(No Model.)

2 Sheets—Sheet 1.

# W. T. SPILLANE.

## GRAIN CAR DOOR.

No. 370,566. Patented Sept. 27, 1887.

*Fig. 1.*

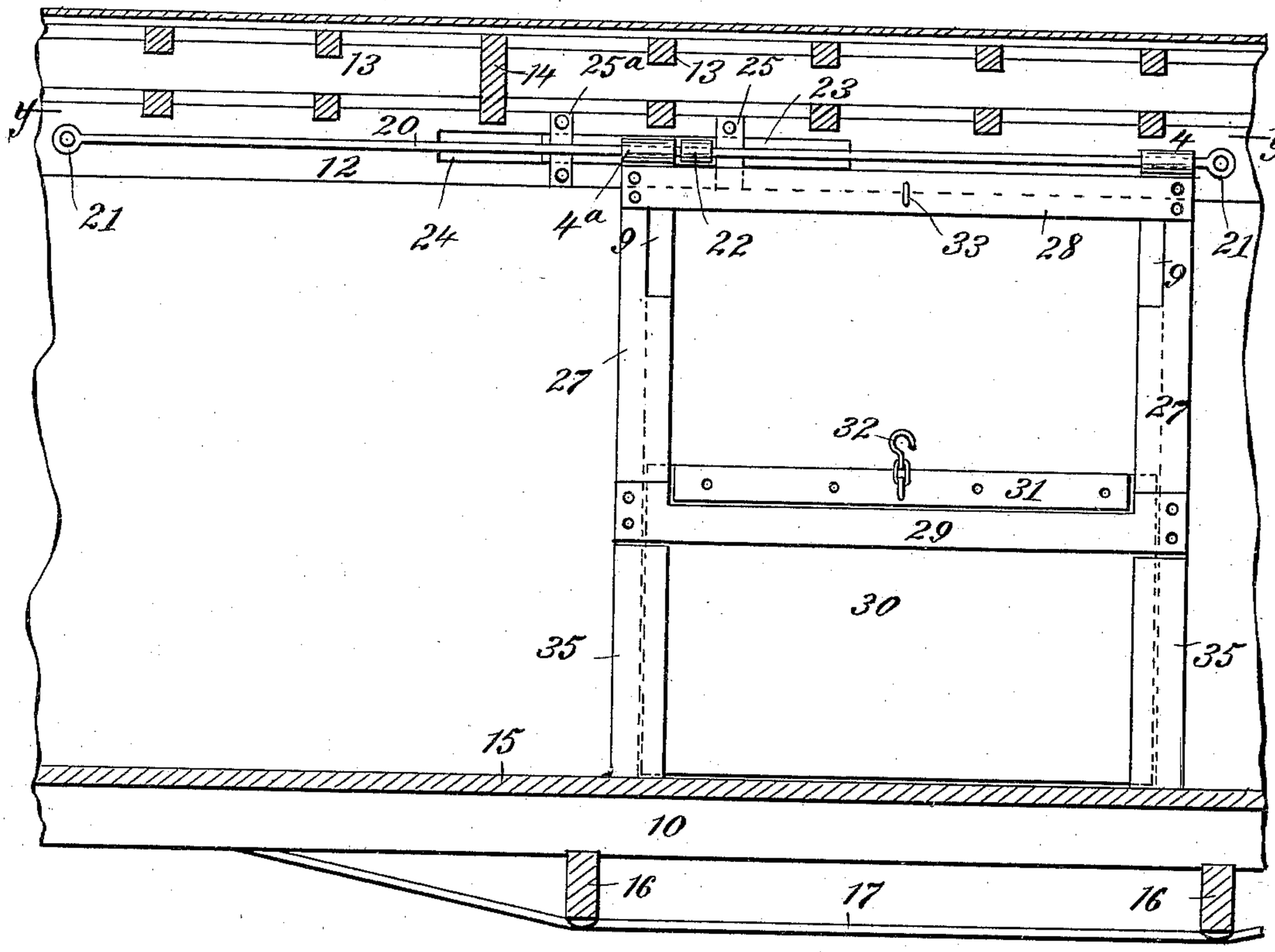



*Fig. 2.*

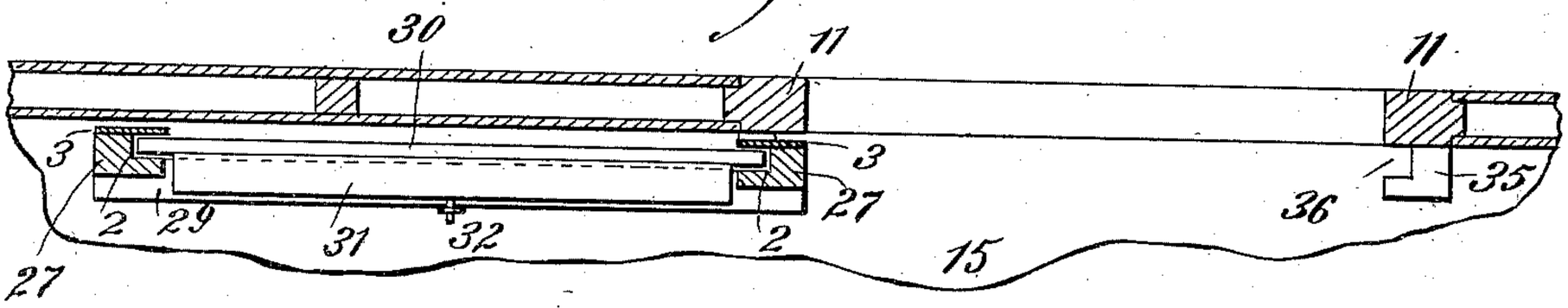
