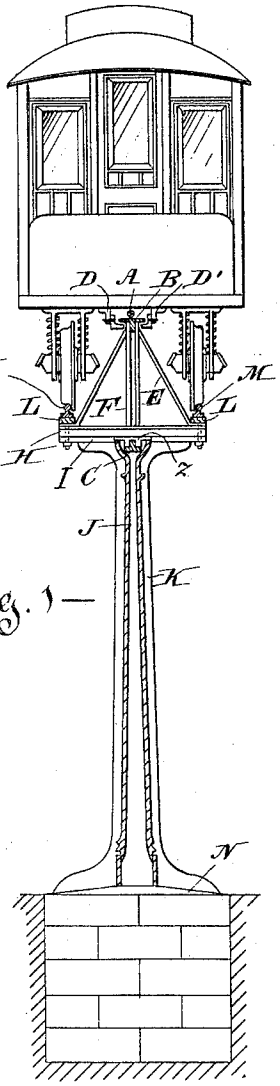
(No Model.) 2 Sheets—Sheet 1.

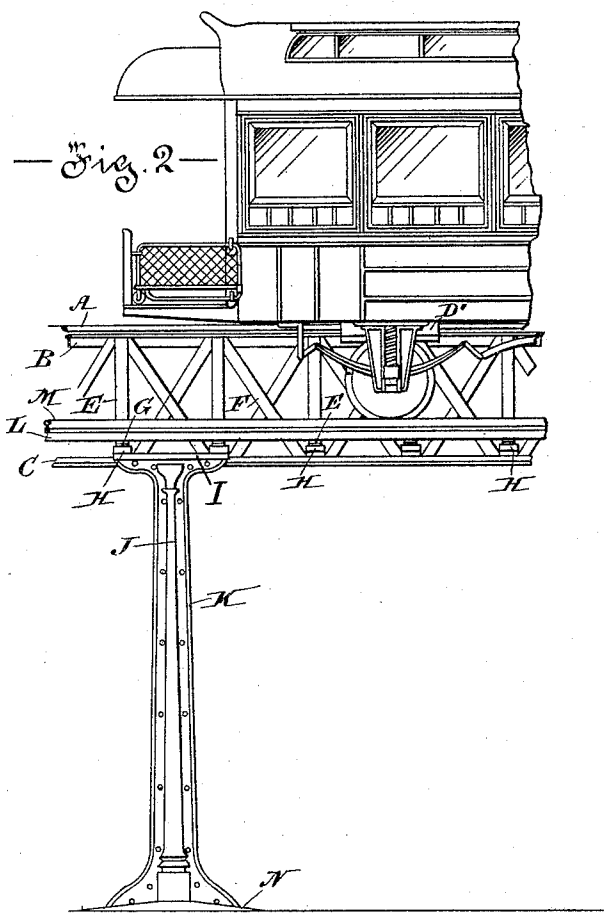
A. DAVIS.

ELEVATED RAILWAY.

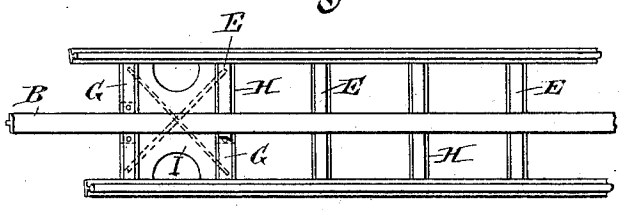
No. 476,982. Patented June 14, 1892.



— Fig. 1 —



— Fig. 2 —



— Fig. 3 —

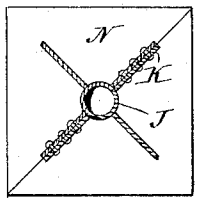


Fig. 4

Witnesses

Inventor

Adolphus Davis

By his Attorney

(No Model.) 2 Sheets—Sheet 2.

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Fig. 6.

