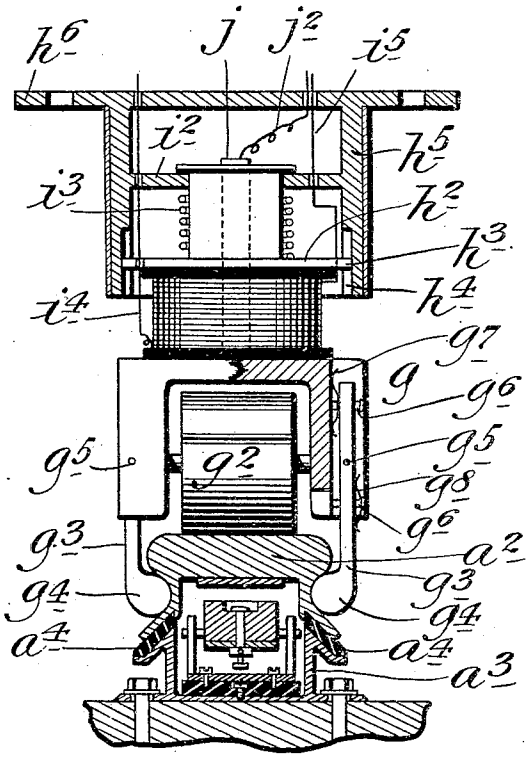
C. KOZESNIK.

THIRD RAIL ELECTRIC RAILWAY SYSTEM.

APPLICATION FILED APR. 18, 1908.

941,151. Patented Nov. 23, 1909.



WITNESSES

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THIRD-RAIL ELECTRIC-RAILWAY SYSTEM.

941,151. Specification of Letters Patent. Patented Nov. 23, 1909.

Original application filed October 30, 1906, Serial No. 341,251. Divided and this application filed April 18, 1908. Serial No. 427,789.

To all whom it may concern:

Be it known that I, CHARLES KOZESNIK, a citizen of the United States, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Third-Rail Electric-Railway Systems, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to third rail electric railway systems and particularly to the third rail of systems of this class and to the device or devices carried by the motor or motor car for making electrical connection with said rail; and the object of the invention is to provide a third rail and means for making electrical connection with the sides thereof, the third rail being of novel form in cross section, whereby the sides thereof are protected and kept free from sleet, snow or ice; and with this and other objects in view the invention consists in the improvements in third rail electric railway systems hereinafter described and claimed.

This application is a division of a prior application filed by me October 30, 1906, Serial No. 341,251 on which United States Letters Patent No. 888,099, dated May 19, 1908 were granted, and the invention which constitutes the subject matter of this application is fully disclosed in the following specification, of which the drawing forms a part, said drawing being a transverse section of the third rail of an electric railway system, made according to my invention and showing also my improved devices for making an electrical connection therewith part of said devices being in section.

In the drawing forming part of this specification, I have shown at a a third rail for electric railway systems, which is composed of top and bottom members a^2 and a^3 connected and insulated at a^4 and forming a hollow box-shaped rail, and in said application the rail is described as composed of separate sections which are in circuit only when the contact shoes or devices of the cars or motors are bearing thereon.

In the practice of my invention, I provide the top or contact part of the third rail with overhanging side flanges a^5 which extend the length of the third rail and which protect the sides of the body portion of the rail, with which electrical connection is made as hereinafter described, from sleet, snow or ice under all conditions.

