No. 768,702. PATENTED AUG. 30, 1904.

J. B. STRAUSS.

RAILROAD TRACK SUPPORTING DEVICE FOR BRIDGES OR THE LIKE.

APPLICATION FILED APR. 25, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

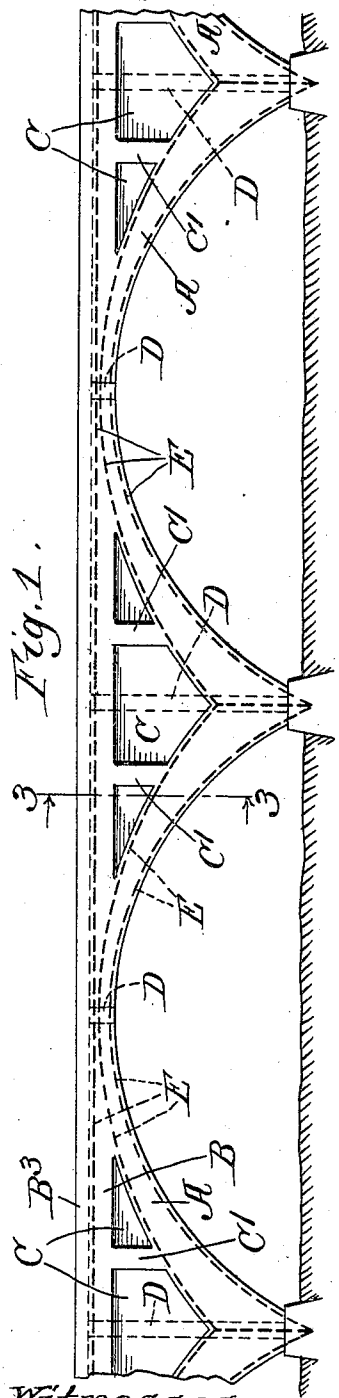

Fig. 1.

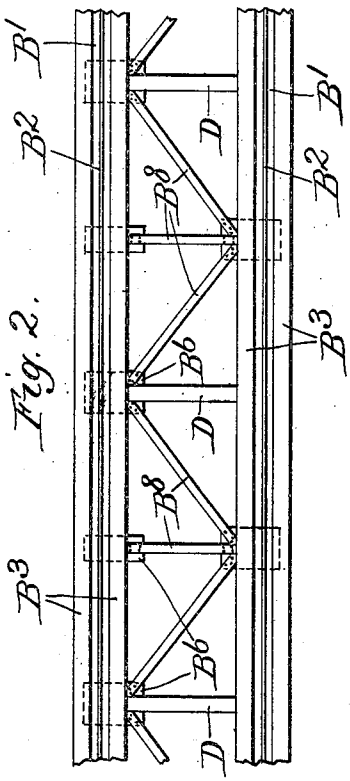

Fig. 2.

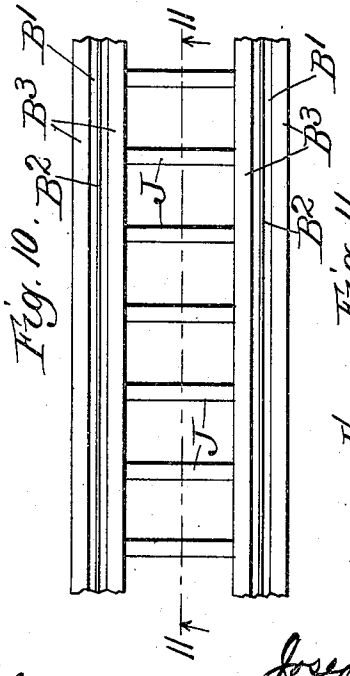

Fig. 10.

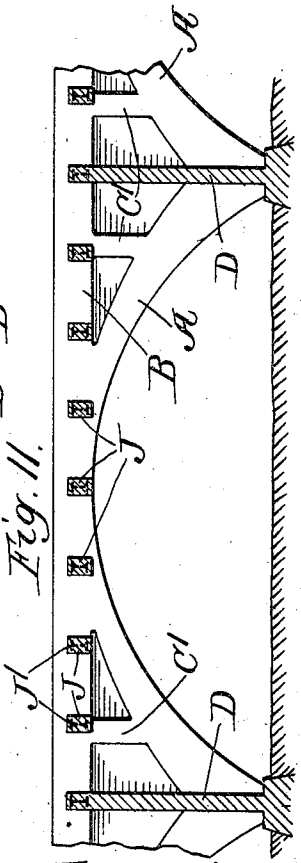

Fig. 11.

