2 Sheets—Sheet 1.

S. MARDEN.

Elevated-Railway Car and Track.

No. 214,937. **Patented April 29, 1879.**

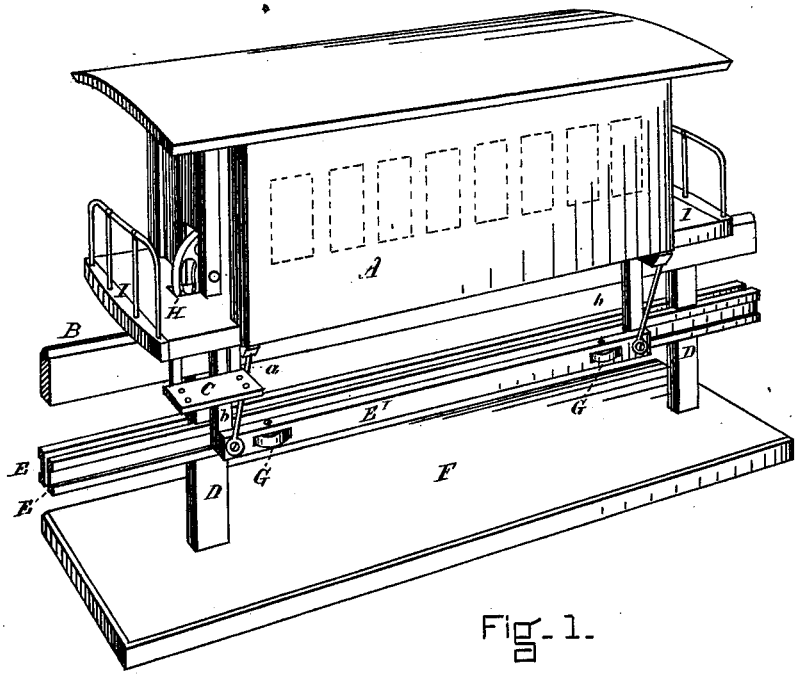

Fig. 1.

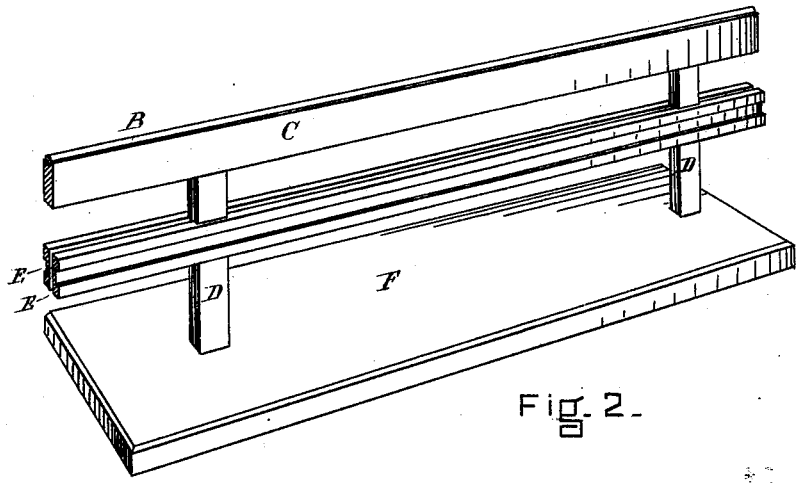

Fig. 2.

WITNESSES.

Mard. M. Davis

James E. Spear

INVENTOR.

Samuel Marden

by attorney

J. L. Newton

2 Sheets—Sheet 2.

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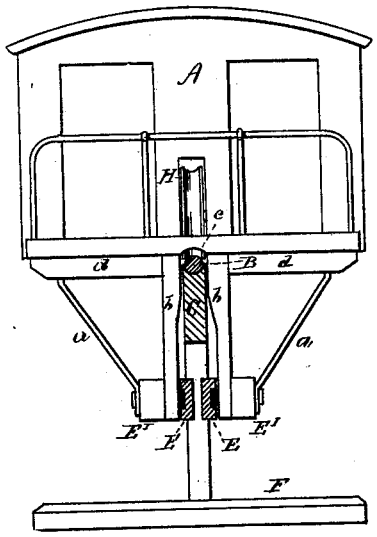

Fig. 3.

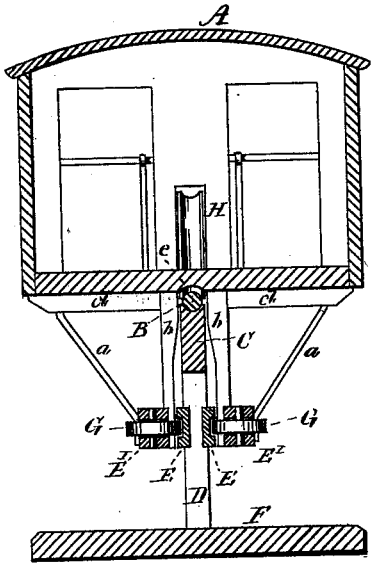

Fig. 4.

WITNESSES.

Mand W. Davis

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Samuel Marden

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UNITED STATES PATENT OFFICE.

SAMUEL MARDEN, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND STEPHEN F. CARRIER, OF SAME PLACE.

IMPROVEMENT IN ELEVATED-RAILWAY CAR AND TRACK.

