No. 858,920. PATENTED JULY 2, 1907.

J. F. STREIB.

CAR DOOR MECHANISM.

APPLICATION FILED MAR. 6, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

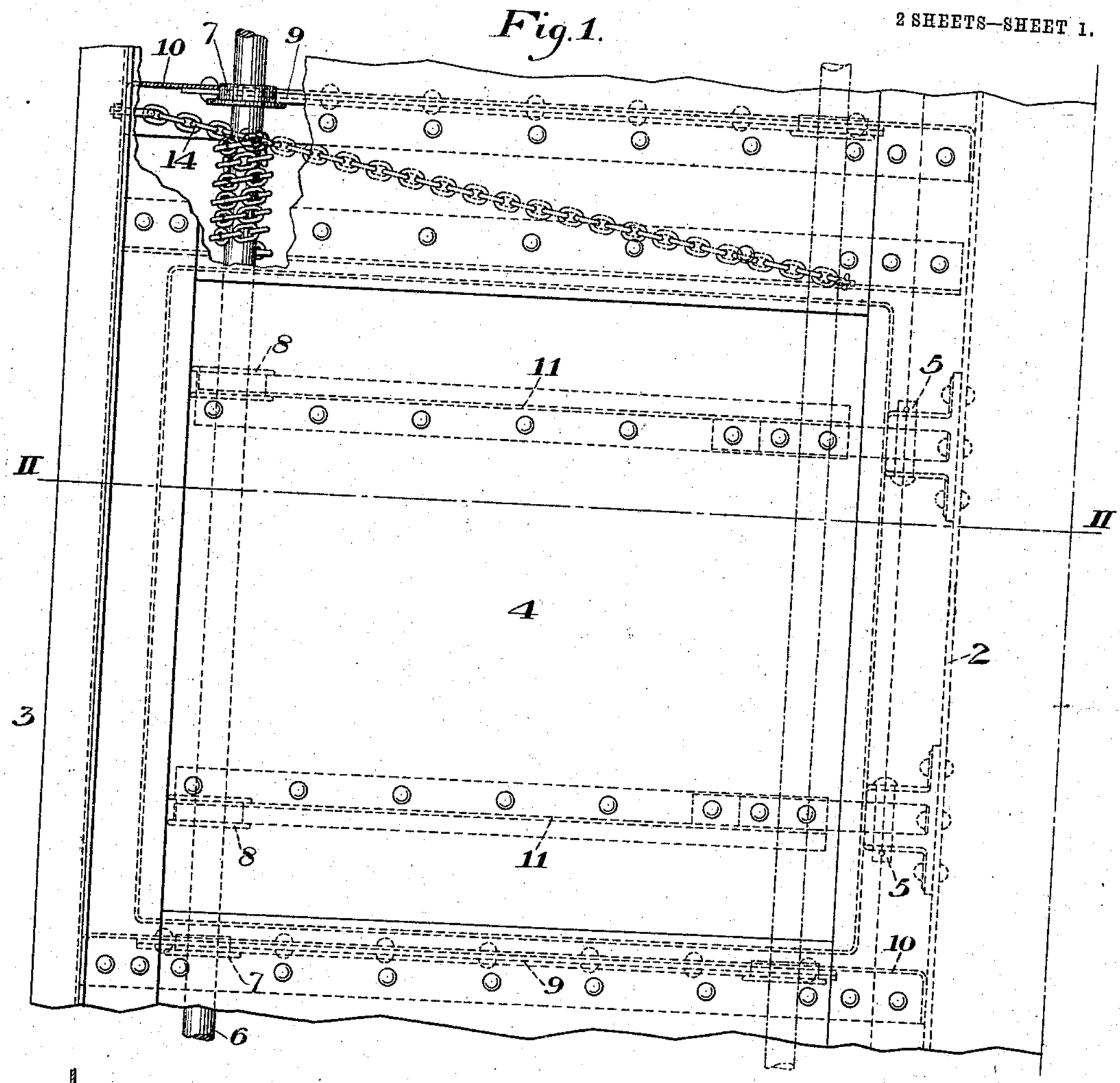
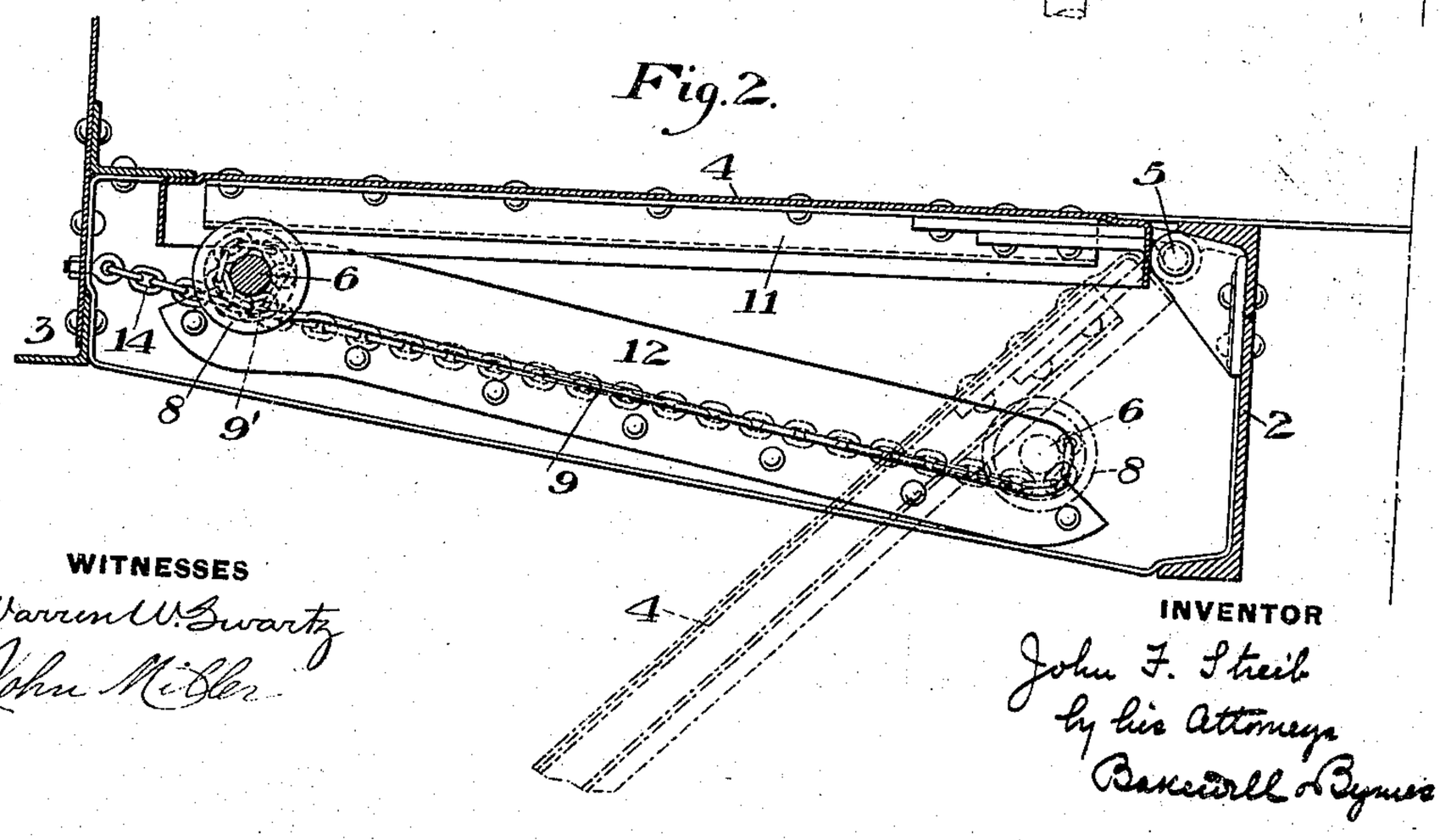


