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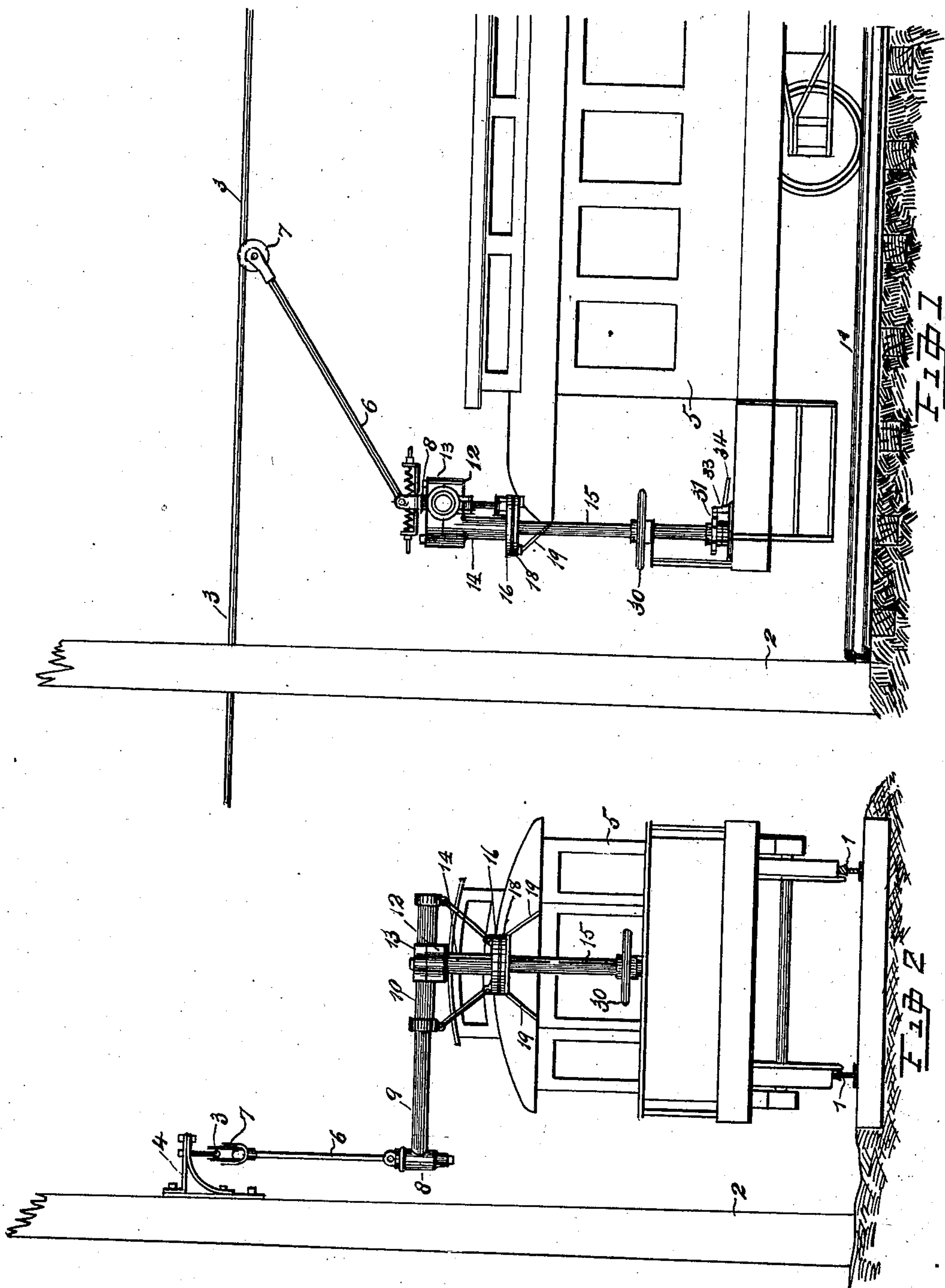
Patented Apr. 22, 1902.