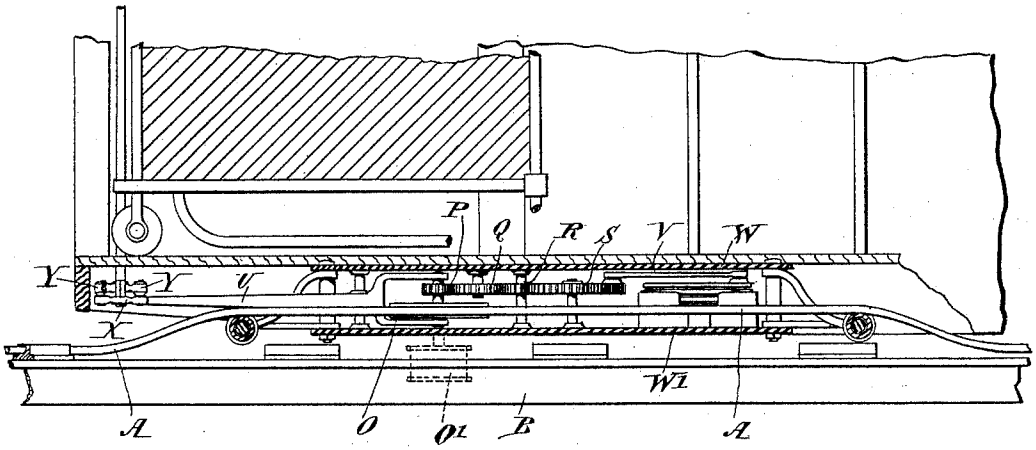
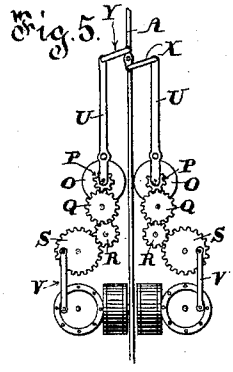


Fig. 5.



Witnesses
Fred J. Sears

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UNITED STATES PATENT OFFICE.

ADOLPHUS DAVIS, OF LONDON, ENGLAND.

ELEVATED RAILWAY.

SPECIFICATION forming part of Letters Patent No. 476,982, dated June 14, 1892.

Application filed May 22, 1891. Serial No. 393,788. (No model.) Patented in Canada December 5, 1890, No. 35,554.

To all whom it may concern:

Be it known that I, ADOLPHUS DAVIS, of the city of London, England, have invented certain new and useful Improvements in Cable or Electrical Elevated Railways, (for which I have already obtained Letters Patent of the Dominion of Canada, No. 35,554, granted December 5, 1890;) and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention has reference to the structure of an elevated railway, including, in connection and combination therewith, special mechanism for imparting to the car the motive force employed, and also to the safety devices in connection therewith and with the cars traveling on same, and may be thus described: The track is a continuous single girder carried on a series of posts. Upon the bottom chord of this girder rest cross-ties, the ends of which are connected by diagonal stays to the top chord for further support, and upon the ends of the cross-ties are bolted the longitudinals carrying the rails. The wheels of the cars are mounted on stub-axles having their bearings in hangers depending from the car and of such height that the bottom of the car will be in close proximity to the top of the girder. Guards secured under the car, sliding on either side of and in close proximity to the girder, prevent any lateral motion while the train is running and do away with any chance of accident from the breaking of a rail or tire, as the car in any case could only drop down between them onto the top chord of the girder.

It must be understood that I lay no claim to any specific means for imparting initial locomotive force to the cars, and if the road be a cable road the propelling-cable will be carried in sheaves on the top chord of the girder and provided with grips, all in the ordinary way.

