

(No Model.)

R. W. KING.
RAILWAY CONSTRUCTION.

No. 470,641.

Patented Mar. 8, 1892.

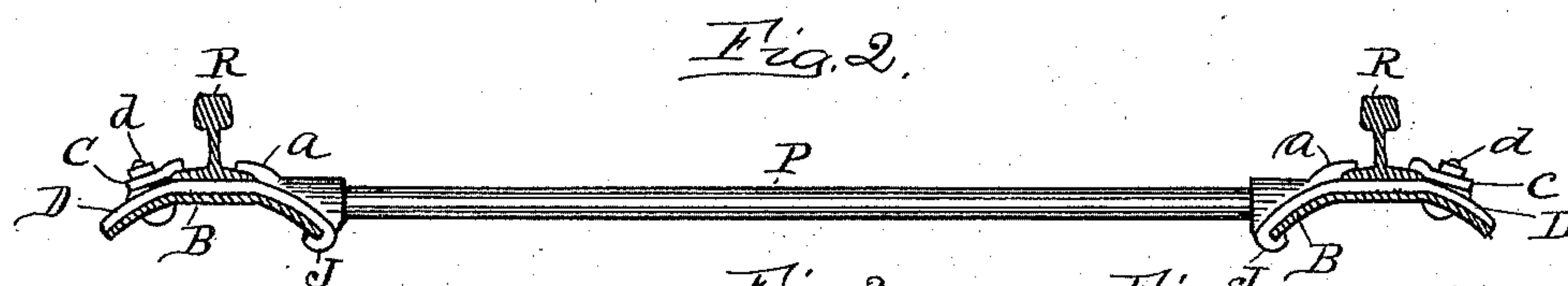
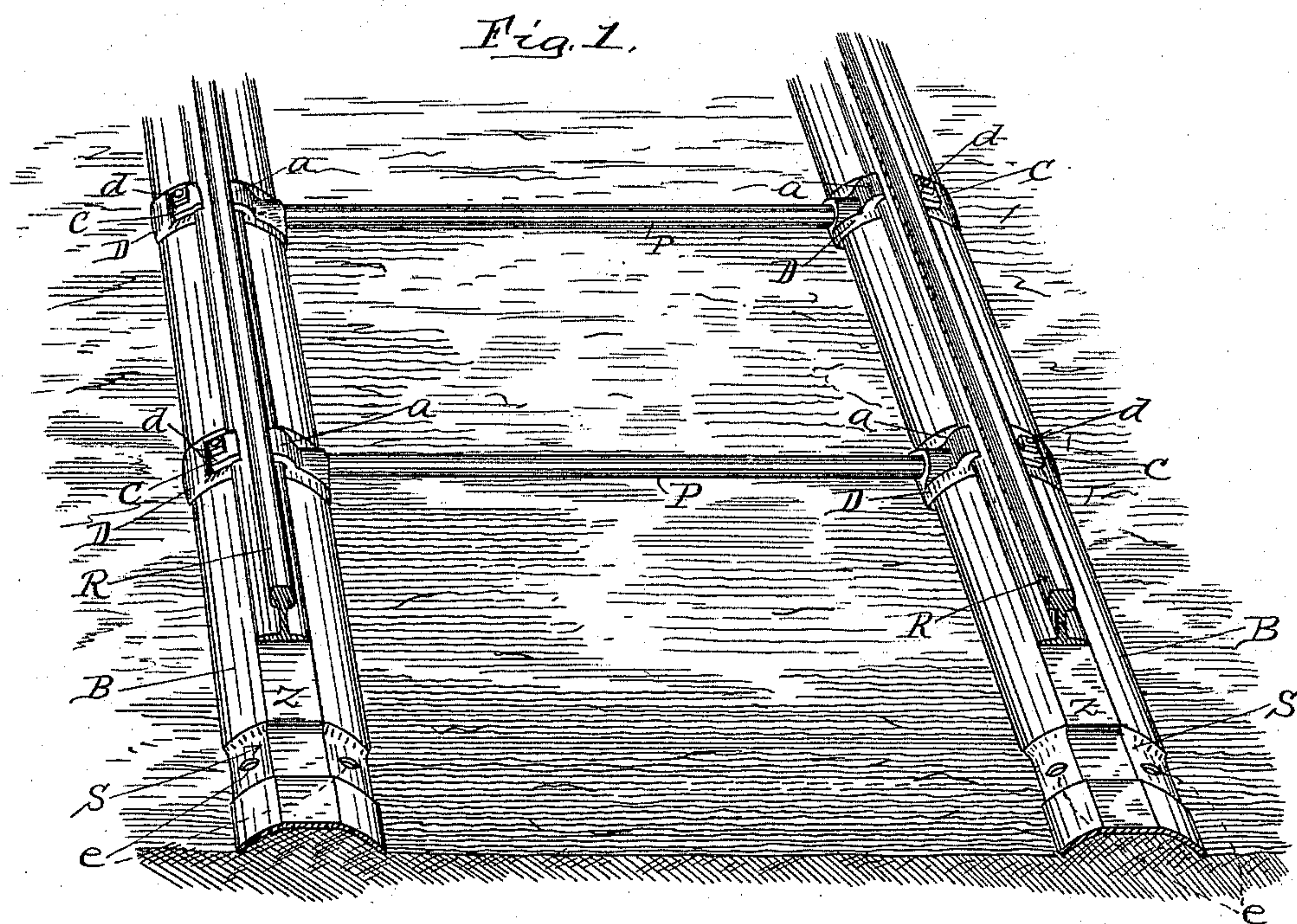


