J. D. WILKINSON.

SLIDING DOOR FASTENER.

APPLICATION FILED JUNE 4, 1908.

917,226.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.

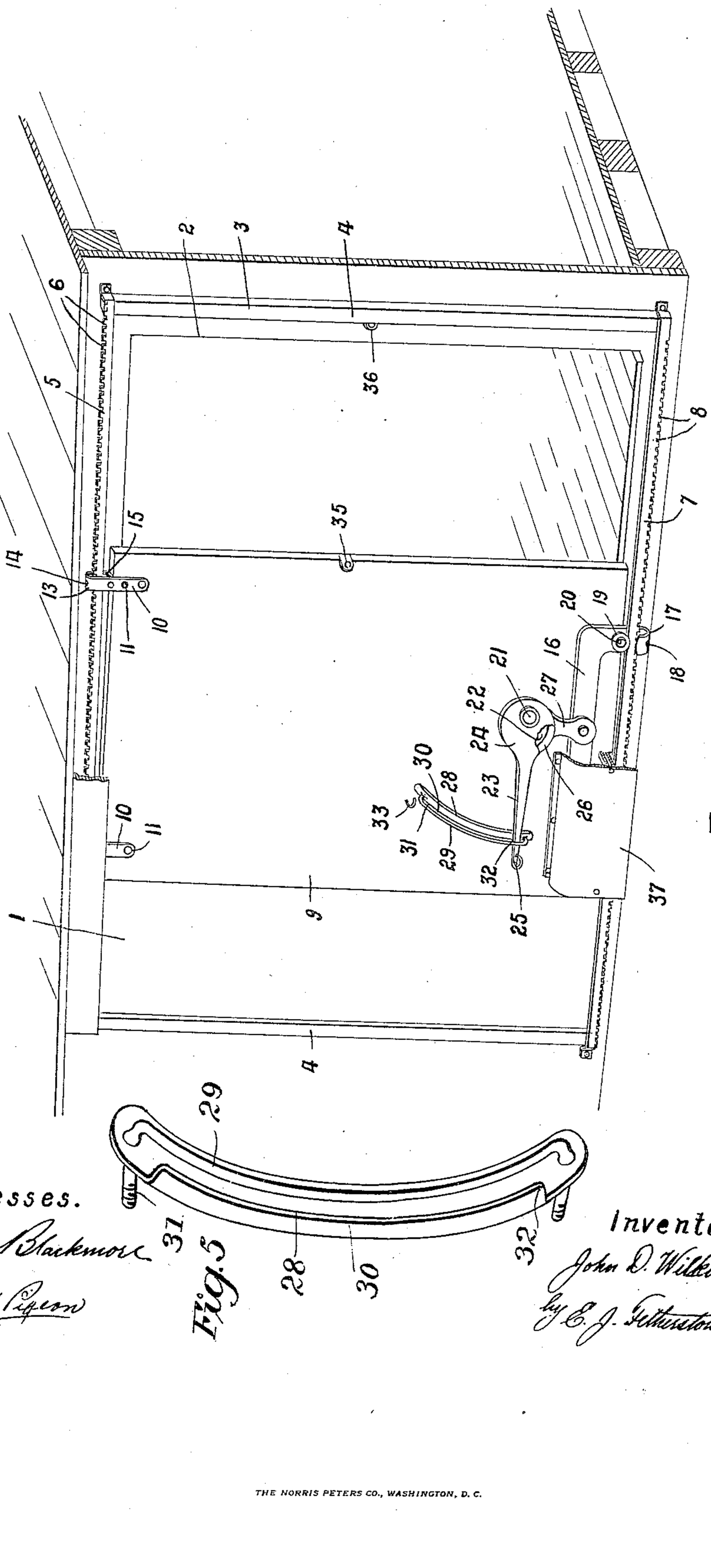

Fig. 1.

Fig. 5

Witnesses.