Specification forming part of Letters Patent No. **214,937**, dated April 29, 1879; application filed December 16, 1878.

To all whom it may concern:

Be it known that I, SAMUEL MARDEN, of Newton, in the county of Middlesex and State of Massachusetts, have invented an Elevated-Railway Car and Elevated-Railway Track, of which the following is a specification.

The invention is a railway-car made to run on a single elevated rail-track. The car-body is similar in its general construction to other cars now in use, except on its under side along the center of the body the entire length of the car is a semicircular groove in the under side of the bottom of the car, which groove, being concave, covers and runs over and along a cylindrical or convex rail. At or near each end of the car is a single wheel, which has a concave rim or face adapted to run upon the convex rail. The rail sets into or rests upon a longitudinal sleeper, which is supported upon upright posts set into the earth.

Under the car-body is a frame, two arms of which, one at each end of the car-body, are fastened to the body extending from the groove across the car-body. Joined to these arms, and at right angles thereto, are the other arms, which bear on their ends stringers or truck-frames the length of the car-body. On the other side of the groove is a similar frame, and near each end of the two stringers or truck-frames are wheels, which rotate horizontally. These four wheels (two in each stringer or truck-frame) run in grooves formed in rails, which are fastened to the sides of the upright posts which support the sleepers. The said frame, beneath the car-body, shuts down over the rail-track, so that while the car-body rests upon the car-wheels the groove in the car-body between the two wheels, and on the other sides of the wheels to the end of the car-body, shuts over the rail—that is, there is a continuous groove from end to end on the under side of the car-body. This contiguity of groove and rail will tend to prevent the swaying of the car. The wheels in the stringers rotate in the grooves of the two rails fastened upon the sides of the posts.

To illustrate more clearly the construction of the car and the mode of running the same upon the elevated rail, I will refer to the accompanying drawings, which are made a part of this specification.

Figure 1 shows the car-body A resting upon its car-wheels H H over the track, the rail B, the sleeper C, the upright posts D D penetrating the ground F, the grooved side rails E E, which are fastened one on each side of the posts, the stringers or trucks E′ E′, which carry the wheels G G, inserted horizontally in the stringers, as shown, and which wheels run in the grooves of the side rails E E, the platforms of the car I I, the steps *c c*, the arms of the frames *b b* and *d d* beneath the car-body, and the stays *a a*.

Fig. 2 shows more clearly the construction of the elevated track, consisting of the parts before named—viz., the cylindrical rail B, the sleeper C, the upright posts D D, and the grooved side rails E E.

Fig. 3 shows an end view of the car upon its track and the frame beneath the car-body—viz., the arms *b b d d*, and the stringers E′ E′, the side stays *a a*, the rail B, the sleeper C, a car-wheel, H, and the groove *e* in the under part of the car-body, and the grooved side rails E E.

Fig. 4 shows a vertical cross-section of Fig. 3, exhibiting the wheels G G and their axles, secured in the stringers E′ E′, and the way the said wheels rotate in the grooved side rails E E. Said Fig. 4 also shows the elevated track and the position of the car-body resting upon the track.

The stringers E′ E′ need not extend the length of the car-body, as herein shown; but there need be only sufficient parts thereof with other stays to carry the wheels G G, and this may be necessary in rounding a curve. Even the car wheels H H might be dispensed with, in which case the car-body would rest upon the rail B, and the wheels G G, &c., might be made with adequate power to propel the car.

I have placed no seats in the car-body; but I have thought the best arrangement of the seats would be to place two seats back to back throughout the length of the car, so that the weight would be directly over the single rail or track. The floor of the car-body may be lower than the rail or track, if thought safer. The advantages of a rail-car thus elevated upon a single track or rail are readily seen.

A track may run through fields, over uneven ground, over the sidewalks of streets in cities, and beside the traveled path of highways, and

at any desired height above the ground, and take up but little room, or, at least, be much less objectionable in cities than the elevated railways now in use.

A car run as herein described by steam or compressed air, or by whatever motive power, could not run off the track. The parts of the elevated track or of the car herein described may be made of metal, wood, or of any suitable material.

I do not claim, broadly, a car supported on two wheels centrally located, and arranged to run on a single rail, and guided by trucks arranged in pendent frames or portions of the car, and bearing upon side rails, that being old and well known.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A car-body, A, provided with a concave groove, *e*, on the under side of its bottom, running the entire length of the car, and adapted for running over a cylindrical or convex rail, either near to or directly in contact with said rail, substantially as shown and described.

2. The combination of a car-body, A, provided with a groove, *e*, and on both sides of said groove attached to the under side of the bottom of said car a frame, *a a b b d d*, and the stringer E′, which has guide-wheels G G rotating in a groove in the rail E, substantially in the manner and for the purpose shown.

3. The combination of the rail B, the sleeper C, the upright posts D D, and the grooved rails E E, adapted for a car, A, provided with a groove, *e*, on the under side of the bottom of the car-body, and provided with wheels H H, and a frame on either side of said groove *e*, carrying stringers E′ E′, provided with guide-wheels G G, for running in the grooves of the side rails E E, substantially as shown and described.

SAMUEL MARDEN.

Witnesses:
JEREMIAH L. NEWTON,
STEPHEN F. CARRIER.