

No. 671,373.

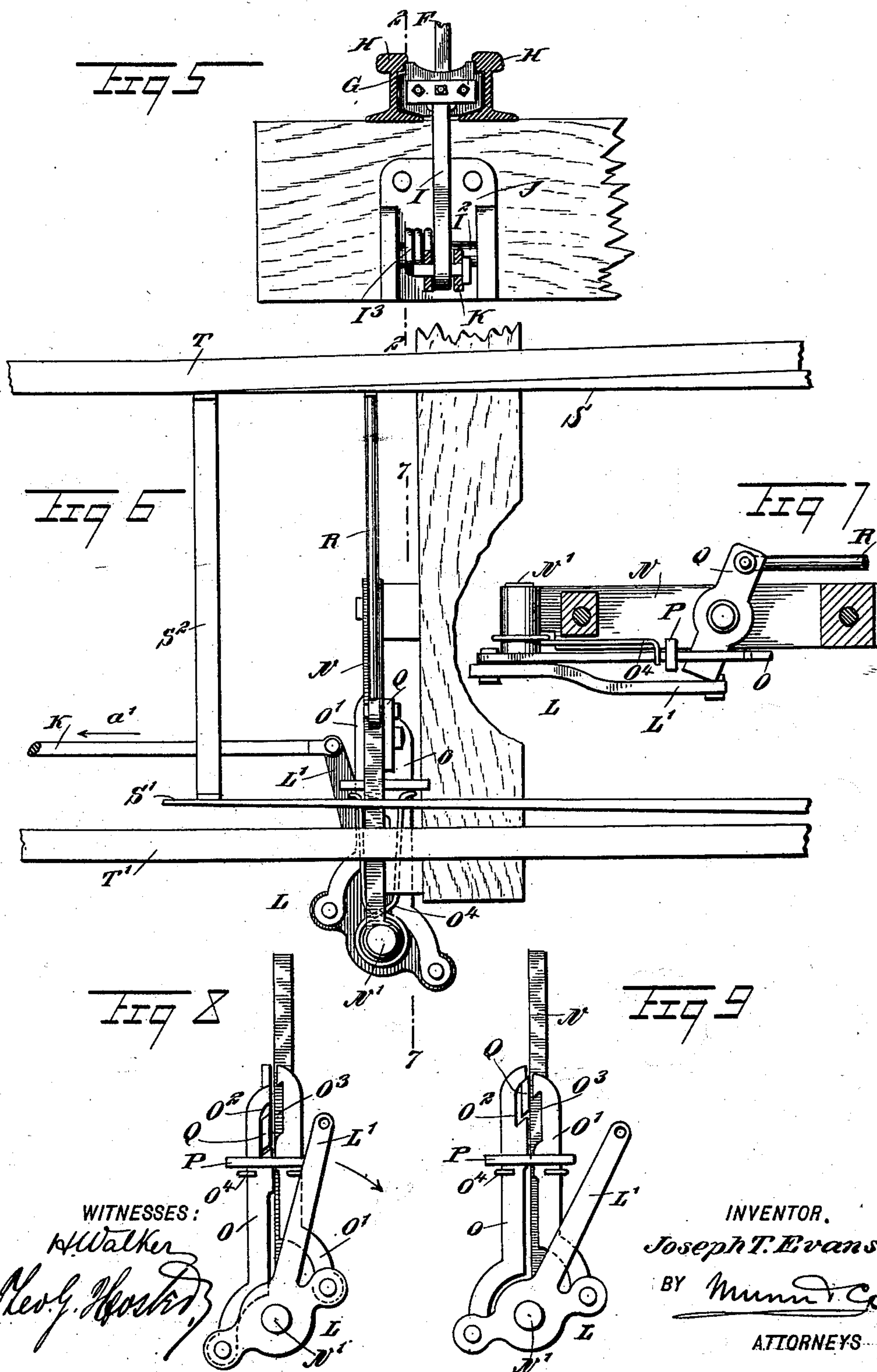
Patented Apr. 2, 1901.

J. T. EVANS.
RAILROAD SWITCH.

(Application filed Aug. 9, 1900.)

(No Model.)

2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

JOSEPH TANNER EVANS, OF RUSHVILLE, NEBRASKA.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 671,373, dated April 2, 1901.

Application filed August 9, 1900. Serial No. 26,409. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH TANNER EVANS, a citizen of the United States, and a resident of Rushville, in the county of Sheridan and State of Nebraska, have invented a new and Improved Railroad-Switch, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved railroad-switch arranged to be opened and closed by a suitable mechanism under the control of the engineer of a train to permit of running the train on the main track or upon a side track and to allow the engineer to close a switch that has been carelessly left open, and thereby prevent trains from running off the track and also prevent trains from crashing into one another on the main track at the station.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of a locomotive and the mechanism thereon for actuating the switch. Fig. 2 is an enlarged sectional side elevation of part of the improvement, the section being on the line 2 2 in Fig. 5. Fig. 3 is a similar view of the same with the parts in a different position. Fig. 4 is an enlarged plan view of part of the same. Fig. 5 is a cross-section of the same on the line 5 5 in Fig. 2. Fig. 6 is a plan view of the switch mechanism. Fig. 7 is a transverse section of the same on the line 7 7 in Fig. 6. Fig. 8 is an inverted plan view of the switch-shifting mechanism, and Fig. 9 is a like view of the same with the parts in a different position.

