

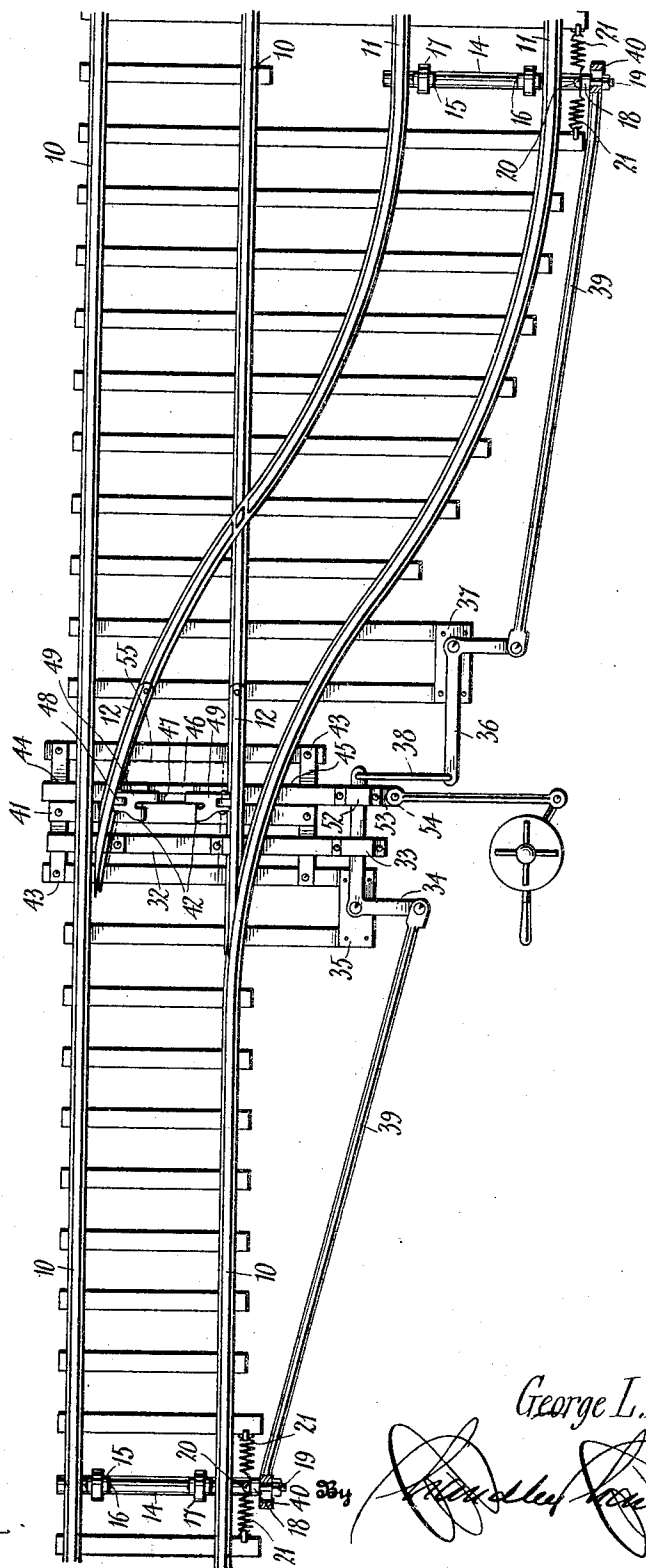
940,646.

G. L. McFARLAND.
RAILROAD SWITCH.
APPLICATION FILED NOV. 27, 1908.

Patented Nov. 16, 1909.

