3 Sheets—Sheet 1.

T. H. DAY.

Rope Tramway and Apparatus.

No. 203,249. Patented May 7, 1878.

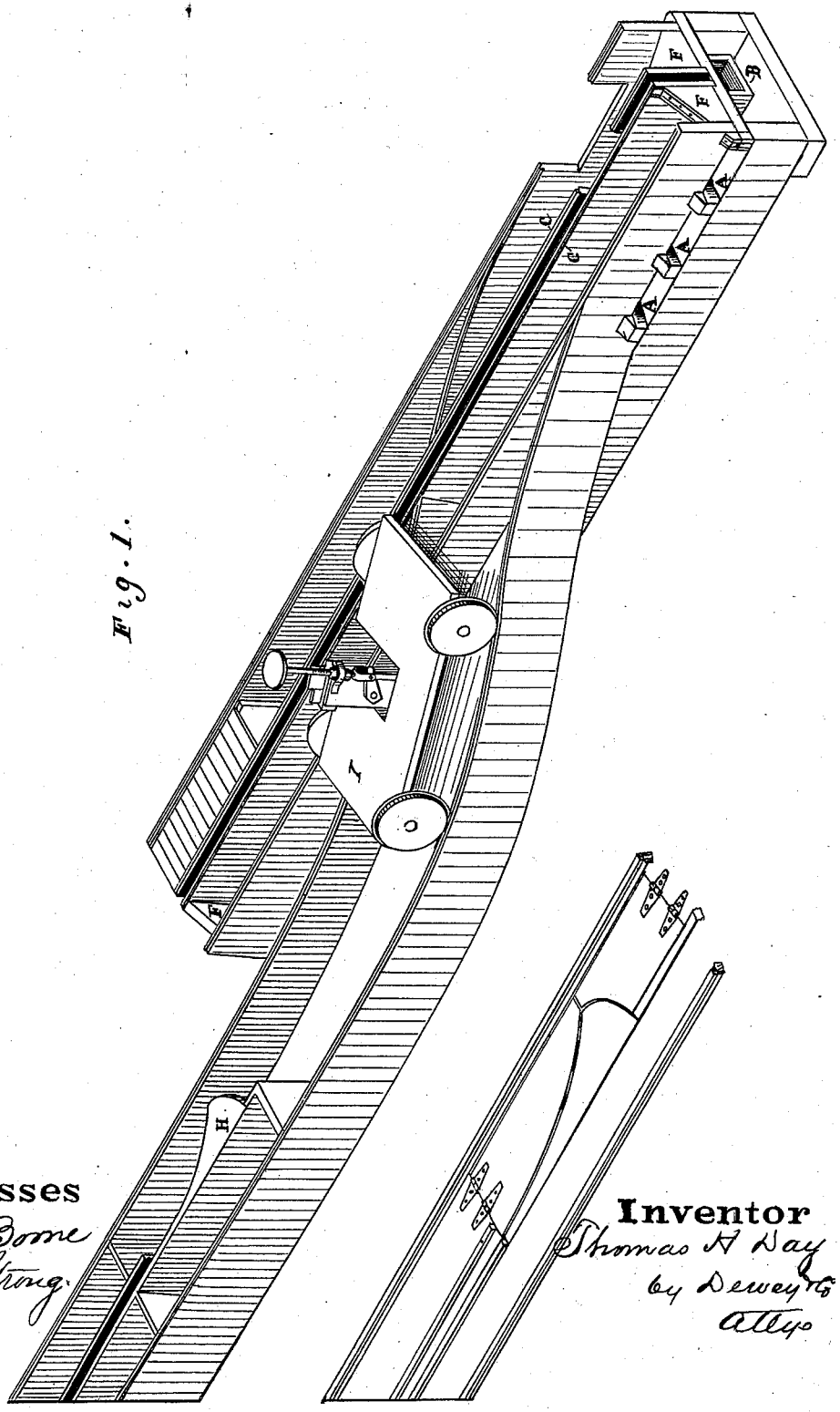

Fig. 1.

