

(No Model.)

C. J. VAN DEPOELE.

# DROP SWITCH FOR ELECTRIC CONDUCTORS.

No. 417,120.

Patented Dec. 10, 1889.

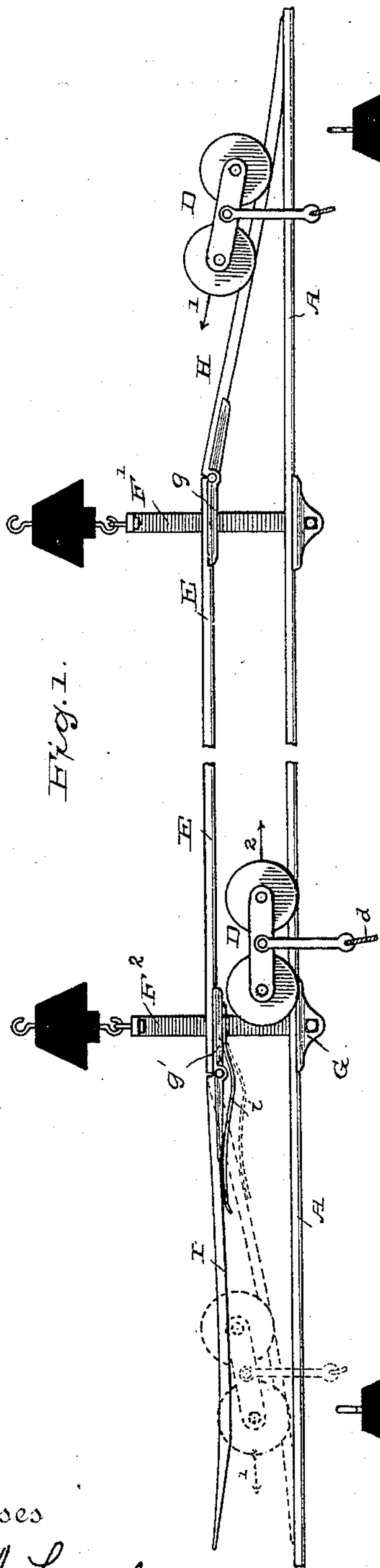


Fig. 1.

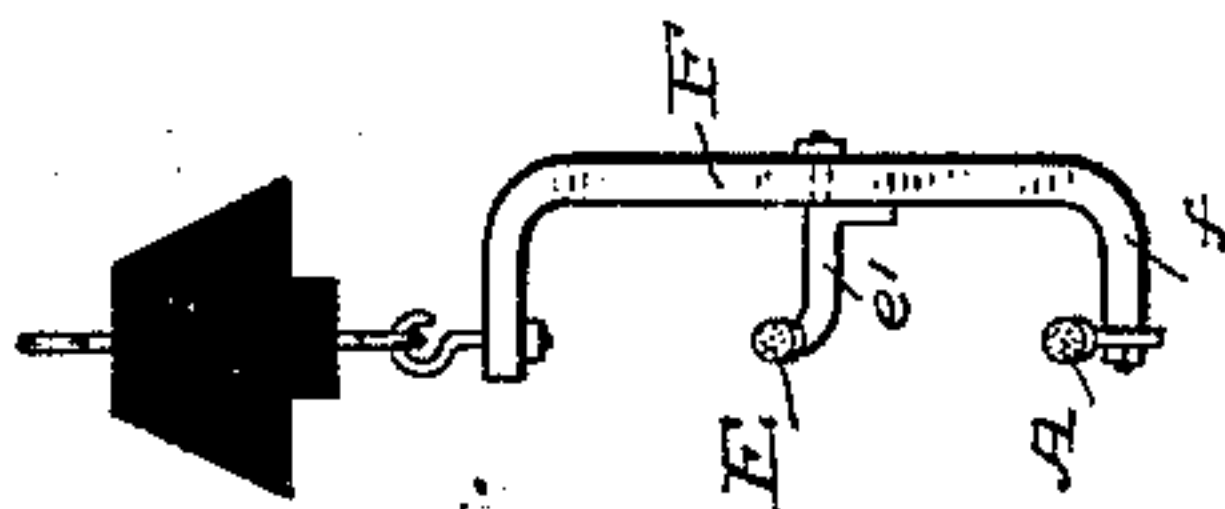


Fig. 4.

