

(No Model.)

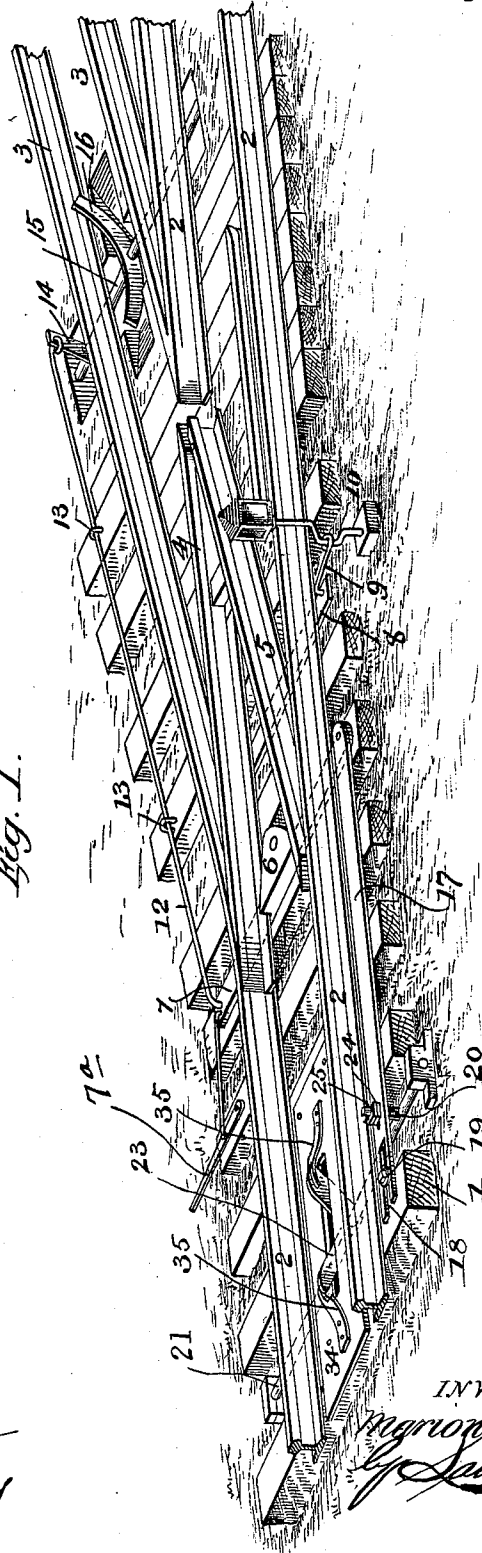
3 Sheets—Sheet 1.

M. N. SHUFFLEBARGER.
AUTOMATIC RAILROAD SWITCH.

No. 538,602.

Patented Apr. 30, 1895.

Fig. 1.



