

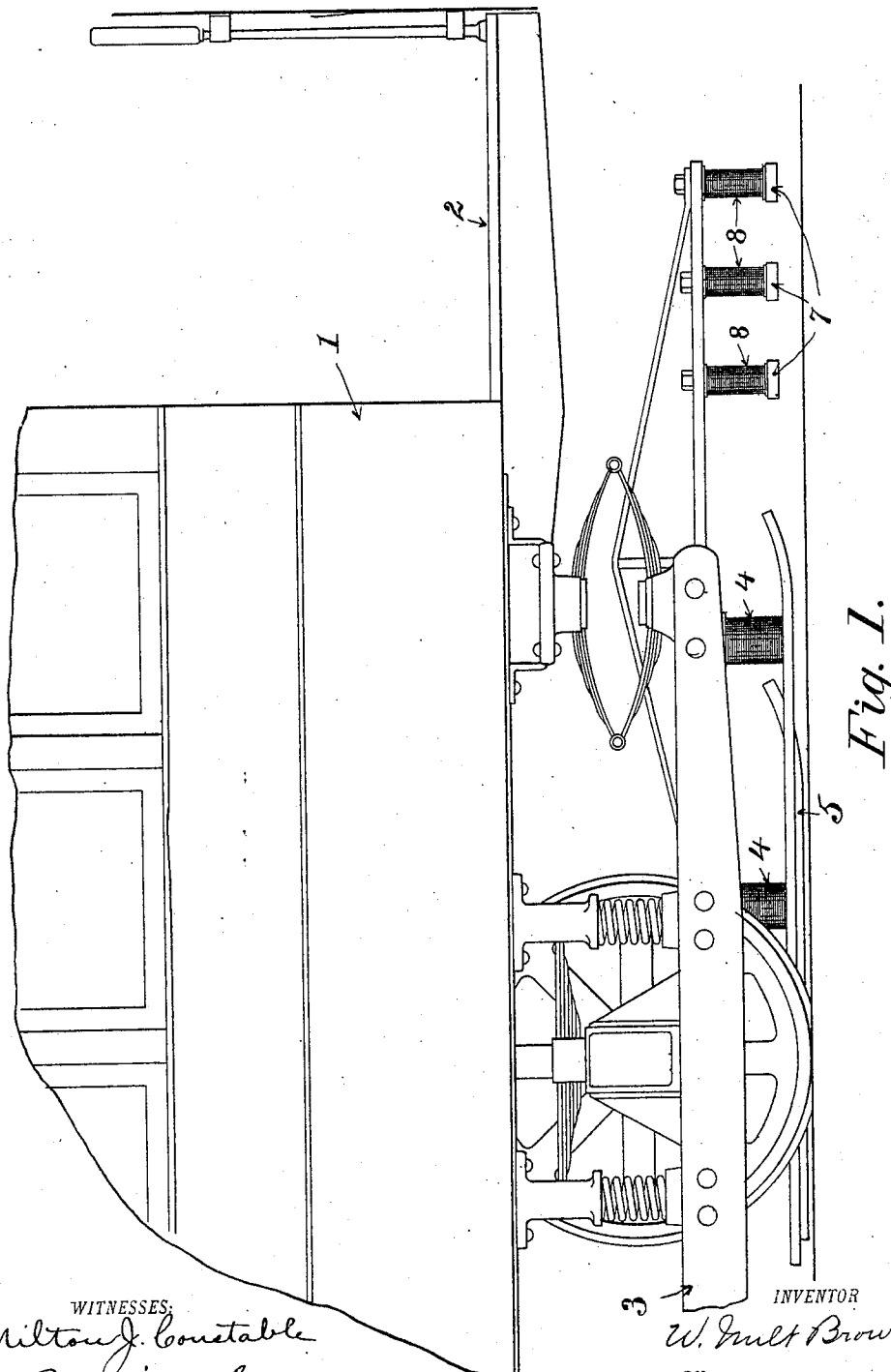
(No Model.)

