

(No Model.)

R. W. CLARKE.
TROLLEY.

No. 593,984.

Patented Nov. 23, 1897.

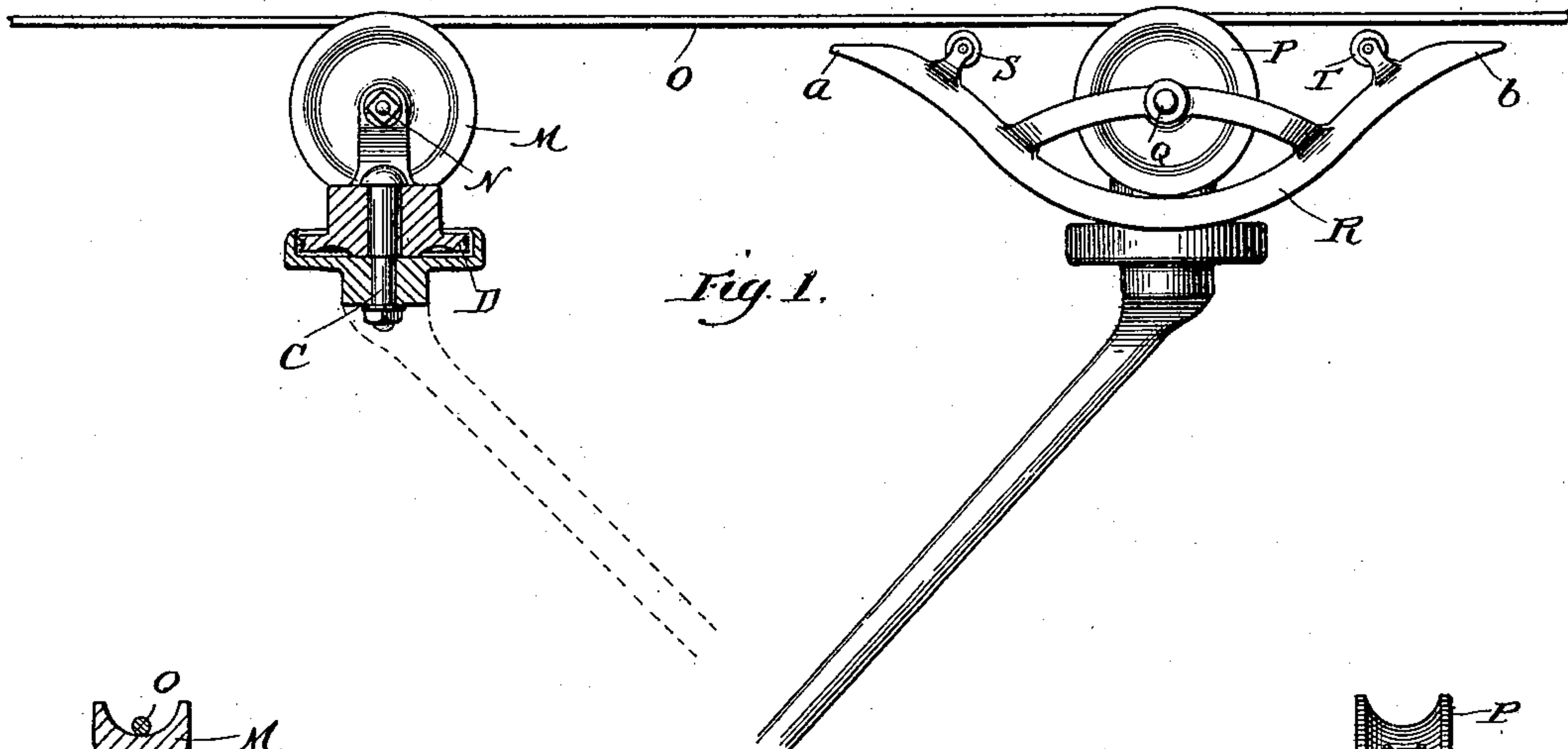


Fig. 1.

