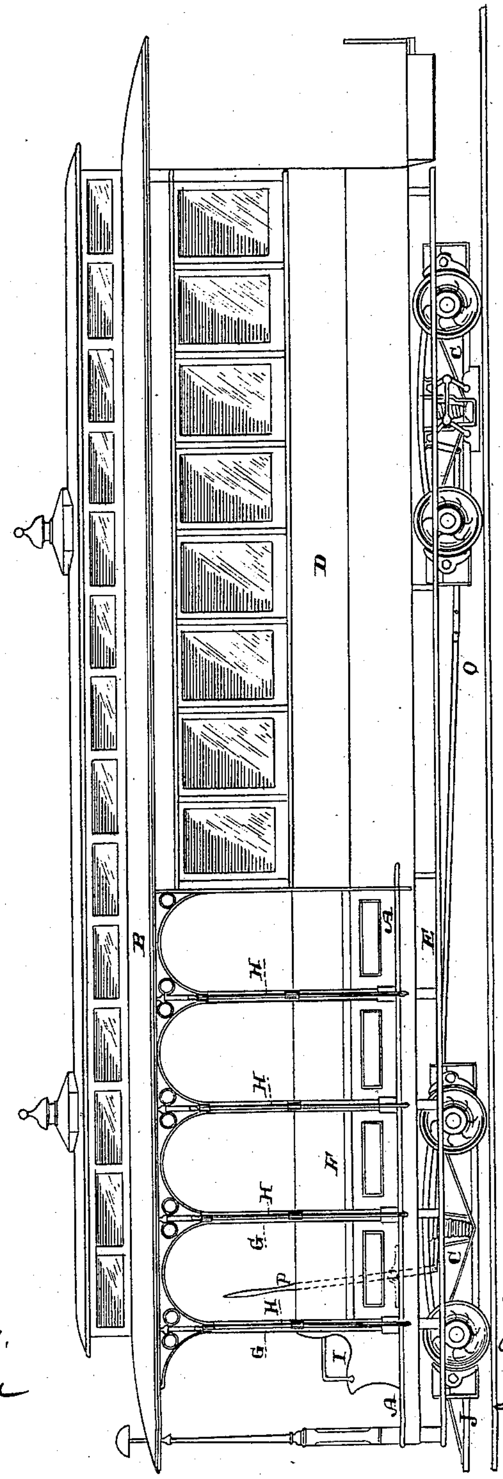
(No Model.) 4 Sheets—Sheet 1.

H. ROOT.

RAILWAY CAR.

No. 304,863. Patented Sept. 9, 1884.

FIG. 1.



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J. H. [illegible]

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(No Model.) 4 Sheets—Sheet 2.

H. ROOT.

RAILWAY CAR.

No. 304,863. Patented Sept. 9, 1884.

