(No Model.) 2 Sheets—Sheet 1.

J. N. VALLEY.

ELEVATED RAILWAY.

No. 511,179. Patented Dec. 19, 1893.

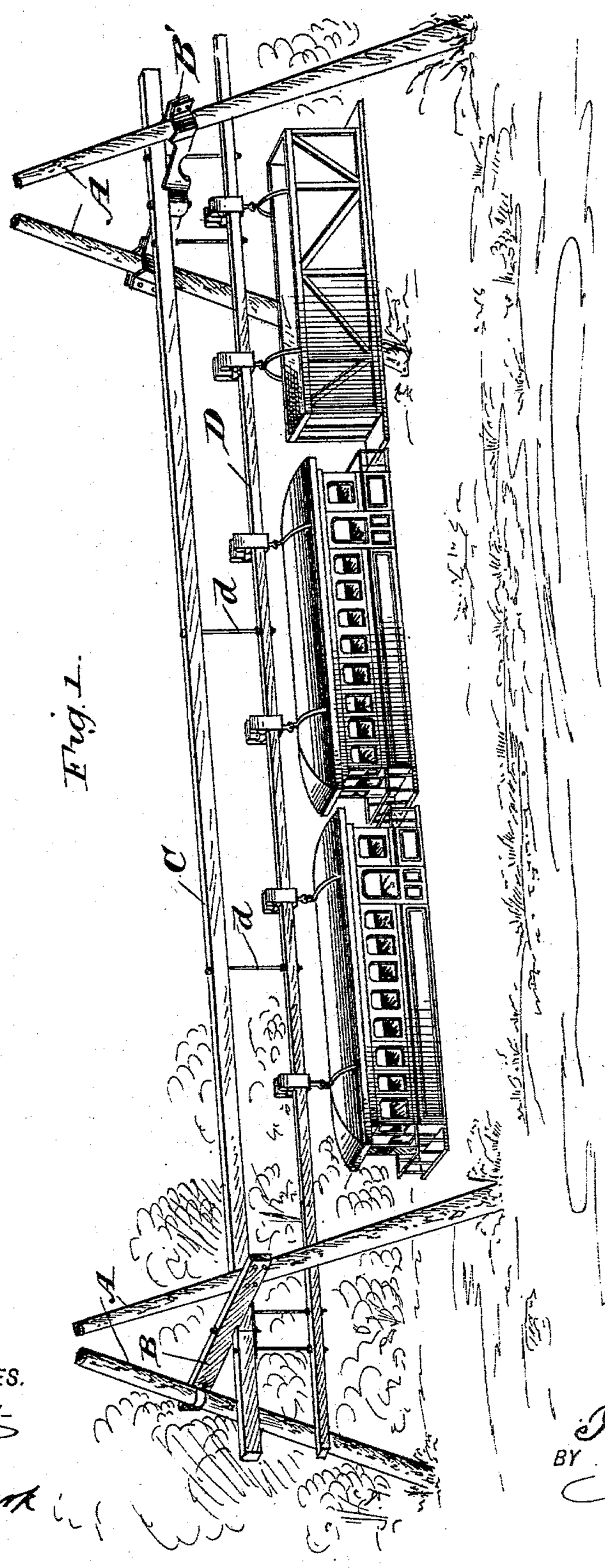

