

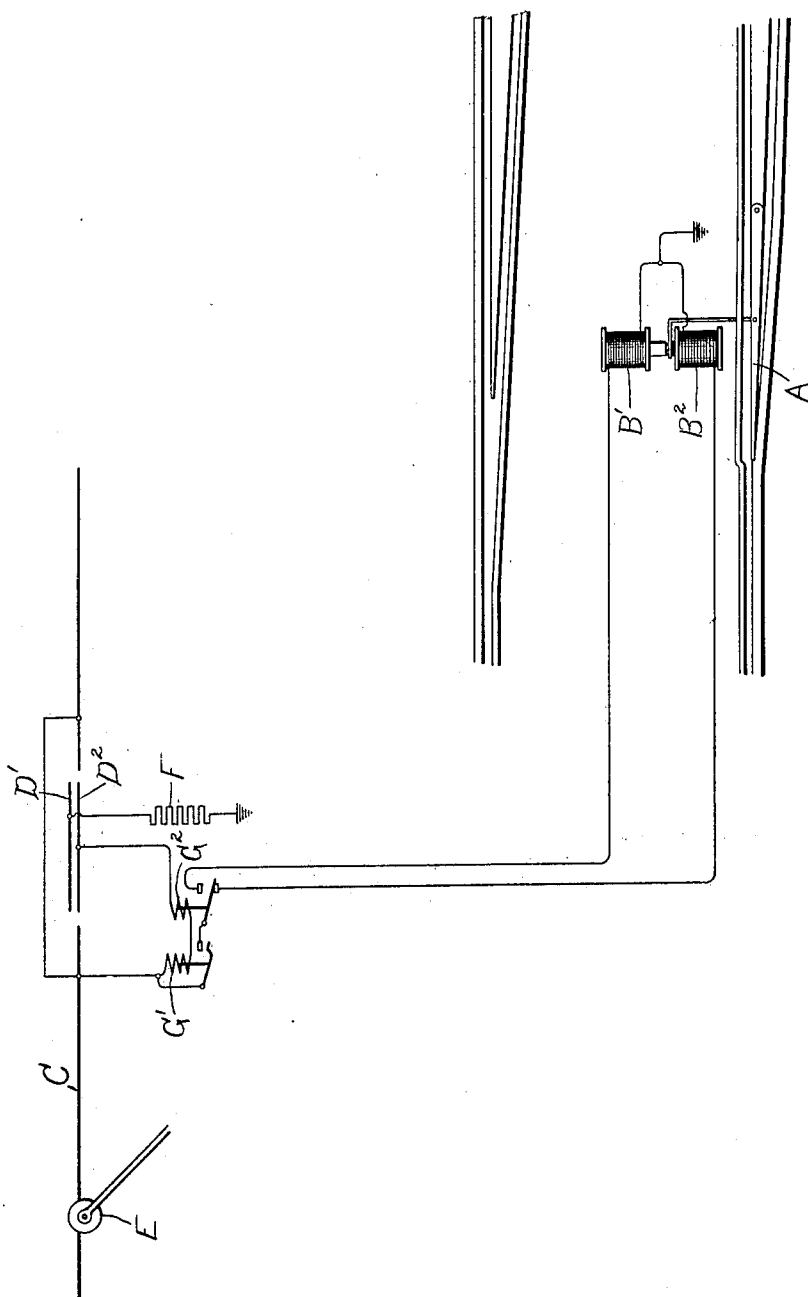
No. 888,389.

PATENTED MAY 19, 1908.

F. B. COREY.

ELECTRICALLY OPERATED TRACK SWITCH.

APPLICATION FILED DEC. 7, 1906.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRED B. COREY, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY,
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ELECTRICALLY-OPERATED TRACK-SWITCH.

No. 888,389.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed December 7, 1906. Serial No. 346,693.

To all whom it may concern:

Be it known that I, FRED B. COREY, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Electrically-Operated Track-Switches, of which the following is a specification.

My invention relates to electrically-operated track-switches for electric railways, and particularly to the type of track switch which is controlled by means of an insulated section in a working conductor arranged in such manner that if a vehicle coasts over the insulated section, the track switch is thrown in one direction, while if the vehicle draws current from the insulated section while passing over it, the switch is thrown in the opposite direction.