3 SHEETS-SHEET 1.

FIG. 1



Witnesses

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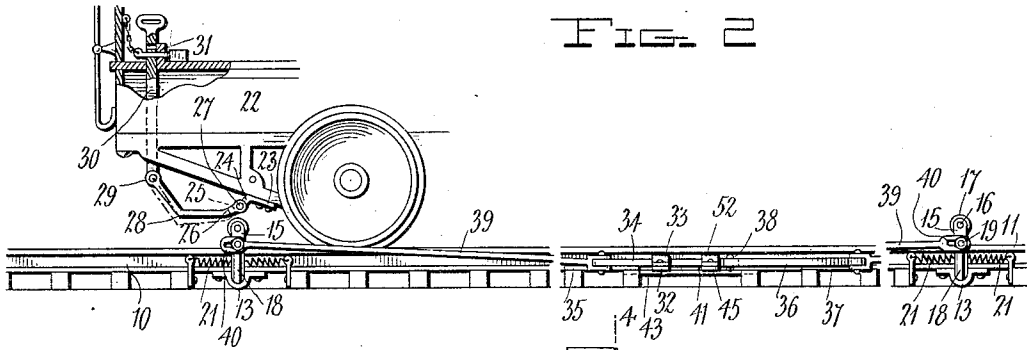
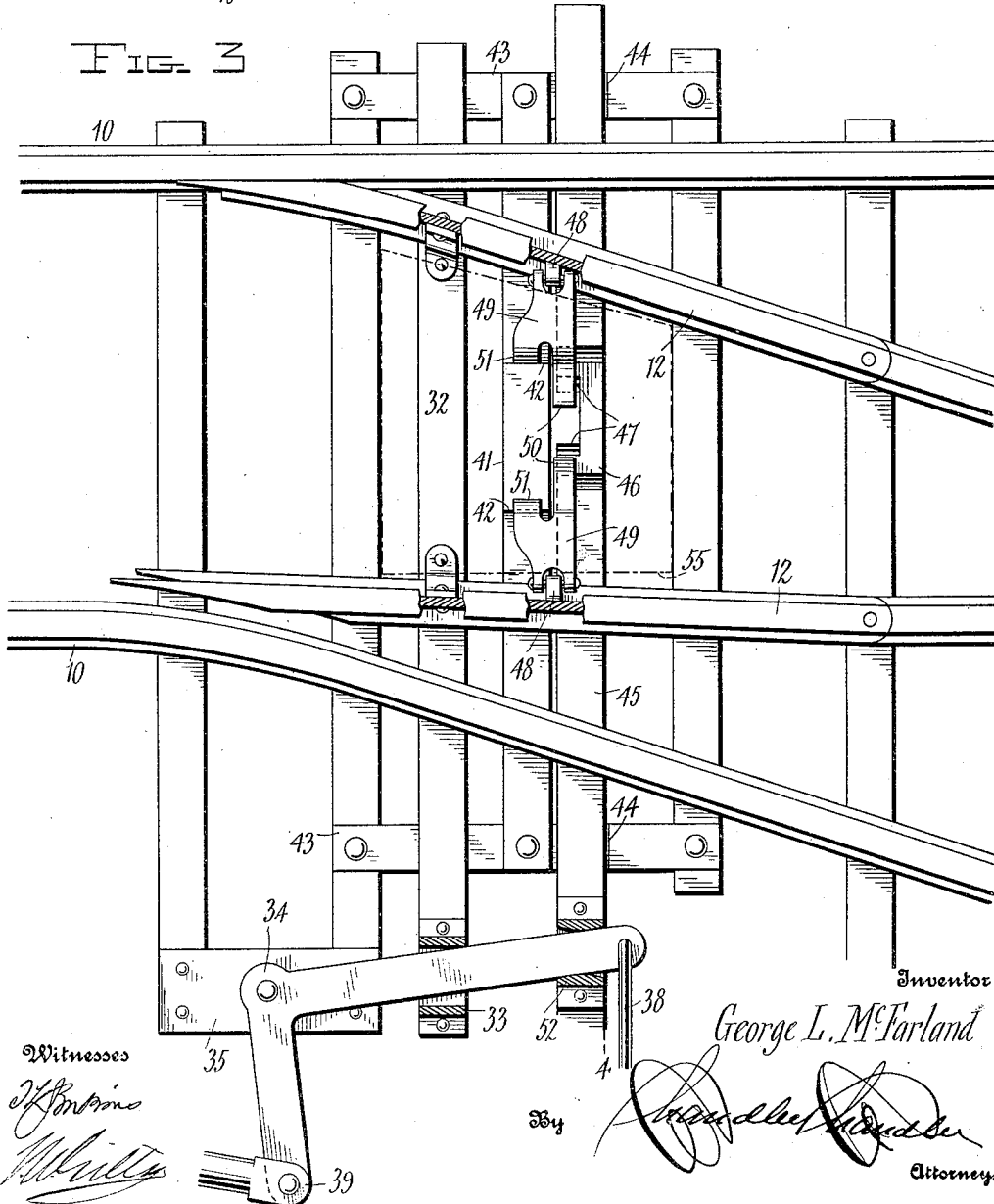