Fig. 2.



WITNESSES

Warren W. Swartz

John McMiller

INVENTOR

John F. Streib

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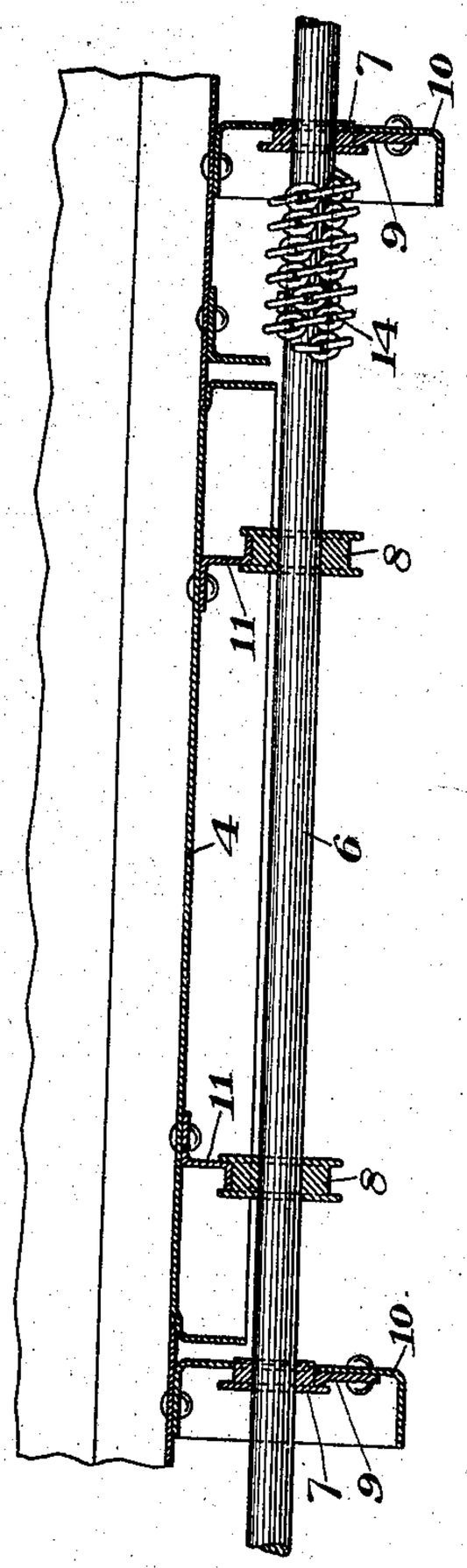

Fig. 3.

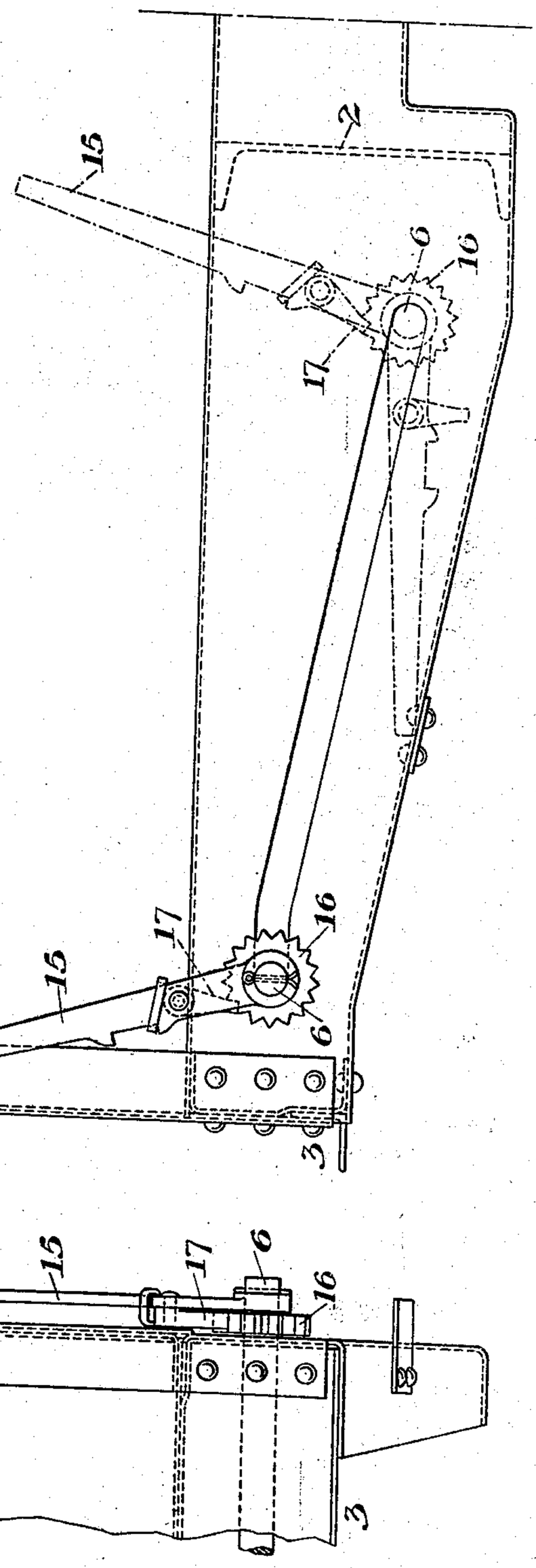

Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN F. STREIB, OF AVALON, PENNSYLVANIA, ASSIGNOR TO PRESSED STEEL CAR COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

CAR-DOOR MECHANISM.