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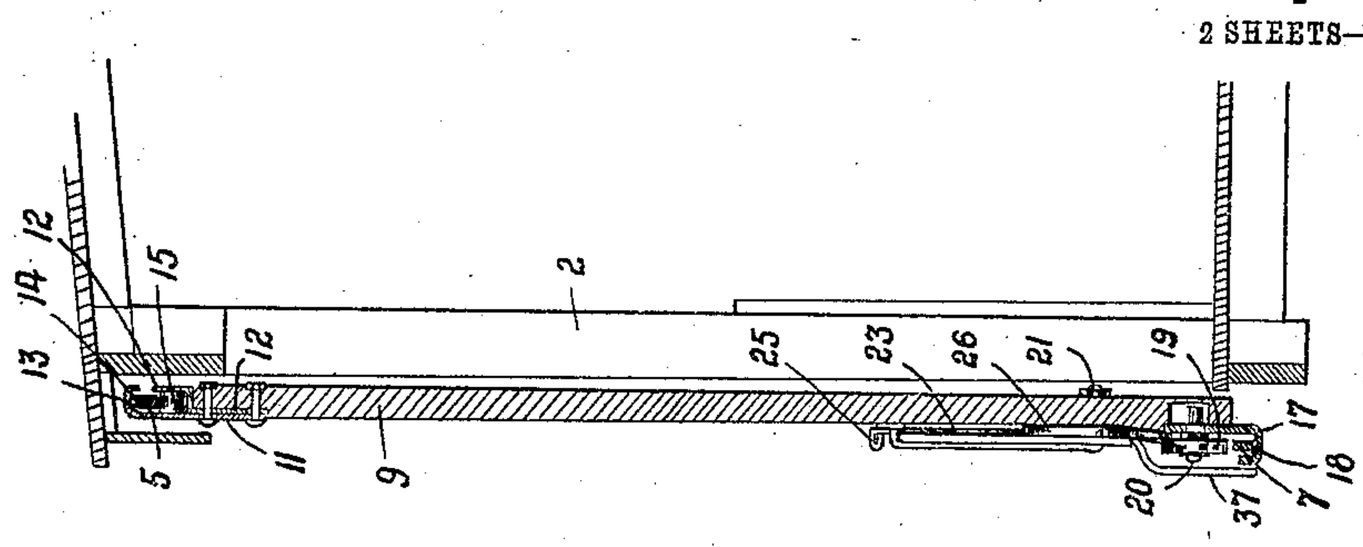

Fig. 3.

