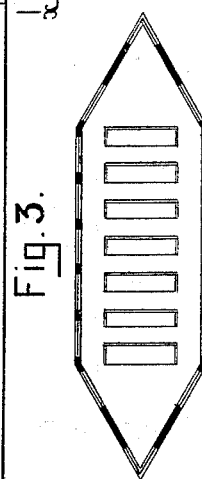
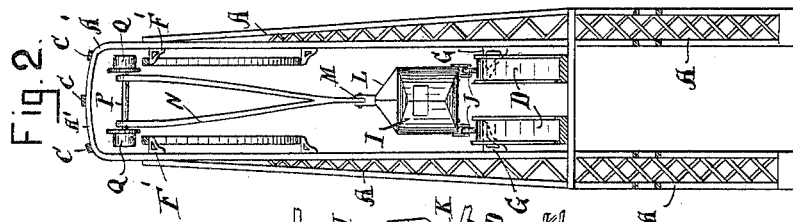
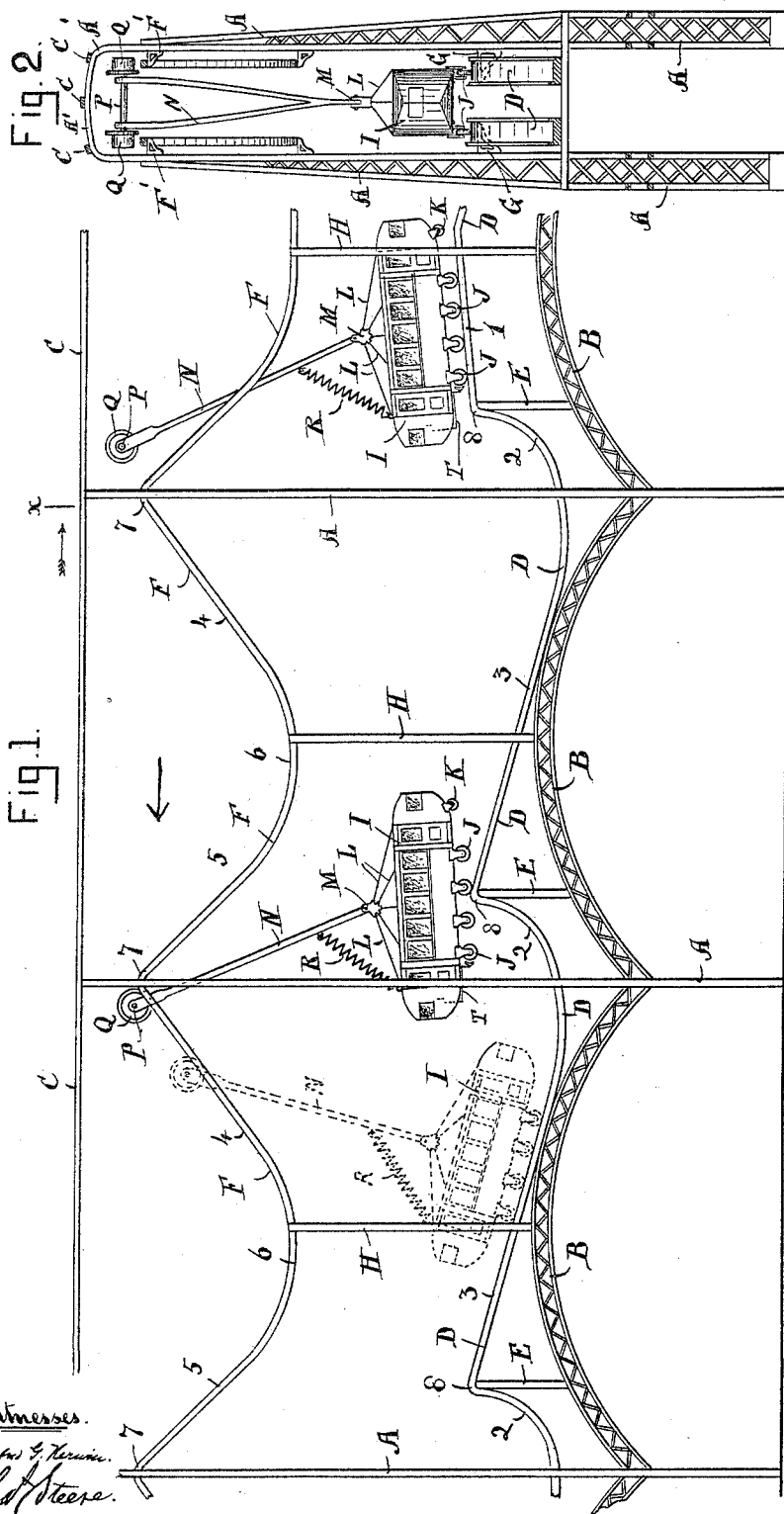


(No Model.)

H. W. LIBBEY. AUTOMATIC AERIAL RAILROAD.

No. 491,572.

Patented Feb. 14, 1893.



Witnesses.
Wm. S. Kerwin.
Chas. Steere.

Inventor.
H. W. Libbey
by Edwin Blanton
Attorney.

UNITED STATES PATENT OFFICE.

HOSEA W. LIBBEY, OF BOSTON, MASSACHUSETTS.