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

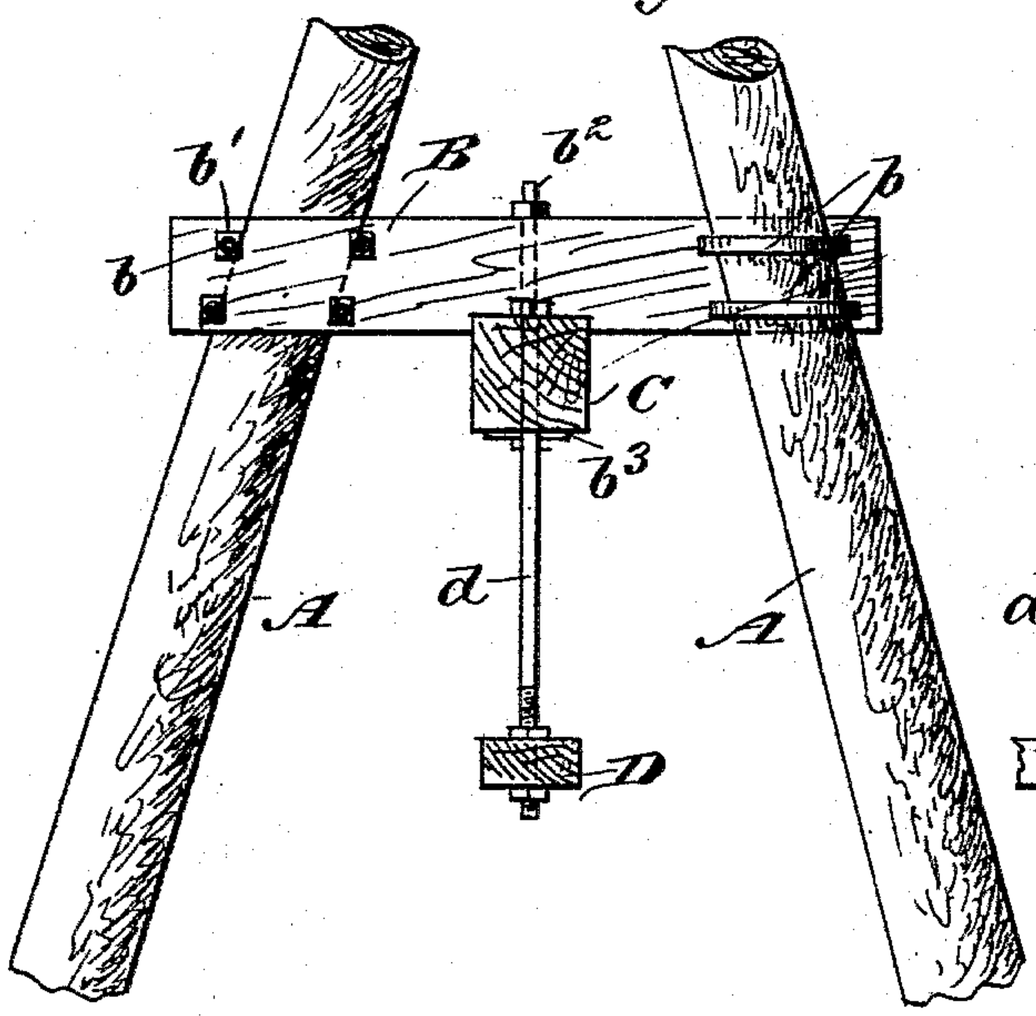


Fig 3.

