

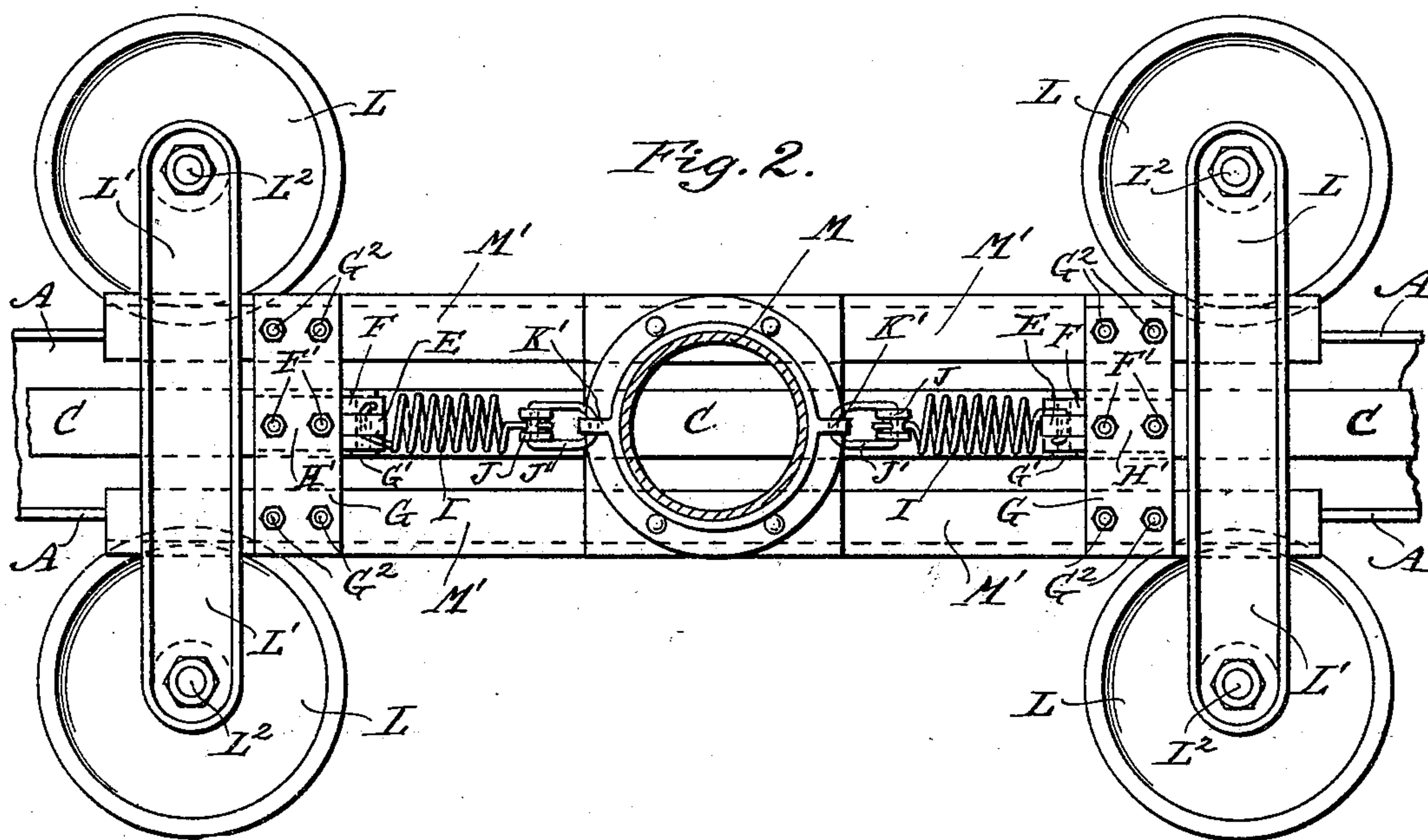
