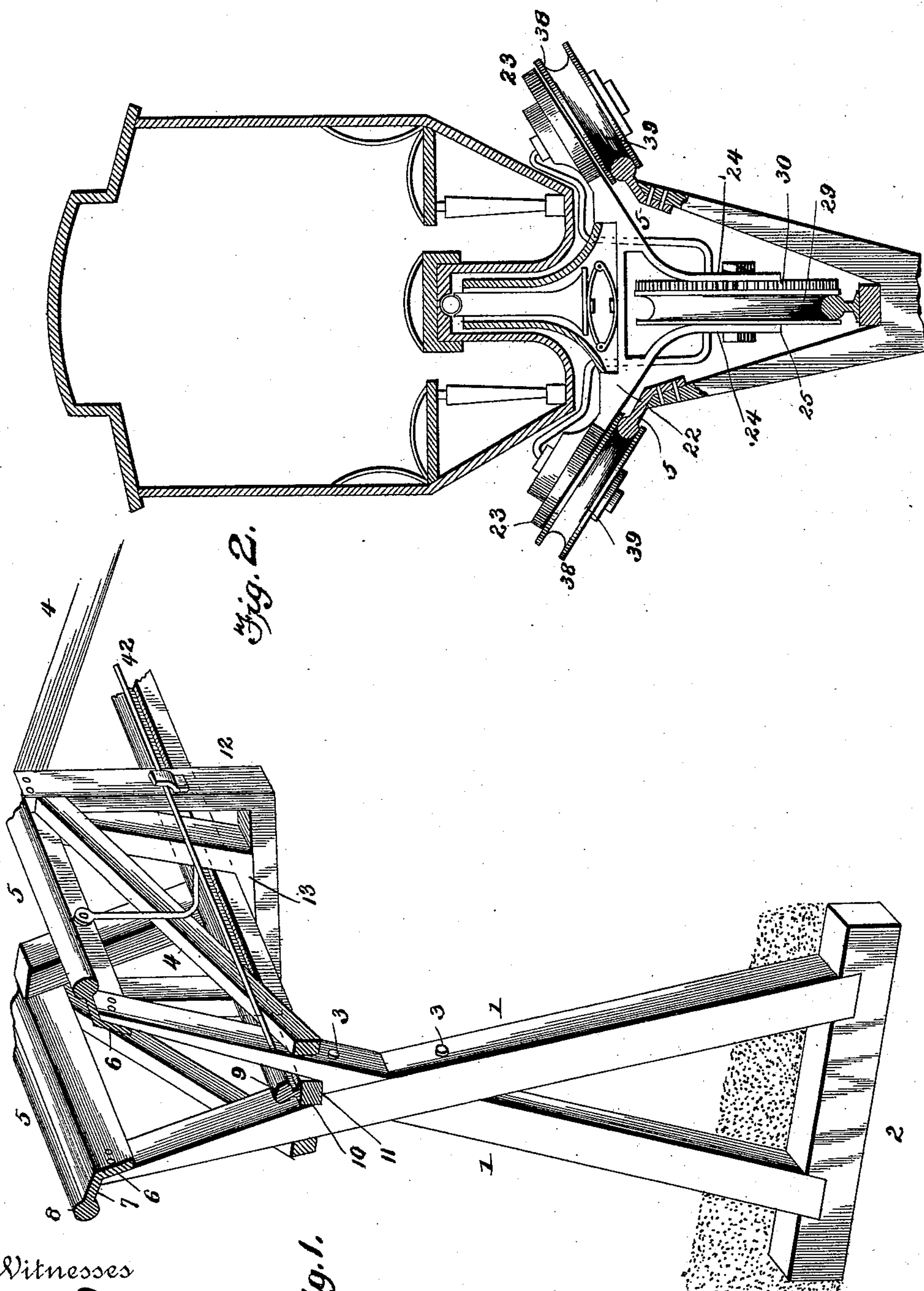


(No Model.)