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Fig. 3.

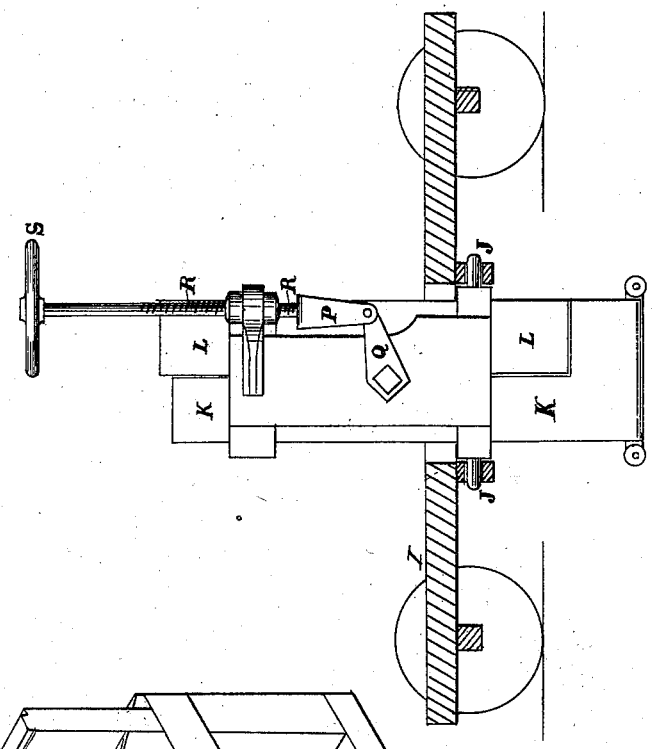

Fig. 2.

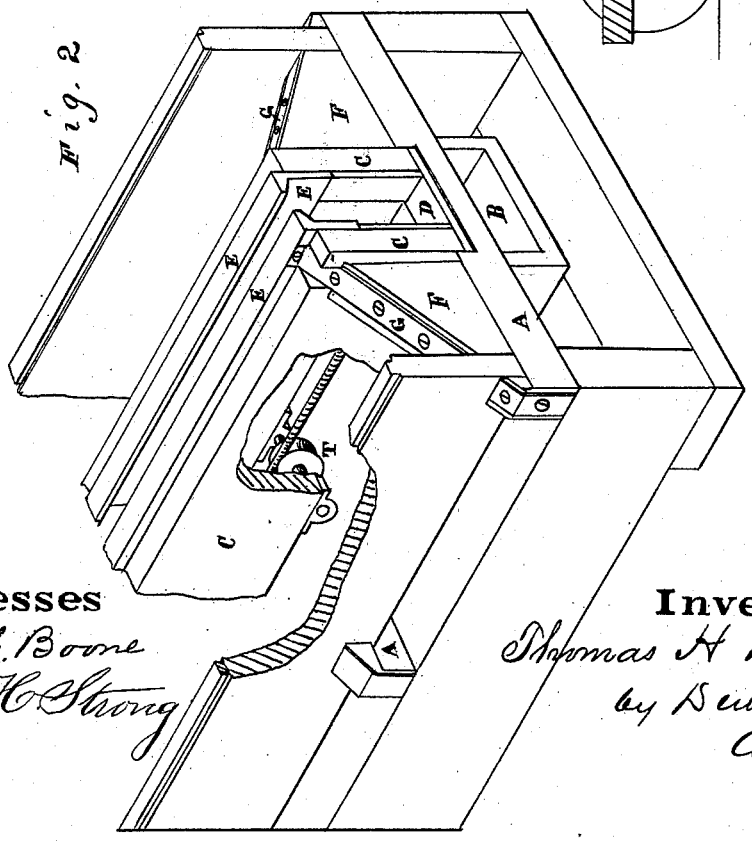

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Fig. 5.

