P. COOPER.

Propulsion of Railway-Cars.

No. 218,935. Patented Aug. 26, 1879.

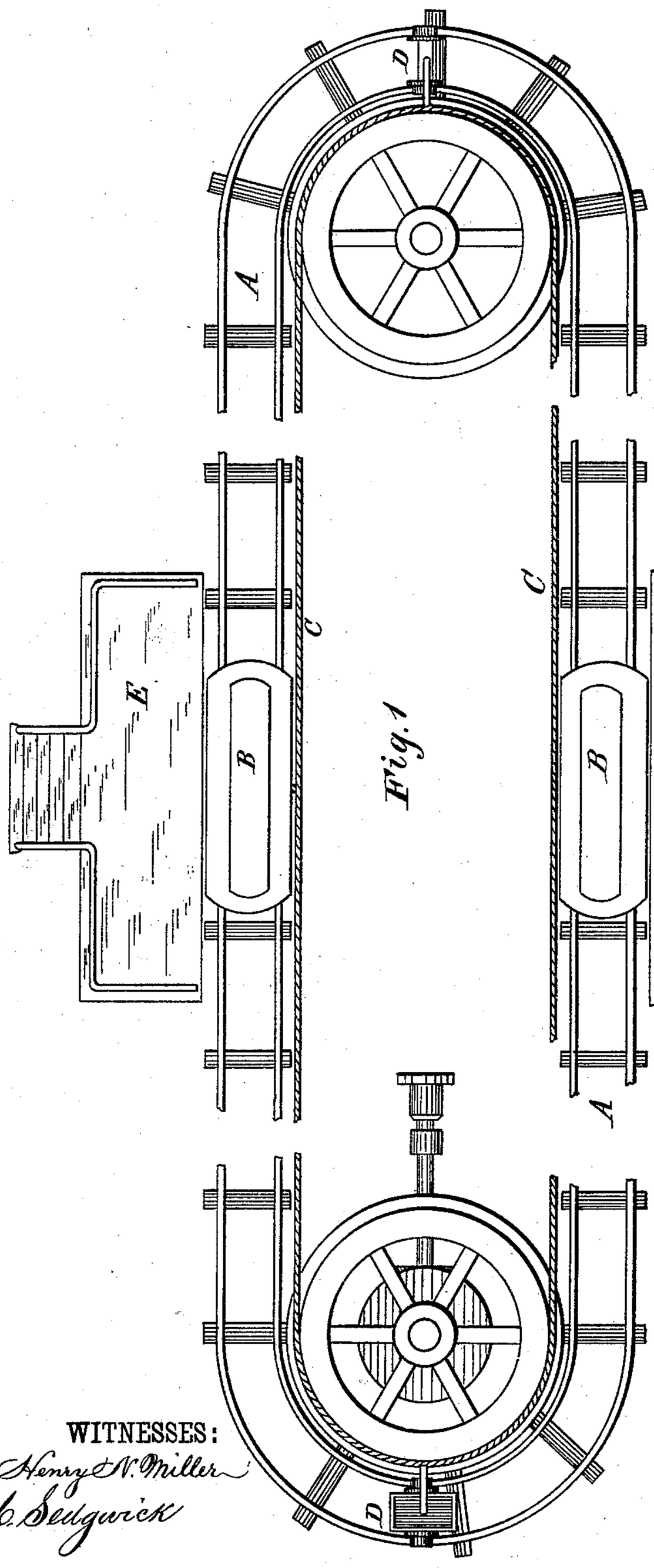

Fig. 1

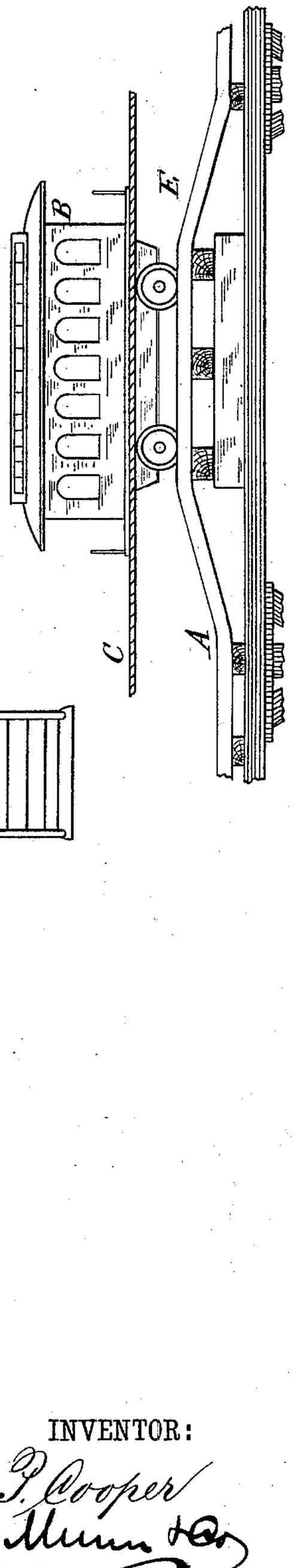

Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

PETER COOPER, OF NEW YORK, N. Y.

IMPROVEMENT IN PROPULSION OF RAILWAY-CARS.

Specification forming part of Letters Patent No. **218,935**, dated August 26, 1879; application filed May 14, 1879.

To all whom it may concern:

Be it known that I, PETER COOPER, of the city, county, and State of New York, have invented new and useful Improvements in the Propulsion of Railway-Cars, of which the following is a specification.

The object of my improvements is to render rapid transit by railway-cars positively safe from all danger of collision, by which one train of cars could destroy another.

The improvement consists in a combination of well-known mechanical powers, by which trains of cars can be propelled at any desired speed by means of an endless chain, wire, or other rope. This endless chain or rope must be borne up in its entire length by being fastened firmly to the outside and in the center of as many sets of cars as there are stopping-places on the whole line of the road. The stopping-places must be all of an equal distance apart, and there must be bearing-trucks between the different sets of passenger-cars to prevent the chain from dragging or rubbing against anything in its passage around the circuit. The endless chain or rope, with the attached cars, is made to pass around a large drum-wheel placed at each end of the line, which drum-wheels are to be of sufficient strength and operated by sufficient power to move the whole line of cars.

By having stopping-places at equal distances apart the rails can be so elevated as to use up the momentum of the cars in their ascent of the elevation at each stopping-place. The elevation should be sufficient to bring the cars to rest and hold the power ready to be given out at once by all the cars going over the ascent at the same time. This will give back all the power consumed by forcing the cars up the ascent, which will reduce the necessary propelling power to that required on a dead-level.

The invention is illustrated by the accompanying drawings, and the construction and operation will be explained more particularly in connection therewith.

In the drawings, Figure 1 is a plan view, and Fig. 2 is a side elevation.

Similar letters of reference indicate corresponding parts.