Witnesses.
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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

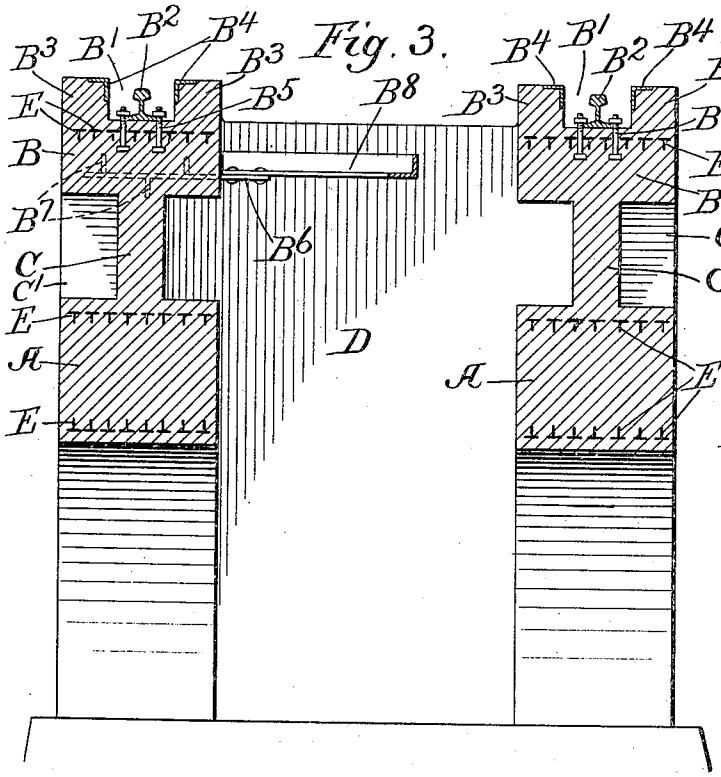


Fig. 4.

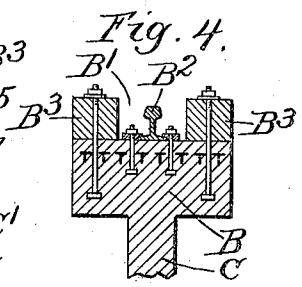


Fig. 5.

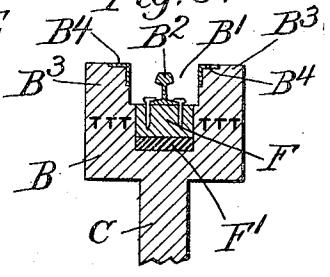


Fig. 6.

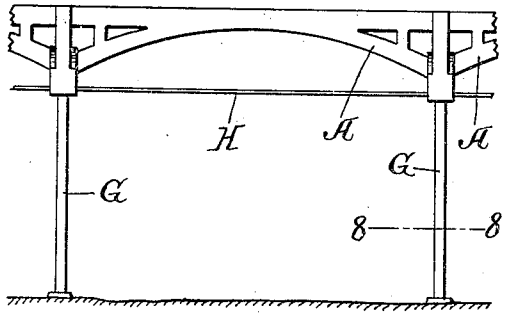


Fig. 7.

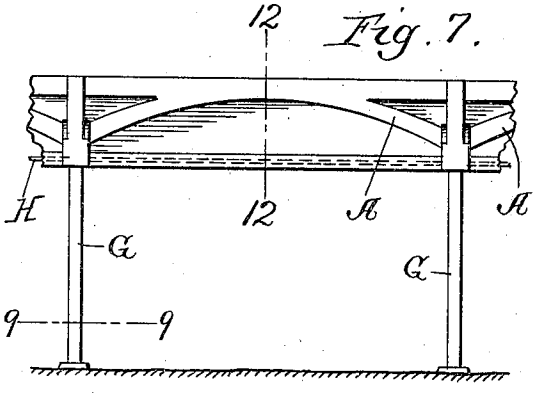


Fig. 8.