Fig. 6.

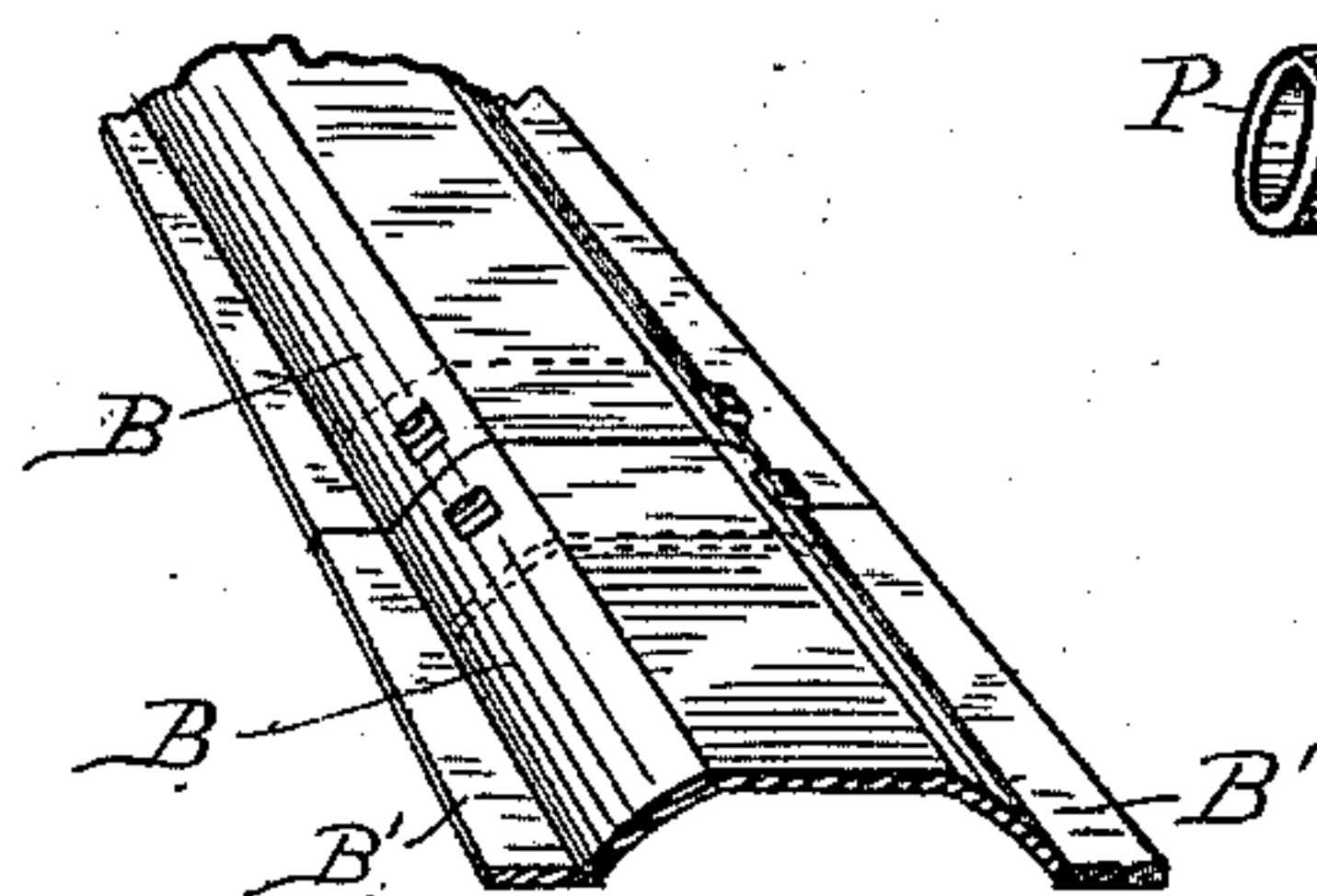


Fig. 3.

