(No Model.)

M. WHELESS.

ELECTRIC RAILWAY CONDUIT SYSTEM.

No. 433,918. Patented Aug. 5, 1890.

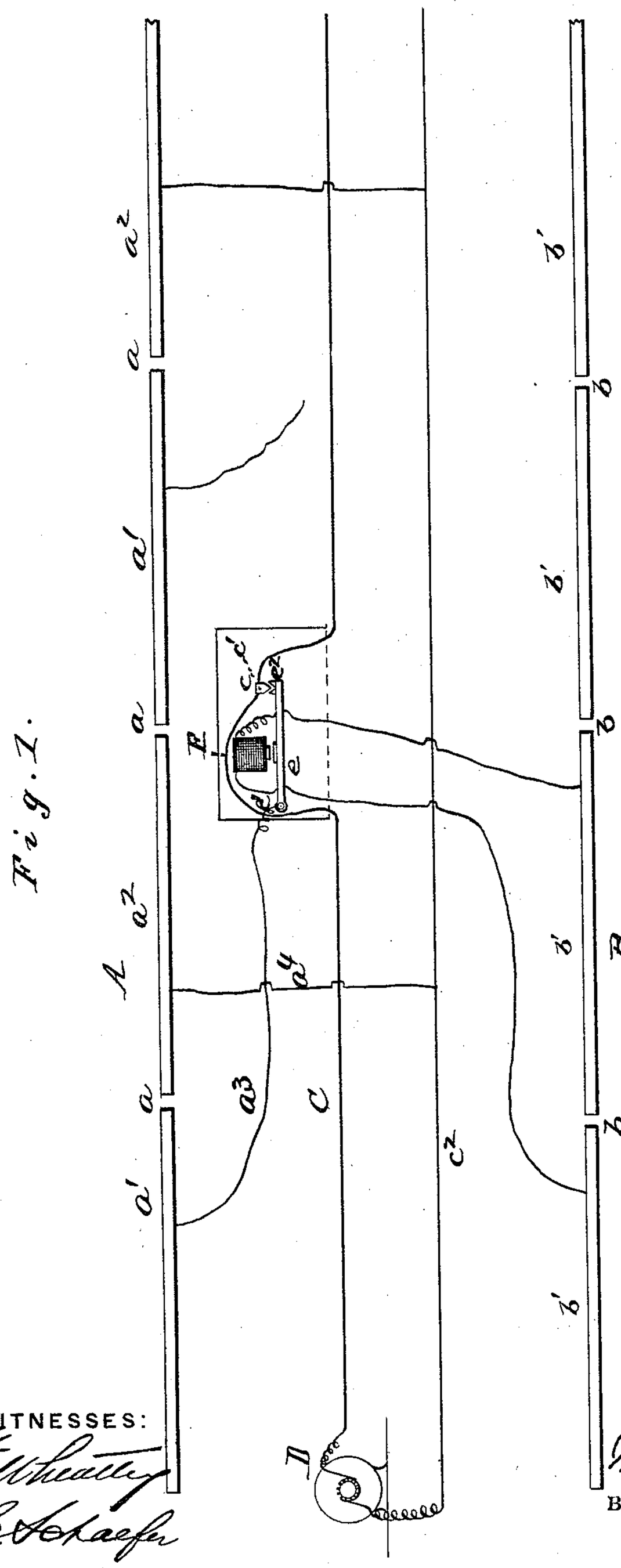

Fig. 1.