AUTOMATIC AERIAL RAILROAD.

SPECIFICATION forming part of Letters Patent No. 491,572, dated February 14, 1893.

Application filed March 8, 1892. Serial No. 424,175. (No model.)

To all whom it may concern:

Be it known that I, HOSEA W. LIBBEY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Automatic Aerial Railroads, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to produce an automatic aerial rail road for carrying passengers, mail, merchandise and the like, and in cars therefor.

The invention consists of two sets of tracks, an upper and lower one of undulating form, and a car mounted upon wheels and having a bar secured to the roof, the upper end of which bar is attached to an axle upon which wheels are secured so that when the car is in operation it is alternately carried by the upper wheels running down an incline on the upper track and then by the lower wheels running up an incline on the lower track from which it is swung off at the moment that the upper wheels are upon the downward incline on the upper track, the momentum thus obtained by the swinging off and running down the incline being sufficient to carry the car up the incline on the lower track and over its highest point when it is again supported by the upper track.

Referring to the accompanying drawings: Figure 1—represents a side view of an automatic aerial rail road embodying my invention. Fig. 2—is a vertical section taken on the line *x, x*, of Fig. 1, looking in the direction of the arrow. Fig. 3—is a horizontal section of a passenger car.

A, A, represent standards which may be of any desired design, and of the required height, these standards are continued or connected at the top to form an arch A', to prevent the upper ends from spreading.

B, B, are arched girders that extend from one standard to another, and C, C, C, are stays or braces for keeping the upper ends of the standards A, the proper distance apart.

D, is the lower track of the form shown, that is to say it is formed with a starting place and stations slightly on the incline as

shown at 1, from the end of which it curves suddenly down as shown at 2, and then rises on an incline 3, from the upper part of which it again curves down as at 2, and again rises on an incline 3, and so on until the next station or stopping place 1 is reached, the lower portion of this track rests upon the top of the arches B, and its highest portions are supported by cross beams secured to standards E, resting upon the arches B.

F, is the upper track and consists of a series of downward and upward inclines 4, 5, connected by a curved portion 6, at their lower ends and rounded at their apexes 7, as shown, these tracks are supported at their apexes by brackets F', projecting inwardly from the standards A, and at their lower portions by bracket G, extending inwardly from standards H, carried by the arched beams B.

I, represents a car by which passengers, mail, merchandise and the like may be transported; this car is at each end formed wedge shaped, as will be best seen in Fig. 3, and slightly rounded up at the bottom and down at the top as shown in Fig. 1, whereby the car is enabled to cut the air so as to reduce the resistance to a minimum. To the under side of the car are secured wheels J, preferably four pairs as shown (but of course the number would depend upon the length of the car) and at the rear of the car is secured a roller K, that extends entirely across the car in case the rear end of the car should at any time come into contact with the point 8, of the lower track D, as the car swings off the same. To the upper portion of the car are secured bars or rods L, the outer ends of which are secured to a block M, to which a rod or bar N, is fulcrumed, this bar is furcated or spread open at its upper end as will be seen in Fig. 2, and through its upper ends is passed an axle P, upon the outer ends of which are mounted flanged wheels Q. A spring R, secured at one end to the top of the car and at its other end to the rod N, draws the latter forward when the wheels Q are off the upper track.

T, are the brakes.

The operation is as follows: Supposing a car is at or upon a station as at 1, upon the

attendant releasing the brakes T, the car runs down the incline and as soon as the center of the car is beyond the point 8, it will tilt forward thus throwing the wheels Q, over the apex 7, of the upper track. The car then drops from the point 8, of the lower track and is supported from the upper track by the wheels Q, axle P, and rod N, but the moment the car leaves the lower track there is a swinging movement imparted to it as the axle P, forms a fulcrum upon which it swings, and at the same time the wheels Q, running down the upper track gives a momentum to the car sufficient to cause it to travel up the incline 3, and over the point 8, when the operation is repeated until the car comes to another station when the attendant applies the brake and the momentum of the car will be retarded when it reaches the incline 1, and the car will be stopped.

What I claim is:

1. An automatic aerial rail road having two sets of tracks an upper and lower one of undulating form, said tracks being supported at a proper distance apart substantially as set forth.

2. An automatic aerial rail road consisting of a lower track D, having inclined surfaces 3, in combination with an upper track F, hav-

ing inclined surfaces 4, and suitable supports all arranged substantially as set forth.

3. An automatic aerial rail road consisting of a track D, having stopping places 1, and inclined surfaces 3, up which the cars are caused to run, and an upper track F, having inclined surfaces 4, from which the cars are suspended when they leave the lower incline 3, substantially as set forth.

4. An automatic rail road consisting of a lower track D, having stopping places 1, and inclined surfaces 3, and an upper track having inclined surfaces 4, in combination with a car I, having wedge shaped ends, and fitted with wheels to adapt it to run up the inclines 3, and a rod or bar N, attached to the roof, the upper end of said rod embracing an axle P, to which wheels Q are secured, and means for drawing said bar forward when the wheels Q are off the incline 4, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 25th day of January, A. D. 1892.

HOSEA W. LIBBEY.

Witnesses:

CHAS. STEERE,
EDWIN PLANTA.