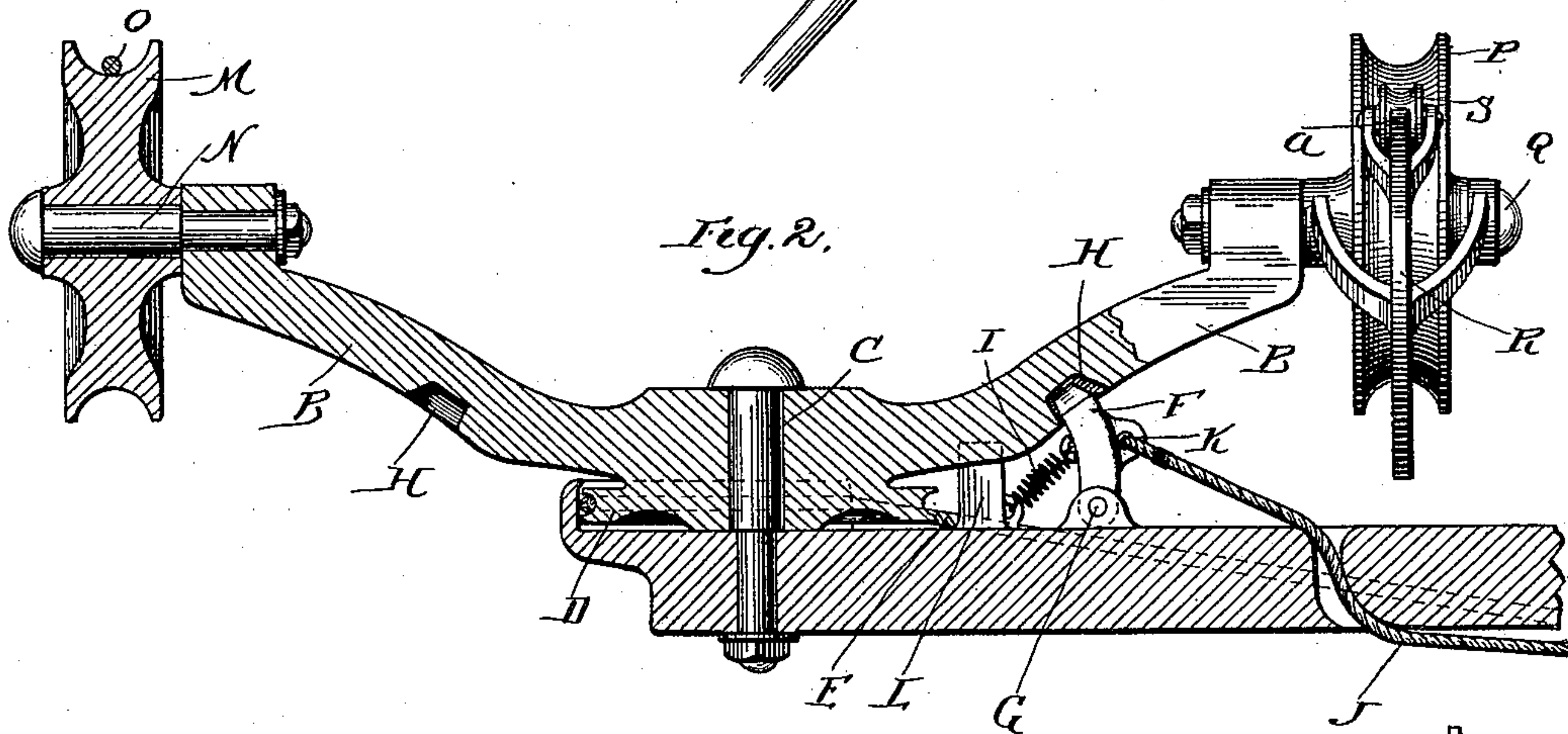


Fig. 2.

Fig. 4.

