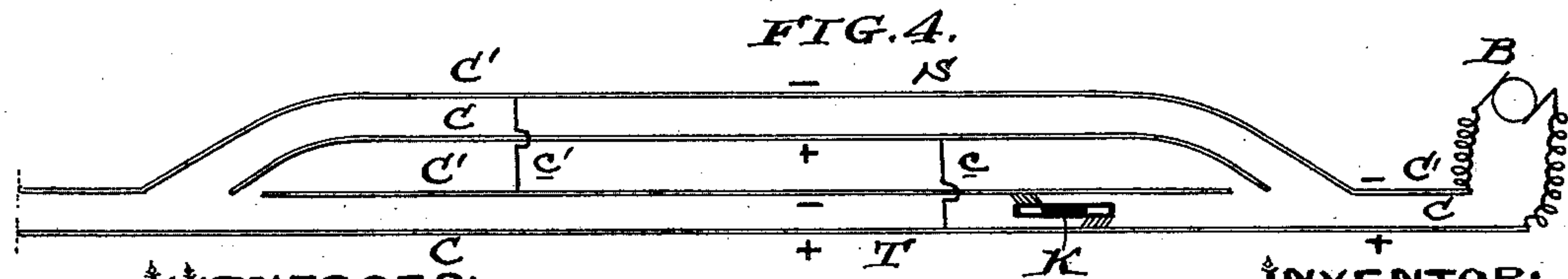
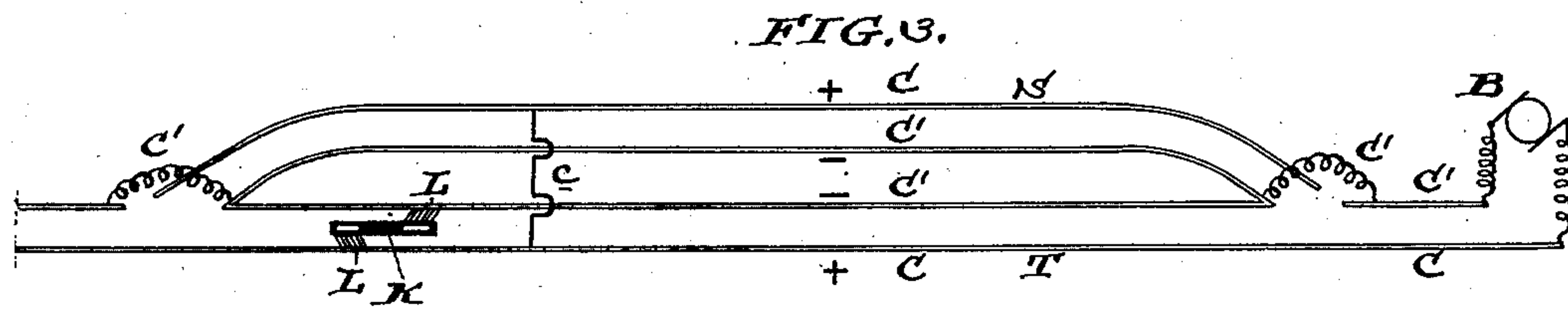
