No. 820,020. PATENTED MAY 8, 1906

J. SHAFFER.

CAR DOOR APPARATUS.

APPLICATION FILED OCT. 5, 1905.

2 SHEETS—SHEET 1

FIG. 1

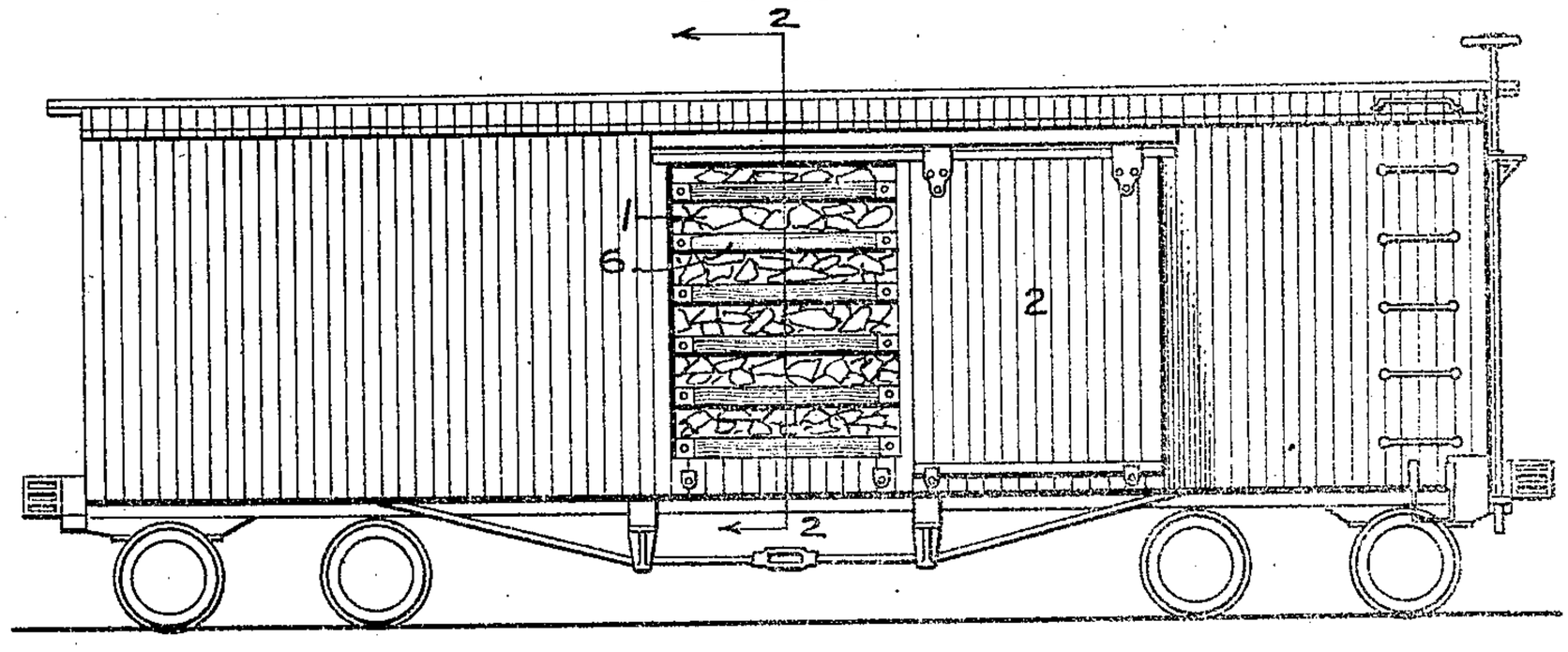
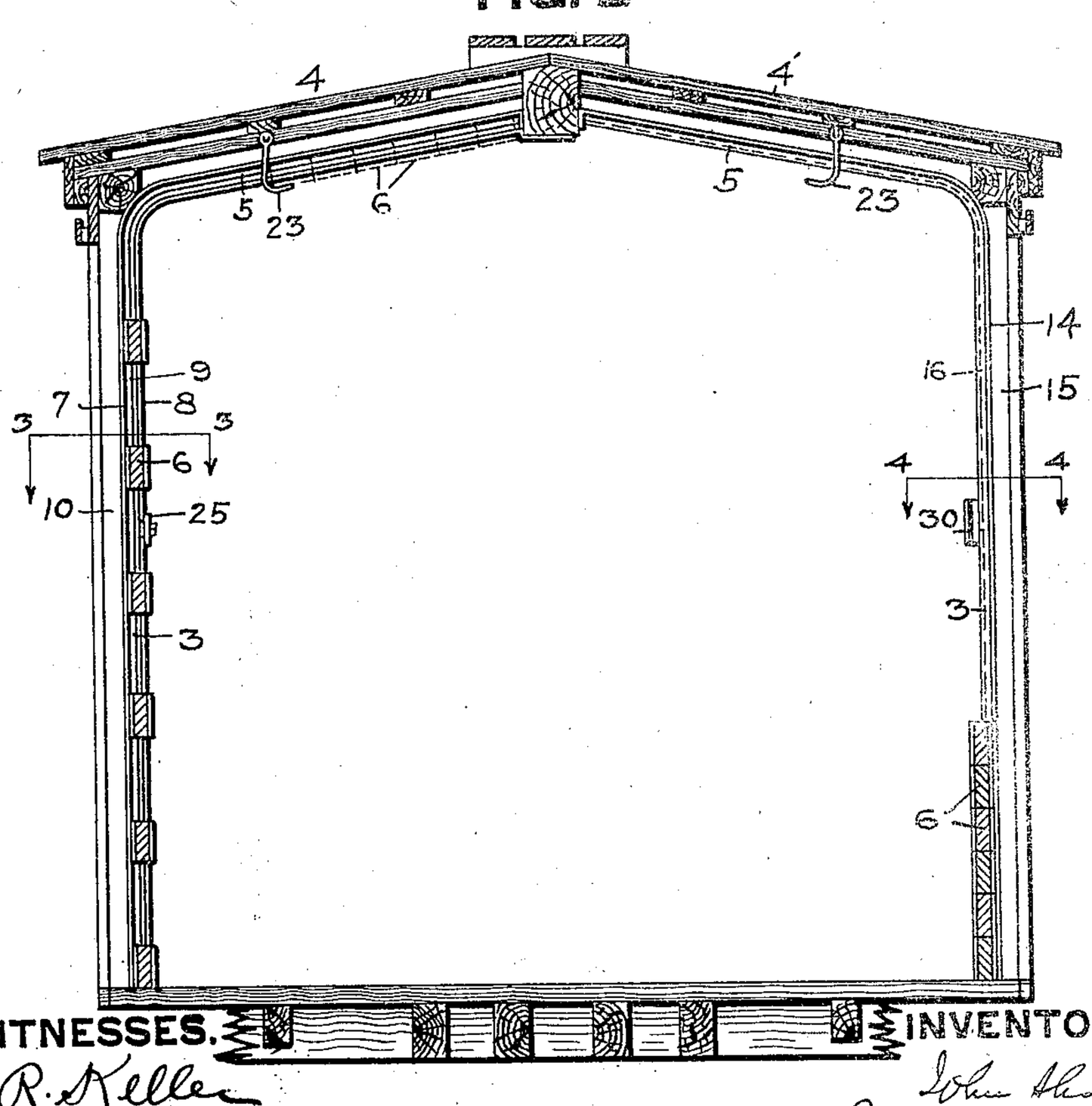