Should I wish to employ electricity as the propelling force, the conductor is placed in proper bearings on the top chord of the girder. Motors of any desired type are placed under the car in convenient positions and are operated from the conductor through metal contacts, which may be friction or geared wheels. These motors when so actuated operate through a train of gearing or friction-wheels to rotate a pair of wheels caused to grip either the cable or the top chord of the girder by means of levers (in which they are carried) operated from the car. It will be noticed that either if worked as a cable road or by the specific devices above mentioned the construction of the girder and carrying-surfaces enables all propelling mechanism to be disconnected from the axles of the wheels, which simply remain as supports or rollers and are free from the brake mechanism as well, which can be arranged to grip the top chord of the girder.

For full comprehension of the invention reference must be had to the annexed drawings, forming part of this specification, in which Figure 1 is a sectional view of the railway and car; Fig. 2, a side view of same; Fig. 3, a plan view of track; Fig. 4, a sectional plan view taken through column; Fig. 5, a plan view of gripping mechanism, and Fig. 6 a sectional view of same on an enlarged scale.

Like symbols represent the same parts.

B and C are respectively the top and bottom chords of the girder, A showing the position of the cable or conductor arranged above B.

F are vertical cross-stays bolted together as usual, and G cross-plates secured to the top chord B by diagonal stays E and resting upon cross-pieces H, to which are bolted the longitudinals L, carrying the rails M. These cross-pieces H are usually set upon clips Z Z, resting on the bottom chord C.

D D′ are longitudinal guides, which may be formed of angle-iron riveted together, having their upper edges secured to the under side of the car, running down on both sides of the top chord B and having their lower edges turned in under it. This superstructure is carried upon columns J, placed at suitable distances apart. These are preferably cast in two or more sections with strengthening ribs or stays K and bolted together, as shown in Fig. 4.

N is the base-plate, resting on suitable foundation, and I the top plate, constructed, as shown in Figs. 1 and 2, to allow the bottom chord to be set about six inches into the head of the column, so as to bring the top of the

chord C approximately at the level of the plate I.

In Figs. 5 and 6 are shown the preferable means by which, if electricity be the motive force employed, I impart motion to the car.

O O are contact-wheels mounted on spindles carried between plates W W′, secured to the bottom of the car, and these spindles, carried in levers U U, are operated from the car, by which they may be thrown in or out of contact or the degree of grip regulated.

P, Q, R, and S form a train of gearing by the metallic contact of which and through the pitman V the current is transmitted to the motor employed, which in its turn operates through the several gears above mentioned to rotate the wheels O O on the cable and drive the car.

It may be found more convenient to use the wheels O O simply as electrical contacts and to mount on the same spindles wheels O′ O′, as shown (dotted) in Fig. 6, which will work against the upper chord of the girder.

It will be seen that the construction of the girder as hereinbefore described is the only one which will allow of this arrangement of devices conveying the motive force to the car and driving it.

Having thus described my invention, I beg to state that what I claim is as follows:

1. In an elevated railway, the combination, with a series of single posts, of a lattice-girder resting on same and having its lower chord sunk into the caps of such posts, cross-pieces resting on such chord and carrying on their outer ends longitudinals, and diagonal stays from top chord of girder to such crosspieces, all as herein described, and for the purposes set forth.

2. The combination, with the posts J, of the girder resting on top of same, cross-pieces H, carried on top of chord C, cross-plates G, connected with girder by diagonal stays E, longitudinals L, and rails M, substantially as and for the purposes herein set forth.

3. In an elevated railway, the combination, with a single girder carrying on the ends of cross-pieces resting on its lower chord the longitudinals and rails, of guides secured to the under side of the traveling car and projecting downward on both sides of and under the top chord of such girder, as and for the purposes described.

4. In an elevated railway, the combination, with the roadway structure embracing a single girder carrying the rails on the ends of cross-pieces resting on its lower chord, of the car with its wheels carried on stub-axles suspended directly from the bottom of such car and guides, also secured to the bottom of such car and projecting downward on both sides of and under the top chord of such girder.

ADOLPHUS DAVIS.

Witnesses:
WILL P. MCFEAT,
FRED. J. SEARS.