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H. L. Coombs

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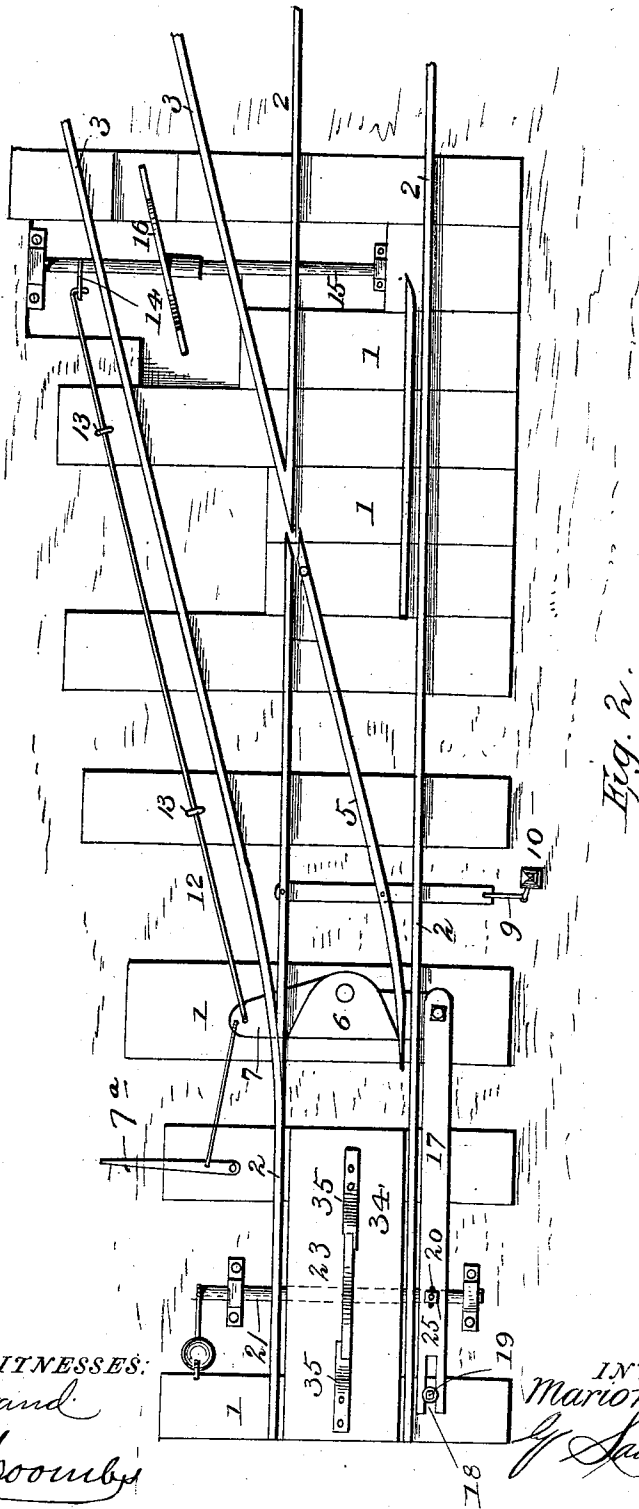
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M. N. SHUFFLEBARGER.
AUTOMATIC RAILROAD SWITCH.

No. 538,602.

Patented Apr. 30, 1895.



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(No Model.)

3 Sheets—Sheet 3.

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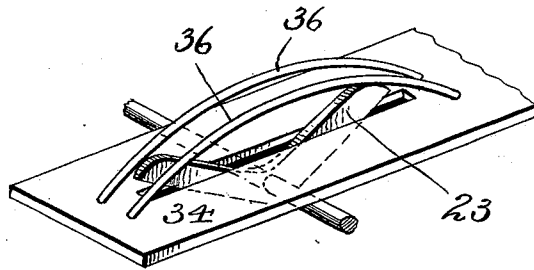
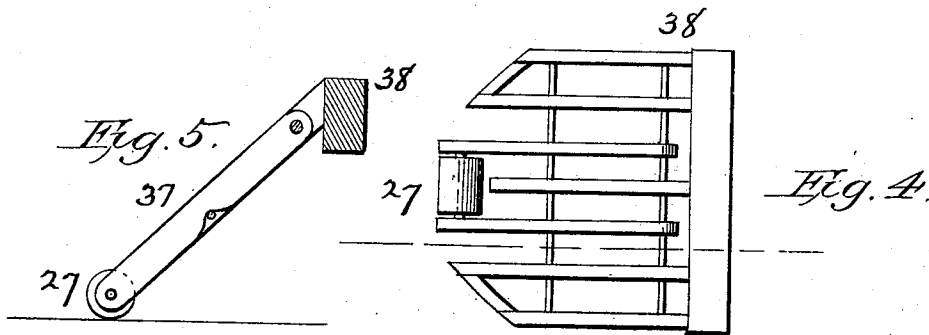
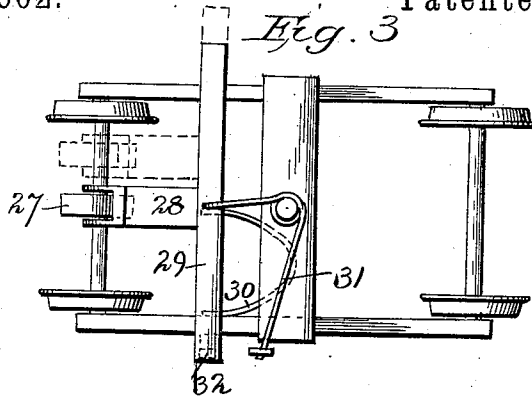


Fig. 6.