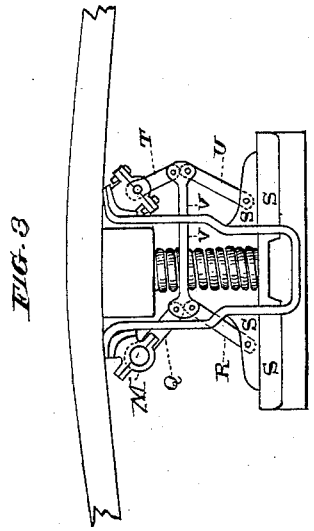

FIG. 3

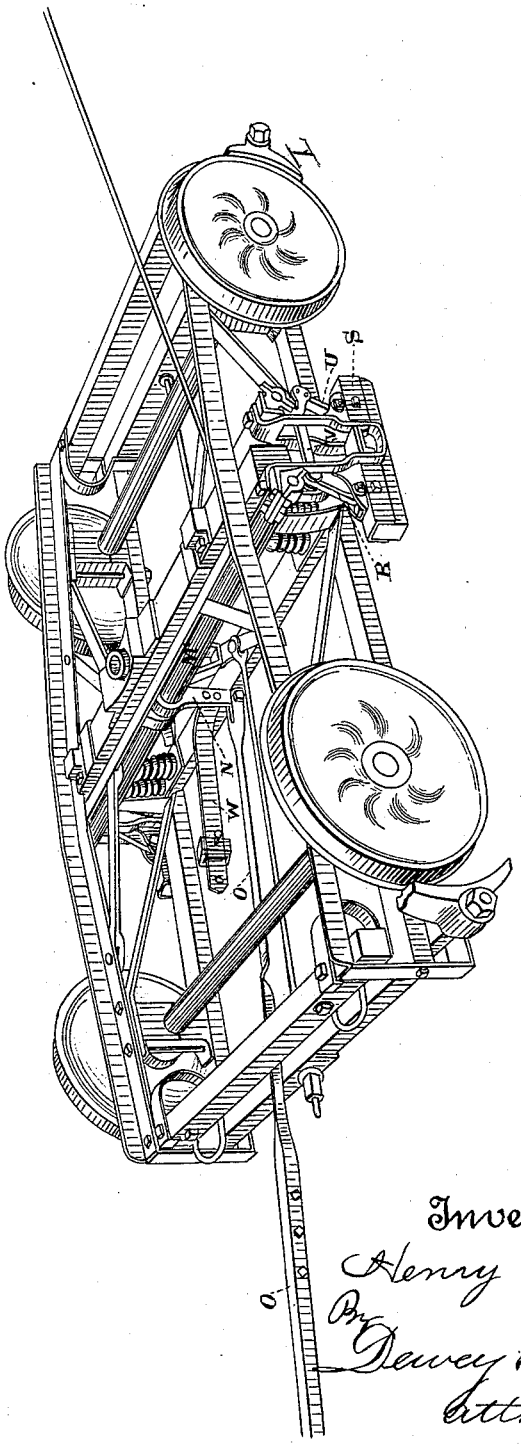

FIG. 2.

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(No Model.) 4 Sheets—Sheet 3.

H. ROOT.

RAILWAY CAR.

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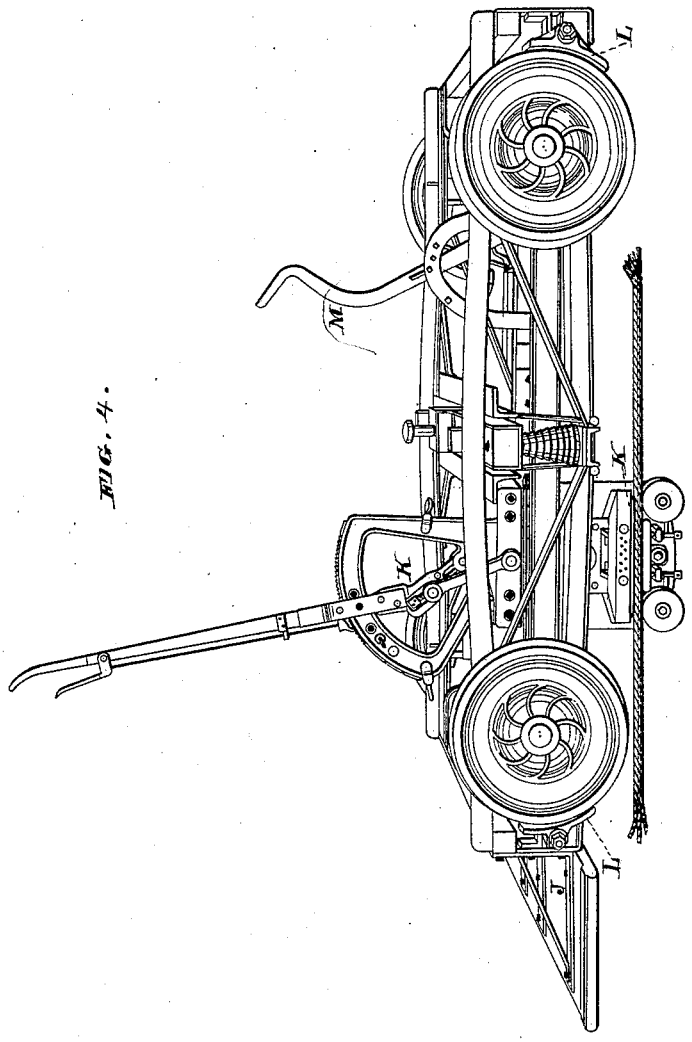

Fig. 4.

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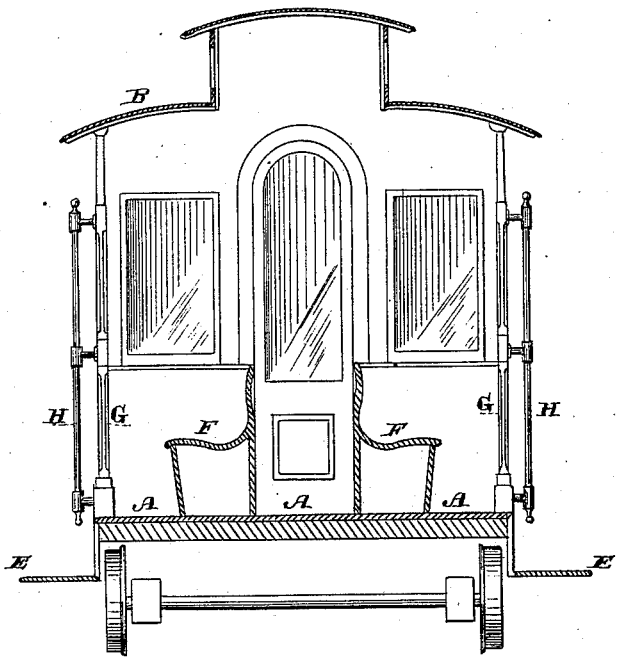
(No Model.) 4 Sheets—Sheet 4.