A is a double track, connected at the ends of the line to form an endless track, upon which the cars, represented at B, may travel continuously.

C is the endless cable, which is to be operated by suitable mechanism and power placed at the ends or at any point in the line, and to this cable the cars are connected by clutches of any desired character.

D D are two-wheeled trucks adapted for running on the track A, and connected with the cable C, intermediately of the cars B, for the purpose of sustaining the cables and preventing sagging.

E E represent stations, which are to be placed at regular intervals throughout the line, and the cars are to be attached upon the cables to correspond, so that every car in the line will approach to and recede from a station at the same time.

At each station the track is elevated to form a double incline and give an ascending and descending grade, as illustrated by Fig. 2, and upon the level summit portion of the grade the station is located.

There can be a platform-car connected with all the different sets of passenger-cars for the convenient transportation of baggage and freight, that can be taken off as rapidly as the passengers can be got in and out of the cars.

The described system will save the jar and all wear and tear of many locomotives constantly running over the whole structure, and the structure thus being relieved from the strain and jar could be made much lighter and equally safe. The second stories of buildings will be available as business places, and the sidewalks between the road and stores may be of glass, thus doing away with the expense and trouble of awnings and the darkening of the lower stores. The road may follow the inclinations and curves of the streets, and the noise, steam, and other annoyances connected with locomotives will be avoided.

I am aware that it is not new to use endless cables for the propulsion of railroad-cars, and that endless traveling platforms have been proposed for carrying passengers.

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

1. In combination with the endless cable and

track, the trucks D, substantially as and for the purposes set forth.

2. The arrangement and combination of the endless track, the stations equally distant apart, the endless traction-rope, and the cars secured thereto at distances corresponding to the distances of the stations, in the manner herein shown and described, so that all the cars on the circuit will simultaneously stop at and start from all the stations on the circuit.

PETER COOPER.

Witnesses:

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