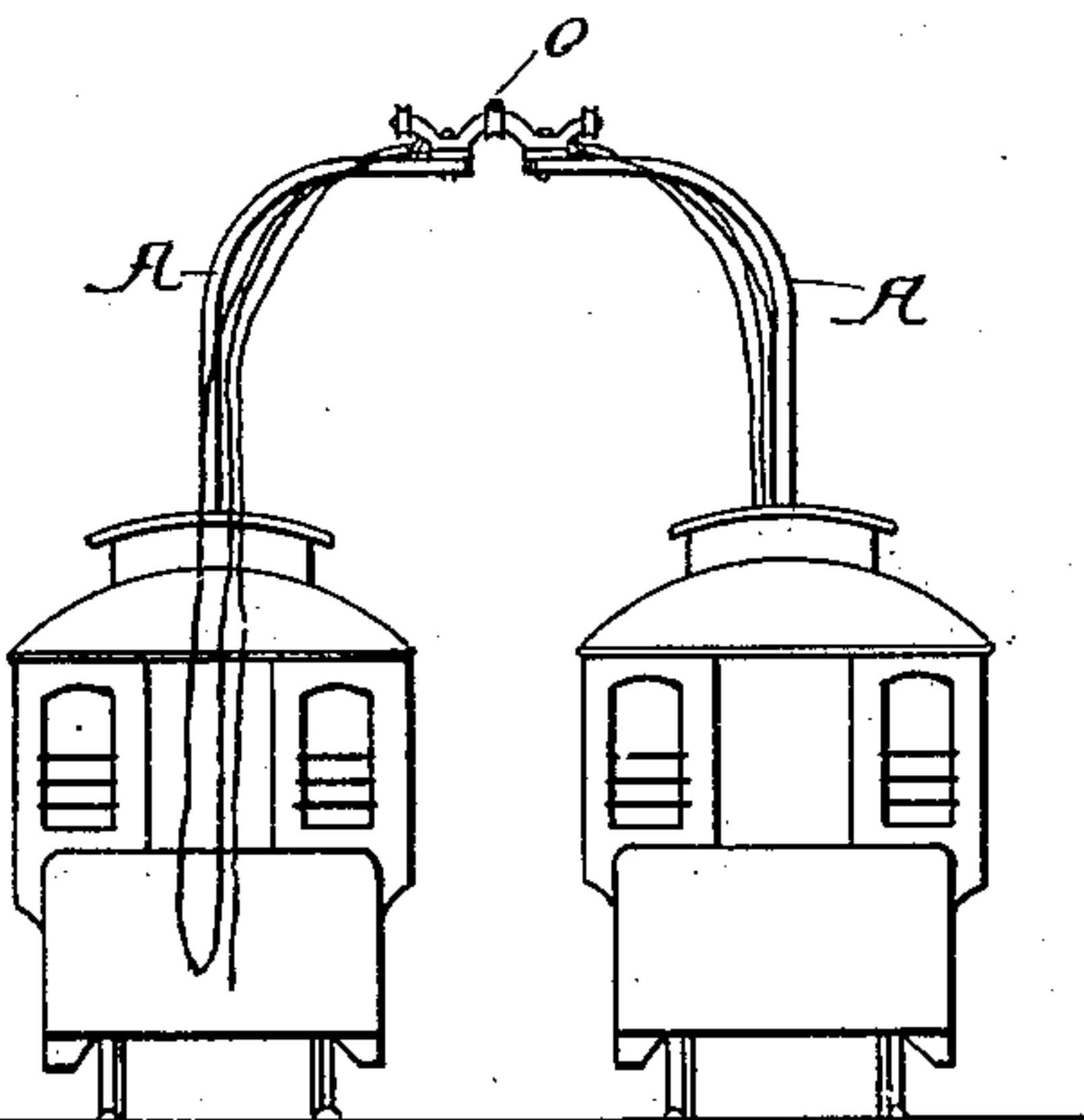
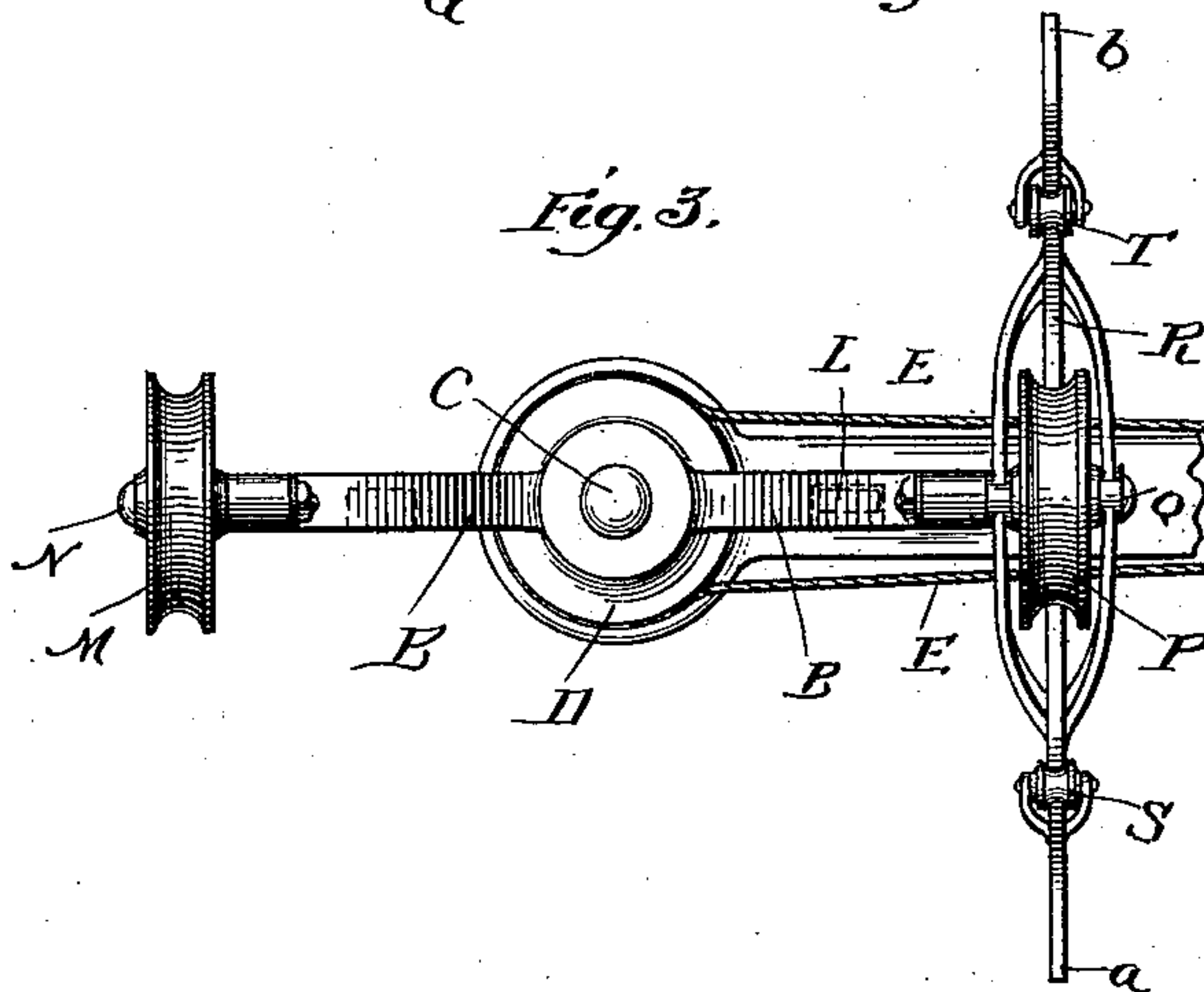


