

A. E. RUPP.
CAR DOOR.
APPLICATION FILED JULY 6, 1911.

1,045,327.

Patented Nov. 26, 1912.

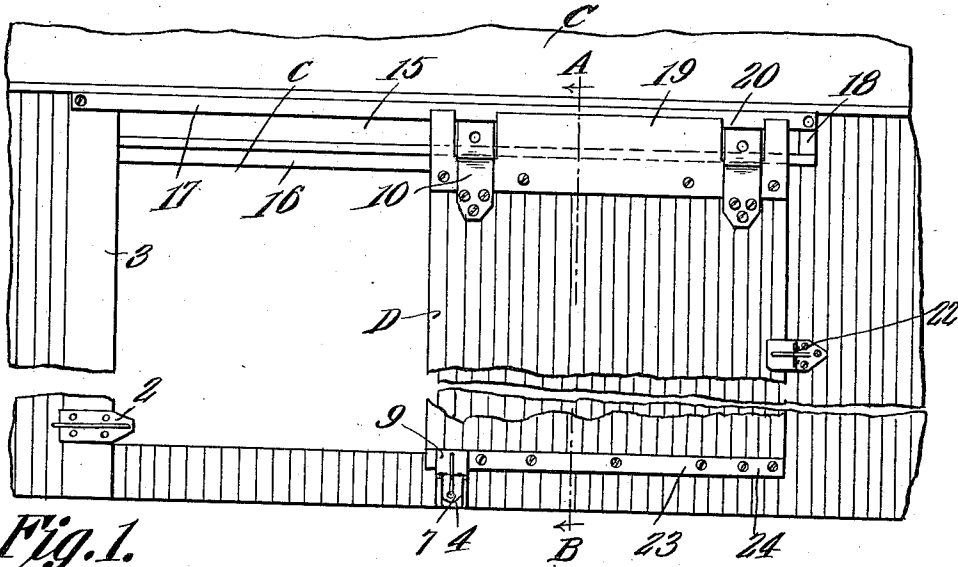


Fig. 1.

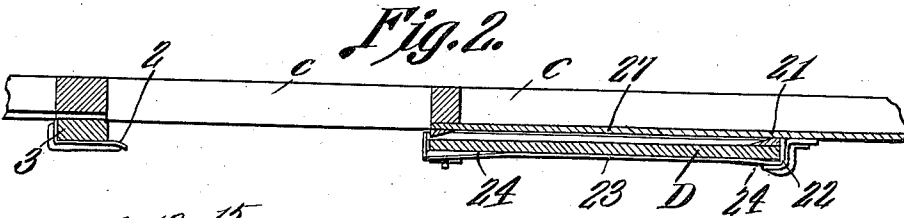


Fig. 2.

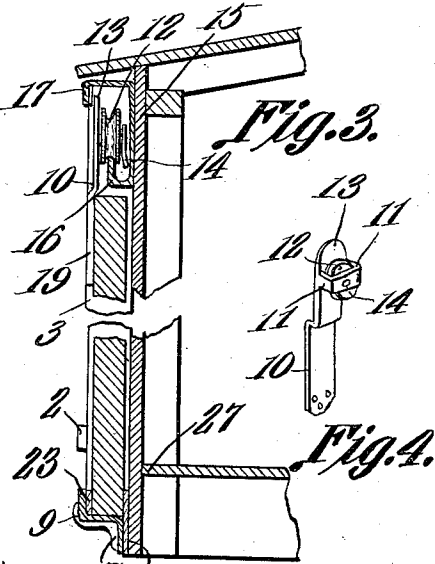


Fig. 3.

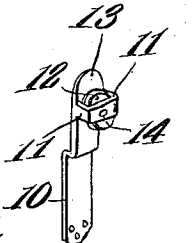


Fig. 4.