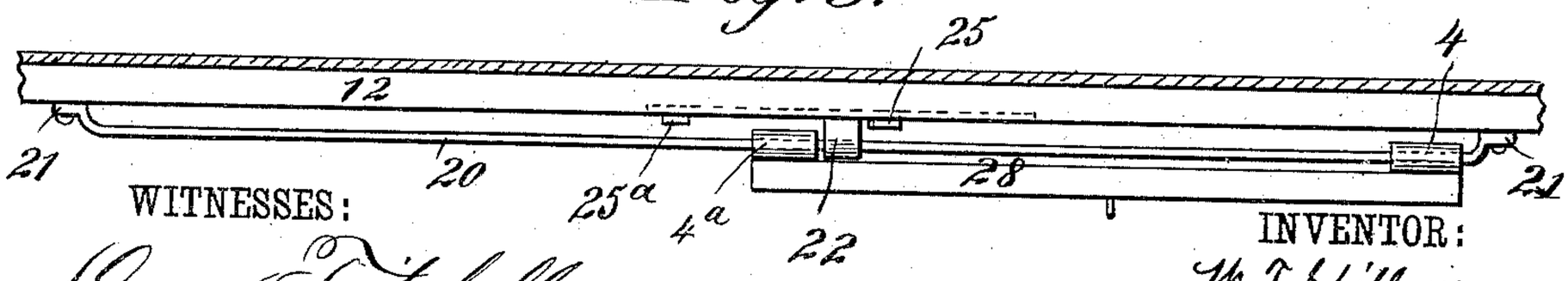



*Fig. 3.*

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(No Model.) 2 Sheets—Sheet 2.

# W. T. SPILLANE.

## GRAIN CAR DOOR.

No. 370,566. Patented Sept. 27, 1887.

Fig. 4.

