(No Model.)

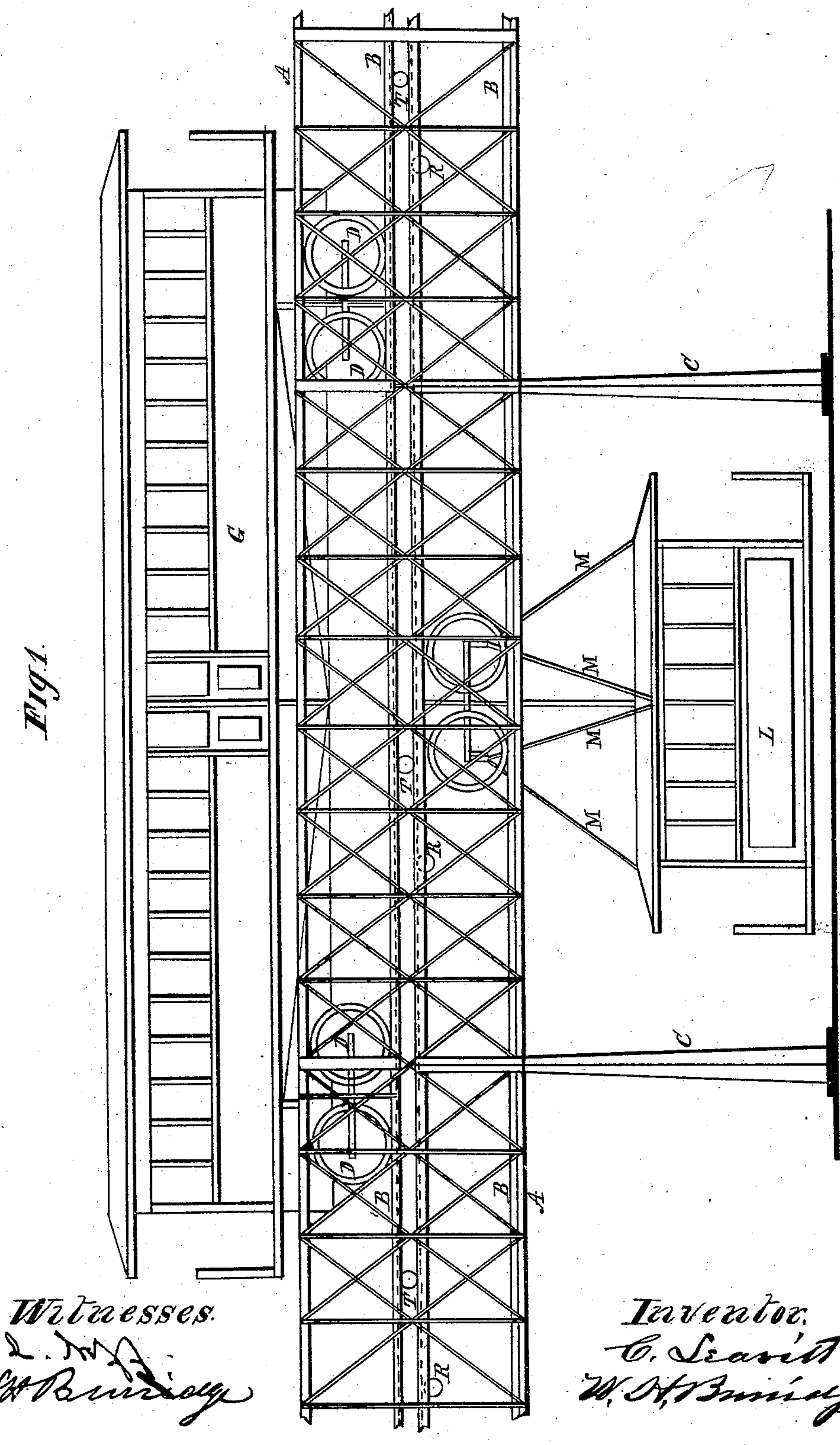
2 Sheets—Sheet 1.

C. LEAVITT.

ELEVATED CABLE RAILWAY.

No. 264,464.

Patented Sept. 19, 1882.



Witnesses.

Inventor.

C. Leavitt

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(No Model.)