T. E. STUCKY.
ADJUSTABLE TROLLEY SUPPORTER.

(Application filed Aug. 31, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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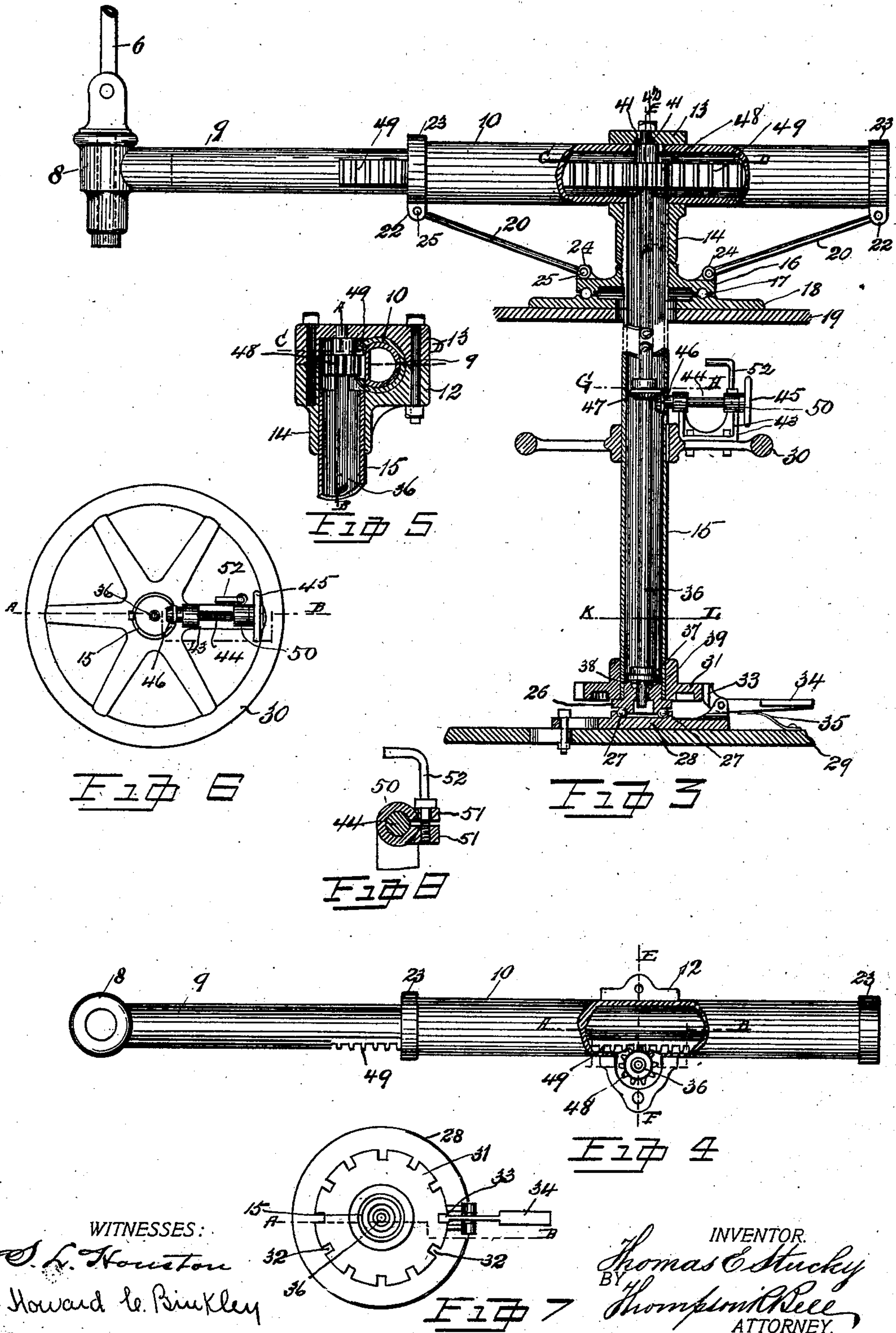
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UNITED STATES PATENT OFFICE.