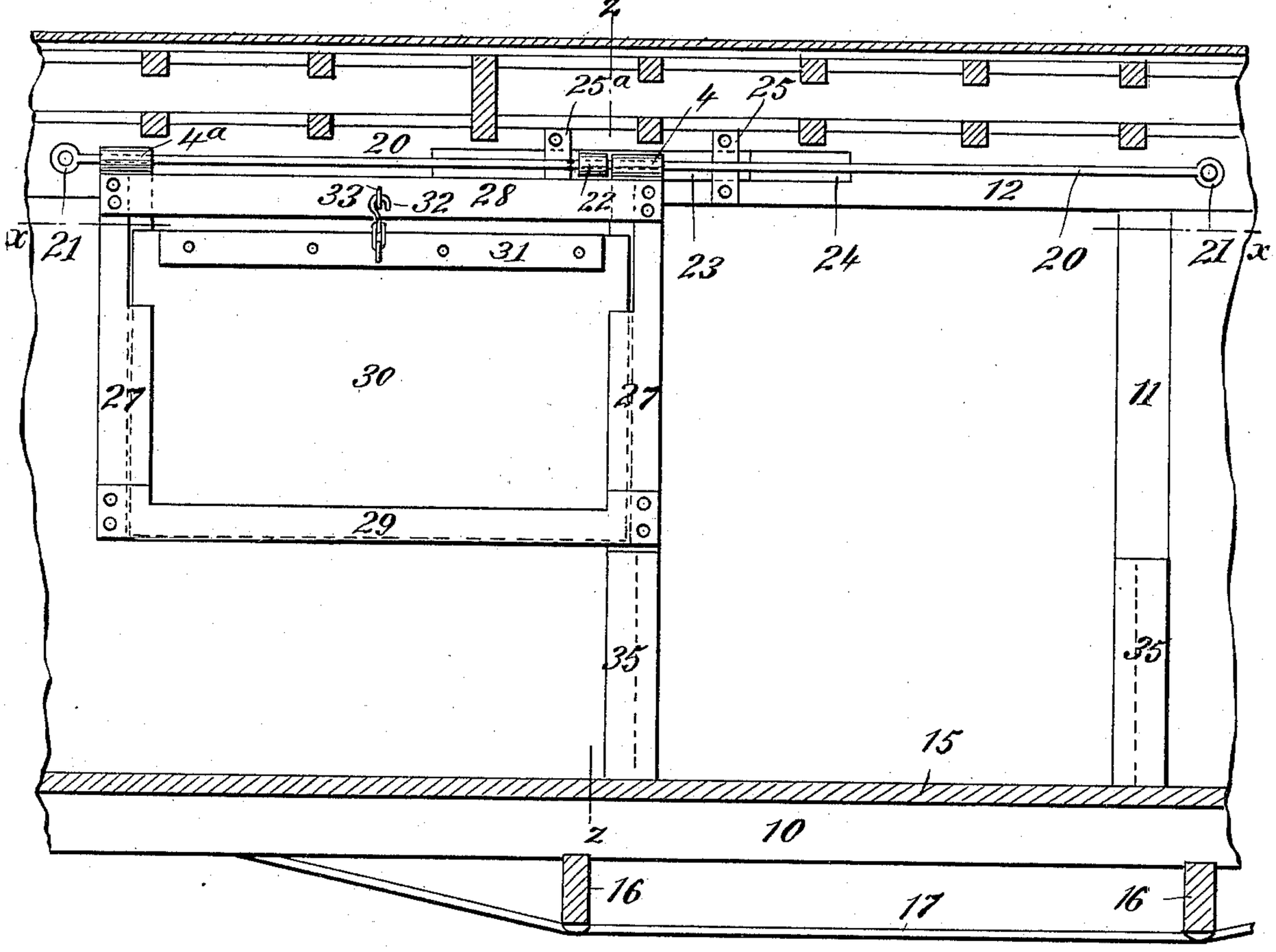



Fig. 5.

