

F. G. CLARK.  
CURRENT DISTRIBUTING AND COLLECTING MECHANISM FOR ELECTRIC RAILWAYS.  
APPLICATION FILED OCT. 7, 1908.

964,953.

Patented July 19, 1910.

2 SHEETS—SHEET 1.

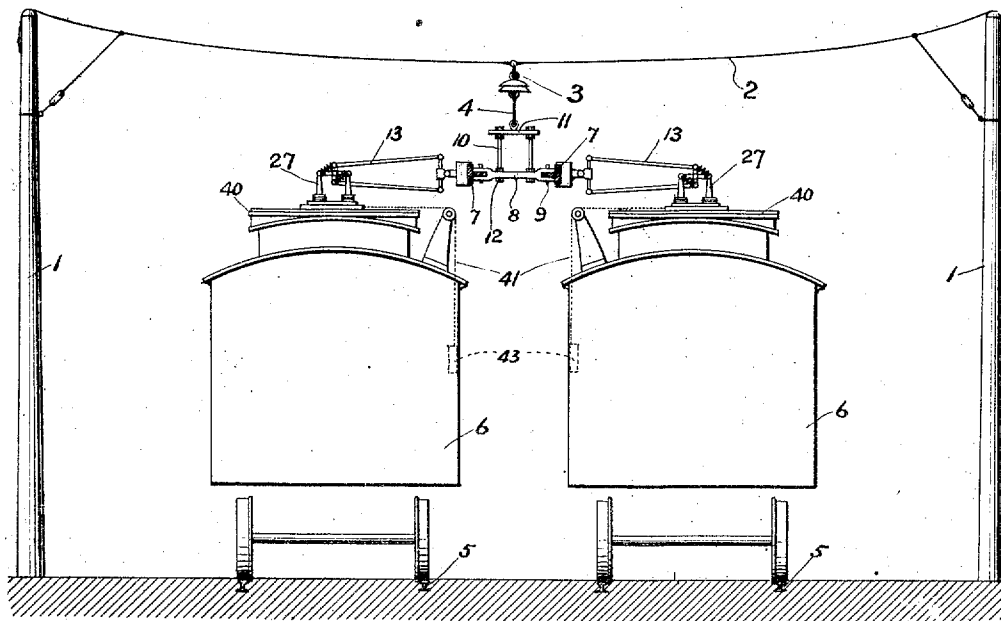


FIG. 1.

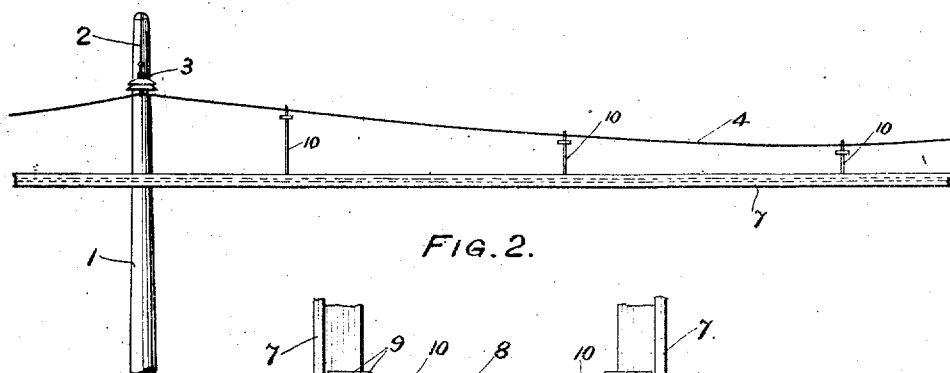


FIG. 2.

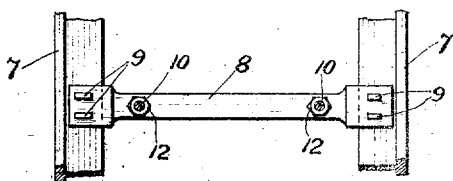


FIG. 3.

WITNESSES:

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INVENTOR

*Farley G. Clark*

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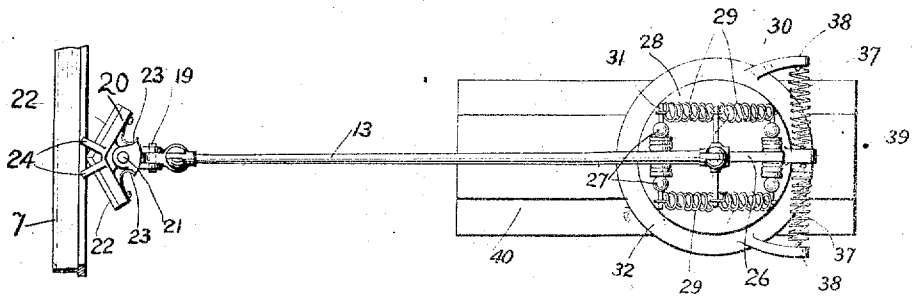


FIG. 4.

