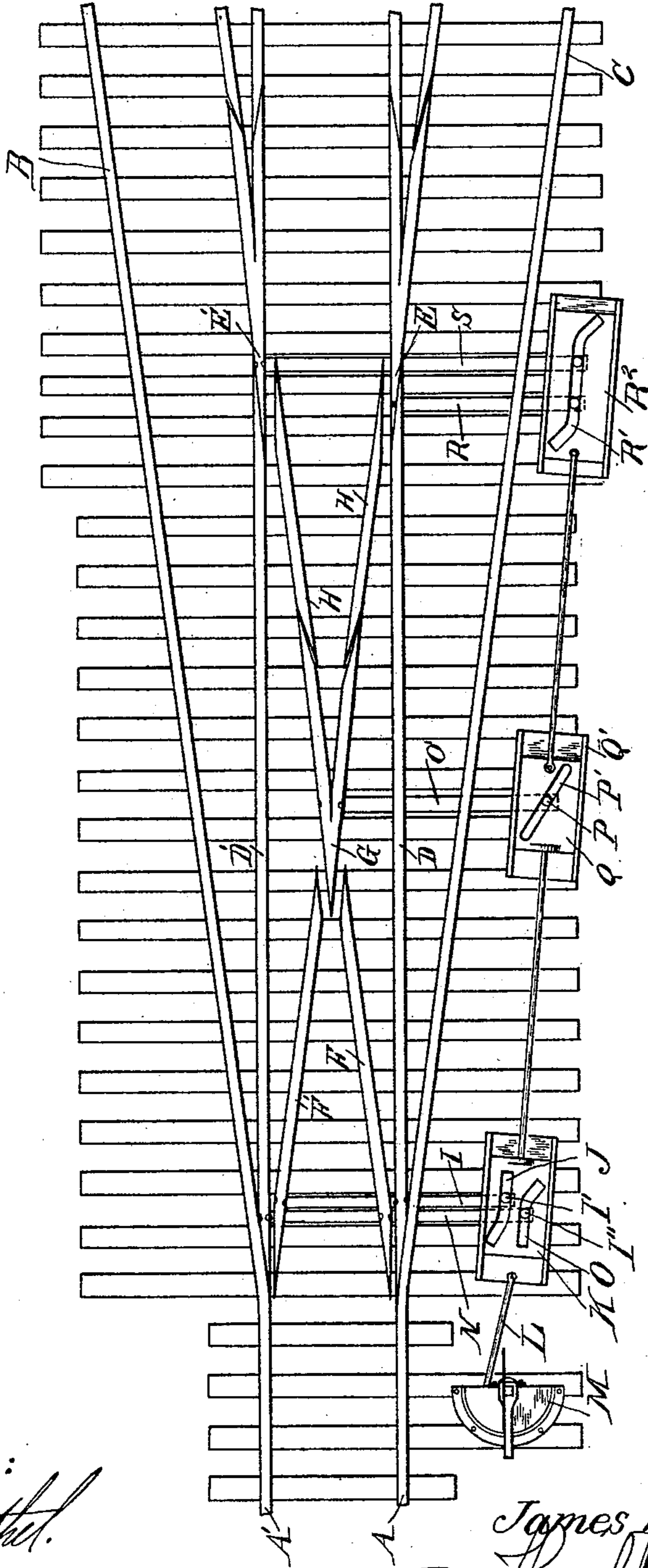


(No Model.)

J. DONOVAN.
RAILWAY SWITCH.

No. 538,102.

Patented Apr. 23, 1895.



Witnesses:
O. F. Barthel.
M. J. O'Connell.

Inventor:
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By *W. S. [Signature]*
Attys:

UNITED STATES PATENT OFFICE.

JAMES DONOVAN, OF THREE RIVERS, MICHIGAN, ASSIGNOR TO THE
ROBERTS, THROP & COMPANY, OF SAME PLACE.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 538,102, dated April 23, 1895.

Application filed July 30, 1894. Serial No. 518,944. (No model.)

To all whom it may concern:

Be it known that I, JAMES DONOVAN, a citizen of the United States, residing at Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Railway-Switches, of which the following is a specification, reference being had therein to the accompanying drawing.

10 The invention consists in the peculiar construction of the rails and the actuating mechanism therefor in a three-throw or three point switch.

