

No. 629,435.

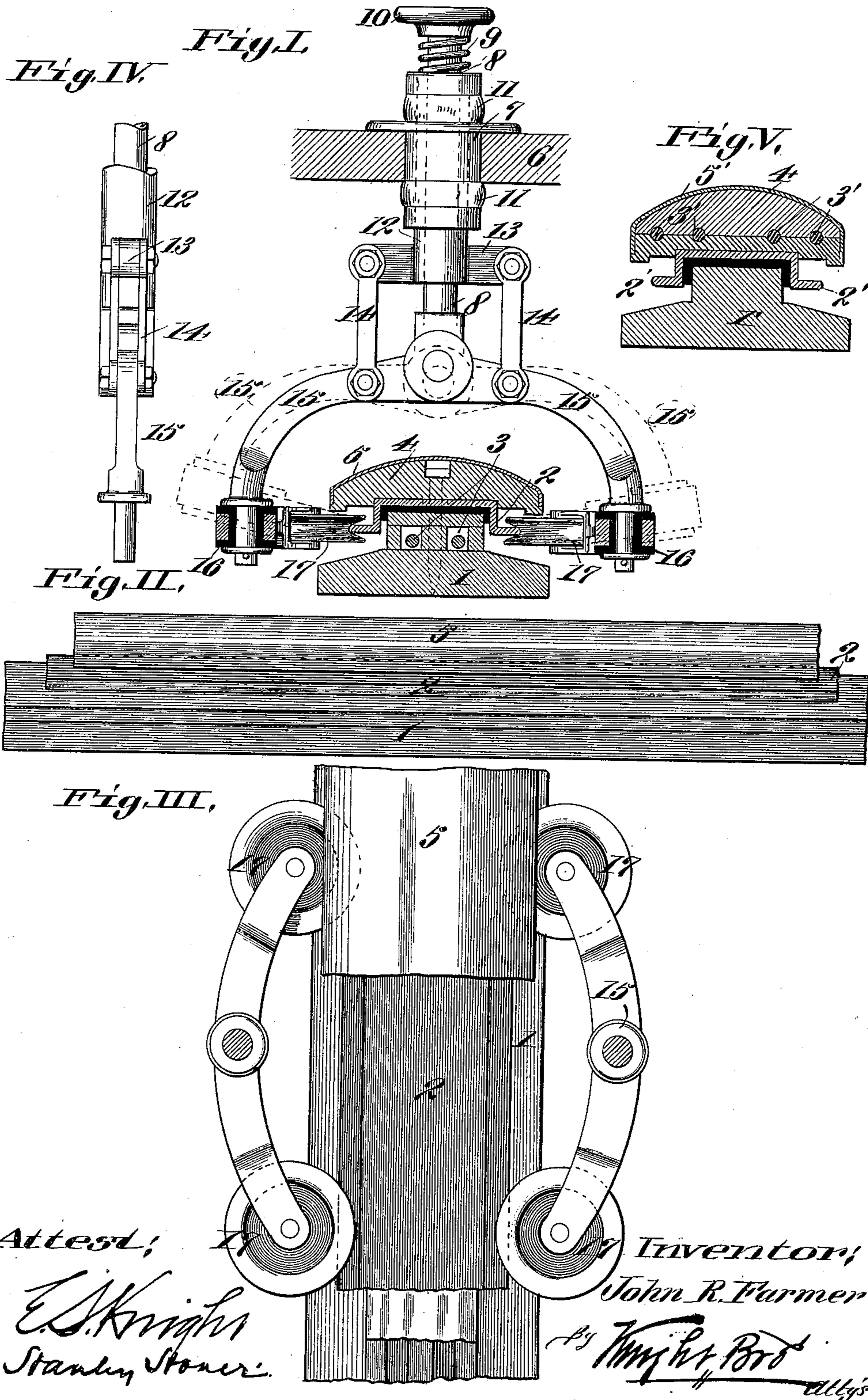
Patented July 25, 1899.