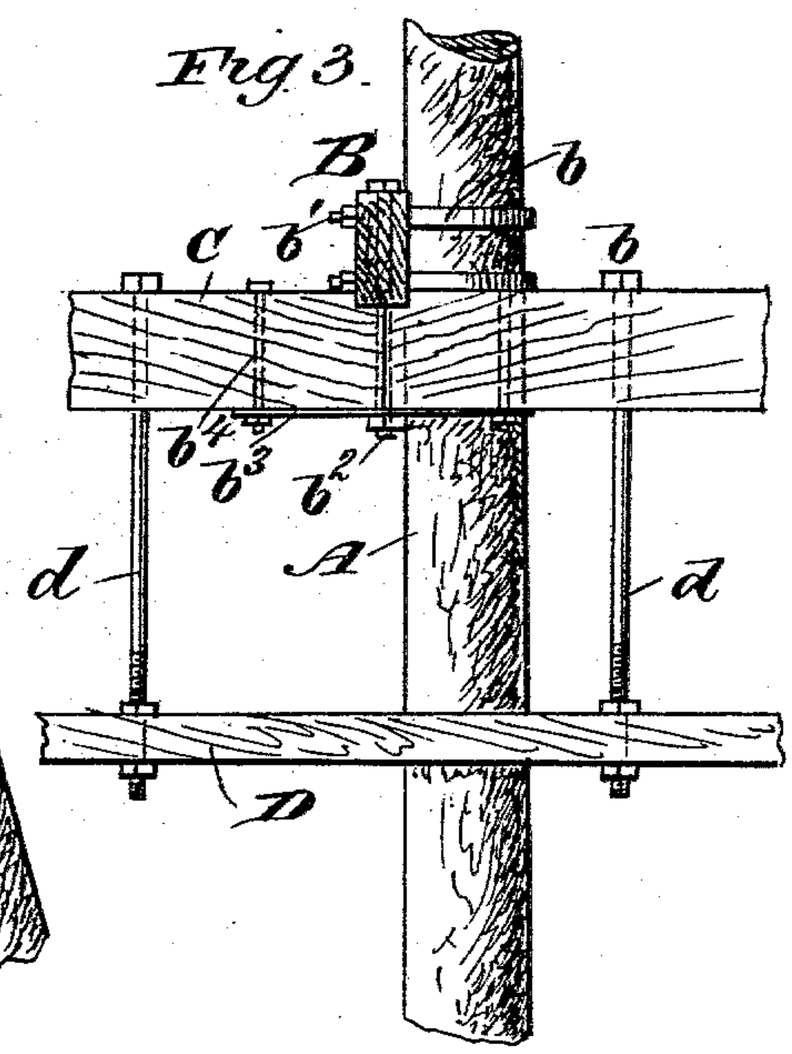


Fig 4.

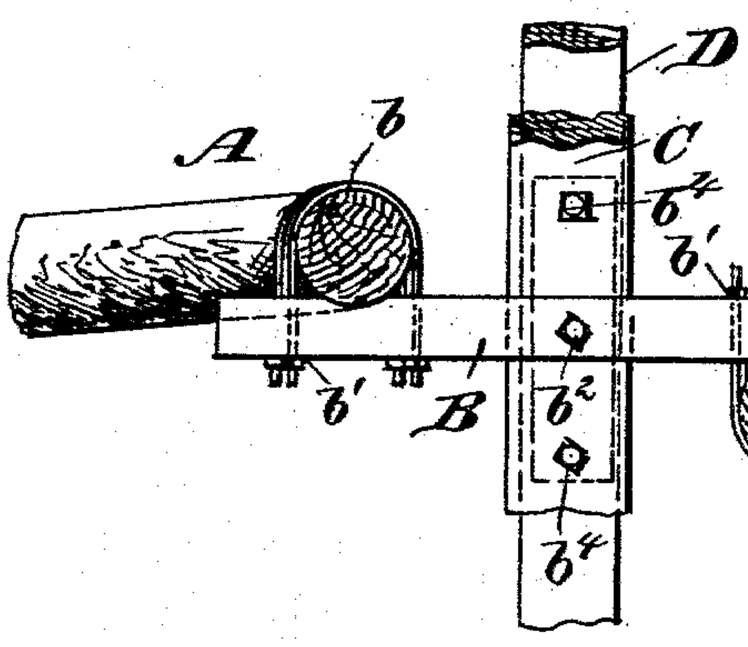


Fig 5.