The object of my invention is to provide novel and efficient controlling means for securing the desired result.

My invention will best be understood by reference to the accompanying drawing, which shows diagrammatically an electrically-operated track switch arranged in accordance with my invention.

In the drawings A represents the track switch, which is arranged to be drawn in one direction or the other by the solenoids B¹ and B². When the solenoid B² is energized, the switch is set for the main track, as shown in the drawing, and if solenoid B¹ is energized, the switch point is thrown to its other position.

C represents the working conductor for supplying power to the electrically-operated vehicles.

D¹ and D² represent a pair of contacts interposed in the working conductor and insulated therefrom. These contacts are arranged to be bridged by a current-collector E carried by a moving vehicle. The contact D¹ is connected to ground through a high resistance F, while the contact D² is connected to the working conductor C through a pair of controlling magnets G¹ and G², which are arranged to respond to different current strengths. The magnet G¹ responds to a weaker current than the magnet G², and for this purpose may be arranged with a greater number of turns, as shown in the drawings, or designed or connected in any well known manner to secure this result. These magnets control switches which are

included in normally-open connection from the working conductor C to the operating magnets B¹ and B².

The operation is as follows: When the current-collector E bridges the contacts D¹ and D², a circuit is closed from the working conductor C through the magnets G¹ and G², contact D², current-collector E, contact D¹ and resistance F to ground. The current which flows through the resistance F is sufficient to energize magnet G¹, but not to energize magnet G². Magnet G¹, alone, consequently, draws up its armatures, thereby closing a circuit from working conductor C through the contact of magnet G¹, and through the lower or back contact of magnet G², to solenoid B², and thence to ground. Magnet B² is thus energized, throwing the switch to the position shown in the drawing, or if the switch is already there, merely holding it in that position. If, however, the motor circuit on the vehicle is closed while the current-collector E engages contacts D¹ and D², the current flowing through the motor circuit will be drawn through magnets G¹ and G², and this current, being greater in amount than that which passes through resistance F, is sufficient to energize magnet G², causing it to shift its contact to its upper position, thereby cutting magnet B² out of circuit and connecting magnet B¹ to the working conductor. The magnet B¹ draws in its core, shifting switch A to its other position. Thus, it will be seen that the switch is set for the main track or siding, according as the vehicle coasts over contacts D¹ and D², or draws current from them in passing.

It will be understood that I have illustrated my invention diagrammatically, and that, in practice, any well known form of switch-operating magnets, contact devices, and controlling magnets may be employed.

What I claim as new and desire to secure by Letters Patent of the United States, is,—

1. In an electric railway, in combination with a track switch, a pair of electromagnets for shifting said switch in opposite directions, a working conductor, a pair of controlling magnets responsive to different current-strengths, contact devices interposed in said working conductor adapted to be engaged by a current-collector on a vehicle and to connect both of said controlling magnets in series with the motor circuit on the vehicle and to establish a second circuit of high

resistance in shunt to the motor circuit, and switch-contacts controlled by said controlling magnets arranged to connect the working conductor to one or the other of the track switch shifting magnets according as one or both of said controlling magnets are energized.

2. In an electric railway, a track switch, a pair of operating magnets therefor, a working conductor, a pair of contacts interposed in the working conductor and insulated therefrom and arranged to be bridged by a current-collector on a vehicle, high resistance connections from one of said contacts to ground, connections from the other of said contacts to the working conductor comprising a pair of controlling magnets responsive to different current-strengths, normally open connections from the switch-operating magnets to the working conductor, and contacts in said connections controlled by said controlling magnets.

3. In an electric railway, a track switch, a pair of operating magnets therefor, a work-

ing conductor, a pair of contacts interposed 25
in the working conductor and insulated there-
from and arranged to be bridged by a cur-
rent-collector on a vehicle, high-resistance
connections from one of said contacts to 30
ground, connections from the other of said
contacts to the working conductor compris-
ing a pair of controlling magnets responsive
to different current-strengths, normally-
open connections from the switch-operating
magnets to the working conductor, contacts 35
controlled by the controlling magnet re-
sponsive to the weaker current for closing
said connections, and contacts controlled by
the other controlling magnet for including
said switch-operating magnets alternately in 40
said connections.

In witness whereof, I have hereunto set
my hand this 6th day of December, 1906.

FRED B. COREY.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.