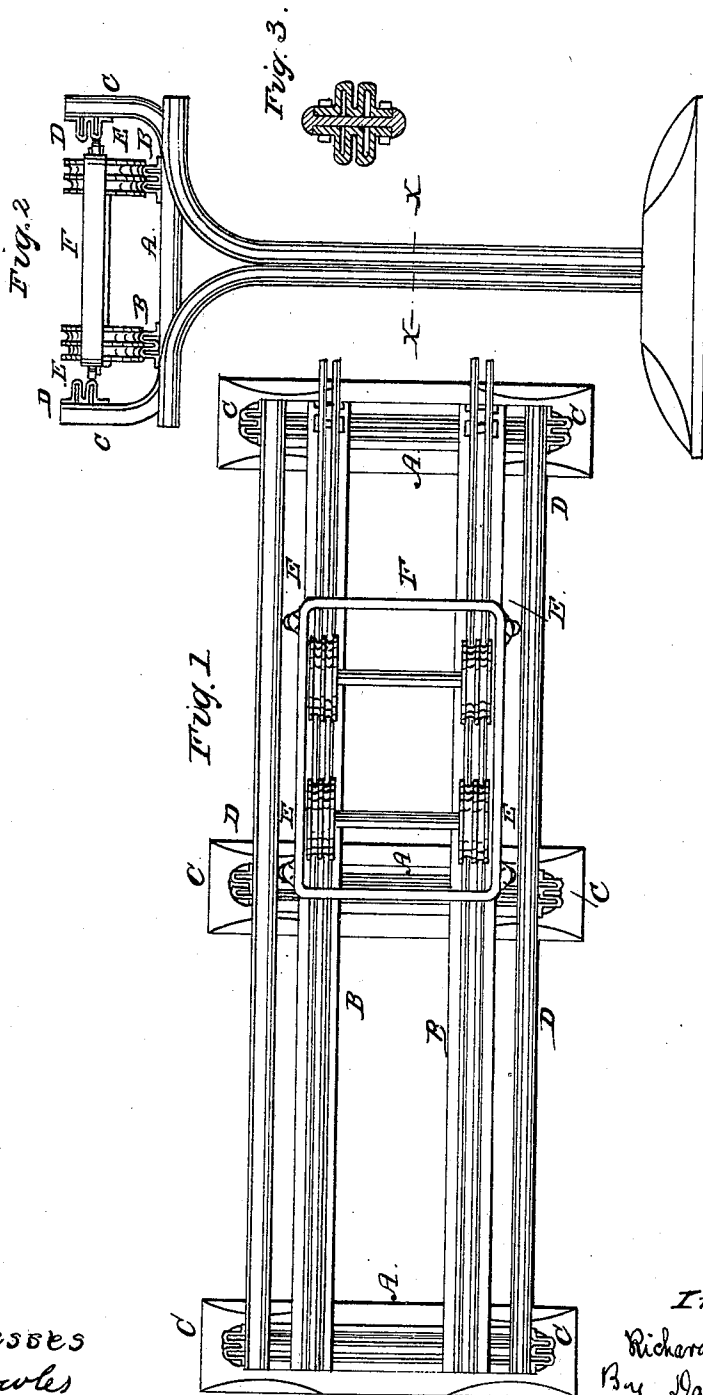


R. MONTGOMERY.  
Elevated Railway.

No. 89,541.

Patented April 27, 1869.



Witnesses  
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# UNITED STATES PATENT OFFICE.

RICHARD MONTGOMERY, OF NEW YORK, N. Y.

## IMPROVED ELEVATED RAILWAY.

Specification forming part of Letters Patent No. **89,541**, dated April 27, 1869.

*To all whom it may concern:*

Be it known that I, RICHARD MONTGOMERY, of the city, county, and State of New York, have invented a new and useful Improvement in Elevated Railroads and Railroad-Bridges; and I do hereby declare the following to be a full, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a plan or top view of my improved elevated railroad with a car-truck thereon; Fig. 2, an end view or transverse section thereof, and Fig. 3 a cross-section of the supporting-column in the line *xx* of Fig. 2.

Similar letters indicate like parts in each of the figures.

In elevated railways supported upon single columns, as illustrated in Fig. 2 of the drawings, it is evident that each column becomes a long lever, having its fulcrum and shorter arm within the base, so that the least lateral pressure at its upper end, or even a slight swaying movement in a train of cars supported thereon, must exert a very severe strain upon its joint with the base. Hence it becomes highly important not only to impart great strength and solidity to the joint of the column with its base, but also to prevent all oscillation of the cars in passing over the columns. The increased danger of disastrous results from the running off the track of a train of cars also increases the importance of providing some sure effective guard against such an accident.

The object of my invention is to avoid these dangers, and to prevent a swaying movement of cars running upon elevated railways or over bridges, and to so confine the cars upon the track as to prevent any accidental displacement thereof from the rails.

The nature of my invention consists in combining, with the ends of the cross-beams, bars, or ties of an elevated railroad or bridge, vertical standards, carrying horizontal guard-rails, running longitudinally parallel to the track, at such height above the same as may be found desirable, to engage small friction-

wheels projecting from the sides of the car-trucks.

In the accompanying drawings I have illustrated an elevated railroad constructed of my corrugated metal beams, rails, and columns, combined, united, and secured, as has been heretofore fully described in Letters Patent of the United States granted to me therefor.

Instead, however, of cutting off the transverse beams or cross-ties *A* supporting the track *B B* of the railroad at the outside of the track, as has heretofore been customary, I bend up the ends of these cross-ties *A* and prolong them into upright standards *C C*, as shown in Fig. 2. To the inner side of these standards *C C*, on each side of the track, I secure, horizontally, beams or bars *D*, by preference corrugated, so as to form a continuous side of guard-rail parallel to the track-rails. Small friction wheels or rollers *E E* are secured to the outer sides of the cars or trucks *F*, so as to bear lightly against the side rails *D D*, and thus steady and support the trucks laterally, so as to prevent a swinging or swaying movement thereof from side to side, and confine them to the track.

Instead of curving the ends of the cross-tie beams *A* to form the uprights *C* to sustain the lateral guard-rails *D*, these uprights may be formed of independent bent pieces, whose inner ends shall rest upon and be secured to the straight ends of the tie-beams, and thence curve upward, so as to form standards *C*, as required.

I propose in some cases to combine with the side friction-rollers upon the trucks *F* of the cars and engines to be run upon the guarded track, springs to be interposed between the rollers and the truck, so as to force the rollers, with an elastic pressure, against the guard-rails *D*, and allow a very slight easy movement of the truck, preferable, perhaps, to a more rigid confinement thereof.

By means of these friction-rollers, in combination with the guard-rails, the trucks are stayed and confined laterally, without the least interference with their proper direct forward movement upon the track, and hence all

danger of running off the track is removed, while a dangerous vibration of the structure is at the same time prevented.

Having thus fully described my invention, I claim therein as new and desire to secure by Letters Patent—

1. Standards C C, in combination with the cross-tie beams A A and continuous lateral guard-rails D D of an elevated railway or railway-bridge, substantially as herein set forth.

2. Also, friction-wheels E E, when combined with a car or car-truck, F, running between the lateral guard-rails D D of an elevated railroad, substantially in the manner herein set forth.

Witness my hand the 18th day of February, 1869.

R. MONTGOMERY.

Witnesses:

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