

(No Model.)

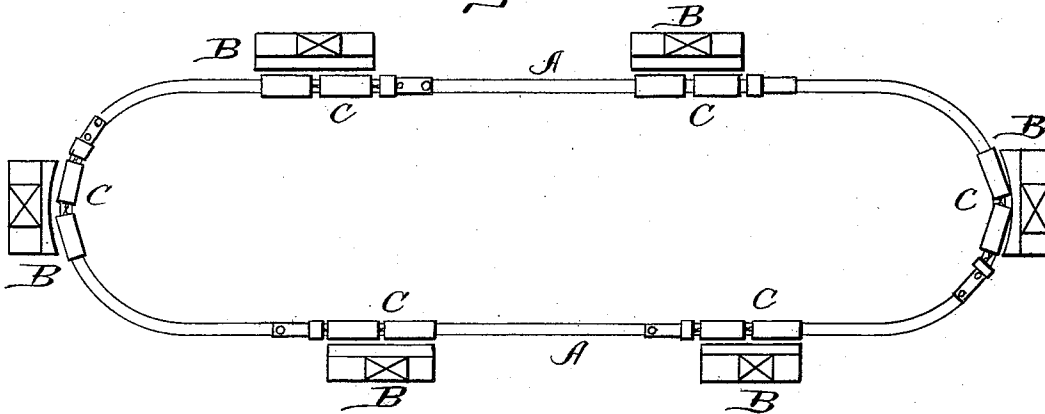
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H. T. DUNNE.  
RAILWAY SYSTEM.

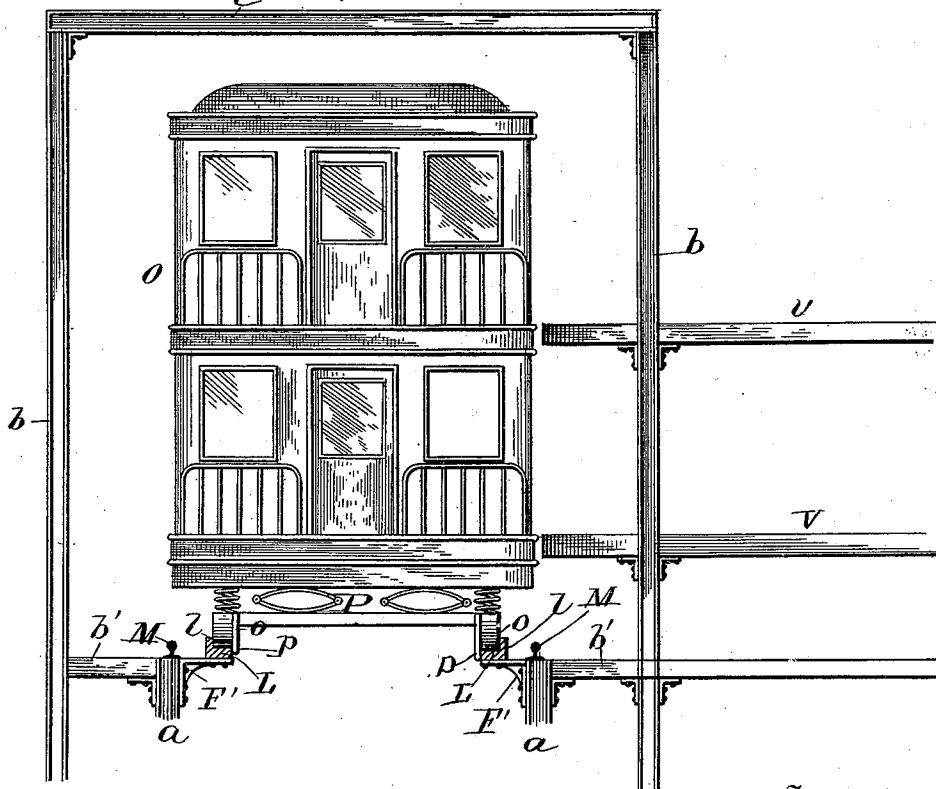
No. 474,951.

Patented May 17, 1892.

