

P. W. LEEN.
 SWITCH ACTUATING MECHANISM.
 APPLICATION FILED SEPT. 7, 1909.

964,661.

Patented July 19, 1910.

Fig. 1

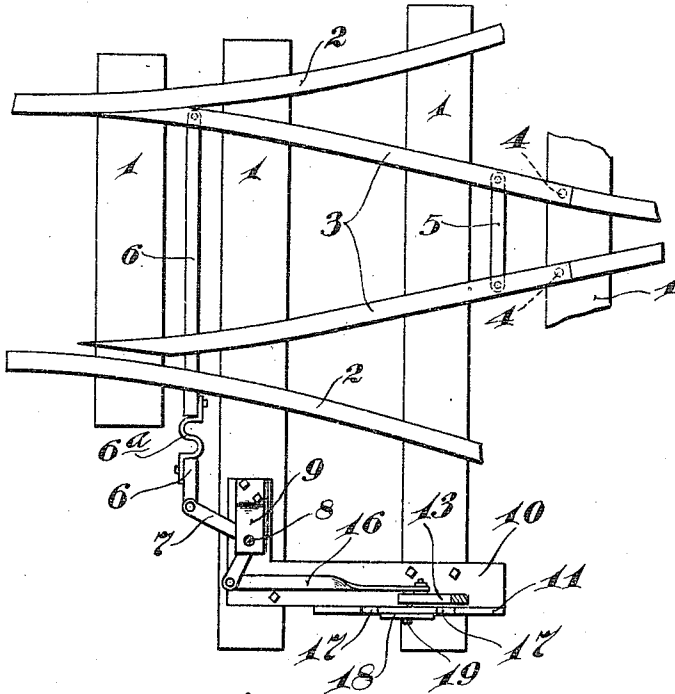


Fig. 2

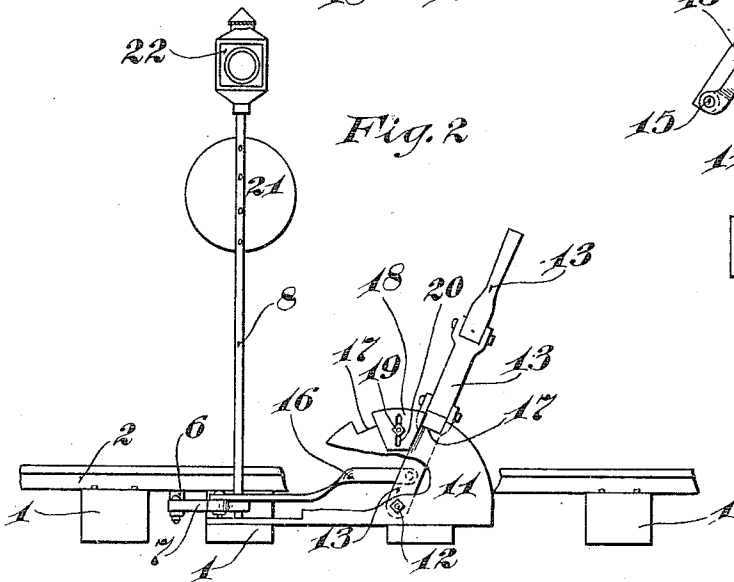
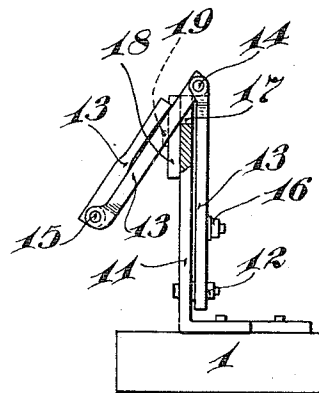


Fig. 3



Witnesses;
 E. C. Skinkle
 L. L. Simpson.

Inventor:
 P. W. Leen.
 By his Attorneys;
 William Merchant

UNITED STATES PATENT OFFICE.

PATRICK W. LEEN, OF MINNEAPOLIS, MINNESOTA.

SWITCH-ACTUATING MECHANISM.

964,661.

Specification of Letters Patent. Patented July 19, 1910.

Application filed September 7, 1909. Serial No. 516,597.

To all whom it may concern:

Be it known that I, PATRICK W. LEEN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Switch-Actuating Mechanisms; and I do hereby 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.

