T. H. DAY.

GRIPING DEVICES FOR ROPE-TRAMWAYS.

No. 192,904. Patented July 10, 1877.

Fig. 1.

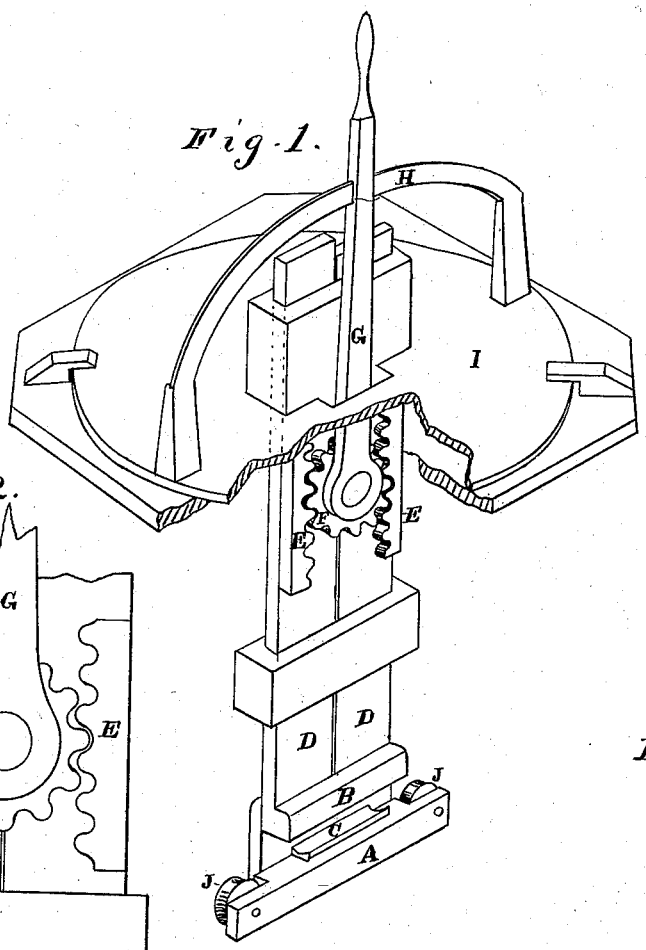


Fig. 2.

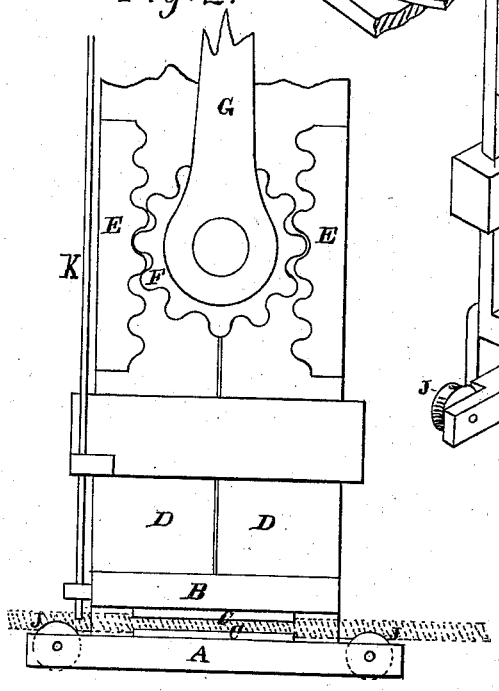
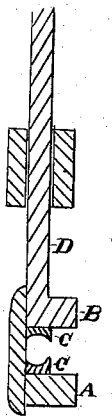


Fig. 3.



Witnesses

Geo. N. Strong

Olwyn T. Storey

Inventor

Thomas H. Day

By Dewey & Co.

Attys

UNITED STATES PATENT OFFICE.

THOMAS H. DAY, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN GRIPING DEVICES FOR ROPE-TRAMWAYS.

Specification forming part of Letters Patent No. **192,904**, dated July 10, 1877; application filed June 8, 1877.