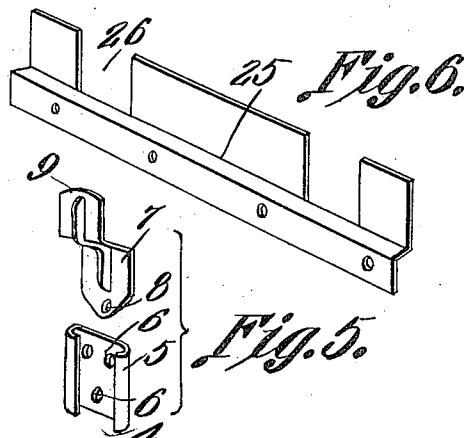


Fig. 5.

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UNITED STATES PATENT OFFICE.

ADOLPH E. RUPP, OF CHICAGO, ILLINOIS.

CAR-DOOR.

1,045,327.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ADOLPH E. RUPP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Car-Door, of which the following is a specification.

This invention relates to car doors and is more especially an improvement upon the structure disclosed in Patent No. 989,646, issued to me on April 18, 1911.

One of the objects of the invention is to provide a sliding door having hangers of novel form combined therewith for engagement with a supporting rail, said hangers including means cooperating with the rail for holding the door against lateral swinging relative to the car structure, there being rollers combined with the hangers and so positioned as to prevent the hangers from binding upon the supporting rail either while the door is in its normal position or while it is elevated.

Another object is to provide cooperating means upon the door and the car structure for sealing the door opening when said door is closed, the said door and the car structure being also provided with cooperating means for binding the sealing elements together when the door is entirely closed or entirely open, these means, however, permitting the door to move freely from one position to the other.

A further object is to provide a door guide having improved means for attaching it to the car structure whereby it becomes impossible to remove the guide unless the door is first detached from the car.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings, the preferred form of the invention has been shown.

In said drawings; Figure 1 is a side elevation of a portion of a car having the present improvements applied thereto, the door being shown open. Fig. 2 is a longitudinal section through the parts shown in Fig. 1. Fig. 3 is a section on line A—B Fig. 1. Fig. 4 is a perspective view of one of the hangers.

Fig. 5 is a perspective view of the door guide, the parts thereof being shown separated. Fig. 6 is a perspective view of a modified form of shield for use in connection with the door.

Referring to the figures by characters of reference C designates a car structure having a door opening *c* and secured to the outer face of the structure and along one side of the door opening is a beveled cleat 1. A stop plate 2 is secured to the car structure at the other side of the door opening and close to the bottom of the opening, this plate serving to hold the door against lateral swinging after it has been closed against the stop strip 3 which is secured to the outer side of the car structure and along said side of the opening *c*. An attaching plate 4 is fastened to the outer face of the car structure C at a point below the cleat 1 and has parallel guide flanges 5 thereon while fastener receiving openings 6 and 6' are formed adjacent the top and bottom respectively of the plate 4. A guide bracket 7 is adapted to slide downwardly into engagement with the flanges 5 so as to cover the upper openings 6 and the fastening devices therein, this bracket having an opening 8 in its lower end portion designed to register with the opening 6' so that a single fastener can thus be inserted through the two openings and into the car structure.

Bracket 7 is preferably formed with an angular extension 9 at its upper end adapted to engage the lower edge portion of the sliding door indicated generally at D. This door is provided, at its upper end, with hangers 10 the upper portions of which are offset so as to extend over the upper edge of the door and are provided with laterally extending frames 11 in which grooved wheels 12 are journaled. A lip 13 extends upwardly from each hanger and above the outer portion of frame 11 while another lip 14 extends downwardly from the inner portion of said frame. Each wheel 12 normally extends above the adjacent lip 13. The rail used in connection with the car structure for supporting the door, consists of a single length of metal bent to form a flat back portion 15 adapted to be secured to the upper portion of the car structure in any suitable manner and having an outwardly and upwardly bent lower portion forming a rail 16 on which the wheels 12 are adapted to travel. The upper end portion of the plate is bent outwardly and

downwardly to form a guard 17, this guard lapping the lips 13 hereinbefore referred to and cooperating with them to limit the swinging movement of the door relative to the car structure. Lips 14 also cooperate with the flat portion 15 of the rail to limit such swinging movement. The ends of the rail are closed by means of a block 18 seated in one of said ends and by means of the stop strip 3 which projects into the other one of said ends.