E. M. TURNER.
ELEVATED RAILWAY.

No. 488,155.

Patented Dec. 13, 1892.



Witnesses

John D. Smith
Chas. H. Brownlee,

Fig. 1.

Ephraim M. Turner,
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UNITED STATES PATENT OFFICE.

EPHRAIM M. TURNER, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO
R. E. MADDOX, OF FORT WORTH, TEXAS.

ELEVATED RAILWAY.

SPECIFICATION forming part of Letters Patent No. 488,155, dated December 13, 1892.

Application filed November 2, 1891. Serial No. 410,558. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM M. TURNER, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Elevated Railways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in elevated railways; and it consists in the novel arrangement and combination of parts, as will be more fully hereinafter described, and designated in the claims.

In the drawings, Figure 1 is a perspective view, with parts broken away, of the elevated structure for the moving cars or vehicle. Fig. 2 is a vertical section of the car-body and the casing for the supporting-post for the same, and an end elevation of the truck-frame and parts carried by the same.

I will give a description of the object and general utility of my invention in connection with a mechanical description thereof.

I will now proceed to describe the elevated structure or superstructure for the cars and running-gear of the same, referring to Fig. 1 for illustration, which is a perspective view of the superstructure with parts thereof broken away. 11 indicate the supporting-posts composed of wood, preferably, or any other suitable material. Said posts 1 are constructed and put together in the shape of a cross, and the lower ends of the same are connected together in any suitable and mechanical manner by a cross-piece 2. The posts 1 are let into each other at the point where the same cross or intersect, thus leaving the sides flush with each other and presenting a neat and finished appearance. After said posts have been let into each other, as above described, they are bolted firmly together by means of bolts 3, which pass transversely through the same, as illustrated in Fig. 1. The upper terminal portions of said posts 1 are tapering on their inner sides, which is effected, however, by cutting their inner faces away, so as to leave as much space between the same as possible for the running-gear of the moving vehicle or cars. The posts 1 and the cross-piece 2, joined together, as aforesaid, constitute the

supporting-columns for the remaining parts of the elevated structure; or, in other words, the supporting-columns are in the shape of a cross, which, as can be readily deduced, prevent the same from tilting laterally to the side. It is presumed that in the construction of an elevated railway of this description said supporting posts or columns should be located about twenty feet apart. However, I do not wish to limit myself to any definite distance. Extending from supporting-columns or supporting column or posts are braces and supports 4, which are put together and have the function of a truss. Secured to the upper terminal portions of the supporting posts or columns 1 are guide-rails 5, located oppositely to each other. Said guide-rails 5 are provided with webs 6, a flat portion 7, extending at an obtuse angle to said web, and a head 8, surmounting said flat portion 7. The webs 6 of the guide-rail are secured to the ends of the supporting-posts 1, and the terminal ends of said supporting-posts 1 rest firmly against the lower surfaces of the flat portion 7. It may be also noted in this connection that the adjacent ends of the bracing timbers 4 are also secured to the webs 6 of the rails and the remaining ends of said bracing timbers 4 are secured in any suitable and mechanical manner to the supporting-posts 1, so that the ends of the bracing-timbers 4 constituting one span rest and abut against the ends of similar bracing-timbers embodied within the adjacent spans.

Having given a description of the guide-rails and the manner of securing the same to the elevated structure, I will now proceed to describe the supporting or center rail, or the rail on which the traction-wheel runs. 9 indicates said supporting-rail, which rests on a wooden base 10. As the rail 9 rests directly on the piece of timber 10, it will only be necessary to describe the manner of supporting the basic timber 10. Said piece of timber 10 rests in the forks 11 of the supporting columns or posts and is secured therein in any suitable and mechanical manner and is supported intermediately of the supporting posts or columns by means of U-shaped supports 12, the ends whereof are secured to the guide-

