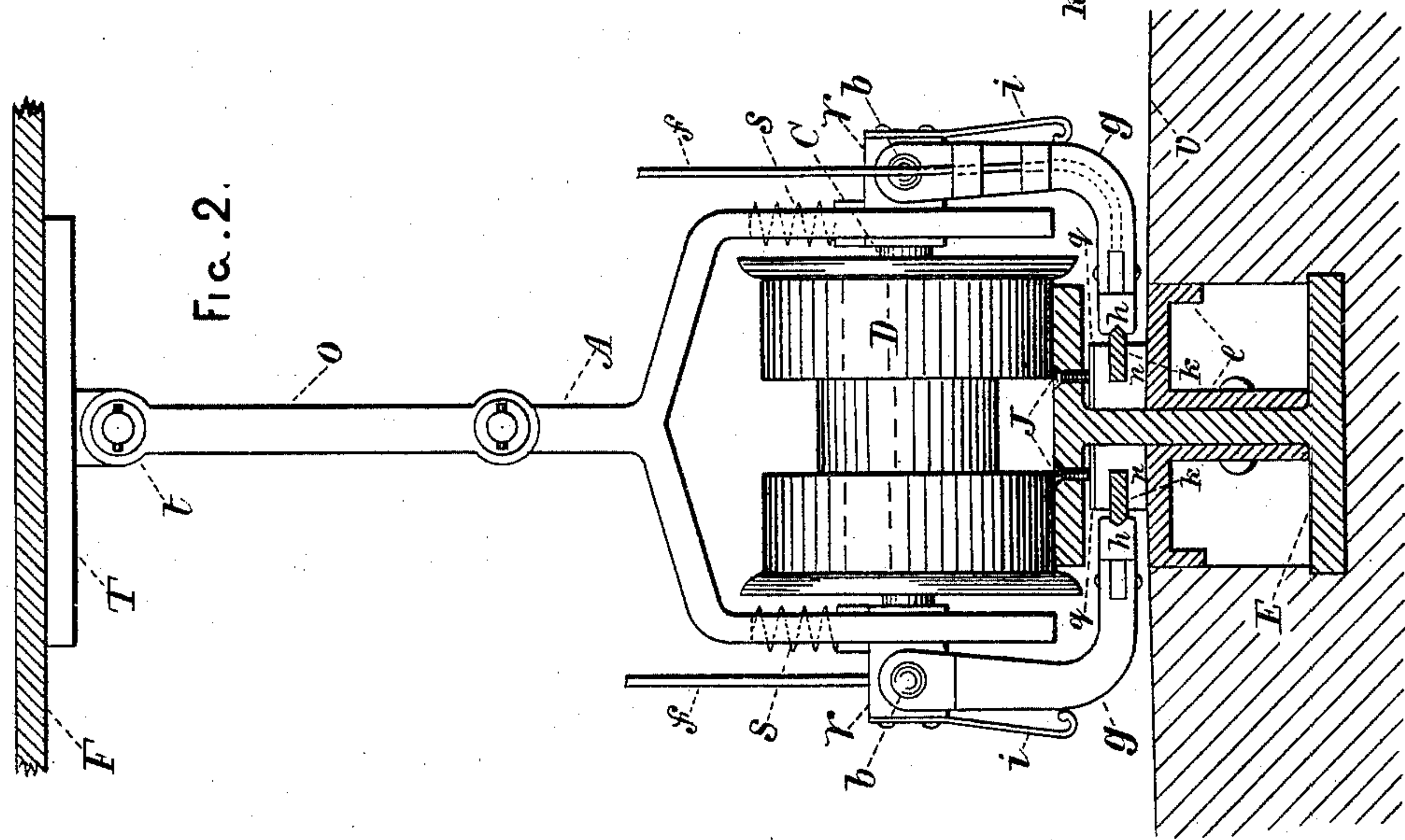
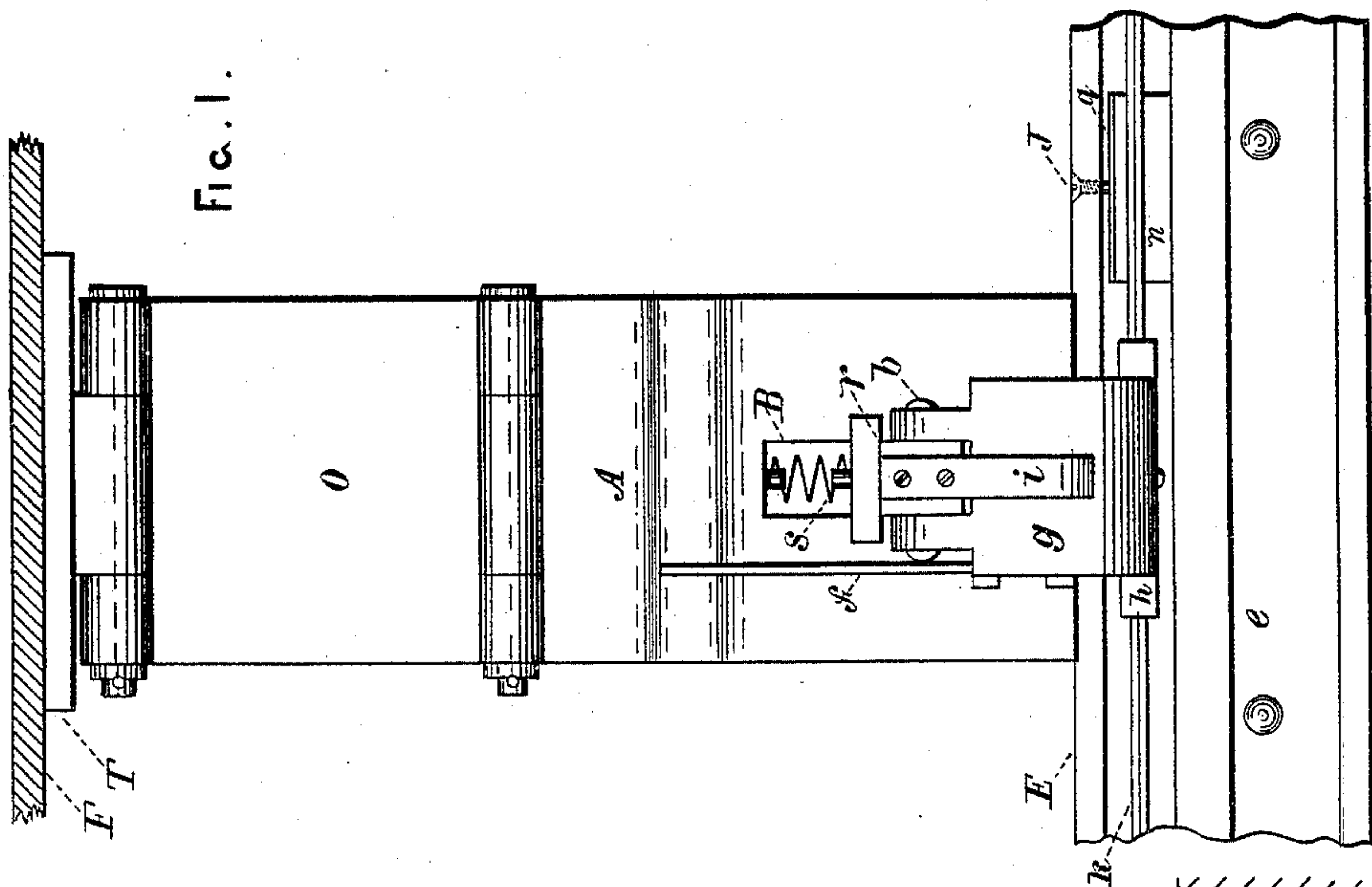