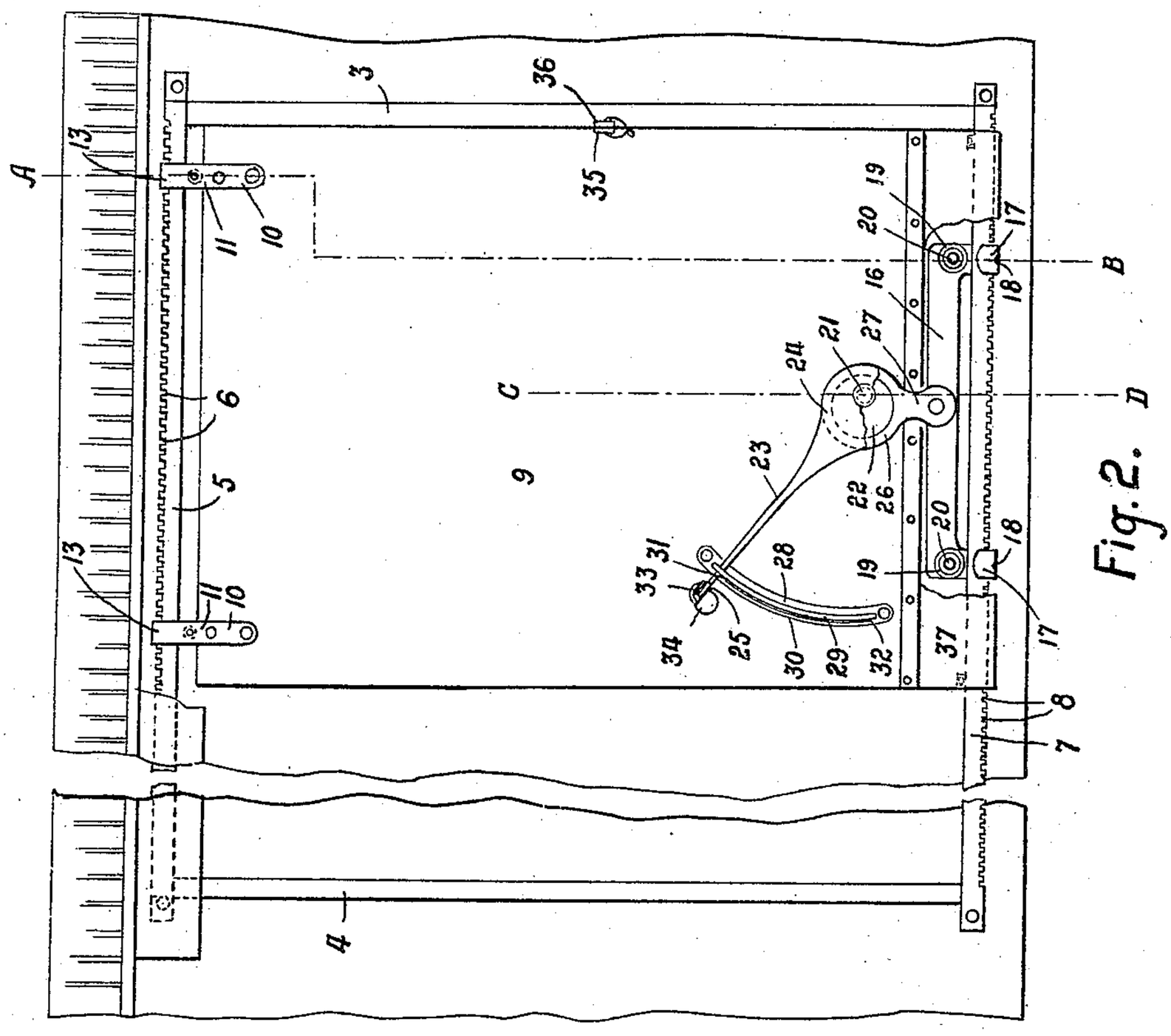

Fig. 2.

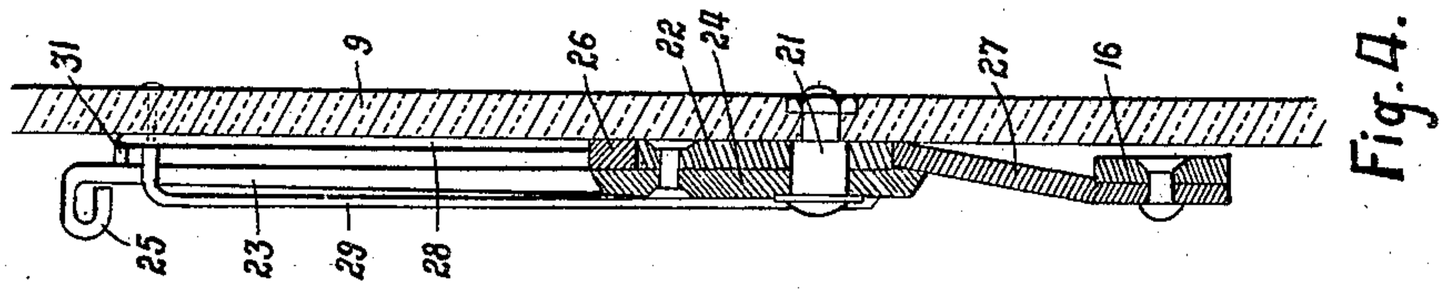

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN D. WILKINSON, OF PLATTSBURG, NEW YORK, ASSIGNOR TO ANDREW A. REA AND GEORGE H. REA, OF BEEKMANTOWN, NEW YORK.