2 Sheets—Sheet 1.

W. M. BROWN.
TRACK CLEANER.

No. 581,264.

Patented Apr. 27, 1897.



WITNESSES:

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E. Pennington

INVENTOR

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ATTORNEY.

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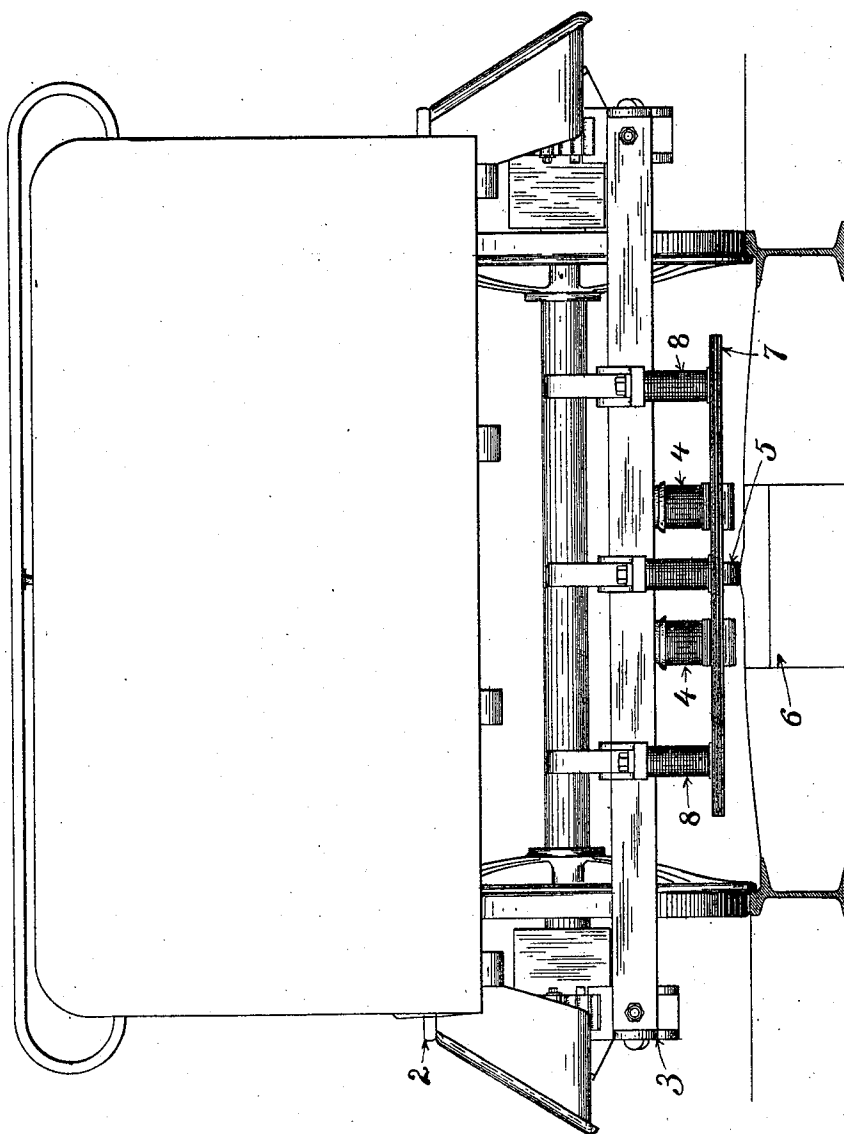
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Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM MILTON BROWN, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO
THE JOHNSON COMPANY, OF LORAIN, OHIO.

TRACK-CLEANER.

SPECIFICATION forming part of Letters Patent No. 581,264, dated April 27, 1897.

Application filed July 18, 1896. Serial No. 599,648. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MILTON BROWN, of Johnstown, county of Cambria, State of Pennsylvania, have invented certain new and useful Improvements in Track-Cleaners, of which the following is a true and exact description, due reference being had to the accompanying drawings.