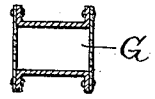


Fig. 12.

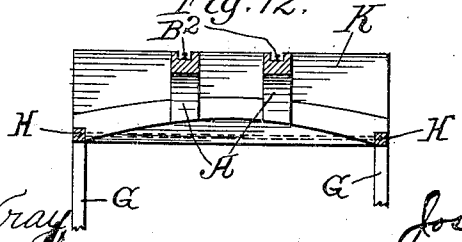
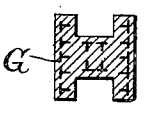


Fig. 9.



Witnesses.
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No. 768,702. Patented August 30, 1904.

UNITED STATES PATENT OFFICE.

JOSEPH B. STRAUSS, OF CHICAGO, ILLINOIS.

RAILROAD-TRACK-SUPPORTING DEVICE FOR BRIDGES OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 768,702, dated August 30, 1904.

Application filed April 25, 1904. Serial No. 204,814. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH B. STRAUSS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Railroad-Track-Supporting Devices for Bridges or the Like, of which the following is a specification.

My invention relates to railroad-track-supporting devices for bridges and the like, and has for its object to provide a new and improved construction of this description.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of a bridge embodying my invention. Fig. 2 is a plan view of a portion of Fig. 1. Fig. 3 is a sectional view taken on line 3 3 of Fig. 1. Figs. 4 and 5 are sectional views through the rail, showing modified constructions. Figs. 6 and 7 are side elevations showing modified constructions. Fig. 8 is a sectional view taken on line 8 8 of Fig. 6. Fig. 9 is a sectional view taken on line 9 9 of Fig. 7. Fig. 10 is a plan view of a construction similar to that shown in Fig. 1 with certain modifications. Fig. 11 is a sectional view taken on line 11 11 of Fig. 10. Fig. 12 is a sectional view taken on line 12 12 of Fig. 7.

Referring now to Figs. 1, 2, and 3, I have shown a bridge embodying my invention. In this construction there are provided the girders A, supported upon suitable supports. These girders are of concrete or concrete-steel and in these figures are shown as arches. The girders A are provided with the rail-supporting parts B, upon which the rails are directly supported without the intervention of cross-ties or the like ordinarily used for this purpose. These girders or rail-supports are of concrete or concrete-steel, and in Fig. 1 the rail-supporting parts B are connected to the stress-bearing parts of the girders by webs or walls C, of concrete or the like, preferably provided at intervals with strengthening-ribs C′. The girders under the two rails are connected together at suitable intervals by vertical webs or diaphragms D, of concrete-steel, properly united to the girders and webs C. I have shown the iron or steel in the girders as being in the form of T's E; but it is of course evident that any other suitable construction may be used. In Fig. 3 the rail-supporting parts of girders A are shown as provided with grooves B′, in which the rails B^2 are set. The side walls B^3 of these grooves act as guard-rails in the event the car gets off the track. These side walls are preferably provided with angle-irons B^4 to prevent abrasion or injury due to contact with the wheels of the car. The rails B^2, it will be noted, are directly mounted upon the rail-supports and are directly over the girders A, and are thus mounted directly upon the supporting part which carries them and without the intervention of cross-ties. These rails may be connected to the rail-supports in any desired manner—as, for example, by means of bolts B^5, embedded in the concrete. I prefer also to connect the parallel girders A on each side of the bridge by a lateral steel system, as shown in Fig. 2. In this construction a series of metal plates B^6 are embedded in the girder and are preferably corrugated or provided with some means for increasing the bond between them and the concrete, such as the projections B^7. These plates are provided with holes and are connected by the lateral braces B^8.

Instead of making the rail-supporting parts B grooved, I may make them flat and place longitudinal beams of wood or the like on each side to act as the rail-guards B^3. This construction is shown in Fig. 4. I may also place in the grooves B′ or under the rail in any of the various constructions longitudinal beams or parts F, of wood or the like, the rails being fastened in position by spikes or the like. I may also locate beneath the rails a cushion device F′ for the purpose of deadening the sound.

