

(No Model.)

F. E. KINSMAN.
CONTACT RAIL.

No. 487,752.

Patented Dec. 13, 1892.

FIG. 1.

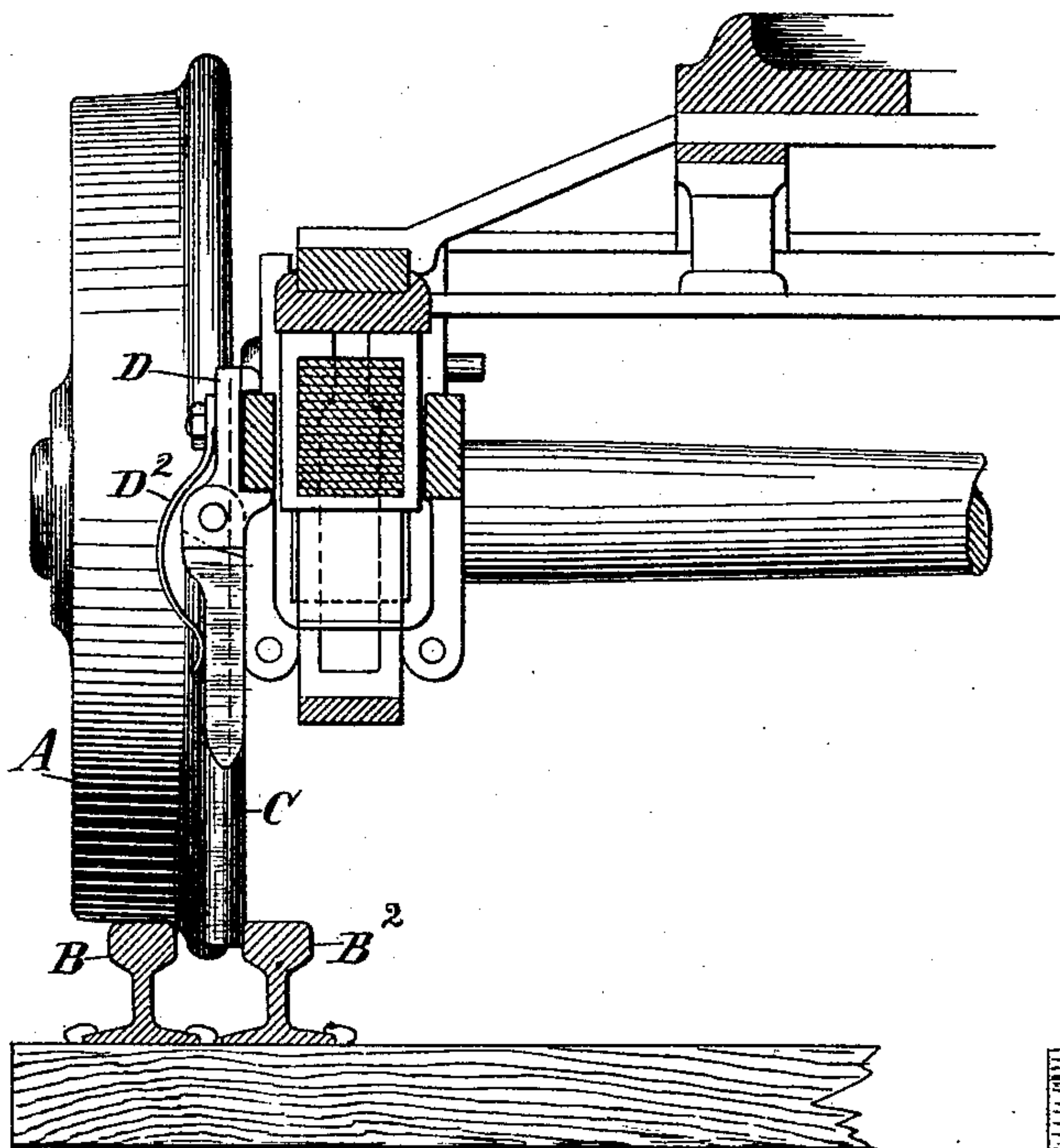


FIG. 2.

