No. 764,211. PATENTED JULY 5, 1904.

F. R. SLATER.

CURRENT COLLECTOR FOR ELECTRIC RAILWAYS.

APPLICATION FILED DEC. 5, 1903.

NO MODEL.

FIG. 1.

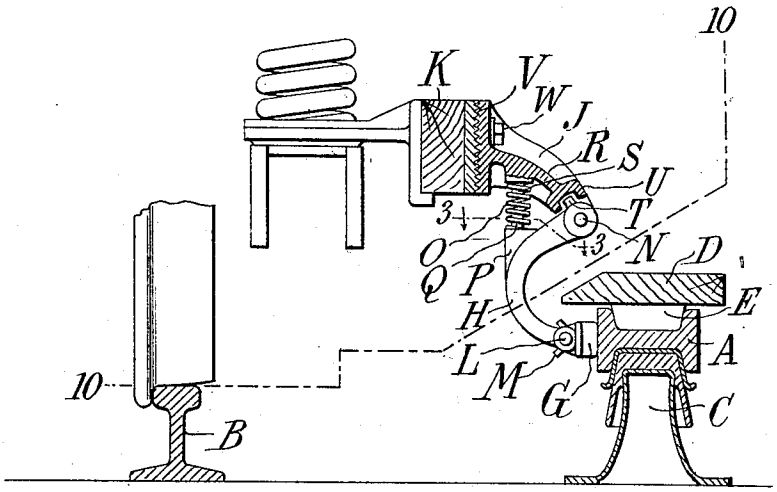


FIG. 2.

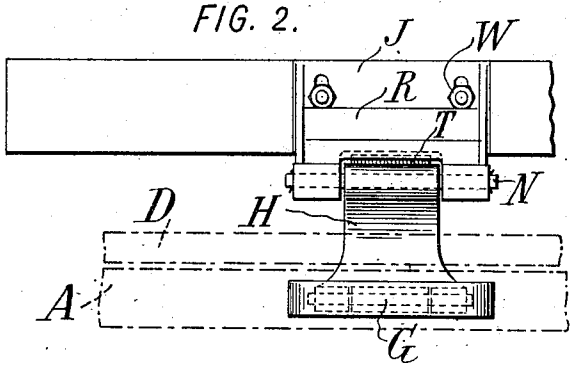
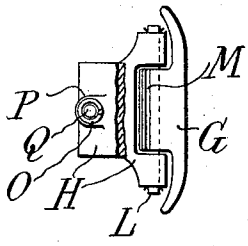


FIG. 3.



WITNESSES:

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No. 764,211. Patented July 5, 1904.

UNITED STATES PATENT OFFICE.

FREDERICK R. SLATER, OF YONKERS, NEW YORK.

CURRENT-COLLECTOR FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 764,211, dated July 5, 1904.

Application filed December 5, 1903. Serial No. 183,985. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK R. SLATER, a citizen of the United States, residing at Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Current-Collectors for Electric Railways, of which the following is a specification.

My invention aims to provide certain improvements in means for taking current from a conductor. It is especially adapted to the so-called "third-rail" system, in which a heavy conductor, usually in the form of a railroad-rail, extends along the side of the track just outside of the track-rail, the current being taken by a contact-shoe or trolley connected to a suitable part of the car.

According to my invention the contact-shoe travels along a side face of the conductor, which is clearer of ice and snow than the upper side. For further protection a guard is extended above the conductor, with its inner edge extending beyond the inner side face of the conductor and preferably beveled, so that it may extend as far inward as possible without danger of being struck by the mechanism or structure on the under side of the car. The guard is preferably a fireproofed wooden plank, or it may be made of any other suitable non-conducting and preferably fireproof material. Even with non-conducting material there is a possibility of the current being transmitted in wet weather from the conductor around the guard and to its upper side, and to avoid this danger I preferably space the guard a sufficient distance above the conductor to avoid mechanical contact. Thus persons stepping on the guard are protected as far as possible from danger of injury. I provide a construction of current-collector on the car specially adapted to coöperate with the particular track structure described. The contact-shoe is carried upon an arm pivoted substantially in the same vertical line with the shoe, so that the latter yields in a truly-horizontal direction, this arm being curved inward to pass around the inwardly-projecting portion of the guard and to provide a convenient means for applying a spring, which holds the shoe against the conductor. The parts of the car device are also arranged to avoid clogging by snow or dirt.

Various advantages are referred to in detail hereinafter.

The accompanying drawings illustrate embodiments of the invention.

Figure 1 is a sectional view showing the principal parts of the track and car structures. Fig. 2 is an outside face elevation of the car device, the position of the track structure being shown in dotted lines. Fig. 3 is a section of the car device, taken approximately on the line 3 3 of Fig. 1.