My invention has for its object to provide an improved switch stand or mechanism for throwing switches, and to this end, it consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a plan view, showing the improved switch stand connected to the split rails of a switch, some parts being sectioned; Fig. 2 is a side elevation of the switch stand and switch, some parts being broken away; and Fig. 3 is an edge elevation, with some parts sectioned, showing the operating lever of the switch stand in a folded position.

The numeral 1 indicates ties, the numeral 2 the main rails and the numeral 3 the split switch rails, which latter are pivotally mounted at 4 and near their pivoted ends are connected by a link 5, pivotally connected to the flanges thereof. A switch bar 6, which extends transversely of the track below the rails, is pivotally connected to one of the split rails 3 near its free end, and the other end of said bar is pivotally connected to one arm of a bell crank 7 that is secured to the lower end of an upright semaphore stem or rod 8, the lower end of which is pivotally mounted in a bearing 9. This bearing 9, as shown, is bolted or otherwise rigidly secured to an angular bearing plate 10 that is rigidly secured to the projecting ends of the long ties and is provided with a vertical segmental latch plate or segment 11. To the axis of the latch plate 11, as shown by means of a bolt 12, the lower end of a jointed operating lever 13 is pivotally connected. This jointed lever 13 is made up of three sections that are connected by pivot joints 14 and 15, which joints permit the sections of the lever to be folded in one direction only into the position shown in

Fig. 3. The intermediate portion of the lower section of said lever 13 is pivotally connected to one end of the connecting rod 16, the other end of which is pivotally connected to the outwardly extended arm of the bell crank 7.

In the switch bar 6 is interposed a curved or crooked spring section 6^a, which is so stiff that it will insure movements of the switch rails 3 under the action of the lever 13, but will, nevertheless, yield under the heavy weight of a train, to permit the wheel flanges of the engine and cars to pass between the outer rail 2 and cooperating split rail 3, if the switch should be set as shown in Fig. 1 and the train run in a direction from the right toward the left in respect to Fig. 1. The other split rail 3, not being connected to the bar 6, will have sufficient spring in itself to permit the above noted action, if the switch should be set in its other position and the train run in a direction from the right toward the left.

The lock segment 11 is provided with two notches 17, with which the intermediate section of the switch lever 13 is adapted to be engaged when turned downward, as shown in Fig. 3. The engagement of the said intermediate lever section with one or the other of said notches will serve to lock the switch in its set position. To make the notches 17 adjustable, to compensate for wear or for variation in the width of the intermediate section of the lever 13, a tapered spacing block 18 is adjustably connected, as shown, by a nutted bolt 19 passed through a perforation in the said lock segment 11 and through a slot 20 in the said block 18.

By reference to Fig. 3, it will be noted that when the switch lever is folded and set in its locked position, the outer end or handle section thereof is dropped below the upper edge of the segment 11 and below the pivotal connection between the lower and intermediate lever sections. This throws the lever, when folded, into a very low position and into a very compact form, so that the lever will immediately drop into contact with the ground and will not project materially above the lock segment.

On the upper end of the semaphore stem 8 is a target or disk 21 and a signal lamp 22, which, by their positions, indicate the position of the switch, that is, whether the main line is opened or closed.

The device above described is of simple

construction and is efficient for the purposes had in view.

What I claim is:

1. The combination with fixed rails and
5 movable switch rails, of a notched lock segment at one side of the track, a three-section lever connected by pivot joints adapting the body of said lever to fold at two
10 different places, the intermediate section of which lever is engageable with the notches of said lock segment, and a connection between the lower section of said switch lever and one of said switch rails, substantially as described.
- 15 2. The combination with fixed rails and movable switch rails, of a lock segment secured at one side of the track and provided with notches and with an adjustable tapered
20 spacing block between said notches for adjusting the width of the latter, a switch lever cooperating with said lock segment and

having a part engageable with the notches thereof, and a connection between said switch lever and one of the said switch rails, substantially as described. 25

3. The combination with fixed rails and movable switch rails, of a notched lock segment at one side of the track, a three-section switch lever connected by pivot joints adapted to fold in one direction only, 30 the intermediate section of which lever is engageable with the notches of said lock segment, and a connection between the lower section of said switch lever and one of the said switch rails, substantially as described. 35

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

PATRICK W. LEEN.

Witnesses:

ALICE V. SWANSON,
HARRY D. KILGORE.