

(No Model.)

3 Sheets—Sheet 1.

R. CARTWRIGHT.  
OVERHEAD TRAMWAY.

No. 308,553.

Patented Nov. 25, 1884.

Fig. 2.

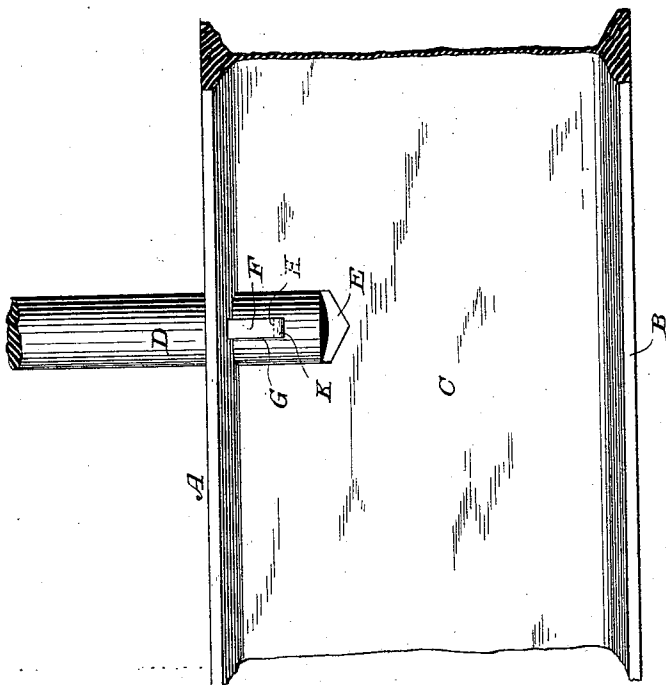
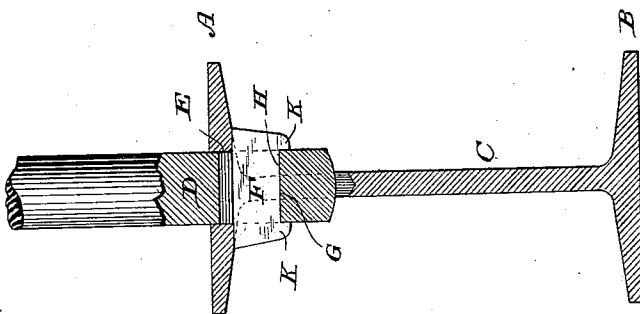


Fig. 1.



Witnesses.

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Inventor

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By his Attorneys.

Baldwin, Hopkins & Beston.

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Fig. 3.