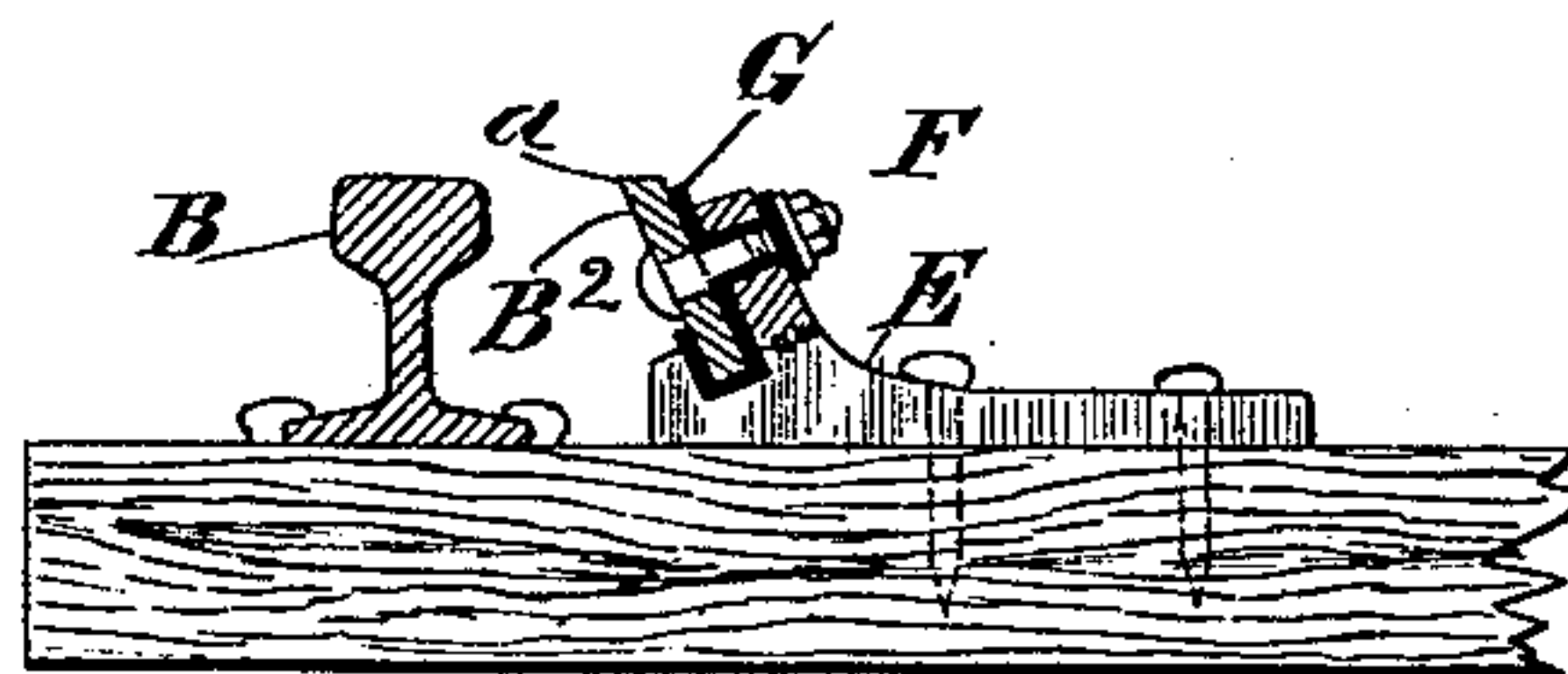
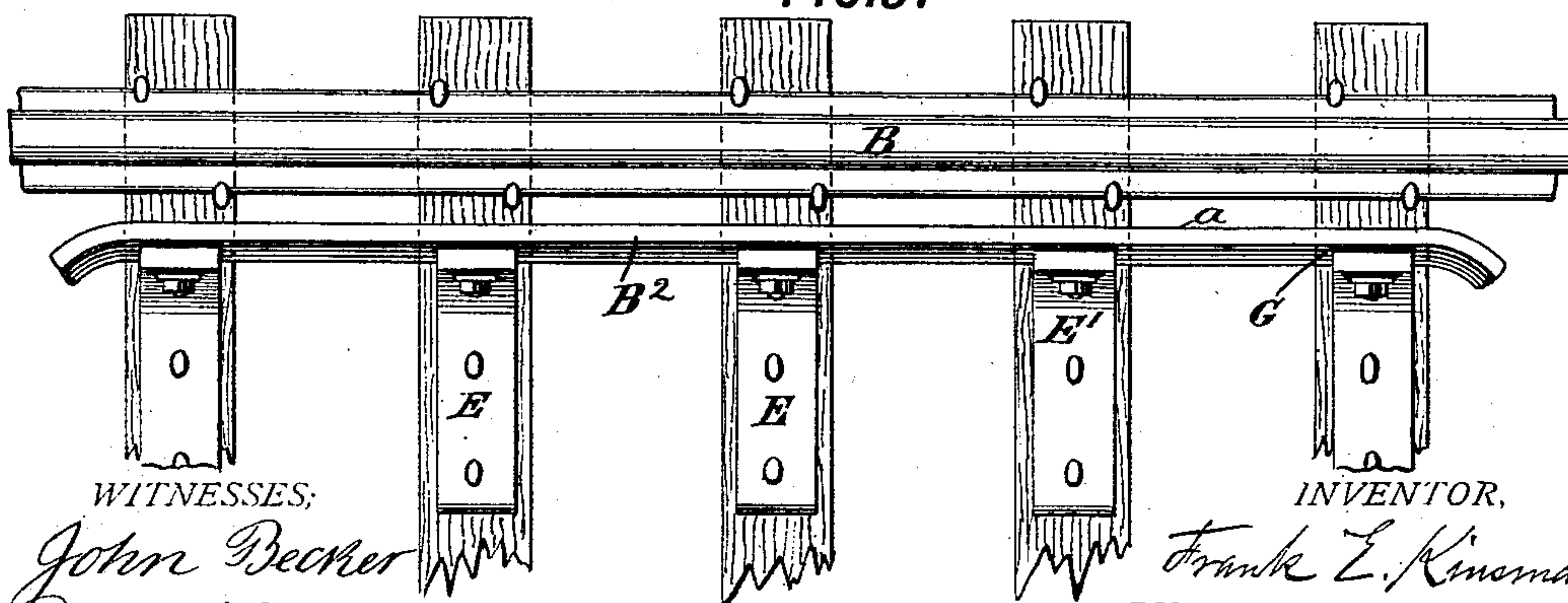