Referring now to the embodiments of the invention illustrated, the conductor A is arranged a suitable distance outside of the track, the adjacent railway-rail being shown at B. The conductor is supported upon any usual or suitable insulating-support C. The guard D extends along above the conductor A, the under side of the guard being spaced above the uppermost edges of the conductor, as shown, and the guard being preferably supported upon insulators E and being fastened down at suitable intervals. The dotted line 10 10 indicates approximately the outside clearance of the periphery of the car and mechanism and structures carried thereon. This line of clearance varies for cars of different types and sizes. The guard D is beveled at its inner edge, as shown, and can thereby be extended a considerable distance over the contact-face of the conductor without crossing the clearance-line. This construction also permits the conductor to be placed close to the track.

The contact-shoe G is carried at the lower end of a swinging arm H, pivoted at its upper end to a support J, which is attached to a side piece K of the car-truck or to any other suitable point on the car. The shoe G is pivoted on the arm H, so that the shoe may rock about a longitudinal pivot L, and is provided with ears or other suitable stops M, which limit the extent of this rocking movement. By this means the shoe maintains a contact with the conductor across the entire width of the face of the shoe. The car has a certain amount of sidewise movement, and it is necessary also that the contact-shoe shall have a certain amount of sidewise movement of its

own in entering upon and leaving the conductor. In order that this movement shall be substantially in a horizontal direction, the arm H is pivoted to the support J, as by the pivot N, at a point in approximately the same vertical line with the shoe. The arm H is then curved inward, as shown, so as to pass around the overhanging edge of the guard D. The outwardly-extending position of the support J and the inward curve of the arm H provide a very convenient space between them for the introduction of a spring O. The arm H is provided with a lug P, carrying a pin Q, which lies within the lower end of the spring O. The support J is provided with a web R, on the under side of which is a downwardly-projecting pin S, similarly holding the upper end of the spring in place. By this construction the spring is underneath the support J, which extends some distance beyond it in each direction and protects it fully from snow, sleet, or the like. The arm H is provided with a stop T, which lies within a suitable recess U on the under side of the end portion of the support J, so as to be protected against snow and sleet, which might otherwise obstruct its free movement. The support J is provided with a corrugated face V, which engages a similarly-corrugated face on the side piece K of the truck, the support being fastened at any desired height by means of bolts W, passing through slots in the support.

In the drawings the conductor A is illustrated as a heavy I-beam. Various other structural shapes, however, may be used.

Though I do not in the present application claim the arrangement and construction of the conductor or third rail independently of the current-collector on the car, yet it is not to be understood that I thereby waive the right to claim the same in a separate application.

Though I have described with great particularity of detail certain embodiments of my invention, yet it is not to be understood that the invention is limited to the specific constructions disclosed. Various modifications thereof in detail and in the arrangement of the parts may be made by those skilled in the art without departure from the invention.

What I claim is—

1. In combination, a conductor, a guard overhanging the side of said conductor, a support carried by a car and projecting outward therefrom and extending over said guard, a contact-shoe, an arm carrying said contact-shoe in position to make contact with the side of said conductor, said arm being pivoted to said outwardly-projecting support at a point approximately vertically in line with and above the shoe and being curved inwardly, and a spring between said support and said arm pressing said shoe against said conductor.

2. In combination, a contact-shoe adapted to make contact with a conductor, a support therefor carried by a car and projecting outward therefrom above the conductor, an arm depending below said support and carrying said shoe and pivoted to said outwardly-projecting support to swing transversely at a point vertically in line with said shoe, and a spring pressing said arm outward.

3. In combination, a contact-shoe adapted to make contact with a conductor, a support therefor carried at the side of a car and projecting outward therefrom, and an inwardly-curved arm carrying said shoe and pivoted to said support.

4. In combination, a contact-shoe adapted to make contact with a conductor, a support therefor carried by a car and having a recess U on the under side of a portion thereof, an arm carrying said shoe and pivoted to said support, and a stop T limiting the pivotal movement of said arm and lying in said recess U so as to be underneath a part of the support.

5. In combination, a contact-shoe adapted to make contact with the side of a conductor, an outwardly-extending support J therefor, an inwardly-curving arm H carrying said shoe and pivoted to said support, and a spring on the under side of said support and between said support and said arm and pressing said shoe outward against the conductor.

6. In combination, a contact-shoe adapted to make contact with the side of a conductor, an outwardly-extending support J therefor, an inwardly-curving arm H carrying said shoe and pivoted to said support, and a spring on the under side of the support and between said support and said arm and pressing said shoe against the conductor, said shoe being pivoted to said arm so as to rock about a longitudinal axis and said arm being provided with a stop limiting its pivotal movement and arranged underneath a part of said support.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FREDERICK R. SLATER.

Witnesses:
THEODORE T. SNELL,
FRED WHITE.