In Fig. 6 I have shown a modified construction where the girders A are supported by the posts G, thus adapting the device to an elevated structure. In Fig. 6 I have shown the posts as of steel, such posts being built up as shown in Fig. 8. I prefer, however, to make the posts of concrete-steel, as shown in Fig. 7, a cross-section of one such post being shown in Fig. 9 and consisting of pieces of steel or iron embedded in concrete. In Fig. 6 I have shown the steel tie-rods H, while in Fig. 7 these rods are surrounded by concrete and

connected by concrete webs to the girders A. These tie-rods H are preferably bent at the ends, so as to project into and be tied to the concrete. In these constructions the girders upon which the rails are supported are carried by cross-beams K, which are preferably concrete cross-beams, said cross-beams being supported upon the posts G.

In Fig. 10 I have shown a plan view similar to that shown in Fig. 2, where the cross connection between the girders supporting the two rails is made by strips of concrete-steel J. These connecting-pieces may be made up in any desired manner, and I have shown them as consisting of T-beams J, embedded in the concrete. The tie-pieces are preferably located above the reinforcing parts C′ of the web C. It will be seen that by this construction, whether used in a bridge or in an elevated structure or the like, the rails upon which the vehicles run are placed directly over the concrete supporting-girders and attached thereto without the intervention of cross-ties and that I am therefore able to do away with such cross supporting-ties and also to eliminate the floor system altogether, thus reducing the first cost as well as the cost of maintenance. This construction also very materially lessens the noise and jar.

It will further be seen that by means of this invention I am able to produce a unitary and monolithic construction of concrete or concrete-steel and a construction which permits of great simplicity and economy and at the same time of great durability and effectiveness.

In the claims I have used the term "concrete," and by this term I mean to include concrete and concrete having metal embedded in it or what is termed "concrete-steel" or the like.

I claim—

1. A supporting device for a railroad-track comprising a series of concrete rail-supporting girders one associated with each rail, means for securing the rails thereto, each concrete girder provided on each side of the rail thereon with elevated portions between which the rail is located.

2. A supporting device for a railroad-track comprising a longitudinal rail-supporting girder upon which a rail is carried, and a sound-deadening device interposed between the rail and the girder comprising a plurality of parts of different material.

3. A supporting device for a railroad-track comprising a concrete rail-supporting girder, one associated with each rail, each girder provided with a groove or recess in which the rail is received, the upwardly-projecting sides of the groove forming guard-rails for the wheels in case of derailment.

4. A concrete girder provided with one or more metal plates embedded therein and projecting laterally therefrom, each plate provided with means for connecting other members thereto.

5. A supporting device for a railroad-track comprising a series of separated, longitudinal, concrete rail-supporting girders one under each rail, said girders mounted upon separated supports, a series of concrete connecting-pieces between said supports and uniting the separated girders, the girders and connecting-pieces forming a monolithic structure.

6. A supporting device for a railroad track comprising a concrete girder under each rail, the rails being mounted directly thereon, each girder comprising two parts connected by a web, and transverse concrete webs between the girders, integral therewith, the whole forming a monolithic structure.

7. The combination with a series of concrete girders mounted upon separated supports of a series of separated concrete connecting-pieces between the supports, the girders and connecting-pieces forming a solid monolithic structure.

8. A supporting device for a railroad-track comprising a series of longitudinal, concrete rail-supporting girders, one under each rail, the rails being connected thereto, and a series of supports upon which said rail-supporting girders are carried.

9. A supporting device for a railroad-track comprising a concrete girder under each rail, each girder provided with a rail-bearing part upon which the rail is mounted, and a stress-bearing part beneath the rail-bearing part, the rail and the rail-bearing part and stress-bearing part of the girder all being in the same vertical plane.

10. A supporting device for a railroad-track comprising a concrete girder under each rail, the rail being directly connected to the girder and set into the girder so that its engaging face is below the upper face of the girder, and connecting devices between the girders located under the rails.

JOSEPH B. STRAUSS.

Witnesses:
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E. K. REYNOLDS.