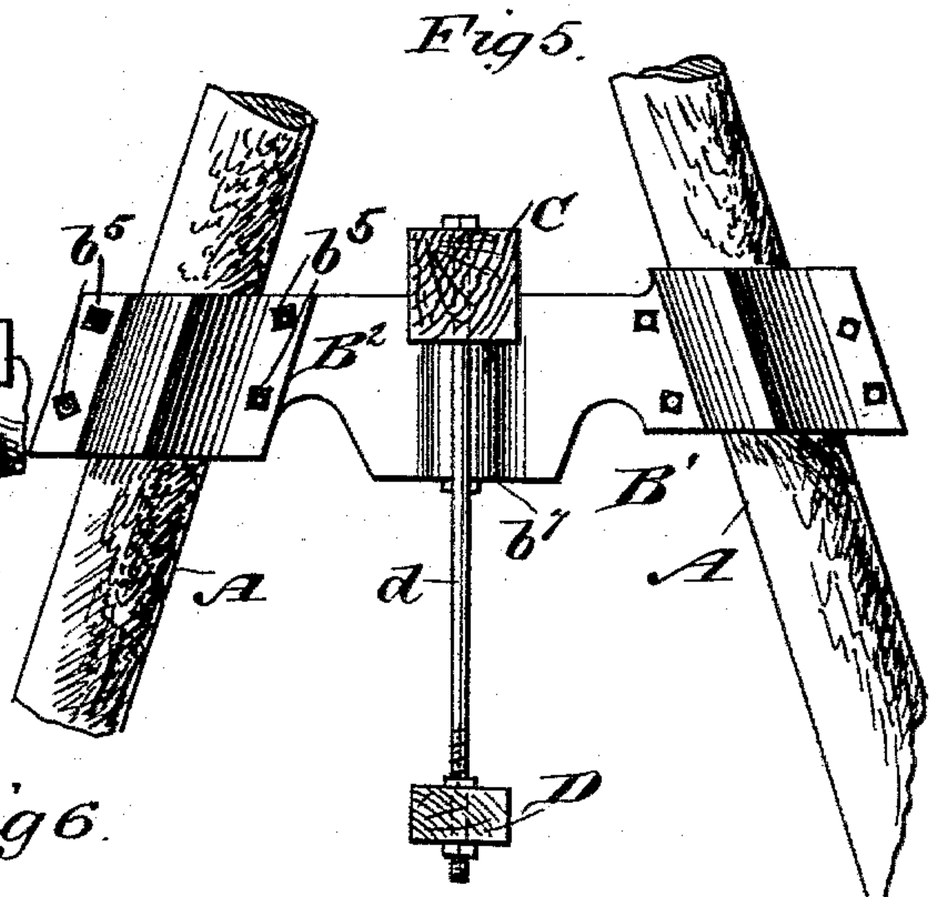
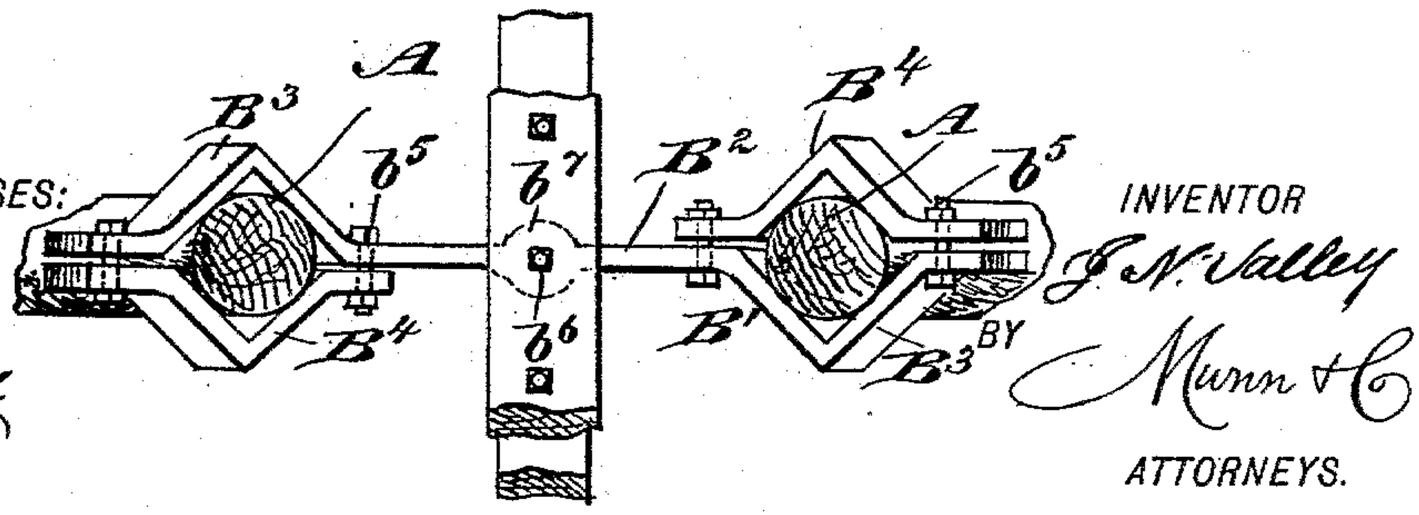


Fig 6.



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ELEVATED RAILWAY.

SPECIFICATION forming part of Letters Patent No. 511,179, dated December 19, 1893.

Application filed September 13, 1892. Renewed November 13, 1893. Serial No. 490,846. (No model.)

To all whom it may concern

Be it known that I, JOHN N. VALLEY, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Elevated Railway, of which the following is a full, clear, and exact description.

The invention relates to that class of railways in which the track is supported in elevated position from supporting posts, the track rail being usually suspended from a longitudinal stringer, that receives support at intervals from said posts.

