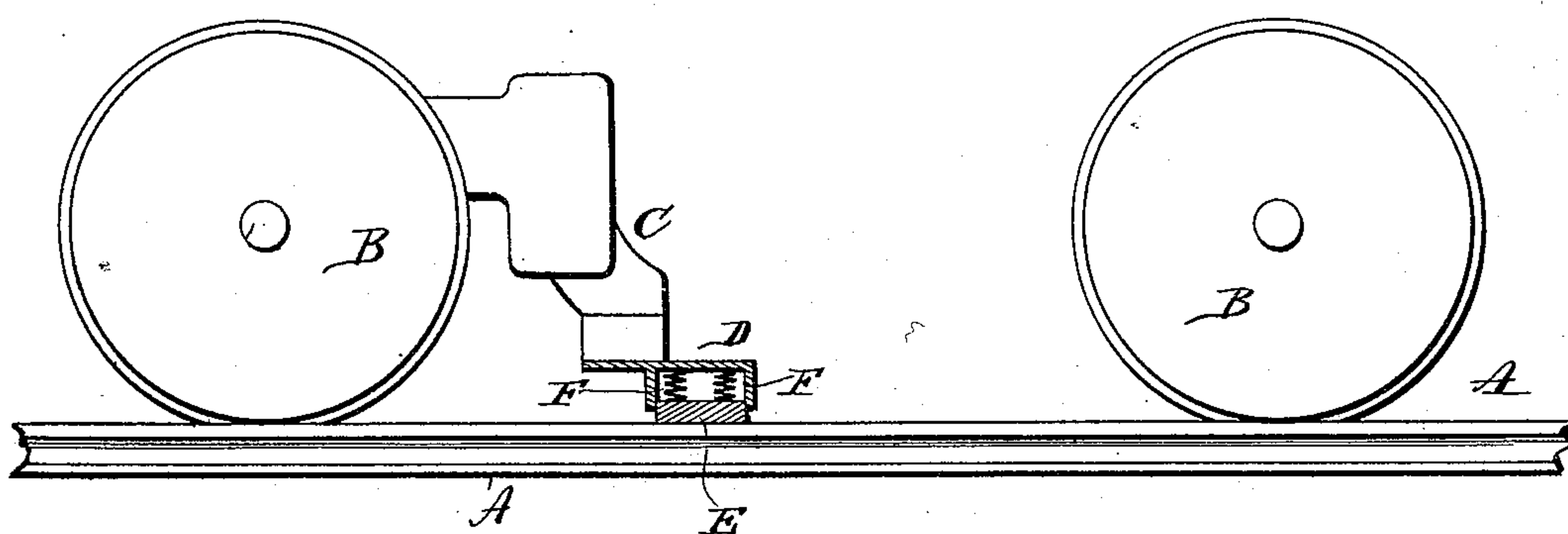


(No Model.)

S. H. SHORT.
ELECTRIC RAILWAY.

No. 431,711.

Patented July 8, 1890.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

SIDNEY H. SHORT, OF CLEVELAND, OHIO.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 431,711, dated July 8, 1890.

Application filed October 29, 1889. Serial No. 328,545. (No model.)

To all whom it may concern:

Be it known that I, SIDNEY H. SHORT, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and
5 useful Improvements in Electric Railways; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and
10 use the same.

My invention relates to an improvement in electric railways, the object being to provide an electric car with devices for insuring a good and reliable contact with the rail to which
15 the current is transmitted as it leaves the motor, and thereby prevent sparking between the wheels and the rail.

With this object in view the invention consists in certain features of construction and
20 combinations of parts, as will be hereinafter described, and pointed out in the claims.

The accompanying drawing illustrates the invention as being connected with the motor of an electric car.

25 A represents the rail, and B B the front and rear wheels of an electric car.

C is an electric motor, to which an electric current is applied from an overhead wire by any suitable trolley and pole.

30 D is a holder, preferably made of metal and electrically connected with the motor.

E is a block of carbon loosely fitted within the holder, so as to be free to move vertically therein. Spiral springs F F, interposed be-
35 tween the holder and carbon block, serve to press the latter against the rail, and thus form a good and extended electrical contact therewith. Owing to the fact that the carbon block is at all times in intimate contact with the
40 rail, a greater portion of the current will pass through the contact formed by the carbon block and rail, instead of passing directly from the wheel to the rail, and hence the "sparking" between the wheel and rail will be al-
45 most wholly, if not entirely, obviated.

While a carbon block forms a good contact,

owing to its good conductivity, durability, and cheapness, still I would have it understood that I do not restrict myself to such material, because carbon and copper or other
50 good electrical conducting metal or suitable metal or compound might be used for this purpose. Again, instead of using springs to force the contact-block against the rail, I may attach the holder to a lever and employ a
55 weight for forcing the block against its rail. The carbon block not only serves as a sliding contact, but as a rail-cleaner as well, and thus materially assists in insuring a smooth and
60 unobstructed trackway for the car.

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

1. The combination, with the truck of an electric-motor car, a wheel of which forms a
65 circuit from the motor to the rail, of a supplemental sliding contact electrically connected with the motor and the rail, substantially as set forth.

2. The combination, with the truck of an
70 electric-motor car, a wheel of which forms a circuit for transmitting current from the motor to the rail, of a supplemental sliding and self-adjustable sliding contact electrically
75 connected with the motor and the rail and forming a supplemental circuit for the passage of the current to the rail, substantially as set forth.

3. The combination, with the truck of an
80 electric-motor car, a wheel of which forms a circuit for transmitting current from the motor to the rail, of a supplemental sliding contact consisting of a carbon block electrically
85 connected with the motor and the rail, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

SIDNEY H. SHORT.

Witnesses:

J. C. WILLIAMS,
E. H. MORRISON.