

No. 839,407.

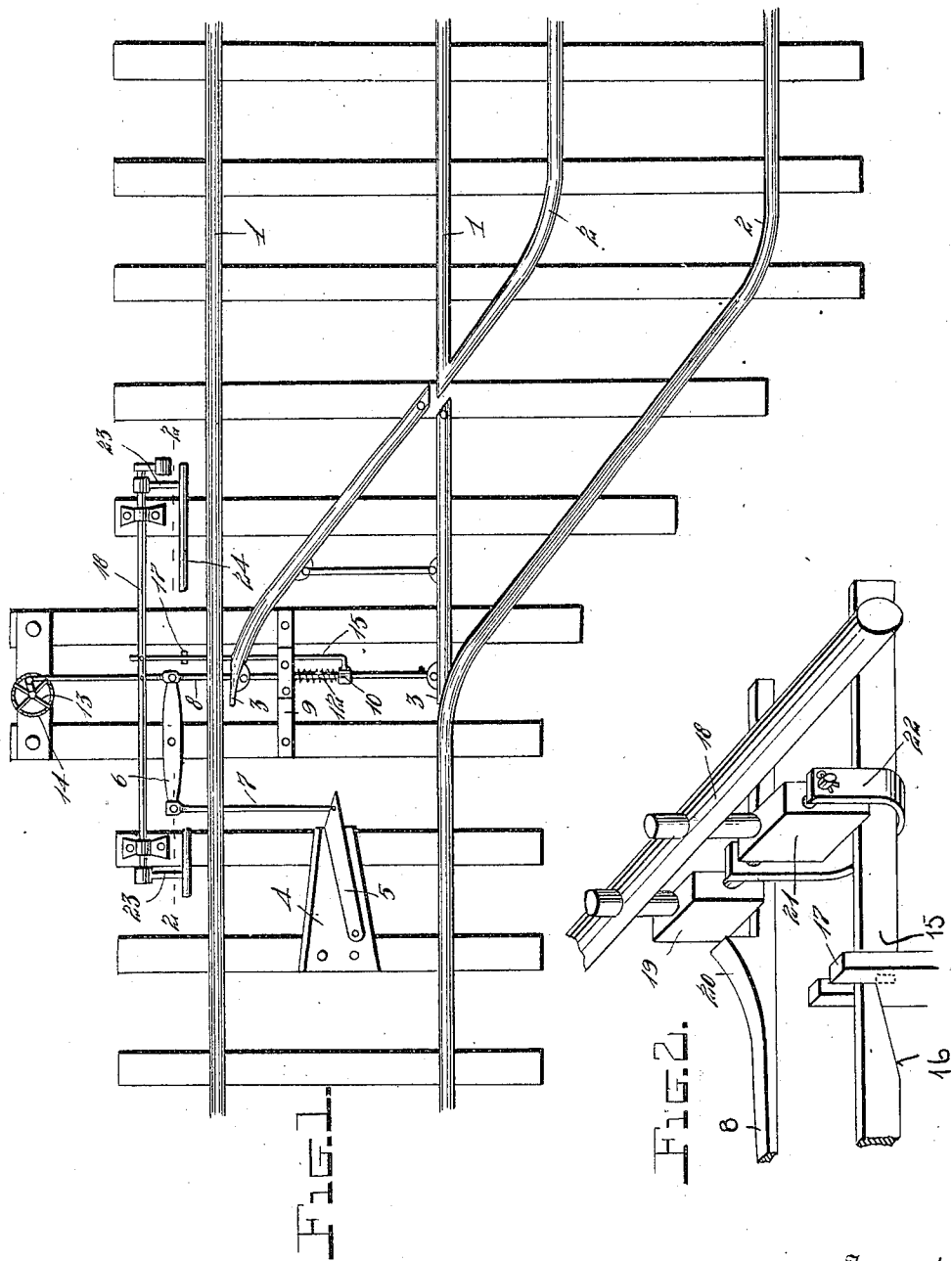
PATENTED DEC. 25, 1906.

B. McINTOSH.

RAILWAY SWITCH OPERATING MECHANISM.

APPLICATION FILED SEPT. 13, 1906.

2 SHEETS—SHEET 1.



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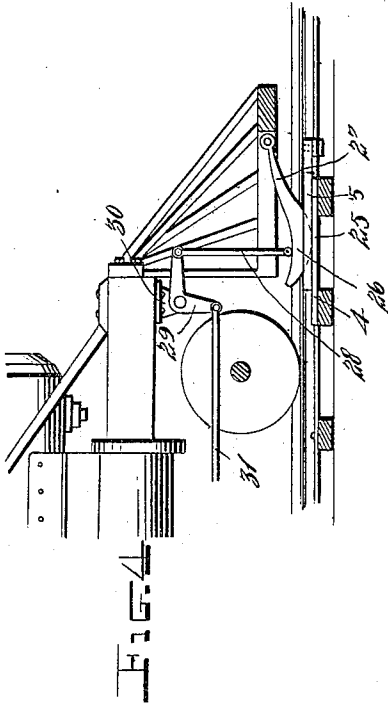


FIG. 4.