My invention relates to certain improvements in track-cleaning devices and has special reference to use on those tracks where the cars are operated by electricity supplied from contact-boxes or conduits laid in the street. In this class of railway the contact-box or conduit contains a switching mechanism designed to keep the circuit between the supply-conductor and the contact portions of said contact-box or conduit open except when a suitable magnetic field carried by the car is immediately over the box. In a system of this class there is danger of pieces of iron or steel lying on the track in such a manner as to short-circuit the contact-box to the return-rail at such times as the magnetic field is over the box, thereby allowing waste of power until the car has passed or until circuit-breakers ordinarily provided in railway power-houses are opened. This would cause a temporary stoppage of all the cars on the same section of the system. Moreover, if the piece of metal causing this damage should not be immediately found the trouble would be met again upon the arrival of another car at the same spot.

It is the object of my invention to provide a set of magnets, to be carried by the car, the magnetic field of which shall have its lines of force so disposed that the said magnets will attract any magnetic material such as has been hereinbefore referred to, while having no effect upon the current-conveyor. By disposing the lines of force in this manner I am enabled to carry the track-cleaning magnets so far in advance of the circuit-closing magnet that there is no danger of the material picked up by the cleaner being the means of short-circuiting the poles of the circuit-closing magnet or short-circuiting the contact devices to either magnet. The high rate of speed ordinarily employed on electric rail-

ways would allow such short-circuiting to occur unless the magnetic cleaning-field is well in advance of the current-collecting devices.

In the drawings and in the following description I show my track-cleaner as it is preferably constructed when intended for use in conjunction with a railway system which employs a circuit-closing magnet the poles of which are so disposed that the direction of the lines of force are transverse to the direction of the car's travel. The underground arrangements are of course adapted to be acted on by transverse lines of force.

To use my invention with other forms of magnetic closers, I would modify the arrangement of the poles of the cleaning-field, but without departing from the scope of my invention.

Referring to the drawings, Figure 1 represents a side view of the front end of a car and track embodying my invention. Fig. 2 is a front view of a portion of the same car.

1 is the body of the car, having the front platform 2 and supported upon the truck 3. This car, being operated by the conduit or surface-contact system, has the operating-magnets 4 and collecting-shoe 5, both constituting the collecting device, the conduit or contact-box 6 being shown in outline in Fig. 2. This magnet, shoe, and box being the things to protect, I extend transversely in front of them, and preferably supported by the truck 3, the magnet-bars 7, which may be two or more, as desirable. These bars are energized by the coils 8, and their polarity should be such that the lines of force will travel from one bar to another—that is to say, in this case the polarity of the center bar should be the opposite to that of the adjacent bars. These magnets being supported across the pathway of the operating-magnets will first engage and pick up any iron or steel that may lie upon the track and carry it along to the end of the line, where they may be cleaned off; or suitable pits may be placed on the track, and as the car passes over them the current to the magnets may be cut off, and the bars will then cease to be magnetic and any iron that may be adhering will then drop off. It will be seen that were it not for this

advance magnetic field there would be danger of pieces of iron coming in contact with the magnets 4 and short-circuiting the same or short-circuiting the magnets to the shoe 5.

5 By the use of this advance magnet all this danger is avoided and the proper working of the collecting devices assured.

10 Having thus described my invention, what I claim, and desire to protect by Letters Patent, is—

1. In combination with an electric-railway car and current-collecting devices beneath the car, a current-conveyer in electrical connection with the source of supply, magnets
15 carried by the car, the current-conveyer being within the magnetic fields of said magnets, a second set of magnets carried by the

car, the current-conveyer being without the field of said last-mentioned magnets.

2. In an electric railway, in combination, 20 magnets carried by the car, said magnets having poles so disposed that the lines of magnetic force are transverse to the railway-track, a second set of magnets carried in advance of said first-mentioned magnet and 25 having poles so disposed that the lines of force are parallel with the railway-track.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM MILTON BROWN.

Witnesses:

K. C. HOXIE,
H. W. SMITH.