

(No Model.)

J. N. VALLEY.  
SINGLE RAIL ELEVATED RAILWAY.

No. 419,739.

Patented Jan. 21, 1890.

Fig. 1.

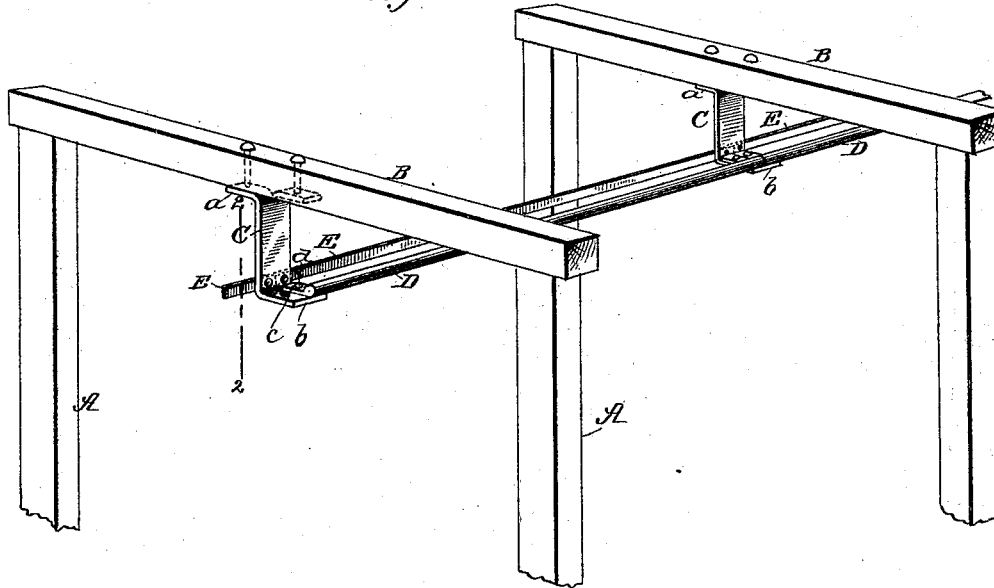


Fig. 2.

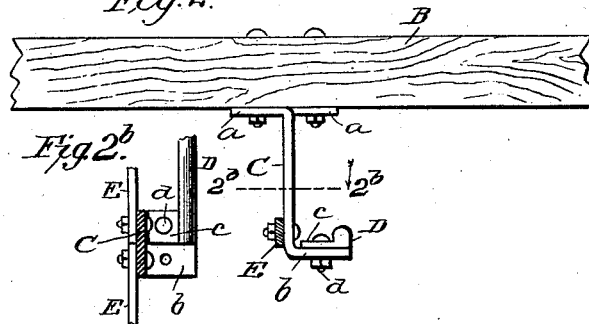
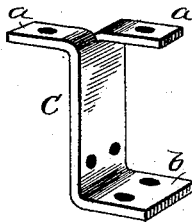


Fig. 3.



WITNESSES:

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## SINGLE-RAIL ELEVATED RAILWAY.

SPECIFICATION forming part of Letters Patent No. 419,739, dated January 21, 1890.

Application filed April 15, 1889. Serial No. 307,367. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN NAPOLEON VALLEY, residing at Jersey City, county of Hudson, and State of New Jersey, have invented a new and useful Improvement in Single-Rail Elevated Railways, of which the following is a full, clear, and exact description.

The object of my invention is to provide an improvement in that class of elevated passenger and freight railways in which the cars run on a single rail secured to vertical supporting-posts. In railways of this class the rail is usually laid flat on a timber extending lengthwise of the roadway; but in some cases the rail is attached to the posts by means of angle-plates, which are bolted to the respective parts. I dispense with the lengthwise timber or beam above referred to and employ a series of independent rails, which are unsupported, save at their ends, where they are so attached to a series of independent hangers having horizontal arms as to secure a continuous track. The abutting ends of the rails have lateral flat perforated projections or lugs, which are laid flat on the corresponding portions of the hanger-arms and bolted in place. The hangers are also spaced or held rigidly by means of aligned rods that combine the functions of a tension and brace. The hanger is peculiarly constructed with a view to strength and economy of material.

Figure 1 is a perspective view showing a section of a complete railway embodying my invention. Fig. 2 is an enlarged vertical section on line 2 2, Fig. 1. Fig. 3 is a perspective view of my improved hanger. Fig. 2<sup>b</sup> is a horizontal section on line 2<sup>b</sup> of Fig. 2.

The vertical posts A are arranged in pairs at such distance apart as may be required by the width of the cars that may run on the railway or the kind of traffic for which they are employed.

Each pair of posts supports a horizontal cross-beam B, and a single hanger C is secured to the underside of each beam, as shown. The said cross-beams B are placed about twenty feet apart, that being the length of the rails D, which I have found preferable in practice.

The form and construction of the hanger are best shown in Fig. 3. It is constructed of a flat wrought-iron or steel plate whose upper

end is slit lengthwise, the two portions *a* thus divided being then bent laterally in opposite directions and perforated to receive the bolts, Figs. 1 and 2, which secure the hangers to the beams B. The lower end of the hanger C is bent laterally to form a broad horizontal arm *b*, which furnishes a suitable bed or support for the correspondingly-shaped ends of the rails D. The latter are formed of iron rods about one inch in thickness, and having at each end a lateral flat perforated projection or lug *c*, Fig. 2. The rails are laid on the arms *b* of the hangers C, with their ends abutting, and the said lugs *c* resting flat on said arms and secured in such position by means of screw-bolts *d*, passing vertically through the lugs *c* and arms *b*, as shown. It will be noted, further, that the outer side of the rails D is flush with the outer edge of the arms *b* for better security of the connection and to avoid any leverage of the rail on the bolt and arm when a car is passing over it.

In order to hold the several hangers C rigidly spaced apart and to further counteract the tendency of the rails D to sag or bend downward under a heavy load, I employ combined tension and brace rods E, which are made of the same length as the rails D and bolted at their ends to the back and lower ends of contiguous hangers. Thus the rods E are aligned with each other and parallel to the rails, as shown, yet do not interfere with the wheels that run on the rails, nor with the cars suspended beneath.

By the construction and combination of parts above described I provide at minimum cost a single-rail railway, which is composed of a minimum number of parts connected in a strong, simple, and durable manner.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an elevated railway, the combination, with a series of independent hangers placed a suitable distance apart and each having a flat horizontal arm, as shown, of a series of independent and self-supporting rails which connect said hangers and have lateral lugs that rest flat on said arms and are secured thereto, substantially as and for the purpose specified.

2. The improved elevated railway herein-

before described, consisting of the following parts: a series of cross-beams and posts for supporting them, a series of independent hangers secured to and pendent from said beams and having at their lower ends broad horizontal arms, as specified, a series of aligned independent and self-supporting rails whose ends abut and are provided with lateral flat lugs which rest flat on the said arms of the hangers, and bolts passing through said lugs and arms for securing them together, as shown and described, for the purpose specified.

3. The combination, with the spaced hangers and the aligned rails secured thereto, of

the combined tension and brace rods which are attached to said hangers on the rear side opposite the rails and secured thereto with their ends abutting, as shown and described.

4. The improved hanger constructed of a single plate of wrought metal having perforated divergent horizontal flanges at the top and its lower bent end extending laterally, thus forming a flat horizontal arm which is perforated to receive the rail-bolts, as shown and described.

J. N. VALLEY.

Witnesses:

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J. H. VALLEY.