

(No Model.)

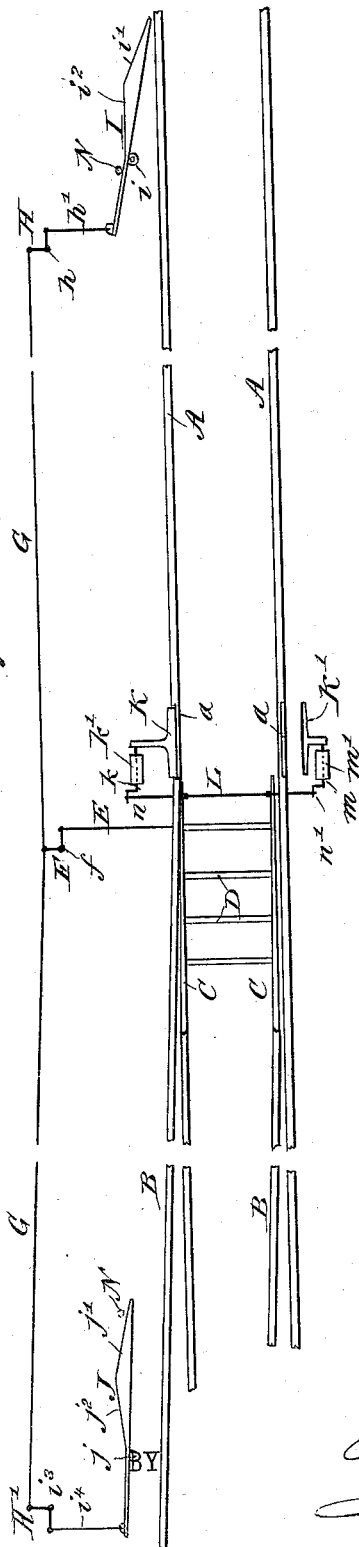
2 Sheets—Sheet 1.

J. QUINN.  
RAILWAY SWITCH.

No. 344,544.

Patented June 29, 1886.

Fig. 1.



WITNESSES:

*Donn Twitchell.*

*C. Sedgwick*

INVENTOR:

*J. Quinn*  
*Munn & Co*

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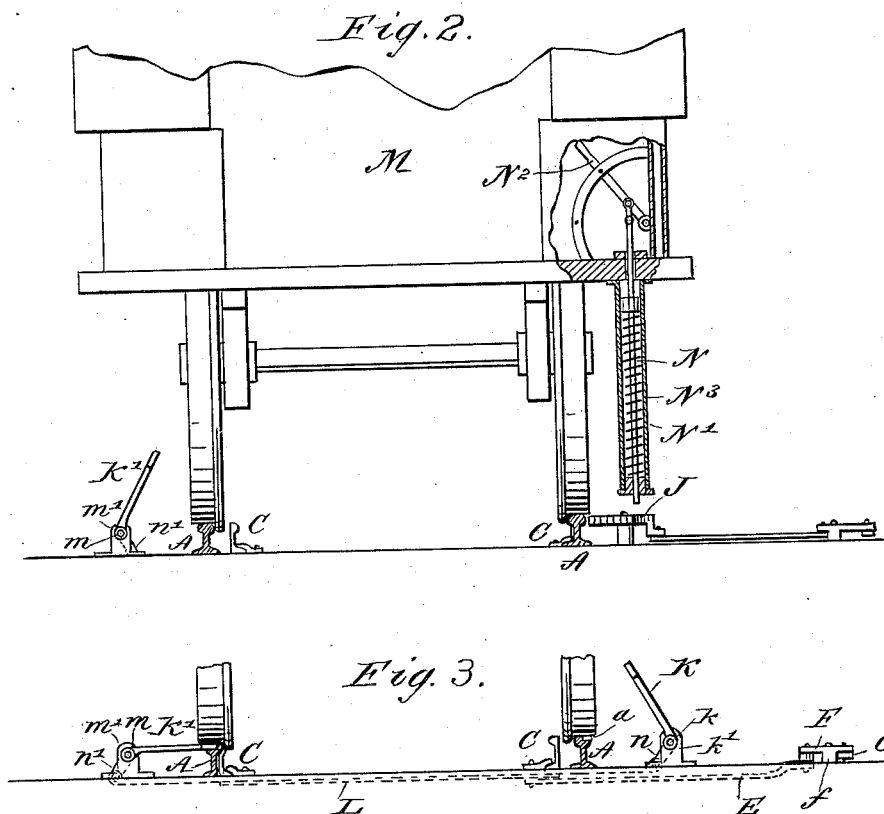
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# UNITED STATES PATENT OFFICE.

