

(No Model.)

W. J. PHELPS.
COMMUTATOR CLEANING DEVICE.

No. 469,319.

Patented Feb. 23, 1892.

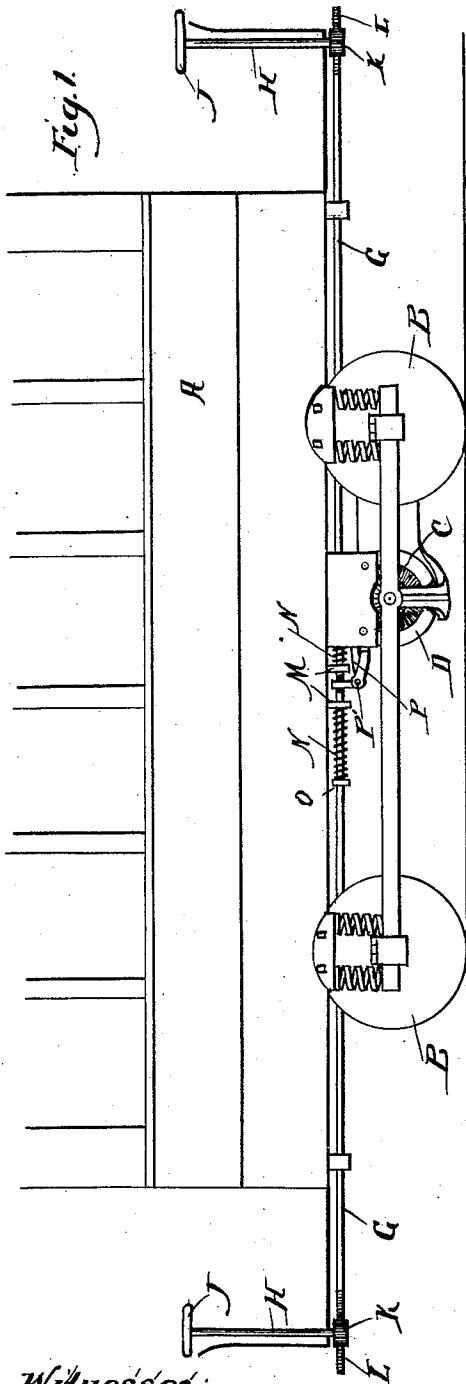
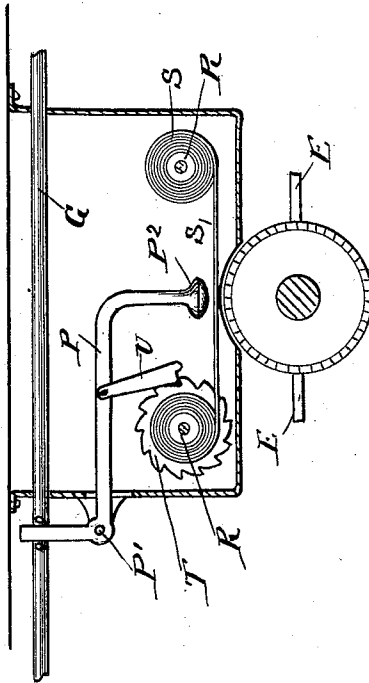


Fig. 2.



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Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM J. PHELPS, OF ELMWOOD, ILLINOIS.

COMMUTATOR-CLEANING DEVICE.

SPECIFICATION forming part of Letters Patent No. 469,319, dated February 23, 1892.

Application filed February 7, 1891. Serial No. 380,697. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. PHELPS, a citizen of the United States, residing at Elmwood, in the county of Peoria and State of Illinois, have invented a certain new and useful Improvement in Commutator-Cleaning Devices, of which the following is a full, clear, and exact specification.

My invention relates to devices for cleaning the commutators of motors, and has for its object to provide convenient means whereby a street-car operator can from time to time when required clean the commutator of the motors in a convenient and easy manner.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of a car with my device shown in operative position. Fig. 2 is a detail of the cleaning mechanism.

Like parts are indicated by the same letters in both figures.