The contact shoes or devices connected with the car motor and which operate in connection with the third rail are shown at g, and these shoes or devices are supported in a vertical position, and each comprises a yoke-shaped member preferably provided with a roller g^2 which bears on the top surface of the third rail. Each of these yoke-shaped members is also provided at the opposite sides thereof with supplemental contact devices g^3 consisting of vertically arranged arms pivoted in corresponding vertically arranged recesses in the opposite side portions of said shoes or devices g and adapted to swing laterally, said arms being provided at their lower ends with contact heads g^4 adapted to bear on the opposite sides of the rail and beneath the overhanging side flanges a^5 thereof. The arms g^3 are pivoted at g^5 and passing through each of said arms above and below its pivotal support is a headed pin or bolt g^6, and spring g^7 are employed to force the upper ends of said arms outwardly, and corresponding springs g^8 are employed to force the lower ends of said arms inwardly, and it will thus be seen that the arms g^3 are adapted to swing laterally and that the bearing or contact heads g^4 thereof will always be in contact with the opposite side portions of the third rail, and said opposite side portions of the third rail are protected, as hereinbefore described, and at all times, from sleet, snow or ice by the overhanging side flanges a^5, and by reason of the construction herein described perfect electrical connection may always be made with the opposite side portions of the rail.

Connected with each contact shoe or device g is an electro-magnet h provided with a top plate h^2 having side lugs or projections h^3 vertically movable in slots h^4 formed in a depending casing h^5 connected, in practice, with a top plate h^6 which may be secured to the car or motor in the usual or any preferred manner, and the top plate h^2 of the electro-magnet h is provided with a vertically arranged member i which passes through a transversely arranged guide i^2 in the casing h^5 and around which is placed a spiral wire i^3 which serves to hold the contact shoe or device g in a depressed position while permitting of its vertical movement.

Each of the contact shoes or devices g of

each car or motor is also provided with a stem j which extends up through the corresponding electro-magnet h and with which is connected a motor wire j^2, and the electro-magnets of the contact shoes or devices g of each car are placed in connection by means of wires i^4, and the electro-magnets h of each car or motor are also provided with a wire i^5, and these wires form part of the general wiring system of the car or motor and the third rail. My invention, however, is not limited to any particular system of wiring, nor to the use of the roller contact device g^2, but said contact device may be employed if desired.

The construction within the third rail is not described herein as it forms no part of this invention, but said construction is fully described in the application for a patent hereinbefore referred to.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent:—

1. In an electric railway system, a contact shoe comprising a frame, an electro-magnet movably mounted in said frame, a yoke associated with said electro-magnet, a roller mounted in said yoke and adapted to bear against the surface of a rail, arms pivotally connected to said yoke and adapted at their free ends to contact with the sides of the rail, and means for maintaining the said free ends of the said arms in contact with the sides of the rail.

2. In an electric railway system, a contact shoe comprising a frame, an electro-magnet movably mounted in said frame, means for exerting a pressure on said electro-magnet, tending to move the same away from the said frame, a yoke associated with said electro-magnet, a roller mounted in said yoke and adapted to bear against the surface of a rail, arms pivotally connected to said yoke and adapted at their free ends to contact with the sides of the rail, and means for maintaining the said free ends of the said arms in contact with the sides of the rail.

3. In an electric railway system, a contact shoe comprising a frame, an electro-magnet, a plate to which the said magnet is secured, said plate being movable within the said frame, a spring for exerting pressure on said plate and magnet, tending to move the same away from the said frame, a yoke connected to the said magnet, a roller mounted in the said yoke adapted to bear against the surface of a rail, arms pivotally mounted in the said yoke and adapted at their free ends to contact with the sides of the rail, and means for maintaining the said free ends of the said arms in contact with the sides of the rail.

4. In an electric railway system, a contact shoe comprising a frame, an electro-magnet, a plate to which the said magnet is secured, said plate being movable within the said frame, a spring for exerting pressure on said plate and magnet, tending to move the same away from the said frame, a yoke connected to the said magnet, a roller mounted in the said yoke adapted to bear against the surface of a rail, arms pivotally connected to the said yoke, contact heads connected with the said arms at one end thereof and adapted to contact with the sides of a rail, and springs associated with the other ends of the said arms and adapted to move the said arms so as to maintain the said contact heads thereof in contact with the sides of the rail.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 17th day of April 1908.

CHARLES KOZESNIK.

Witnesses:
M. E. Doody,
C. E. Mulreany.