FIG. 2



WITNESSES.

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2 SHEETS—SHEET 2.

FIG. 3

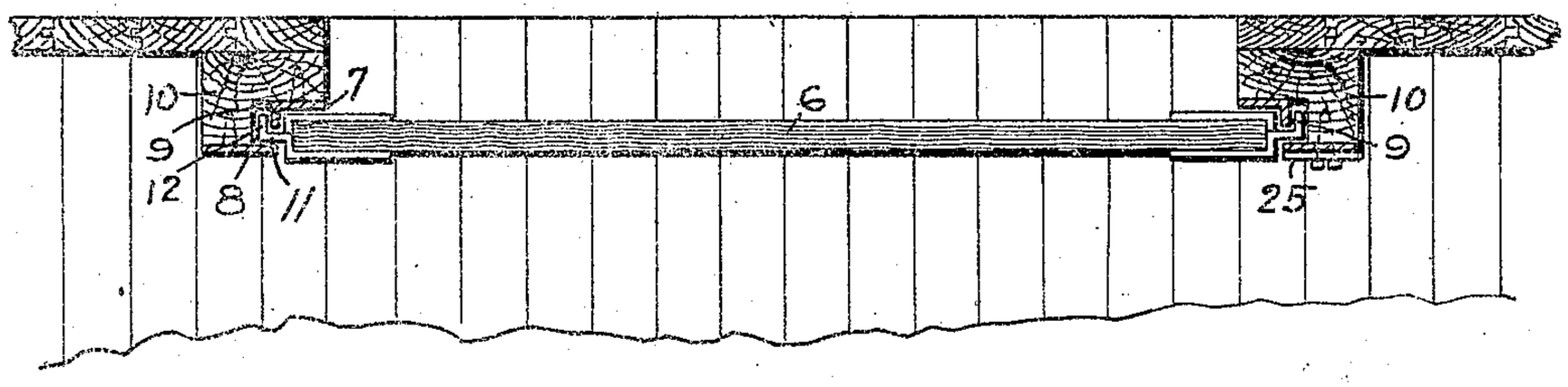