*Fig 1*



*Fig 4*



Witnesses

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*Geo. L. Wheelock*

Inventor

*Hugh T. Dunne*  
*per R. H. Davis*  
*his Attorney*

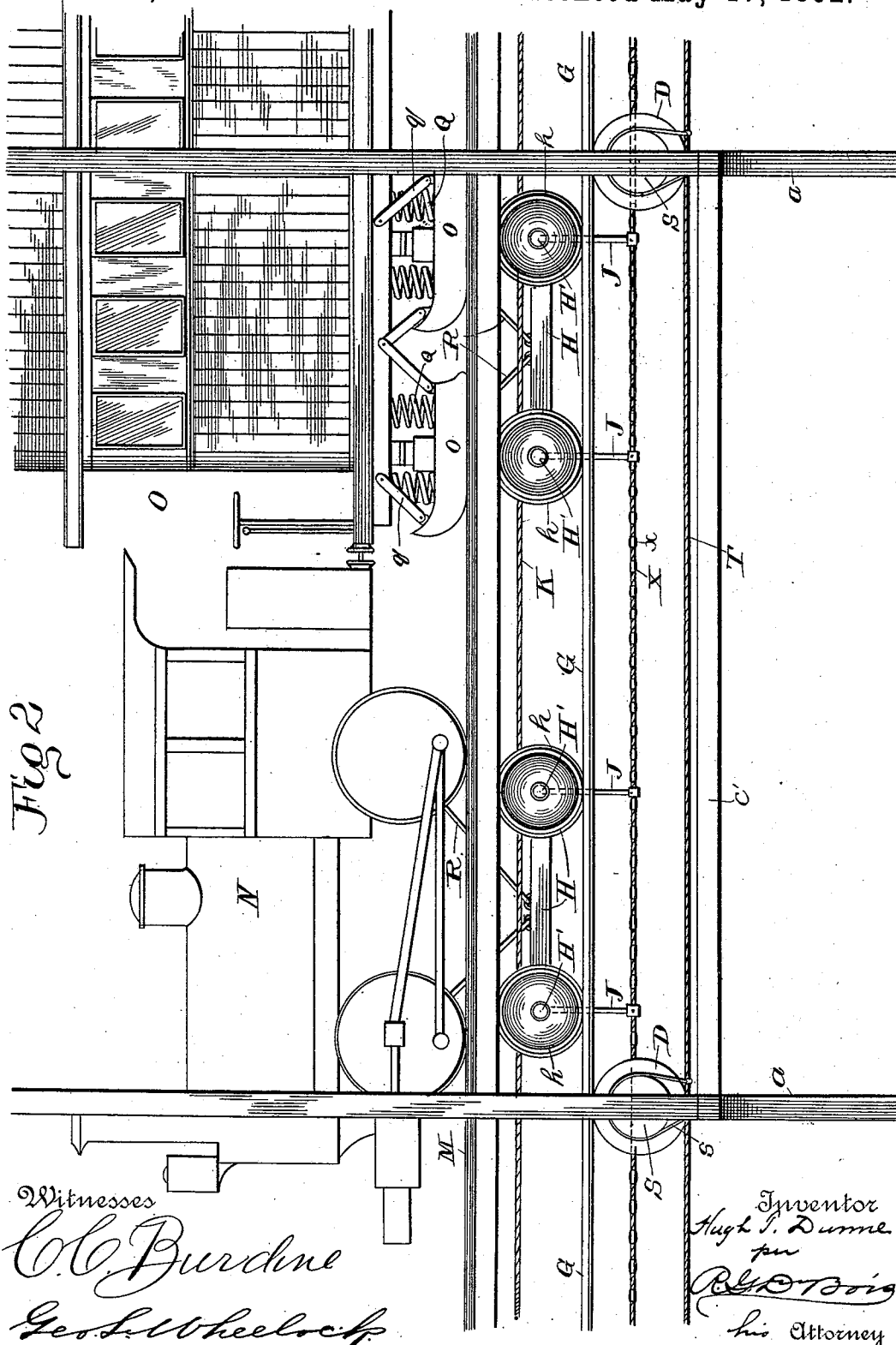
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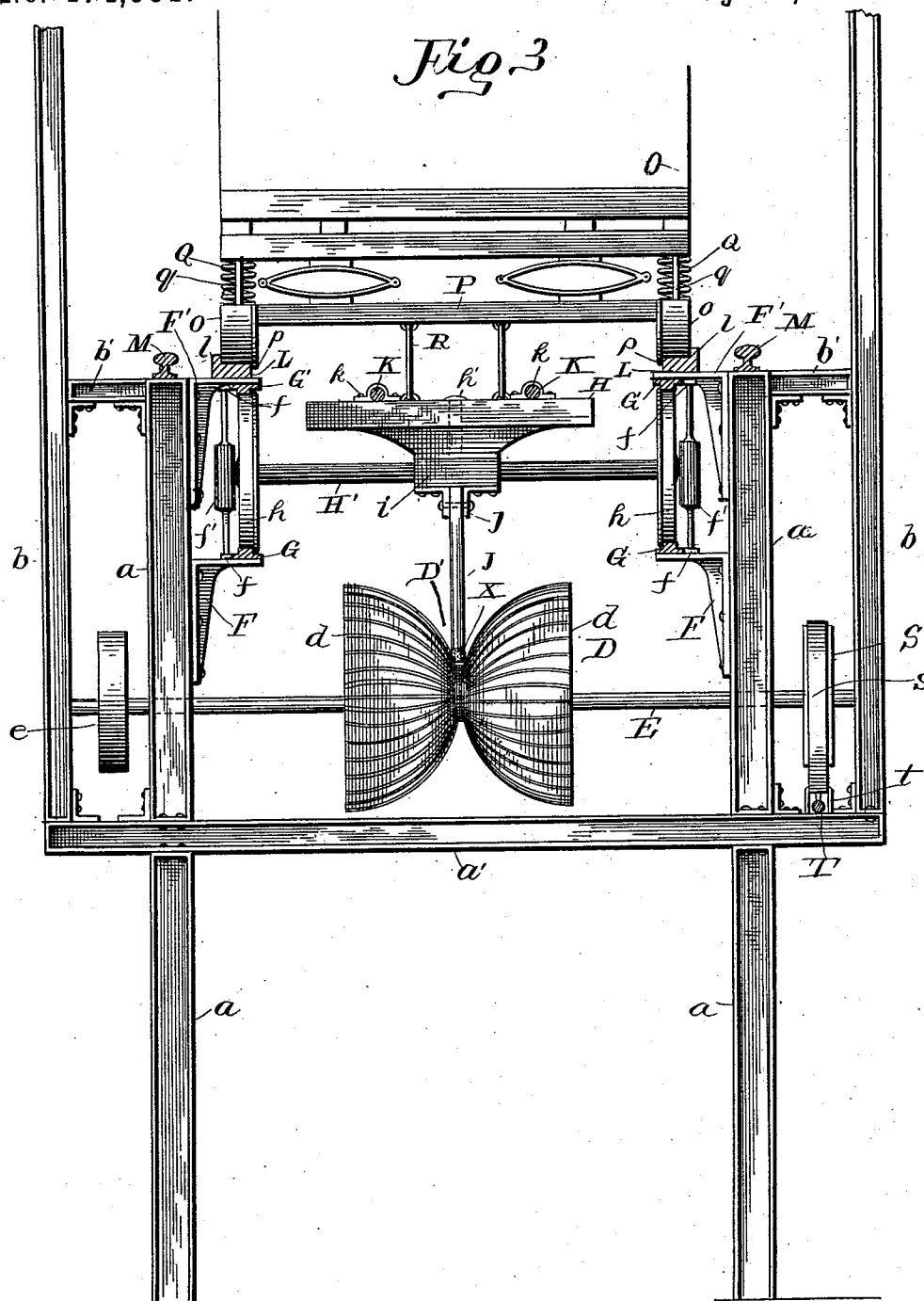
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Witnesses

