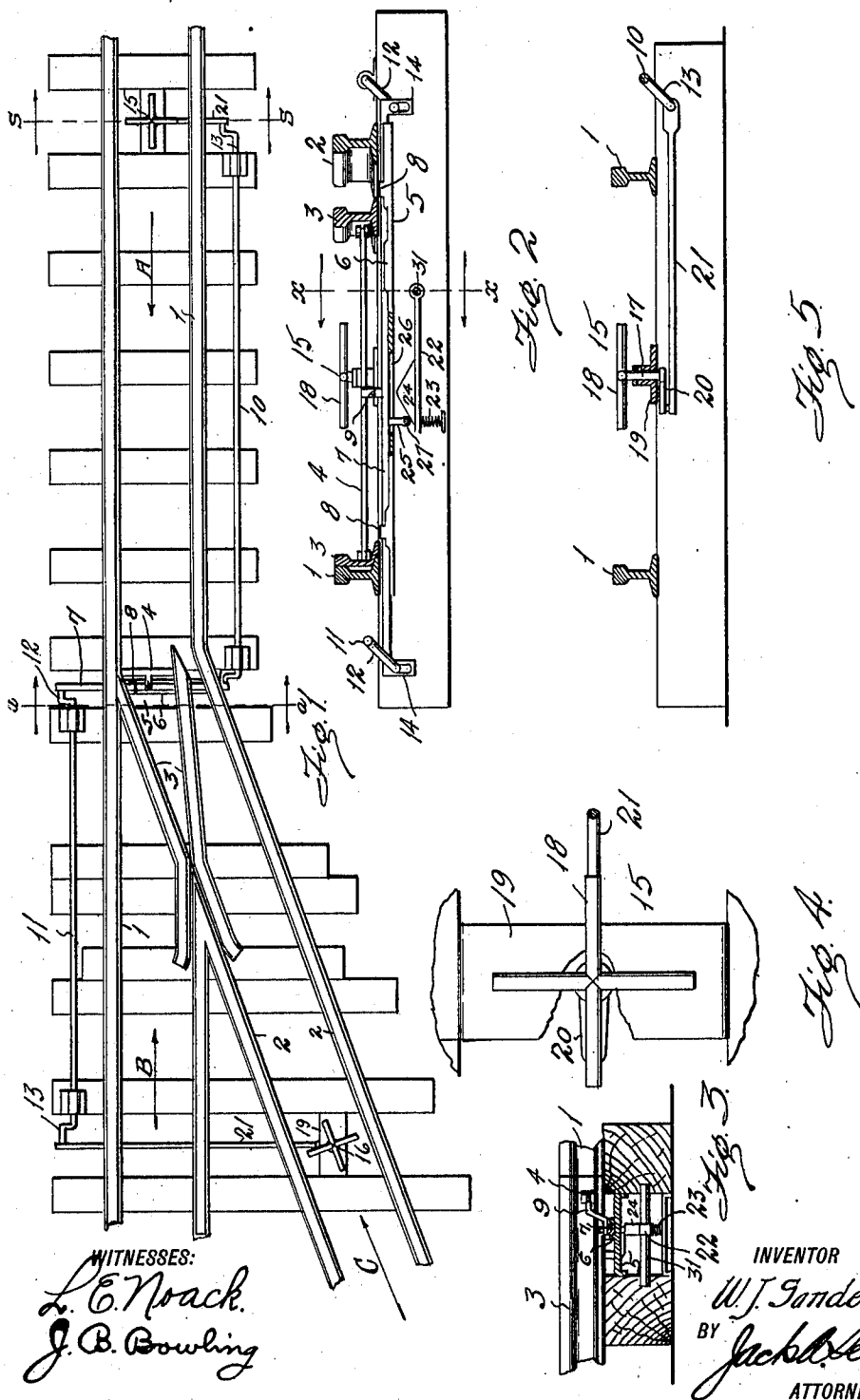


W. J. SANDERS.
RAILWAY SWITCH.
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989,295.

Patented Apr. 11, 1911.



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WILLIAM J. SANDERS, OF COALGATE, OKLAHOMA.

RAILWAY-SWITCH.

989,295.

Specification of Letters Patent.

Patented Apr. 11, 1911.

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To all whom it may concern:

Be it known that I, WILLIAM J. SANDERS, citizen of the United States, residing at Coalgate, in the county of Coal and State of Oklahoma, have invented certain new and useful Improvements in Railway-Switches, of which the following is a specification.

This invention relates to new and useful improvements in railway switches.

10 The object of the invention is to provide a simple switch of the type employing an operating device carried by the engine or car and embodying a pair of rock shafts for imparting the initial movement to the switch tongue and a spring pressed member for completing the movement.

20 Finally the object of the invention is to provide means of the character described that will be strong, durable, efficient, and easy of operation, simple and comparatively inexpensive to construct, and also in which the several parts will not be likely to get out of working order.

25 With the above and other objects in view, the invention has relation to certain novel features of construction and operation, an example of which is described in this specification and illustrated in the accompanying drawings, wherein:

30 Figure 1. is a plan view showing the switch open. Fig. 2. is a transverse section on the line *a-a* of Fig. 1. Fig. 3. is a vertical section on the line *x-x* of Fig. 2. Fig. 4. is an enlarged detail of one of the switch stands, and Fig. 5. is a transverse section on the line *S-S* of Fig. 1.

