

F. CHAMNESS & J. P. KRIEGBAUM.
ELECTRICALLY OPERATED SWITCH.
APPLICATION FILED OCT. 12, 1909.

977,595.

Patented Dec. 6, 1910.

FIG. 1

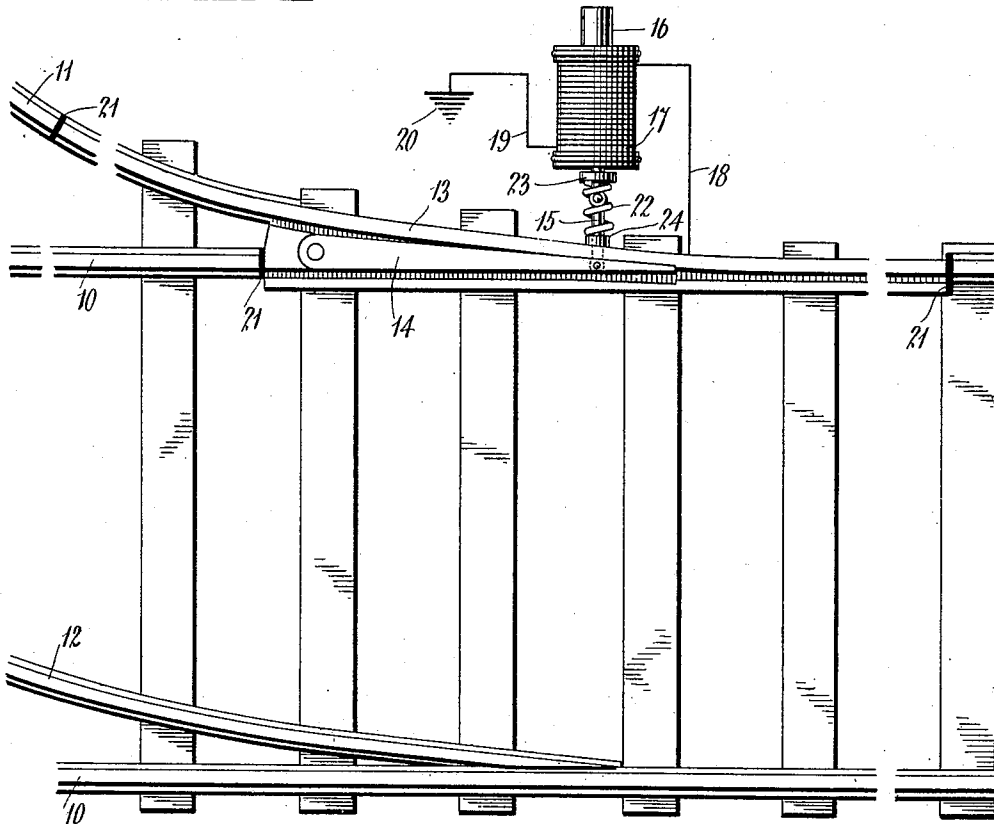
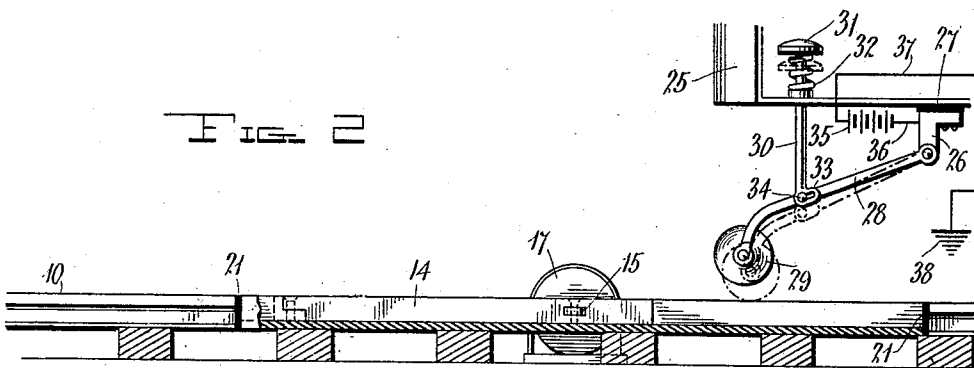


FIG. 2



Witnesses
J. J. Jenkins
L. N. Griffin

Inventors
Frank Chamness, Jr.
John P. Kriegbaum
By *[Signature]*
Attorneys

UNITED STATES PATENT OFFICE.

FRANK CHAMNESS AND JOHN P. KRIEGBAUM, OF HUNTINGTON, INDIANA.

ELECTRICALLY-OPERATED SWITCH.

977,595.

Specification of Letters Patent.

Patented Dec. 6, 1910.

