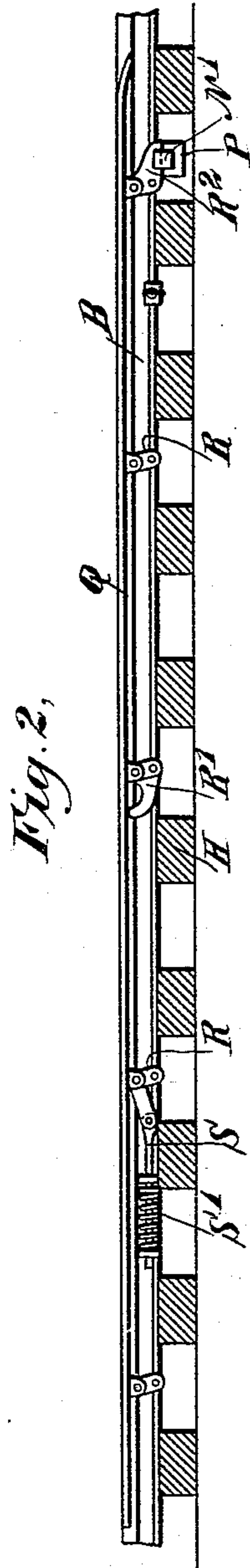


(No Model.)

J. KESSELRING.  
RAILWAY SWITCH.

No. 557,828.

Patented Apr. 7, 1896.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN KESSELRING, OF GIRARDVILLE, PENNSYLVANIA.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 557,828, dated April 7, 1896.

Application filed October 9, 1895. Serial No. 565,120. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN KESSELRING, of Girardville, in the county of Schuylkill and State of Pennsylvania, have invented new and useful Improvements in Railroad-Switches, of which the following is a full, clear, and exact description.

My invention relates to that class of railroad-switches which are arranged to automatically return to a certain normal position—for instance, so as to be normally open to a siding.

The object of the invention is to improve switches of the above-indicated class so as to make them very reliable in operation, and also to provide, in addition to the well-known movable switch-tongue, a yieldingly-mounted track-rail section arranged to operate in a manner and for a purpose more fully described hereinafter.

The invention consists in the relative arrangement of certain parts, and also in details of construction which will be specifically set forth hereinafter, and particularly pointed out in the claims.

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

Figure 1 is a broken plan of a section of a main track and siding, showing the arrangement of the improved switch. Fig. 2 is a longitudinal section taken on the line 2 2 of Fig. 1; and Fig. 3 is a transverse section in substantially the plane indicated by the line 3 3 of Fig. 1, but showing the switch-tongue in a different position.

As illustrated by the drawings, A A' are the rails of the main track. B is the switch-tongue, spliced at B' and located adjacent to the rail A, and C is the well-known guard-rail located on the inner side of the other main rail, A'.

D is one of the rails of the siding and forms a continuation of the switch-tongue B.

E is a rail, one portion of which, E', extends adjacent and at an angle to the main track-rail A', so that the rails E and A' converge toward the pointed end of the latter. The portion E' of the rail E forms the mating rail to the rail D of the siding. The other portion,

E<sup>2</sup>, of the rail E forms a portion of the main track—that is, it is located in the continuation of the main track-rail A'.

The rail E is supported in a peculiar manner adjacent to the end of the main rail A', viz: Said rail E is mounted loosely for part of its length, so as to be able to swing transversely from the position shown in full lines in Fig. 1 to that indicated in dotted lines in the same figure.

The movable portion of the rail E is normally held in close contact with the point or end of the main rail A' by means of springs, the preferred arrangement comprising a rod F, passed loosely through the rail E and guard-rail C and provided with heads F' at its ends, and coiled springs G, surrounding the projecting or outer portions of the said rod, so as to bear with their outer ends against the heads F' and with their inner ends against the rails E and C, respectively. Thus in the normal position of the movable portion of the rail E the portion E<sup>2</sup> is in perfect alinement with the main rail A', and the latter is practically continuous with said portion E<sup>2</sup>. (See full lines in Fig. 1.) The opposite ends of the portions E' and E<sup>2</sup> are rigidly secured to the ties H in the usual manner, said fixed ends forming the mating rails to the siding-rail D and main rail A, respectively.

The switch-tongue B is normally held open—that is, out of contact with the main rail A—by means of a spring-pressed rod I, pivotally connected to said switch-tongue and having guided movement in a frame J, which also forms a casing for the coiled springs K and K', operating the rod. These springs are of different diameters, and this construction I prefer for the sake of strength and safety. The same construction of two springs, one coiled within the other, may be employed for the springs G, hereinbefore referred to. It will also be understood that, if desired, several spring-pressed rods, such as I, may be arranged at different points of the switch-tongue B. The switch-tongue is further connected to a switch-lever L, fulcrumed at L' and having at L<sup>2</sup> a pivotal connection with a casing M, in which a rod N has guided movement, said rod being yieldingly connected to the casing by means of a double coiled spring



O O'. The rod N is provided at its end with a hook N' and is also guided in a yoke P, secured to the switch-tongue B.