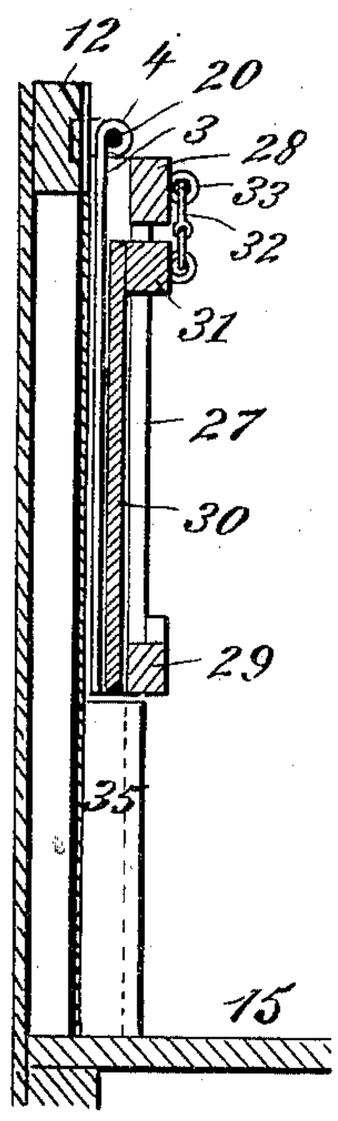
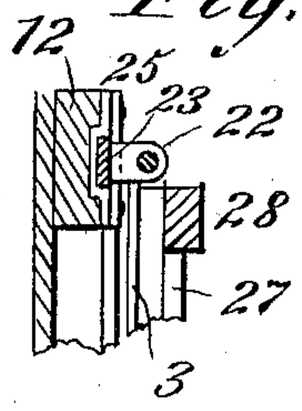



Fig. 6.

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# UNITED STATES PATENT OFFICE.

WILLIAM THOMAS SPILLANE, OF CASSELTON, DAKOTA TERRITORY.

## GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 370,566, dated September 27, 1887.

Application filed November 23, 1886. Serial No. 219,692. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM THOMAS SPILLANE, of Casselton, in the county of Cass and Territory of Dakota, have invented a new and Improved Grain-Car Door, of which the following is a full, clear, and exact description.

This invention relates to grain-car doors, the object of the invention being to so mount the door that it may be easily moved to open the port or doorway in connection with which it is arranged, but at the same time to so connect the door to the car that it cannot be readily removed, thereby preventing the loss of the door and saving it from the rough usage to which the ordinary detachable grain-doors are frequently subjected.

To the ends named the invention consists of a door-supporting frame mounted upon a horizontal way and a vertically-adjustable door carried by the frame, the parts being so arranged that the grain-door may be raised to rest within the frame, and the frame and the door carried thereby moved to one side to clear the doorway, as will be hereinafter more fully described, and specifically pointed out in the claims.

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

Figure 1 is a longitudinal sectional view of a portion of a grain-car that is represented as being provided with my improved form of grain-door, the door being shown as it appears when lowered to close the doorway. Fig. 2 is a sectional plan view taken on line *x x* of Fig. 4. Fig. 3 is a similar view taken on line *y y* of Fig. 1. Fig. 4 is a view of the parts illustrated in Fig. 1, the door and its frame being, however, represented as they appear when moved to a position to clear the doorway. Fig. 5 is a cross-sectional view taken on line *z z* of Fig. 4, and Fig. 6 is a detailed view illustrating the construction of the central movable support for the horizontal frame-supporting rod.

The invention forming the subject-matter of this application is applicable for use in connection with the ordinary form of box-car, such as the one partially illustrated in the drawings above referred to, wherein 10 represents one of the central floor-timbers; 11, the door-posts; 12, the plate; 13, the carlings; 14, the main carlings; 15, the flooring of the car; 16, the cross-frame tie-timbers, and 17 one of the body truss-rods.

In applying my invention to cars of the character above described I secure a horizontal rod, 20, to the inner face of each of the plates of the car, each end of the rod being bent inward and then outward to form an eye, 21, through which eyes the retaining-bolts by means of which the rod is partially supported are passed. The rod 20 extends over the upper end of the doorway and along the plate beyond one side of the doorway for a distance slightly in excess of the width of the doorway.

In order that the rod 20 may be centrally supported, and thereby prevented from sagging when subjected to the weight of the door and its supporting-frame, as will be hereinafter described, I provide a central supporting-bracket, 22, which bracket is carried by a flat slide, 23, that is mounted in a groove or recess, 24, formed in the face of the plate 12, the slide being held within the recess by short clips 25, that are bolted to the plate 12 and extend across the recess 24 in front of the slide 23.

The door-supporting frame consists of two vertical strips, 27, that are united by an upper longitudinal strip, 28, and a lower longitudinal strip, 29, each of the strips 27 being formed with a rabbet, 2, and provided with a metallic facing-plate, 3, said plates being secured to the outer faces of the strips 27, the upper ends of the plates being bent over to form eyes 4, through which the rod 20 is passed.

