J. W. POST.

Elevated Railway.

No. 206,385. Patented July 23, 1878.

Fig. 1.

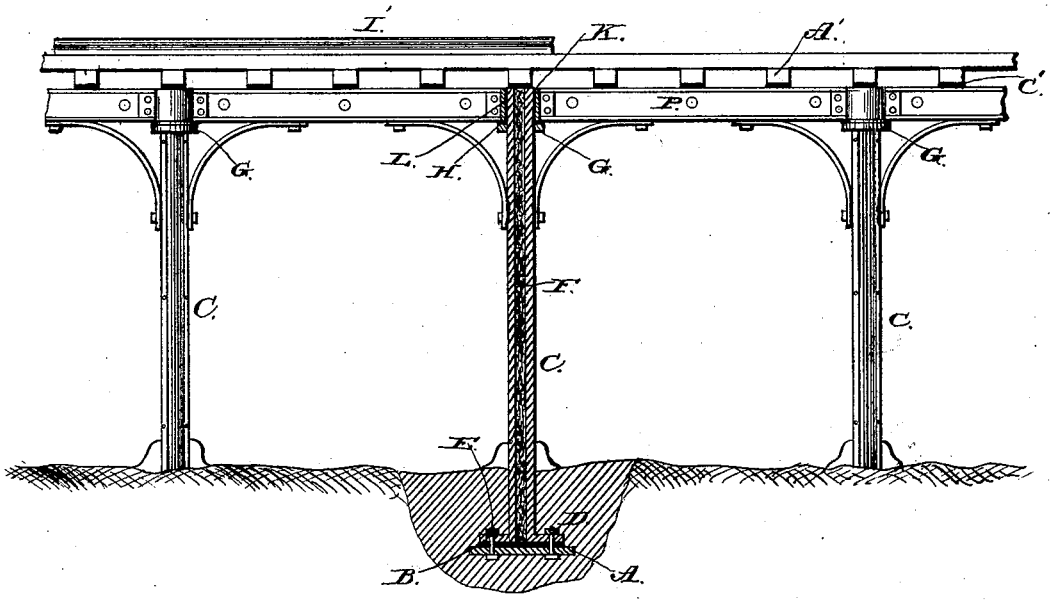


Fig. 2.

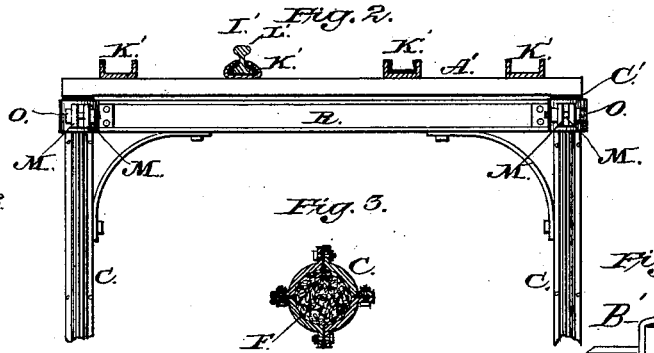


Fig. 8.

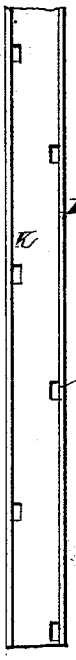


Fig. 3.

Fig. 9.

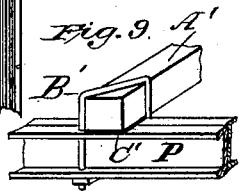


Fig. 4.

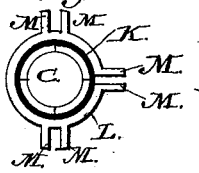


Fig. 5.

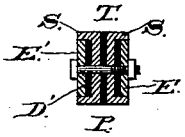


Fig. 6.

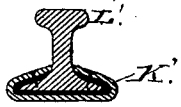
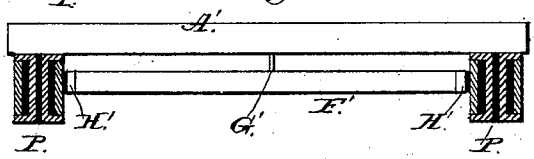


Fig. 7.



WITNESSES

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IMPROVEMENT IN ELEVATED RAILWAYS.

Specification forming part of Letters Patent No. **206,385**, dated July 23, 1878; application filed July 11, 1878.

To all whom it may concern:

Be it known that I, JOHN W. POST, of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Elevated Railroads; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in elevated railroads or tramways, its object being to provide a structure light and cheap in construction, neat in design, and possessing great strength and durability, and which will not be liable to get out of order, and which will in the greatest possible degree obviate the noisy reverberations common to other structures for the purpose.

In order that others skilled in the art to which my invention pertains may readily understand the same, I will now proceed to describe my invention, reference being had to the accompanying drawings and the letters of reference marked thereon.

In the drawings, Figure 1 represents a side elevation of my improved elevated railroad or tramway, showing one of the supporting standards or posts in section. Fig. 2 represents a transverse section of railroad or tramway, taken between the posts. Fig. 3 represents a horizontal section of one of the posts or standards. Fig. 4 represents a view of the top of one of the posts or standards and a collar mounted thereon, to which the sections of the road-bed are secured. Fig. 5 represents a transverse sectional view of one of the side beams of the road-bed. Fig. 6 represents a transverse section of one of the rails and the chair in which it is supported. Fig. 7 represents a transverse section of the road-bed and beam provided at each end with bumpers, and which may be supported from or attached to one of the cross-ties. Fig. 8 represents a detached view of one of the chairs in which the rails are supported, and Fig. 9 represents my improved manner of fastening the tie on the girder or truss.