To all whom it may concern:

Be it known that I, THOMAS HENRY DAY, of the city and county of San Francisco and State of California, have invented an Improved Griping Device for Rope-Tramways; 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 that class of apparatus which is employed to make or break connection between a moving car or vessel and a rope or cable by which it is propelled, and it is more especially applicable to that class of railways in which cars moving upon a track are impelled by means of an endless rope which travels in a tube beneath the level of the rails.

My invention consists in a novel construction of a griping apparatus by which connection is made between the car and rope, and in so mounting this griping apparatus that it can be reversed in position, so that I am enabled to switch a car from one track to the other at any point in the line without the use of turn-tables, and without reversing or turning the car or dummy around.

In the accompanying drawings, Figure 1 is a view of the upper part of my devices, howing a method of reversing it. Fig. 2 is a view of the gripe and means of operating it.

A and B are two griping-jaws having suitable lining blocks or plates C, these plates receiving the actual contact and friction of the rope, and being made removable so as to be replaced by others when worn out. The jaws are placed one above the other, and are secured to broad bars D, which stand side by side, as shown, and are made thin enough to pass out through the narrow slot which must necessarily be made in the tube to effect a communication between the car and the rope which runs in the tube. My method of operating the jaws is novel, and it consists in forming a rack, E, upon the side of each of the bars D at some point above the surface of the ground. These racks stand with their teeth toward each other, and a pinion, F, is mounted between them, so that when this pinion is turned it will actuate the racks, and move the griping-jaws to or from each other, and either seize or release the rope. A lever, G, extends from this pinion up into the car, so as to be within easy reach of the operator, and a curved rack, H, serves to hold the lever at any point.

A difficulty which has hitherto been experienced in the operation of these rope-railways has been the necessity of special apparatus, at either end of the line, by which the car or dummy carrying the griping attachment must be turned around, or otherwise operated, so as to transfer the griping device from the rope running in one direction to the other part of the rope running in an opposite direction, so as to make the return trip, and this has been of such a nature that the change could only be made at the ends of the route.

In my present invention I obviate this difficulty by so mounting my griping apparatus that it may be reversed without turning the car at all. This is done by means of a turning table or post upon which all the apparatus directly connected with the gripe is mounted.

In the present case I have shown a turn-table, I, which is suitably mounted upon the floor of the car, and the operating-bars D, with their jaws A and B, pinion F, lever G, and rack H, are all connected with or attached to this turn-table. The griping-jaws A and B are nearly in a line with the operating bars or plates D, but must of necessity be upon one side of these bars. They are, therefore, so placed that the bars D will stand toward the inside or between the oppositely-moving ropes. It will then be seen that when, for any cause, it is necessary to transfer the car from an up to a down track, it will only be necessary, after dropping the rope from the gripe, to rotate the turn-table so as to reverse the position of the clutch or gripe, when it can be switched over to the return track, and the gripe will be in proper position to seize the other rope. This not only allows the rope to be dropped at any point on the line, and the car to be transferred to the return track, but it places the operating-lever so that it is always moved in the same relative direction to the motion of the car for the purpose of seizing or releasing the rope, instead of being moved in one direction when the car is going down and another when it is going up.

It will be manifest from this construction

that, if desired, both parts of the rope could be run in the same tube, and one line of rails used so that a car could return upon the same track by simply reversing the gripe so that it would take either rope. Friction-pulleys J, at each end of the jaw A, support the rope to prevent friction on the jaw when the car is momentarily stopped and the gripe is released, and a vertically-moving rod, K, which may have a friction-pulley upon its lower end, serves to prevent the rope from leaving the gripe until desired, when this rod is simply drawn up high enough to be free of the rope.

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

1. The oppositely-moving jaws A B, secured to the bars D, said bars being provided with the toothed racks E E, in combination with the pinion F and lever G, substantially as and for the purpose herein described.

2. A means for reversing the rope-griping device, the same consisting in mounting it upon a turn-table, I, substantially as herein described.

3. The movable rod K, in combination with jaws A B, so arranged as to secure the rope, and prevent its leaving the gripe, or release it, substantially as herein described.

In witness whereof I have hereunto set my hand and seal.

THOMAS H. DAY. [L. S.]

Witnesses:
GEO. H. STRONG,
FRANK A. BROOKS.