Fig. 3.



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UNITED STATES PATENT OFFICE.

ROBERT W. CLARKE, OF VICTORIA, CANADA.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 593,984, dated November 23, 1897.

Application filed February 17, 1897. Serial No. 623,808. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. CLARKE, a subject of the Queen of Great Britain, residing at Victoria, in the Province of British Columbia and Dominion of Canada, have invented a certain new and useful Improvement in Trolleys, of which the following is a specification.

My invention relates to a new and useful improvement in trolleys, and has for its object to so construct and arrange a device of this description as to permit the passage of two cars running in opposite directions whose trolleys are traveling upon the same feed-wire without interference with each other, and also to so arrange such a trolley as to enable the person having charge of the car to determine which car may have the right of way, thereby greatly reducing the cost of construction and maintenance of an electric road, since but one feed-wire is needed for the operation of cars passing in both directions.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, its construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a diagrammatical view showing one trolley in elevation carrying the switch which gives it the right of way and the other trolley in section which is not so provided with a switch and therefore has not the right of way; Fig. 2, a sectional elevation of the upper end of a trolley-pole, showing the swiveled arms thereon which carry the two trolleys, one with and one without a switch; Fig. 3, a plan view of the upper end of a trolley-pole, showing the swiveled arms and trolleys thereon; and Fig. 4, a diagram of two cars upon opposite tracks using the same feed-wire for the reception of the electric current.

In carrying out my invention as here embodied I so construct a trolley-arm A and attach it to the car as to cause it to project to one side of the car sufficient to permit its trolley to reach a feed-wire strung midway

between the two tracks of a double-line trolley-road. Upon the upper and outer end of this pole is swiveled the arms B, as indicated at C, and formed with the center of these arms or secured thereto is a grooved pulley D, to which is secured the rope E, which latter passes around the pulley, the two ends thereof being led through suitable guides downward within easy access of the person having charge of the car—say the conductor—so that when one or the other of these ends is pulled upon with sufficient force the pulley will be revolved, carrying one or the other of the arms into active position. In order that the arms may be made stationary and remain in the adjustment desired after having been revolved to this position, a latch F is pivoted at G to the trolley-pole and adapted to spring within one or the other of the notches H, formed in the arms, the spring I giving said latch an inward tendency.

A cord J is attached to the latch at K and leads downward through suitable guides within reach of the conductor, so that by pulling upon this cord the latch may be disengaged from its notch prior to the revolving of the arms, and when they have been thus revolved this latch is again released and permitted to spring within the other notch, and in order that the arms may always stop at the proper position for the engagement of the latch with its notch a lug or post L projects upward from the trolley-arm in such position as to arrest the swinging movement of said arms, as will be readily understood.