THOMAS E. STUCKY, OF INDIANAPOLIS, INDIANA.

ADJUSTABLE TROLLEY-SUPPORTER.

SPECIFICATION forming part of Letters Patent No. 698,076, dated April 22, 1902.

Application filed August 31, 1901. Serial No. 73,940. (No model.)

To all whom it may concern:

Be it known that I, THOMAS E. STUCKY, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented new and useful Improvements in Adjustable Trolley-Supporters, of which the following is a specification.

My invention relates to new and useful improvements in adjustable trolley-supporters, and is particularly applicable to that class of trolley-supporters for use in connection with that system of electric railroad in which the conducting wire or wires are situated at one or either side of the track upon which the vehicles run and above the plane of said track, and which invention consists in means for adjusting the position of and otherwise manipulating the trolley or current-conveyer, which means are situated at either end of the vehicle, preferably the front end, and in such position thereat as to be within easy reach of the driver or motorman, as hereinafter more fully set forth, and particularly pointed out in the claims.

The object of my invention is, first, to provide an adjustable means for supporting current-conveyers and to situate the same at or near either end of the vehicle, preferably the front end, and within easy reach of the driver or motorman, so that the latter may readily and without any inconvenience to himself adjust and manipulate said means, thereby concentrating the entire controlling and driving mechanism of the vehicle so as to be under the observation, in the absolute care, and under the control of the operator; second, to provide simple means for supporting the trolley or current-conveying means on the vehicle, moving the latter into position and adjusting the same in position to maintain said current-conveyer in contact with the side conductor either while the vehicle is in motion either in a forwardly or backwardly direction or while said vehicle is at rest. I attain these objects by means of the apparatus illustrated in the accompanying drawings, in which similar numerals of reference designate like parts throughout the several views.

Figure 1 is a side elevational view of a portion of a car, showing my apparatus applied thereto. Fig. 2 is a front end elevation of the same. Fig. 3 is an enlarged detail part-sectional elevational view of the telescoping arm and its supporting-standard, taken through the line A B, (see Figs. 4, 5, 6, and 7,) and showing the adjusting and telescoping mechanism thereof. Fig. 4 is a part-sectional plan view of the telescoping arm of the apparatus and taken through the line C D. (See Figs. 3 and 5.) Fig. 5 is an enlarged detail broken view of the top portion of the supporting-standard, taken through the line E F. (See Figs. 4 and 3.) Fig. 6 is an enlarged detail transverse sectional plan view of the supporting-standard of the apparatus, taken through the line G H. (See Fig. 3.) Fig. 7 is a similar plan view taken through the line K L, (see Fig. 3;) and Fig. 8 is an enlarged detail end elevational view of the hand-shaft standard of the telescoping mechanism and showing the split clamping-bearing thereof.

1 designates any suitable railroad-track on which either electrically-propelled or steam-propelled vehicles may run.

2 designates the usual or any electric-telegraph pole situated at one side of the track or roadway, and 3 designates the electric-current conductor situated at one side of the track and above the plane thereof and suspended from and supported by suitable supporting means secured to the said telegraph-poles erected and arranged along the side of the track, such as the supporting-bracket 4. A supporting-bracket 4 is provided for each telegraph-pole along the way or track, and each is secured to its pole in position thereon to maintain the electric conductor as near as practicable equally distant from and above the track 1 on which the electrically-propelled vehicle is intended to run.

5 designates any suitable vehicle adapted to run on the track 1, and on the front or driver's end of which my trolley or electric-current-conveyer supporting apparatus is situated.

