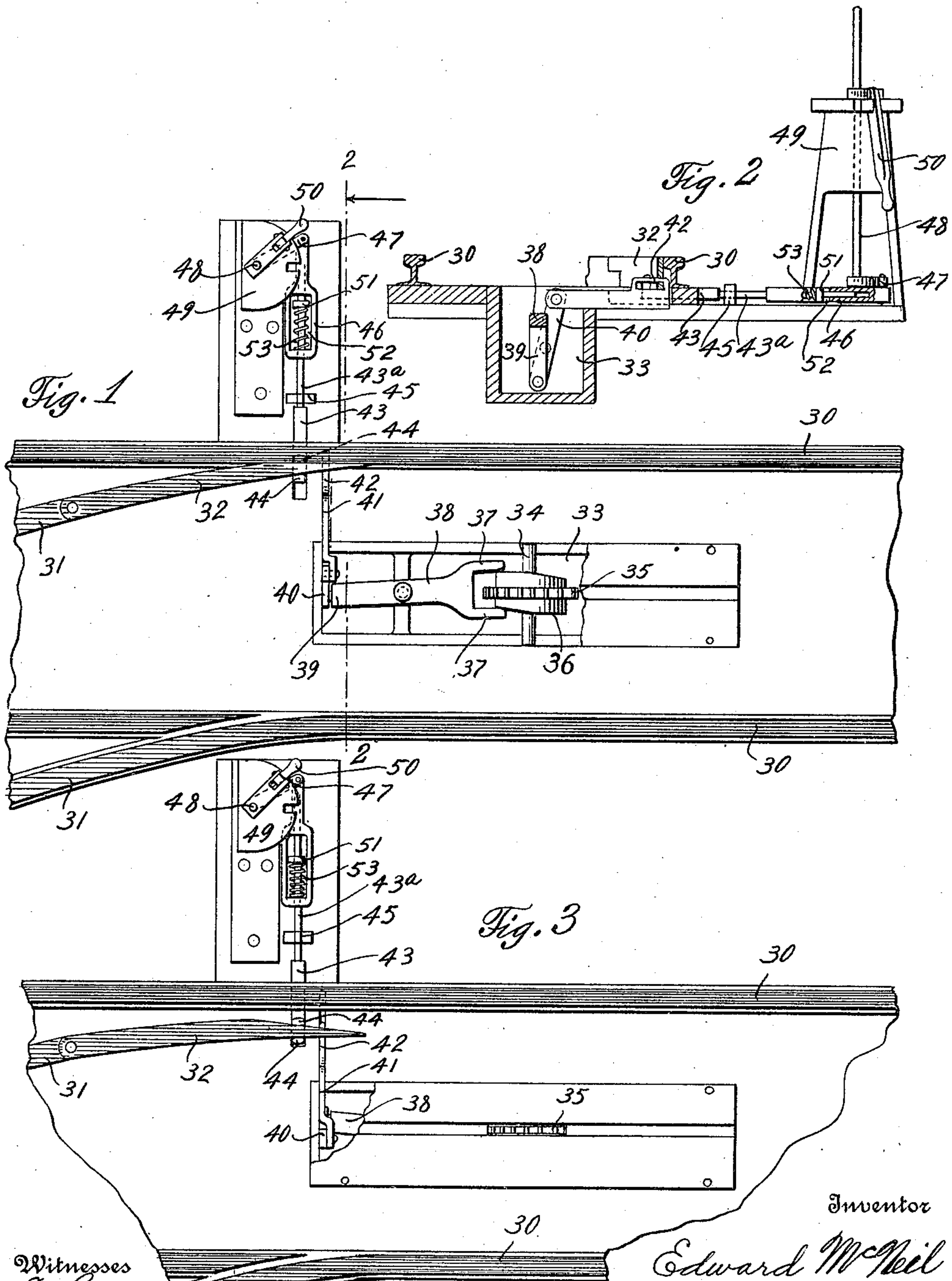


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AUTOMATIC SWITCH THROWER.  
APPLICATION FILED JULY 1, 1910.

985,614.

Patented Feb. 28, 1911.



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# UNITED STATES PATENT OFFICE.

EDWARD McNEIL, OF EAST ST. LOUIS, ILLINOIS.

## AUTOMATIC SWITCH-THROWER.

985,614.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed July 1, 1910. Serial No. 569,971.

*To all whom it may concern:*

Be it known that I, EDWARD McNEIL, a citizen of the United States, residing at East St. Louis, in the county of St. Clair and State of Illinois, have invented certain new and useful Improvements in Automatic Switch-Throwers, of which the following is a specification.

This invention consists of certain improvements in railway switch mechanisms.

The invention comprises essentially certain mechanism of the type embodied in my Letters Patent No. 948,427, issued February 8, 1910, but combined in a peculiarly advantageous manner with manually operable mechanism involving the use of a switch stand and coacting parts.