A is the body of the car; B B, the wheels; C, the motor; D, the field-magnet; E E, the motor-brushes, and F the rail or track upon which the car is moving.

G is a rod or bar, arranged longitudinally upon the car so as to reciprocate therealong. At either end of the car is a vertical shaft H with a wheel or handle J and a pinion K, adapted to engage the racks L L on the ends of the bar G.

M is a double guide, and N N are springs on opposite sides thereof abutting each against a stop O on the bar G.

P is an elbow-crank lever, secured to the bar G at one end, pivoted at P', and provided at its other extremity with the buffer P², preferably of elastic material.

R R are rollers carrying the ribbon S, which is adapted to be tightly drawn between such rollers. These rollers are suitably supported on frame-work. One of these rollers carries the ratchet-wheel T, and pivoted to and pendent from the elbow-crank lever P is the weighted dog U, adapted to engage the ratchet-wheel T.

It is evident that the details of this device can be greatly altered and changed from time to time and that they must be greatly changed to accommodate the devices of the various vehicles to which it may be from time to time desired to apply it.

I do not wish to be limited in the application or details of construction of my device.

The use and operation of my invention are as follows: The normal position of the ribbon is out of contact with the commutator, but near the same, and the normal position of the buffer and elbow-crank lever is elevated away from the ribbon. To this position the buffer is brought by reciprocating the rod G toward the lever, and in this case it might obviously be done from either end of the car. If now it is desired to clean or rub the commutator, by rotating either hand-wheel J J in the proper direction the rod G may be moved toward the right, thus moving the elbow-crank lever P on its pivot and forcing the buffer P² downward toward the commutator and against the ribbon S, thus forcing the latter against the commutator. This ribbon is of suitable rubbing material, and when so operated will cleanse the rotating commutator, against which it lies. When this action is continued for a sufficiently long period, the rod G will be moved in the opposite direction, whereupon the elbow-crank lever P will move upward, carrying the commutator, and thus permitting the ribbon to rise and free itself from the commutator. By this same action, however, the dog U is raised to engage with a tooth above that with which it has been in engagement, so that when the rod G is again moved toward the right the ratchet-wheel T will be rotated by the dog U and the belt be caused to move forward a slight distance to bring another and cleaner surface in opposition to the commutator.

I claim—

1. In a commutator-cleaning device, the combination of a cleaning-ribbon with a buffer to force the same against the commutator and means for operating the buffer, whereby the same may be controlled from the end or ends of the car.

2. In a commutator-cleaning device, the combination of a cleaning-ribbon with means for moving the same along step by step, a buffer to bring the same against the commutator, and means for operating such buffer, controlled by handles at the end of the car.

3. In a commutator-cleaning device, the combination of a buffer adapted to be moved to or from the commutator, a support for the

same and operative connections whereby such buffer may be moved to or from the commutator, and a cleaning-ribbon between the buffer and the commutator.

5 4. In a commutator-cleaning device, the combination of a buffer adapted to be moved to or from such commutator, a support for the same and operative connections whereby such
10 buffer may be moved to or from the commutator, and a cleaning-ribbon between the buffer and the commutator, and a connection from such buffer to the ribbon-supports, whereby the ribbon is moved forward at each
15 motion of the buffer.

20 5. The combination of a car with a rod thereunder, means at each end of the car for reciprocating the rod, and a commutator-cleaning device connected with and operated by such rod, said commutator-cleaning device containing a buffer movable to and from the commutator and a ribbon between the commutator and buffer.

6. The combination of a car with a rod thereunder, means at each end of the car for reciprocating the rod, and a commutator-cleaning 25 device connected with and operated by such rod, said commutator-cleaning device containing a buffer movable to and from the commutator, and a ribbon between the commutator and buffer, and a connection from the 30 buffer to the ribbon-support, whereby such ribbon is moved forward at each movement of the buffer.

7. The combination of a car with a rod thereunder, means at each end of the car for reciprocating the rod, and a commutator-cleaning 35 device consisting of a buffer and ribbon acting in conjunction with each other, connected with and operated by such rod.

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Witnesses:

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