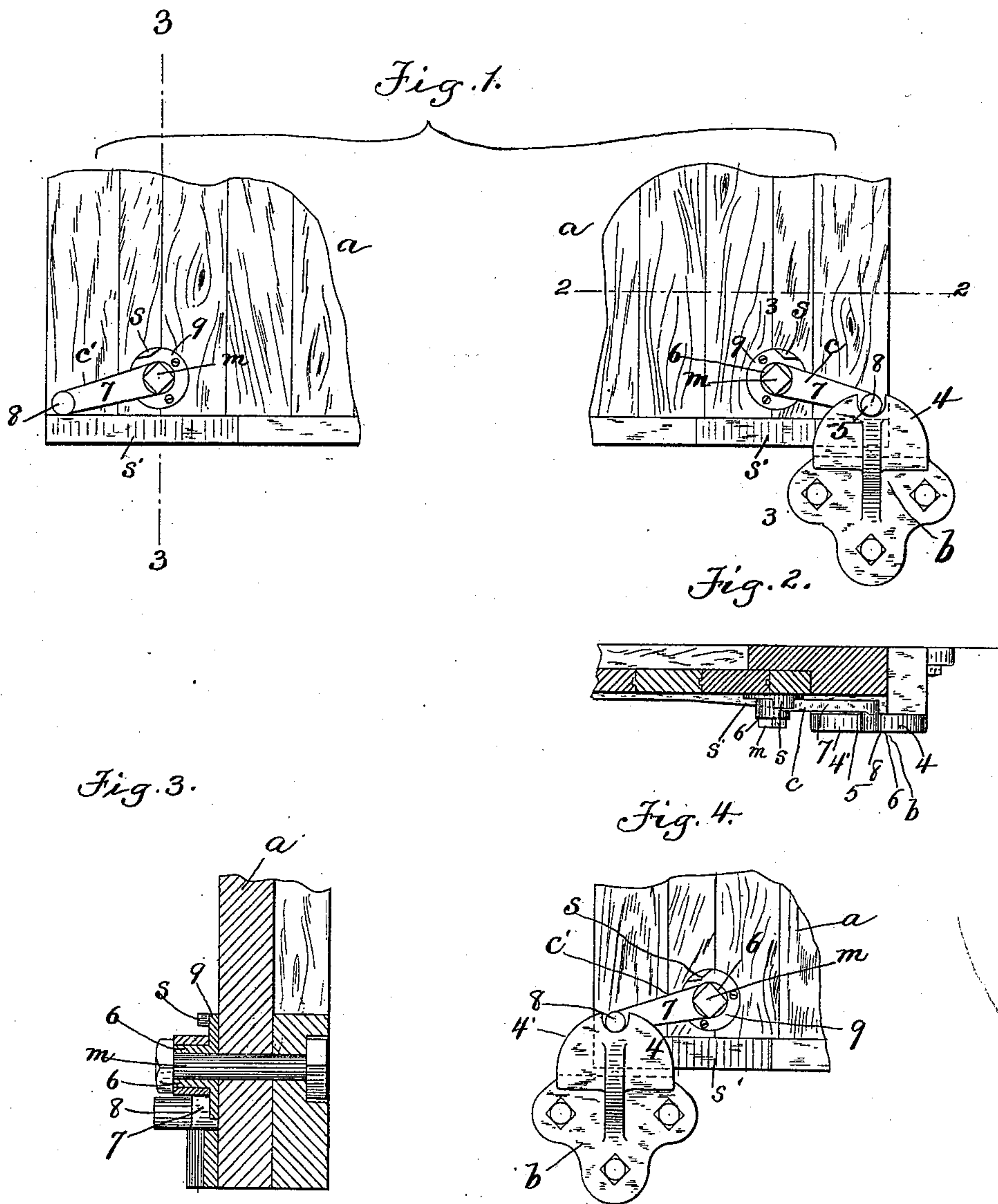


(No Model.)

O. P. HIX.  
CAR DOOR LATCH.

No. 447,182.

Patented Feb. 24, 1891.



Witnesses  
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C. S. Bartlett

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# UNITED STATES PATENT OFFICE.

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## CAR-DOOR LATCH.

SPECIFICATION forming part of Letters Patent No. 447,182, dated February 24, 1891.

Application filed May 23, 1890. Serial No. 352,817. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER P. HIX, of Rockland, in the county of Knox and State of Maine, have invented certain new and useful  
5 Improvement in Gravity-Latches for Freight-Car Doors, of which the following is a specification.

This invention has for its object to provide improved means for latching freight-car doors  
10 and holding the same either open or closed, so that accidental movement from either position will be impossible; and it consists in the improved devices which I will now proceed to describe and claim.

