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Patented Jan. 28, 1902.

H. M. HARDING.

MEANS FOR REGULATING SPEED OF CARS ON OVERHEAD ELECTRIC RAILWAYS.

(Application filed Apr. 19, 1901.)

(No Model.)

Fig. 1

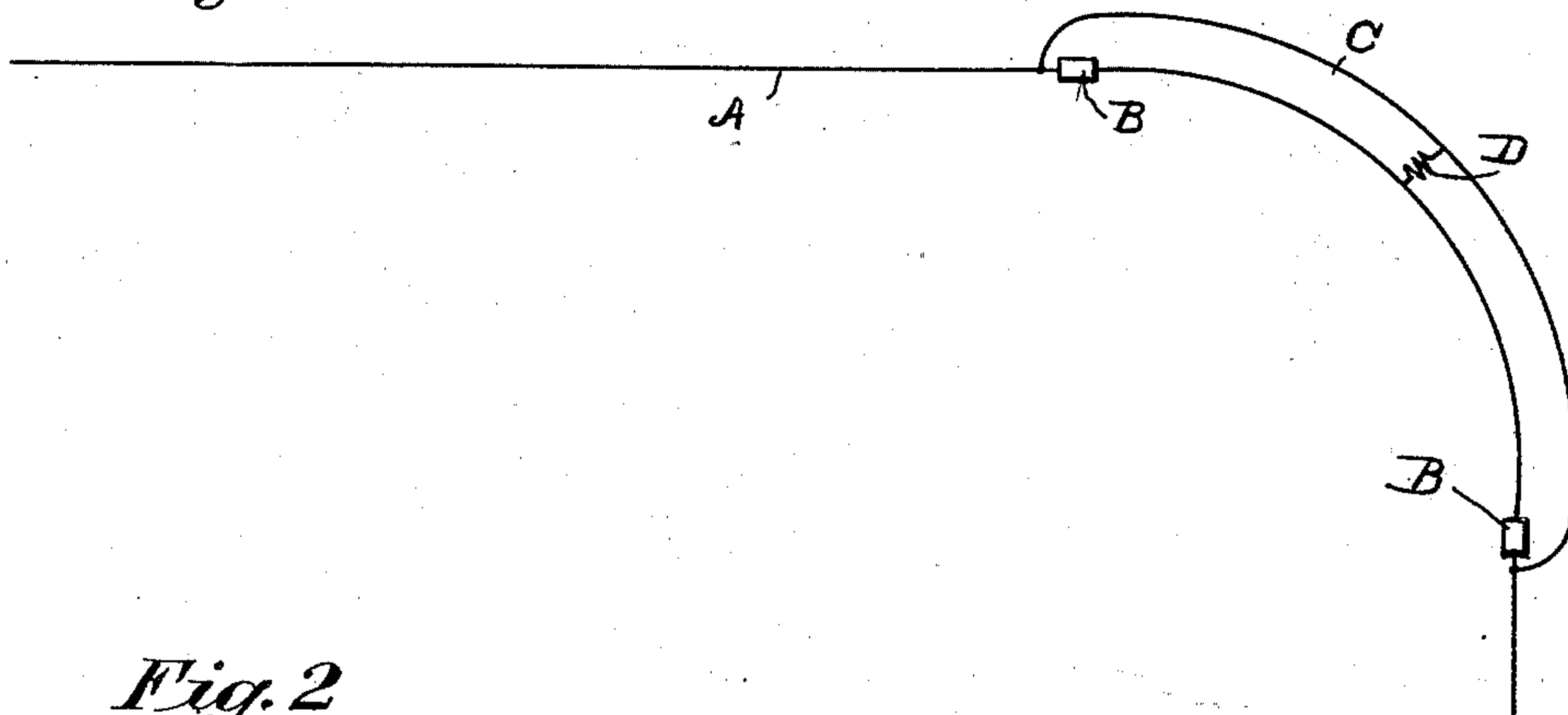


Fig. 2

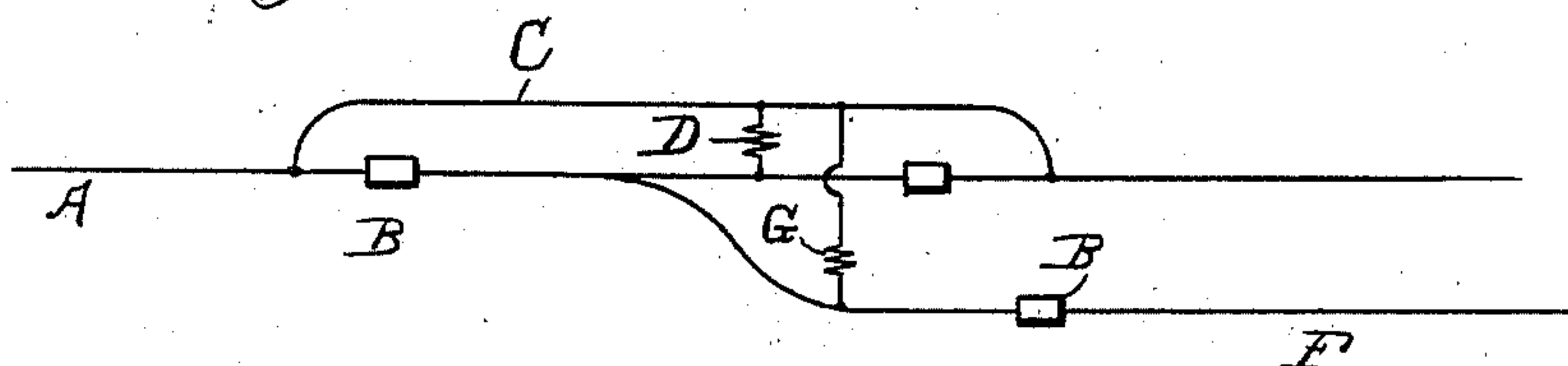


Fig. 3

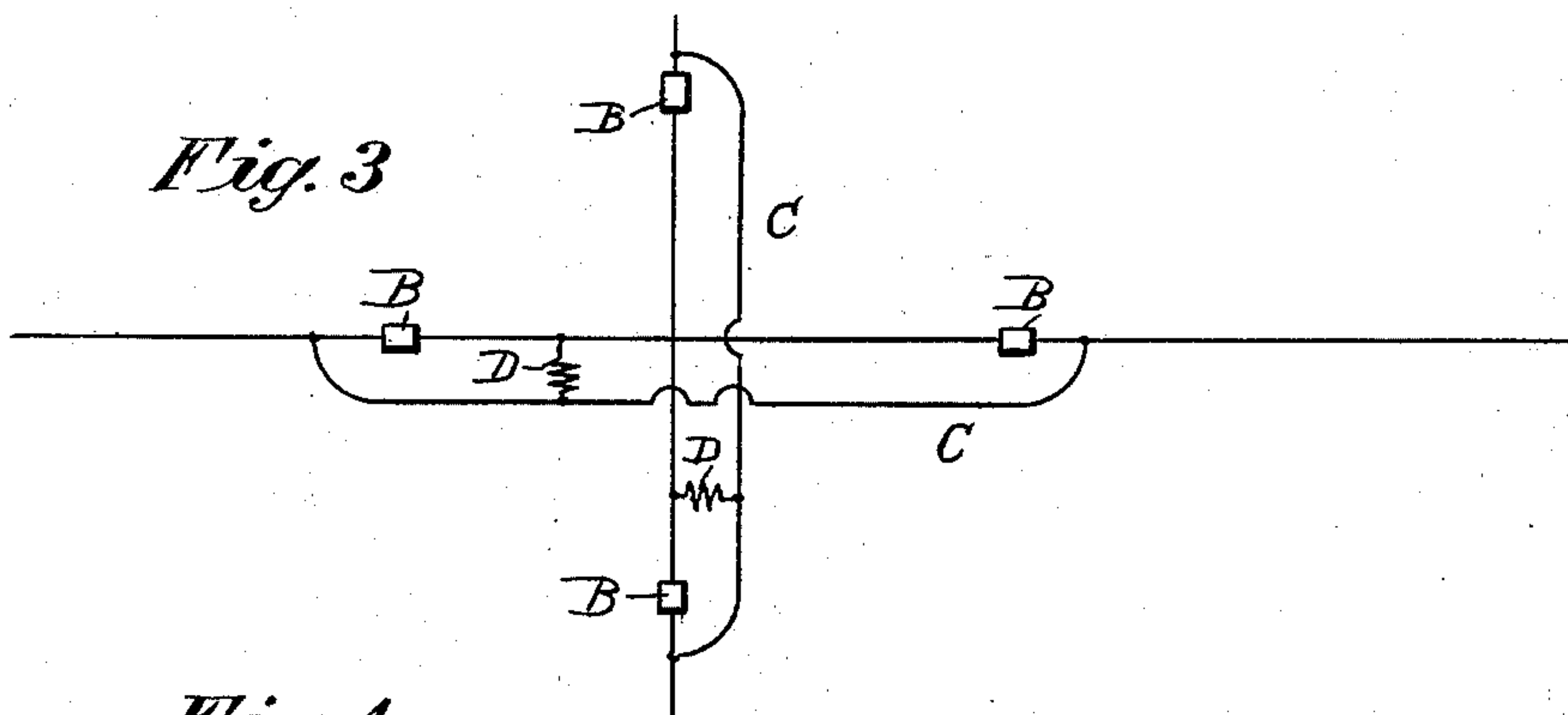
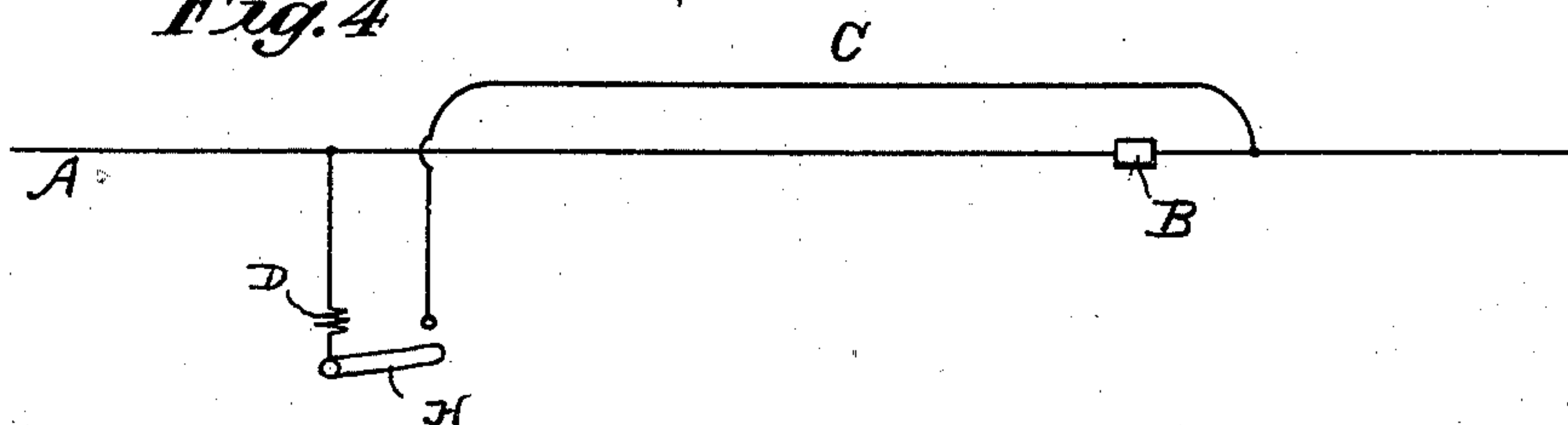