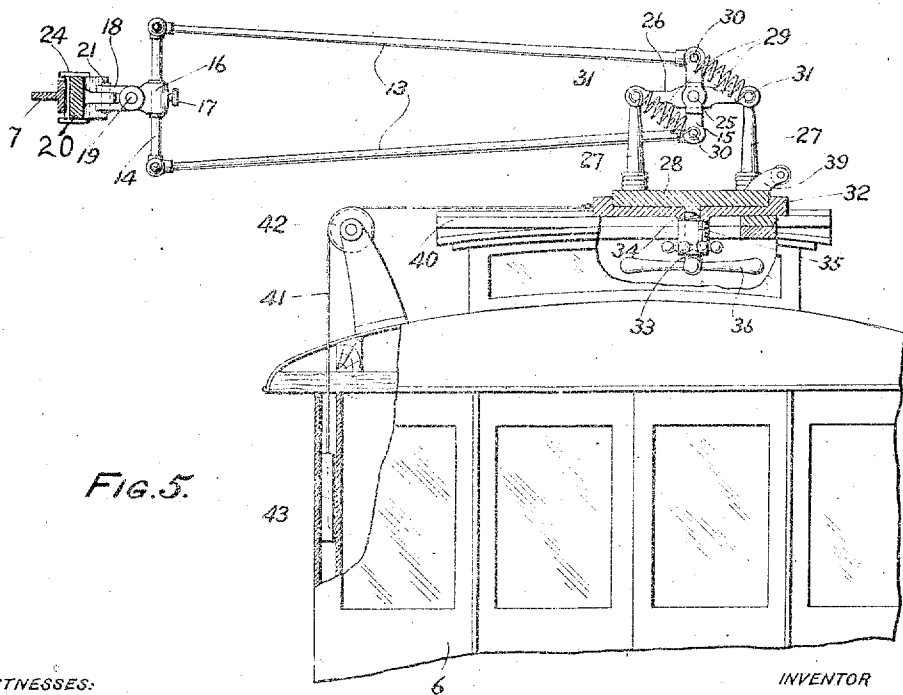


FIG. 5.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

FARLEY G. CLARK, OF NEW YORK, N. Y.

CURRENT DISTRIBUTING AND COLLECTING MECHANISM FOR ELECTRIC RAILWAYS.

964,953.

Specification of Letters Patent. Patented July 19, 1910.

Application filed October 7, 1908. Serial No. 456,574.

*To all whom it may concern:*

Be it known that T. FARLEY G. CLARK, a citizen of the United States, and resident of the city of New York, county of New York, and State of New York, have invented certain Improvements in Current Distributing and Collecting Mechanism for Electric Railways.

This invention comprehends distributing and collecting mechanism, designed particularly for side contact, wherein there is preferably provided a catenary support for a pair of connected rails having means for adjusting them vertically and horizontally, in combination with a trolley having an adjustable two faced shoe supported by a universal joint which is carried by an arm connected with a car by means permitting such arm to rock vertically and laterally and reciprocate longitudinally.

The characteristic features of the improvements are fully disclosed in the accompanying drawings and the following description.

In the drawings, Figure 1 is a sectional elevation taken transversely to the distribution mechanism illustrating the improvements in operation; Fig. 2 is a side elevation of the distribution mechanism; Fig. 3 is a plan view of a section of the connected rails used in the distribution system; Fig. 4 is a plan view of the trolley in contact with a rail; and Fig. 5 is a sectional side view of the trolley in connection with a car and rail.

In the application of the improvements, as represented in the drawings, there are employed the usual posts 1 which carry span wires 2 having the insulating hangers 3 depending therefrom and supporting the catenary conductor 4 midway between the centers of the tracks 5 and the cars 6 thereon.

Current conducting T-rails 7, having their flanges disposed substantially vertically with their webs turned toward each other, are connected together in parallel relation by conducting cross-bars 8 having bifurcated ends which receive the rail webs, keys 9 passing through the bifurcated bar ends and the rail webs to fix them together. Conducting rods 10 connect the cross bars 8 with conducting cross bars 11 which are fixed to and electrically connected with the catenary conductor 4, nuts 12 being threaded on the rods 10 to adjust the distance between the bars 8 and 11, whereby the elevation of the rails 7 is regulated.

The trolley comprises the arms 13 connected at their respective ends by the cross bars 14 and 15, forming a trapezoidal frame vertically supported with relation to the car and extending laterally therefrom.

