6.

To prevent the accumulation of snow or ice upon the rail structure on the roof of the car, I provide a hood *p*, which projects over, covers, and protects the rails, the carriage *G*, and the block *F*, from which the door is suspended, as shown in Fig. 2. These hoods are omitted from Fig. 1, as their illustration would prevent a proper showing of the rail structures.

In Figs. 4 and 5 I have illustrated a modification of my invention in which, instead of a double rail upon the roof of the car, a single rail *H'* only is employed, and the block *F'*, from which the door is suspended, has a single vertical wheel *d'* running upon this rail in place of the carriage with its pair of wheels *d*, the rail *H'* having an offset *f'*, suitably located, so as to carry the door into the door-opening as it is moved longitudinally forward and out of the door-opening as it is moved rearward. In this case the depending arm *a'* of the block *F'* is swiveled in the bracket on the door, so that the latter can swing on the supporting-block for the same purpose as the door shown in Figs. 1, 2, and 3 swings on the pivot *b*. In this case the hood *p* prevents the lifting of the door so as to carry the wheel *d'* off of the rail *H'*.

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

1. The combination of the car having upon the roof of the same a guideway offset so as to present two parallel longitudinal planes, one farther inward from the edge of the roof than the other, with a hanger-block, a car-door suspended therefrom, means whereby the movement of said hanger-block is controlled by the guideway on the roof of the car, and a pivotal connection whereby the door is free to swing on a vertical axis as well as to slide, substantially as specified.

2. The combination of the car having on the roof of the same a pair of rails constituting a guideway and offset so as to form one portion of said guideway farther inward from the edge of the roof than the other, with a hanger-block having portions engaging said guideway, a door suspended from said hanger-block, and a pivotal connection whereby the

door is free to swing on a vertical axis as well as to slide, substantially as specified.

3. The combination of the car having on the roof a pair of rails constituting a guideway, and offset so as to form one portion of said guideway farther inward from the edge of the roof than the other, a carriage having wheels engaging said guideway, a hanger-block pivoted to said carriage, a door suspended from said hanger-block, and a pivotal connection whereby the door is free to swing on a vertical axis as well as to slide, substantially as specified.

4. The combination of the car having on the roof a pair of flanged rails constituting a guideway, and offset so as to form one portion of said guideway farther inward from the edge of the roof than the other, with a hanger-block, a door suspended from said hanger-block, grooved wheels adapted to the flanged rails so as to be free to move longitudinally thereon, but confined vertically thereto, means for connecting said wheels to the hanger-block, and a pivotal connection whereby the door is free to swing on a vertical axis as well as to slide, substantially as specified.

5. The combination of the car having on the roof an offset guideway, a hanger-block having its movement controlled by said guideway, a door suspended from said hanger-block, and a pivotal connection whereby the door is free to swing on a vertical axis as well as to slide, and a guard-rail on the inside of the car for limiting the inward movement of the front portion of the door when the latter is closed into the doorway, substantially as specified.

6. The combination of the car having on the roof an offset guideway, a hanger-block having its movement controlled by said guideway, a door suspended from said hanger-block so as to be capable of moving longitudinally and also laterally into and out of the doorway, and a guard-rail for limiting the lateral outward movement of the bottom of the door when the latter is open, substantially as specified.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

HENRY J. SCHMICK.

Witnesses:

H. F. REARDON,
F. E. BECHTOLD.