Fig. 4



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HENRY M. HARDING, OF ENGLEWOOD, NEW JERSEY.

MEANS FOR REGULATING SPEED OF CARS ON OVERHEAD ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 692,136, dated January 28, 1902.

Application filed April 19, 1901. Serial No. 56,556. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. HARDING, a citizen of the United States, residing at Englewood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Means for Regulating the Speed of Cars on Overhead Electric Railways, of which the following is a specification.

10 In the drawings forming part of this specification, Figure 1 is a diagrammatical view showing my device as applied to curves. Fig. 2 is a view showing the invention applied to switches and turnouts. Fig. 3 is a view showing the invention applied to crossing lines. Fig. 4 is a view showing the invention as used for stopping cars at predetermined points.

In brief, the invention consists in insulating the line at portions where it is desired to reduce the speed, allowing the current to pass around the insulated portion through a shunt-circuit, and connecting the insulated portion with the shunt-circuit by a resistance of the requisite amount.

25 In Fig. 1, A represents the trolley-line, showing it passing around a curve. At each end of the curve are insulating devices B. Passing around the insulated portion of the wire is the shunt-circuit C, and connecting the shunt-circuit to the insulated portion of the wire is the resistance D. The result will be that as the trolley reaches the insulated portion of the wire the current to the motor will be reduced to the amount corresponding with the resistance D, thus automatically slowing up the speed.

Fig. 2 shows the same arrangement applied to a switch or turnout, A being the trolley-line, C the shunt-circuit, and F the switch or turnout. It will be seen that as the car comes along the trolley will come onto the insulated portion of the trolley-wire and the speed be reduced automatically, as in the first instance, and if the car passes onto the switch a second connection and resistance will reduce the speed on the switch or turnout until the straight portion thereof is reached.

Thereupon the car will be automatically stopped, or if current is supplied to F the car will resume full speed.

Fig. 3 shows precisely the same idea applied to lines which cross each other, and from the above description its use and operation will be obvious.

Fig. 4 shows the way of stopping a car automatically at a predetermined point. The predetermined point in this case is to the right of the insulating-point B. The shunt-circuit C in this particular case is broken, and a switch H is provided by which the circuit can be closed. In the shunt-circuit is introduced a resistance D.

In the construction as shown when the car reaches the insulated portion of the wire it will be stopped by the shutting off of the current. To start the car from this dead portion of the wire, it is only necessary to close the switch H, which will send a reduced current through the motor, as heretofore described.

What I claim, and desire to secure by Letters Patent, is—

1. A means for regulating the speed of overhead electric carriers consisting of a continuous trolley-wire the desired portion of which is insulated from the remainder, a shunt-circuit passing the full strength of the current around the said insulated portion, and a resistance connecting the shunt-circuit and the insulated portions, substantially as described.

2. A means for regulating the speed of overhead electric carriers consisting of a continuous trolley-wire the desired portion of which is insulated from the remainder, a shunt-circuit passing the full strength of the current around the said insulated portion, a resistance connecting the shunt-circuit and the insulated portions and a switch in said resistance, substantially as described.

Signed in the city, county, and State of New York this 10th day of April, 1901.

HENRY M. HARDING.

Witnesses:

C. M. CLARK,
JOHN J. RANAGAN.