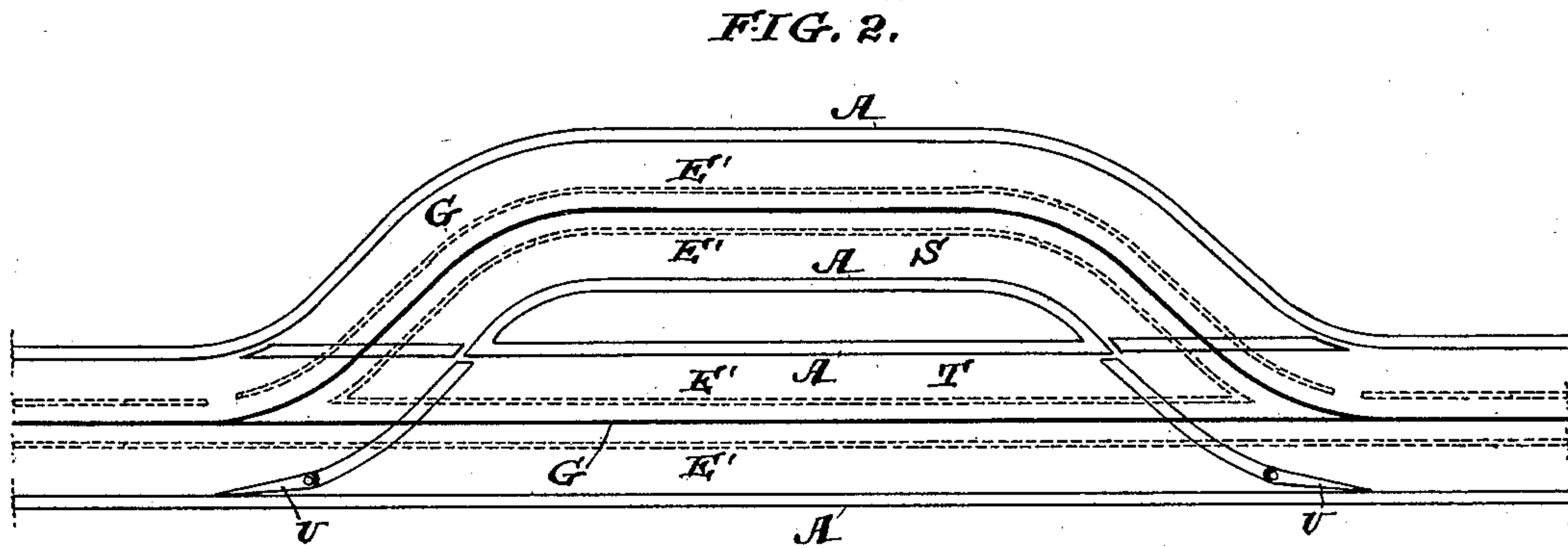
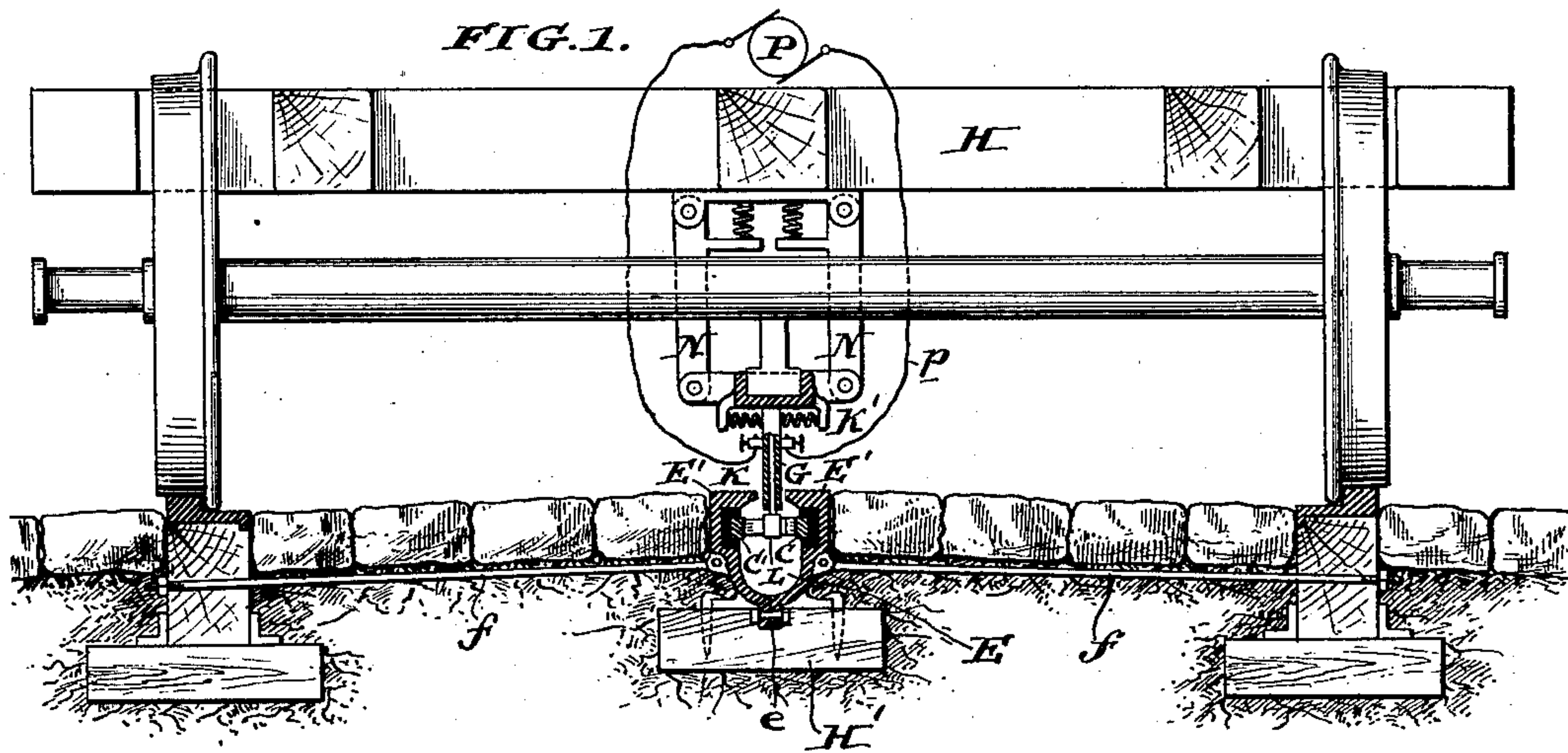