2 Sheets—Sheet 2.

C. LEAVITT.

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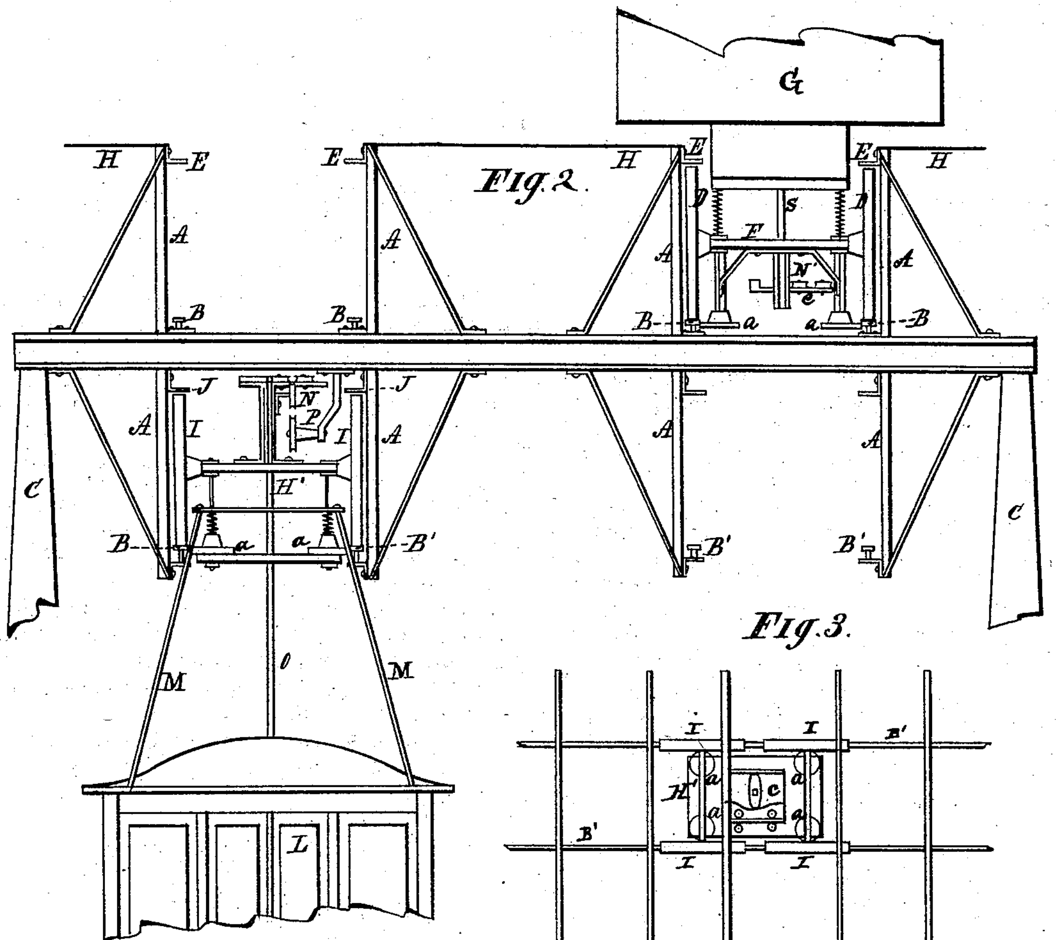

FIG. 2.

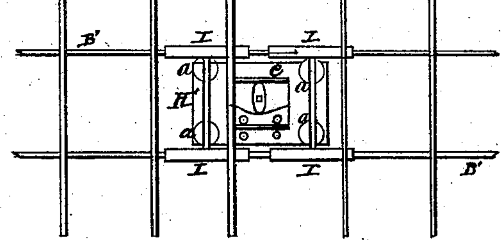

FIG. 3.

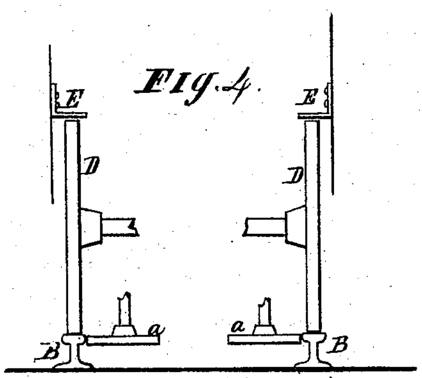

FIG. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES LEAVITT, OF CLEVELAND, OHIO.

ELEVATED CABLE RAILWAY.

SPECIFICATION forming part of Letters Patent No. 264,464, dated September 19, 1882.

Application filed January 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEAVITT, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Elevated Cable Railways; and I do hereby declare that the following is a full, clear, and complete description thereof.

The nature of my improvements relate to elevated cable railways; and it consists in the means employed for preventing the cars from being derailed, which means may be used in connection with any suitable truss-work for the railway and cars.

For a more full and complete description of the said improvements reference will be made to the following specification, and to the annexed drawings, making a part thereof, in which—

Figure 1 is a side elevation; Fig. 2, an end elevation; Fig. 3, a plan view, reduced, of the lower tracks, showing the truck thereon; Fig. 4, an enlarged detached section, referred to hereinafter.