(No Model.)

A. A. SHOBE & W. EMBLEY.
ELECTRIC RAILWAY.

No. 433,544.

Patented Aug. 5, 1890.



Witnesses

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UNITED STATES PATENT OFFICE.

ABRAHAM A. SHOBE AND WILLIAM EMBLEY, OF JERSEYVILLE, ILLINOIS.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 433,544, dated August 5, 1890.

Application filed April 7, 1890. Serial No. 346,987. (No model.)

To all whom it may concern:

Be it known that we, ABRAHAM A. SHOBE and WILLIAM EMBLEY, of Jerseyville, in the county of Jersey and State of Illinois, have
5 invented a new and Improved Electric Railway; and we do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference
10 marked thereon.

Our invention relates to an improvement in electric railways; our object being, first, to provide a more efficient and simple means than heretofore devised for connecting the
15 motor on the car with the supply-conductor; second, to provide more efficient means than heretofore employed for retaining the moving conducting-wires of the motor in uninterrupted contact with the fixed supply-con-
20 ductors; third, to provide a third or central rail adapted for housing and insulating the supply-conductors and admit the connections between the latter and the motor on the car; fourth, to provide improved facilities for se-
25 curing and insulating the supply-conductors under the head of the rail, and also afford ready means for converting, at small expense, either an ordinary horse-railway or a cable railway into an electric railway.

