

(No Model.)

J. C. COWDRICK.
RAILWAY RAIL TIE.

No. 527,668.

Patented Oct. 16, 1894.

Fig 1

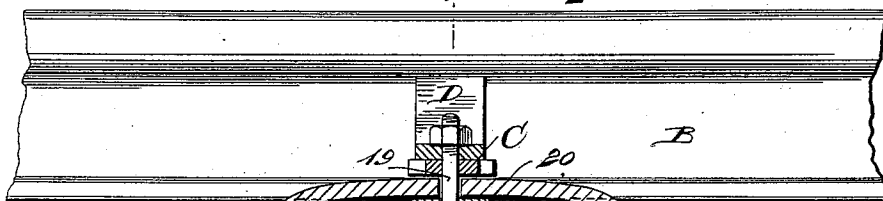
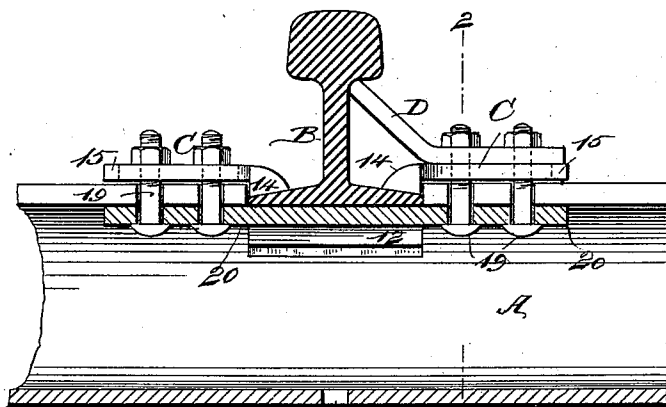


Fig 2

Fig 4

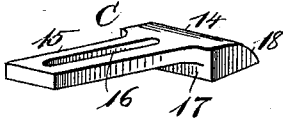
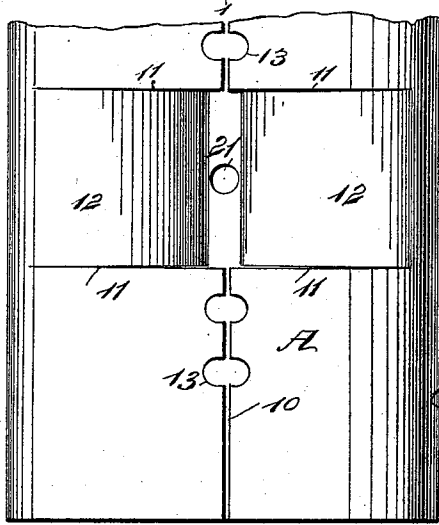


Fig 3



WITNESSES:

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JESSE C. COWDRICK, OF OGDENSBURG, NEW JERSEY.

RAILWAY-RAIL TIE.

SPECIFICATION forming part of Letters Patent No. 527,668, dated October 16, 1894.

Application filed April 4, 1894. Serial No. 506,319. (No model.)

To all whom it may concern:

Be it known that I, JESSE C. COWDRICK, of Ogdensburg, in the county of Sussex and State of New Jersey, have invented a new and useful Improvement in Railway-Rail Ties, of which the following is a full, clear, and exact description.

My invention relates to an improvement in metallic ties for railway rails, and it has for its object to provide a metallic tie which may be substituted for the ordinary solid wood tie, and one by means of which the rails of a track may be kept in alignment as well as with a wooden tie.

A further object of the invention is to provide a tie so constructed that the rail when located thereon will be prevented from rattling, and to provide a fastening device which will hold the rail in its seat on the tie, under all circumstances.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

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

Figure 1 is a longitudinal vertical section through the improved metallic tie, the section being taken essentially on the line 1—1 of Fig. 2. Fig. 2 is a transverse section taken essentially on the line 2—2 of Fig. 1. Fig. 3 is a plan view of a portion of the metallic tie; and Fig. 4 is a perspective view of one of the fastening dogs employed in connection with the tie.

In carrying out the invention the tie or sleeper A, is tubular and is constructed of steel, iron, or any suitable metallic substance. The said sleeper or tie is made somewhat oval in cross section, approximating in shape or contour that of the ordinary sleeper or tie. The said metallic tie is provided with a slot 10, extending from end to end thereof at about the central portion of its upper face, whereby the tie may yield under pressure to a certain extent, and is practically of the same elasticity as a wooden tie.

