

(No Model.)

2 Sheets—Sheet 1.

W. C. WRIGHT.  
ELECTRIC RAILWAY.

No. 458,932.

Patented Sept. 1, 1891.

FIG. 1.

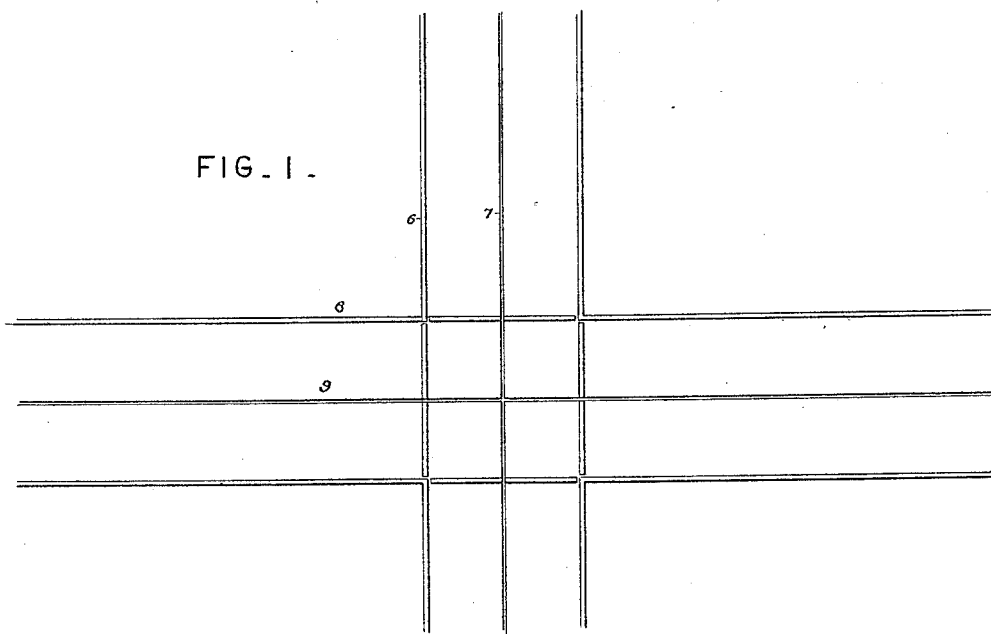
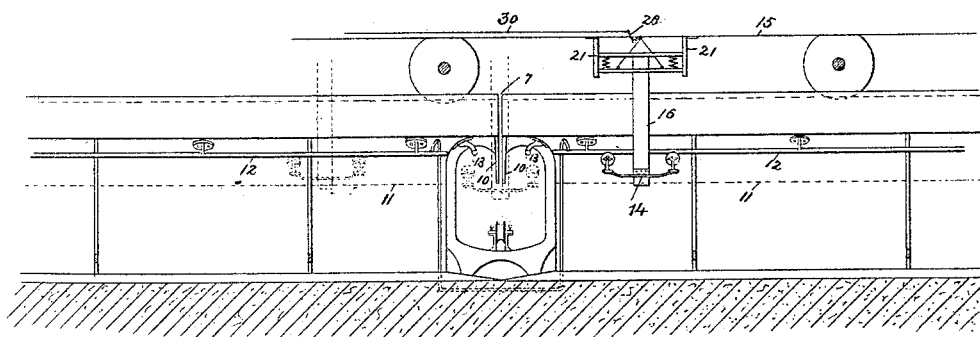


FIG. 2.



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FIG. 3.

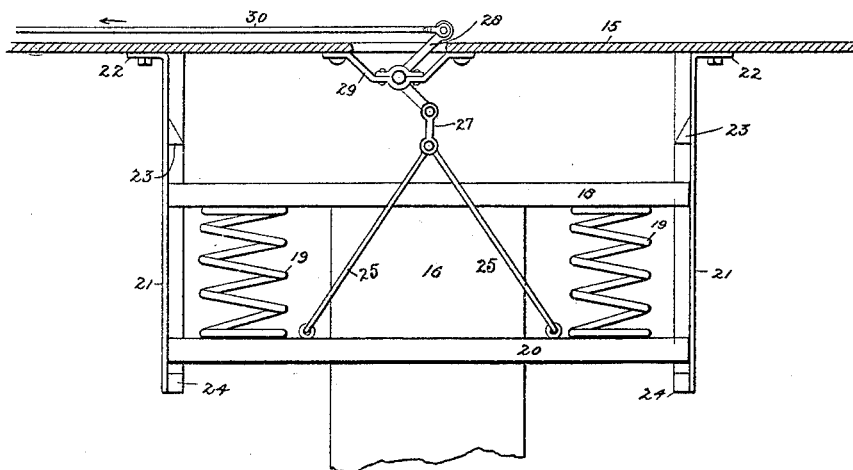


FIG. 4.