rails, and also by means of a similar U-shaped support 13, which rests on said support 12, and the ends whereof of said last-mentioned support are secured to the inside faces of the webs 6 of the guide-rails in any suitable and mechanical manner. The supporting-rail 9 is secured to the basic wooden support or piece of timber 10 in any suitable and mechanical manner. From this construction it can be readily perceived that the guide-rails 5 and the supporting-rail 9 are firmly supported intermediately of the supporting posts or columns by means of U-shaped supports 12 and 13 and also by the bracing-timbers 4, which have the function of trusses, and it also can be readily perceived that the road or track way in which the running-gear of the moving vehicle moves is V-shaped, the same being compact in form and thoroughly braced in all directions, thus making a substantial and compact elevated structure for moving vehicles. It also may be noted in this connection that the superstructure or elevated structure hereinbefore described is composed almost entirely of wood, with the exception, of course, of the retaining-bolts for securing the parts of the same together.

22 indicate the truck-frames, two of which are applied to each car-body. Said truck-frames 22 are provided on each side about the central portion of their lengths with projecting arms 23, which extend outwardly from said truck-frame at an obtuse angle from the upper or top surface of said truck-frame. Each of said truck-frames is provided with four depending arms or standards 24, between which the wheels 25 26 are revolvably mounted in any suitable and mechanical manner.

38 indicates the guide-wheels, which are provided with U-shaped peripheral grooves 39, in which the guide-rails 5 are adapted to fit.

Having fully described my invention, what I claim is—

1. In an elevated structure for moving vehicles, cross-shaped supporting-columns having their upper terminal portions tapering or wedge-shaped, substantially as set forth.

2. In an elevated structure for moving vehicles, supporting columns or posts in the form of a cross, the lower ends whereof are connected together by cross-piece 2 and the upper terminal portions thereof are tapering and wedge-shaped, substantially as set forth.

3. In an elevated structure for railways, the combination of cross-shaped supporting-columns, the lower ends whereof are connected together by means of a basic cross-piece 2 and the upper terminal portions are tapering or wedge-shaped, guide-rails secured to said tapering ends, and a supporting-rail located within the forks of said supporting-

columns and mounted upon a plate or base, substantially as set forth.

4. In an elevated structure for railways, the combination of cross-shaped supporting-columns, the lower ends whereof are connected together by means of a basic cross-piece 2 and the upper terminal portions are tapering or wedge-shaped, guide-rails secured to said tapering ends, a supporting-rail located within the forks of said supporting-column and mounted upon a plate or base, braces 4, secured to said supporting-column and to said guide-rails, a U-shaped support 12, and a V-shaped support 13, secured to said guide-rails intermediately of the supporting-columns for supporting said supporting-rail, substantially as set forth.

5. An elevated structure for vehicles, having cross-shaped supporting-columns forming a V-shaped way, a supporting-rail mounted in the base of said way, and guide-rails carried by the free ends of the column-uprights and projecting outwardly therefrom, substantially as set forth.

6. An elevated structure for vehicles, having cross-shaped supporting-columns forming a V-shaped way and connected at their lower ends, a base-beam secured in the lower closed end of said way, a supporting-rail mounted on said beam, and guide-rails carried at the upper ends of the column-uprights and projecting in opposite directions, substantially as set forth.

7. In an elevated railway, the combination, with an elevated structure provided with a supporting-rail and with side guide-rails located above the same and arranged obliquely, of a truck provided with a vertical supporting-wheel and with obliquely-arranged guide-wheels, said wheels being adapted to engage the supporting and guide rails, respectively, substantially as set forth.

8. In an elevated railway, the combination, with an elevated structure comprising cross-shaped columns forming a V-shaped way, a supporting-rail mounted in the contracted base of said way, and guide-rails carried at the upper ends of the column-uprights and projecting outwardly therefrom, said guide-rails being arranged obliquely, of a truck provided with a central vertical supporting-wheel and with opposing obliquely-arranged guide-wheels, said wheels being adapted to respectively engage the supporting and guide rails, substantially as set forth.

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

EPHRAIM M. TURNER.

Witnesses:

ED. E. LONGAN,

E. F. KELLER.