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PATENTED AUG. 7, 1906.

A. ANDERSON.

SWITCH OPERATING AND LOCKING DEVICE.

APPLICATION FILED NOV. 21, 1905.

2 SHEETS—SHEET 1.

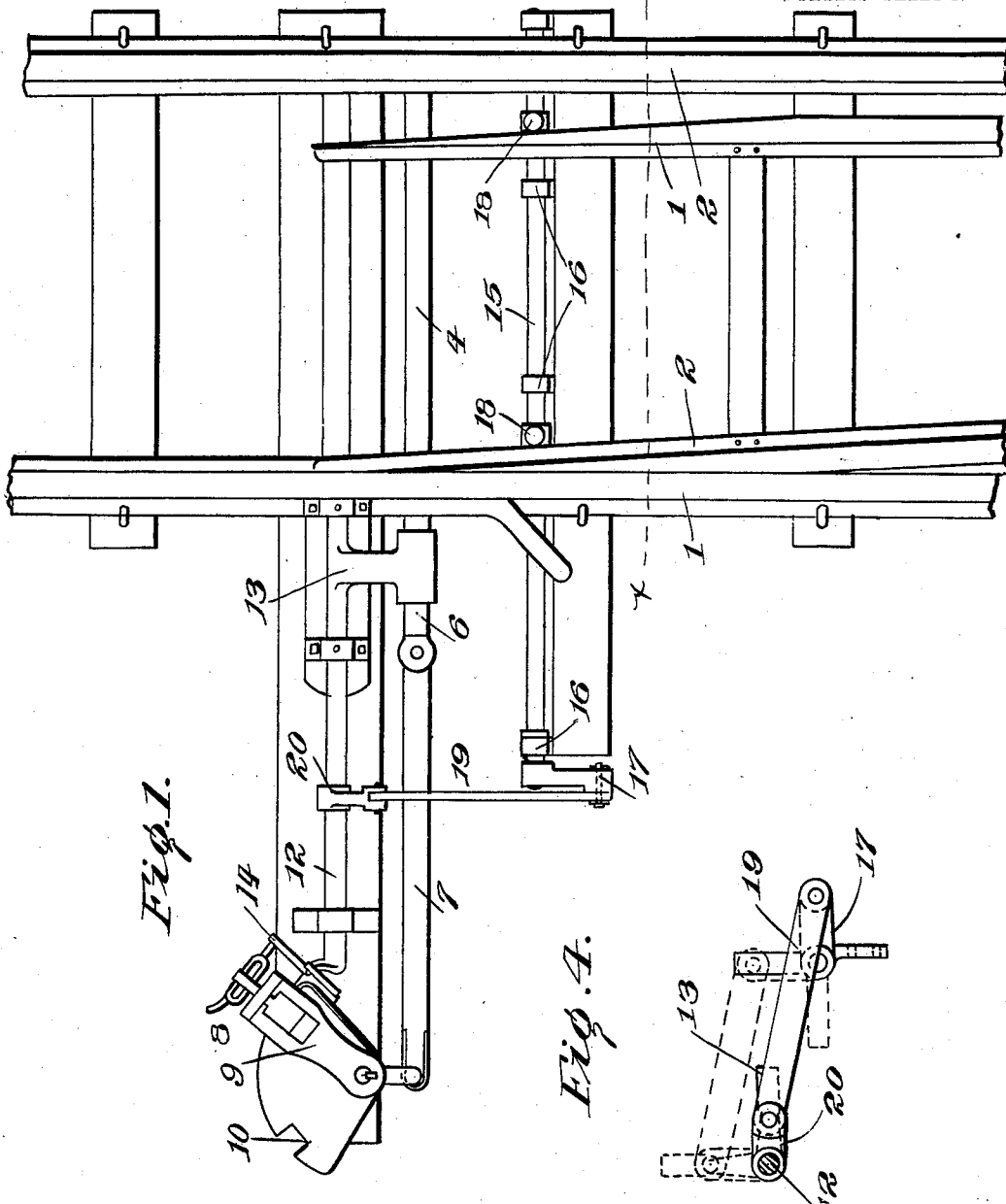


Fig. 4.

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UNITED STATES PATENT OFFICE.

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SWITCH OPERATING AND LOCKING DEVICE.

No. 828,263.

Specification of Letters Patent.

Patented Aug. 7, 1906.

Application filed November 21, 1905. Serial No. 238,418.

To all whom it may concern:

Be it known that I, ALFRED ANDERSON, a citizen of the United States, residing at Detroit City, in the county of Becker and State of Minnesota, have invented certain new and useful Improvements in Switch Operating and Locking Devices, of which the following is a specification.

The object of my present invention is to provide improvements in switch operating and locking mechanism, such as that disclosed in my application for Letters Patent of the United States, filed July 10, 1905, Serial No. 269,051.