4 In the drawings the numeral 1 designates the main line rails, 2 the rails of the siding and 3 the usual movable switch points. Near the free ends of the points is attached the usual connecting bar 4. A horizontal plate 5 is supported between the ties adjacent the ends of the switch points. On this plate which is below the surface of the ties a pair of guide ribs 6 are disposed substantially parallel with the ties and transversely of the track. Between these guide ribs a throwing bar 7 is slidable and held against upward movement by keepers 8 attached to the ribs and through which it passes. From the central portion of the bar 4 a rigid arm 9 extends down to the bar 7 and has a slotted connection therewith to permit the proper swing of the switch points and bar 4. It is

obvious that by moving the bar 7 transversely of the rails the switch points through the connection just described are thrown.

On opposite sides of the main line rails crank shafts 10 and 11 are mounted, the shaft 10 being disposed beyond the free ends of the switch points and siding and the shaft 11 being disposed opposite the siding. The crank shafts are substantially duplicates each having a crank 12 at one end and a crank 13 at the other end, both cranks of a shaft being substantially the same and projecting in the same direction and at the same angle. It will be noted however that the cranks of one shaft are directed in the same general direction as those of the other shaft and thus the cranks of one shaft will always be directed toward the rails 1 while the cranks of the other shaft will be directed away from the rails 1. The crank 12 of each shaft is turned down between the ties and has its free end engaging in a slotted hanger 14, one of which is fixed on each end of the bar 7. By rocking either of the shafts 10 and 11 one of the cranks 12 will be swung and movement imparted to the bar 7 which at the same time will rock the other shaft by the connection with its crank 12. For operating the crank shafts a switch stand 15 is mounted between the rails 1 and a switch stand 16 is mounted between the siding rails 2. As these switch stands are substantially the same, a description of one will suffice for both.

The switch stand comprises a central post 17 at the top of which cross arms 18 are secured at right angles to each other. The post is supported to rotate in a plate 19 and so that the cross arms lie below the upper ends of the rails. As shown in Fig. 5 the post extends below the plate 19 and has fixed on its lower end a horizontal crank arm 20 which has connection by a link 21 with the crank 13. The length of the arm 20 is such that upon a full rotation will only rock the crank 13 and not rotate it.

A suitable device is carried by the car or engine and arranged to be projected so as to engage one of the cross arms 18 and impart a quarter turn to the post of the switch stand. Such a movement of the post transmits through the arm 20 and cranks 12 and 13, only substantially half of the movement of the throwing bar 7. From

the following description it will be seen that the throwing of the switch points and the movement is completed automatically.

Under the plate 5 and between its supporting ties, a shaft 31 is fixed longitudinally of the track. On this shaft a lever 22 is mounted to swing and extends transversely of the track. This lever at its free end is supported by a coil spring 23 and a boss 24 which has oppositely downwardly inclined faces. An arm 25 rigid on the bar 7 extends through a slot 26 in the plate 5 and carries at its lower end, a roller 27 which rides on the inclined faces of the boss 24. The movement imparted to the throwing bar 7 by the switch stand is sufficient to cause the roller 27 to ride up one of the inclined faces of the boss 24 and just over the highest point onto the other inclined face. As the roller rides up the inclined face of the boss, the boss and its lever 22 are depressed against the tension of the spring 23. Thus when the roller passes the highest point of the boss, the spring will force the lever upward and the inclined face will force the roller 27 laterally thereby completing the throwing of the switch points. This last movement of the throwing bar also moves the switch stands through the agency of the shaft 10 and 11 and cross arms of the switch stands will always be rested in proper position.

Referring to Fig. 1 it will be noted that the switch points are thrown for a train approaching in the direction of the arrow A to take the siding. Now should a train approach in the direction of arrow B, the flanges of the wheels will close the switch points. A train on the siding and approaching from arrow C will pass onto the main line as the switch is open, but it is preferable to have an operating device on the last car which is depressed to engage the stand 15 and close the switch. Suppose a train approaching in the direction of the arrow A and finding the switch open as in Fig. 1, is not to take the siding, but continue on the main line. In such case, the suitable operating device is depressed to en-

gage one of the transverse cross arms of the stand 15 and as the train moves the stand 15 will be rotated a quarter turn; such movement will swing the arm 20 and rock the shaft 10 sufficient to throw the bar 7 far enough to carry the roller 27 over the high point of the boss 24, when the upward movement of the lever 22 will complete the throwing of the switch points and positioning of the parts, the switch thus being closed.

What I claim is:

1. The combination with the track rails and movable switch points connected therewith, of a pair of rock shafts having cranks at each end, a switch stand for each rock shaft, a crank attached to each switch stand, a connection between said last named crank and one of the cranks of the adjacent rock shaft, a throwing bar having connection with the switch points, a member depending from the bar, and a spring pressed member provided with inclined faces engaging with the depending member.

2. The combination with the track rails and movable switch points connected therewith, of a pair of rock shafts having cranks at each end, a switch stand for each rock shaft, a crank attached to each switch stand, a connection between said last named crank and one of the cranks of the adjacent rock shaft, a throwing bar having connection with the switch points, an arm depending from the bar, a roller carried at the lower end of the arm, a lever pivoted below and parallel with the bar, a boss having oppositely inclined faces with which the roller engages, the boss being secured on the free end of the lever, and a coil spring under the free end of the lever normally forcing the boss upward into the path of the roller.

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

WILLIAM J. SANDERS.

Witnesses:

LEE PAYNE,
J. I. GREEN.