J. R. FARMER.

THIRD RAIL ELECTRIC RAILWAY SYSTEM.

(Application filed Dec. 22, 1897.)

(No Model.)



Attest;

E. J. Knight  
Stanley Stoner.

Inventor;

John R. Farmer

By *Wright & Bro*  
attys

# UNITED STATES PATENT OFFICE.

JOHN R. FARMER, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE MISSISSIPPI VALLEY ELECTRICAL AND MANUFACTURING COMPANY, OF SAME PLACE.

## THIRD-RAIL ELECTRIC-RAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 629,435, dated July 25, 1899.

Application filed December 22, 1897. Serial No. 663,047. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN R. FARMER, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Third-Rail Electric-Railway Systems, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a form of rail and construction of trolley for use upon what is known as the "third-rail" system of electric railways. The rail is designed to be placed between the track-rails to conduct a current of electricity from a main feed-wire through the said third rail and trolley to the car-motors, the said trolley bearing against the said third rail.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claim.

Referring to the drawings forming part of this specification, Figure I shows a transverse section of the third rail and an end view of the trolley-wheel and its supporting mechanism, the same being hung from the car-platform, which is shown in section. Fig. II is a side view of a portion of the third rail. Fig. III is a top view of a portion of the third rail, the same being partly broken away, showing also the trolleys which act as contacts for the conducting of electric currents. Fig. IV is an end view of the trolley-support, looking at the side of Fig. I. Fig. V is a detail vertical section of the third rail, showing a modified means of inserting the feed-wires.

1 represents a supporting-strip laid upon the ties between a railway-track and which carries upon it the third rail 2. This is insulated from the supporting-rail 1 by the insulation shown in the heavy black line and is preferably in the shape of an inverted U, as shown. In my preferred form, Fig. I, I have shown the supporting-rail as containing recesses in which are laid the main feed-wires 3. In the modified construction these feed-wires are laid above the third rail. Above the third rail 2 is placed a continuous strip 4, which is protected by a continuous plate or armor 5 and which projects over and protects the extending edges of the third rail 2.

6 is the car bottom or platform, in which is supported a sleeve 7, which has an opening therethrough. A bar 8, adapted to pass through the said opening, is kept raised by means of a spring 9, bearing against a pressure-plate 10. Cushions 11 are placed both above and below the platform 6.

12 is a sleeve through which the bar 8 plays.

13 are extensions from the sleeve 12, whose ends pivotally support the links 14. Pivoted to the bar 8 are two arms 15, which extend down to and on a line with the edge of the third rail 2. These arms 15 are pivoted to the ends of the links 14, and pressure on 8 produces a toggle action thereon. Extending inward from these arms 15 and insulated therefrom by means of the insulation 16 are trolley-wheels 17. These trolley-wheels, when the device is in its normal position, as shown in Figs. I and III, are adapted to come in contact with and convey an electric current through their carrying-arms and on into the car-motor by means of any suitable conductor. The arms 15 are divided, so as to have a double end carrying a pair of trolley-wheels, as shown in Fig. III, the advantage therein being that when the car is passing a crossing or broken portion of the rails one or the other of the trolley-wheels 17 will always be in contact with the third rail, and thus capable of supplying a current of electricity to the car-motor.

It is of especial importance that the rail be of an inverted-U shape with projecting edges.

The insulation between rails 1 and 2 is wide enough to form a space between the said two rails sufficient to prevent snow or rain getting between the same.

What I claim, and desire to secure by Letters Patent of the United States, is—

The combination consisting of a supporting-rail 1, a third rail supported thereon and shaped like an inverted U, insulation between the same and forming an air-space between the bottom of the said third rail and said supporting-rail, substantially as described.

JOHN R. FARMER.

In presence of—

N. V. ALEXANDER,  
STANLEY STONER.