On the inner side of the switch-tongue is movably mounted a plate or bar Q, which extends longitudinally from the point of the tongue to the spliced end thereof, or preferably somewhat beyond said spliced ends. Both ends of the bar Q are bent downwardly to facilitate the riding of the wheel-flanges on and off said bar, for it will be understood that the bar is located in the path of travel of the wheel-flanges. The bar Q is arranged to swing up and down, so as to remain substantially horizontal during said movement, links R being pivoted at their lower ends to the switch-tongue B on the inner side thereof, while the upper ends of the links are pivotally connected to the bar Q. The latter is normally held in an elevated position by means of a spring-pressed rod S, connected to one of the links R, it being understood that one end of the spring S', which actuates said rod, engages a fixed bearing. In order to limit the upward movement of the bar Q, one or more of the links R may be made in the shape of elbow-levers to engage the bar Q, as shown in Fig. 2 at R'. At the end of the bar Q adjacent to the point of the switch-tongue is also arranged an elbow-lever R<sup>2</sup>, whose lower end is engaged by the hook N' of the switch-rod N when the bar Q is in its elevated position, as will be seen by reference to Fig. 3.

The operation of the invention is as follows: The switch-tongue B and main rail A being normally in the position shown in Fig. 3, as the switch-tongue is held in that position by the spring-pressed rod I it follows that no train traveling on the main line in the direction indicated by the arrow *a* can enter the siding unless the switch-lever L is thrown by an operator so as to bring the tongue B in contact with the main rail A against the tension of the springs K K'. (See position shown in full lines in Fig. 1.) The flanges of the right car-wheels will then ride up on the bar Q and depress the same against the tension of the spring S'. This will cause the free end of the elbow-lever R<sup>2</sup> to rise out of contact with the hook N', and the latter being thus released the spring O will draw it against the tongue B and keep the latter in contact with the rail A. As long as the bar Q remains in its depressed position the switch-tongue B and main rail A will remain in contact with each other; but as soon as the last car-wheel leaves said bar Q the spring S' will raise the bar, thereby again throwing the free end of the elbow-lever R<sup>2</sup> into engagement with the hook N' and depressing said hook until it is disengaged from the switch-tongue B and can pass through the opening of the yoke P, so that the switch-tongue is no longer held by the said hook, and the springs K K' will at once draw the switch-tongue back to

its normal position. The switch-rod N is returned to an engagement with the elbow-lever R<sup>2</sup> by throwing the switch-lever L over to the normal position shown in Fig. 3, the inclined upper surface of the hook N' raising said elbow-lever slightly until said lever drops again into position behind the hook. When a train is traveling from the main line to the siding in the direction of the arrow *a*, Fig. 1, the left car-wheels will be pressed against the rail E and the movable portion of said rail will yield laterally, as indicated in dotted lines in Fig. 1. The transit from the main line to the siding will therefore be effected smoothly, and as the gage cannot get wider by wear or other cause at the junction of the two tracks (the spring-rail being always in close engagement with the wheels) derailments at the switch are effectively prevented.

In the case of a train traveling from the siding to the main track in the direction indicated by the arrow *b* the flanges of the right car-wheels will be forced to the right as they wedge themselves in between the portion E' of the rail E and main rail A', so that the left car-wheels will force the switch-tongue B to the left and into contact with the main rail A. The central portion of the rail E will again yield laterally, so as to afford sufficient space for the passage of the wheel-flanges between said rail E and the main rail A'. All the parts will of course return to their normal positions as soon as the train leaves the portion of the track adjacent to the switch.

It will be obvious that the movable portions of the track—that is, the switch-tongue B and the yielding part of the rail E—remain in their normal positions when a train travels on the main track only in either direction.

I desire it to be understood that various details may be modified without departing from the nature of my invention.

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

1. In a railway, the combination with the rails of the main line and those of a siding, of a movable switch-tongue arranged at the end of one of the said rails, the mating rail being provided, adjacent to the switch-tongue, with a transversely-movable portion, a guard-rail located alongside said mating rail, a rod extending transversely through the said rail and guard-rail, and springs held on said rod and arranged to press the mating rail of the switch-tongue toward the guard-rail, substantially as described.

2. In a railway, the combination with the rails of the main line and those of a siding, of a movable switch-tongue arranged at the end of one of the said rails, means for normally keeping the switch-tongue in an open position, a vertically-movable bar extending longitudinally on the inner side of the switch-tongue and secured thereto so as to move therewith,



and means for normally keeping the said bar in an elevated position, substantially as described.

5 3. In a railway the combination with the rails of the main line and those of a siding, of a movable switch-tongue arranged at the end of one of the said rails, means for normally keeping the switch-tongue in an open position, a vertically-movable bar extending longitudi-  
10 nally on the inner side of the switch-tongue, links pivotally connected to the switch-tongue and to the bar, and means for normally keeping the bar in an elevated position, substantially as described.

15 4. In a railway, the combination with the rails of the main line and those of a siding, of a movable switch-tongue arranged at the end of one of the said rails, means for normally keeping the switch-tongue in an open position,  
20 a vertically-movable bar extending longitudinally on the inner side of the switch-tongue, links pivotally connected to the switch-tongue

and to the bar, means for limiting the upward movement of the bar, and means for normally keeping the bar in an elevated position, 25 substantially as described.

5. In a railway, the combination with the rails of the main line and those of a siding, of a movable switch-tongue arranged at the end of one of the said rails, means for normally 30 keeping the switch-tongue in an open position, a vertically-movable bar extending longitudinally on the inner side of the switch-tongue, links pivotally connected to the switch-tongue and to the bar, means for normally keeping 35 the bar in an elevated position, and an elbow-lever fulcrumed on the switch-tongue, pivoted to the bar, and having its free end arranged to engage the bar to limit the upward movement thereof, substantially as described.

JOHN KESSELRING.

Witnesses:

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