(No Model.)

R. M. HUNTER.
ELECTRIC RAILWAY.

No. 424,928.

Patented Apr. 1, 1890.



WITNESSES:
David S. Williams
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UNITED STATES PATENT OFFICE.

RUDOLPH M. HUNTER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
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ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 424,928, dated April 1, 1890.

Original application filed July 14, 1885, Serial No. 171,625. Divided and another application filed March 12, 1889, Serial No. 302,945.
Again divided and this application filed January 10, 1890. Serial No. 336,548. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH M. HUNTER, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Electric Railways, of which the following is a specification.

My invention has reference to electric railways; and it consists of certain improvements, which are fully set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

This application (Case 127) is a division of my application Serial No. 302,945, filed March 12, 1889, which in turn is a division of my application Serial No. 171,625, filed July 14, 1885.

The object of my invention is to provide an electric railway with a branch track or turn-out, and in which the conductor or conductors for supplying the current to the car are preferably separate from the rails for the supporting-wheels of the vehicle or car. The tracks are laid substantially as is customary, with the usual switches and branches or turn-outs, and are supplemented by one or more separate or independent current-supplying conductors, which may be arranged within a conduit or otherwise, and adapted to allow of a moving contact being made therewith by a suitable current-collecting device carried by the car traveling on the tracks. It is also evident that as there is considerable difficulty in laying the conductors parallel with the track the collecting device should be made to have a lateral movement independent of the car-wheels to compensate for such unevenness.

In the drawings, Figure 1 is a cross-section of an electric railway and car embodying my invention. Fig. 2 is a plan view of a branching railway or turn-out, and Figs. 3 and 4 show plan views of the working-conductors which are employed on the branch or turn-out and main line when embodying my invention.

A A are the two rails of the main track T and branch track or turn-out S, and these rails may have the usual switch-points U. Arranged parallel to these tracks is shown the conduits E, formed of the two sections E' E', bolted together at e and forming the slot G at the top and made branching, as in the case

of the rails. The conduit is supported upon blocks H' and is tied to the stringers of the rails by rods f, by which a more or less fixed location is given to the conduit with reference to the rails.

C C' are the conductors, one of which is connected with the positive pole of the generator B and the other with the negative pole of the generator. These conductors C C' have preferably vertical or substantially vertical faces. The branch or turn-out is provided with a similar conduit to that of the main line furnished with conductors, and these conductors thereof are connected electrically with the similar main-line conductors by connecting-conductors c c', or otherwise. By this means the conductors of similar polarity on both the main line and branch or turn-out are in multiple connection. The conductors of the main line and turn-out or branch are open at both ends to allow the free passage of the collector device from one pair of conductors to the other pair.

The only difference between Figs. 3 and 4 is that the polarity in the conductors of the turn-out in one case is the reverse of what it is in the other case.

H is the car or vehicle of any construction having the usual supporting car-wheels for running upon the rails A. Suspended below the car in any suitable manner is a laterally-movable frame K', sustained by links N. Projecting down from this laterally-movable frame is a vertical plate or collector-frame K, which extends down through the slot G of the conduit, (when used,) and is provided on the bottom with brushes or contacts L L for making a sliding contact with the conductors C C' within the conduit. The current collected by these brushes is conveyed by the motor-circuit p to the motor P, of any suitable construction and connected for driving the car. The collector, as an entirety, is movable to follow the irregularities in the conduit or conductors, (which need not be within a conduit, but may be supported independent of the rails in any suitable manner.)

Any matters set out in this application but not claimed therein are not dedicated to the

public, but form subject-matter of my applications above referred to.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an electric railway, the ordinary track-rails of a main-line and branching railway, in combination with an electric conductor extending along each of the tracks of the main line and branch, electrically connected with each other but insulated from the rails, an electrically-propelled car running upon the rails, and a laterally-movable current-collecting device carried by the car and making a moving contact with the conductors of either the main line or branch.

2. In an electric railway, the combination of a main line having a conductor for supplying current to the motor on the car and independent of the rails, a siding or turn-out having a conductor independent of the rails and formed with each end curved to meet the main-line conductor, a car to run upon the rails, and a current-collecting device independent of the supporting-wheels for making a moving contact with said conductors.

3. In an electric railway, the combination of a main line having a conductor for supplying current to the motor on the car and independent of the rails, a siding or turn-out having a conductor independent of the rails and formed with each end curved to meet the main-line conductor, a car to run upon the rails, a current-collecting device independent of the supporting-wheels for making a moving contact with said conductors, and a slotted conduit for both the main line and turn-out.

