

W. H. SHEAR.
METALLIC RAILWAY TIE.
APPLICATION FILED JAN. 22, 1910

952,586.

Patented Mar. 22, 1910.

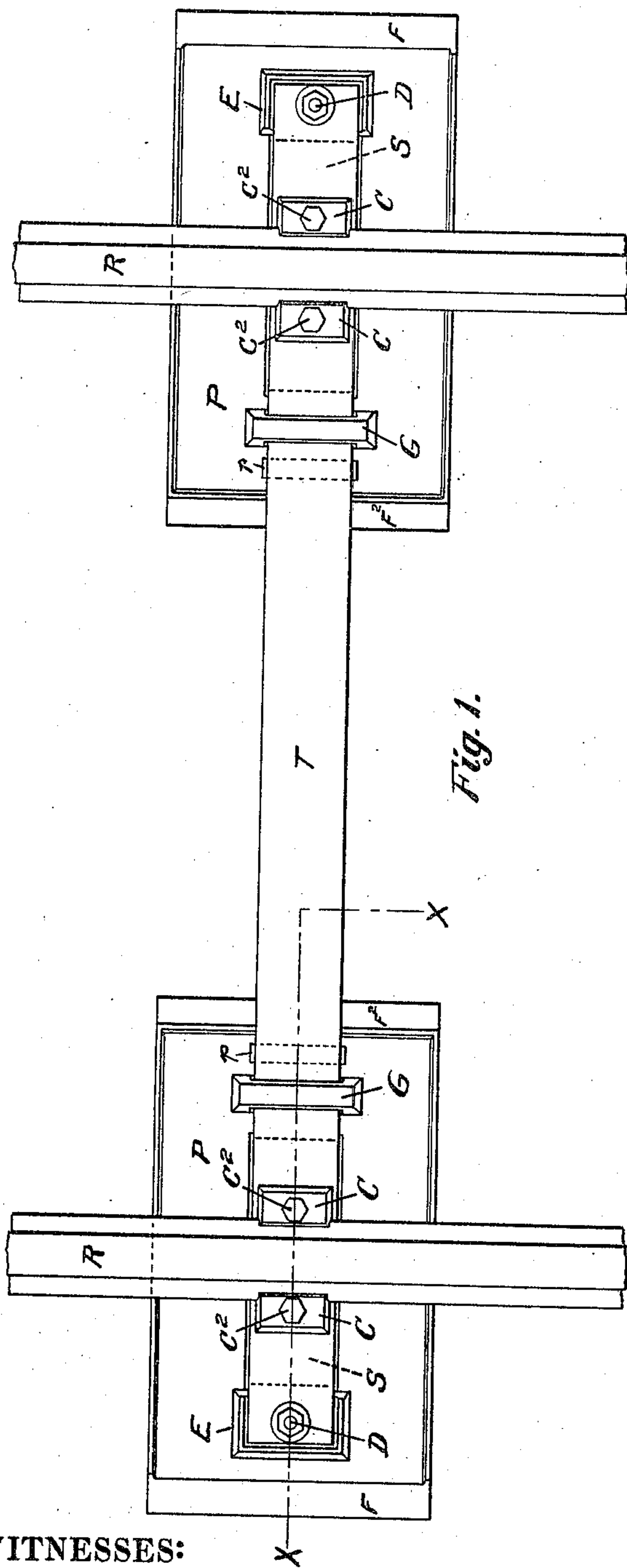


Fig. 1.

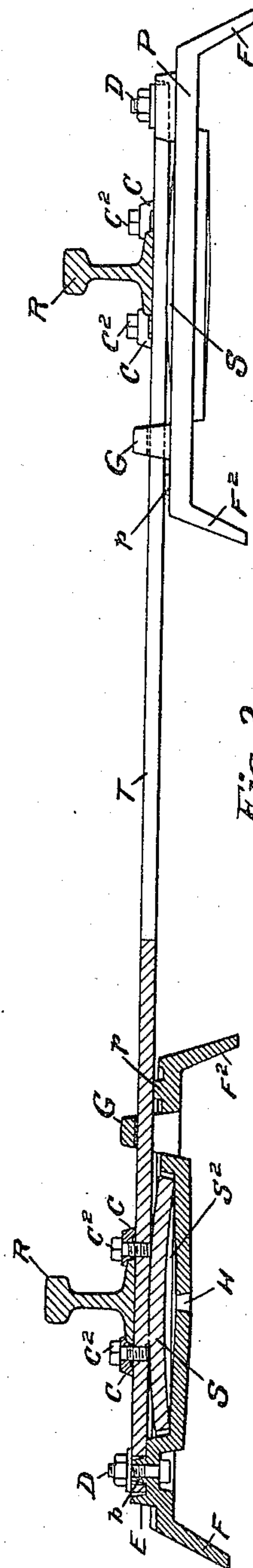


Fig. 2.

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METALLIC RAILWAY-TIE.

952,586.

Specification of Letters Patent. Patented Mar. 22, 1910.

Application filed January 22, 1910. Serial No. 539,471.

To all whom it may concern:

Be it known that I, WILLIAM H. SHEAR, a citizen of the United States, residing at Ravena, in the county of Albany and State of New York, have invented certain new and useful Improvements in Metallic Railway-Ties, of which the following is a specification.