Like letters of reference refer to like parts in the several views.

The tracks represented in the drawings are one above the other, the cars running upon the upper tracks, while the cars below are suspended from trucks running upon rails below. These upper and lower tracks may be sustained by the same truss-work and supports. The double tracks above, in connection with the frame-works and improvements, are or may be essentially alike, and the double tracks below, with the improvements in connection therewith, may also be alike. Hence, for brevity, one of the tracks above, with its improved attachments, need only be set forth, and the same with reference to the lower tracks and connections.

In the drawings, A represents the truss or frame-work and supports, which may be of any suitable construction, for the upper and lower tracks. To this frame-work are secured, in any suitable manner, the rails B of the upper line and the rails B′ of the lower line. The said frame-work is sustained by the columns C, which rest upon the ground, Figs. 1 and 2.

To the frame-work, which rises above the flangeless car-wheels D, is fastened a stringer, E, on each side above the wheels, as seen in Fig. 2. The wheels D are provided with axles, and have journal-boxes in the car-truck F, upon which the car G is supported at both ends, as seen in Fig. 1.

To the under side of the car truck is journaled rollers *a a a a*, Figs. 2 and 3. These rollers are so arranged to run against the side of the head of the rails at right angles to the car-wheels D, as seen in Figs. 2, 3, 4. There is allowed sufficient space between the rollers *a* and the rail to admit of little lateral play of the rollers, to prevent undue strain upon the truck and car, and frictional resistance by any unevenness of the rails.

By the construction and arrangement of the described frame-work and the attachments the car is prevented from being derailed either by any lateral force or by raising the car. It is prevented from being derailed laterally by action of the rollers *a*, as any force in a lateral direction sufficient to move the car will bring the rollers *a* in contact with the rails on one side or the other, according to the direction of the lateral movement of the car; also, by means of the stringers E, which are secured along the line to the frame-work directly over the wheels D but not in contact, the car is prevented from being forced upward from the track, and as the car-truck and wheel are between the frame-work, as seen in Fig. 2, the car is effectually prevented from being forced from the rails. The wheels D being flangeless there is less frictional resistance, which admits of the car running more easily over the track.

By raising the frame-work above or in line with the top of the wheel, or nearly so, it admits of an easy entrance to and from the car, as the platforms H are secured to the frame-work near to the bottom of the car, as seen in Fig. 2.

The clutch mechanism *e*, Fig. 2, may be of any suitable arrangement for stopping, starting, and controlling the motion of the car in connection with the cable.

Having set forth the upper line and its attachments, reference will now be made to the

lower one, with the attachments and appendages, which are similar in some parts to the upper one.

Near to the bottom of the truss are secured the rails B′ B′, upon which run the flangeless truck-wheels I I, provided with a common axle and journaled in boxes in the car-truck H, or so arranged that each wheel of the truck runs independently of the others.

Above the flangeless truck-wheels I, Figs. 1 and 2, is secured to the frame-work a stringer, J, and journaled to the under side of the truck H are rollers *a*, at right angles to the truck-wheels I. These rollers *a* are arranged in the same relation to the rails B′ as the rollers *a a* are to the rails B, the stringers J being for the same purpose as the stringers E. The arrangement of the several described parts in Fig. 4 for preventing the cars from being derailed on the upper track is substantially the same as that shown and described for holding the trucks E and H′ and cars upon the upper and lower tracks, the only material difference being that the upper car rests upon the trucks, while the lower car, L, is suspended from the truck by means of brace-rods M, Figs. 1 and 2.

The cable-clutch mechanism N is connected with the shaft O, which extends into the car L, for operating the said clutch in stopping, starting, and controlling the motion of the car as it is conveyed along the track by the moving cable over pulleys or along the line of the track. The clutch N′, connected with the upper car, is operated in the same way and for the same purpose. The shaft S of the clutch extends up into the car G for convenience in handling. The cable for moving the cars extends along the line of the roads over pulleys T R, and is operated by a suitable motor.

No special description of the cars, trucks, cable-clutch, or truss-work has been given, as my improvements are not confined to any particular construction and arrangement thereof.

The improvements set forth may be used in connection with various constructions of elevated railways without departing from the essential features herein claimed. Hence the reference herein made to the cars, clutch, and truss-work is for the purpose principally of showing the application of my invention to this class of railways.

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

In elevated cable railways, the car suspended by rods connected with the truck, having flangeless wheels which are kept upon a smooth surface-rail by guard-wheels running horizontally in immediate proximity to the wheels and against the inner face of the rail, substantially as and for the purpose described.

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

CHARLES LEAVITT.

Witnesses:

W. H. BURRIDGE,

C. H. WILLIAMS.