4. In an electric railway, the combination of a main line having a conductor for supplying current to the motor on the car and independent of the rails, a siding or turn-out having a conductor independent of the rails and formed with each end curved to meet the main-line conductor, a car to run upon the rails, a current-collecting device independent of the supporting-wheels for making a moving contact with said conductor, and a slotted conduit for both the main line and turn-out, and having the slots thereof arranged over but to one side of the conductors.

5. In an electric railway, the combination of the main-line and turn-out rails, two parallel conductors arranged parallel to the main-line rails, two parallel conductors arranged parallel to the turn-out rails and meeting the main-line conductors, and a slotted conduit for both the main line and turn-out, inclosing the conductors and having the slots arranged above and between the parallel conductors.

6. In an electric railway, the combination of the main-line and turn-out rails, two parallel conductors arranged parallel to the main-line rails and centrally between them, two parallel conductors arranged parallel to and centrally between the turn-out rails and meeting the main-line conductors, and a slotted conduit

for both the main line and turn-out, inclosing the conductors and having the slots arranged above and between the parallel conductors.

7. In an electric railway, the combination of the main-line and turn-out rails, two parallel conductors arranged parallel to the main-line rails, two parallel conductors arranged parallel to the turn-out rails and meeting the main-line conductors, a slotted conduit for both the main line and turn-out, inclosing the conductors and having the slots arranged above and between the parallel conductors, a traveling electrically-propelled car, and a current-collecting device carried by the car and making a moving contact with the conductors in the main track or turn-out.

8. In an electric railway, the combination of the main-line and turn-out rails, two parallel conductors arranged parallel to the main-line rails, two parallel conductors arranged parallel to the turn-out rails and meeting the main-line conductors, a slotted conduit for both the main line and turn-out, inclosing the conductors and having the slots arranged above and between the parallel conductors, a traveling electrically-propelled car, and a laterally-movable current-collecting device carried by the car and making a moving contact with the conductors in the main track or turn-out.

9. The combination of a main-line conductor extending along the line of an electric railway, a turn-out conductor leading out of and returning to the main-line conductor and extending along a turn-out track from said main line, and a common source of electric power to supply both the main-line conductor and turn-out conductor.

10. The combination of a main-line conductor extending along the line of an electric railway, a turn-out conductor leading out of and returning to the main-line conductor and extending along a turn-out track from said main line, a common source of electric power to supply both the main-line conductor and turn-out conductor with electricity of the same polarity and in which the current to the turn-out conductor is conveyed through the main-line conductor.

11. The combination of a main-line railway and a turn-out railway therefor, an electric conductor extending along the main-line railway, an electric conductor arranged along the turn-out and leading to the main-line conductor at each end, and connecting-conductors for electrically connecting the main-line conductor with the turn-out conductor between its ends.

12. The combination of a main-line railway and a turn-out railway therefor, an electric conductor extending along the main-line railway, an electric conductor arranged along the turn-out and leading to the main-line conductor at each end, connecting-conductors for electrically connecting the main-line conductor with the turn-out conductor between its ends, an electrically-propelled car, and a current-collecting device carried by the car and

making a connection with either of the conductors, according to whether it is on the main line or turn-out.

13. In a railway having a turn-out, the combination of the main-line conductor and the turn-out conductor leading from and returning to the main-line conductor, a traveling car and current-collecting means moved with the car and making a traveling connection with either of said conductors.

14. In a railway having a turn-out, the combination of the main-line conductor and the turn-out conductor leading from and returning to the main-line conductor and of the same polarity, a traveling car and current-collecting means moved with the car and making a traveling connection with either of said conductors.

15. The combination of a main-line railway and a turn-out railway, a pair of electric conductors for each railway, both open on their ends, for the passage of a current-collecting device, and in which the turn-out conductors lead out of and return to the main line, a common source of electric power for each of said pairs of electric conductors, an electrically-propelled car, and a current-collecting device carried by the car and making a moving connection with the conductors.

16. The combination of a main-line railway and a turn-out railway, a pair of electric conductors for each railway, both open on their ends for the passage of a current-collecting device, and in which the turn-out conductors lead out of and return to the main line.

17. The combination of a main-line railway and a turn-out railway, a pair of electric conductors for each railway, both open on their ends for the passage of a current-collecting device, in which the turn-out conductors lead out of and return to the main line, and electrical connections between conductors of similar polarity of the main line and turn-out.

18. The combination of a main-line railway and a turn-out railway, a pair of electric conductors for each railway, both open on their ends for the passage of a current-collecting device, and in which the turn-out conductors lead out of and return to the main line, and an inclosing slotted conduit for each pair of said conductors.

In testimony of which invention I have hereunto set my hand.

R. M. HUNTER.

Witnesses:

ERNST HOWARD HUNTER,
K. B. HUNTER.