FIG. 3.



WITNESSES;

John Becker
Jm. A. Capel.

INVENTOR,

Frank E. Kinsman
BY
H. L. Townsend.
ATTORNEY.

UNITED STATES PATENT OFFICE.

FRANK E. KINSMAN, OF PLAINFIELD, NEW JERSEY.

CONTACT-RAIL.

SPECIFICATION forming part of Letters Patent No. 487,752, dated December 13, 1892.

Application filed February 23, 1892. Serial No. 422,347. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. KINSMAN, a citizen of the United States, and a resident of Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Contact-Rails, of which the following is a specification.

My invention relates to means for closing an electric circuit or connection between a moving vehicle and apparatus or circuits upon the road-bed, and is designed more particularly for use with apparatus for controlling the movement of railway-vehicles by means of signals, valves, or other devices, the said devices being controlled or operated upon the car or vehicle through the agency of an electro-magnet the circuit of which is affected by the making of contact between the circuit-closer carried by the vehicle and a contact rail or bar on the road-bed.

My invention relates more particularly to the construction of and mounting of the contact rail or bar; and the object is to provide a device which shall not be affected by ice, snow, dirt, or grease and shall be certain to make good connection or contact between the circuit-closer and the bar.

My invention consists, essentially, in a contact rail or bar having a contact edge or corner, in combination with a circuit-closer adapted to make longitudinal rubbing and side contact with the edge of said bar.

My invention consists, further, of the contact-rail consisting of a flat metal bar adapted to be bent at its ends and set on edge on a suitable chair or support in position to be engaged on a sharp corner by the side of a circuit-closer carried by the vehicle.

My invention consists, further, in setting the contact-bar on edge at an inclination to give a clearance-space between itself and the base of the main rail and to facilitate the dropping away of foreign substances from the contact-edge.

My invention consists, further, in the combination, with a contact-rail consisting of a bar set on edge, of a contact-arm carried by the vehicle and adapted to yield transversely when it makes side contact with said bar.

In the accompanying drawings, Figure 1 illustrates a form of circuit-closing arm with which the circuit-closing bar of my present

invention is adapted for use, the arm in said figure being of a form and mounted in a way described in another application for patent filed by me July 31, 1891, Serial No. 401,043, and the contact-bar being in that figure of the form or construction heretofore employed by me. Fig. 2 illustrates in cross-section the main rail and the circuit-closing bar or rail of my present invention. Fig. 3 is a plan of the devices shown in Fig. 2.

B indicates the main rail, upon which the vehicle travels, and A the car or vehicle wheel.

