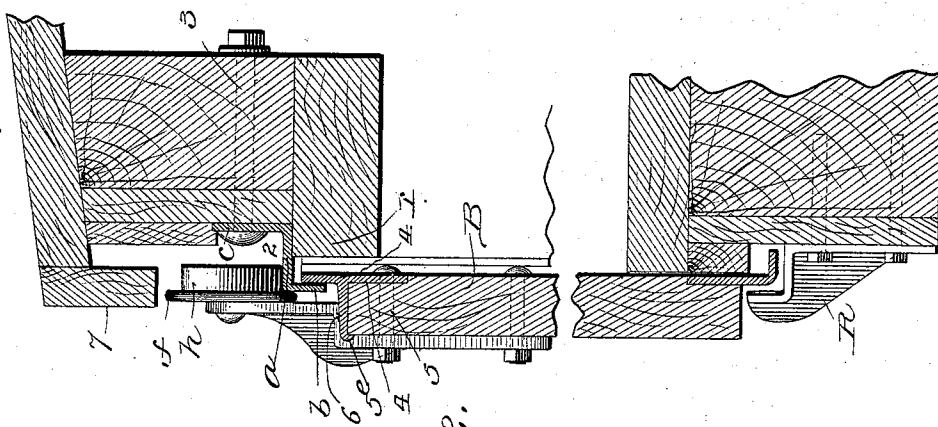
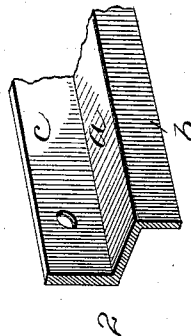
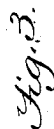
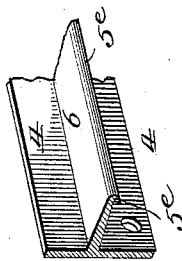
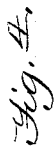
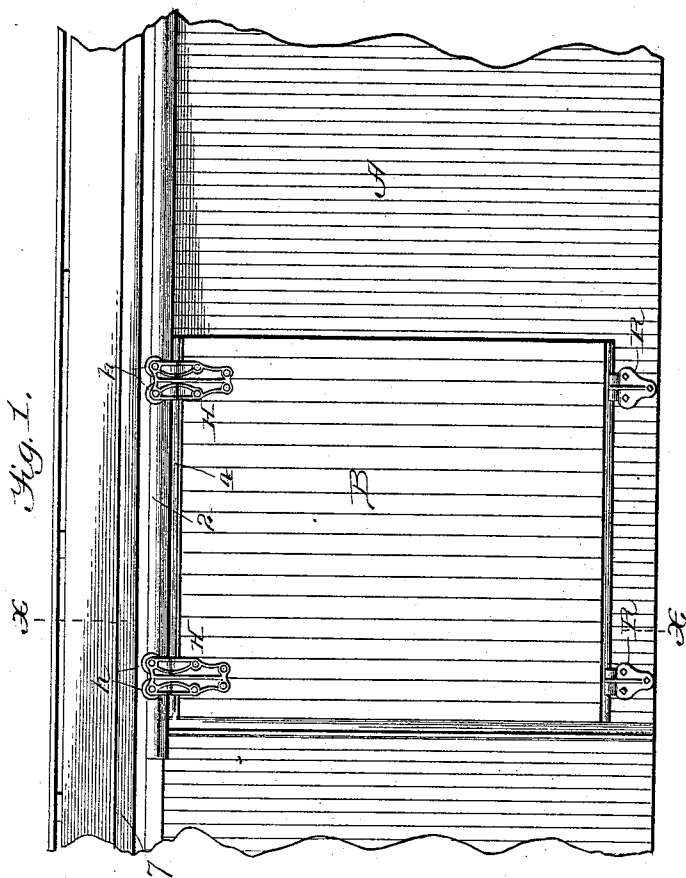


(No Model.)

A. M. WAITT & H. F. BALL.
CAR DOOR.

No. 570,075.

Patented Oct. 27, 1896.



WITNESSES:

Harry S. Roberts
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Fig. 2.

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UNITED STATES PATENT OFFICE.

ARTHUR M. WAITT AND HERMAN F. BALL, OF CLEVELAND, OHIO.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 570,075, dated October 27, 1896.

Application filed June 5, 1896. Serial No. 594,429. (No model.)

To all whom it may concern:

Be it known that we, ARTHUR M. WAITT and HERMAN F. BALL, citizens of the United States, residing at Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Car-Doors; and we hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a portion of a freight-car and a car-door embodying our invention. Fig. 2 is a vertical section on the line $x x$, Fig. 1, taken to one side of the hanger and trolley portions, broken out. Fig. 3 is a detached perspective view of a portion of the track-plate, and Fig. 4 is a similar view of a portion of the cap and guard-plate.

Like symbols refer to like parts wherever they occur.

Our invention relates to the construction of that class of sliding doors more especially designed for freight-cars, though the construction devised by us, being of general utility on all sliding doors for outside use, as, for instance, barn-doors, is not to be taken as confined to use on car-doors.

The object in view has been the production of a simple and efficient guard for the top joint of a sliding door, whereby rain, snow, dust, and cinders will be effectually excluded, and incidentally thereto in suspended doors to obtain such a construction as will, when bottom brackets are employed, prevent the outward swing of the door or its displacement or loss in case one or more of the hangers and trolleys should be broken or detached.

