

F. W. ROCHLER.
ELECTRIC RAILWAY.
APPLICATION FILED MAY 6, 1903.

NO MODEL.

FIG. 1.

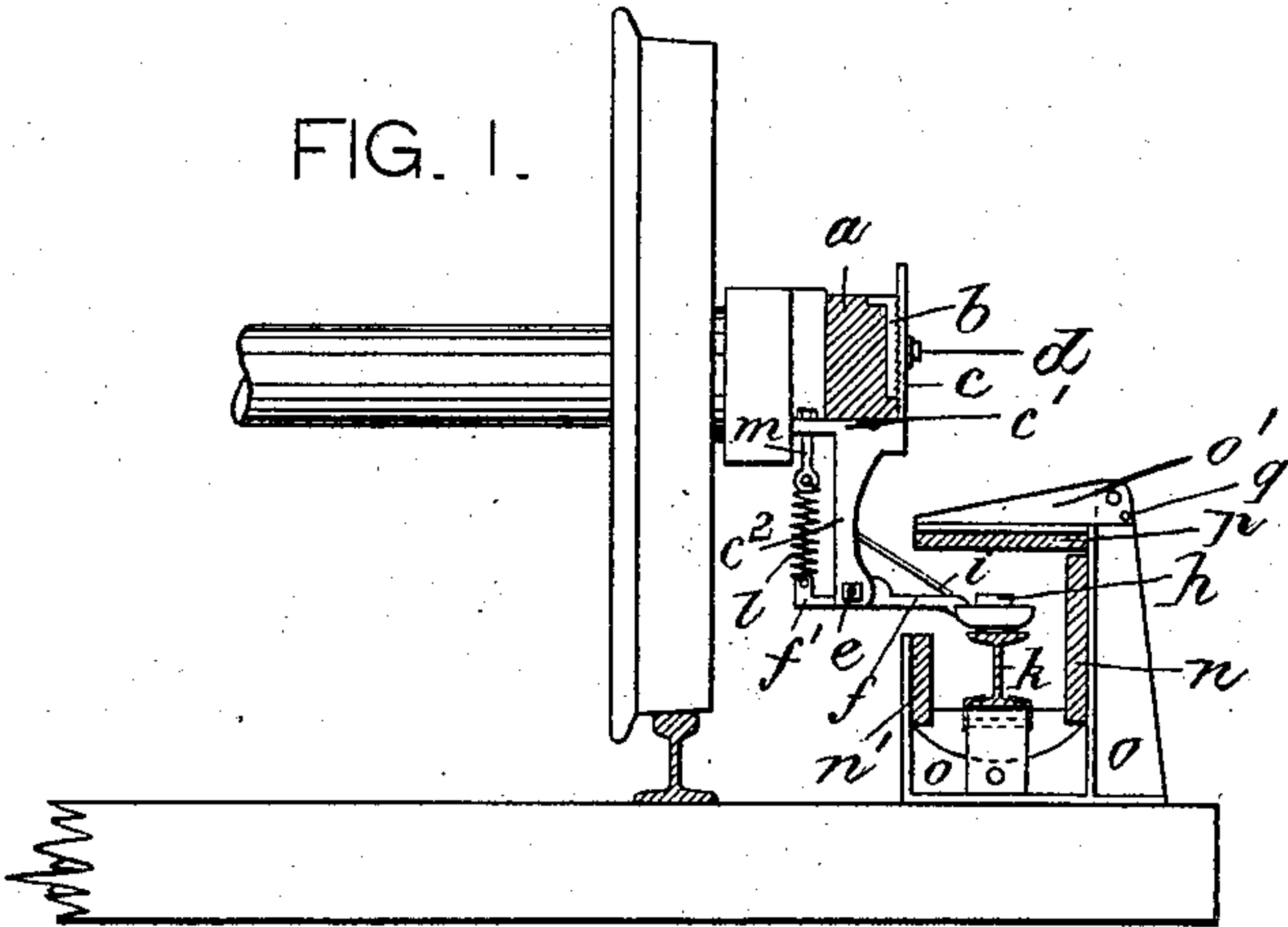


FIG. 3.