FIG. 3



Witnesses

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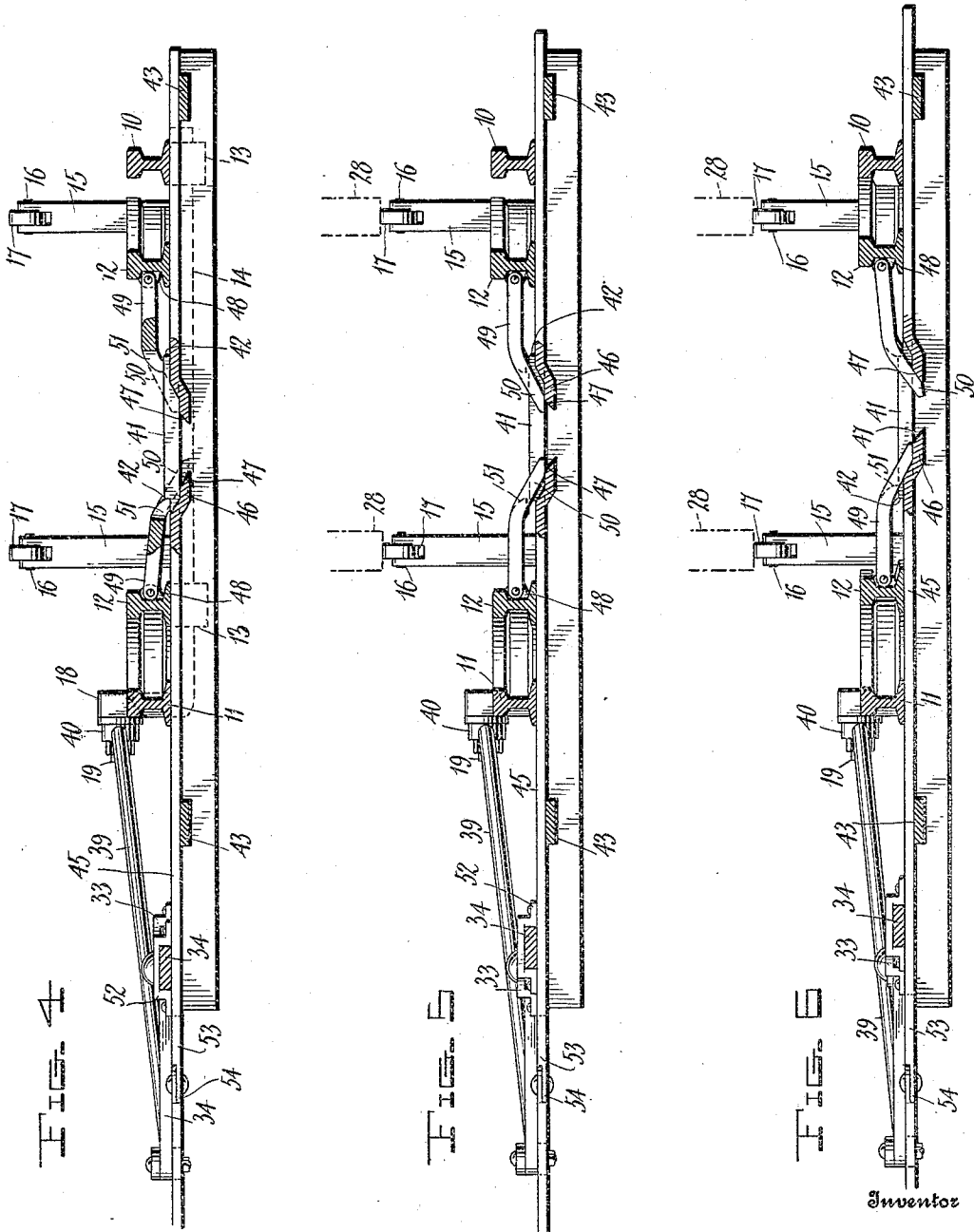
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UNITED STATES PATENT OFFICE.

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RAILROAD-SWITCH.

940,646.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed November 27, 1908. Serial No. 464,620.