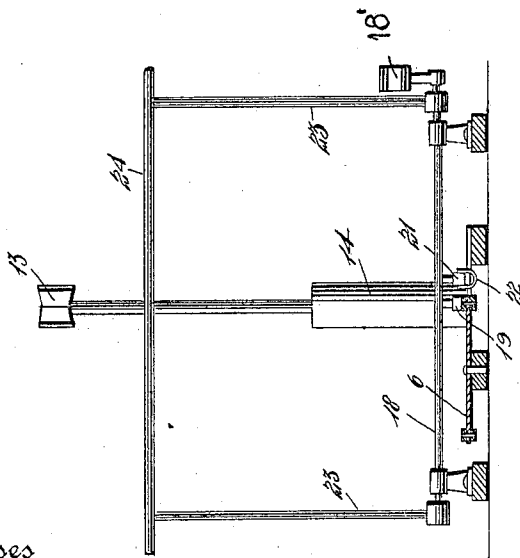
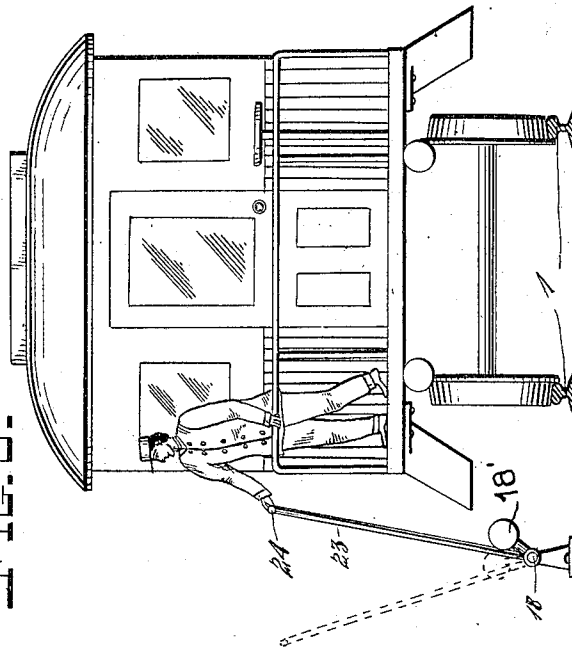


FIG. 5.

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UNITED STATES PATENT OFFICE.

BRUCE McINTOSH, OF WARREN, PENNSYLVANIA.

RAILWAY-SWITCH-OPERATING MECHANISM.

No. 839,407.

Specification of Letters Patent.

Patented Dec. 25, 1906.

Application filed September 13, 1906. Serial No. 334,492.

To all whom it may concern:

Be it known that I, BRUCE McINTOSH, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Switch-Operating Mechanisms; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in railway-switch-operating mechanisms.

The object of the invention is to provide a switch-operating mechanism having means whereby a switch will be automatically locked in an opened position while a train is passing onto a siding.

A further object is to provide means whereby the locking mechanism may be released from the rear end of the train without the necessity of any of the train-crew getting off or stopping the train.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a switch-operating mechanism constructed in accordance with the invention. Fig. 2 is a vertical sectional view on the line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of the locking mechanism. Fig. 4 is a detail view of a portion of a locomotive, showing the switch-throwing device carried thereby; and Fig. 5 is a rear view of a car, showing the manner of releasing the operating mechanism to permit the switch to be closed.

Referring more particularly to the drawings, 1 denotes the main-line tracks, 2 denotes the siding or switch tracks, and 3 denotes the switch-points. Arranged on the ties of the main-line track at a suitable distance from the switch-points 3 is a bearing-plate 4, on which is pivotally mounted a trip-lever 5. The outer end of the lever 5 is pivotally connected to one end of an operating-lever 6 by connecting-rod 7. The lever 6 is pivotally mounted upon one of the ties of the main-track trails, and its opposite end is pivotally connected to a switch-throwing bar 8. The bar 8 is adapted to slide beneath the

ally connected the switch-points 3. The bar 8 is adapted to slide through a guide-bracket 9, and on said rod between the bracket 9 and a stop 10 on the rod is arranged a coil-spring 12, the tension of which is exerted to normally close and hold the switch-points in closed position. The bar 8 is continued beyond its pivotal connection with the end of the lever 6 and is connected to the lower end of a signal 13, arranged in a stand 14 at one side of the main-line track, as shown. By thus connecting the bar 8 with the signal 13 the position of the switch-points will be indicated. Slidably mounted beneath the tracks of the main-line track is a locking-bar 15, said bar being connected at its inner end to the bar 8, by means of which said locking-bar is operated. The bar 15 is provided on its outer end with a notch 16, Fig. 2, which is adapted to be engaged with a bifurcated stop-lug 17, in which the bar 15 slides. The notch 16 in the bar 15 is so arranged that when the bar 8 is shifted to open the switch said notch will drop into engagement with the stop-lug, thereby holding said points open.