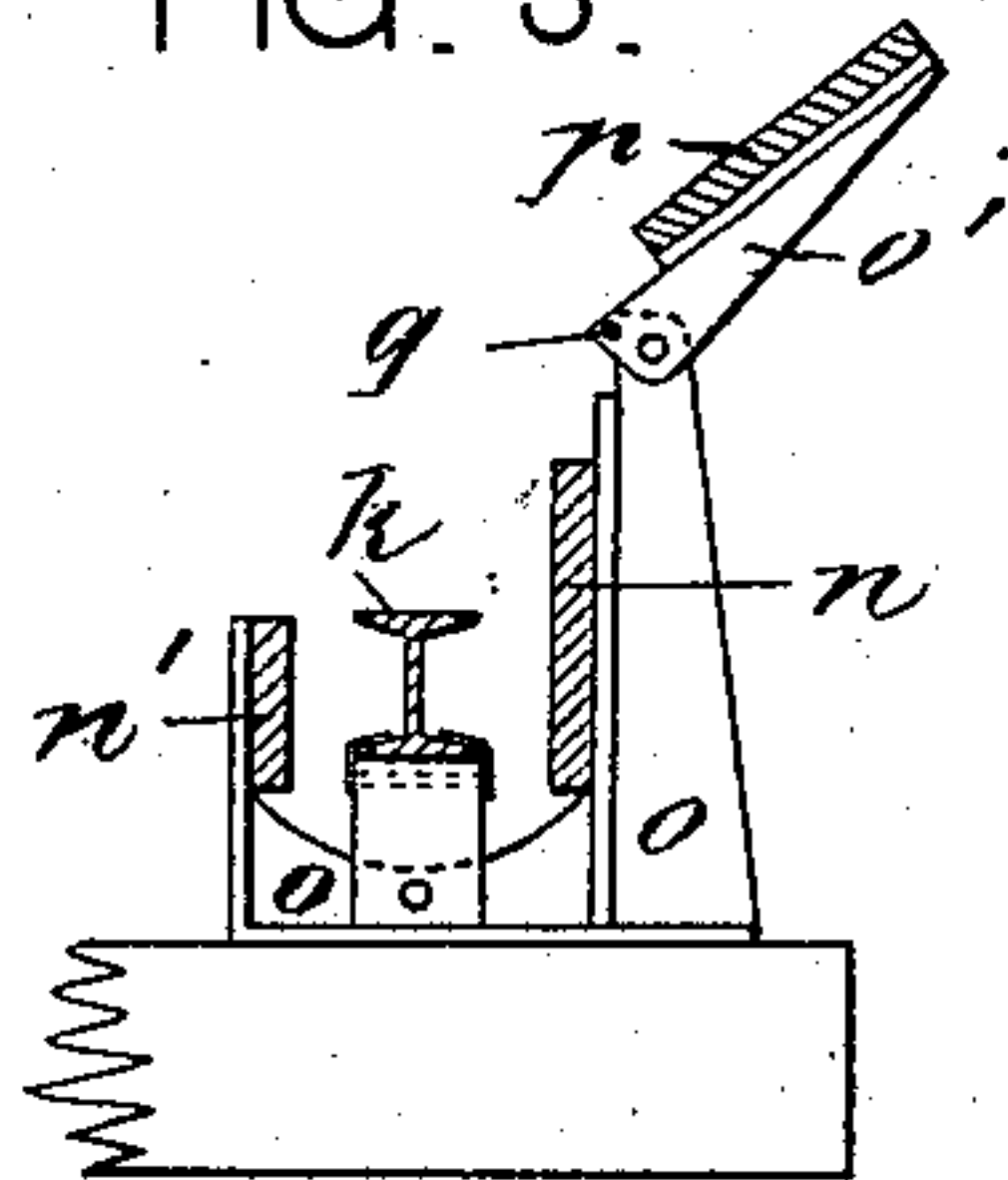