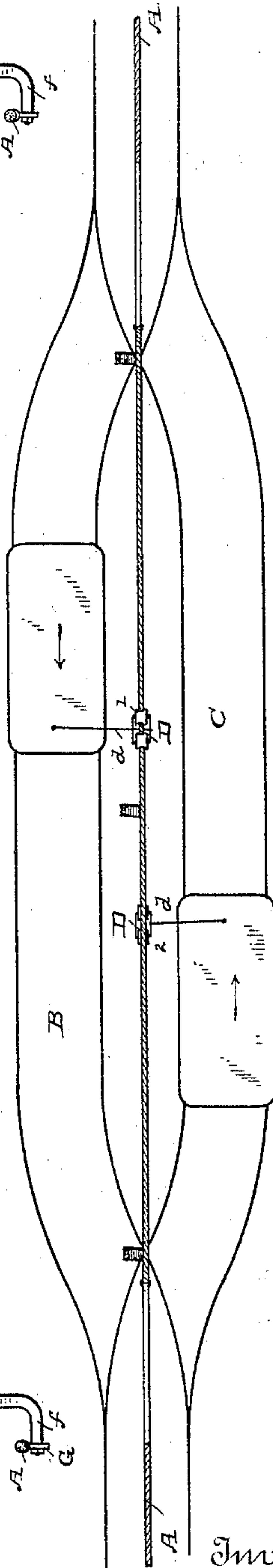


Fig. 2.

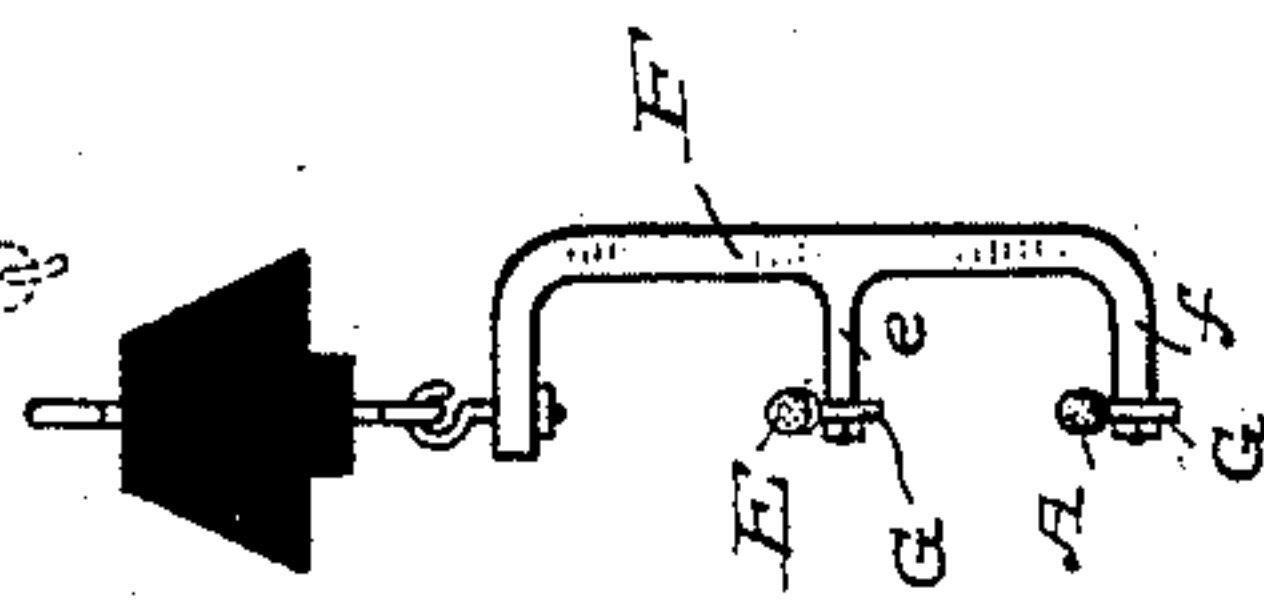


Fig. 3.

## Witnesses

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Inventor

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By his Attorney

Frankland James.

# UNITED STATES PATENT OFFICE.

CHARLES J. VAN DEPOELE, OF CHICAGO, ILLINOIS.

## DROP-SWITCH FOR ELECTRIC CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 417,120, dated December 10, 1889.

Application filed April 22, 1887. Serial No. 235,774. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES J. VAN DEPOELE, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Drop-Switches for Electric Conductors, of which the following is a description.

The present invention relates to improvements in switches for the suspended conductors used in electric railways, and is of a type which I have called "drop-switches," the construction and mode of operation of which will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 shows the extremities of a switch or turn-out embodying my improvements. Fig. 2 is a plan view of a turn-out, showing the relative positions of cars and conductor. Fig. 3 is a detail of the suspending devices, and Fig. 4 shows a slight modification thereof.

