

A. S. HALLIDIE.  
RAILWAY.

No. 182,663.

Patented Sept. 26, 1876.

Fig. 1

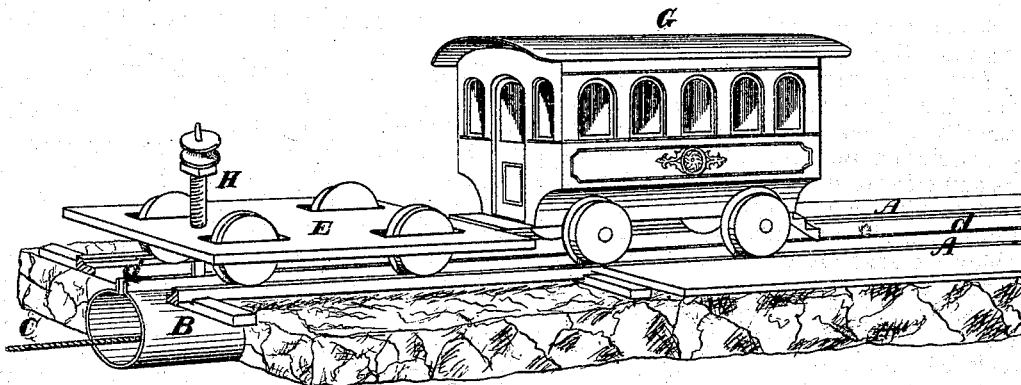
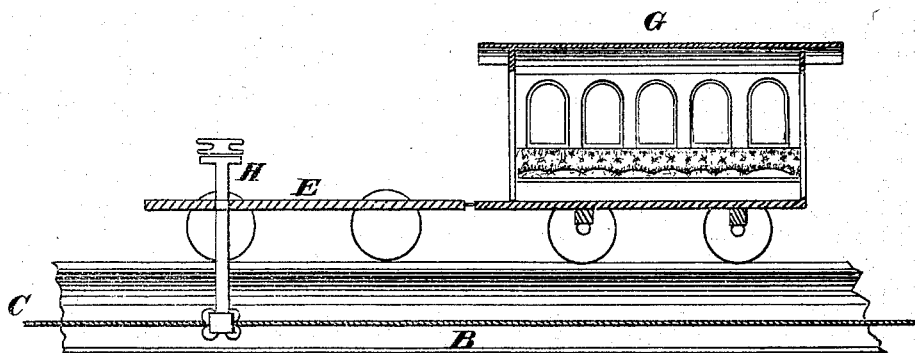


Fig. 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN RAILWAYS.

Specification forming part of Letters Patent No. **182,663**, dated September 26, 1876; application filed March 24, 1876.

*To all whom it may concern:*

Be it known that I, ANDREW S. HALLIDIE, of San Francisco city and county, State of California, have invented an Improvement in Railroads; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to that class of street-railways in which the cars are propelled along the track by means of an endless rope or chain, which is arranged to travel in an underground tube or tunnel, and in which a griping apparatus or device is used to connect the cars with the rope through a slot in the tube.

This system of propelling railway-cars has long been used upon uniform planes. Sometimes these planes were inclined, and sometimes they were horizontal, but previous to my invention it was never made available for long lines of railway which pass over changing levels, or for propelling the cars over steep inclines in the length of a road which was operated by horse or other power at either end of the line, so that the same car could proceed from one system of propulsion to the other without trouble or delay.

My invention is intended to accomplish this object by providing a separate truck or car, which I call a "dummy," for supporting and carrying the griping device, and which will be a permanent part of the road, while the car to be propelled is simply connected by a coupling with this car or dummy, so that it can be disconnected and run upon another track without disarranging any of the mechanism connected with the griper.

Referring to the accompanying drawings, let A A represent the two tracks of a street or other railway, between which the underground tube or tunnel B is placed. Inside of this tube the endless rope, chain, or cable C, which propels the cars along the tracks, is supported upon pulleys and caused to travel by steam or other power. The tube has a longitudinal slot, *d*, in it, through which the griping de-

vice passes in order to connect the car and rope.

Heretofore the griping-device has uniformly been secured to the car itself, so that the car could only move as far as the slotted tube extended, because the griping device could not be removed from the tube or detached from the car. The car was not, therefore, available for running upon another track, or upon an extension of the same track, on which horse or other power was used for propulsion.

By my invention I employ a truck or dummy, E, to which I permanently secure the griping apparatus H. This dummy moves only as far as the slotted tube extends. The car G, which forms one of the running and carrying cars of the road, I simply couple onto this dummy, so that it can be drawn over the portion of the road operated by the wire-rope or other cable, and be detached at any desired point for the purpose of running it upon another track, thus leaving the dummy ready to couple with another passenger-car.

It often happens that a portion of a railway is built over uneven and hilly ground, while the remainder is comparatively level. By the employment of my griper-carrying dummy I am enabled to use the endless-rope system for propelling the cars over the rough and uneven portion, and horses or other power for moving them over the remainder. I leave the car itself free to be attached and detached at pleasure.

This arrangement is also very useful in transferring cars on a road operated entirely by the endless-rope system, as it enables me to switch the car from one track to another without the use of turn-tables. The construction of the dummy is immaterial, so long as it provides a permanent support for the griper.

It will be noticed that I secure the griping device through an opening in the dummy-floor, directly above the middle of one of the axles of the bearing-wheels. This is necessary in order to preserve a uniform distance between the griping-jaws and the bottom of the tube when the dummy passes over the angles of the hill where the level changes.

I am aware that cars have long been coupled

to a dummy or engine upon which the motive-power was carried and generated; but this I do not claim.

What I do claim is—

In combination with the cars of a street or other railway which are intended to be propelled by means of an endless cable moving in an underground slotted tunnel, the truck or dum-

my E, having the permanently-attached gripping device H, substantially as and for the purpose described.

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Witnesses:

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