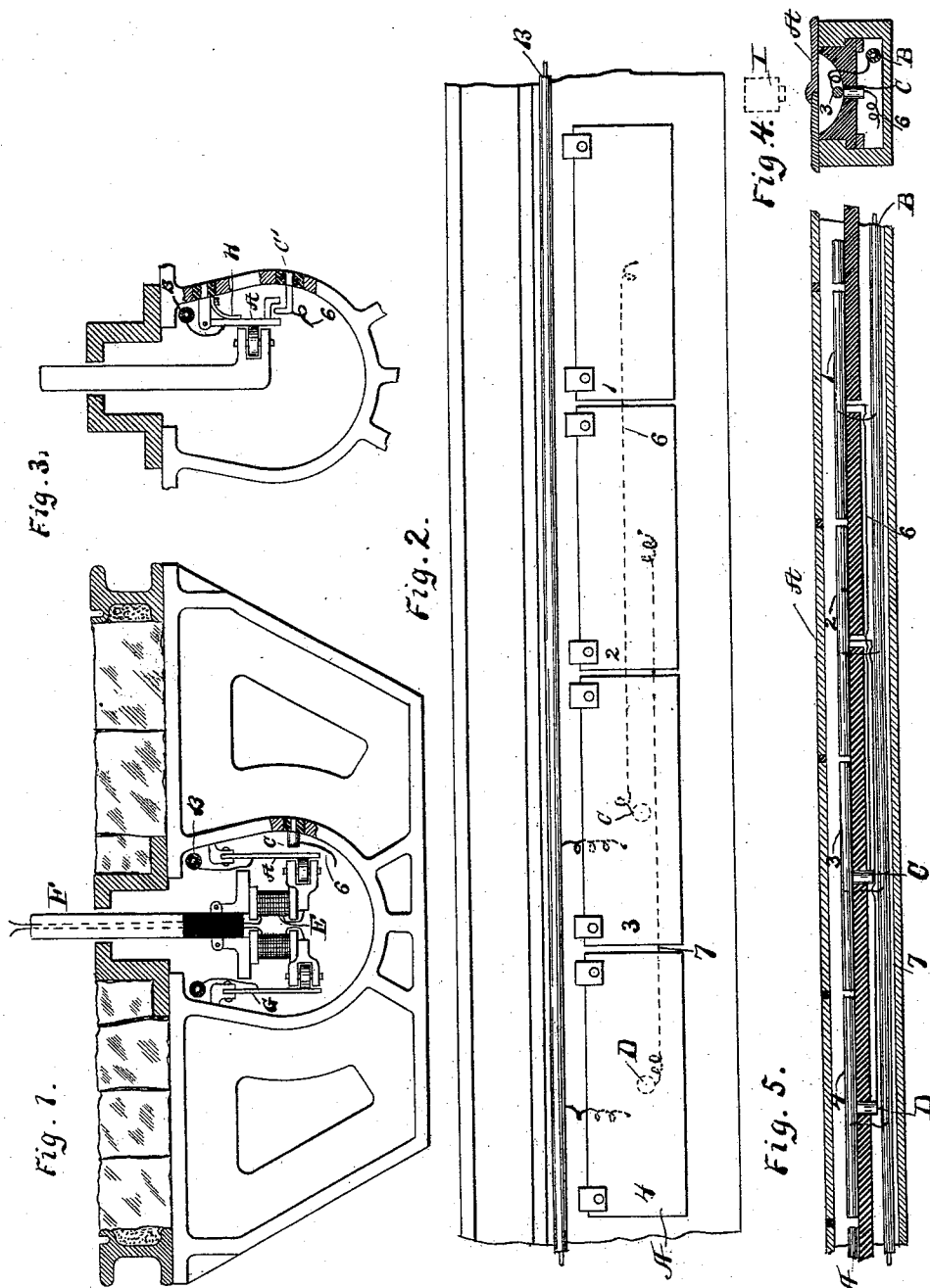


(No Model.)

J. H. GUEST.
ELECTRIC RAILWAY.

No. 537,198.

Patented Apr. 9, 1895.



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ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 537,198, dated April 9, 1895.

Application filed August 9, 1894. Serial No. 519,836. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GUEST, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Electric Railways, of which the following is a specification.

My invention relates to electric railway systems and is designed to provide means whereby, when a motor is taking current from a working conductor at one part of the system, the supply to a working conductor or section of working conductor at another point whether on the same or a crossing or branch line may be automatically cut off.

The invention consists essentially in making the working conductor from which the motor takes up current, movable laterally either in a horizontal or a vertical plane and in cutting off the supply of current to the desired section or sections by means operated or controlled by the movement of said conductor produced by or accompanying its engagement by the trolley or collector in the act of taking up current.

A convenient and preferred way of carrying out the invention is to provide an insulated contact stop for the working conductor, and to carry the supply for the section of conductor, when the supply is to be controlled, through said insulated contact stop. When the working conductor is moved laterally at the time current is being taken from it, it is moved away from said stop and the connection is thereby broken.

The invention, as will be obvious, admits of many modifications all alike in that the movement of the conductor is made to control directly or indirectly the supply to another section.

As illustrating one way of carrying out my invention I have shown its application to a laterally movable conductor actuated by a magnet as described in my prior application for patent filed June 18, 1894, Serial No. 514,873. In this application of my invention the movement of the conductor into engagement with the trolley by the influence of the magnet breaks the connection to the section of working conductor which is to be made dead.

In another application of my invention, the working conductor being moved and held to

one side by the mechanical action of the trolley in taking current therefrom, breaks the connection of another section.