Similar letters denote like parts throughout.

A is the main conductor, receiving current from a suitable source.

B is the main track of a single-track railway, and C is a switch or turn-out leading from and back into the same for the purpose of permitting cars to pass in the manner well understood in the operation of single-track railways.

The conductor A is suspended centrally above the main track throughout its entire length, and, continuing in a substantially straight line, passes midway between the tracks where the roadway is doubled at the turn-outs, which occur at intervals therealong. With the system are used contact-carriages D, traveling on top of the suspended conductor and connected to the car by means of a metallic cable *d*.

In order to permit the free and uninterrupted travel of the contact-carriages and also of their passing each other at the turn-outs, I provide at those places additional conductors E, which are suspended six inches (more or less) above the continuous main conductor A. Suitable double-armed hangers F are provided, the main conductor A being supported on the lower arm *f* and the switch-conductor E on the upper arm *e*. Obviously the two arms may be similar in construction, or, as indicated in Fig. 4, the up-

per arm E may be removable and formed to receive the conductor without the use of the ear-pieces G, by which it is ordinarily secured. The duplex conductors extend one above the other and in similar relationship from end to end of the turn-out, at the extremities of which they are provided with hinged portions H and I, said hinged pieces being metallic rods of the same size as the remainder of the conductor, but preferably of stiffer metal. At the extremity of an ear-piece *g*, attached to the upper arm of the hanger F', is formed a hinge, to the free portion of which is securely fastened the switch-arm H, so that it will drop down and rest upon the main conductor A, in which position a contact-carriage approaching in the direction of the arrow numbered 1 will run onto and up the inclined plane formed by said hinged arm H and onto the upper conductor. The opposite end of the turn-out is provided with a hanger F<sup>2</sup>. The fixed support or ear-piece *g'*, attached to it, is also provided with a hinged switch-arm I, but with this difference from the opposite end of the turn-out, that a spring *i* is provided, which normally holds the arm I in a suspended position, as though it were a continuation of the conductor, and so permits carriages approaching from the opposite direction to remain upon the main conductor and to pass under said arm. A carriage moving in the direction of the arrow numbered 2 is shown as having passed under the suspended switch. It will be readily understood that as the carriage 1 passes along and is about to leave said switch its weight will depress the arm I until it rests upon the main conductor A, as indicated in dotted lines, the carriage 1 thus returning to the main track. The carriage 2 passes uninterruptedly along the main conductor A until reaching the opposite end of the switch, when in its further progress it runs under and raises the arm H, which, when said carriage has passed, drops back again into its first position, and is ready to receive the next carriage coming in the direction opposite to the one by which it was raised.

The hangers being of metal, it will be understood that the switching conductors and all portions thereof are of the same polarity and in electrical connection with the main



circuit, so that no interruption can occur in the supply of current to the motors.

Instead of making the hinged end pieces H and I as described, I may construct them of resilient material and attach them rigidly to the said conductor E, they being so arranged that they will normally assume the positions here shown for the hinged end pieces—that is to say, one resting upon the main conductor and the other suspended above it in position to be depressed thereonto by the weight of one of the contact-carriages.

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

1. In a turn-out for electric railways, the combination of the main conductor with a branch conductor having a movable point at each end, one of said points resting normally upon the main conductor and the other normally out of contact therewith.

2. In an electric-railway turn-out, the combination of main and branch conductors having horizontal portions arranged in different planes, and a vertically-moving switch-point connecting them.

3. A switch for suspended conductors, consisting of a section of additional conductor arranged substantially parallel with and located above the main conductor and having yielding end pieces arranged for communication therewith, substantially as described.

4. A switch for suspended conductors, consisting of a section of conductor suspended

above the main conductor and having hinged end pieces, one of said end pieces resting normally upon the main conductor and the other one being normally raised therefrom, substantially as described.

5. A switch for suspended conductors, consisting of a conductor located above the main conductor and provided with hinged end pieces, one normally resting upon the main conductor to elevate a carriage coming from one direction and the other normally raised to permit the free passage of a carriage from the other direction without leaving the main conductor, but adapted to be depressed into contact with the main conductor by the said first-mentioned carriage when reaching the opposite end of the switch, substantially as described.

6. The combination, with main and switch conductors, of hangers having two sets of supporting-arms and ears having hinged extensions attached thereto, substantially as described.

7. The combination, with main and switch conductors of similar polarity, of hangers therefor having two sets of supporting-arms and conductor-supporting ears having hinged extensions connected therewith.

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

CHARLES J. VAN DEPOELE.

Witnesses:

WILLIAM A. STILES,  
JOHN EASON.