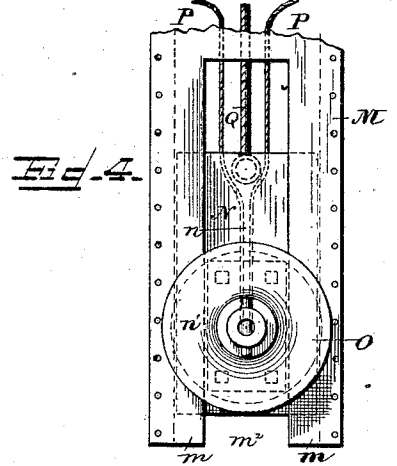
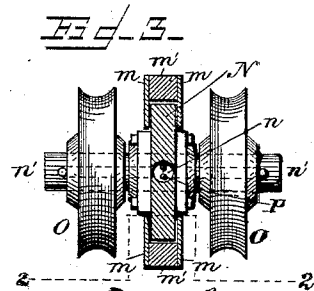
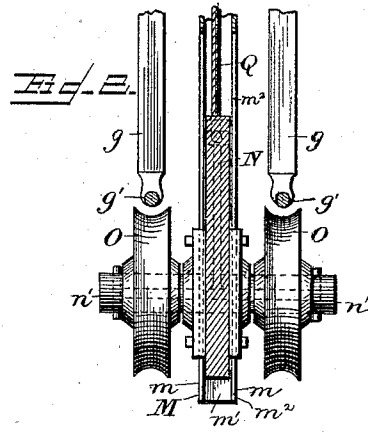
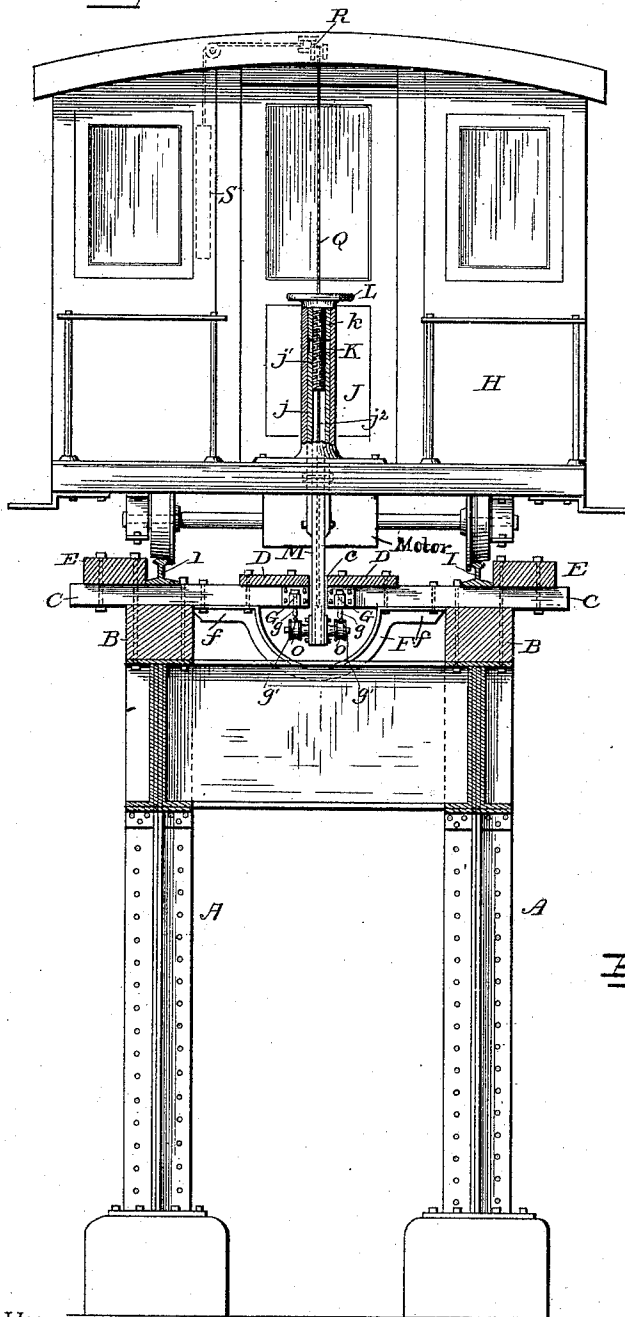


(No Model.)