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To all whom it may concern:

Be it known that we, FRANK CHAMNESS and JOHN P. KRIEGBAUM, citizens of the United States, residing at Huntington, in the county of Huntington, State of Indiana, have invented certain new and useful Improvements in Electrically-Operated Switches; and we 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 electrically operated railroad switch.

One object of the invention is to provide a simple construction of railroad switch of the tongue point type, the switch being adapted for operation by electrical means.

Another object of the invention is to provide rolling stock supporting means for operating such a switch.

With the above and other objects in view the invention consists in general of a tongue switch provided with novel electrical means for operating the same, in combination with rolling stock supported means to complete an electric circuit through the switch operating means.

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

In the accompanying drawings, like characters of reference indicate like parts in the several views, and:—Figure 1 is a plan view of a portion of a track showing a switch constructed in accordance with this invention. Fig. 2 is a section taken longitudinally through Fig. 1, the view also showing a portion of a car arranged to operate the switch, the operating mechanism being partly diagrammatic.

The numeral 10 indicates the line rails of a track and at 11 and 12 are shown the outer and inner turnout rails.

At 13 is a switch provided with a pivoted point 14 whereto is connected a link 15 extending laterally from the track and connected in turn to a solenoid core 16 which is held to move in a solenoid 17, one end of the wire whereof is connected by means of a wire 18 to the switch 13 while the other end is connected by a wire 19 to the ground as indicated at 20. This switch is insulated

from the remainder of the track by suitable insulation as indicated at 21. Surrounding the link and inner end of the solenoid core is a spring 22 which normally serves to hold the switch point in the position shown in Fig. 1, a collar 23 being provided on the solenoid for one end of the spring to bear against while a boss 24 is formed on the switch for the opposite end to rest against.

Now, from an inspection of Fig. 1 it will be obvious that if a current is sent through the solenoid the core will be drawn in and the switch point 14 moved to open the turnout rail 11 so that a car provided with the usual flanged wheels will be caused to pass over the turnout. In order to provide means for actuating the solenoid by completing an electric circuit therethrough the car 25 is provided with a bracket 26 located below the floor and insulated from the remainder of the car as shown at 27. Pivoted on this bracket is an arm 28 which carries at its lower end a contact roller 29 adapted to be depressed and strike the switch 13 as the car moves over the track. In order to depress this roller 29 a plunger 30 is provided on the car, having a foot treadle 31 extending above the car floor, and between this foot treadle and the car floor is a spring 32 which normally holds the roller 29 free from the track. At the lower end of the plunger 30 there is provided a slotted head 33 and through the slot in this head extends a pin 34 attached to the arm 28. At 35 is typified any suitable source of electricity here indicated as a battery although it is obvious that electricity may be taken from the trolley in an electric car or from any other desired source. From this battery a wire 36 extends to the bracket 26 and a wire 37 extends from the opposite pole of the battery to a suitable current 38 on some part of the car so that one end of the battery is constantly grounded.

Now, as the car moves over the track if it be desired to remain on the main line the operator does not touch the foot treadle 31. If, however, it be desired to pass over the turnout the operator depresses the foot treadle 31 prior to reaching the switch point 14. Current will now flow from the ground 38 through the wire 37, battery 35, wire 36, bracket 26, arm 28, roller 29, switch 13, wire 18, solenoid 17, wire 19, and back to the ground 20, thence through the ground to the ground 38, thus completing the circuit.

When the circuit is thus completed the solenoid will be energized and the solenoid core drawn in thus causing the switch point 14 to move and open the turnout as previously described. The length of the insulated portion of the turnout is made sufficient so that the entire car or train will pass into the turnout prior to the circuit being broken, but as soon as the circuit is broken by the roller 29 passing out of the insulated switch or by the operator removing his foot from the treadle and allowing the roller to rise, the solenoid will be deenergized and the spring 22 will act to restore the switch to the position in which the main track is opened and the turnout closed.

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

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

In a device of the kind described, a railroad track including a section containing a switch provided with a pivot tongue, said switch being further provided with a lateral boss having an opening therethrough terminating adjacent the point of the tongue, insulation between said section and the re-

mainder of the track, a solenoid adjacent the track and having an opening there- 30 through, said solenoid being alined with said boss, a core movable in said solenoid, a link passing through the opening in the boss and having one end pivotally connected to said core and the other end pivotally con- 35 nected to the switch tongue adjacent its point, a collar on the end of the solenoid core adjacent the link connection, a coil spring surrounding said link and having one end bearing against the boss and the 40 other end bearing against said collar, a wire connecting one end of the solenoid winding with the insulated section, a second wire connecting the other end of the solenoid winding with the ground, and rolling stock 45 supported means adapted for completion of a circuit through the insulated section and solenoid.

In testimony whereof, we affix our signatures in presence of two witnesses.

FRANK CHAMNESS.
JOHN P. KRIEGBAUM.

Witnesses:

JOHN R. DAY,
W. E. CALLISON.