JOHN QUINN, OF ELIZABETHPORT, NEW JERSEY.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 344,544, dated June 29, 1886.

Application filed November 23, 1885. Serial No. 184,176. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN QUINN, of Elizabethport, in the county of Union and State of New Jersey, have invented a new and Improved Railway-Switch, of which the following is a full, clear, and exact description.

The principal object of my invention is to operate railway-switches from the locomotive or car, so the control of the switches will be entirely in the hands of the engineer, or driver in case of a street-car.

Another object is to lock the switch-rails in open or closed position, or both, by the weight of the locomotive or car passing the switch, so that there will be no danger of derailment when the switch is open, or failure of the train to take the switch when closed.

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

Figure 1 is a plan view of an ordinary main track, siding, and switch having my switch-operating and switch-locking mechanism applied thereto, the switch being shown set for the main track. Fig. 2 is a section across the main track and switch, showing the switch set for the siding, and showing in sectional elevation a part of a locomotive having applied thereto the switch-operating device. Fig. 3 is a section across the main-track and switch, showing wheels upon the track, and showing the switch-locking mechanism, the switch being set for the main track.

A A represent the rails of the main track; B B, the rails of the siding, and C C represent the switch-rails connected together by one or more cross pieces or rods, D. Attached to one of the cross-pieces D or to one of the switch-rails is the rod E. This reaches a suitable distance to one side of the track, and is attached at its outer end to one arm of the bell-crank lever F, which is pivoted upon a firm and rigid pivot at *f*. The other arm of the bell-crank F is attached to the rod G, that runs a considerable distance along the main track and along the siding, and is connected at its extremities to the outer arms of the two bell-crank levers H H'. The bell-crank lever H is pivoted upon a firm pivot at *h*, and its inner arm is connected by the rod *h'* to one end of the operating-lever I. This lever I stands

near the main track, and is fulcrumed at *i*, and its free rear end is formed with the two opposite inclines *i'* and *i''*, for the purposes hereinafter described. The bell-crank H' is pivoted upon a firm pivot, *i''*, and its inner arm is connected by the rod *i'* to the lever J, which is placed near the siding and is fulcrumed at *j*, and is in all respects formed like the lever I, with the double inclines *j'* *j''*. The operation of these two levers I J together will be hereinafter described.

The rails of the main track are cut away at *a a*, just in front of the points of the switch-rails C C, to receive the switch-locking plates K K'. These are placed opposite to each other, and act alternately—that is, the plate K acts to lock the switch set for the main track, and plate K' to lock the switch set for the siding. The plate K is attached to a shaft, *k*, journaled in the fixed stud *k'*. The plate K' is attached to a similar shaft, *m*, journaled in a fixed stud, *m'*. The shafts *k m* each have corresponding downwardly-projecting and rigidly-connected cranks, (marked *n n'* respectively,) and these cranks are connected together and to the switch-rails C by a rod, L, that passes under the track, so that when the switch-rails are shifted the rod L will be moved longitudinally, which movement will turn the cranks *n n'* and their respective shafts *k m*, in the same direction, through a space of a fifth of a circle or thereabout, and this movement of the shafts will properly operate the locking-plates K K'—that is to say, when the switch-rails are moved toward the stud *k'* the movement of rod L will move crank *n* outward away from the track, and swing the locking-plate K forward and downward upon the rail where the wheels of the locomotive and cars will run upon it, so under the weight upon it it will react through the shaft *k*, crank *n*, and rod L, and lock the switch set for main track. The movement of the rod L that lowers the locking-plate K also swings the crank *n'* toward the track, and swings the opposite locking-plate, K', upward and outward away from the track, as indicated in the drawings.