The cross bar 14, which is normally held in a substantially vertical position, has sleeved thereon an adjustable collar 16 held in the desired position by a set screw 17. A knuckle 18 is pivotally connected to the collar 16 by a pin 19 disposed transversely to the bar 14 and a shoe 20 is pivotally connected to the knuckle by a pin 21 disposed transversely to the pin 19. The shoe has the contact plates 22, angularly disposed with relation to each other and normally held at the same angle with reference to the plane of the arms 13 by springs 23, which are engaged with the extremities of the shoe and bear upon the knuckle 18. Prongs 24, extending outwardly from the shoe above and below each plate, form forks for engaging a rail 7 and holding the shoe in the horizontal plane thereof. The character of the connection of the shoe with the frame, by an adjustable universal joint, provides for the ready accommodation of the contacts to proper engagement with the rails.

The cross bar 15 is connected by an arbor 25 in rocking engagement with a cross piece 26 which is carried by posts 27 mounted on a circular base 28. Springs 29 connect projections 30 at the extremities of the bar 15 with projections 31 carried by the posts 27 so that the trolley frame is supported normally in a substantially horizontal position and flexibly so that it can oscillate in a vertical plane.

The base 28 is supported revolubly on a carriage 32, a journal 33 which is fixed to the base passing through the bearing 34 of the carriage and a nut 35 on the journal engaging the bearing. A handle 36 on the journal within the car provides for manually turning the turret, comprising the parts 26, 27 and 28. Springs 37, disposed between the bearings 38 on the carriage and the bearing 39 on the base, act to limit the movement and restore the turret to the normal position with the trolley frame extending at right angles to the length of the car.

The carriage 32 is adapted to reciprocate in ways 40 extending transversely of the car by which they are carried and a cord or like tension member 41 passing over a pulley 42 has connected therewith a weight

43 which tends to move the carriage toward the conducting bar and hold the shoe in contact therewith.

The trolley, thus constructed and connected, is adapted to be moved, automatically or manually, so as to trail, in either direction of movement of the car, with the corresponding contact plate held in close side contact with the face of the distributing rail, by reason of the rocking connection of the shoe, the ability of the turret to move through a limited arc and against resistance and the carriage to reciprocate subject to the force acting to move it toward the rail, while the forks on the shoe and the adaptability of the latter to move vertically secures proper tracking alinement of the contact plates.

Having described my invention, I claim:

1. In mechanism of the character described, the combination with a car, of trolley mechanism adapted to rock on transverse axes, said mechanism comprising a reversible shoe supported by a pivotal joint.

2. In mechanism of the character described, the combination with a conducting rail, of a trolley adapted to rock on transverse axes, said trolley having springs for controlling its movements with relation to said axes and collecting means adapted to turn in transverse directions and movable in contact with said rail.

3. In mechanism of the character described, the combination with a car, of a distributing conductor disposed laterally with relation to said car; and collecting means comprising a support carried by said car and adapted to turn about an axis, an arm carried by said support and adapted to turn about an axis transverse to said axis first named, and a reversible contact device carried by and adapted to turn relatively to said arm.

4. In mechanism of the character described, the combination with a conducting rail having a side contact surface, of a car, a trolley arm extending laterally therefrom, means whereby said arm is adapted to swing horizontally and vertically, and a shoe having several contact parts and a movable connection with said arm, said parts being adapted for engaging said rail.

5. In mechanism of the character described, the combination with a car having a transverse way, of a carriage adapted to reciprocate along said way, a turret supported by said carriage and adapted to turn

thereon, an arm carried by said turret and adapted to turn thereon, a contact piece, and means connecting said contact piece with said arm, whereby said contact piece is movable horizontally and vertically relatively to said arm.

6. In mechanism of the character described, the combination of a car, with a carriage adapted to reciprocate transversely relatively thereto, a turret carried by and adapted to turn on said carriage, means for limiting the turning movement of said turret, an arm carried by and adapted to turn on said turret, means for limiting the turning movements of said arm, and a contact member connected with said arm.

7. In mechanism of the character described, the combination with a car having a way, of a carriage adapted to move along said way, supported by said carriage, a trolley movable on a vertical axis and means within said car for turning said trolley about said axis.

8. In mechanism of the character described, a trolley having an arm, a shoe having a fork adapted to engage a conductor and contact surfaces disposed angularly with respect to each other, and a joint connecting said shoe with said arm and permitting said contact surfaces to rock upon an axis parallel thereto.

9. In mechanism of the character described, a trolley having an arm, a shoe having contact surfaces disposed angularly with relation to each other, and a universal joint connecting said shoe and arm, said joint having a vertically movable connection with said arm.

10. In mechanism of the character described, the combination with a car, of a carriage adapted to reciprocate transversely relatively to said car, means for moving said carriage transversely to said car, a turret adapted to oscillate on said carriage, a spring or springs connected with said carriage and turret to control the movements of the latter, a frame adapted to oscillate on said turret, and a spring or springs connected with said turret and frame to control the movements of the latter.

In witness whereof I have hereunto set my name this 5th day of October A. D. 1908, in the presence of the subscribing witnesses.

FARLEY G. CLARK.

Witnesses:

JOHN THIEL,

CHARLES N. BUTLER.