15 The invention consists particularly in the construction of the rails and points, whereby solely split rails or split joints are employed; further in the construction of the actuating mechanism, whereby all the points and rails are locked at every point of movement, and
20 further in the peculiar construction, arrangement and combination of the various parts, all as more fully hereinafter described.

In the drawing, the figure is a plan view of a railway switch embodying my invention
25 showing the switch moved to permit a train to pass on the main track.

A and A' are the rails of the main track. B and C are the rails of two side tracks extending from a common point on the main track. In the main rails are the sections D D' having split ends, and the points E E'. Between the sections D D' are the sections F F' converging as they enter the switch section. Between their inner ends is the swinging
35 point G, which turns on the point of the stationary spreading section H the ends of which are split, and are opposite the points E E'. The point of the section D and section F' are connected together by a connecting rod I,
40 which extends to one side of the switch and is provided with the pin I' engaging in the cam way J in the block K which slides in a closed casing at one side of the track, and is connected by the rod L with the usual switch
45 stand M. The sections F and D' are likewise connected together by a connecting rod N which has a corresponding pin I'' engaging in a camway O in the block K.

The point G has a connecting rod O' on
50 which is a pin P, engaging in an inclined slot P' in the sliding block Q, engaging in bear-

ings in the covered casing Q'. The point E has a connecting rod R, which has a pin engaging in the slot or groove R' in the block R² and the point E' has a rod S having a pin
55 engaging in the same slot or groove in the block R², the blocks Q and R² being connected to the block K which as described is connected to the switch stand and operated therefrom.
60

The parts being thus constructed their operation is as follows: The switch lever and target being in the middle position as shown in the figure, the points of the sections D D' will be pressed against the sections A A' of the
65 main track, while the points E E' will be held in contact with the opposite ends of the sections D D' and thus make a continuous rail on the main track. Now if it is desired to side-track on the track B, the operator turns
70 the lever in the switch stand to the right, which actuates the connecting rods and the various blocks K, Q and R². This movement draws the point of the section D' away from the section A' and moves the point of the section
75 F against the section A. At the same time it throws the point G against the other end of the section F and the point E' against the end of the section H. If it is desired to side-track on to the track C, the operator turns
80 the lever from the position shown in the figure to the left, which moves the blocks and shifts the section D away from the rail A, the point of the section F' against the section
85 F' and the section E against the section H, thereby opening the track C, making a continuous track to side-track C. These various movements are effected by properly shaping the grooves or slots in the plates and they are
90 so arranged that at all points in their movement the connecting rods are locked against movement in either direction by engaging with both sides of these slots. It will also be observed that with this construction I use en-
95 tirely split rails or switches, thus dispensing with the necessity of stub switches at any place and thus provide a continuous rail for both the main track and side tracks.

It will be observed that all switches are
100 thrown by a single lever and that the working of this lever is transmitted to the switch

rails and points through the medium of the sliding cam blocks which greatly reduce the power of the operator required to throw the switches, simplifies the mechanism and as before described it forms a lock for the switch rails and points.

It will be observed that the points G, E and E' rock about or upon the points or their connecting sections. It will also be observed that I am enabled to construct a switch without the use of any frogs whatever.

What I claim as my invention is—

1. In a railway switch, the combination with the outer switch rails B, C, and main track rails A, A', from which the former diverge, of the movable sections D, D' of the main rails, the movable sections F, F', at the junction of the switch and main rails, the connecting rod between the sections F and D', the connecting rod between the sections F', and D, a single switch lever, and means actuated by the lever for moving the rods independently and locking one rod while the other is being moved, substantially as described.

2. In a switch, the combination with the

main rails, of the siding rails B, C, extending outwardly therefrom in opposite directions, the movable sections D, D', of the main rails, the movable sections F, F', of the sidings, independently movable throw rods between the sections F, D', and F', D, the movable V-section at the ends of sections F, F', the throw rod for the V-section, the sections H, H', overlapping the ends of the V-section, the V-sections E, E', having their points interposed between the ends of sections D, D', and H, H', independent throw rods for sections E, E', a single actuating lever, the sliding plate K having the oppositely inclined grooves therein, the plate Q having the single inclined groove, the plate R² having the groove R' therein, and connections between the plates and lever, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES DONOVAN.

Witnesses:

GEORGE A. ROBERTS,
JAMES E. BUNN.