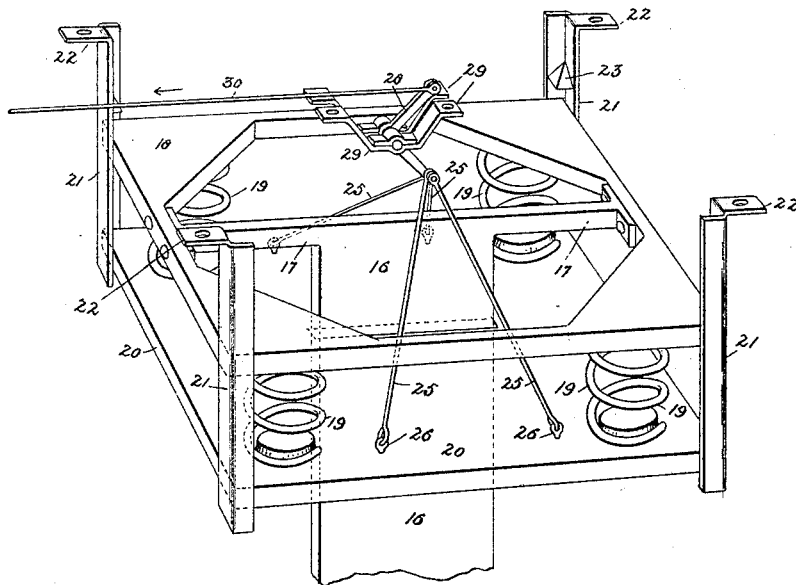
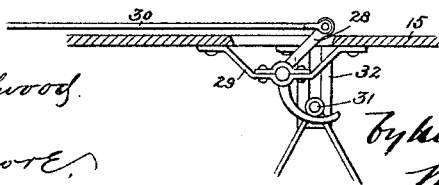


FIG. 5.

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# UNITED STATES PATENT OFFICE.

WALTER COOK WRIGHT, OF PHILADELPHIA, PENNSYLVANIA.

## ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 458,932, dated September 1, 1891.

Application filed November 29, 1889. Serial No. 332,031. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER COOK WRIGHT, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and 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 use the same.

In an application filed by me of even date herewith, Serial No. 331,475, I have shown and described a contact-roller carriage for use in connection with an electric-railway conduit wherein the conducting-trackways are located upon opposite sides of depending aprons forming a continuation of the longitudinal conduit-slot, said conducting-trackways being also secured at the top of the conduit and above the depending aprons, so as to be fully protected against drippings through the conduit-slot. In said application the contact-roller carriage proper is shown as suspended from a vertical plate traveling freely in the conduit-slot.

My present invention relates to certain new and useful improvements in the connections between said depending plate and the body of the electric vehicle to be propelled, the construction and arrangement of parts being such that the contact-rollers are normally held in good electrical contact with the conducting-trackways, while at the same time provision is made for lowering the entire carriage, so as to enable it to pass with safety intersecting trackways at street-crossings and the like, the inertia of the vehicle being relied upon to convey it past the point of intersection.

In the accompanying drawings, illustrative of my invention, Figure 1 represents in plan the place of intersection or crossing of two electric railways embodying my improvements. Fig. 2 represents a central longitudinal section taken through one of the electric-railway conduits at the conduit-slot thereof and illustrates the position of the contact-roller carriage at the point of intersection of the two conduits and also immediately before and immediately after passing said point. Fig. 3 represents in side elevation

and partial section the upper portion of the plate-supporting connections as attached to the bottom of the electric car. Fig. 4 represents in perspective said connections as detached from the car-body, and Fig. 5 represents in side elevation and partial section a fragmentary view of a modification.

Similar numerals of reference indicate similar parts throughout the several figures.

Referring to the drawings, 6 indicates the wheel-tracks, and 7 the conduit-slot, of an electric railway, and 8 indicates the wheel-tracks, and 9 the conduit-slot, of a second electric railway, forming an intersection or crossing therewith, as shown in Figs. 1 and 2. Depending aprons 10 form a continuation within the first-mentioned conduit of the conduit-slot 7, and similar depending aprons, whose lower edge is indicated in Fig. 2 by the dotted line 11, form continuations within the second-mentioned conduit of the conduit-slot 9. The place of intersection of the two conduits forms a space common to both, and the depending aprons of both conduits are interrupted at this space and do not pass across it. In like manner the trackway 12 for the contact-roller carriage 14 is interrupted at this common space. The trackway 13 of the intersecting conduit on the contrary passes completely across said space.