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# UNITED STATES PATENT OFFICE.

HUGH THOMAS DUNNE, OF NEW YORK, N. Y.

## RAILWAY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 474,951, dated May 17, 1892.

Application filed May 18, 1891. Serial No. 393,167. (No model.)

*To all whom it may concern:*

Be it known that I, HUGH THOMAS DUNNE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Railway Systems; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in railways, its object being to produce a rapid-transit railway which will be safe and efficient.

To this end my invention consists in certain features of novelty and combinations of parts, to be hereinafter described, and then particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a diagrammatic view showing a railway system built after my plan. Fig. 2 is a side elevation of a section of my improved railway system. Fig. 3 is a vertical transverse section thereof. Fig. 4 is an end elevation showing a double-decked car and a double-platform station.

In Fig. 1, A indicates an endless railway, which is divided into equal divisions, a station B being provided at each division. The trains C are arranged at the same distance apart as are the stations B, and are connected by propelling-cables. (Shown in the drawings and to be hereinafter described, but not shown in said figure.) Thus the trains are made to work and stop together.

In Figs. 2, 3, and 4, *a* represents lower uprights; *a'*, a lower beam connecting them; *b*, upper and outer uprights parallel with uprights *a* and having their lower ends resting upon the outer projected ends of beam *a'*; *b'* *b'*, short beams connecting the upper ends of uprights *a* and the uprights *b*; *c*, an upper beam connecting the upper ends of the uprights *b*, and *c'* longitudinal girders connecting the uprights, the whole constituting an elevated structure.