Any suitable yielding trolley-pole 6, having the trolley 7 mounted on its top or free end, is pivotally mounted at its base or lower end in the socket 8, which is secured rigidly in vertical position to the free or outer end of the overhanging extensible arm 9. The arm 9 extends horizontally and is adapted to be moved longitudinally or to telescope in the sleeve 10, and the said sleeve is securely

clamped to retain it permanently in position at a point intermediate between its ends in the sleeve-clamp 12 by its clamping-cap 13. The clamp 12 is provided with a downwardly-projecting sleeve 14, formed integral thereon, and the latter is internally threaded to receive the top end of the pivotal supporting-standard 15, upon which it is securely screwed to securely and rigidly connect said top clamp 12 to said standard. A turn-table 16 is also secured at or near the top of the supporting-standard 15 beneath the sleeve 14, and said turn-table is provided with suitable ball-bearings 17, adapted to run or work in ball races or ways formed in said turn-table and in the supporting bearing-plate 18, which latter is securely mounted on suitable supporting-braces 19, which latter may be either secured to the front portion of the roof of the vehicle or to the front end of the body of said vehicle in such a manner that the standard 15 will be situated centrally of said vehicle and on the forward end or the forward platform thereof, so that the driver or motorman may conveniently manipulate all the other mechanism required on electrically-propelled vehicles, as well as the trolley-supporting apparatus. The overhanging or free ends of the sleeve 10 are supported and held rigidly by suitable brace-rods 20, which extend from the brace-lugs 22, formed integral on the reinforcing rings or straps 23, which latter are secured on the free ends of the said sleeve 10 to the brace-lugs 24, formed integral on the turn-table 16, and to which lugs 22 and 24 said brace-rods are connected by suitable means, as the pins 25. A step-bearing 26 is secured in the bottom end of the standard 15 and is adapted to work on the ball-bearings 27, which latter work in the ball-bearing ways or races formed in the base or step-bearing plate 28. The step-bearing plate 28 is adjustably secured to the floor 29 of the vehicle or the front platform thereof to be adjustable in a direction transversely with the length of the vehicle, so that the position of said standard 15 may be changed from side to side or situated centrally with the car or vehicle, as the conditions may require. A turning-wheel 30 is keyed or otherwise secured on the standard 15 at a distance from the base thereof to be conveniently grasped by the driver or motorman, and the said wheel is provided for the purpose of turning said standard 15 to swing in a horizontal direction the extensible arm 9 into any position to extend in either a forwardly or backwardly direction or to extend outwardly from and beyond either side of the vehicle. A latch or locking wheel 31, having the peripheral notches 32, is keyed or otherwise secured at or near the bottom end of the standard 15 to turn therewith, and a spring locking-latch 33 is pivotally mounted on the bearing-plate in such position thereon to enter the notches 32 of said locking-wheel 31, and said latch 33 is provided with a pedal-arm 34, and the said latch 33 is held in en-

gagement with the locking-wheel 31 by a suitable latch-spring 35. The latch 33 is adapted to be disengaged from the locking-wheel 31 by the operator placing his foot on the pedal-arm 34. A rack-shaft 36, preferably constructed of light tubing to secure lightness, extends vertically and centrally within the standard 15, and said shaft has its bottom end prolonged sufficiently to extend through the central bore of the step-bearing 26, and at or near the bottom end of said vertical shaft a collar 37, having a bottom or lower coned surface 38, is secured on said shaft, and the said coned bearing-surface of said collar is adapted to bear on the ball-bearings 39, which latter work in suitable ball-bearing ways formed in said step-bearing 26. The top end of the shaft 36 is provided with a reduced end to form a shoulder against which the top ball-bearings 41 and by which said ball-bearings 41 are retained in their ways 42, formed in the clamping-cap 13, to form a top ball-bearing journal. A shaft-bearing standard 43 is secured on the turning-wheel 30, in the bearings of which is journaled the hand-shaft 44. A hand-wheel 45 is secured on the outer projecting end of said shaft, and on the inner end of the latter is secured the bevel-pinion 46, which meshes with the bevel-wheel 47, secured on the vertical rack-shaft 36. At or near the top end of the vertical rack-shaft 36 is secured the rack-pinion 48, which meshes with the rack 49, which latter is secured firmly on the flat side of the telescoping arm 9, and thus by means of the hand-wheel 45 the telescoping arm 9 may be moved outwardly or inwardly independently of the turning or swinging mechanism, or the turning or swinging of the horizontal arm 9 may be performed simultaneously with the extending or withdrawing of the same without any inconvenience to the driver.