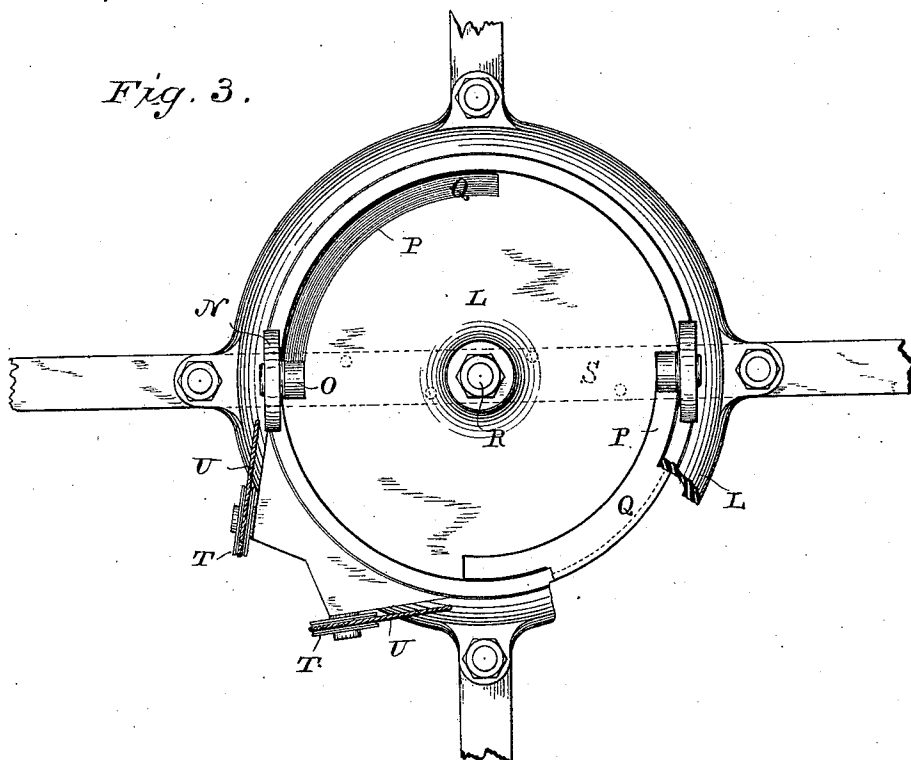


Fig. 4.

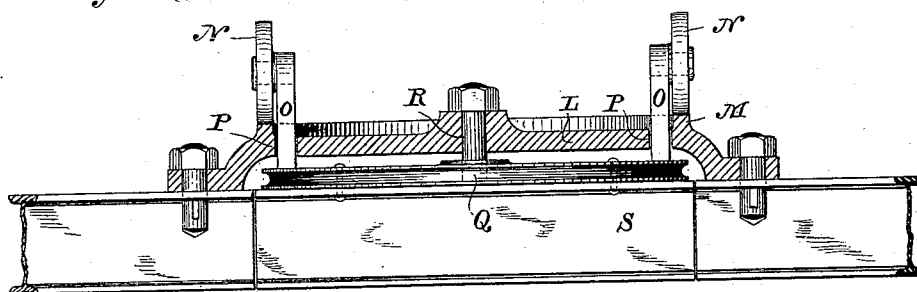
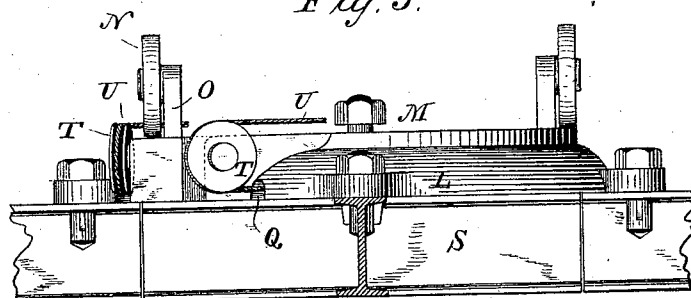


Fig. 5.



Witnesses

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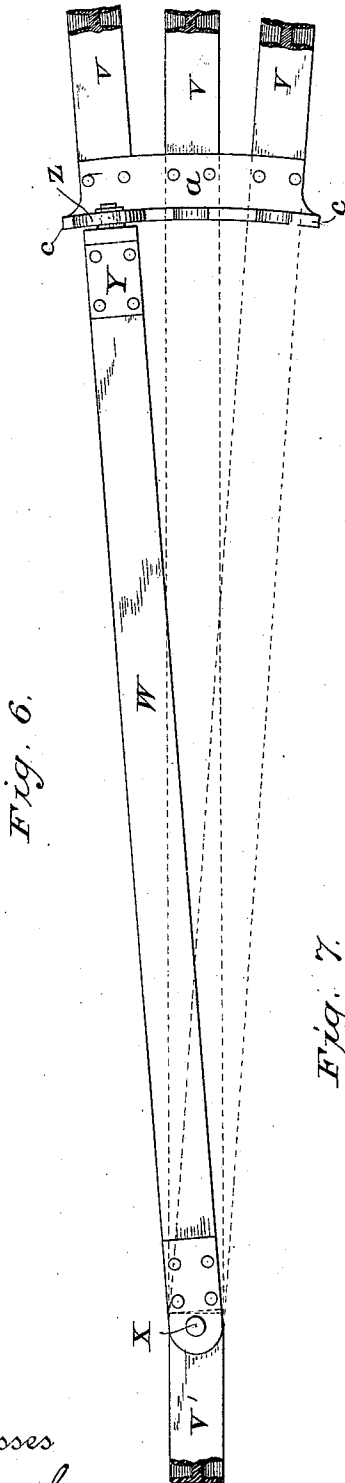