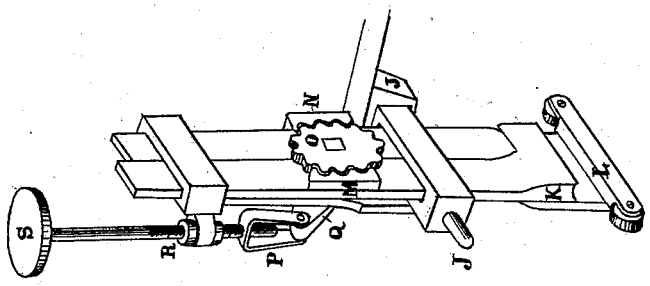
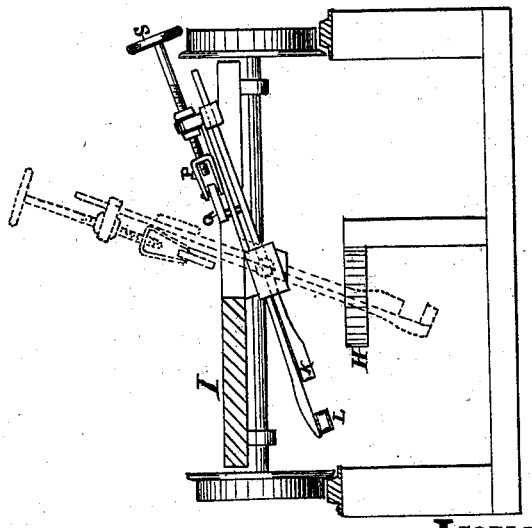


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS H. DAY, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN ROPE TRAMWAYS AND APPARATUS.

Specification forming part of Letters Patent No. **203,249**, dated May 7, 1878; application filed September 3, 1877.

To all whom it may concern:

Be it known that I, THOMAS H. DAY, of the city and county of San Francisco, and State of California, have invented an Improvement in Rope Tramways and Apparatus; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to certain improvements in the construction of wire-rope tramways and apparatus; and it consists in a novel construction of the tube within which the rope runs beneath the permanent way, so that it may be laid without cutting the cross-ties or sleepers, may be made much smaller than hitherto, and very much more cheaply.

My invention further consists in a means for detaching the gripe from the rope, and throwing it entirely out of the tube, so that the car may be made to cross another wire ropeway at any angle, or may be switched off upon a siding, or transferred to another line of track at any point, without the necessity of going to the full length of the line or to any especial point on the line where there is a turn-table or other apparatus for transferring the car or dummy.

The peculiar apparatus employed by me for the purpose of making the connection between the car and rope, and throwing the gripe entirely out of the tube, makes it possible for me to run a line of cars in both directions with but a single line of track, and neither car, gripe, nor any portion of the apparatus need be reversed in any manner.

In the accompanying drawings, Figure 1 is a view of my apparatus. Fig. 2 is a cross-section of the track and tube. Fig. 3 shows the manner of throwing out the gripe.

A A are cross-ties of a road, properly laid and leveled, and having centrally located beneath them a gutter, B, either placed before the ties are laid, or made in sections and dropped in after they are laid, as may be thought best. This gutter lies directly beneath the rope-tube proper, and serves to receive and carry off all water and dirt that may fall into the tube, and thus prevent its becoming clogged.

The tube is composed of the side timbers C C, which are laid along the cross-ties, resting upon shoes D of iron, these shoes being laid upon the ties. Within the timber tube are girders E, formed of angle-iron, and secured to the shoes, and also to the side timbers C. The angles at the top of these girders incline toward each other, so as to leave between them the necessary slot for the travel of the stem of the griping device.

Upon each tie a pair of knees or braces, F, are secured, so as to brace the timbers C strongly from the outside, and prevent them from being separated.