H. ROOT.

RAILWAY CAR.

No. 304,863. Patented Sept. 9, 1884.

FIG. 5.



Witnesses,
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UNITED STATES PATENT OFFICE.

HENRY ROOT, OF SAN FRANCISCO, CALIFORNIA.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 304,863, dated September 9, 1884.

Application filed December 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY ROOT, of the city and county of San Francisco, and State of California, have invented an Improvement in Cable-Railway Cars; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates, particularly, to a track-brake for railway-cars; and it consists in certain details of construction, hereinafter fully described and particularly claimed.

Figure 1 is a side elevation of my car. Fig. 2 is a perspective view of the rear truck, showing the track-brake. Fig. 3 is an enlarged side view of the brake-levers and the brake-shoe. Fig. 4 is a perspective view of the front truck with the rope-gripping mechanism and wheel-brakes. Fig. 5 is a transverse vertical section of the car.

A is the floor, and B the roof, of my car. These are made continuous, about twice as long as an ordinary street-car, and the whole car is mounted upon trucks C, which are placed one under each end. As these trucks have a wheel-base of about five and a half feet only, they easily accommodate themselves to any curvature in the track, and carry the long body of the car around the curves with less friction than a coupled car and dummy or grip car, and with less liability to leave the rails. The rear portion, D, of the car is in the present case inclosed and provided with windows like ordinary cars, and has a rear platform and steps. This portion of the car may occupy one-half or more of its entire length, and the remaining or front portion is left open. The wheels of the trucks are made somewhat smaller than ordinary street-car wheels, so that the car-floor may be entirely above them, instead of the wheels projecting up through the car-floor, as in the usual construction of street-cars. Foot-boards or platforms E are supported from it upon each side at such a height as to be easily reached from the ground, and they project away from the sides of the car and the wheels, so that the person is not endangered while stepping on or off. Upon the floor of the open front portion are longitudinally-arranged seats F, facing outward, the backs of which are far enough apart to leave a passage between them, within which the operating levers or mechanism are placed, and where the gripman stands. These seats are sufficiently far from the outer edges of the car-floor to leave a safe and convenient place for the feet, and vertical posts G extend up from the outer edge of the floor to the roof at short intervals along the sides of the open portions. Upon the outer faces of these posts are vertical hand-rails H, secured so as to stand two or three inches from the posts, and serve as convenient handles for those getting on or off, and, when the seats are full, for those who stand upon the side platform, E. These posts and rails not only serve to protect seated passengers from risk of passing vehicles or other objects, but also increase the carrying capacity of the cars by providing convenient handles for those who stand. Across the front may be placed seats I, with a space between corresponding with the passage between the seats, in which a lantern or head-light may be placed at night, the dash-board in front being also open to allow the light to pass out. Wheel-brakes L are also fitted to this truck, and are operated by a foot-lever, M, or other mechanism projecting up through the car-floor, as shown.

As the rear portion of the car carries the greatest weight, it is necessary to provide some means for stopping it quickly which shall be under the control of the gripman in front, and experience has shown that a frictional brake working upon the track itself is the most effectual.

M′ is a shaft extending across the rear truck-frame just in front of the bolster, turning in boxes at each end, and having an arm or lever, N, projecting down from near its center. From this arm a connecting-rod, O, extends forward, and connects with the lever or other operating device, P, in the front portion of the car. From the outer ends of this shaft the upper arms, Q, of knee-levers project downward, and the lower arms, R, are jointed to their lower ends, extending thence down to the brake-shoe holder S, to which they are hinged or pivoted near one end. Similar knee-levers, T U, are pivoted behind the bolster, with their lower ends connected with the rear portion of the brake-shoe holder. A link, V, unites the knee-joints of these levers, so that when the front ones are actuated by the shaft M the rear ones will also be moved in unison therewith, and will

thus force the brake-shoes down upon the track. The shoe-holder is preferably made of channel-iron, and a wooden shoe is secured in it, which may be renewed at any time. These brakes are extremely powerful, and will bring the car to a full stop in a short distance. An arm, W, extends horizontally from the lever N of the shaft M, and it is weighted, so that when the actuating-lever is released the weight raises the brake from the track. These brakes are very efficient, and their use saves considerable wear on the wheels.

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

In a car, the combination of the knee-levers suspended from the truck-frame, having their angles united by a connecting-rod, V, the track-shoes suspended from the lower ends of said levers parallel with the track, the transverse shaft M, connected to the upper end of one pair of the levers, the crank-arm N, the connecting-rod O, and the operating-lever, substantially as described.

In witness whereof I have hereunto set my hand.

HENRY ROOT.

Witnesses:
S. H. NOURSE,
C. D. COLE.