In Fig. 2, 15 indicates an electric car provided with the customary motor actuated by an electric current derived from the conducting-trackway 12 through the contact-roller carriage 14. Said contact-roller carriage 14 is suspended from the bottom of the electric car by the depending plate 16. At its upper end the depending plate is secured by means of the side projections 17 to a support 18. Said support 18 is sustained by the coiled springs 19 upon a base-piece 20, provided with an appropriate aperture for the free passage of the depending plate 16, and the structure formed by the said support and its base-piece is contained within suitable vertical guides 21, formed of angle-iron and having perforated lugs 22 for attachment to the bottom of the car-body 15. Stops 23 24 are provided to limit the vertical movement of the structure within the guides. Lifting-rods 25 are connected at their lower ends to eyebolt 26, connected to the base-piece 20, and at their up-

per ends said lifting-rods are connected to a link 27, which in turn is connected to a bell-crank lever 28, journaled in suitable brackets 29, attached to the car-body. A rod 30 extends from the upper end of the bell-crank lever to a convenient point on the car where it can be readily manipulated by the operator.

In the construction illustrated in Fig. 3 I substitute for the link connection just described a pin and guide connection. The lower arm of the bell-crank lever is appropriately bent to rest beneath the pin 31, and said pin is restricted to a movement of strict vertical progression by means of the guides 32, consisting of a rectangular metallic strap secured to the under surface of the car-body.

The parts of my invention being constructed and arranged as described and shown, the mode of operation will be readily apparent. When the electric car is at rest, the parts are in the adjustment shown in Figs. 3 and 4 of the drawings, the base-piece 20 being in its lowermost position, thereby lowering correspondingly the support 18, and consequently the depending arm 16, carrying the contact-roller carriage 14. The contact-rollers of the carriage 14 will consequently drop below the conducting-trackway 12 and the flow of current to the car-motor will be interrupted. When the car is to be put in motion, the operating-rod 30 is drawn out in the direction indicated by the arrow in Figs. 3 and 4. This motion is transmitted through the bell-crank lever 28 and link 27 to the lifting-rods 25, thereby raising the base-piece 20. The support 18 is also raised through the intermediacy of the springs 19, which act as a cushion to any sudden or abrupt movement of the operating-rod 30. The depending arm 16 is therefore elevated in such manner as to bring the contact-roller carriage with a yielding pressure against the conducting-trackway 12, obviating excessive strains that would tend to loosen said trackway from its supporting-brackets.

It will of course be understood that the device shown in Fig. 5 will be operated in a similar manner, as the only difference between it and the one shown in the remaining figures is in the connection between the bell-crank lever and the lifting-rods.

When the car 15 approaches the crossing or intersection with the other conduit, the operator moves the rod 30 so as to drop the contact-roller carriage in such manner that it will remain below the plane of the conductors 13 while passing the place of intersection. During this brief period the flow of current to the car-motor will of course be interrupted,

but the inertia of the car will be sufficient to carry it past the place of intersection, whereupon the contact-roller carriage will again be raised to the position of contact.

Having thus described my invention, what I claim is—

1. In an electric railway, the combination, with a contact-roller carriage, of an arm for supporting the same, springs for sustaining said arm, and an operating-lever and intermediate connections for raising said springs and with them the arm and contact-roller carriage, substantially as described.

2. In an electric railway, the combination, with a contact-roller carriage, of an arm for supporting the same, springs for sustaining the said arm, an operating-rod and intermediate connections for raising said springs and with them the arm and contact-roller carriage, and guides for insuring the vertical movement of said arm, substantially as described.

3. In an electric railway, the combination, with a spring-supported contact-roller carriage, of an operating-lever and connections for raising said contact-roller carriage through the intermediacy of its spring-support, substantially as described.

4. In an electric railway, the combination, with a spring-supported contact-roller carriage, of an operating-lever and connections for raising said contact-roller carriage through the intermediacy of its spring-support, and guides for insuring the vertical movement of the contact-roller carriage, substantially as described.

5. In an electric railway, the combination, with a contact-roller carriage, of an arm 16 for supporting the same, springs 19 for sustaining the arm, and base-piece 20, upon which said springs rest, an operating-rod 30, and a bell-crank lever 28, and lifting connections between said bell-crank lever and the base-piece 20, substantially as described.

6. In an electric railway, the combination, with a contact-roller carriage, of an arm 16 for supporting the same, springs 19 for sustaining the arm, and base-piece 20, upon which said springs rest, an operating-rod 30, and a bell-crank lever 28, and lifting connections between said bell-crank lever and the base-piece 20, and guides 21 for insuring the vertical movement of the base-piece 20 and arm 16, substantially as described.

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

WALTER COOK WRIGHT.

Witnesses:

J. WALTER ZEBLEY,  
JOHN C. PENNIE.