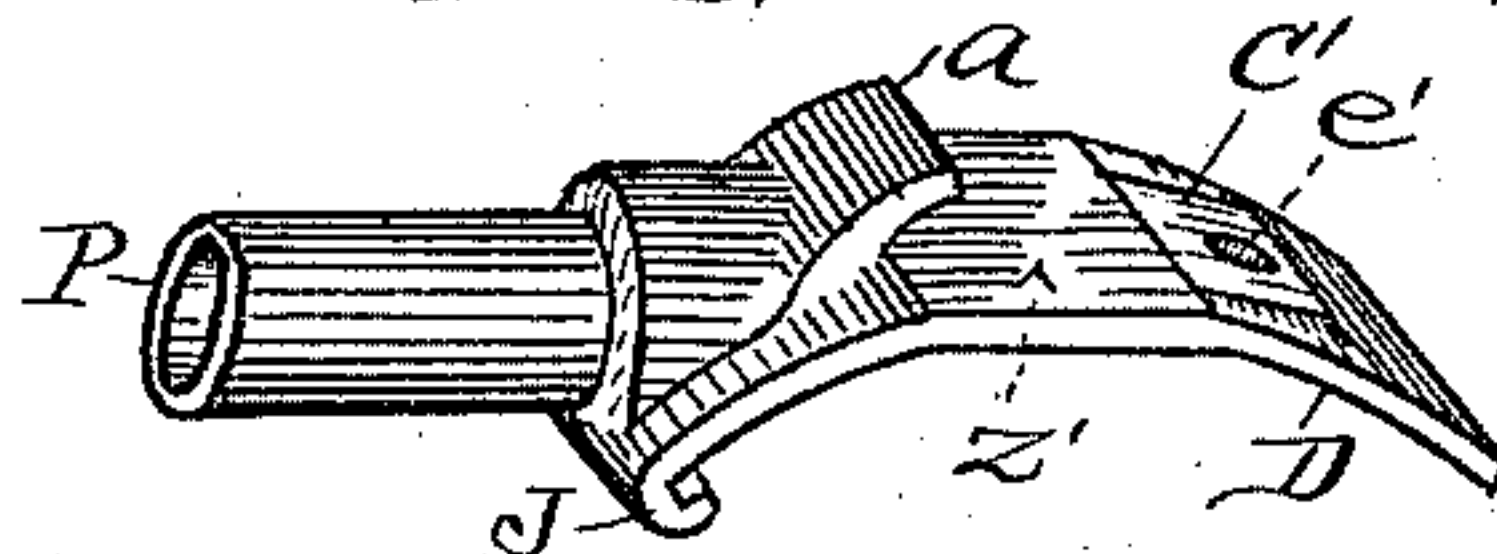


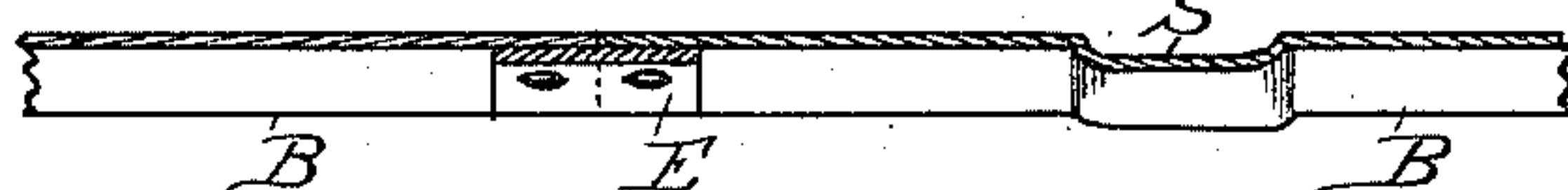
Fig. 4.



Fig. 5.



Fig. 7.



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RAILWAY CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 470,641, dated March 8, 1892.

Application filed November 2, 1891. Serial No. 410,617. (No model.)

To all whom it may concern:

Be it known that I, RICHARD W. KING, a citizen of the United States of America, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Railway Construction, of which the following is a specification, reference being had therein to the accompanying drawings, and the letters of reference thereon, forming a part of this specification, in which—

Figure 1 is a perspective view of a section of my improved railway construction; Fig. 2, a side plan of the cross-tie and a cross-section of the metallic stringers and of the railway-rails of the same; Fig. 3, a detailed perspective of one head and a section of the cross-tubing of the cross-tie; Fig. 4, a detailed perspective of one of the detachable rail-keepers for holding the rails upon the cross-ties and stringers; Fig. 5, a similar view of one of the bolts for securing said keepers into position and for binding the ties and stringers together; Fig. 6, a detailed perspective of two connected sections of the stringers of the construction, and Fig. 7 a longitudinal section of said stringers.