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UNITED STATES PATENT OFFICE.

MARION NOEL SHUFFLEBARGER, OF HINTON, WEST VIRGINIA.

AUTOMATIC RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 538,602, dated April 30, 1895.

Application filed October 31, 1894. Serial No. 527,523. (No model.)

To all whom it may concern:

Be it known that I, MARION NOEL SHUFFLEBARGER, a citizen of the United States, and a resident of Hinton, in the county of Summers and State of West Virginia, have invented certain new and useful Improvements in Automatic Railroad-Switches; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to devices for automatically operating railroad and street railway switches from a moving engine or car, so that there is no necessity for stopping a train or car to open or close the switch.

The object of the invention is to provide improved means for this purpose, which shall possess superior advantages with respect to efficiency in operation.

The invention consists in the novel construction and combination of parts herein-after fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a railway track and switch constructed in accordance with my invention. Fig. 2 is a plan view of the same. Fig. 3 is a detail view of a locomotive-truck, showing the laterally-movable wheel for actuating the switch-levers. Figs. 4 and 5 are detail views of the switch-operating mechanism applied to the pilot of a locomotive. Fig. 6 is a detail view of one of the switch-operating segments.

In the said drawings, the reference-numeral 1 designates the ties of a railway and 2 the main rails thereof.

The numeral 3 designates the siding rails. The numerals 4 and 5 designate the switch rails, one of which is inclined or converges toward the other at one end. Near this end these rails are connected with each other and secured to the ties. The other or free ends of these rails are beveled as usual, and fitting between them is a beveled projection 6, on an oscillating switch-bar 7 pivoted or otherwise secured to one of the ties.

The numeral 8 designates a bar secured to the switch rails and provided with a link 9, connected with a vertical cranked rod 10, having a signal at its upper end. This signal

may be a target in the daytime, and a lantern at night, so arranged, that one color, say red for instance, will be displayed when the switch is open, and a white or green color when the switch is closed, as is ordinarily the custom. With one end of the switch bar is connected a horizontal rod 12, running along the outer siding-rail, and passing through staples or guides 13 secured to the ties. The other end of this rod is connected with a crank 14, on one end of a transverse oscillatory shaft 15, located between the siding rails. Centrally between these rails is a segmental arm 16, secured intermediate its ends to said shaft and the ends arranged to alternately project up above the rails—that is to say, when one end is elevated above the rails, the other end will be below or on a level with the same, and when said first-mentioned end is depressed, the other end will be raised. Connected with said switch bar 7 is a horizontally movable bar 17, running alongside the outer main rail, and provided at one end with a guide-slot and pin 18 and 19. This bar near said end is provided with a slot through which projects a crank 20 on a transverse oscillatory shaft 21, provided with a segment arm 23, similar to shaft and arm 15 and 16, before described. The numerals 24 and 25 designate a washer and nut on said crank 20. The switch bar 7 is also provided with a hand-lever 7^a for operating the same by hand, when desired, and may be provided with suitable locking mechanism, as usual.

In Fig. 3 the numeral 27 designates a laterally movable wheel or plate mounted on one of the axles of a locomotive truck. Embracing this wheel is a yoke 28, secured to a sliding bar 29. Bearing against this yoke is a spring 30, the tendency of which is to throw the wheel away from the center or middle of the axle. Connected with the bar 29 is a crank-lever 31, the other end of which is provided with a rod leading to the cab for shifting said wheel. At one end the bar 29 is provided with a lug 32 which acts as a stop for limiting the movement of said wheel.