To this end the main feature of our invention embraces the combination, with a car-doorway having a projecting lintel or lintel-strip, of a trolley-track having a horizontal flange forming the trolley-tread and which rests on the projecting lintel, a vertical guard-flange pendent from the outer edge of the tread, and a sliding door provided with a vertical guard-plate which projects above the top of the door within the guard-flange of the trolley-track, whereby a "broken joint" is presented to prevent the entrance of dust, rain, or cinders, and the door is secured against outward or lateral displacement.

A minor feature of our invention embraces

the construction of the flanged trolley-track of general Z shape in cross-section and the top guard-plate of the door of T shape in cross-section, whereby effective means for securing the track and the top guard-plate are obtained and the strength and stability of the structure are enhanced.

We will now proceed to describe our invention more specifically, so that others skilled in the art to which it appertains may apply the same.

A indicates a portion of one side of a freight-car wherein is the doorway, and B indicates a sliding door for closing the same.

The lintel-timber 1 is preferably allowed to project from the side of the car sufficiently to form a ledge upon which the trolley-track 2 may rest, though in lieu thereof the bracket-strip of equal projection may be provided as a means of supporting the trolley-track.

2 indicates the trolley-track, which is composed of the horizontal tread-section a and the vertical pendent flange or guard section b , integral therewith, to which is preferably added (also integrally) the upright flange-section c , through which pass the bolts 3, by which the track is secured to the side of the car; but it will be evident that while the Z-shape cross-section of track 2 is preferable and that while the tread-section a should be continuous and extend beyond the doorway and the pendent flange or guard section b should be at least coextensive with the doorway the upright flange-section c , while coextensive with the tread-section a , is not necessarily continuous or uninterrupted, as it only performs bracket duty for the passage of bolts 3 as a means of securing the tread a and pendent flange b .

On the inner edge and projecting above the top of door B is a vertical guard-plate 4, coextensive with the top of the door, to which it is attached by bolts 5 or in other suitable manner, said guard-plate arranged to enter the space between the pendent guard flange or section b and the lintel-timber 1 and thus "break joint" along the top of door, as well as prevent any lateral or outward play of the door B when closed.

The top edge of the door may be covered by a horizontal top strip 6, formed integral with the vertical guard-plate 4, so that 4 and

6 are united to form a T-iron, and the outer edge of the top strip 5 is recessed or bent over, as at 5^e, which, in conjunction with the through-bolts 5, which also serve to secure the hangers H to the door, greatly strengthens the connections between the vertical guard-plate 4, the door B, and the trolley-hangers H.

The stem of the T constitutes a cap-plate for the top edge of the door. One flange of the cross-piece extends down and constitutes a wear-plate or rub-iron for the inner upper face and edge of the door, where it bears on the projecting lintel of the doorway, while the other flange of the cross-piece of the T extends up under the pendent flange of the track and constitutes both a guard-flange and a wear-plate or rub-iron, which bears on the face of the projecting lintel. Further, the upper edge of the door is held in the angle formed by the stem of the T, and the downward flange of the cross-piece of the T and the door is thus strongly braced at the points where the strain from the hangers fall on its upper edge or that portion which is subjected to leverage and which carries the weight of the door and sustains the jar and vibration.

H indicates the trolley-hangers, by which the door B is suspended, said hangers provided with trolley-rollers *h*, which, if preferred, may be plain rollers, but preferably have a single outer flange *f*, the shape of the trolley-track 2 and the presence of pendent section *b* and vertically-projecting guard-plate 4, which takes under pendent section *b*, rendering an inner flange unnecessary as a means of holding the trolley to the track.

Above and in line with the trolley-track 2 a pendent eaves-strip 7 may be provided, which will serve the purpose of guarding the trolley-track from the roof-water, and below the door may be held against outward displacement by the usual or any approved form of bottom or guide brackets R.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination with a car having a doorway provided with a projecting lintel, of a trolley-track having a horizontal flange forming the tread which rests on the projecting lintel of the doorway and a guard-flange pendent from the outer edge of said tread, a sliding door provided with a vertical guard-plate which projects above the top of the door within the guard-flange of the trolley-

track, and suitable hangers and trolleys for suspending the door from the trolley-track; substantially as and for the purposes specified.

2. The combination with a car having a doorway provided with a projecting lintel, of a trolley-track substantially Z shape in cross-section providing a horizontal flange forming the tread which rests on the projecting lintel of the doorway, a pendent guard-flange, and a vertical bracket-flange for securing the trolley-track, a sliding door having its upper edge provided with a vertical guard-plate which projects above the top of the door within the pendent guard-flange of the trolley-track, and suitable hangers and trolleys for suspending the sliding door from the trolley-track; substantially as and for the purposes specified.

3. The combination with a car having a doorway, of a trolley-track of substantially Z shape cross-section providing a horizontal flange which constitutes the tread, a pendent guard-flange at the outer edge thereof, and a vertical bracket-flange at the inner edge thereof for securing the trolley-track to the car, and a sliding door having a top strip and guard-plate of substantially T cross-section the stem of the T constituting the top plate of the door and the vertically-projecting flange of the guard-plate arranged to be housed by the pendent guard-flange of the trolley-track; substantially as and for the purposes specified.

4. The combination with a car having a doorway of a trolley-track having a horizontal flange which constitutes the tread and a vertically-pendent guard-flange at the outer edge of the tread, and a sliding door having a top strip and guard-plate of substantially T shape in cross-section, the stem of the T constituting the top plate of the door and the vertically-projecting flange of the guard-plate arranged to be housed by the pendent guard-flange of the trolley-track; substantially as and for the purposes specified.

In testimony whereof we affix our signatures, in presence of two witnesses, this 29th day of May, 1896.

ARTHUR M. WAITT.
HERMAN F. BAIL.

Witnesses:

C. E. HATCH,
J. D. MCALPINE.