J. MILLER.

Elevated Railway.

No. 211,174. Patented Jan. 7, 1879.

*Figure 1.*

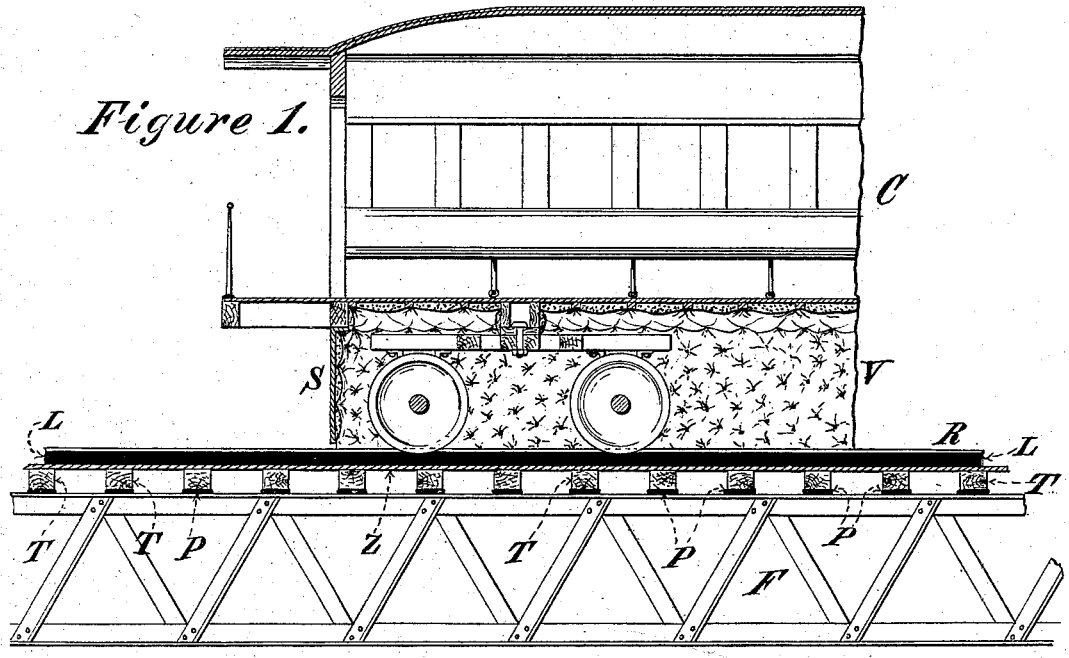
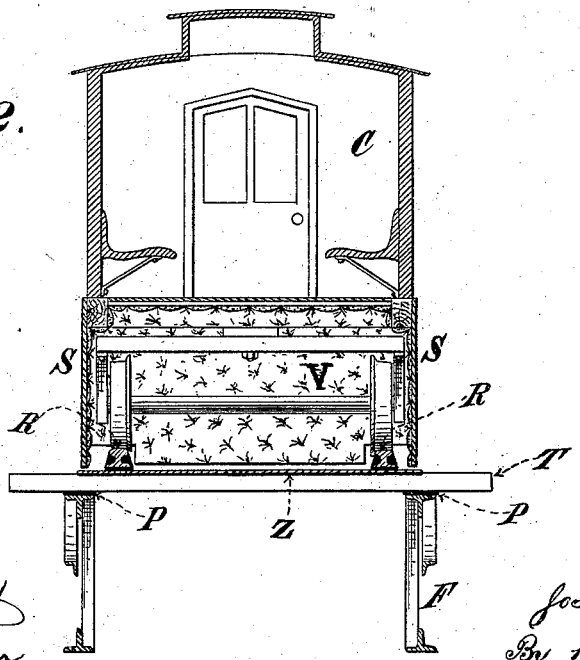



*Figure 2.*




Witnesses:

Geo. W. Miatt

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Inventor

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By his Attorney

E. N. Dickerson Jr.

# UNITED STATES PATENT OFFICE.

JOSEPH MILLER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES G. COFFEY.

## IMPROVEMENT IN ELEVATED RAILWAYS.

Specification forming part of Letters Patent No. **211,174**, dated January 7, 1879; application filed September 12, 1878.

*To all whom it may concern:*

Be it known that I, JOSEPH MILLER, of the city, county, and State of New York, have invented a new and useful Method of Preventing the Vibrations and Sound Occasioned by Steam-Railroads, especially such as are elevated above the surface of the ground.

Since the operation of the elevated railroad in the city of New York, great inconvenience and damage have been experienced from the constant reverberation and noise caused by the passing trains, and several attempts have been made to remedy this difficulty, but without success. The attempts have chiefly been directed toward preventing vibration by the introduction or insertion between the rail and the wood of some soft material—such as felt or rubber. In addition to the difficulty of satisfactorily introducing and using these soft materials, it has been found that they do not answer the purpose, and I have found it necessary to use a material of greater consistency and firmness in order to accomplish the results desired. I have found, also, that the rush of the car through the air produces air waves or reverberations beneath it, which should be, as far as possible, shut in. Therefore I run down the sides of the cars as close as possible to the rails, and the inside of the boxing and the bottom of the car I upholster loosely with hair and coarse wool to a thickness of about three inches, the said pads or cushions being covered with a loose material, like coarse carpet. This boxing I combine with a sheet of zinc, covering the road-bed about one-half inch in thickness, thereby preventing the passage of the sound below the ties; but I do not find that the zinc is absolutely necessary as a material for this purpose, though advantageous.

In my drawings, Figure 1 represents a longitudinal elevation, partly in section, of my improvement; Fig. 2, a cross-section of the same, showing the rails.

The frame-work or trestle is represented by F. The ties T are supported upon strips of lead P, as shown. These strips might be continuous, or might be under the end of each tie. Upon the ties T, and beneath the rails R, may be laid a sheet of zinc, Z, which should preferably extend far enough to meet the boxing, but may be confined beneath the rails. Upon this is laid a longitudinal strip of lead, beneath the rails, and the grooves in the side of the rail are likewise filled with it. It is marked L, and is indicated by black coloring. The car is boxed down close to the rails by the side or box S, which is upholstered within by carpet or upholstering V, as above described.

I disclaim, in this application, the use of lead in the sides or grooves of the rails, intending to make a separate application therefor.

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

1. In combination with an elevated-railroad track, a car having an inclosing boxing approaching nearly to the track, when said track is provided with an inclosing-sheet, for the purpose of preventing the escape of the sound, substantially as described.

2. In combination with a car having an inclosing boxing or siding, a sheet of zinc, attached to the track or track-support and preventing the escape of the sound, substantially as described.

3. In combination with an elevated-railroad track, a car provided with an upholstered boxing or siding approaching nearly to the track, when said track is provided with an inclosing-sheet, for the purpose of preventing the escape of the sound, substantially as described.

4. In combination with an elevated-railroad track, a car having an upholstered boxing or siding approaching nearly to the track, when said track is provided with an inclosing zinc sheet, for the purpose of preventing the escape of the sound, substantially as described.

JOSEPH MILLER.

Witnesses:

A. GREF, Jr.,

GEO. H. EVANS.