For a full understanding of the invention, reference is to be had to the following detail description and the accompanying drawings, in which—

Figure 1 is a plan view of mechanism constructed in accordance with the present invention; Fig. 2 is a section taken along the line 2—2 of Fig. 1; Fig. 3 is a detail plan view showing certain parts illustrated in Fig. 1 in differently adjusted positions, as when the switch has been operated by the means on a moving train, even though the manual operating device is locked.

Throughout the following description and on the several figures of the drawings similar parts are referred to by like reference characters.

In the drawings 30 denotes a main track and 31 the switch rails, one of the latter having the usual switch point 32. In a suitable casing 33 sunk in the middle of the bed of the track is mounted a mechanism adapted to be operated from the moving train in order to throw the switch point 32. Said mechanism comprises a shaft 34 having thereon a toothed wheel 35 at the opposite sides of which are formed cams 36 rotatable with the wheel 35 between the spaced parts of the yoke 37 formed at one end of the horizontal lever 38, the opposite end of said lever 38 having a downwardly extending arm 39 pivoted to the lower end of a vertical lever 40. The lever 40 is pivoted between its ends to an end of the casing 33, and the upper end of the lever 40 has connection with the horizontal slide 41, the outer end of which is formed with a slotted projection 42 connected with the switch point 32 and permitting movement of the latter

irrespective of movement of the slide. The switch point 32 extends over a bar 43 having lugs 44 which extend upwardly on opposite sides of the switch point whereby the latter may be moved when the bar 43 is actuated. The outer end of the bar 43 is reduced as shown at 43<sup>a</sup> so as to pass through a guide 45, after which the bar passes through the end of a slotted plate 46, the outer end of which is connected with an arm 47 on the lower end of the shaft 48 of an ordinary switch stand 49. The shaft 48 is operated by the customary locking lever 50.

At its outer reduced portion 43<sup>a</sup>, the bar 43 is formed with a head 51, which operates in the slot 52 of the plate 46, a spring 53 being interposed between the head 51 and the end of the plate 46 near to the track. The head 51 of the bar 43 is adapted to abut with the outer end of the slotted portion 52 of the plate 46 so that when the arm 47 is moved toward the track, the plate 46 and the bar 43 may be simultaneously moved so as to operate the switch point 32 to set the same so that a train will keep to the main track. Furthermore, the tension of the spring 53 is sufficient to enable the switch point to be moved in the opposite direction to that above described by proper operation of the shaft 48.

It is contemplated that the train passing over the main track will be provided with suitable mechanism adapted to be lowered to engage and turn the toothed wheel 35. The cams 36 on said wheel will thus be engaged with the yoke of the lever 38 so as to shift said lever and the slide 41, whereby the switch point 32 may be pulled away from the adjacent rail of the track as a train approaches the switch and should the engineer of the train see that the switch is open to the siding when it is desired that the train shall remain on the main track.

The mechanism above described affords safety therefore in that by reason of the yielding connection of the bar 43 with the plate 46, even though the switch stand has been locked so that the switch point 32 is closed, said switch point may be moved without operating the parts on the switch stand and so prevent the approaching train from taking the siding with the resultant likelihood of accident.

Having thus described my invention, what is claimed as new is:

1. In switch mechanism of the class de-



scribed, the combination of rails, a switch point, means operable by a moving train for actuating said switch point and consisting of a member having slidable connection with  
5 the switch point for movement of the same in a predetermined direction, and manually operable mechanism for operating the switch point for moving the same in either direction and consisting of a bar connected  
10 to the switch point at one end, a plate provided with a longitudinal slot and having slidable engagement with the other end of said bar, a head on the bar and operating in the slot of the plate, a spring interposed  
15 between an end of the slotted portion of the plate and the head of the bar, whereby the plate and bar are yieldably connected, and operating devices for actuating the bar and plate.

20 2. In a switch mechanism of the class described, comprising rails, a switch point co-acting therewith, means operable from a moving train for shifting the switch point and consisting of a lever, a slide connected

with said lever and movable transversely 25  
with the switch point, and having a slotted projection connected with the switch point for moving the same in a predetermined di-  
rection, and manually operable means for 30  
actuating the switch point comprising a bar connected with the point, a guide through which said bar operates, a plate having a longitudinal slot and formed with a bearing in one end through which the bar passes to enter the slot, a spring having a bearing 35  
against an end of the slotted portion of the plate, a head carried by the bar and forming a bearing for the spring, and operating means for the plate and bar yieldingly con-  
nected therewith by the spring and compris- 40  
ing an arm pivotally connected with one end of the plate to shift the same back and forth.

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

EDWARD McNEIL.

Witnesses:

HERBERT E. ROBERTS,  
A. H. FRIDRICH.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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