The grain-door proper, which is shown at 30, is mounted to slide in the grooves or ways formed by the rabbets 2, the upper edge of the door being strengthened by a cleat, 31, which also serves as a stop to limit the movement of the door within its frame. To this cleat 31 there is connected a hook, 32, that is arranged to engage with an eye, 33, carried by the upper longitudinal strip, 28, of the door-frame. To the inner face of each of the door-posts there is secured a short rabbeted post, 35, the arrangement being such that when the frame

carrying the grain-door is moved to the position in which it is shown in Fig. 1 the door 30 may be moved downward, its ends at this time riding in the grooves 36, formed by rabbeting the posts 35.

When it is desired to clear the doorway in connection with which my improved form of grain-door is arranged, the door 30 is raised and its hook 32 is brought into engagement with the eye 33, after which the door and its supporting-frame may be slid along the rod 20 to the position in which the parts are shown in Fig. 4; and it will be noticed that in so moving the sliding frame and the door carried thereby the movable supporting-bracket 22 will be carried from its position adjacent to the clip 25 to a position adjacent to the clip $25^a$; and it will also be noticed that when the door is moved to a position to close the port the rod 20 will be supported at a point in close proximity to the eye $4^a$, while when the door and frame are moved to open the doorway the rod will be supported at a point in close proximity to the eye 4.

The door as described is applicable for use when heavy grain—such as wheat, rye, and corn—is to be transported; but when more bulky grains—such as oats—are to be transported it will sometimes be necessary to increase the height of the door, and to this end I cut away a portion of the upper inner face of the strips 27, as shown at 9, thereby permitting of the introduction of boards which will fit within the grooves or ways of the strips 27 and rest upon the upper face of the cleat 31. As many of these boards may be used as may be required.

In practice it will be found that a single person can easily lift the door 30 and bring its hook 32 into engagement with the eye 33 and move the door and its frame to a position to clear the doorway.

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

1. In a car, the combination, with short rabbeted posts secured to the door-posts, of a horizontally-sliding frame provided with grooved end strips, and a vertically-sliding door carried by the said frame and adapted to slide in the grooves formed by the rabbets of the short posts when the end strips of the frame are brought into alignment with the said short posts, substantially as herein shown and described.

2. In a car, the combination, with short rabbeted posts secured to the door-posts and a bar secured to the upper part of the car, of a horizontally-sliding frame suspended from the said bar and provided with grooved and cut-away end strips, and a vertically-sliding door carried by the said frame and adapted to slide in the grooves formed by the rabbets of the short posts when the end strips of the frame are brought into alignment with the said short posts, substantially as herein shown and described.

3. In a car, the combination, with a horizontal bar secured to the car, of a frame having its end strips provided with rabbets in their upper ends, facing-plates secured to the inner face of the said strips, forming, with the rabbet, grooves, and provided with eyes in their upper ends, through which the horizontal bar is passed, and a door sliding in said grooves, substantially as herein shown and described.

4. In a car, the combination of a bar secured to the upper part of the car, a centrally supporting and sliding bracket for said bar, and a frame suspended from said bar by eyes on either side of the said sliding bracket, substantially as herein shown and described.

5. In a grain-car, the combination, with a bar fixed to the plate of the car and centrally supported by a movable bracket, of a frame suspended from the bar by eyes arranged upon either side of the central supporting-bracket, a door mounted to slide vertically within the frame, and means for locking the door in the raised position, substantially as described.

6. In a grain-car, the combination, with a bar fixed to the plate of the car and centrally supported by a movable bracket, 22, of a frame consisting of vertical strips 27, formed with grooves 2, upper and lower longitudinal strips, facing-plates 3, formed with eyes 4, through which the bar 20 passes, a door mounted within the grooves 2, posts 35, having grooves, as described, a hook, 32, and an eye, 33, substantially as described.

WILLIAM THOMAS SPILLANE.

Witnesses:

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J. B. CUMMINS.