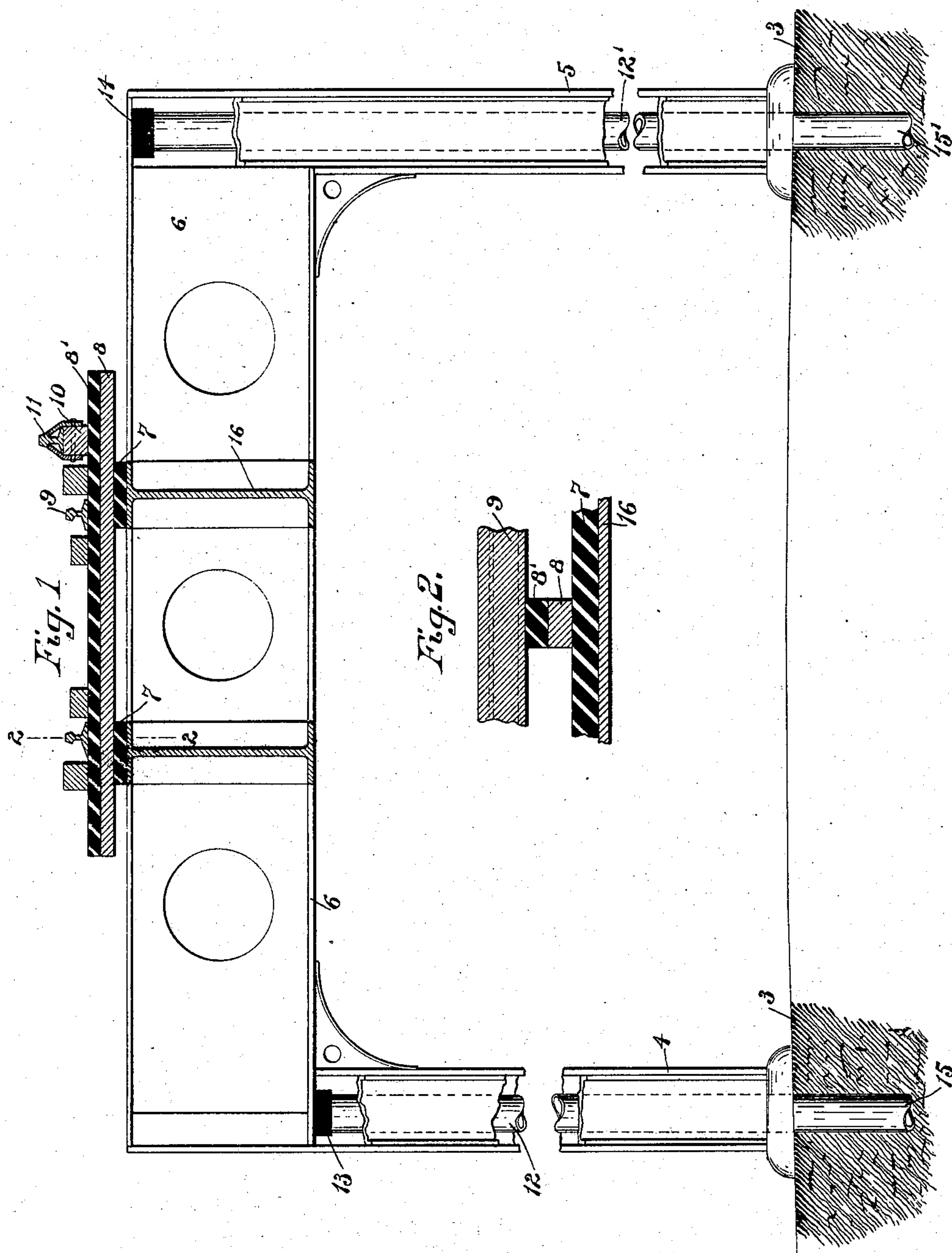


No. 785,247.

PATENTED MAR. 21, 1905.

C. D. WOOD.  
NOISE DEADENING MEANS.  
APPLICATION FILED JAN. 2, 1904.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## NOISE-DEADENING MEANS.

SPECIFICATION forming part of Letters Patent No. 785,247, dated March 21, 1905.

Application filed January 2, 1904. Serial No. 187,522.

*To all whom it may concern:*

Be it known that I, CHARLES D. WOOD, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Noise-Diminishing Means, of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is to insulate the rails of railroads, and especially of third-rail electric roads, from the structure upon which they rest, furnishing elastic seats for the rails and third rail which will be so constructed as to prevent any vibrations caused by the rolling-stock on said structures from being communicated from the rails to the supporting structure and preventing the noise from being carried forward in advance of the train upon the structure, also preventing to a great degree the noise usually caused by the concussion of the car-wheels on the rails and of the shoe upon the third rail.