My invention further consists in the construction and combination of parts as will hereinafter be fully described and pointed out in the claims.

In the accompanying drawings which form a part of this specification, Figure 1 represents in vertical cross section, an electric railway conduit equipped with means for carrying out my invention. Fig. 2 represents a longitudinal section of a portion of such conduit. Fig. 3 represents in cross section a modified construction and arrangement of parts embodying my invention. Fig. 4 represents a cross section of a closed conduit showing another modification, and Fig. 5 represents a longitudinal section thereof.

In the drawings A, indicates the working conductor which is represented divided into sections as 1, 2, 3, 4. B, is the feeder from which taps are shown leading to sections of said conductor, as to sections 3 and 4. In the neighborhood of certain sections, as 3 and 4, suitable contacts such as the posts or pins C, D, are located for engagement with sections of the conductor. From these contacts conductors as 6, 7, are led to other sections of the working conductor which have no direct connection with the feeder. In the drawings, the contact C, is shown as connected to section 1, and contact D, to section 2. The contacts between the sections of the working conductor and these posts or pins may be controlled in various ways. In Figs. 1 and 2, I have shown the sections of the working conductor mounted to move laterally in a horizontal plane and to be so moved by a magnet as E, carried on the trolley or collector arm F, as set forth in the application above referred to. In this construction the magnet draws the suspended sections of conductor A, away from the contact posts and thereby breaks the circuit connection as, for instance, between sections C or D, and sections 1 or 2, respectively. Therefore, should a car be taking current from section 3, no current can flow to section 1, and when the car moves onto section 4, no current will flow to section 2, while the current will be restored to section 1. In this manner, the car taking current prevents a following car from approaching

nearer than the second section. If travel be toward the left, a car taking current from section 3, will cause a car running onto section 1, to stop from loss of current and a car on section 4, will stop a car as it enters onto section 2.

I propose locating the sections such as 3 and 4, which are constructed to break circuit to other sections, at crossings, stations, short curves and other places where it is especially desirous to have additional safe-guards against a following car or train running into those ahead.

The return conductor G, as indicated in Fig. 1, may be constructed in the same manner as the working conductor A, and if desired the connections through contact posts from one section to another may also be the same as in connection with conductor A, though it is not essential that it should be so.

The trolley shown in Fig. 1, is simply illustrative of any form of trolley or collector carrying a magnet to draw the conductor into engagement therewith. In this instance the trolley wheel is shown mounted in the polar extension of the magnet and from said extension current is led by a suitable conductor to the motor and back to the return conductor G, through the other magnet of the trolley.

In Fig. 3, is represented one of the many ways which may be devised for the current collector to break circuit between one section and another of the working conductor. In this instance each section of the conductor is held out by a spring, as H, so as to make good contact with the trolley and to normally complete circuit to another section through a contact carried by such section and a contact as C', located in but insulated from the wall of the conduit. As the trolley presses on a section it is forced back and circuit over conductor 6, to the section with which it connects is broken as indicated in said figure.

In Figs. 4 and 5, a closed conduit is represented wherein the sections of the working conductor are normally at rest upon a bed of insulation and are attracted to the cap or trolley track by a magnet indicated at I. Certain sections of this conductor as 3 and 4, are connected to the feeder B, and normally rest upon contact posts or pins C, D, located in the bottom of the conduit, which posts are connected as by conductors 6 and 7, respectively, with the feeder B. As section 3, for instance, is raised by the train magnet, contact with post C, is broken and section 1, is cut out of circuit.

By employing my invention in the above mentioned forms or in any other suitable manner producing the same result, a car or train while taking current continuously from the working conductor is enabled to cut out of circuit other portions of the same conductor and so prevent the flow of current to other cars or trains.

I have shown sections of the working conductor so mounted that by the attraction of

a magnet carried by the trolley they would be moved into engagement with the trolley and at the same time break the circuit to another section. I have also shown such section moved aside by the trolley thereby causing it to break circuit to another section. I have also shown such section lifted into engagement with a part traversed by the trolley and thereby causing a break in the circuit leading to another section. These are simply a few of the many ways of carrying out my invention, the gist of which resides in the construction and arrangement by which I am enabled to move a section of live conductor by or into engagement with a trolley or current collector and in the same act break the circuit leading from the feeder through said section to another section.

I claim as my invention—

1. In an electric railway system, a movable working conductor, and means controlled by its movement, when a car takes current from it, for cutting off current from another section of conductor.

2. In an electric railway system, a laterally movable working circuit conductor divided into sections one or more of which are connected to other sections, and a circuit breaker in such connections operated by the movement of said conductor.

3. In an electric railway system, the combination with a feeder, of a sectional working circuit conductor in which the sections are mounted to move laterally as a car takes current therefrom, connections between the feeder and certain sections of said conductor, and circuit breakers operated by the movement of said sections to break connection to other sections of working circuit conductor.

4. In an electric railway system, the combination with a sectional working circuit conductor each section of which is mounted to move laterally, of contacts normally in engagement therewith, connections from said contacts to other sections of working conductor, and means carried by a car for moving the sections of conductor while taking current therefrom and breaking circuit at said contacts.

5. In an electric conduit railway, the combination of a plate conductor suspended in said conduit and divided into sections some of which are connected to the feeder, of contacts located to be normally engaged by said sections, conductors leading from said contacts to other sections of said conductor, and a current collector which moves said sections out of engagement with said contacts when taking current from the sections so moved.

Signed at Boston, in the county of Suffolk and State of Massachusetts, this 1st day of August, A. D. 1894.

JOHN H. GUEST.

Witnesses:

HOMER ALBERS,
J. PORTER CROSBY.