When the switch is set for the siding, the rod L will move with the switch-rails in the opposite direction, which will simultaneously reverse the locking-plates—that is, it will swing the plate K upward and away from the

5 rail, and lower the plate K' upon the opposite rail, so the wheels will run upon it and cause it under the weight to react through the shaft *m*, crank *n'*, and rod L, to lock the switch set for the siding.

10 The switch is operated from the locomotive or car M by means of a vertical rod, N, held in a sleeve, N', attached to the frame of the locomotive or car. The rod N is located to stand outside the railway-track, and is under the control of the engineer, being adapted to be depressed by a lever, N<sup>2</sup>. A coiled spring, N<sup>3</sup>, is placed in the sleeve N' for normally holding the rod N elevated so it will clear the 15 switch-actuating levers I J. The fulcrum-pins of the levers I J are located a distance from the rails somewhat less than the pin N, as indicated in Fig. 1, so that when the locomotive passes the lever I, for example, said lever being in the position shown in Fig. 1, 20 and the pin N being depressed, the pin N will strike the lever just in front of the fulcrum *i*, and will force the forward end of the lever toward the track, which will turn the bell-crank levers H, F, and H'. The movement of the bell-crank F will set the switch for the siding, and also operate the switch-locking plates K K', as above described. The movement of the bell-crank H' will swing the rear end of the lever J toward the track, so that the pin N (if depressed) as the locomotive passes the lever J will strike the lever beyond its fulcrum *j* and operate the bell-crank levers H' F H in the opposite direction, which will cause bell- 25 crank F to set the switch for the main track, and at the same time reverse the switch-locking plates K K', as above described.

35 The inclined surfaces *i' j'* of the levers I J, respectively, serve to cause the operating-pin N on the locomotive to move the rear end of the levers toward the track in proper position should they be displaced before the pin strikes the lever in front of their pivots. The inclined *i<sup>2</sup> j<sup>2</sup>* of the lever I J are for causing the 40 operating-pin on the locomotive to operate the switch when the locomotive is backed from the siding upon the main track, so that after the locomotive has backed past the lever I the main track will be clear, and the engineer has

simply to raise the pin N to pass the switch 50 and run along the main track with safety.

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

1. The combination, with a railroad-switch, 55 of pivoted locking-plates arranged at the sides of the track, with their free ends when lowered resting upon the main rails, and means for alternately raising and lowering the said plates from and upon the main rails by the 60 movement of the switch-rails, substantially as described.

2. The switch-rails C and rod L, connected thereto, in combination with the switch-locking plates K K', attached to crank-shafts jour- 65 naled on opposite sides of the track, the cranks of said shafts being connected to the rod L, substantially as and for the purposes set forth.

3. The rails of the main track cut away at *a*, in combination with the switch-locking 70 plates arranged to be operated by the movement of the switch-rails, substantially as described.

4. In a railway-switch, the combination, with the switch-rails, of levers having double 75 inclines pivoted at the side of the track and adapted to be operated by a projection on the locomotive, means for connecting the said levers together and to the switch-rails, and pivoted locking-plates connected to the switch- 80 rails, substantially as herein shown and described.

5. The combination, with the switch-rails C, of the levers I J, having double inclines *i' i<sup>2</sup> j' j<sup>2</sup>*, the bell-cranks F H H', and the connect- 85 ing-rods E G, substantially as herein shown and described.

6. The combination, with the switch-rails C, of the levers I J, having double inclines *i' i<sup>2</sup> j' j<sup>2</sup>*, the bell-cranks F H H', the connecting- 90 rod E G, the locking-plates K K', the crank-shafts *k n m n'*, and rod L, substantially as herein shown and described.

JOHN QUINN.

Witnesses:

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EDWD. M. CLARK.