Another object of my invention is to insulate certain portions of the structure, so that vibrations of the train cannot be carried through the supporting-posts of the structure and into the pavements or along the steel girders of the structure.

The invention consists in the combination of elements and in certain parts of construction entailed in the combination of said elements to obtain the desired result.

A full understanding of the invention can best be given by a detailed description of a preferred construction embodying the various features of the invention, and such a description will now be given in connection with the accompanying drawings, and I attain my object by the mechanism there illustrated showing such preferred construction, and the features forming the invention will then be specifically pointed out in the claims.

Figure 1 is a view, partly in section, of one of the steel girders and supporting-posts and showing in transverse section the road-bed and rails. Fig. 2 is a side sectional view on line 2 2 of Fig. 1.

Latitude is allowed herein as to details, as

they may be changed or varied at will without departing from the spirit of my invention and the same yet remain intact and be protected.

Corresponding and like parts are referred to in the following description and indicated in the drawings by the same reference characters.

Numeral 3 represents the earth, upon which rest the vertical supporting posts or standards 4 5, which support the horizontal steel girders 6, and connecting the steel girders 6 are the trestles or connecting-girders 16, upon which the cross-ties 8 rest. The cross-ties 8 have their upper portion covered with vulcanized rubber or other insulating material 8' or with thick felt, and upon this insulating material 8' rest the rails 9 and the support 10 of the third rail 11. Between the trestles or girders 16 and the cross-ties 8 are layers 7, of rubber or other insulating material, and it is thus seen that the noise occasioned by the rolling-stock upon the rails or the noise caused by the passing of the shoe upon the third rail or by the concussion of the car-wheels upon the rails is to a large extent, if not wholly, prevented from passing down into the steel girders 6 and into the trestles or connecting-girders 16 and is thus prevented from passing ahead or in front of the train, so that with a system as herein shown the only noise that could pass forward in advance of the train would be that carried forward by the third rail, which from experiments I have found to be very slight.

Within the upright standards or supporting-posts 4 5 I have inserted tubular pipes 12 12', which have at their upper end a plate or buffer 13 14, of insulating material, which press against a portion of the steel girder 6. These pipes extend downward through the posts 4 5 a certain distance into the ground 3, as at 15 15', so that when the train passes along over the tracks and the girders and connecting-trestles are shaken by the moving train and part of the vibrations are transmitted from the steel girders 6 to the posts 4 5 the pipes 12 12' take up the balance of the vibrations which have passed into the steel girders



through the insulating material 8' and 7, and these vibrations, which cause noise, are carried downward into the ground and not passed along through the connecting-trestles 16—that is, any noise passing into the girders 6, caused by the vibrations, and from them into the posts 4 5 will pass inward toward the center of the posts 4 5, jumping into the pipes 12 12', which carry the vibrations or noise caused by the vibrations into the ground 3; but where pipes are not used the vibrations are carried downward to the surface of the earth through the posts 4 5 and thence along the surface of the earth, causing great disturbance to adjoining property-owners from the noise vibrations.

It is to be understood that my invention is not limited to the specific details of construction shown in the accompanying drawings, but that said details may be varied in the practical carrying out of my invention. It is also to be understood that the combinations specifically set forth in the several claims are intended to be separately claimed without limitation to the use in connection therewith of other features of construction illustrated.

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

1. The combination in a railroad structure, of a series of vertical supports, horizontal girders supported by the vertical supports, trestles connecting the horizontal girders, insulating material covering the upper portion of the trestles, cross-ties upon the insulating material, and rails supported upon the cross-ties.

2. The combination in a third-rail electric road of a series of vertical supports, horizontal girders carried by the vertical supports, trestles connecting the horizontal girders, insulating material covering the upper portion of the trestles, cross-ties upon the insulating material, insulating material covering the up-

per portion of the cross-ties, and running-rails and a third rail upon the upper insulating material, substantially as shown and described.

3. The combination in a railroad structure of a series of vertical supports, a series of horizontal girders carried by the vertical supports, and a hollow pipe within the vertical supports and having its lower portion extending downward into the ground, substantially as shown.

4. The combination in a railroad structure of a series of vertical supports, a series of horizontal girders carried by the vertical supports, and a pipe within each vertical support and having its upper portion covered with insulating material which insulating material is inserted between the pipe and a portion of the girder, substantially as shown.

5. The combination in a third-rail electric road of a series of vertical supports, hollow pipes within said vertical supports having their lower ends extending downward into the earth, horizontal girders carried by the vertical supports, insulating-buffers covering the upper portion of the pipes and the horizontal girders partly resting upon said insulating material, trestles connecting the horizontal girders, insulating material covering the upper portion of the trestles, cross-ties upon the insulating material, insulating material covering the upper portion of the cross-ties, and rails upon the upper insulating material, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES D. <sup>his</sup> × WOOD.  
mark

Witnesses:

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