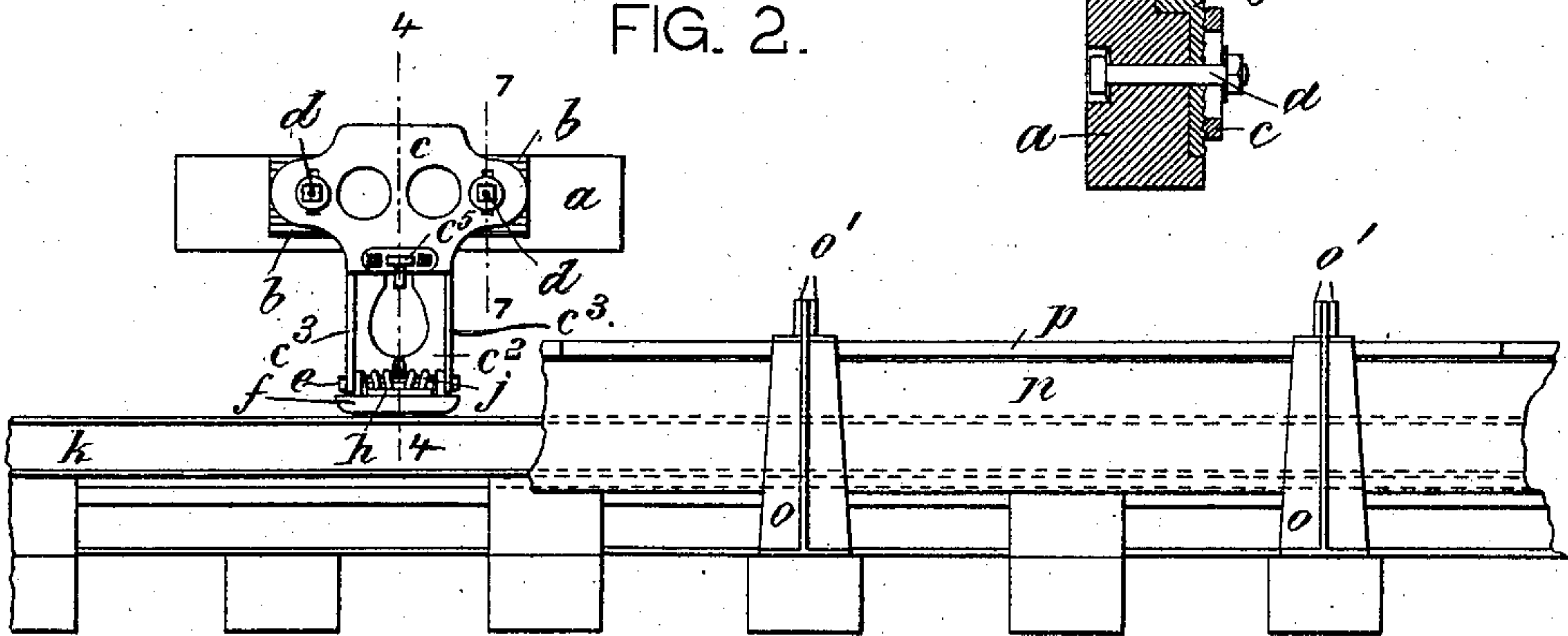