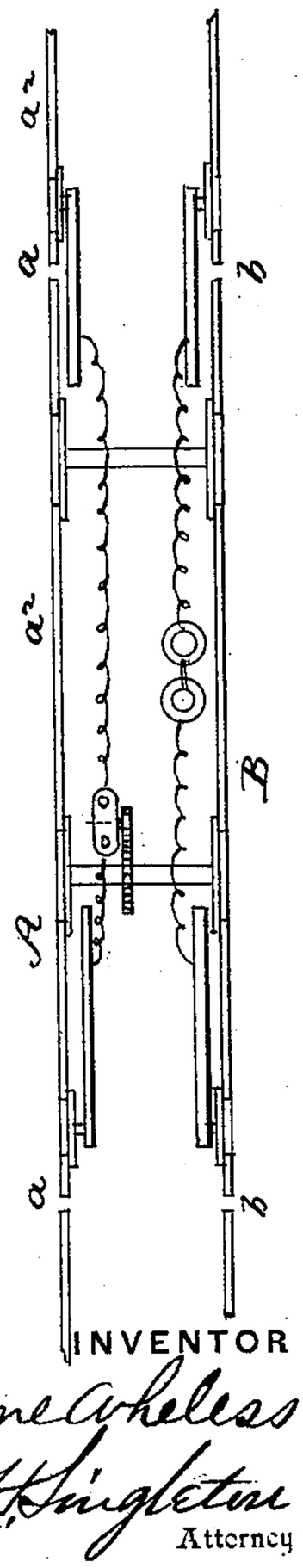

Fig. 2.

WITNESSES:

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MALONE WHELESS, OF NASHVILLE, TENNESSEE, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE WHELESS ELECTRIC RAILWAY COMPANY, OF ALEXANDRIA, VIRGINIA.

ELECTRIC-RAILWAY-CONDUIT SYSTEM.

SPECIFICATION forming part of Letters Patent No. 433,918, dated August 5, 1890.

Application filed October 5, 1889. Serial No. 326,075. (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-Conduit 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 is a plan view of a track provided with the improved system. Fig. 2 is a diagrammatic view showing the relation of the car to the track.

The present invention relates to an improvement in electric-railway systems, more particularly to those whereof the conduit is under ground.

It is the object of the present invention to produce a system which will obviate many of the defects incident to the constructions now known.

With the present invention the conduit is buried entirely under ground, where the underground system is used. If overhead wires are used, they are covered with this invention. Therefore there is absolute safety to passers by.

The invention consists, broadly, in adapting to a covered wire the present open-circuit system, with its series of circuits passing through the cars.

In the annexed drawings, the letter A indicates a line of conductors—for instance, a line of railroad-rails insulated from one another at their ends, as at a—and the letter B indicates another similar line insulated at b. The letter D represents the source of electricity—say a dynamo—of the main circuit C. This circuit is made of wire covered its entire length, except at proper intervals c, where it may have secured to it the projection c'. From the dynamo passes the usual raw wire c^2. Along the track at suitable distances are placed electro-magnets E, having the armatures e pivoted at e'. These armatures are normally held away from the magnets E, and have the contacts e^2 adapted to the projections c' of the wire C. Of the line of conductors A, each alternate section or rail a' is connected with an armature e by a wire a^3, and the other alternate section or rail a^2 is connected with the raw wire c^2, as by the wire a^4.

The sections b' of the line B are connected with the magnets E, so that each magnet-circuit is normally open at each point of insulation b.

The operation of this invention may be thus explained: A car (shown diagrammatically in Fig. 2) is provided with the ordinary motor-circuit, the ends of which are in contact with the line of conductors A and are provided with a source of electricity and a circuit thereof, the ends of which are in contact with the line of conductors B. Now, as the car spans a given point of insulation between sections a' a^2 and sections of the line B, the magnet-circuit is closed, the armature drawn down, and a contact made at the points c' e^2. As this occurs, a circuit is brought from the main line through that portion of the main line next the dynamo, the armature, the wire a^3, the motor-circuit, the wire a^4, and the wire c^2. As the car spans the insulation between the sections a^2 a', passing onward, the armature of the next magnet is affected, as already described, and the circuit passes through the motor-circuit to the ground-wire through the wire a^4. This continues as the car proceeds, the circuit passing to the ground-wire through the motor-circuit, as described.

Having thus described my invention, what I claim is—

The combination of two lines of conductors, consisting of sections insulated from one another, electro-magnets connected to one line of conductors on opposite sides of each point of insulation, the armatures of said magnets

normally open and connected to the alternate sections of the other line of conductors, the other alternate sections of which are grounded, and a main circuit having an uncovered portion adjacent to the armatures of the magnets, with a car having a motor-circuit and a circuit provided with a source of electricity, as set forth.

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

MALONE WHELESS.

Witnesses:
M. DORIAN,
FRANK C. ROACH.