(No Model.) 2 Sheets—Sheet 1.

M. WHELESS.

ELECTRIC RAILWAY SYSTEM.

No. 441,216. Patented Nov. 25, 1890.

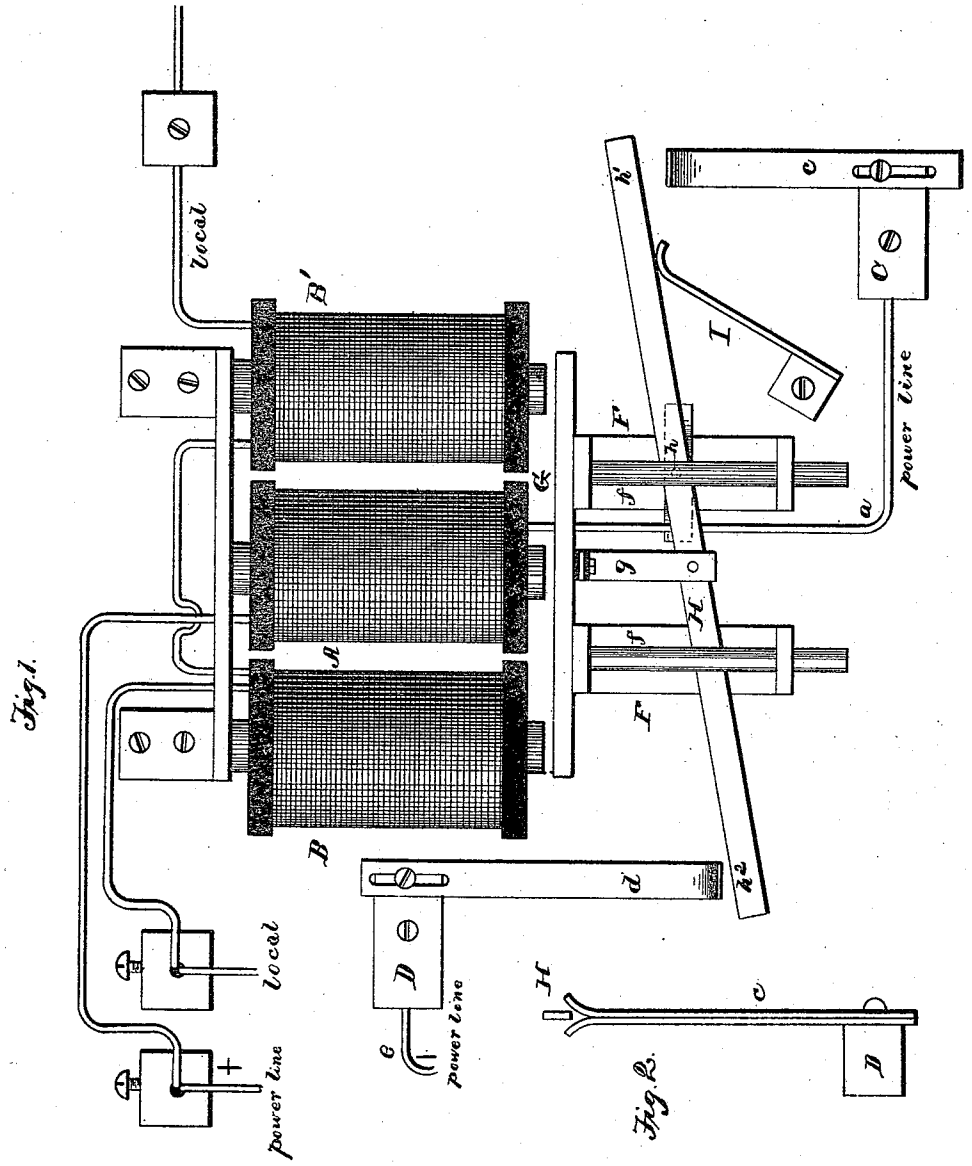

Fig. 1.

Fig. 2.

Witnesses
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Thos. H. Houghton.

Inventor
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per W. H. Singleton.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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ELECTRIC RAILWAY SYSTEM.