C. H. BAKER.
ELECTRIC RAILWAY.

No. 474,355.

Patented May 10, 1892.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES H. BAKER, OF LAKE GENEVA, WISCONSIN.

ELECTRIC RAILWAY.

SPECIFICATION forming part of Letters Patent No. 474,355, dated May 10, 1892.

Application filed October 30, 1891. Serial No. 410,370. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. BAKER, a citizen of the United States, residing at Lake Geneva, in the county of Walworth and State of Wisconsin, have invented a new and useful Electric Railway, of which the following is a specification.

This invention relates to electric railways, and to that class more especially known as "conduit systems;" and it has for its object to provide an electric railway somewhat in the nature of an improvement upon an application filed by me September 1, 1891, Serial No. 404,423, for a conduit-system electric railway, and particularly to provide a railway constructed on the electric-conduit plan, which provides means whereby the contact devices are greatly simplified and rendered more efficient, and in connection with elevated railways.

With these and other objects in view the invention consists in an elevated railway constructed in the novel manner hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a vertical transverse section of an elevated electric railway and motor-car thereon constructed in accordance with my invention. Fig. 2 is an enlarged detail sectional view of the lower portion of the sheave-bar and plow located therein on the line 2 2 of Fig. 3. Fig. 3 is a detail transverse section of the same. Fig. 4 is a side elevation of the lower portion of said bar and plow.

Referring to the accompanying drawings, A represents vertical supports or uprights suitably braced by longitudinal and transverse braces and supporting upon their upper ends the parallel longitudinal stringers B, upon which the various parts of the railway are secured and which form a bed and support therefor, as is employed in the construction of steam elevated railways. Secured transversely to the stringers and at regular intervals are the half-ties C, rigidly bolted upon the top of the elevated support and terminating short of each other between the stringers, in order to form a slot c, upon either side of which and upon the ends of the opposite ties

are secured the parallel planks or guard-facings D, forming a continuous slot through which the devices upon the electric motor project, in order to make connection with the contact devices beneath the inner ends of the ties. In an elevated road it is not necessary to have the entire surface of the conduit completely closed, as in surface roads; but the same may be left entirely uncovered, and with this in view the planks or guard-facings D, extending longitudinally of the entire road to form the slot, are sufficiently wide, so as to form protectors for the conductors arranged directly beneath to protect the same from moisture, &c.

Upon the outer ends of the ties are secured the longitudinal guard-blocks E, while secured to the under sides between the parallel stringers are the semicircular braces and arches F, which, while securely holding the ends of the ties apart and in rigid position, also form a conduit, within which are located the electrical conductors. The semicircular arches F are provided at each end with the outwardly-extending flat securing arms or flanges f, which are parallel with the half-ties C and are securely bolted to the same, so as to firmly brace the inner ends of said ties and hold them in position, and also provide means whereby the said arches forming the conduit can be readily replaced, if found necessary.

Secured to the inner ends of each tie at suitable intervals within the conduit are the brackets G, within which are located the sliding hangers g, to the lower ends of which are secured the longitudinal conductors g', on either side of the slots and within the space inclosed by the under arches, this construction being fully set forth in my previous application, serially numbered 404,423.

An ordinary electric motor-car H, provided with the usual driving machinery, is designed to travel upon the rails I, secured upon the cross-ties directly above the longitudinal stringers.

Upon the front end of the car is located a tubular upright J, within which is located a sliding block j, having an upper interiorly-