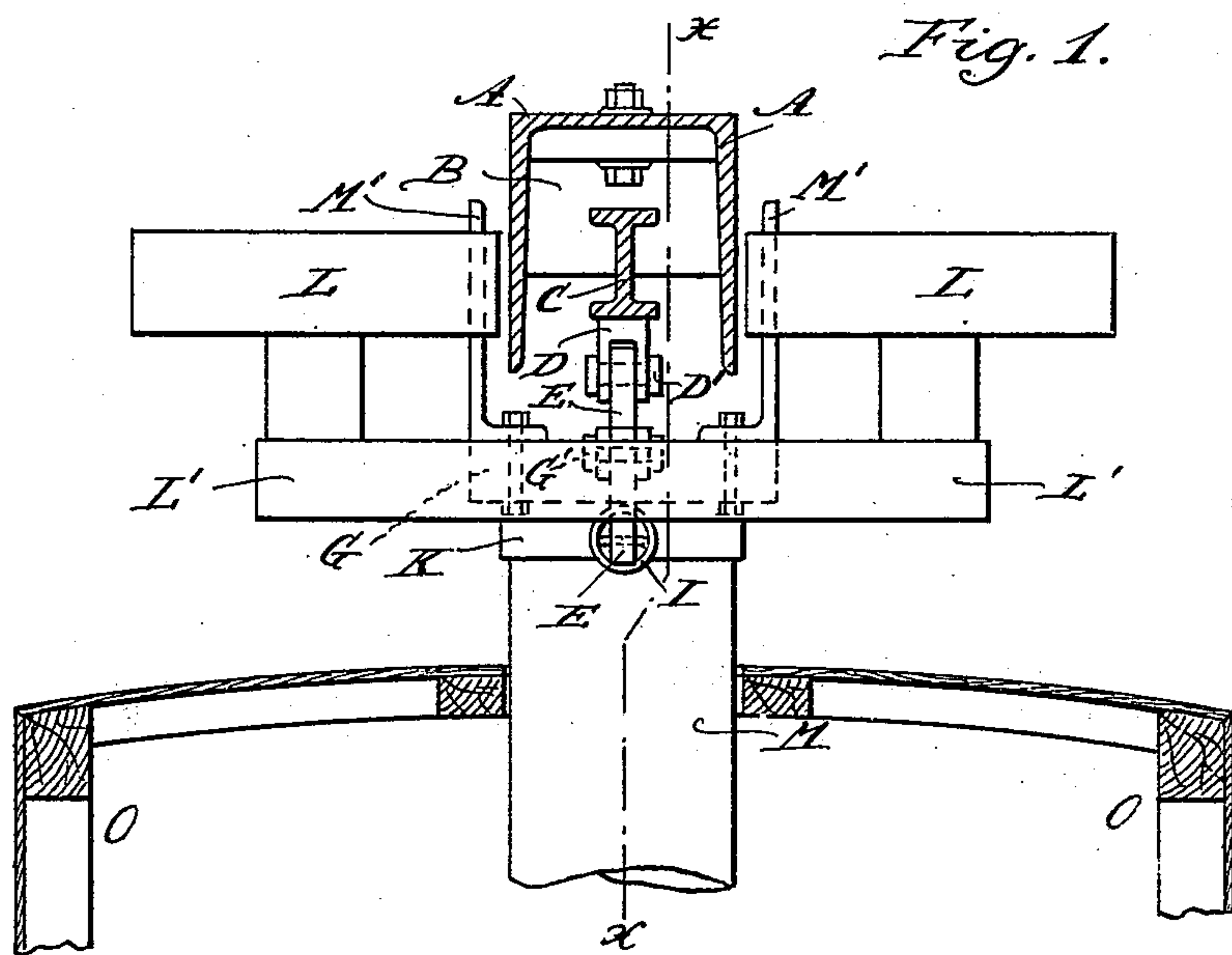
(No Model.)