FIG. 4

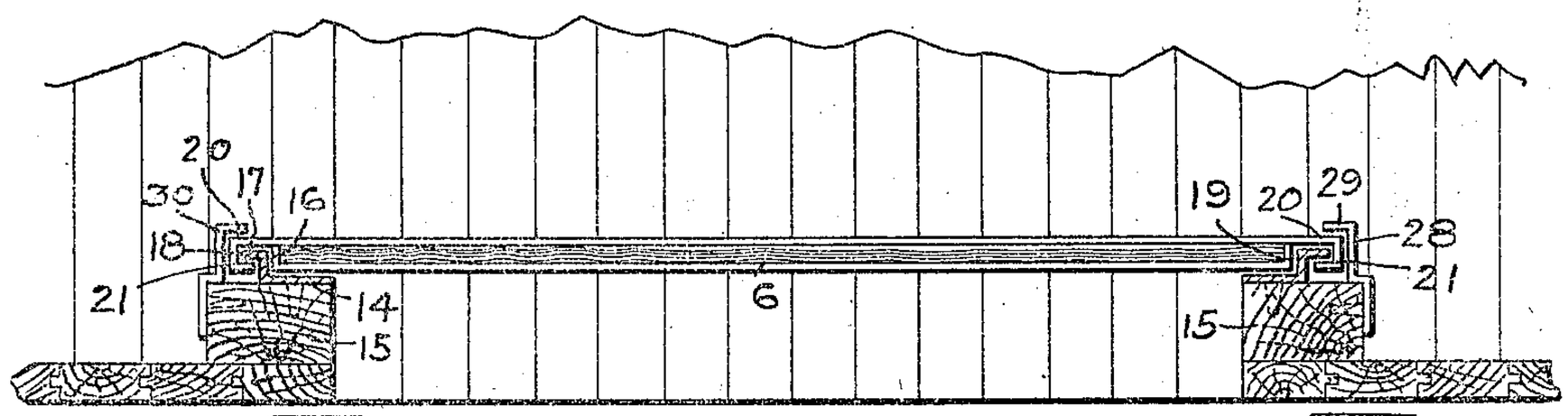


FIG. 5

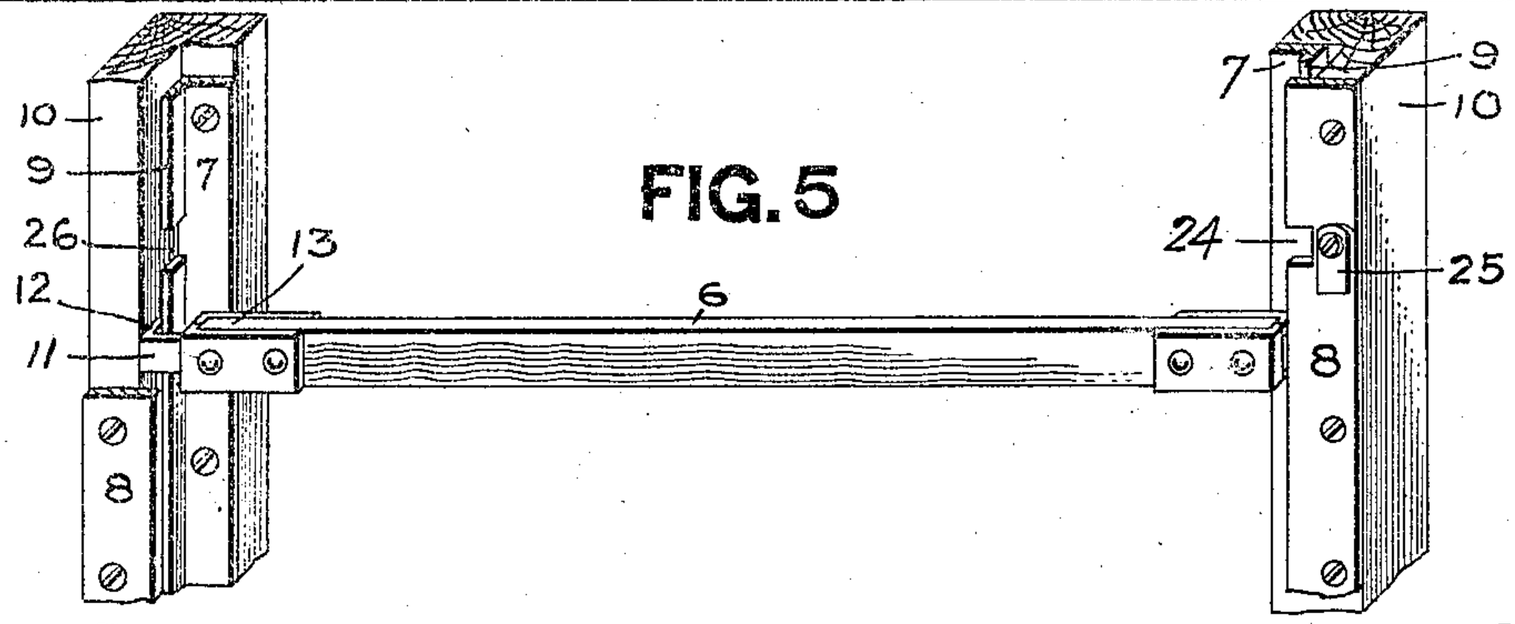
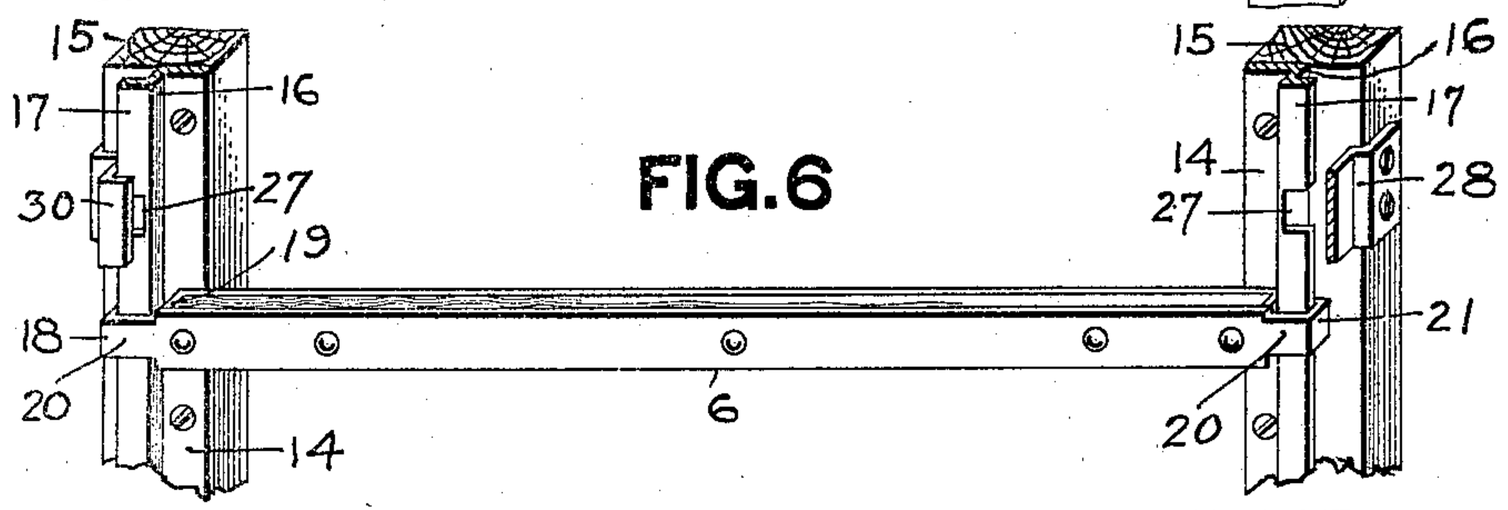