This invention relates to certain improvements in a railway construction designed more especially for steam-railways; and it consists, essentially, in metallic stringers made of flat metal and bent to take the form of an arch in cross-section, and of metallic cross-ties having heads made to be seated upon the stringers in corresponding depressions struck in the stringers and arranged to form chairs for the railway-rails having a rail-supporting surface on a plane with a corresponding supporting-surface of the stringers, and of means for binding the rails, the cross-ties, and the stringers together, which improvements are fully set forth in the following specification, and pointed out in the claims.

The object of this invention is to dispense with the use of wood in a railway construction, to make the cross-ties as a gage for the laying of the track, and to prevent the spreading of the rails, and also to provide a continuous support for the rails.

Referring to the drawings, B represents the metallic stringers, which are preferably made from steel plate of a suitable width and usu-

ally of corresponding length with the rails, and is rolled or bent to take the form of an arch in cross-section with a flat crown surface corresponding in width with the rail-flanges, as shown at Z, and are struck in at suitable regular intervals along their length, as shown at S, to provide depressed seats for the cross-tie heads, and are perforated at the side portions of said depressions to provide holes *e* for the securing-bolts, and perforated at the ends to provide holes for bolts used for securing a connecting-plate E for connecting the stringers together, as shown in Figs. 6 and 7, the holes *e* being made in either side to adapt the stringers being used at either side in the construction. The cross-ties consist of two cast heads D and D, made to the general cross-section form of the stringers and adapted to be seated upon the stringers B in the depressions S', as shown, and are provided with a flat supporting-surface Z', which, when seated, is of the same plane as the surface Z of the stringers, and are also provided on their inner side portion adjacent said flat portion with fixed hooked keepers *a*, and are connected together to be of a standard gage by means of tubular cross-bars P, which are cast into the heads D and thereby become firmly connected with the said heads. Each head D is provided on its upper side opposite keeper *a* with a keeper-seat *c'*, (see Fig. 3,) and with a bolt-hole *e'* through said seat and head, which is so located as to register, when seated upon the stringer, with the hole *e* of the stringer. Also, each head D is provided on its inner lower side portion with a hook J, into which hooks the corresponding margin of the stringers B are placed in said construction, as shown in Fig. 2.

R represents the railway-rails, and in the construction are respectively arranged upon the stringers B B upon surfaces Z, and upon the surfaces Z' of the tie-heads, with their inner flange placed under the keepers *a* of said heads; and as a means of securely holding the outer rail-flanges I have provided the removable keepers *c*, which are adapted to rest upon the seats *c'* of heads D with their bolt-holes arranged to register with those of said seats and with a portion at one side upon the rail-flanges, and are securely held into such position by means of the bolts *d*, arranged

through said bolt-holes, which bolts also securely bind together the cross-tie heads and stringers, as represented. Thus in this construction two bolts serve to secure the rails and bind the ties and stringers at each cross-tie.

I have in Figs. 1 and 2 shown the stringers without side flanges, and in Fig. 6 with side flanges B' B', and I desire to state that in this construction the stringers may be provided with such flanges, if so desired, or omitted.

By reason of the arched form in cross-section of the stringers they are given greater supporting strength than were they flat, and in laying them upon a road-bed the ballasting will not be forced from under them to give unevenness to the road, as would be liable and possible in the use of flat stringers, for the reason that their down-curved side portions prevent the escape of the ballasting, and, further, by reason of the rails being continuously and evenly supported throughout their length a level smooth road is easily maintained, and therefore by the use of such construction the wear of rolling-stock of the road is greatly decreased over that used upon the ordinary construction.

Having thus described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is as follows:

1. In railway construction, the combination, with metallic cross-ties, of the metallic stringers arched in cross-section and struck in at suitable regular intervals to provide seats for the cross-tie heads, substantially as set forth.

2. The combination, with the railway-rails, of the metallic stringers arched in cross-section and provided with flat crown-rail-supporting surface and with struck-in depressions at suitable intervals, and the cross-ties provided with heads conforming to said depressions and seated therein and provided with keepers for holding the rail-flanges, substantially as set forth.

3. In railway construction, the combination, with the rails, of the stringers B, having the depressions S and bolt-holes e, the cross-ties consisting of the cast heads D D and tubular cross-bar P and provided with the fixed keepers a, the removable keepers c, and the bolts d, substantially as and for the purpose set forth.

4. In railway construction, the combination, with the longitudinally - arched stringers struck in at suitable intervals, as shown, of the cross-ties comprising the opposite cast heads provided with the rail-keepers, and the lower side hooked portion for holding the stringer-margin, and the tubular connecting-bar cast into said heads, substantially as and for the purpose set forth.

5. In railway construction, the combination, with metallic stringers provided with depressions at suitable intervals, of metallic cross-ties arranged seated at their end portions in said stringer-depressions, and keepers for holding the railway-rails, substantially as and for the purpose described.

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