2 Sheets—Sheet 1.

E. M. BOYNTON.
ELECTRIC RAILWAY CURRENT COLLECTOR.

No. 512,535.

Patented Jan. 9, 1894.



WITNESSES:

D. C. Rensch
Colon Bancroft

INVENTOR

E. M. Boynton

(No Model.)

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Fig. 3.

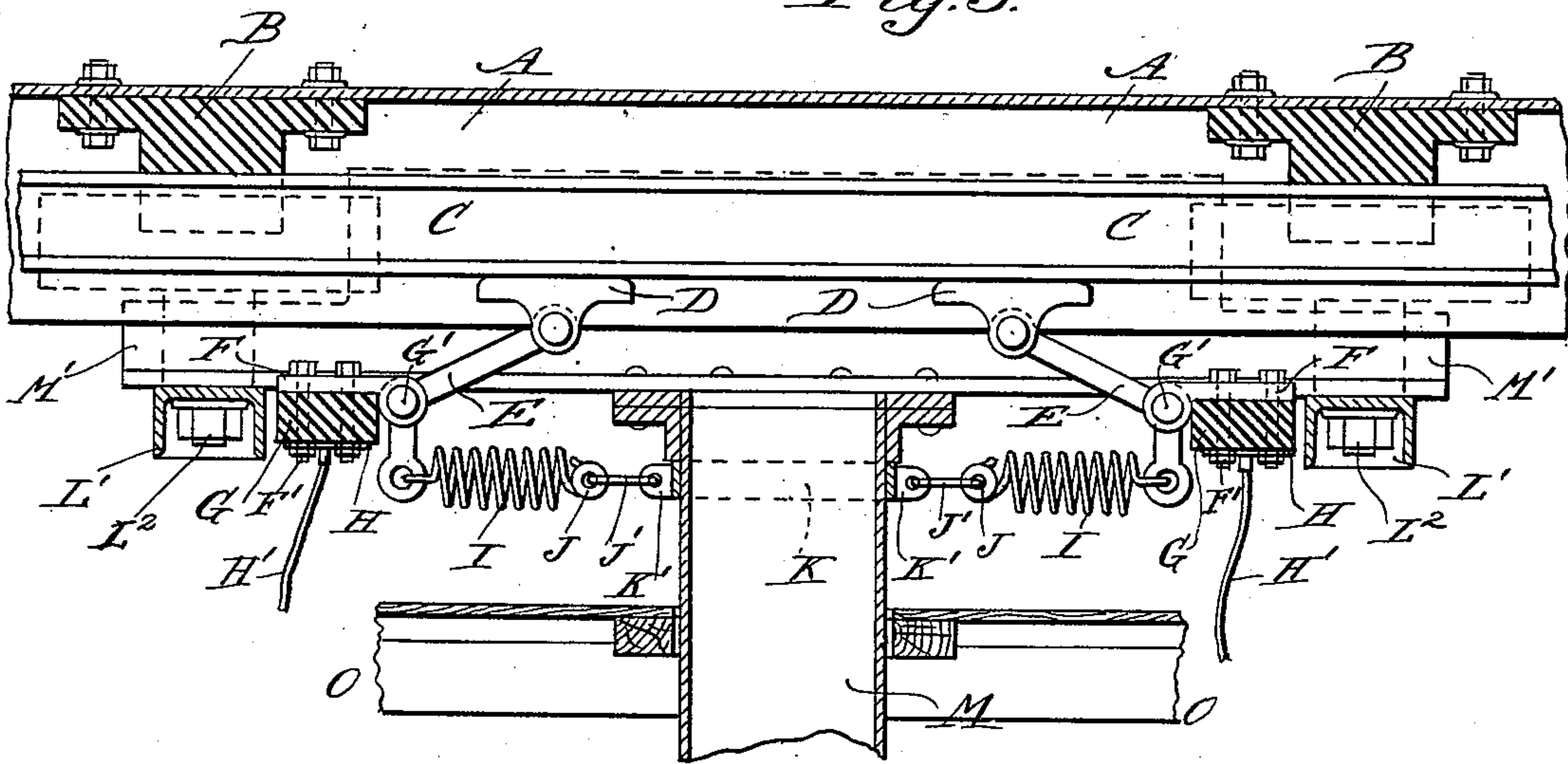
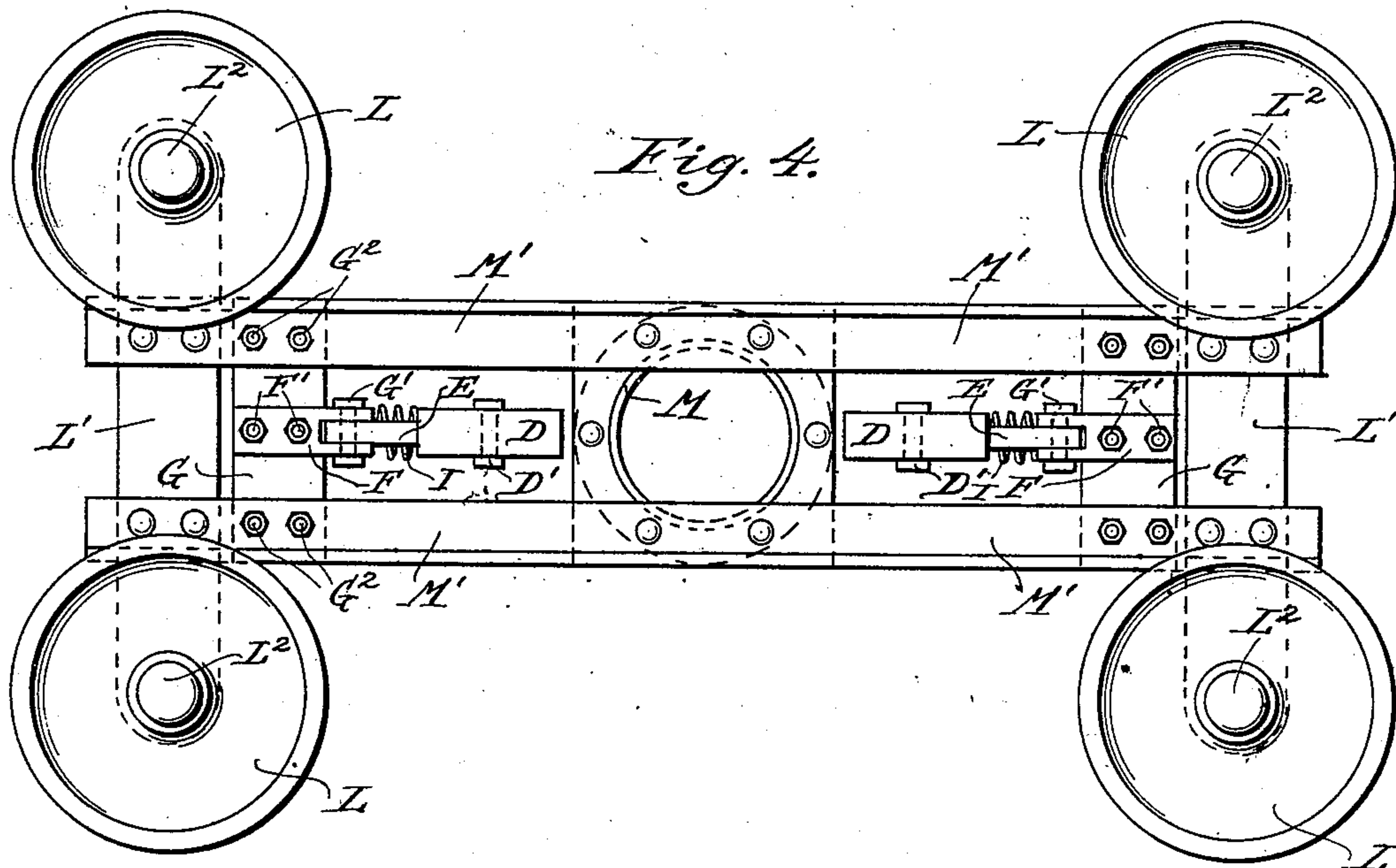