FIG. 6



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UNITED STATES PATENT OFFICE.

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CAR-DOOR APPARATUS.

No. 820,020. Specification of Letters Patent. Patented May 8, 1906.

Application filed October 5, 1905. Serial No. 281,416.

To all whom it may concern:

Be it known that I, JOHN SHAFFER, a resident of Forbes Road, in the county of Westmoreland and State of Pennsylvania, have invented a new and useful Improvement in Car-Door Apparatus; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to car-door apparatus, its object being to provide load-retaining devices in the ordinary freight or cattle car which will enable the same to carry loads in bulk, such as loads of coal or coke. The usual custom in carrying loads of this character in such cars has been to close the doors or portions thereof with regular board strips nailed in place, and where these cars were used for different purposes such strips of course became loose, while they involved considerable labor and trouble in their use. By the present invention I provide load-retaining means extending across the car-door which can be secured out of the way when the car is used for regular freight or like purposes, but can quickly be brought into position for use when needed.

To this end the invention consists, generally stated, in the combination with the car-door of vertical guideways at each side thereof and a series of bars mounted to slide in these guideways and adapted to extend across the door for load-retaining purposes, the guideways being preferably arranged to extend above the door and under the roof, such as along the carlines, and the cross-bars being adapted to slide up into the upper sections of the guideways and be secured therein when not needed for load-retaining purposes.

It also consists in certain other improvements hereinafter described.

In the accompanying drawings, Figure 1 is a side view of a freight-car, illustrating the invention. Fig. 2 is an enlarged cross-section illustrating different forms of guideways and the different uses of the load-retaining bars. Fig. 3 is a horizontal section illustrating one form of guideway. Fig. 4 is a like view illustrating another form of guideway and bar, and Figs. 5 and 6 are detail perspective views showing the same and the manner in which the cross-bars are held within the guideways and can be removed therefrom.

The car illustrated is an ordinary freight-car having the door-opening 1, closed by the ordinary sliding door 2, mounted outside of the car-body. Within the car-body and extending upwardly along each side of the passage-way are the guideways 3, these guideways being shown as extending for the full height of the door-opening and then curving around and extending up under the roof 4, as at 5, forming a continuous guideway from the central portion of the roof to the car-floor. Mounted in said guideways are the cross-bars 6, these cross-bars being made separate and each bar being mounted in the guideways so that when in use they may form a solid load-retaining wall across the base of the door-opening, as shown to the right in Fig. 2, such as for retaining a load in bulk, like coal or earth, or that they may be spaced apart, as shown in Fig. 1 and to the left in Fig. 2, for retaining a lighter load, such as a load of coke, where the load extends up near the car-roof and is formed of large pieces which can be properly held by means of an open strip load-retaining device. Any suitable guide connection between the bars and the guideways may be employed. I have illustrated the invention in two forms. To the left of Fig. 2 and in Figs 3 and 5 are shown each guideway formed of an angular piece 7, secured on the inside of the door-post, and a flat strip 8, extending over the lateral angle portion 9 of the strip 7, such flat strip being shown as supported on the vertical bar 10. In such case the cross-bars 6 are provided with angular end portions 11, fitting between the angle-bars 7 and the strips 8, the angular end portion having the lip 12, extending back of the lateral rib 9 of the strip 7. The angular end portion 7 extends out from the socket portion 13, and the bar is guided in its course by fitting around the lateral rib 9, while it is held in place by the outer plate 8 of the guideway.