At that point in the tie where the rails B are to cross it the tie is provided with two

parallel transverse cuts 11 in its upper face, whereby virtually two tongues 12 are formed, one at each side of the central opening 10, and the said tongues are pressed downward preferably on a curved line, as shown in Fig. 2, bringing their upper faces below the plane of the upper face of the body of the tie. The rails B are adapted to be seated upon the tongues 12, as shown in Fig. 1, whereby the upper face of their flanges will be below the plane of the upper face of the body of the tie. At each side of the space between the tongues 12 two or more apertures 13, are produced, and at each side of the said space, between each set of tongues 12, a retaining shoe C, is adjustably located. The retaining shoe comprises a head section 14 and a shank section 15. The shank section is provided with a longitudinal slot 16, and the shank is projected from the upper rear portion of the head section, as best shown in Fig. 4. The head section is therefore thicker than the shank, providing a shoulder 17 beneath that portion of the shank which connects with the head, and the free end of the head upon its upper surface is rendered more or less cylindrical, as shown at 18 in Fig. 4.

The under faces of the heads of the retaining shoes C, are adapted to bear upon the upper faces of the flanges of the rail, as illustrated in Fig. 1; and the shoulders 17 of the heads of the said retaining shoes engage with the side walls of the opening produced in the tie by the formation of the tongues 12, as is clearly shown in Fig. 1; and the shoes are held in engagement through the medium of bolts 19, which are passed through the slots 16 in the shanks of the shoes, through the apertures 13 in the tie, and through a connecting plate 20, located in engagement with the under face of the upper section of the tie, the said connecting plates being made to cross the tongues 12, as shown in Fig. 2, and to form a seat or bearing for the rails B between opposing tongues. The connecting plates 20 prevent rattling, since they form a firm bearing for the rails at that portion of their under surface where the tongues 12 do not engage, it being understood that the space between the cuts 11 in a tie corresponds practically to the width of a rail at the base. The side walls of the openings produced by

the tongues prevent the rails from moving laterally, the retaining shoes prevent them from moving in an upwardly direction, while the connecting plates or bars 20 prevent them from moving in a downwardly direction except sufficiently to provide a proper elasticity.

Where the ties are used on a curve, a brace plate or bar D of angular construction is made to engage with the shank of the rail immediately beneath its head upon the outer face thereof, the said brace bar or plate being secured upon the shank of one of the retaining shoes through the medium of the same bolts which hold the shoes in place, as shown in Fig. 1.

A metallic tie or sleeper constructed as above set forth may be readily substituted for any wooden sleeper, and may be gaged in equally as expeditious and convenient a manner, and the said sleepers or ties may be sent from the factory complete, with the retaining shoes loosely attached thereto. By this means but little time and labor are required to place the rails upon the ties and fasten them in place. In the event the old fish plates are employed, the lower flange or member of said fish plates may be raised to receive the heads of the retaining screws when the plates happen to come opposite the shoes; but any form of fish plate may be employed, and either the fish plates may be adapted to the shoes or the shoes to the plates.

The tie may be attached to bridge trestles, or other metallic structures by passing bolts through apertures 21 produced in the bottom of the ties; or when the ties are to be attached to structures of wood, lag screws may be employed instead of bolts.

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

1. A railway tie formed of a tubular metallic body having transverse cuts in its bearing face and a longitudinal slot joining the transverse cuts, whereby opposite tongues are formed, said tongues being bent downward whereby their bearing faces are at a point below the plane of the upper face of the body of the tie, substantially as shown and for the purposes described.

2. A tubular, metallic railway tie, provided with a slot extending through from end to end in its upper face, tongues transversely

formed in the said upper surface of the tie at each side of the slot therein, which tongues are projected downward below the plane of the upper surface of the tie, forming seats or bearings for the base of railway rails, substantially as shown and described.

3. The combination, with a tubular metallic railway tie having transverse cuts made in its upper face, forming opposing tongues, which tongues are separated and downwardly curved forming seats for the reception of rails, of a connecting bar or plate extending transversely across the opening between the tongues and above the inner ends of the latter, the said connecting bar being attached to the body of the tie, and retaining shoes adjustably carried by the tie, one at each side of the central portion of the opening between each set of said tongues, the said shoes comprising a shank adjustable upon the tie, and a head adapted for engagement with the flanges of the rails and likewise for engagement with the walls of the said opening in the tie above the tongues, as and for the purpose set forth.

4. The combination, with a tubular metallic railway tie having transverse cuts made in its upper face, forming opposing tongues, which tongues are separated and downwardly curved, forming seats for the reception of rails, of a connecting bar or plate extending transversely across the opening between the tongues and above the inner ends of the latter, the said connecting bar being attached to the body of the tie, and retaining shoes carried by the tie, one at each side of the central portion of the opening between each set of said tongues, the said shoes comprising a shank adjustable upon the tie and a head adapted for engagement with the flanges of the rails, and likewise for engagement with a wall of the said opening in the tie above the tongues, and a brace bar carried by the shank of one of the retaining shoes and adapted to extend upwardly and inwardly over the opening between two opposing tongues, the inner member of the said bar or plate being adapted for engagement with the outer surface of the rail at the junction of its head with its shank, substantially as shown and described.

JESSE C. COWDRICK.

Witnesses:

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H. C. GOULD.