FIG. 2.



UNITED STATES PATENT OFFICE.

FREDERICK W. ROCHLER, OF NEW YORK, N. Y.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 741,719, dated October 20, 1903.

Application filed May 6, 1903. Serial No. 155,833. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. ROCHLER, a citizen of Germany, residing at New York city, Manhattan, county and State of New York, have invented certain new and useful Improvements in Electric Railways, of which the following is a specification.

This invention relates to improvements in electric railways, and more particularly to improved means for regulating the friction between the contact-shoe and third rail and means for securing the shoe to its supporting-arm.

In the accompanying drawings, Figure 1 is a cross-sectional view of part of a car embodying my invention; Fig. 2, a side view thereof; Fig. 3, a cross-section of the housing that incloses the third rail; Fig. 4, an enlarged cross-section on line 4 4, Fig. 2; Fig. 5, a rear view of Fig. 4; Fig. 6, a cross-section through the shoe on line 6 6, Fig. 4; and Fig. 7 an enlarged cross-section on line 7 7, Fig. 2.

The letter *a* represents a wooden or other insulating-block secured to the truck of an electric car. The block *a* is recessed at its face for the reception of a countersunk plate *b*, having a serrated outer surface. This serrated surface is engaged by the correspondingly-serrated inner surface of a slotted frame *c*, which is clamped to plate *b* and block *a* by a bolt *d*, Fig. 7. By slackening this bolt the frame *c* may be vertically adjusted, the serrated surfaces preventing displacement through the jolting of the car. Below the block *a* the frame *c* extends, first backward, as at *c'*, and then again downward, as at *c''*, the section *c''* being slotted to reduce its weight. The section *c''* is flanked by a pair of forwardly-projecting ribs *c'''*, that extend at right angles thereto. To the ribs *c'''* there is hung by a pivot *e* a forwardly-extending arm *f*, having an opening for the reception of the downwardly-projecting shoe or contact-piece *g*. The shoe is provided with a flange *g'*, that is received by a corresponding offset of the opening and serves to hold the shoe in position. The upper side of the shoe is recessed for engagement with a corresponding projection *h'* of a top plate *h*, which is screwed to the arm *f*.

In assembling the parts the shoe is first fitted into its seat, and then the top plate is fitted in position and screwed to the arm *f*, so that all the parts are properly connected. A cable *i* extends from the top plate *h* around a pin *c⁴* and thence to a holder *c⁵* of frame *c*.

The pivot *e* is surrounded by a coiled main-spring *j*, which bears at *j'* against arm *f* and at *j''* against plate *c''*, and thus tends to lower the shoe *g* upon the top of the third rail *k*. The arm *f* is provided with a pair of fingers *f'*, perforated, as at *f''*, and extending back of plate *c''*. These fingers are connected by upright coiled auxiliary springs *l* to eyebolts *m*, depending from the horizontal plate *c'* of frame *c*. By adjusting the bolts *m* the tension of the auxiliary springs may be regulated so as to adjust the friction between the shoe and the third rail.

The rail *k* is protected by a housing composed of an outer wall *n* and of an inner wall *n'*, which is made lower than the outer wall. The walls are secured to brackets *o*, which project from the cross-ties of the road-bed at suitable distances. To the brackets *o* are hinged arms *o'*, carrying lids *p*, which when folded up permit access to the third rail, Fig. 3. When folded down, the lids protect the top of the rail, but permit free entrance of the arm *f* through the slot which is formed between the lid and the top of the inner wall *n'*, Fig. 1. The arms *o'* are perforated for the reception of a locking-pin *q*, which when inserted holds the lid *p* in its open or closed position.

What I claim is—

1. In an electric railway, the combination of a frame with an arm pivoted thereto, a shoe secured to the arm, a main spring and an auxiliary spring between frame and arm, and means for adjusting the tension of the auxiliary spring, substantially as specified.

2. In an electric railway, the combination of a vertically-adjustable frame with a pivoted arm having a rearwardly-extending finger, a shoe secured to the arm, a main spring between frame and arm, a bolt depending from the frame, and an auxiliary spring between the finger and the bolt, substantially as specified.

3. In an electric railway, the combination

of a perforated arm with a shoe engaging the same, a top plate engaging the shoe, and means for securing the top plate to the arm, substantially as specified.

- 5 4. In an electric railway, the combination of a perforated arm with a recessed shoe engaging the same, a top plate having a projection that engages the shoe-recess, and

means for securing the top plate to the arm, substantially as specified. 10

Signed by me at New York city, Manhattan, New York, this 5th day of May, 1903.

FREDERICK W. ROCHLER.

Witnesses:

FRANK V. BRIESEN,
WILLIAM SCHULZ.