The letter A represents a stone or metal foundation-plate of suitable size, which is firmly laid on bed-rock or other substantial base in a suitable excavation, and securely embedded in proper position by cement or otherwise. Upon the top of said plate is laid some indestructible non-conducting and non-vibrating substance B.

The letter C represents the columns, standards, or posts which support the superstructure. These are made hollow, and each are provided with a flanged base, D, which rests upon the top of the base-plate and its packing, and is secured thereto by substantial iron bolts E passing upward through the bed-plates, the packing, and the flange of the post, standard, or column. The excavation is then filled with a packing of any kind, and a suitable cap-plate or wheel-guard may be put on above the surface of the ground, the non-vibrating packing between the plate and column serving to materially lessen the vibration of the same, and consequent reverberations, when a train is passing over the superstructure.

To still further prevent noisy reverberations, the columns, which are in all cases made hollow, may be packed wholly or in part with fragments of cork. It is well known that the longitudinal fibers of wood will conduct vibrations producing sound. The object of my invention is to deaden or destroy this conveying tendency. To this end I employ cork as a packing, the atoms of which are so disconnected as to preclude the possibility of vibration, and there are no longitudinal fibers tending to convey the same, as shown at F, Figs. 1 and 3.

Near the top of each column or standard is a small supporting-flange, G, on which is placed a non-vibrating collar, H, of lead, asbestus, or other equivalent material, and the portion of the column extending above this flange is closely wound with felting K or other suitable material, and over this is sprung a strong metallic collar, L, made preferably of malleable iron, and provided with a series of lugs or ears, M M, between which the lateral and transverse girders of the superstructure are secured, a suitable packing of felting or other material being interposed between said lugs or ears and the girders.

The collar is split between two of the lugs

in order that it may be sprung upon its seat, and the girders are secured between the lugs by means of substantial screw-bolts O. It will be perceived that by this construction, also, this collar, after being sprung upon its seat, is closed tightly upon the packing by the bolts, rendering it impossible for the packing to get out of place, and providing for taking up any subsequent looseness.

The lateral and transverse girders P R may be of like material, preferably of iron, and of any suitable design which the builder's fancy or judgment may suggest, though I prefer to use doubly-flanged metallic plates S S, placed back to back, with felting, T, or other non-vibrating packing firmly secured between them.

The columns and girders are further strengthened by braces, with suitable packing placed between each connecting part.

The cross-ties A′ are bolted in position on the lateral girders, and I employ for the purpose a U-shaped staple, B′, screw-threaded at its ends, which is inverted and placed diagonally over the end of the tie, and passed through the flanges on opposite sides of the girders, and secured thereto by suitable screw-nuts, as clearly shown in Fig. 9 of the drawings.

Between the girders and the ties may be placed one or more layers of asbestus, C′, or other non-vibrating substances, which will answer the double purpose of lessening the vibrations and the wearing away of the wood. Rubber belting or like material also may be clamped against the sides or web of the girders, as shown at D′, and held firmly in place by strips of wood or metal E′, in order to further lessen the vibration of the structure.

In Fig. 7, the letter F′ represents a transverse beam, a series of any number of which may be employed, each supported from (or attached to) a cross-tie, and held in position by pin G′, and provided at each end by bumpers H′, of rubber or other suitable material, which are held lightly against the girders, and which will materially lessen the vibration of the same.

The letter I′ represents the track, which consists of an iron chair, K′, and rail L′, the chair extending the whole length of the rail, and being provided with upturned sides, forming a trough, in which the rail rests. The chair is provided with longitudinal slots M′ at suitable intervals on opposite sides, through which the spikes are to be driven to hold the rail, the slots permitting the chair to expand or contract freely during the changes of temperature. Strips of packing of suitable material, and wide enough to overlap the base of the rail at each side, are then placed in the chairs.

To secure the rails, they are placed upon the packing and firmly spiked down between the upturned edges of the chair. Said edges are then forced down upon the lower flanges or base of the rail and snugly tamped down around the head of each spike—the rails, in all cases, to break joints with the chairs.

The advantages of this construction of the track are fourfold: First, it makes, in effect, a continuous rail. Second, it secures from displacement the packing under the rail. Third, it securely locks the spikes holding the rail in position; and, fourth, it strengthens the track, rendering fish-plates unnecessary, and absolutely prevents any accidental displacement of the railroad-track.

Having thus fully described my invention, what I claim is—

1. In combination with the superstructure of an elevated railway, the hollow columns for supporting the same and the cork packing within said columns, substantially as and for the purposes specified.

2. In combination with the columns or standards of an elevated railway and the girders thereof, the split collars and their lugs for securing the girders to the columns, substantially as specified.

3. In combination with the columns, the collars, and the girders, the packing interposed between the surfaces of the same, substantially as specified.

4. In combination with the girder, the packing at the sides of the same and plates and strips for confining it in place, substantially as specified.

5. In combination with an elevated-railroad structure, the continuous chair, having the upturned edges thereof bent down in such a manner as to form a perfect lock for the spike holding the rail.

6. In combination with the superstructure of an elevated railway, the continuous rail-chair provided with longitudinal slots at intervals throughout its length, as and for the purpose specified.

7. The combination in an elevated railway, of the rail, its continuous chair, and the intervening packing, substantially as specified.

8. In combination with the cross-ties and the longitudinal girders, the U-shaped staples passing diagonally over the ties and through the flanges of said girders, on opposite sides thereof, substantially as and for the purposes specified.

9. The transverse beam secured to the tie, and provided with buffs or bumpers at each end, and held lightly against the girders, thereby materially lessening the vibration of the same, substantially as specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN W. POST.

Witnesses:
WILLIAM FITCH,
WM. A. JOHNSON.