A metallic guard plate 19 is secured to the upper edge portion of door D and has portions cut away, as indicated at 20 so as to receive the hangers 10. These guard plates lap the guard or shield 17 of the rail and cooperate therewith to prevent the admission of dust, etc., into the rail back of the door.

A beveled cleat 21 is secured to the inner face of the door D at that side thereof farthest removed from the door opening *c*, and the cleat 1 is at all times located in the path of this cleat 21. A stop bracket 22 is secured upon the outer face of the car structure and in the path of the door and serves to limit the sliding movement of the door when said door is being shifted to open position.

A wear strip 23 is secured to the lower edge portion of the door D and the end portions of this wear strip extend outwardly or diverge at acute angles to the door. These outwardly diverging portions or cam faces, which have been indicated at 24, are so located with relation to the guide bracket 7 that when the door is opened to its greatest extent, one of said cam faces will move into engagement with the angular portion 9 of bracket 7 and thus deflect the door D inwardly so as to bind it tightly against the cleat 1. When, however, the door is closed and cleat 21 brought against the cleat 1, the other cam face 24 will be brought into engagement with the angular portion 9 of bracket 7 and cause the door D to be deflected inwardly so as to bind the cleat 21 upon cleat 1 and thus not only hold the door against rattling but also practically seal the door opening.

By mounting the guide bracket 7 in the plate 4 in the manner described, it will be apparent that after the plate 4 has been secured to the car structure and the bracket placed in position on the plate, it becomes impossible to remove the plate 4 and the bracket 7 because it is first necessary to elevate the bracket out of engagement with the plate 4 and this is prevented by the door D. In order to remove the bracket 7 it is first necessary to remove the door.

Where the hangers are secured to the inner face of the door instead of to the outer face thereof, as is sometimes desirable, the shield shown at 19 is not employed, but, in lieu thereof, another shield such as illustrated in Fig. 6 is provided, this shield having a laterally offset upper end portion 25 adapted to fit upon the upper edge of the door and having openings or cut away portions 26 to receive the hangers.

Importance is attached to the fact that the parts 24 only bind upon the brackets thereunder when the door is brought to the limits of its movement and, at other times, said bracket does not frictionally engage the wear strip 23. As a result the door can be freely moved when unlocked.

A guard strip 27 may be secured along the inner face of the door close to the bottom thereof, as shown in Fig. 3, so as to prevent snow or rain from beating upwardly between the lower portion of the door and the car structure and into the door opening *c*.

What is claimed is:—

1. The combination with a car structure having a door opening, and a cleat secured along one side of the opening and having its outer face and the wall of the car structure converging away from the door opening, of a sliding door, a door guide upon said structure and below the cleat, a wear device upon the door and having oppositely disposed terminal cam portions movable successively against the guide when the door is opened and closed, to bind the door upon the car structure, and a cleat upon the inner surface of the door and along one edge of the door, one face of the cleat being parallel with and movable against the outer face of the cleat on the car structure during the binding action of one of the cams to press the door outwardly and force said cam against the guide.

2. The combination with a car structure having a door opening, of a sliding door, a guide upon the car structure and slidably engaged by the bottom portion of the door, means upon the door and cooperating with the guide for shifting the door toward the car structure when the door is moved to closed position, and cooperating means upon the car structure and door for pressing the first mentioned means against the guide when the door is closed.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ADOLPH E. RUPP.

Witnesses:

A. F. LE CLAIRE,
EDWIN L. READ.