SLIDING-DOOR FASTENER.

No. 917,226. Specification of Letters Patent. Patented April 6, 1909.

Application filed June 4, 1908. Serial No. 436,692.

To all whom it may concern:

Be it known that I, JOHN D. WILKINSON, a citizen of the United States, residing at the city of Plattsburg, in the State of New York, in the United States of America, have invented certain new and useful Improvements in a Sliding-Door Fastener, of which the following is a specification.

The invention relates to improvements in a sliding door fastener, as described in the present specification and illustrated by the accompanying drawings.

The invention consists essentially in the novel arrangement of the sliding gear in railway car and like doors, and means for arresting the sliding motion at any desired position.

The objects of the invention are to provide a simple, effective and durable means of locking railway box-car doors, both in the closed position and in any slightly open position, in order that the car may be thoroughly ventilated in the event of its containing any perishable produce, to hold the door securely in position so that the jarring and jolting shall not loosen it from its fastenings, and to devise a locking means which cannot well be tampered with.

In the drawings, Figure 1 is a sectional perspective view of the side of a box-car, showing the door in its unlocked position and partly open. Fig. 2 is a side elevation of a portion of the car, showing the door closed and locked. Fig. 3 is a sectional view on the line A—B in Fig. 1. Fig. 4 is an enlarged sectional view on the line C—D in Fig. 2. Fig. 5 is a perspective detail view of the guide plate for the lever handle.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 is a car wall preferably forming part of a railway car of the box-car type, and 2 is the doorway leading through said wall.

3 is a vertical strip secured to the car wall 1 adjacent to the side edge thereof and forming the door jamb.

4 is a vertical strip secured to the car wall at a distance from the other side of the said doorway and forming the door stop.

5 is a rail extending from the upper end of the door jamb 3 to the upper end of the door stop 4 and rigidly secured thereto and to the car wall and forming the upper track-way, the upper of the longitudinal edges of said rail having teeth 6 and being arranged in the form of a rack.

7 is a rail of similar formation to the rail 5, having the rack portion 8 on the lower longitudinal edge thereof and extending from the lower end of the said door jamb to the lower end of the said door stop and firmly secured over said stop and jamb to the car wall.

9 is the door of larger dimensions than the doorway 2 so as to extend to the door jamb 3 and beyond the other side and also into proximity with the rails 5 and 7.

10 are trolley hangers formed of the pieces 11 and 12 together rigidly secured to the upper end of the door 9, the piece 11 extending upwardly and looped at 13 over the rack 6 of the rail 5, a tooth 14 being arranged on the inner wall of said loop, said tooth in the lower position of said door engaging the said rack 6, and the piece 12 extending upwardly to the inside of the piece 11 and in right-angular formation over the top edge-face of the door and upwardly from the inner edge, the wheel 15 of the trolley hanger being journaled between the said pieces 11 and 12 immediately under the plain side of the rail 5, or in other words, the upper track-way.

16 is a yoke terminating in the looped ends 17, said ends having the teeth 18 projecting from the inner walls thereof, said tooth being adapted to engage the rack 8 of the rail 7.

20 are pins rigidly secured in orifices in the yoke 16 in proximity to the looped ends 17. The pins 20 extend a short distance on the inside of the yoke 16 into suitable vertical slots in the door 9.

19 are rollers journaled on the pins 20 where the said pins project outwardly from the yoke 16.

21 is a pin extending outwardly from the door 9 above the yoke 16 and rigidly secured.

22 is a disk forming an eccentric and journaled on the pin 21.

23 is a lever, having the enlarged end 24 rigidly secured to the face of the eccentric 22, and extending slightly thereover, and forming the operating handle in turning said eccentric on the pin 21; the lever at the smaller end is formed into an eye 25.

26 is the eccentric strap, having the lug 27 extending downwardly therefrom, and centrally secured to the horizontal bar of the yoke 16.