30 With these ends in view our invention consists in certain details of construction and combinations of parts fully explained in the following specification, and illustrated in the accompanying drawings, in which—

35 Figure 1 is a side elevational view of the device, including a portion of the central rail, and Fig. 2 is an end elevation of the same, showing the central rail and the supply-conductors in transverse section.

40 Referring to the drawings, F represents the bottom or floor of the motor-car; T, a plate secured thereto, the central part of which is hinged, as shown at *t*, to a link *o*, at the lower end of which is similarly hinged a bifurcated
45 bar A, each arm of which is provided with a slot B, (see Fig. 1,) in which is adapted to slide vertically an axle-box *r*, secured upon the end of a non-revolving axle C, upon which is journaled, so as to revolve freely, a double-
50 flanged guide or gage wheel D, adapted to travel upon a broad-headed T-rail E, located centrally between the two rails of the track

and at about the same elevation above the surface of the road. Hinged, as shown at *b*, to the axle-boxes *r*, and depending therefrom, 55 are curved arms *g*, made of hard rubber or any other suitable insulating material, to the lower ends of which are pivotally secured contact shoes or bars *h*, suitably grooved on the inner face to receive the V-shaped edge of the
60 supply-conductors *k*.

Connected with the contact-shoes *h* are conducting-wires *f*, secured, as shown in Fig. 1, in the insulating bars or arms *g*, and adapted to be prolonged upward and through any con- 65 venient part of the floor of the car to the motor.

The contact-edges of the supply-conductors are V-shaped, as are likewise the grooves in the contact-bars *h*, for the purpose of affording a guide for the latter upon the contact- 70 faces of the former, and thus securing, as nearly as possible, uniform contact area of the two surfaces, which are held together by the gentle pressure of the springs *i*, said springs being secured to the axle-boxes *r* and adapted 75 to impinge upon the arms *g*, as shown in the drawings.

Secured to each side of the vertical web of the rail E is an angle-bar *e*, extending the whole length of the track, and of the cross- 80 sectional form shown in Fig. 2. Resting upon the upper surface of each of said angle-bars, which are purposely above the surface *v* of the road, are insulating rubber blocks *n*, located at suitable distances apart and grooved, 85 as shown in the drawings, for the reception of the supply-conductors *k*. On the tops of said blocks are clamping-plates *q*, adapted to be pressed downward by set-screws J, so as to compress the rubber blocks, and thus 90 securely retain in position the supply-conductors.

The purpose of the springs *s* is to keep, by a constant downward pressure, the wheel D in contact with the rail, and consequently re- 95 tain the contact-bars *h* in the required position both vertically and laterally, while the bifurcated bar A is free to rise and fall with the car, the jointed link O permitting the car to sway laterally or rock upon its center of 100 gravity without disturbing the line of travel of the contact-bars.

The spiral springs *s*, as will be observed by reference to Fig. 1, are secured in position by

studs, one of which is in the top of the slot in which the spring plays, and the other on the top of the axle-box.

It is obvious that numerous changes in the form and arrangement of the several details of our device might be resorted to without departing from the spirit of our invention; hence we would have it understood that we do not limit ourselves to the exact construction of parts as shown and described, but consider ourselves at liberty to make such changes as come within the spirit and scope of our invention.

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

1. In an electric railway, a device for connecting the supply-conductors with the motor on the car, comprising a hinge-plate T, a link O, a bifurcated bar A, having slotted arms B, axle-boxes r, adapted to slide vertically in the slots in said arms, springs s and springs i, insulating-arms g, hinged to and depending from said axle-boxes and adapted to carry the contact-bars and connections between the latter and the motor, a guide or gage wheel

D, journaled upon a non-revolving axle secured at each end in the axle-boxes r, said wheel D adapted to travel upon a T-headed rail located between the two outer and main rails of the track, all of said parts constructed, combined, and adapted to operate substantially as and for the purpose herein set forth.

2. In an electric railway having between the two main rails a central rail adapted to house the supply-conductors, insulating rubber blocks n, angle-bars e, secured to the web of the rail, clamping-plates q, and set-screws J, all of said parts constructed, combined, and adapted to each other for united effect, substantially in the manner and for the purpose herein set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 1st day of February, 1890.

ABRAHAM A. SHOBE.
WILLIAM EMBLEY.

Witnesses:

W. H. MILLER,
L. M. CUTTING.