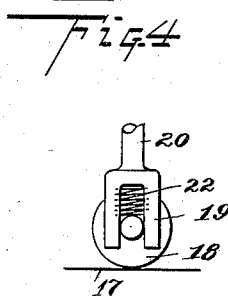
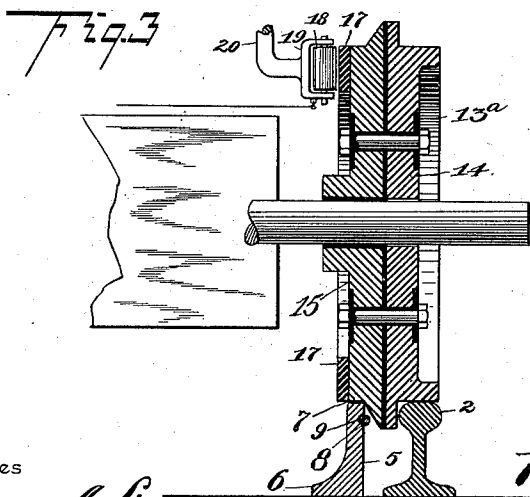
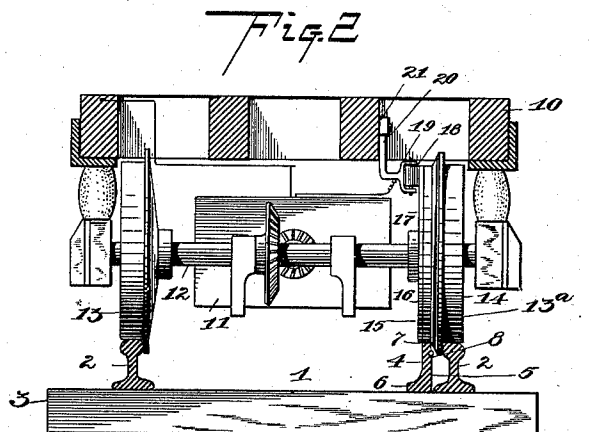
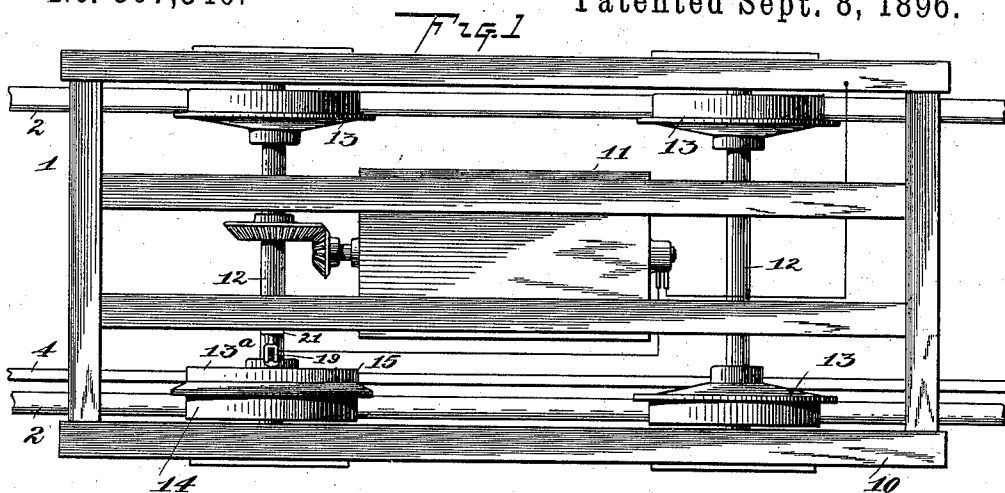


(No Model.)

W. F. GRASSLER.
ELECTRIC RAILWAY.

No. 567,540.

Patented Sept. 8, 1896.



Witnesses

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D. P. Haupt.

Inventor

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By his Attorneys,

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UNITED STATES PATENT OFFICE.

WILLIAM F. GRASSLER, OF WILLIAMSPORT, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO R. A. HOFFNAGLE AND JOHN L. GUNTER, OF SAME PLACE.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 567,540, dated September 8, 1896.

Application filed May 8, 1896. Serial No. 590,761. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. GRASSLER, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Electric Railway, of which the following is a specification.

This invention relates to electric railways; and it has for its object to effect certain new and useful improvements in electric-railway systems, whereby an ordinary surface-track system can be readily converted into an electric system at a small expense.