15 Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a freight-car door provided with my improved latching devices. Fig. 2 represents a section on line 2 2, Fig. 1, looking  
20 downwardly. Fig. 3 represents a section on line 3 3, Fig. 1, looking toward the right. Fig. 4 represents a side view of a portion of the door and the latching devices, the door being latched in its open position.

25 The same letters and numerals of reference indicate the same parts in all of the figures.

In the drawings, *a* represents a sliding door, which may be of any suitable construction, and is hung in any suitable way on the side  
30 of a freight-car.

*b* represents an ear or bracket, which is attached to the body of the car below the door, and is formed to project above the lower edge of the door, its upper portion presenting two curved guides 4 4', between which is  
35 a socket or recess 5.

*c c'* represent latch-dogs, which are pivoted at 6 6 to the door, one being near the front and the other near the rear edge of the door.  
40 Each latch is composed of a flat shank 7, which is substantially parallel with the outer surface of the door, and a boss or finger 8, formed on the swinging end of the shank and projecting outwardly at right angles there-  
45 with.

The latches *c c'* are so arranged relatively to the fixed ear *b* that when the door is closed the finger of the latch *c* will be engaged with the socket 5, as shown in Fig. 1, said finger  
50 striking the curved guiding-edge 4 of said ear while the door is being moved to its closed

position and dropping from the highest point of said edge into the socket 5 just as the door reaches its closed position. When the door is being opened and has nearly reached the  
55 end of its opening movement, the latch *c'* rides up the guiding-edge 4' of said ear and drops into the socket 5 when the door is fully opened. Hence the door is automatically latched at each end of its movement and  
60 cannot be moved from either position until the operating-latch is raised from the socket in the ear.

The latches *c c'* are arranged so that the latch *c* projects from its pivot toward the rear  
65 edge of the door, while the latch *c'* projects toward the forward edge of the door, as shown in Fig. 1. This arrangement enables each latch to effectually oppose the movement of the door from the position in which it is held.  
70

The sides of the socket 5 are curved, so that the latches can be swung upwardly to remove their fingers from the socket without binding of said fingers on the sides of the socket.

To prevent the latches from swinging loosely  
75 beyond the necessary limits of their movement, I provide stops to limit their upward and downward movement. The upward movement of each latch is limited by a stop *s* above it, and downward movement is limited by a  
80 stop *s'* below it. The stops *s* are preferably lugs or projections formed on the flanges 9, that support the pivots 6 6 of the latches, said flanges being cast with the pivots 6, which are made hollow or tubular, and are at-  
85 tached by bolts *m* to the side of the door, said bolts passing through the tubular pivots. (See Fig. 3.) The stops *s'* are here shown as the wedges, which project outwardly from the lower edge of the door to co-operate with the  
90 ear *b* in pressing the door inwardly against the side of the car when it is fully opened and fully closed, as shown in the Dunham patent, No. 378,579, dated February 28, 1888, said wedges being so arranged that the swinging ends of the  
95 latches bear upon their upper edges when not engaged with the ear *b*. By the employment of stops for the latches I keep each latch in its proper position and prevent either from swinging downwardly below the bottom edge  
100 of the door.

The device for securing the latch to the



door—viz., the tubular pivot 6, provided with the flange 9, bearing against the side of the door and adapted to receive a bolt *m*, passing through the door—constitutes an important  
5 feature of my invention, because it secures the latch so firmly that accidental loosening of the latter from its connection with the door is impossible.

I claim—

10 1. The combination of the pivot 6, adapted to be attached to the side of a car-door, the latch composed of the shank 7, adapted at one end to receive and turn upon the said pivot and provided at the other end with the outwardly-  
15 projecting finger 8, and the ear *b*, adapted to be secured to the car and provided with a socket formed to receive said finger and prevent movement thereof in either direction, and with a guiding-edge formed to raise the  
20 finger to the socket during a movement of the car-door, as set forth.

2. The combination of a car-door, a latch pivoted thereto and composed of a shank having at its free end an outwardly-project-

ing finger, an ear on the car, having a finger-re- 25  
ceiving socket and a finger-guiding edge, and stops on the car-door above and below said latch, whereby the movements of the latter are limited, as set forth.

3. The combination of a car-door, two latches 30  
pivotaly connected therewith, one near the front and the other near the rear edge of the door, stops on the door, whereby the movements of said latches are limited, and an ear affixed to the car and provided with a socket, 35  
arranged to engage one latch when the door is opened and the other when the door is closed, and with two guiding-edges at opposite sides of said socket, as set forth.

In testimony whereof I have signed my 40  
name to this specification, in the presence of two subscribing witnesses, this 17th day of May, A. D. 1890.

OLIVER P. HIX.

Witnesses:

C. F. BROWN,  
A. D. HARRISON.