In practice it is preferable that the cord J shall be either of a different size from the ropes E or of different color, so as to be distinguished therefrom in order that no mistake may be made in the operation of the several ropes, and it will further facilitate the manipulation of these ropes if one of the ropes E be made distinguishable from the other.

A trolley-wheel M is journaled upon a stud N, projecting from one of the arms, and this trolley-wheel is in all respects similar to those of ordinary construction, and its operation is likewise similar, since its only function is to travel upon the feed-wire for the transference of the current therefrom to the motor of the car. A similar wheel P is journaled

upon a stud Q, projecting from the opposite arm, and also pivoted upon this stud is the switch R, whose lower edge is formed upon a compound curve, the upper ends thereof
 5 projecting into close proximity to the feed-wire, as indicated at *a b*, and between ears formed upon this switch are journaled the small rolls S and T.

From this description the operation of my
 10 improvement will be obviously as follows: Assuming that two cars are traveling upon parallel tracks in opposite directions, one having the trolley-wheel P, which carries the switch R, traveling upon the feed-wire, while
 15 the other has the trolley-wheel M of ordinary arrangement traveling upon said wire, it will be seen that when these two trolleys meet the one having the switch will of necessity have the right of way, since the opposite
 20 wheel when coming in contact with the point *a* of this switch will be caused to pass thereon and riding downward around the trolley-wheel P will pass to the opposite side thereof and again gain access to the feed-wire when
 25 passing from the switch at the point *b*, and as this may take place while both cars are moving in opposite directions and at considerable speed neither car will be interfered with in its travel. When the trolley-wheel
 30 M first comes in contact with the point *a* of the switch, said switch will be caused to swing upon its pivot-point, so as to bring the small roll S into contact with the feed-wire, after which the switch will be sufficiently rigid to
 35 permit the wheel M to pass thereon, and when said wheel passes to the opposite side of the pivot-point of this switch the small roll T will be brought into contact with the feed-wire, thus preventing the displacement of
 40 said switch during the passage of the trolley-wheel therefrom, as will be readily understood. The fact that the rolls S and T come in contact with the feed-wire when the trolley-wheel M passes on and off of the switch
 45 permits the continuation of the flow of the current to the wheel M, since it will flow through the rolls S and T to the switch and from thence to the wheel M, thus preventing an interruption of the current, and conse-
 50 quently the cutting off of the power from the motor of the car carrying the trolley-wheel M. When a car has reached its destination or one terminus of the road and is switched to the opposite track, the trolley-pole may be
 55 turned to the opposite side, the colored rope which releases the latch being used to pull the trolley off the wire, and during the process of walking around with the trolley the

rope to turn the swivel is pulled and the swivel turned, after which the latch-rope can be re- 60 leased and the trolley adjusted to the wire in the usual manner, so as to reverse the trolley-wheels M and P, carrying the one last in active position to an inactive position, while bringing the inactive wheel into activity, it 65 being obvious that suitable switches, both for the tracks and feed-wire, may be provided so as to facilitate these changes.

I do not wish to be limited to the exact constructions hereshown and described, as these 70 may be varied without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In combination, a trolley-pole having its 75 upper end turned outward, two arms swiveled thereon, means for revolving said arms, means for securing said arms in their adjustment when revolved, a trolley-wheel journaled upon each of said arms, and a switch 80 so arranged relative to one of said wheels as to permit the passage of a trolley-wheel carried by another car without interference with either, as specified.

2. In combination, a trolley-pole secured to 85 a car, its upper end being turned outward, two arms swiveled to this end, a pulley carried by the arms, a rope secured to said pulley and having its ends located in easy reach of the conductor, two trolley-wheels jour- 90 naled upon said arms, a switch arranged in connection with one of said wheels so as to permit the passage of another trolley traveling upon the same wire in opposite direction, and small rolls carried by the switch, sub- 95 stantially as and for the purpose set forth.

3. In combination, a trolley-pole having its upper end turned outward, two arms swiveled to said pole, a latch so arranged as to 100 lock the arms in their active position, two trolley-wheels journaled to the arms, a switch so arranged relative to one of the wheels as to permit the passage of another wheel there- around when meeting upon a single feed-wire, ropes for operating the arms and latch, and 105 small rolls arranged to come in contact with the feed-wire when the switch is utilized, as specified.

In testimony whereof I have hereunto af- fixed my signature in the presence of the sub- 110 scribing witnesses.

ROBERT W. CLARKE.

Witnesses:

S. S. WILLIAMSON,
 W. J. CANE,
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