In the cab of the locomotive A is arranged a lever B under the control of the engineer and connected by a link C with a lever D, fulcrumed on the forward truck E of the locomotive, as is plainly indicated in Fig. 1. On the lever D is hung a bar F, adapted to rest against one of the truck-wheels and extending down into the path of a block G, mounted to slide in suitable bearings H, preferably in the form of a pair of rails having their forward

ward ends curved downward, as is plainly indicated in Figs. 1, 2, and 3. The block G is provided with forwardly-extending rods G', connected with each other by a cross-bar G², pressed on by springs G³, coiled on the rods and resting with their rear ends against the block G. The forward movement of the cross-bar G² is limited by nuts or keys G⁴ on the rods G'. The cross-bar G² is adapted to be engaged by the upper end I' of a lever I, fulcrumed at I² on a bracket J, secured to one of the ties of the railroad-bed, and said lever I is pressed on by a spring I³ to normally hold said lever I in the rearmost position. (Shown in Fig. 2.)

The lever I is pivotally connected by a forwardly-extending rod K with the arm L' of a three-armed lever L, fulcrumed on a vertically-disposed pin N', held on a frame N, secured to one of the railroad-ties, as is plainly illustrated in Figs. 6 and 7.

The three-armed lever L is pivotally connected on opposite sides of its fulcrum with bars O O', extending transversely and formed at their inner ends on opposite faces with notches O² O³, as is plainly shown in Figs. 8 and 9. The bars O O' are mounted to slide in a suitable guideway P, forming part of the frame N, and said bars are pressed toward each other by a suitable spring O⁴, engaging both bars, as indicated in Figs. 6 and 7. The notches O² O³ of the bars O O' are adapted to alternately engage one end of a lever Q, fulcrumed on the frame N and connected by a link R with a switch-point S, connected by a reach S² with the other switch-point S', as is plainly indicated in Fig. 6.

When the switch is in the closed position (shown in Fig. 6) and the switch-point S rests against the rail T and the other switch-point is away from the rail T' and the engineer of the train desires to open the switch, then the engineer swings the lever B into the position shown in Fig. 1, so that the bar F extends downward into the path of the block G, and when the locomotive carries the bar F in contact with the block G then the latter is moved forward in the guideway H, and as the latter is curved the block moves downward, so that the bar F finally slides off said block. During this forward and downward movement of the block G a swinging motion is given to the

lever I to move the rod K rearwardly in the direction of the arrow a' (see Figs. 2 and 6) until the bar F moves out of engagement with the block G. (See Fig. 3.) During the rearward movement of the rod K a swinging motion is given by said rod to the three-armed lever L to cause the bar O to move inward, and thereby impart a swinging motion to the lever Q, which by the rod R moves the switch-point S into an open position and the switch-point S' into a closed position to cause the locomotive to run on the side track. When the three-armed lever L' moves back to its former position, then the arm O moves with its notch O² out of engagement with the lever Q, while the notch O³ of the other bar O' moves in engagement with said lever Q, and consequently on the next rearward swinging motion given to the three-armed lever L by the rod K it is evident that the bar O now imparts a swinging motion to the lever Q to cause the rod R to move the switch-points S S' back to their forward position. (Shown in Fig. 5.) When the three-armed lever L' is brought back to its former forward position, then the notch O³ moves out of engagement with the lever Q and the other notch O² again moves in engagement with said lever, so that the several parts again assume the position shown in Fig. 8.

By the arrangement described the engineer in charge of a locomotive can readily control the switch-rod according to the direction in which the train is to run, and in case the train ahead is at a station then the engineer of the succeeding or following train can readily open the side switch and run upon the side track instead of crashing into the train at the station.

It is understood that immediately after the bar F moves out of engagement with the block G the latter is returned to its previous position by the action of the lever I, returned by its spring I². The return movement of the lever I does not affect the position of the switch-points set during the forward movement of the block G, as the bar O or O', which did the previous shifting of the lever Q, simply moves out of engagement with the lever Q and the other bar O' or O at the end of the stroke of the three-armed lever L moves into engagement with the lever Q to shift the latter on the next forward movement of the block G by a subsequent train. Thus from the foregoing it is evident that the engineer in charge of a train can either open a closed

switch or close an open switch, as the case may be.

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

1. A railroad-switch having a lever fulcrumed on the track a distance from the switch, but connected with the latter, a block adapted to be engaged by said lever, a fixed curved guideway for said block to slide in, and means carried by the locomotive and controlled by the engineer, to move said block in its guideway, as set forth.

2. A railroad-switch, comprising a switch-shifter directly connected with a switch-point, a lever fulcrumed on the track a distance from said switch-shifter, but connected with the latter, a block adapted to engage said lever, a fixed curved guideway for said block to slide in, and means carried by the locomotive and controlled by the engineer, to move said block in its guideway, as set forth.

3. A railroad-switch, comprising a switch-shifter directly connected with a switch-point, a lever fulcrumed on the track a distance from said switch-shifter, but connected with the latter, a block adapted to engage said lever, a fixed curved guideway for said block to slide in, and means carried by the locomotive and controlled by the engineer, to move said block in its guideway, said means comprising a depending arm, a lever carrying said arm, and a hand-lever in the cab of the locomotive and connected with said arm-car-rying lever, as set forth.

4. A railroad-switch having a switch-shifter comprising a three-armed lever adapted to be actuated by a device under the control of the engineer, notched bars connected with said lever, and a shifting-lever having connection with the switch-points and adapted to be alternately engaged by said notched bars, as set forth.

5. A railway-switch having a movable block carrying rods, a cross-bar slidable on said rods, but limited in a forward direction by stops on said rods, and springs pressing said cross-bar, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH TANNER EVANS.

Witnesses:

EL. L. HEATH,
KEMP HEATH.