C is any circuit-closing arm or contact carried by the vehicle and mounted and constructed, preferably, in the manner described in another application for patent filed by me July 31, 1891, Serial No. 401,043.

I do not limit myself to any particular construction of contact-arm or way of supporting the same, but prefer to pivot it, as described in said application, upon a bracket or block D, fastened to some portion of the truck which moves without much vibration. When the arm C is pivoted, a suitable spring, as indicated at D², is provided to operate on the spring in a manner to give it, sidewise bias toward the contact-rail B² and to permit the circuit-closer to yield when it engages the bar. The end of the arm is arranged to travel in line with the wheel-flange, as described in my prior application before referred to, and its rounded side projects beyond the flange sufficiently far to engage the contact bar or rail. (Shown in Fig. 1 as of a form heretofore used by me in connection with the side contact-arm.)

B², Fig. 2, is the contact-bar of my invention, arranged so as to have a comparatively-sharp edge or corner at *a*, where it is engaged by the circuit-closing arm C. This edge serves to clean away any oil or foreign substances from the contact-surface of the arm C and insure a good contact. When the contact-bar is thus formed with a rather sharp edge or corner, there will be less tendency to accumulation of oil and grease at the wearing contact, such foreign substances tending to fall away down upon the flat surface or to drop off from the contact-edge.

For a contact-bar I employ a plain flat bar of metal, preferably rather soft iron, which is

set up on edge, as shown, in a socket or seat upon a suitable chair or chairs E, which are bolted to the ties, as shown.

By using a plain flat bar, as shown, I am enabled to readily bend the same at its ends, as shown in the plan view. These bent or curved ends are for the purpose of permitting the circuit-closing arm C to gradually make contact with the bar and prevent as far as possible severe shocks. I prefer, also, to set the bar B² on edge on an inclination, as shown, thus facilitating still further the dropping away of foreign substances from the contact-edge *a*.

Any desired number of chairs may be employed for supporting the contact-bar B². It may be bolted to the chair in position, as shown, by suitable bolts F, which may be provided with insulating bushings and washers to prevent the formation of an electrical connection between the chair and the bar. Layers of insulating material of any suitable kind may also be interposed between the bar and the chair, as indicated at G.

The connection with the devices on the vehicle is formed by attachment to the bracket D, carrying the circuit-closing arm C, or otherwise, as desired, and the connection between such circuit and any circuit or portion of circuit on the road-bed attached to the bar B² in any usual or proper manner will be completed when the arm C rides into side contact with the edge *a* of the contact-bar B².

I do not claim in this specification mounting the contact-bar on the road-bed, in combination with a contact-bar carried by the vehicle and making side contact therewith, the contact-bar on the road-bed being undercut at the lower surface where the rubbing contact is made, as this feature forms the subject of claims in another application for patent filed by me February 20, 1892, Serial No. 422,176.

What I claim as my invention is—

1. The combination, with a contact rail or bar having a contact edge or corner and mount-

ed on the road-bed, of a contact-arm adapted to make rubbing side contact with said edge or corner and carried by the vehicle.

2. In a circuit-closing apparatus for railway-vehicles, a contact-rail consisting of a metal bar set on edge on the road-bed, in combination with a contact-arm carried by the vehicle and adapted to make contact with a corner of the contact-bar.

3. The combination, in a circuit-closing apparatus for railway-vehicles, of a contact-bar B², consisting of a flat metal bar adapted to be bent at its end and set on edge near the main rail in position to be engaged at a corner by a contact-arm carried by the vehicle in line with the wheel-flange.

4. A contact-rail set on edge at an inclination to give a clearance-space between itself and the base of the main rail and to facilitate the dropping away of foreign substances from its contact edge or corner.

5. The combination, substantially as described, with a bar of metal set on edge, of a rubbing contact carried by the vehicle and adapted to engage with a corner of said bar.

6. The combination, substantially as described, with a metal bar set on edge, of a contact-arm carried by a vehicle and adapted to yield transversely and to make side contact with a corner of said bar.

7. The combination, substantially as described, with the vehicle and the main supporting-rail, of a contact-arm carried by said vehicle and a contact-bar mounted opposite the main rail and having a contact edge or corner, beneath which the surface of the bar inclines away from the path of travel of the contact-arm.

Signed at New York, in the county of New York and State of New York, this 19th day of February, A. D. 1892.

FRANK E. KINSMAN.

Witnesses:

WM. H. CAPEL,
THOS. F. CONREY.