In order that the notch 16 may be disengaged from the stop-lug to permit the spring 12 to close the switch-points after a train has passed through the switch, a suitable releasing mechanism is provided. This mechanism comprises a horizontal longitudinally-disposed rock-shaft 18, which is journaled in suitable standards on the ties adjacent to one side of the main-track rail, as shown. Connected to the rock-shaft 18 is a downwardly-projecting block 19, which is adapted to be engaged by an offset 20 on the bar 8. On the rock-shaft 18 is also secured a downwardly-projecting block 21, which is adapted to be engaged with the upper edge of the locking-bar 15 to hold the notch 16 thereon into engagement with the stop-lug 17, thereby preventing the casual disengagement of said notch from the lug. Pivotaly connected to the block 21 is a depending bail or stirrup 22, which is adapted to be engaged with the under side of the locking-bar 15, whereby when the shaft 18 is rocked in the proper direction, or opposite to that in which it is rocked by the offset 20 of the bar 8, will disengage the notch 16 from the stop-lugs, thereby permitting the spring 12 to actuate the bar 8 and close said switch-points.

Any suitable means may be provided for

rocking the shaft 18, said means being here shown and preferably consisting of upwardly-projecting arms 23, which are secured to the outer ends of the rock-shaft and are connected at their upper ends by a handle-bar 24. The arms 23 and the handle-bar 24 are of such length and arranged in such manner as to lie within convenient reach of a person standing on the rear platform of a car, so that as the car passes over the switch the bar may be grasped and the shaft 18 rocked in the proper direction to engage the bail or stirrup 22 with the locking-bar 15 to release the notch therein from the stop-lug, as hereinbefore described. The rock-shaft 18 is provided on one end with a weight 18' to aid in the movement of the same by the handle-bar. The operation of the rock-shaft 13 by the handle-bar 24 is clearly illustrated in Fig. 5 of the drawings.

Connected to the front end of a locomotive, as herein shown, or to the front end of a car is a switch-throwing device 25, said device being here shown as being in the form of a segmental shoe 26, having a forwardly-projecting arm or stem 27, by means of which the same is pivotally connected to the lower bar of the cow-catcher or other suitable part of the locomotive or car. The shoe 26 is connected by a link 28 to one arm of a bell-crank lever 29, which is pivotally mounted upon a bracket 30, secured to a suitable part of the locomotive. To the other arm of the bell-crank lever 29 is connected an operating-rod 31, which runs back to within convenient reach of the engineer or operator of the locomotive or car.

By providing a switch-operating mechanism such as herein shown and described a train after having passed through the switch and onto a siding may back out again onto the main line without the necessity of the switch being thrown by a brakeman, the switch-points being moved against the tension of the spring which holds the same by the flanges of the car-wheels, as will be understood.

While I have shown and described the operating mechanism for the switch as connected with a locomotive, it is obvious that the same may be applied to a car driven by steam, electricity, or any other motive power.

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

1. A switch-throwing mechanism comprising a pivoted trip-lever adapted to be engaged by a switch-throwing device carried by a car or locomotive, an operating-lever pivotally connected to and actuated by said trip-lever, a switch-throwing bar connected to the points of the switch, a spring arranged on said bar to retract the same and close said switch-points, a locking-bar connected to and actuated by said switch-throwing bar, a stop-lug adapted to be engaged by a notch in said locking-bar, a rock-shaft, a block secured on said shaft to engage said locking-bar and hold the notch therein in engagement with said stop-lug, and a handle-bar connected to said rock-shaft, whereby the same may be actuated by an operator on a moving car, substantially as described.

2. A switch-throwing mechanism comprising a pivotally-mounted trip-lever, an operating-lever connected thereto and actuated thereby, a spring-retracted switch-throwing rod connected to the points of the switch, a notched locking-bar connected to and actuated by said switch-throwing bar, a stop-lug adapted to be engaged by the notch in said locking-bar to hold the switch-points in an open position, a rock-shaft, a stop-block secured to said rock-shaft in position to be engaged with said locking-bar to hold the notch therein in engagement with said stop-lug, a block on said rock-shaft adapted to be engaged by an offset on said switch-throwing rod, whereby said rock-shaft is actuated to engage the stop-block thereon with said locking-bar, a releasing bail or stirrup on said stop-block to engage the under side of said locking-bar, and a handle-bar on said rock-shaft arranged in position to be engaged by an operator on a moving car, whereby said locking-bar is released from said stop-lug, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

BRUCE McINTOSH.

Witnesses:

JOHN E. WHEELER,
JOHN H. WIEKIER.