The object of the present invention is to provide in a structure of the general character indicated, a ready and simple means of grading the track rail to compensate for irregularities of the ground.

The invention is distinguished by an adjustable support for the track whereby the point of connection with the posts may be made higher or lower, as desired, to level the track.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a railway structure embodying my invention showing cars thereon, and illustrating different forms of my improved adjustable connections. Fig. 2 is a detail in transverse section on a larger scale, showing one means of connecting the girder to the posts. Fig. 3 is also a detail view thereof, in longitudinal section. Fig. 4 is a broken plan view illustrating the means shown in Figs. 2 and 3. Fig. 5 is a transverse sectional view illustrating a modification; and Fig. 6 is a broken plan view of the device shown in Fig. 5.

The supporting posts A, are preferably inclined as shown, and are unconnected with each other, except by vertically adjustable girders B or B′, hereinafter to be described, from which girders the longitudinal stringer C is supported and in turn supports the suspended track proper D.

As shown at the left of Fig. 1, and in Figs. 1 to 4, the adjustable girder B is of wood, and overlaps at its ends the posts A, the ends of the girder passing preferably at opposite sides of the said posts. The adjustable connection of the girder to the posts is effected with this form of girder by means of U-bolts *b*, which embrace the posts and pass through the girder, the ends of the U-bolts being threaded and provided with nuts *b′*, for tightening the U-bolts and thus firmly clamping the girder in place. It will be observed that the two U-bolts at each end are not quite in vertical alignment, the upper one being slightly farther inward than the lower one, thereby forming a somewhat diagonal passage-way for the post to correspond with the inclined position of the latter. By this construction it will be seen that by loosening the nuts of the U-bolts, the girder B and with it the stringer C and track D may be moved higher up or lower down on the posts A, to suit the level of the ground, the incline of the posts being made to correspond.

With the wooden girder B, connection of the stringer C is preferably effected with the under side of the girder by means of a bolt b^2 which passes through the girder and stringer, and through a plate b^3 where the meeting ends of the stringer sections are joined at the girder, the plate being secured to the girder by bolts b^4. The track D is suspended from the stringer by hanger bolts *d*.

At the right of Fig. 1 and in Figs. 5 and 6, is illustrated a modification in which a metallic girder B′ is employed. This girder consists of a plate B^2, formed at the ends into half sections B^3 of a clamp, the clamp being completed by the separate half section B^4. The clamps thus formed are inclined to correspond with the inclination of the posts A, and as the latter are generally round natural logs, the clamp is made preferably diamond shape in horizontal section, this angular conformation having a bettter clamping effect on the round post than would a round clamp. The clamp sections B^3, B^4, are held together and tightened on the posts by bolts and nuts b^5, and by loosening the nuts the girder may be placed higher or lower on the posts as the irregularities of the ground may necessitate.

With the metallic girder the stringer C is preferably secured on top of the same by means of a bolt b^6 which passes vertically through the stringer and through a central enlargement b^7, formed on the girder. The track D is suspended from the stringer by bolts *d* as in the form first described.

It will readily be understood that the adjustability of the track supporting girders affords a ready means of grading the track to compensate for ordinary irregularities of the ground, and that the grading may be effected by unskilled labor and with dispatch by merely placing the posts in position and after adjusting the position of the girder firmly clamping the posts in place.

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

1. In an elevated railway, the combination of supporting posts arranged in pairs at an angle to each other girders vertically adjustable on said posts, their ends projecting beyond the latter and clamps embracing the posts and including bolts engaging the ends of the girders both outside the posts, and at the inside of the latter, substantially as described.

2. In an elevated railway, the combination of supporting posts arranged in pairs at an angle to each other, girders vertically adjustable on said posts, their ends extending at opposite sides of the posts and projecting beyond the latter, and clamps embracing the posts and engaging the girder both at the outside and inside of the posts, substantially as described.

3. In an elevated railway, the combination of supporting posts, arranged in pairs, inclined toward each other, and vertically adjustable girders projecting beyond the posts and forming clamp sections, separate clamp sections mating the ends of the girders, and bolts uniting such separate sections to the girders both at the inside of the posts and the outside thereof, substantially as described.

JOHN N. VALLEY.

Witnesses:
GEORGE BARNETT,
FRANK A. GOODNOW.