

UNITED STATES PATENT OFFICE.

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RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 253,749, dated February 14, 1882.

Application filed August 1, 1881. (No model.)

To all whom it may concern:

Be it known that I, PATRICK NOLAN, a subject of the Queen of Great Britain, and a resident of Rockwood, in the county of Roane and State of Tennessee, have invented certain new and useful Improvements in Railroad-Switches, of which the following is a specification.

My invention relates to an improvement in railway-switches.

The object of this invention is to prevent cars which are run apart onto the side track by a running-switch from having any tendency to return to the main track.

In sidings which have a downgrade toward the main track a great deal of trouble is experienced in preventing cars from returning toward the main track, as the switched cars usually have to be blocked or checked by the switchman, which causes the stopping of the train to allow the brakeman to follow up and block the return of a car run onto the side track; but by the employment of the short spring-switch herein shown the track is automatically blocked by the reconnecting of the main track by the switch, and a perfect safety locking or blocking of the car on the siding is obtained. This I accomplish by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my invention. Fig. 2 is a cross-section on line *x x*, Fig. 1. Fig. 3 is a sectional elevation, showing one of the friction-rollers attached in position between the ties on line *y y*, Fig. 1. Fig. 4 is a cross-section of the spring operating the block-switch. Fig. 5 is a cross-section showing the sliding track-bar of the switch supported on a roller between the ties on line *z z*, Fig. 1.

A A represent the main-track rails.

B B represent the ordinary movable switch-rails.

b b represent ordinary chair-slides for supporting the movable rails B B.

A' A' represent ordinary railway-ties.

C C represent a series of longer ties, upon the ends of which are mounted bearings D, for supporting a connecting crank-rod, E, journaled thereon.

E' E'' represent cranks at each end of rod E.

F represents the ordinary switch-bar for moving the sliding rails.

M represents the switch-lever by which the switch is operated.

b' b' represent the ordinary connecting-bars which hold the rails B in proper relative position.

G represents a link connecting crank E' with switch-lever F M.

I represents a spring connecting-rod, which is connected at one end to crank E'' of crank-rod E. At the other end rod I is firmly clamped to the short switch-rail in such a manner as to move the rail when the crank-rod E is operated.

L represents a roller hung between two ties, A' and C, for supporting spring switch-rod H, I, and allowing it to slide endwise with but little friction.

O O represent supplemental switch-bars supported on friction-rollers to assist the movement of rails.

a represents a short switch-rail which moves a short distance out of line with its abutting rail A'. Cranks E' and E'' should be out of center, so as to allow the parts to be operated with ease, avoiding a dead-center.

l l represent other rollers upon which clamping chair-rods O O, which support the short rail *a*, are supported. These rollers *l l* allow rail *a*, sliding on chairs O' O', to move easily.

K represents a spring-connection in rod I between the short switch-rail and the crank-rod E. It may occupy any desired position between these points. It should have sufficient elasticity to yield to the lateral draft caused by the flange of the wheels of an empty

car which is being run onto the side track, and of sufficient tension to return the rail *a* to its place, as shown in Fig. 1, as soon as the car has passed over the end of it, so that it may thus serve as a block or stop to the car

and prevent its return past that point. This spring-connection, as shown in Figs. 2 and 4, is composed of a rod or bar, K', having at each end a head, L', in an opening in each of which is arranged a headed tapering thrust-block, N',

the smaller portions of which project through said heads and rest against nuts *s* on threaded parts of the rod H, so that one or both of said thrust-blocks can be adjusted to regulate the tension of two reversely-coiled springs which

encircle the rod H, and abut at each end against the respective inner shouldered ends of the

thrust-blocks. When the switch between the main and side track is opened to connect the main with the side track, crank-rod E and connecting-rod I, being connected to switch F M, 5 moves the rail *a* into position with the abutting joint-rail A', and allows cars to run from the main to the side track, and vice versa. When the switch is turned to connect the main-track rail and a car is turned onto the side 10 track by a "running-switch" the spring-connection K yields to the pressure of the flange of the car-wheels on the inside of short switch-rail *a* and brings it into line position with its 15 the siding, and as soon as the car has passed short switch-rail *a* the spring K brings it into position (shown in Fig. 1) for blocking the return of the car toward the main track. This 20 short switch-rail *a* is a very important improvement, as it effectually holds the cars on the side track and allows a running-switch to be made with ease and safety.

I claim—

1. In the side track of a railway connected by 25 a switch to the main track, the short blocking

switch-rail *a*, combined with the main switch, the crank-rod E, connected with and operating the latter, and a spring-connection between the blocking switch-rail and the crank-rod, said 30 members being arranged for operation substantially as described, for the purposes set forth.

2. The combination, with a railway-switch, of the short blocking-rail *a*, crank-rod E, arranged parallel to the track-rails, and the 35 spring connecting-rod I, all constructed and arranged substantially as and for the purpose described.

3. The combination, with the switch and main siding track-rails, the connecting-rod I, 40 the short blocking-rail *a*, and the crank-rod E, of the switch-spring K, all arranged for operation substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing wit- 45 nesses.

P. NOLAN.

Witnesses:

H. H. SQUIER,
C. B. DUNCAN.