The operation is as follows: Supposing the switch is to be closed, and that a car is approaching from the siding to be shifted to the main track. The inner end of the segment arm 16 will then be elevated and the engineer

in the cab will then shift the wheel 27 by means of the rod connected with the crank-lever, so that said wheel will occupy a central position on the axle. As the engine continues its movement the said wheel will strike the elevated end of the said segment arm, depressing the same, and rotating shaft 15, which, through the rod 12, will actuate or rotate the switch bar 7, causing the beveled projection to move the switch rails and open the switch. At the same time the signal rod will be rotated to display the proper signal. As this movement of the switch-bar takes place, the horizontal bar 17, will be actuated, rotating the shaft 21, and causing the outer end of segment arm 23, to be elevated, so that after the train has moved from the siding to the main track, the wheel on the truck of the rear car will strike said end and depress the same, and through the medium of the shaft and connections, the switch bar will be returned to normal position, and the switch closed. At the same time the inner end of the arm 23 will be elevated, so that the engineer of a train approaching the switch can open the latter by shifting the wheel on the truck, so as to strike and actuate said arm. The tendency of the spring connected with the wheel is to throw the wheel away from the center of the axle, so that it will not strike the segment arms, but by means of the signal, the engineer can always tell whether a switch is open or closed, and can shift the wheel or not, as is necessary. When it is not desired to open and close the switch automatically, the switch lever 7^a may be provided with a padlock as usual, for locking the same. In this case, the lever, only, is operated by hand in the ordinary manner.

The segment arm 23 is shown as projecting upwardly through a slot in a board or plate 34, located between the main rails, and at each side of this slot is secured a curved bar 36. The object of these bars or rods is to prevent wagons or other vehicles passing across the track from actuating the segments, the bars or rods serving as a guard.

Secured to the board 24, at each end of the slot therein is a spring plate 35, the free ends of which project over the ends of the segment and prevent the brake-rods on pilot or chains or other objects from catching under said arms.

While I have described my invention as being applied to steam railways, it is obvious; that it may, with equal advantage, be used in connection with horse, electric, or other railways, where it is desired to operate switches automatically.

In Figs. 5 and 6 I have shown the wheel or roller for actuating the switches, as being connected with the pilot or cow-catcher of a locomotive. In this instance the reference-

numeral 38 designates the pilot, and 37 a pivoted arm connected therewith, having the wheel or roller 27 journaled in its lower end. This operates in the same manner as the wheel on the axle, depressing the segments when coming in contact therewith, in the manner previously described.

Having thus fully described my invention, what I claim is—

1. In a railway, the combination with the main and siding rails, and the movable switch rails, of the pivoted switch bar having a beveled projection engaging between the free ends of said switch rails, the horizontal rod connected with said switch bar, the crank shaft with which said rod is connected the segment arm on said shaft, located between the siding rails; the segment arm located between the main rails, the curved bars at each side of said arm, the crank shaft to which said arm is secured, the horizontal bar with which said crank is connected, having a guide slot and pin at one end and secured at its other end to the pivoted switch bar, substantially as described.

2. In a railway, the combination with the main and siding rails, and the movable switch rails, of the pivoted switch bar having a beveled projection engaging between the free ends of said switch rails, the horizontal rod connected with said switch bar, the crank shaft with which said rod is connected, the segmental arm on said shaft, located between the siding rails, the segment arm located between the main rails, the crank shaft to which said arm is secured, the horizontal bar with which said crank is connected, having a guide slot and pin at one end and secured at its other end to the pivoted switch bar, the slotted boards, through which the said segments project, and the spring plates secured to said boards with their free ends projecting over the ends of the segments, substantially as described.

3. In a railway of the character described, the combination with the main and siding rails and the movable switch rails, the slotted boards or plates, the oscillating segments projecting through the slots in said plates, and the connections between said segments, of the curved bars secured to said boards or plates at each side of the segments, and the spring plates secured to said boards or plates with their free ends projecting over the ends of the segments, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

MARION NOEL SHUFFLEBARGER.

Witnesses:

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W. H. PEMBERTON.