D are sheaves provided with V-grooves D' and corrugations *d*, extending longitudinally of the grooved periphery of the sheaves. E are transverse shafts extending across the superstructure and having bearing in suitable journals. At the end of each or some of the shafts E is a power-pulley *e*, over which

a belt from a power-house may pass, such power-houses being located at suitable intervals along the road. Over the sheaves D and in the V-grooves therein runs a cable X, having at regular intervals knobs or enlargements *x*, which take into the spaces between the corrugations *d* of the sheaves, whereby the cable is propelled. Above the sheaves D and at the upper end of each upright *a* is a pair of inwardly-projecting brackets F F', in bearings *f* of which are journaled vertical rollers *f'*.

G are lower parallel rails secured upon the brackets F, one at each side of the superstructure, and G' are upper rails arranged parallel with each other and with the lower rails and secured under the brackets F'. A series of trucks are arranged at suitable intervals along the road, and these are each composed of a body H, wheels *h* at the end of axles H', of which there is a pair to each truck, and king-bolts *h'*, connecting the body H to the sleeves or boxes *z*, in which the axles turn, or the axles may be fixed therein and the wheels turn on the axles. At the bottom of each sleeve is a socket *j*, in which is pivoted a link J, which may swing in a plane extending vertically and longitudinally of the road, but cannot swing laterally. The lower ends of these links are pivotally connected to the cable. These trucks are connected by a pair of cables K (one at each side) by suitable fastenings *k*. These two cables are for keeping the several parts in proper position. The upper pair of rails keep the trucks from jumping off their track. On the top of the upper brackets F', at each side of the road, is a track-rail L, each having on its outer upper side a flange *l*. Outside of these track-rails L are track-rails M, on which the locomotive or other motor N runs.

The passenger coaches or cars O are provided with runners *o*, connected by bars P, the runners and bars constituting sleds. Each runner is provided with an inner downwardly-projecting flange *p*. These runners move on the broad track-rails L, the combined effect of the flanges *l* and *p* being to prevent the runners being shifted off the rails when the cars are in motion. The sleds are connected to the cars by means of pivoted hangers *q*, and the cars are cushioned upon the sleds by

means of spring-cushions Q. Grease or frozen water may be placed on the tracks L, or the tracks may be composed of soapstone or other slippery substance. The locomotive is coupled  
5 to the cars as usual, and it is designed to move the cars thereby when not moved by the cable.

The locomotive and cars are secured to any of the trucks by means of links R.

To stop the trains, I provide at the ends of  
10 shafts E brake-wheels S, over which pass brake-straps s, connected at one end to the superstructure by open links t and at the other end to a cable T, which passes through the openings of the links, whereby when the cable is  
15 moved in the proper direction by means of suitable mechanism the straps will be tightened upon the brake-wheels and the propelling-cable X and the connected parts slowly stopped.

20 It is designed to construct all of the metallic parts of steel, but of course other suitable metal might be used.

In connection with my system I propose to employ some automatic or other signal to signal when all is safe. I also propose to use a  
25 register in each power-house, showing when all trains are ready to move, and an alarm to sound when starting.

In Fig. 4 is shown a double-decked car O  
30 in connection with a double-platform station V. This allows passengers to get on or off quickly and facilitates rapid transit.

My system may be used on the one-track or cycle road or in a conduit, and may be also  
35 adapted to other styles of roads.

Changes of various kinds may of course be resorted to by skilled mechanics and engineers without departing from the scope and spirit of my invention.

40 What I claim is—

1. In a railway, a propelling-cable, spaced trains, and an intermediate series of connected trucks connected with the cable and trains below and above, respectively, substantially as set forth. 45

2. In a railway, a propelling-cable, an upper and lower pair of track-rails, and connected wheeled trucks running on the lower rails, connected with the cable, and with which a train or trains may be connected, said cables  
50 being guided in a path outside of that in which the trucks travel, as set forth.

3. In a railway, a propelling-cable, wheeled trucks running on suitable rails, and cables connecting the trucks, separate from the propelling-cable, and hangers depending from  
55 the trucks, said hangers being connected to the propelling-cable located below the trucks, substantially as set forth.

4. In a railway, a propelling-cable, shafts  
60 provided with sheaves for moving the cable, and brake mechanism comprising brake-wheels on the shafts, straps fixed at one end and passing around the brake-wheels, and a cable connected at the other ends of the straps,  
65 substantially as and for the purpose set forth.

5. A railway system comprising an endless track or road, cars, separate trucks on separate tracks, with which said cars are connected, and three cables, two for securing the  
70 trucks together and keeping them in position, and the other for propelling the cars and stopping them, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HUGH THOMAS DUNNE.

Witnesses:

EDWARD FARRELL,  
JAMES A. HAYES.