To all whom it may concern:

Be it known that I, GEORGE L. McFARLAND, a citizen of the United States, residing at Butler, in the county of Custer, State of Oklahoma, have invented certain new and useful Improvements in Railroad-Switches; 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.

This invention relates to railroads and has special reference to an improved form of railroad switch arranged to be operated from a moving train, the switch being self-locking.

One object of the invention is to improve the general construction of railway switches.

Another object of the invention is to provide an improved form of locking means for such a switch.

A still further object of the invention is to provide an improved form of throwing device for such a switch.

With the above and other objects in view, as will become hereinafter apparent, the invention consists, in general, of a railway switch provided with train actuated means for throwing the same together with an improved device for holding the switch in either open or closed position, the latter being also actuated by said train actuated mechanism.

The invention further consists in certain novel arrangements of details and combinations of parts hereinafter fully described, illustrated in the accompanying drawings, and specifically set forth in the claims.

In the accompanying drawings, like characters of reference indicate like parts in the several views, and:—Figure 1 is a top plan view of a switch constructed in accordance with this invention. Fig. 2 is a side elevation of such a switch showing a portion of a car equipped with the car supported means for throwing the switch. Fig. 3 is an enlarged detail plan view showing the switch points and adjacent parts in the closed position. Fig. 4 is a detail cross section on the line 4—4 of Fig. 3. Fig. 5 is a detail similar to Fig. 4 showing the first part of the movement to open the switch. Fig. 6 is a similar detail showing the completion of this movement.

The numerals 10 indicate the main line rails, 11 the siding rails, and 12 the switch points, these parts being of the ordinary construction as found in point switches.

At such distance in advance of the switch points on the main line rails that may be deemed advisable, there is provided a pair of bearings 13 and a similar pair of bearings 13 is provided at a suitable point on the siding. Carried in each pair of these bearings is a rock shaft 14 provided between the rails with a pair of rocker arms 15 having forked upper ends to receive a pin 16 whereon is mounted a roller 17. These rock shafts extend outward from the rails and at their outer end are provided with a rocker arm 18 having formed thereon a journal 19. On the rocker arm 18 and near the journal end thereof is a pin 20 whereto are connected a pair of springs 21 so tensioned as to normally keep the rocker arm in a vertical position.

At 22 is shown a car or the like. Upon the under side of the car is secured a bracket 23 having a downwardly extending arm 24 provided at its lower end with a perforated ear 25 whereto is connected, by means of a fork 26 and bolt 27, a bent shoe 28 provided with an eye 29 at its free end. To this eye is pivotally bolted a lift bar 30 which extends above the floor of the car and is there provided with a perforation 31 adapted to receive a suitable lock so that the shoe may not be depressed except by a person holding the key to said lock. When this shoe is depressed it takes the position shown in dotted lines in Fig. 2 and will contact with one of the rollers 17 and cause the rock shaft 14 to rotate in its bearings.

The switch points 12 are connected by a switch bar 32 and upon the end of this switch bar which projects beyond the rails on the same side as the rocker arms 18 there is held a clip 33. A crank lever 34 is pivotally mounted on a plate 35 and the longer arm of this lever passes through the opening formed between the switch bar 32 and the clip 33. The length of this clip is so proportioned to the width of the longer arm of the lever 34 that slight movement of the arm is possible without its contacting with the ends of the clip. A similar crank lever 36 is mounted on a pivot plate 37 and the arm of the crank lever 34 which passes

beneath the clip 33 is so arranged as to overlap one arm of the lever 36. For the purpose of connecting these two arms there is provided a link 38 having forked ends which are pivotally bolted, one to the lever 34 and the other to the lever 36. Each of these levers has one of its arms extending substantially at right angles to the track and these arms are connected to the journals 19 by means of links 39 each of which has an elongated eye 40 and the journals 19 are so arranged as normally to lie at one end or the other of each of these eyes according as the switch is opened or closed.

It will now be plain that when the train supported mechanism is in position to depress the arms 15 one or the other of the links 39 will cause the levers 34 and 36 to rotate about their pivot points. When this takes place, the longer arm of the lever 34 will come into contact with one end or the other of the clip 33 and force the switch points into either open or closed position according to the direction in which the train is moving and the consequent direction of rotation of the rock shafts 14.