No. 858,920. Specification of Letters Patent. Patented July 2, 1907.

Application filed March 6, 1906. Serial No. 248,491.

To all whom it may concern:

Be it known that I, JOHN F. STREIB, of Avalon, Allegheny county, Pennsylvania, have invented a new and useful Car-Door Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a part of the bottom of a car showing my improved door operating mechanism; Fig. 2 is a vertical section on the line II—II of Fig. 1; Fig. 3 is a vertical longitudinal section on the line II—III of Fig. 1; Fig. 4 is an end elevation of the car showing the operating lever; and Fig. 5 is a side elevation.

In the drawings 2 represents the center sill of the car, 3 is one of the side sills, and 4 is a door which is hinged to the car at 5 and is adapted to swing from the closed position shown in full lines on Fig. 2 to the open position which is shown in dotted lines.

The operating mechanism comprises shafts 6 which extend lengthwise of the car below the doors. Each shaft extends under the doors from one end of the car to the other on one side of the center sill. These shafts are provided at intermediate points with rollers 7, 8, of which the rollers 7 travel upon tracks 9 secured to plates 10 which depend from the bottom of the car. The tracks are inclined upwardly and outwardly from the center sill, and the plates 10 are slotted as shown at 12 to receive the shaft and permit its movement. The rollers 8 are grooved peripherally and contact with bars 11 on the doors. Each shaft 6 is connected with the side sill or other part of the car-framing by a suitable number of chains 14 which when the shaft is in its outermost position are wrapped up thereon, but as the shaft is rolled towards the center sill it uncoils the chains from it and the chains therefore preserve the shaft in parallel position.

The shaft 6 is moved preferably by a lever 15 which is journaled loosely at the end of the shaft as shown in Fig. 4, and engages a ratchet 16 on the shaft. The lever is provided with a pawl 17, so that by operating the lever, a step by step motion is imparted to the shaft causing it to roll from one end of the tracks 9 to the other.

Fig. 2 shows by full lines the door in its closed position. The shaft is then near the side sill and the chains 14 are wrapped around it. The door then rests upon the rollers 8 and is held thereby in its highest and closed position; the shaft is held by the lever 15 which is confined by a suitable locking device 18 and the rollers themselves are rendered stable in their position by forming the track with depressions 9′ in which the rollers then rest. To open the door, the lever 15 is released from its locked position, the pawl detached from the ratchet and the shaft caused to travel down the inclined track, during which travel the door resting on the rollers 8 opens into the position shown by dotted lines, the chains unwinding as the shaft descends and holding the shaft and rollers parallel. To close the door the operator by means of the lever and ratchet causes the shaft to travel up the tracks, winding the chains upon it until finally it is brought into closed position.

The mechanism is very simple in its construction, it is easy to operate and it holds the door with great security. The mechanism being simple it is not apt to get out of order with the rough usage to which it is subjected during the operation of the car.

It will be noted that the chains and rollers are at all times covered by the portions of the floor over the slotted diaphragms. They are therefore out of the way of the descending material when the doors are open.

Within the scope of my invention as defined in the claims, the parts may be modified in many ways since

What I claim is:

1. In car door operating mechanism, a bottom door hinged at one edge, tracks supported below the door and inclined upwardly and outwardly from the car center sill, a rolling shaft mounted to travel on said tracks in contact with the underside of the door, and guiding chains for said shaft all of which are attached thereto at one end and to a fixed portion of the car at their opposite ends; substantially as described.

2. In car door operating mechanism, a bottom door hinged at its inner edge, tracks supported below the door and inclined upwardly and outwardly from the longitudinal center of the car, a rolling shaft mounted to travel on said tracks and having rollers upon which the door rests, ratchet and pawl means for actuating the shaft, and guiding chains all of which are attached to said shaft at one end and to the car at the opposite end, and adapted to wind upon and unwind from the shaft; substantially as described.

3. The combination with a downwardly and inwardly opening bottom door, having transverse bearing portions at its under side, of guide-ways or tracks supported below the car door and inclined upwardly and outwardly from the car center sill, a rolling shaft having rollers which travel on the said tracks, and other rollers which engage the transverse bearing members on the door, and guiding chains for said shaft, each of which are attached by one of its ends to the rolling shaft and by its opposite end to a fixed portion of the car; substantially as described.

In testimony whereof, I have hereunto set my hand.

JOHN F. STREIB.

Witnesses:
F. DITCHFIELD,
M. C. BLEST.