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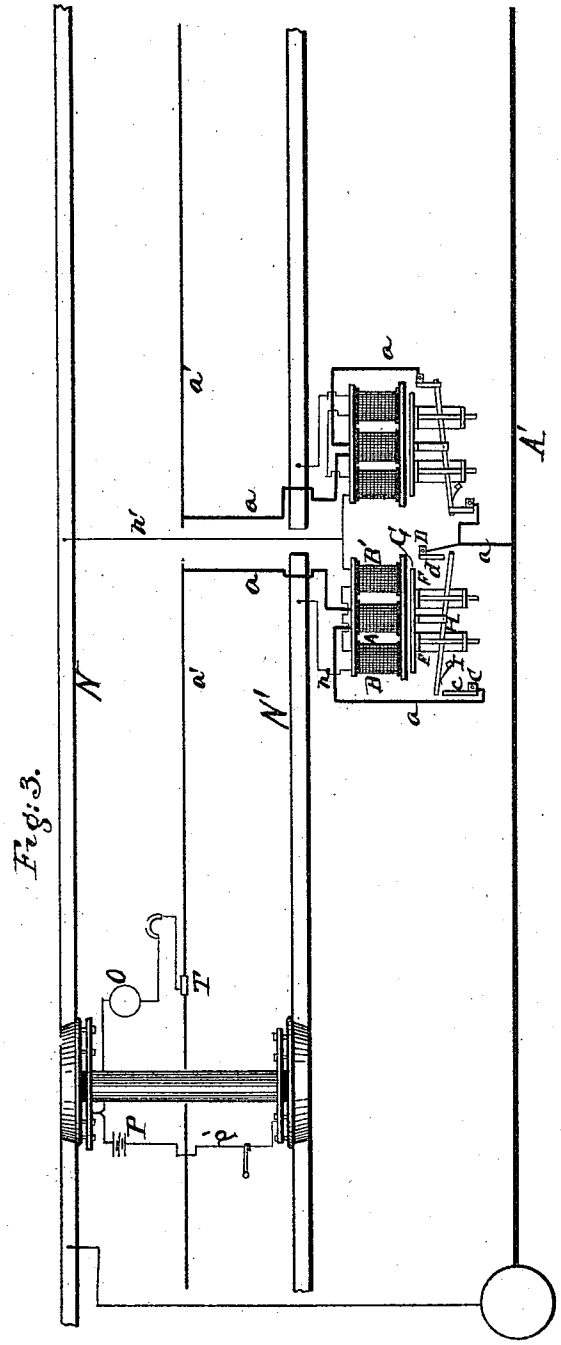

Fig. 3.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MALONE WHELESS, OF NASHVILLE, TENNESSEE, ASSIGNOR TO THE WHELESS ELECTRIC RAILWAY COMPANY, OF ALEXANDRIA, VIRGINIA.

ELECTRIC-RAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 441,216, dated November 25, 1890.

Application filed July 21, 1890. Serial No. 359,386. (No model.)

To all whom it may concern:

Be it known that I, MALONE WHELESS, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Electric-Railway Systems; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 represents a side view of the device. Fig. 2 is a detail end view. Fig. 3 shows the device applied to a railway system.

This invention relates to an improvement in electric-railway systems, more particularly to the kind where there is an insulated power-line, a bare working-conductor in sections, and switches between the two.

The present invention relates more particularly to the way of arranging the armature and the device for connecting the power-line with the working-conductor section, so as to make a larger break when the working-conductor section is cut out.

The invention consists in the construction hereinafter set forth.

In the annexed drawings, the letters B A B′ represent three magnets. To the magnets B and B′ are connected the local circuit, and to the magnet A the power-line. From the magnet A a wire *a* runs to a post C, provided with the adjustable spring-contact plate *c*, and from the post D, provided with a spring-contact plate *d*, runs a wire *e*. In juxtaposition to the magnets are placed the guide-plates F F, through which loosely pass the guide-rods *f f*, carrying the armature G. From the back of this armature projects an arm *g*, which is pivoted to the transverse bar H. This bar is pivoted at *h* to one guide-plate F, or is held by a strip to whatever the device is secured to. This pivot *h* should be sufficiently loose to allow of proper play of the bar. The spring-contact plates *c* and *d* project in opposite directions, and the ends h' h^2 of bar H are in line with the ends of these plates, such ends being preferably curved.

On Sheet 2 is shown the invention applied to a railway system. N N′ are two lines of track-rails; a' a', insulated sections of a bare working-conductor; A′, the main power-line, and the device already fully described is placed between the main power-line and the section of the working-conductor. The car is represented by an axle and pair of wheels. Upon it is placed a motor O and a battery P, the former connected with the axle and the trolley T, the battery connected with the two wheels. The lines of rails are connected by the local wires n n' with the magnets B B′. With such a construction, where the magnets are vitalized by current passing around them, the armature G is drawn up and turns the bar H on the pivot *h*, closing the same at the contact-plates *c* and *d*, and the power-current is turned on to the working-conductor section. This device is to be arranged vertically, so that gravity will draw the armature down and break the contact; but to assist gravity a spring-plate I may be placed under the end h' of the bar H. When the battery or local circuit is closed, the current from the battery passes by wire *p* through the wheel to the line N of rails, thence by wire n' and the magnets B B′, thence by wire *n* to the line N′ of rails, and by the car-wheel and wire p' to battery. This vitalizes the magnets B B′, drawing up the armature G, turning the bar H, and closing the break. The power-current then streams in from the power-line A′, through the wire *a* and the magnet A, preserving the contact of the bar H, and into the trolley-line a' through the trolley T to the motor.

Having thus described my invention, what I claim is—

The magnet, in combination with the armature G, the bar H, pivoted thereto and also pivoted to a support, and the circuit provided with the contact-plates *c d*, the ends of the bar H being adjacent to the plates, as set forth.

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

MALONE WHELESS.

Witnesses:

J. SHERMAN PATRICK,

GRAHAM L. GORDON.