In order to hold the switch locked in either the open or closed position there is provided a locking bar 41 each end of which is reduced to form a shoulder 42. This locking bar is rigidly secured to the ties by means of bars 43 each of which is provided with a transverse recess 44 forming a guide for a cam bar 45. This cam bar 45 is provided with a centrally depressed portion 46 which is cut away at the side adjacent the bar 41 and is there provided with a pair of spaced synclinally arranged cam surfaces 47. Pivotally mounted on suitable ears 48 which are secured to the inner sides of the switch points 12, are a pair of double pawls 49 each of which is provided with a long arm 50 having its end normally resting against one of the cam surfaces 47. The other arm is indicated at 51 and is arranged in such position as to drop behind the shoulder 42 at that end of the bar 41 whereat the double pawl 49 carrying said arm is located, this being only permitted when the arm 50 bears against the lower end of the cam surface 47 on that side. The bar 45 extends outward beneath the track and passes beneath the arm of the lever 34 which projects through the clip 33. A clip 52 is mounted on this bar to closely embrace the lever 34.

Now when either the lever 34 or the lever 36 be rotated the first movement that takes place is that of the bar 45, inasmuch as the clip 33 is, as previously noted, of sufficient length to permit a slight movement of the lever 34. The result of this movement is that the arm 50, which is resting at the bottom of one of the cam surfaces 47, is lifted. This, in turn, lifts the arm 51 attached to that arm 50 and frees the pawl from en-

gagement with the shoulder 42 with which it was previously in contact. Owing to the proportions of the parts, when this point has been reached that arm of the lever 34 which lies beneath the clip 33 will contact with the end of the clip and move the switch points as previously set forth. When the motion has been completed, the other pawl 51 will engage the opposite shoulder 42 and securely lock the switch in the position in which it is desired to have the same. It is of course obvious that movement in the other direction is accomplished in like manner.

In order to provide for the throwing of the switch in the usual manner, that is to say, by hand, the bar 45 is extended beyond the clip 52 as indicated at 53 and is provided at its outer end with an eye 54 where to may be attached the switch link of an ordinary target stand of any preferred kind.

In order to protect the working parts from the action of sleet and other deleterious influences there is provided a cover 55 which extends over the operating parts between the switch points.

While the device is here shown as applied to a point switch it is obvious that it is equally applicable to a stub switch. It is also obvious that changes may be made in the form and proportions of this invention without departing from the material principles thereof. It is not, therefore, desired to confine the invention to the exact form and arrangement herein shown and described, but it is wished to include all such as properly come within the scope of the invention.

There has thus been provided a simple and efficient device of the character described and for the purpose specified.

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

1. In a railroad switch, main line rails, siding rails, switch points, a switch bar adapted to move said switch points, a bar provided with oppositely disposed shoulders held beneath said switch points, pawls carried on the switch points one of which is adapted to engage one of said shoulders in open position and the other to engage the other shoulder in closed position, and train actuated means adapted to release the engaged pawl and move said switch bar.

2. In a railroad switch, main line rails, siding rails, switch points, a switch bar adapted to move said switch points, a bar provided with oppositely disposed shoulders held beneath said switch points, pawls carried on the switch points one of which is adapted to engage one of said shoulders in open position and the other to engage the other shoulder in closed position, lifting arms attached to said pawls, a cam bar slidably mounted beneath said lifting arms, and

train actuated means to successively move said cam bar, raise the lifting arm, and free the engaged pawl, and move said switch bar.

3. In a railroad switch, main line rails, 5 siding rails, switch points, a switch bar adapted to move said switch points, a bar provided with oppositely disposed shoulders held beneath said switch points, pawls carried on the switch points one of which is 10 adapted to engage one of said shoulders in open position and the other to engage the other shoulder in closed position, lifting arms attached to said pawls, a cam bar slidably mounted beneath said lifting arms, 15 a bell crank lever, a clip on said switch bar loosely engaging one end of said bell crank lever, a second clip on said cam bar closely

engaging said end, a rock shaft provided with a crank arm, a link connecting said crank arm with the other end of said bell 20 crank lever, an upstanding rocker arm held on said rock shaft between two of said rails, and train supported means to depress said rocker arm and thereby actuate said bell crank lever to successively move said cam 25 bar and free the engaged pawl, and move said switch bar to change the position of said points.

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

GEORGE L. McFARLAND.

Witnesses:

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