Fig. 4.



WITNESSES:

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INVENTOR

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UNITED STATES PATENT OFFICE.

EBEN MOODY BOYNTON, OF WEST NEWBURY, MASSACHUSETTS.

ELECTRIC-RAILWAY CURRENT-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 512,535, dated January 9, 1894.

Application filed October 12, 1893. Serial No. 487,996. (No model.)

To all whom it may concern:

Be it known that I, EBEN MOODY BOYNTON, a citizen of the United States, and a resident of West Newbury, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Electric-Railway Current-Collectors, of which the following is a specification.

My invention relates especially to improvements in contact and collector devices for cars and especially electric bicycle cars. In ordinary electric trolley cars the contact with the overhead conductor is not certain, for reason of the long trolley arm and the yielding nature of the conductor; in particular is the contact uncertain on curves. The arrangement of the overhead guide wheels as illustrated in my Patent No. 474,331 offers a very favorable opportunity for overcoming these difficulties. The guide wheels always following the sides of the guide beam insure a middle position of the collector, with no possibility of the same leaving the conductor, no matter if running on a curve or a tangent. Further, as the seat of the collector is only a few inches below the conductor, the movable connections between the collector and the framework of the guide wheels may therefore be made short and light, and must necessarily be quick acting, which is so important at high speed. A further advantage is that it makes no difference in which direction the car is going, as the device need not be reversed, but can run backward as well as forward on any conductor for any car.

Figure 1 is an end view of the overhead guiding mechanism, with the collector, the guide beam, and conductor in section; also the top of the car partly broken away. Fig. 2 is an inverted plan view, showing the collectors in position. Fig. 3 is a sectional view of Fig. 1, taken on line *xx*. Fig. 4 is a plane view of the same, the overhead guide being removed to give an unobstructed view.

The accompanying drawings illustrate a preferred form of the collector, such as would be applicable to the motor illustrated in the patent referred to above. Though in this case I have utilized contact shoes as being most suitable for iron or steel conductors, in order to preserve a clean surface, still, I do

not wish to limit myself to this special form, but may use wheels instead, if preferred.

Referring to the drawings, A is the overhead guide beam; B B the blocks of insulating material fastened to A and supporting the conductor C.

M is a column projecting through the roof of the car O, to which column the angles M' M' with the arms L' L' are attached, serving as a support for the guide wheels L² L².

Under the conductor C, and rubbing against it, are shoes D D movably connected to the levers E E by bolts D' D'. These levers are pivoted on bolts G' G', supported by plates F F, and the latter fastened to blocks G G of insulating material by bolts F' F', which latter also carry the terminal plates H H with the terminals H' H'. Bolts G² G² fasten the blocks G G to the angles M' M'.

The pressure of the shoe D against the conductor C is obtained by means of a spring I hung with one end in the lever E and with the other on an insulator J, connected by a link J' to an eye K' upon the ring K surrounding the column M.

Referring to my Patent No. 474,331, mentioned above, it will be seen that any position the guide wheels L L may assume in a horizontal plane is also taken by the shoes D D, no matter how small or large the variation of position may be. There will therefore be no tendency of these shoes when rounding a curve to leave the conductor. On the other hand, any variation of position in a vertical plane by the guide wheels L L is not transferred to the shoes, but taken up by levers E E. It will also be seen that any irregularity of the contact surface of conductor C is immediately followed by a corresponding movement of the shoe by an upward or downward motion, the pivoted shoe assisting in making a good contact by placing itself at an angle corresponding to the wavelike irregularities the conductor may have.

The small weight of the moving parts insures a quick motion, excluding any tendency of the shoes, by reason of their inertia, to leave the conductor and break the circuit.

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

1. In an electrically propelled bicycle car,
the combination with the guide wheels of one
or more current collectors guided and carried
by the framework of said wheels, substan-
5 tially as set forth.

2. In an electrically propelled bicycle car,
the combination with the guide wheels of one
or more current collectors, guided and carried
by the framework of said wheels and capable

of motion in a vertical plane, substantially as
as set forth.

Signed at New York, in the county of New
York and State of New York, this 27th day of
September, A. D. 1893.

EBEN MOODY BOYNTON.

Witnesses:

D. C. REUSCH,
SOLON BANCROFT.