The outer bearing 50 of the shaft-bearing standard 43 is split longitudinally at one side, (see Fig. 8,) and clamping-lugs 51 are formed integral on the split side of said journal-bearing, one above and one below said split, and a clamping-screw 52 is provided for drawing the said lugs 51 toward each other to cause said journal-bearing 50 to tightly clamp the hand-shaft 44 to lock the rack-shaft 36 to retain the extensible arm in position in its sleeve 10.

I will now proceed to describe the practice of my invention. The driver or motorman first moves the arm 9 into position, either to overhang the right or the left side of the vehicle, according as the current-conductor 3 is situated at the right or the left side of the track 1, by means of the turning-wheel 30, which turning when completed the spring-latch 33 is released to engage that notch of the notches 32 in the locking-wheel 31 corresponding with the required position of the arm 9. The driver now proceeds to either extend or move outwardly or withdraw or move inwardly the arm 9, according as the

conductor 3 is situated nearer to or farther from the track 1, by means of the hand-wheel 45, by which latter the telescoping or extensible mechanism of the arm 9 is manipulated to adjust the trolley 7 in position under the conductor 3, which when done the hand-shaft 44 is locked to prevent any movement of the telescoping mechanism of the arm 9 and to retain said arm in its adjusted position by the binding-screw 52.

In such cases as when the side conductor 3 is not parallel with the course of the track, but varies in distance therefrom throughout its length, the motorman or driver may readily adjust the arm 9 into position to move the current-conveyer or trolley into position under said conductor 3 by means of said hand-wheel 45 while the vehicle is in motion.

It will be observed that the mechanism for extending or telescoping the arm 9 is preferably inclosed in the vertical tubular shaft 15, so that all dust and grit is excluded from the bearings and journals of said mechanism.

Having thus fully described this my invention, what I claim as new and useful, and desire to cover by Letters Patent of the United States therefor, is—

1. The combination with a railroad-track, an electrically-propelled vehicle on said track, and a current-conductor situated at one side of and above the plane of said track, of a current-conveyer and a horizontally-extending extensible arm pivoted to swing in a horizontal plane, and means on the free end of said arm whereby said current-conveyer is pivotally supported and maintained in position to contact with said current-conductor.

2. The combination with a railroad-track, an electrically-propelled vehicle on said track, and a current-conductor situated at one side of and above the plane of said track, of a current-conveyer, an extensible horizontally-extending arm pivoted to swing in a horizontal plane whereby said current-conveyer is supported and maintained in position to contact with said side conductor.

3. The combination with a railroad-track, an electrically-propelled vehicle on said track, and a current-conductor situated at one side of and above the plane of said track, of a current-conveyer, and a horizontally-extending extensible arm pivotally mounted to swing in a horizontal plane, and situated at or near the forward end of the vehicle, and means on the free end of said arm whereby said current-conveyer is pivotally supported and maintained in position to contact with said side conductor.

4. The combination with a railroad-track, an electrically-propelled vehicle on said track, and a current-conductor situated at one side of and above the plane of the track, of a current-conveyer, a vertically-extending rotatable shaft, an arm extending horizontally from said vertical shaft and whereby said current-conveyer is supported and maintained in position to contact with said side conductor.

5. The combination with a railroad-track, an electrically-propelled vehicle on said track, and a current-conductor situated at one side of and above the plane of said track, of a current-conveyer, a vertically-extending rotatable shaft, an extensible arm extending horizontally from the top end of said rotatable shaft, whereby said current-conveyer is supported and maintained in position to contact with said side conductor, and means for swinging and extending said arm and for locking same in position.