My invention relates to railway ties and the object of my invention is to provide a metallic railway tie which will not buckle or bend in the center, that will provide a resilient seat for the rail, and safe and secure means for holding the tie upon the railroad bed and the rail upon the tie, and will be practical in operation and simple and economical in construction. I obtain these objects by means of a metallic railway tie constructed as shown in the accompanying drawings, in which—

Figure 1 is a plan view of my tie with the rail R clamped upon it in position. Fig. 2 is a side elevation of the same with one end thereof in section on the lines X, X of Fig. 1.

Similar letters refer to similar parts throughout the several views.

Referring to the drawings, T represents my metallic tie which is preferably constructed of steel of suitable length to reach under both rails of the track, leaving sufficient space for clamping it down and having sufficient breadth and thickness to furnish strength and rigidity.

P, P are bed-plates to support the ends of the tie under the rails. These bed-plates are made of suitable width and length to properly support the tie and the weight of the rails with the cars upon the rails. These bed-plates have the ends F, F extending downward into the ground at obtuse angles, as shown in Fig. 2, and these ends tend to prevent the bed-plates from sliding upon the ground and also being at obtuse angles when the trains pass over them causing the bed-plates to vibrate, the ends will gather dirt under the bed-plates and thus tend to tamp the railway bed.

The bed-plates P, P are provided with shoulders *p, p* on the ends toward the center of the road bed for the tie to rest upon. Also loops, G, G on the same ends for the tie to slide through and the shoulders E, E upon the other end of the bed-plate for the end of the tie to rest upon and to be fastened upon. The central portion of the bed-plates P, P

over which the rail rests are hollowed out or depressed so as to form a recess or chamber under the tie so that the tie does not come in contact with the upper surface of the bed-plates directly under the rail, but rests upon the shoulders *p* and E and under the loop G. In this depression or recess, I place a convexo-concave spring plate S which has sufficient convexity and is so constructed that the upper surface will bear against the under surface of the tie directly under the rail and the ends bear against the upper surface of the bed-plate, as shown in Fig. 2. The plate S should be made of suitable material of sufficient thickness and strength to allow a slight resiliency to the tie when the train passes over it. There should be a sufficient vacancy *S²* between the center of the spring plate S and the bottom of the bed-plate to allow for a spring downward of the tie when heavy trains are passing over it.

H is an opening in the center of the bed-plate in the depression under the rail to allow any accumulation of moisture to escape.

C, C are clamping plates to fasten the rail upon the tie. These plates extend slightly over the edges of the flanges of the rail and are provided with holes by which the threaded bolts may be used to attach them to the tie, as shown in the drawing.

The extreme ends of the ties are preferably provided with holes which fit loosely over the hollow projections, *b, b* in the shoulders E, E and the ties may also be securely bolted to the shoulders E, E, as shown in the drawings. The projections *b, b* are hollow and extend upward from the shoulders E, E. The ends of the ties have holes to fit over these projections loosely so as to provide for the vibration caused by the cars passing over the ties and bolts extend upward through these projections and through the holes in the ends of the tie and the ties are thus bolted upon the shoulders of the bed-plate.

Constructed in this way the ties may be of any suitable thickness and strength and are attached securely to the bed-plates. The rails are attached to the ties in such a manner that they may be watched and the bolts kept properly tightened from the surface of the railway bed. The spring plates under the rails may be of such strength as to give the proper resiliency to the seat of the rails when the cars pass over them. The bed-plates being embedded in the ground will

hold the rails in alinement and the whole road bed thus provided would be safe and secure against accidents. The material from which the whole structure is composed is
5 practically indestructible and will last a generation.

What I claim as my invention and desire to secure by Letters Patent is,

10 1. In a metallic railway tie, a metallic bar adapted to extend across the track under the rails, bed-plates adapted to support the ends of the tie, said bed-plates having recesses under the tie, a convexo-concave metallic spring plate in each of said recesses
15 under the rail and adapted to supply a resilient seat to the rail upon said tie.

2. In a metallic railway tie, a metallic bar adapted to extend across the track and support the rails, metallic bed-plates adapted
20 to support the ends of the tie, means for fastening said tie upon said bed-plates, means for fastening the rails upon said tie, recesses in said bed-plates under said rails, spring metallic plates in said recesses, adapt-
25 ed to provide resilient seats to the rails, substantially as described.

3. In a metallic railway tie, a metallic bar extending across the track under the rails, metallic bed-plates adapted to support
30 the ends of the tie, lugs on the upper surface of said bed-plate near the end toward the center of the track, adapted to sustain said tie, loops upon the upper surface of said

bed-plates adapted to receive said tie when resting upon said lugs, shoulders at the outer
35 ends of the said bed-plates adapted to sustain the end of said tie and to which said tie is adapted to be attached, recesses in the upper surfaces of said bed-plates under said tie, metallic convexo-concave spring plates
40 adapted to fit in said recesses, the ends against the bottom thereof and the vertices against the under surfaces of said ties under the seats of the rails, thereby forming
45 resilient seats for the rails and means for clamping said rails upon said bed-plates, substantially as described.

4. A metallic railway tie consisting of a metallic bar adapted to extend across the track under the rails, a metallic bed-plate
50 adapted to support one end of the tie, a recess in the bed-plate under that portion of the tie upon which the rail is adapted to rest, a hole in the tie near the end thereof, a projection upon the bed-plate near the
55 outer end thereof adapted to fit into the hole in said tie, means for clamping said tie upon said bed-plate and the rail upon the tie, substantially as described.

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

WILLIAM H. SHEAR.

Witnesses:

WALTER E. WARD,
MARGUERITE VAN DER VOLGEN.