Straps of iron G are bolted to the angle-iron girders E at the top, and extend from these down the inclined surface of the knees and around the ends of the ties, so as to bind the whole firmly together.

By this construction I am enabled to make a small, compact rope-channel with straight sides, occupying but little space, as the whole channel is built above the cross-ties or sleepers, and as those are not cut at all they serve to bind the whole firmly together and prevent spreading. Finally, great economy is obtained.

This form of rope-tube is especially adapted for the use of my griping apparatus for which Letters Patent were granted to me July 10, 1877, as in this apparatus nothing but the griping-jaws run in the tube, while all the operative mechanism is placed within the car or dummy or above the tube.

In order to detach the gripe from the rope and throw it entirely out of the tube, for the purpose of crossing another similar ropeway, or for the purpose of leaving the main line and running upon a siding, as would have to be done if a single-line track were used, I have placed a lug or inclined projection, H, at each point where this transfer or detaching of the gripe becomes necessary.

This device is placed just at a point where the tube terminates; and in order to make it operate the griping device and throw it out of contact with the rope, there must be an enlarged opening at this point, and the gripe must be hinged to the dummy I at J, in such a manner that when it reaches the inclined plane H it will be thrown to one side, and, turning about its hinge J, will rise entirely out of the tube, so as to leave the car or dummy free to move anywhere independent of the rope. The gripe will, of course, be loosened from the

rope just previous to reaching the point for detaching, and will then be in readiness to be thrown out.

My gripe consists of two vertically-moving jaws, K and L, which are caused to move to and from each other by means of rack-bars M N, one of which carries each jaw, and a central operating-pinion, O, as shown in my former patent, referred to above.

This form of gripe allows me to hinge it at J in the lower part of the dummy, so that it may be readily turned out of the tube, and the method of operating allows it to readily leave the rope at any point and pick it up again wherever desired.

In my present invention I have improved my operating mechanism by connecting a swivel or link nut, P, with the end of the lever Q, which operates the pinion O, and a screw, R, passes through this nut, and is provided with a hand-wheel, S, at the top, so that by this combination I am enabled to obtain a leverage upon the gripe sufficient for any purpose.

In the present case I have shown my griping device considerably out of proportion to the line of track and the dummy, so that it will not turn up inside the line of the rails; but it will be manifest that when built upon a large scale it will operate within the line of the rails and turn up beneath the dummy without projecting too far.

Trap-doors serve to close the openings where the gripe emerges from or enters the tube, and these may be opened and closed automatically or otherwise, as desired.

The pulleys T, which support and guide the rope, have their boxes bolted beneath the timbers C which form the tube, so that their bearing flanges stand at a proper height to support the rope properly.

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

1. An improved rope-tube for tramways, consisting of the side timbers C, seated upon the shoes D on the surface of the ties, and having the angle-iron girders E bolted to them, so that the flange will form the slot for the travel of the gripe-stem, substantially as herein described.

2. In combination with the rope channel or tube C, built upon the surface of the ties, as shown, the gutter B beneath the tube and ties, substantially as herein described.

3. The rope channel or tube C, built upon the surface of the ties A, and provided with the gutter B beneath, in combination with the pulleys T, having their journal-boxes secured beneath the timbers C, substantially as herein described.

4. The inclined lug or projection H upon the rope tube or channel, in combination with the griping apparatus, hinged to the dummy at J, so that the lug will throw it out of contact with the rope and out of the tube, substantially as and for the purpose herein described.

5. The vertically-moving jaws K and L, with their rack-bars M N, operating-pinion O, and lever Q, in combination with the nut P, and screw R, substantially as herein described.

6. A rope-griping device, hinged to the car or dummy I, so that it may move with its jaws within the tube, so as to gripe the rope or be thrown out of the tube and sever the connection, substantially as herein described.

In witness whereof I have hereunto set my hand.

THOMAS H. DAY.

Witnesses:

FRANK A. BROOKS,

WILL. L. TAYLOR.