To this end the main and primary object of the present invention is to provide simple and practicable means for feeding the electric current to a motor-car in connection with a surface track, thereby obviating the use of the objectionable and dangerous overhead trolley and also the expensive subway or conduit system.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a plan view of a surface track and motor-car truck equipped with the improvements contemplated by this invention. Fig. 2 is a transverse sectional view thereof. Fig. 3 is an enlarged detail sectional view illustrating more clearly the third conductor-rail and the connections therewith for feeding the current to the motor of the car. Fig. 4 is a detail elevation of the truck trolley-wheel.

Referring to the accompanying drawings, the numeral 1 designates an ordinary surface track comprising the usual track-rails 2, mounted on the cross-ties 3. The surface track 1 may be of any desired character, whether for street-railway use or otherwise, but in the present invention the track is designed to have used in connection therewith a third conductor-rail 4. The third conductor-rail 4 is adapted to be mounted on the cross-ties of the track at the inner side of and directly adjacent to one of the track-rails, and in thus arranging the third conductor-rail in

position no modification whatever of the surface track is required. The said third conductor-rail 4 is preferably provided with a flat inner side 5, so that it can be arranged in close proximity to the adjacent track-rail 2, but at the side opposite the flat inner side 5 the said third rail is provided with an ordinary base-flange 6, whereby the same can be firmly secured in place on the cross-ties of the track. The rail 4 is further provided in its flat side, near the tread 7 thereof, with a wire-groove 8, in which is suitably secured a feed-wire 9, leading from the source of electrical energy and having metallic contact with the third rail, so as to provide for feeding the electricity thereto for distribution to the motor carried by the motor-car truck 10.

The motor-car truck 10 is of any approved construction and carries an ordinary electric motor 11, suitably geared with the wheel-axes 12 of the truck. The wheel-axes 12 of the truck carry the usual car-wheels 13, arranged to travel over the rails 2 of the track, but in the present invention one of said car-wheels, designated by the numeral 13^a, acts in the capacity of a trolley-wheel for collecting the current from the third rail of the system and is insulated from its axle. The truck trolley-wheel 13^a is preferably made in two parts 14 and 15, respectively, the part 14 being of the ordinary shape of a car-wheel and arranged to travel on one of the rails 2 of the track in the usual way. The main part 14 of the truck trolley-wheel 13^a is preferably made of pressed paper or otherwise suitably insulated from the part 15 and its axle, so as not to have electrical connection with the track-rail on which it travels, but the part 15 of the wheel 13^a, which is an inner metallic tread for the said wheel, is bolted or otherwise suitably secured to the main insulator part 14 of the wheel.

The inner metallic supplemental tread portion 15 of the truck trolley-wheel 13^a travels directly on the tread 7 of the third rail 4, and is provided with a flat inner side 16, on which is secured a contact-ring 17, against which contact-ring bears a metallic collecting-spool 18, which freely rotates when the wheel 13^a is in motion. The metallic collecting-spool

18 is journaled in a suitable bearing 19 at one end of a supporting-arm 20, connected with a hanger 21, suspended from the car-truck 10, and having an adjusting-spring 22
 5 connected therewith to provide for holding the spool 18 in firm facial contact with the ring 17 of the wheel 13^a. The said collecting-spool 18 has suitable wire connections with the electric motor 11 of the car-truck to pro-
 10 vide for feeding the current through the motor from the third rail and the trolley-wheel traveling thereon.

The construction herein described is exceedingly simple and is readily adapted to
 15 any surface road and to any electric-motor car without material modification thereof or much expense, and it will be understood that changes in the form, proportion, and the minor details of construction may be resorted
 20 to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

25 1. In an electric railway, the combination with a surface track; of a third conductor-rail arranged adjacent to and at one side of one of the track-rails, a motor-car truck hav-
 30 ing one of its wheels provided with separate

treads insulated from each other and respectively traveling on one of the track-rails and said third rail, and a collecting device for the motor of the car-truck, substantially as set forth.

35 2. In an electric railway, the combination with a surface track; of a third conductor-rail arranged adjacent to and at one side of one of the track-rails and provided with a flat side having therein a longitudinal wire-
 40 groove, a feed-wire secured in said wire-groove, a motor-car truck having one of its wheels provided with separate treads insulated from each other and respectively traveling on said third rail and adjacent track-
 45 rail, a contact-ring secured on the inner side of the wheel-tread traveling on the third rail, a spring-adjusted supporting-arm suspended from the car-truck and carrying a collecting-spool bearing against said contact-ring, and
 50 suitable wire connections between the motor of the car-truck and said collecting-spool, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
 55 the presence of two witnesses.

WILLIAM F. GRASSLER.

Witnesses:

JOHN H. SIGGERS,
 THEODORE DALTON.