

No. 667,150.

Patented Jan. 29, 1901.

J. R. LLOYD.

MEANS FOR OPERATING STREET RAILWAY SWITCHES.

(No Model.)

(Application filed June 9, 1900.)

Fig. 1

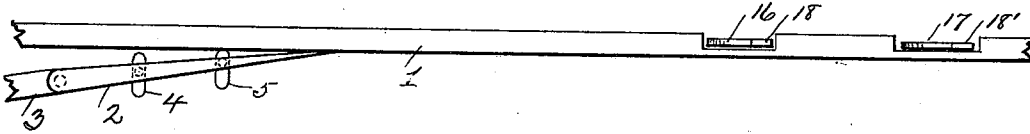


Fig. 2

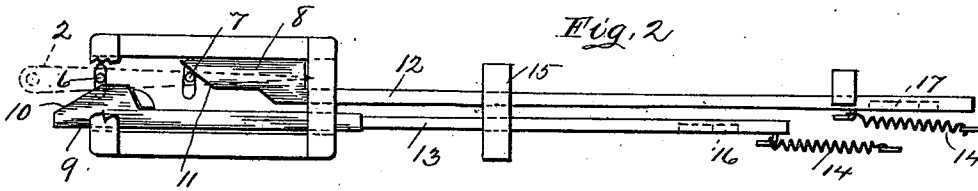


Fig. 3

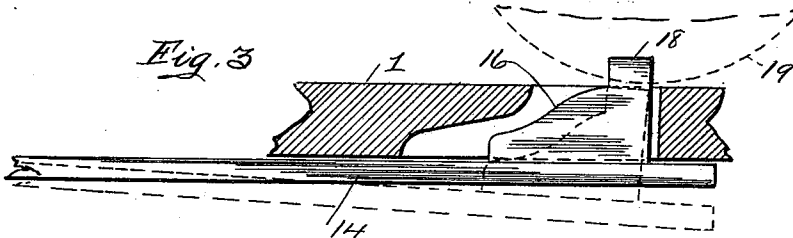
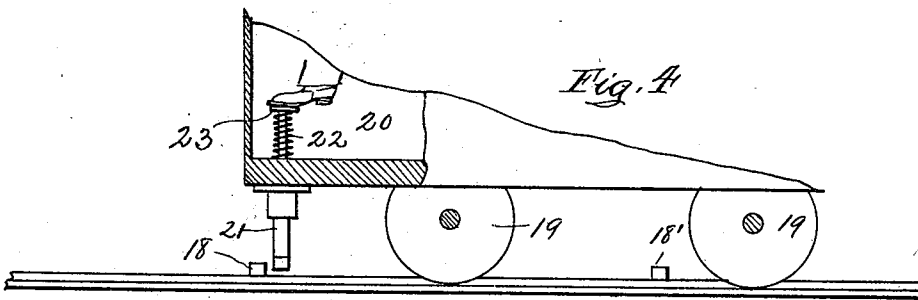


Fig. 4



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# UNITED STATES PATENT OFFICE.

JOSHUA RHODES LLOYD, OF PITTSBURG, PENNSYLVANIA.

## MEANS FOR OPERATING STREET-RAILWAY SWITCHES.

SPECIFICATION forming part of Letters Patent No. 667,150, dated January 29, 1901.

Application filed June 9, 1900. Serial No. 19,676. (No model.)

*To all whom it may concern:*

Be it known that I, JOSHUA RHODES LLOYD, a citizen of the United States of America, residing at 209 Lang avenue, Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Means for Operating Street-Railway Switches; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved means for operating street-railway switches; and it consists in the certain details of construction and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a plan view of a switch bar and rail, showing my improved device for operating the said bar. Fig. 2 is an inverted plan view of the same, showing the mechanism beneath the rail, the same being constructed and arranged in accordance with my invention. Fig. 3 is an enlarged side sectional elevation taken through the rail, showing one of the devices for operating the switch-bar. Fig. 4 is a side elevation of a portion of a street-railway car, showing the means for engaging the switch-operating devices.

To put my invention into practice, and thereby provide a means whereby the switch-bar may be moved in either direction to open or close the switch from the platform of a moving car, I form through the plate or casting to which the switch-bar 2 is pivoted two slots 4 and 5 for the reception of two pins 6 and 7, projecting from the under side of the said switch-bar 2. These two pins 6 and 7 are adapted to operate in connection with two reciprocating cams 10 and 11, arranged in suitable slides and operated by the forward movement of the car in a manner hereinafter described. Each of these cams 10 and 11 consists of a flat bar 8 9, having inclined edges 10 11 to engage with the pins 6 7 and rearwardly-extending spring-bars 12 and 13, each of which is provided with spiral springs 14, which will at all times keep the cams 10 and 11 in their normal position. Attached to each outer extremity of these bars 12 and

13 are two upwardly-projecting portions 18 18', which extend through slots formed in the rail 1 and are adapted to engage with a device under the control of the motorman and arranged upon the platform of the car. These portions 18 and 18' are provided with inclined sides 16 and 17, which engage with similar parts 16', (see Fig. 3,) formed in the rail-slots, when the same are moved forward to operate either of the cams 10 or 11.

Operating upon the platform of the railway-car 20 is a vertically-moving spring-actuated bar 21, which may be depressed by means of a foot-treadle 23 to a point in close contact with the rail 1, so as to engage with either of the upwardly-projecting parts of the devices 18 and 18' for operating the cams 10 and 11.

In operation the motorman observes the position of the switch-bar 2, and if it is desired to turn or change the position of the same the treadle 23 is depressed by the foot of the motorman and engaged with the proper operating-piece 18 or 18'. To open the switch, and thereby move the point of the bar 2 away from the rail 1, the bar 21 is depressed after passing over the first piece 18' and engaged with the second piece 18. By the forward movement of the car 20 the piece 18 is moved forward a short distance, engaging the cam 10 with the pin 6, thereby opening the switch, and by a further movement of the piece 18 the inclined side 16 is brought in contact with the inclined surface 16', which depresses the said piece 18 and permits the bar 21 to disengage itself. The wheels of the car are at all times free to pass over either of the pieces 18 or 18' without interfering with the switch-bar 2, as the said pieces are simply depressed and offer no obstruction to the wheels of the car or other vehicles.

Various modifications and changes may be made in the details of construction without departing from the spirit of the invention. Therefore I do not confine myself to the exact construction shown and described.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The herein-described switch-turning device, consisting of the switch-bar 2, the down-

wardly-projecting pins 4 and 5, the cams 10  
and 11 operating in connection with the said  
pins, the spring-bars 12 and 13 for operating  
the said cams, the springs 14 to keep the  
5 parts in their normal position, and the oper-  
ating-pieces 18 and 18' projecting through  
and above the surface of the rail 1, the said  
pieces being capable of a forward and verti-  
cal movement, by the action of a suitable de-  
10 vice arranged on the platform of a railway-

car, substantially as and for the purpose de-  
scribed.

In testimony whereof I have hereunto af-  
fixed my signature in the presence of two sub-  
scribing witnesses.

JOSHUA RHODES LLOYD.

Witnesses:

JOHN GROETZINGER,  
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