Fig. 6.

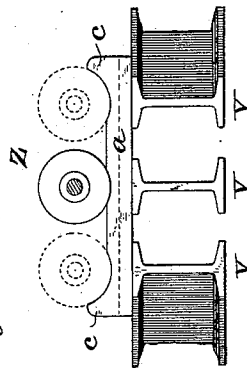


Fig. 7.

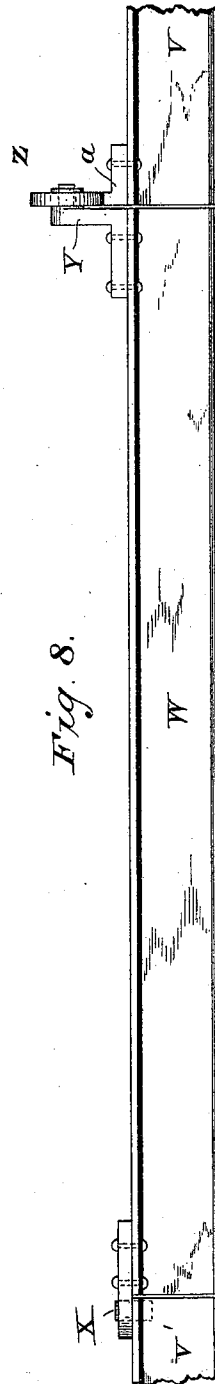


Fig. 8.

Witnesses

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Inventor

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# UNITED STATES PATENT OFFICE.

ROBERT CARTWRIGHT, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE  
YALE & TOWNE MANUFACTURING COMPANY, OF SAME PLACE.

## OVERHEAD TRAMWAY.

SPECIFICATION forming part of Letters Patent No. 308,553, dated November 25, 1884.

Application filed July 5, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT CARTWRIGHT, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Overhead Tramways, of which the following is a specification, reference being had to the accompanying drawings, illustrating the same.

My first improvement relates to means for supporting the track from beams or other overhead supports. Heretofore it has been usual to bore a hole through the upper flange of the track-rail and cut out enough of the upper part of the web to permit a nut to be screwed onto the lower end of the rail-supporting bolt after its insertion into the place thus prepared for it. This plan is too expensive; and it is the object of my improvement to furnish a more simple and economical as well as more reliable way. I therefore bore a hole through the upper flange of the rail into the web slightly larger than the bolt, and deep enough so that the bolt can be passed down into it far enough to permit the insertion of a key in a slot through the bolt. After the insertion of the key the bolt is drawn up snug, so as to cause the upper edge of the key to bear on the under surface of the flange of the rail. The key is provided with a recess or cut-away on its lower edge, leaving ledges, so that it is saddled to its seat in the bolt-slot and prevented from coming out.

Figures 1 and 2 of the drawings clearly show this improved construction, Fig. 1 being a cross-section of an overhead tram-rail and one of its supporting-bolts, and Fig. 2 a side view of the same at right angles to the view shown in Fig. 1.

Referring to the letters upon the drawings, A indicates the upper flange, B the lower, and C the web of the rail.

D indicates the lower portion of a supporting-bolt; E, the hole in the rail where it is inserted; and F, the key passing through a slot, G, in the bolt and firmly securing it to the rail.

H indicates the cut-away part of the lower edge of the key, and K the ledge left on each one of its projecting ends to keep it in place.