6. The combination with a railroad-track, an electrically-propelled vehicle on said track, and a current-conductor situated at one side of and above the plane of said track, of a current-conveyer, a vertically-extending rotatable shaft, an extensible arm extending horizontally from the top end of said rotatable shaft whereby said current-conveyer is supported and maintained in position to contact with said side conductor, and independent means for swinging and extending said arm and for locking the same in position.

7. The combination with a railroad-track, an electrically-propelled vehicle on said track, and a current-conductor situated at one side of and above the plane of said track, of a vertically-extending rotatable shaft, a horizontally-extending extensible arm rigidly secured at or near the top of said vertical shaft, and a current-conveying means pivotally mounted on the free end of said extensible arm.

8. The combination with a railroad-track, an electrically-propelled vehicle on said track, and a current-conductor situated at one side of and above the plane of said track, of a vertically-extending rotatable shaft, a horizontally-extending extensible arm rigidly secured at or near the top end of said vertical shaft, a current-conveying means pivotally mounted on the free end of said arm, and means for locking said arm in position.

9. The combination with a railroad-track, an electrically-propelled vehicle on said track and a current-conductor situated at one side of and above the plane of said track, of a vertically-extending rotatable shaft, a horizontally-extending extensible arm rigidly secured at or near the top end of said vertical shaft, a current-conveying means pivotally mounted on the free end of said arm, and independent means for extending said arm and for swinging the same into position.

10. The combination with a railroad-track, an electrically-propelled vehicle on said track and a current-conductor situated at one side of and above the plane of said track, of a vertically-extending rotatable shaft, a horizontally-extending extensible arm rigidly secured at or near the top end of said vertical shaft, a current-conveying means pivotally mounted on the free end of said arm, independent means for extending and swinging said arm and independent means for locking said swinging means and said extending means.

11. The combination with a railroad-track,

an electrically-propelled vehicle on said track and a current-conductor situated at one side of and above the plane of the track, of a vertically-extending rotatable shaft, a horizontally-extending extensible arm rigidly secured to said vertical shaft at or near the top end thereof, a current-conveying means pivotally mounted on the free end of said arm, independently-operated means situated on said vertical shaft for extending said arm and swinging the same, and independent means for locking said swinging and said extending means.

12. The combination with a railroad-track, an electrically-propelled vehicle on said track and a current-conductor situated at one side of and above the plane of said track, of a vertically-extending rotatable shaft, a horizontally-extending extensible arm rigidly secured to said vertical shaft at or near the top end thereof, a step or floor bearing in which the bottom end of said vertical shaft is journaled and an upper bearing at or near the top end of said vertical shaft whereby the latter is steadied and held in vertical position.

13. The combination with a railroad-track, an electrically-propelled vehicle on said track, and a current-conductor situated at one side of and above the plane of said track, of a vertically-extending rotatable shaft, a horizontally-extending sleeve rigidly secured to said vertical shaft at or near the top end thereof, braces extending from the free ends of said sleeve to said vertical shaft, and an arm tele-

scoping into said sleeve substantially as and for the purpose set forth.

14. The combination with a current-conductor and a current-conveyer, of a vertically-extending tubular shaft, a secondary vertically-extending shaft inclosed in said tubular shaft, a horizontally-extending sleeve secured to said tubular shaft at or near the top end thereof, an extensible arm adapted to telescope into said sleeve, driving means connecting said arm and said interior shaft, and means extending from the interior of said tubular shaft whereby said interior vertical shaft is turned to traverse said arm.

15. The combination with a current-conductor and a current-conveyer of a vertically-extending tubular shaft, a secondary vertically-extending shaft inclosed in said tubular shaft, a horizontally-extending sleeve secured to said tubular shaft at or near the top end thereof, an extensible arm adapted to telescope into said sleeve, a rack on one side of said arm, a pinion on said vertical shaft, and means extending from the interior of said tubular shaft to the exterior thereof for turning said interior shaft to manipulate the said extensible arm.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

THOMAS E. STUCKY.

Witnesses:

HOWARD C. BINKLEY,
SAMUEL L. HOUSTON.