28 is a curved plate secured to the outside face of the door, and from which the rod 29

is supported, said rod 29 forming a guide for the lever 23 which extends under said rod. The plate 28 has the up-turned edge 30, extending along the upper side thereof, and terminating in the stop 31 toward the top of said plate and the stop 32 toward the bottom of said plate.

33 is a staple adjacent to the upper end of the curved plate 28, and to which the lever handle is linked in the locked position of the door by the pad-lock 34, the said handle springing into the face of the plate 28 immediately above the stop 31.

35 and 36 are hasps projecting from the door jamb 3 from the edge of the door 9 respectively, said hasps being joined by a padlock, seal or other suitable device in the closed position of the door.

37 is a hood projecting outwardly toward the lower end of the door, and secured thereto, and covering in the locking mechanism below said eccentric and lever.

In the operation of this door, it will be seen that the wheels of the trolley hangers 10 travel on the lower smooth edge of the rail 5, while the rollers supported from the yoke 16 travel on the upper smooth edge of the rail 7, and that in order to bring these rollers and wheels to the said smooth edges, the lever 23 must be lowered. In lowering the lever 23, the eccentric 22 is turned on the pin 21, consequently the yoke 16 is lowered which brings the rollers in contact with the upper smooth edges of the rail 7 and releases the teeth in the inner wall of the looped ends of the said yoke from engagement with the rack 8. The continued action of lowering the lever after the said rollers have come in contact with the said rail 7 has the effect of raising the door, and bringing the wheels of the trolley 10 in contact with the under plain edge of the rail 5, thereby arranging the sliding gear in its proper position for the easy movement of the door, that is to say, the rollers on the yoke 16 are engaging the lower track-way and the wheels in the hangers 10 are engaging the upper track-way, the teeth in the upper loops of the said hangers 10 having been disengaged from the rack 6 by the upward lifting of the door. So long as the lever is in its lower position where it is held by the stop 32, the door may be slid with ease, either to its open or closed position, but the moment the said lever has been raised and the door allowed to drop, the teeth on the inner wall of the loops of the hangers 10 engage the rack 6, and similarly the teeth in the loops from the yoke engage the teeth of the rack 8, as the eccentric 22 when returned to its former position pulls the yoke 16 into its upper position.

It will readily be understood that this door may be left in any one position on the rails, that is slightly open if desired, and yet be securely locked in that slightly open position.

What I claim as my invention is:

1. In a sliding door fastener, the combination with the car wall having a suitable doorway therethrough and rails rigidly supported above and below said doorway respectively from the wall of the car and formed by teeth into racks on one of each of their longitudinal edges, of an eccentric suitably journaled and supported from the outside face of the door, a lever rigid with said eccentric and extending laterally therefrom, a yoke having loop-shaped ends and teeth projecting from said loops engaging a rack formed on the under side of the lower rail, and rollers journaled toward the ends of its horizontal bar, an eccentric strap joining said yoke and eccentric, hangers secured to the upper end of the door and having loops engaging the teeth of the rack in the upper edge of the upper rail, and wheels contacting on the smooth under edge of said upper rail, and a guide rail through which said lever-handle extends.

2. In a sliding door fastener, the combination with the car wall having a suitable doorway therethrough and upper and lower rails rigidly supported from the wall of the car above and below said doorway respectively and having racks formed on their upper and lower longitudinal edges respectively, of hangers secured to the top of said door and having teeth adapted to engage the rack on said upper rail, an eccentric suitably journaled and supported from the outside face of the door, a lever rigid with said eccentric and extending laterally therefrom, a curved plate having stops engaging said lever, a guard rod extending along said plate over said lever, a yoke having looped ends and adapted to engage the rack on the under side of said lower rail, rollers journaled on pins extending from said yoke and running on the upper edge of said lower rail, and an eccentric strap joining said yoke and said eccentric.

Signed at Plattsburg, Clinton Co. N. Y. this 11th day of April 1908.

JOHN D. WILKINSON.

In the presence of—
JOSEPH N. LANDRY,
MARTIN H. O'BRIEN.