screw-threaded end j' and the longitudinal perforation j^2 , said threaded end of the sliding block being designed to be engaged by the threaded shank K, operated by the hand-wheel L, working in the top of said tubular upright, and by means of which said sliding block is rendered vertically adjustable, said exteriorly-threaded shank K being also provided with a longitudinal perforation k , which is always in direct line with the longitudinal perforation of said sliding block. Suitably secured by means of bolts or other connecting means to the lower end of said sliding block is the hollow sheave-bar M, comprising opposite parallel plates m , spaced apart by the end blocks m' , to which said plates are secured to form a hollow bar for the purposes which will be apparent, said sheave-bar being provided, further, with the longitudinally-disposed slots m^2 , formed in the lower ends of each of the parallel plates m to accommodate the sliding block or plow N, working in the lower end of said sheave-bar, which is adjusted vertically by means of said sliding block J. The sliding plow or block N is provided with a central perforation n , communicating with the hollow spindles n' , projecting opposite to each other from the lower end of said plow or block and carrying the contact-wheels O, which are held in contact with the conducting-wires g' . Wires P, in connection with said contact-wheels, pass through the perforation in said sliding plow and up through the sheave-bar and therefrom to the motor actuating the car, while a counterbalancing and supporting rope Q is secured to the upper end of said plow, the spindles of which travel in the opposite slots in the lower end of said sheave-bar and passes up through said sheave-bar and through the registering openings or perforations of the sliding block and the screw-threaded shank K to the top of the car. The rope then passes over suitable pulleys R, secured in the frame of the car, and is provided at its end with a weight S, working in the casing of the frame of the car and normally drawing the plow up within the sheave-bar traveling in the slot of the railway, and thus always holding the contact-wheels gently in contact with the conducting-wires, while the sheave-bar within which said plow works may be independently adjusted therefrom, thus providing means whereby the contact of the devices carried by the car with the electrical conductors of the conduit may either be controlled by means of the hand-wheel or by simply pulling on said balancing-rope.

It will of course be readily observed that the supporting-rope Q, carrying the sliding contact plow or block, is designed to be used for the temporary disconnection of the trolleys from the conductors to start and stop the car along the route for taking on and letting off passengers, thus allowing the trolleys to be easily lowered from the conductors and

brought again in contact with the same, as desired by the operator; but at certain places, as when the cars are at the stables or terminals of the route, it is not convenient for an operator to be continually standing upon the car and pulling down on the rope Q to lower the trolleys and disconnect the same from the conductors, and therefore by operating the screw-rod the sheave-bar may be screwed down sufficiently far to hold the trolleys below and out of contact with the conductors until it is again desired to carry the car along its route and operate the same by the rope Q. It will of course be seen that by means of the screw-rod the sheave-bar M may be lowered until the top of the slots m^2 come in contact with the plow, and thus carry the same downward and out of contact with the conductors.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an electric railway, the combination, with the vertical supports and the parallel longitudinal stringers secured thereon, of the rail-supporting half-ties secured transversely to said stringers and terminating short of each other between the same, longitudinal planks or guard-facings secured upon the inner ends of said half-ties and forming a continuous slot, and protectors for the conductors directly therebeneath in the open conduit of the elevated road, semicircular arches or braces having outwardly-extending securing arms or flanges at each end secured to the under side and near the inner ends of each half-tie and spanning said slot to form a conduit, and electrical conductors supported from the inner ends of said ties within the conduit, substantially as set forth.

2. In an electric railway, the combination, with a conduit and electrical conductors supported upon each side of the communicating slot, of the motor-car provided with a hollow tubular upright, a hollow sheave-bar depending from said upright, a sliding plow working in the lower end of said bar and provided with contact devices, and a counterbalancing connection secured to said plow and passing through said hollow upright and into the car-casing, substantially as set forth.

3. In an electric railway, the combination, with a conduit and electrical conductors supported upon each side of the communicating slot, of the motor-car provided with a hollow tubular upright, a hollow sliding block having an interiorly-threaded hollow end and located within said upright, a hollow exteriorly-threaded shank engaging the upper end of said sliding bar and provided with a hand-wheel, a hollow sheave-bar depending from said vertically-adjustable sliding block and provided with slots at its lower end, a sliding plow working in the lower end of said bar and provided with oppositely-disposed contact devices working in said slots, a coun-

terbalancing-rope secured to said plow and
passing through the sheave-bar, hollow block,
and threaded shank and over suitable pul-
leys in the car, and a weight secured to the
5 end of said rope within the car-casing, sub-
stantially as set forth.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in
the presence of two witnesses.

CHARLES H. BAKER.

Witnesses:

CHAS. S. FRENCH,

CHAS. O. LASALLE.