My second improvement relates to a turn-table for overhead tram-rails of simple and

economical construction and efficient operation. It is illustrated in Figs. 3, 4, and 5 of the drawings, of which Fig. 3 is a plan view, Fig. 4 a side view partly in section, and Fig. 5 a side elevation. I provide a circular casting or frame, L, which may be supported, as shown, upon the ends of four tram-rails, or from beams above, or in any suitable way. This casting has a raised rim or track, M, around which travel anti-friction rollers, N, which carry, by means of hangers O, extending through curved slots P, a circular grooved plate, Q, capable of turning on its axle R. To the under side of this plate is bolted or riveted a short section of T-beam track, S. Attached to the casting L at convenient points are the pulleys T, over which pass pull-cords U into the groove in the periphery of the plate Q, to which plate their ends are secured. A sufficient pull upon one of these cords will turn the table in one direction, and upon the other in the opposite direction, changing the position of the track-section S, for example, from that shown in Fig. 4 to a position at right angles thereto, or vice versa, so that the direction of travel of a trolley turned upon the table may be changed accordingly.

In order to stop the turn of the table so that the tracks shall be in alignment and hold it there with sufficient security, I form slight depressions at the proper points in the curved track M, into which the rollers N simultaneously enter. The pull upon one of the pull-cords being then stopped, the tracks will be and remain in perfect alignment. This species of stop is practically elastic, or as if elastic in operation, and is preferable to a dead-stop. An increased pull upon the pull-cords will readily start the table out of rest in these depressions.

Instead of pull-cords, other well-known appliances or gearing may be used to turn the table; but I prefer the cords.

The same species of stop by means of depressions in a track is applicable to switches, as illustrated in Figs. 6, 7, and 8, Fig. 6 being a plan view of a switch for an overhead tramway, Fig. 7 an end view of the same, and Fig. 8 a side elevation. In these drawings, V V and V' indicate fixed T-beams or tracks of an overhead rail. W indicates a movable

switch-section of such track, pivoted at X to the top of one of the fixed rails V' at one end and free to move into alignment with the several fixed rails at the other end, where it is  
 5 provided with a casting or hanger, Y, and a roller, Z. *a* indicates a casting secured to the tops of the three fixed rails V V V, and provided with a raised slightly-curved track, *b*, upon which the roller Z travels. This track  
 10 is provided with three depressions, into which the roller Z settles in operation. These depressions are made at such points in the track as to bring the movable switch-rail in alignment, respectively, with the three fixed rails  
 15 V V V, and to stop and secure the switch-section accordingly.

Any usual or suitable means for moving the free end of the movable switch-section may be employed. The outer ends of the circular  
 20 track are raised at *cc* high enough to prevent the roller from riding over.

Having thus described my improvements, what I claim, and desire to secure by Letters Patent of the United States, is—

25 1. The combination, with a flanged overhead tram-rail and a supporting-bolt, of a key provided with a recess and end ledges and projections for saddling into the bolt-slot, substantially as and for the purpose set forth.

2. In an overhead tramway, the combination, with the fixed tracks, of a pendent turning track-section, S, secured on the bottom of a turning-plate supported by rollers and hangers on a circular track, substantially as set forth.

3. In an overhead turn-table, the combination of a frame, L, having a circular track, M, and curved slots P, of a rotary plate, Q, having its axle R in the frame, and supported on the circular track by anti-friction rollers and  
 40 hangers, and carrying on its under surface a track-section, S, with suitable operating pull-cords or gearing, all substantially as set forth.

4. The combination, with a movable section of an overhead tram-rail having a hanger  
 45 and roller for supporting its end, of a curved section of track for the roller, provided with one or more depressions for stopping the movement of the movable section and holding it in place, substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

ROBERT CARTWRIGHT.

Witnesses:

SCHUYLER MERRITT,  
 GEO. E. WHITE.