In the guideway shown to the right of Fig. 2 and in Figs. 4 and 6 the guideway is formed of a Z-shaped plate 14, one face of which is attached to the door-post 15, while connected therewith is the laterally-projecting rib portion 16, and beyond the same the longitudinally-projecting rib portion 17. The cross-bar 6 has a return angle portion 18 at its end, having a shoulder 19 traveling along the inner face of the lateral rib portion 16, and beyond the same the projecting portion 20, extending past the rib portion 17 and connect-

ing to the hook 21, which extends past said rib portion and back of the same and holds the cross-bar within the guideway.

As shown in Fig. 2, any suitable holding means in the upper section 5 of the guideways may be employed to hold the load-retaining bars within said upper section when they are not in use, such as the hooks 23. By releasing them from this hook the bars will slide down from the guide portions 5 into the guide portions 3 of the guideways, and they may either be arranged in contact with each other to form a solid load-retaining device in the lower portion of the car-body or spaced apart such as to hold a load of coke or like material, the cross-bars being thus within easy reach at any time though entirely out of the way when not needed.

In case the cross-bars become broken, as is liable under the strain to which they are subjected, and it is desired to replace them provision is made for this by interrupting the guideways, such as by means of a notch 24 within the plate 8 of the guideway, as shown in Figs. 3 and 5, and a removable cover-piece 25 fitted over said notch. To remove one of the bars, this cover-piece is loosened or removed, when it will permit the angular end portion of the cross-bar to pass out of the notch 24. In the lateral rib portion 9 of the guideway in the opposite side is a like notch 26, permitting the withdrawal of the angle portion at the other end of the cross-bar through the guide. In the form of guideways shown in Figs. 4 and 6 a like notch 27 is formed in the portion 17 of the guideway through which the hook portion 21 of the cross-bar may be withdrawn. To hold the cross-bar within the guideway at this place, the cover-piece 28 is employed, that piece having the inwardly-projecting angle 29 covering the notch 27 and preventing the withdrawal of the hooked end 21 through said notch. I also employ opposite to said notch the angle-piece 30 to prevent the hooked portion from drawing into said notch 27 as the cross-bar travels past the same.

By the above apparatus means are provided for retaining the load in cars of this character, which are simple and while ready at hand for use do not in any way interfere with the regular loads carried by the car.

What I claim is—

1. The combination with a car having a door-opening, of a vertical guideway at each side of said opening, each guideway having a rib projecting from the car side and transversely thereto, and a web extending parallel to the car side and spaced therefrom, and a series of unconnected bars extending across the door-opening and having end portions which project into the spaces between the parallel webs of the guideways and the car sides, said end portions being provided at their ends with angle portions extending transversely of the car and lying beyond the transversely-projecting ribs of the guideways.

2. The combination with a car having a door-opening, of a vertical guideway at each side thereof, said guideways being formed of Z-shaped bars having one flange secured to the car side and the other flange projecting away from the door-opening, and a series of unconnected bars extending across the door-opening and having hooked end portions engaging with the outwardly-projecting flange of the guide-bars and sliding thereon.

In testimony whereof I, the said JOHN SHAFFER, have hereunto set my hand.

JOHN SHAFFER

Witnesses:
ROBERT C. TOTTEN,
G. C. RAYMOND.