The application above referred to comprehends a switch operating and locking device combined with a switch bar and stand, said device comprising two horizontally-swinging operating members connected with the switch-bar and mounted on the stand and provided with a vertically-swinging handle designed for locking engagement with the stand when the handle moves downwardly, and a supplemental locking device including a rock-shaft and a lever operatively connected thereto, the said lever being disposed in the path of the handle, so that the latter in its downward movement would actuate the lever and throw an arm carried by the shaft into engagement with a portion of the switch-bar.

The present invention contemplates certain improvements, as before mentioned, in switch operating and locking devices such as that just described; and it consists, essentially, of additional locking means designed to act directly upon the switch-points to hold them rigidly in their different positions, thereby providing additional means of safety without interfering with the movement of the switch-points when properly operated.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a top plan view of my improved switch operating and locking mechanism. Fig. 2 is a transverse section taken on the line *x x* of Fig. 1. Fig. 3 is a perspective view illustrating the two rock-shafts and their connection. Fig. 4 is a detail transverse section illustrating the two different positions of the parts in full and dotted lines, respectively.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 designates the main rails of the track, and 2 designates the switch-points designed to open and close a siding to the main-track rails. The switch-bar 4 is provided with a suitable projection 6, and to the switch-bar is connected an actuating-rod 7, the latter being so connected to the actuating mechanism located in the switch-stand 8 that the operating-handle 9 may throw the switch-points to one side or the other when said handle is moved in a horizontal plane over the upper face of the switch-stand. The switch-stand is provided with suitable locking-notches, (designated 10,) and the handle is jointed, so that it may turn downwardly, the downwardly-moving portion thereof being designed for reception in either one or the other of said notches 10 to hold the switch-points in their adjusted position. The said jointed portion of the handle when received in either one of the notches is arranged to be locked therein by means of a padlock 11 or other suitable mechanism. With a switch-actuating mechanism similar to that just described my former invention above referred to comprises a rock-shaft 12, provided with an arm 13, arranged when the shaft is rocked to engage the projection on the switch-bar and lock the latter to prevent it from being moved, and a lever 14, operatively connected to the rock-shaft 12, the said lever being disposed in the path of the handle, so that the latter in its downward movement to engage the adjacent notch in the switch-stand will actuate the lever, and consequently rock the shaft, to lock the switch-bar.

In connection with this locking mechanism for the switch-bar my present invention comprises a second rock-shaft 15, mounted to turn around its longitudinal axis in suitable boxes 16, fastened to the side of an adjacent tie next to the head-block and provided at one end with a crank 17 and intermediate of its ends with two locking-fingers 18. The crank 17 is connected by a link 19 to another crank 20, fastened to or integrally connected with the first-named rock-shaft 12, the parts being so arranged that as the rock-shaft 12 is turned to raise its switch-bar-locking arm 13 the second rock-shaft 15 will be turned, through the instrumentality

of the cranks and link, in a direction to depress its fingers 18. The reverse movement of the first-named rock-shaft 12 will, conversely, effect the turning of the rock-shaft 15 in a direction to raise its fingers 18 to an approximately vertical position. The fingers 18 are located within the plane of the track and in such position, transversely considered, that when they are raised, as just described, each of said fingers will engage a side of an adjacent switch-point, one of said fingers projecting upward alongside the dead switch-point and between the latter and the adjacent rail and the other finger firmly binding the other switch-point against the other rail. By this arrangement it will be seen that I have provided not only means for locking the switch-bar automatically against movement when the handle 9 is turned downwardly in one position, but I also provide means for acting directly on the switch-points, the locking means for the two switch-points being operated by the switch-bar-locking mechanism and also operated simultaneously therewith, so that an additional feature of safety is added by the present invention. It is to be understood that when the handle 9 is raised to release the arm 13 from the switch-bar the movement of the shaft 12 and the consequent movement of the shaft 15 are such as to depress the switch-point-locking fingers 18 a sufficient distance below the base-flanges of the switch-points to allow the switch-points to be readily moved from one position to the other.

Having thus described the invention, what is claimed as new is—

1. In switch-locking mechanism of the character described the combination of a

rock-shaft designed for locking engagement with the switch-bar, a second rock-shaft provided with means for engaging the switch-points, and a connection between said two shafts whereby they will operate simultaneously.

2. In switch mechanism the combination of a locking device including a rock-shaft provided with an arm designed for locking engagement with the switch-bar, and a lever operatively connected thereto, a second rock-shaft arranged transversely of the track and provided with fingers designed to project upwardly alongside of the switch-points, each of said rock-shafts being provided with cranks, and a link connecting said cranks, as and for the purpose set forth.

3. In switch-locking mechanism of the character described the combination of switch-points, a switch-bar connected thereto, a switch-stand, a horizontally-swinging operating member connected to said switch-bar and mounted on said stand and provided with a vertically-swinging handle, a rock-shaft provided with an arm 13 designed for locking engagement with the switch-bar, a second rock-shaft provided with fingers designed to be turned into locking engagement with the switch-points, and a crank-and-link connection between said two shafts, and said connection being so arranged that said shafts will operate simultaneously to alternately depress the said arm and the said fingers.

In testimony whereof I affix my signature in presence of two witnesses.

ALFRED ANDERSON. [L. S.]

Witnesses:

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