No. 758,115. PATENTED APR. 26, 1904.

J. F. SMITH.

RAILWAY TIE AND FASTENING.

APPLICATION FILED JAN. 27, 1904.

NO MODEL.

Fig. 1.

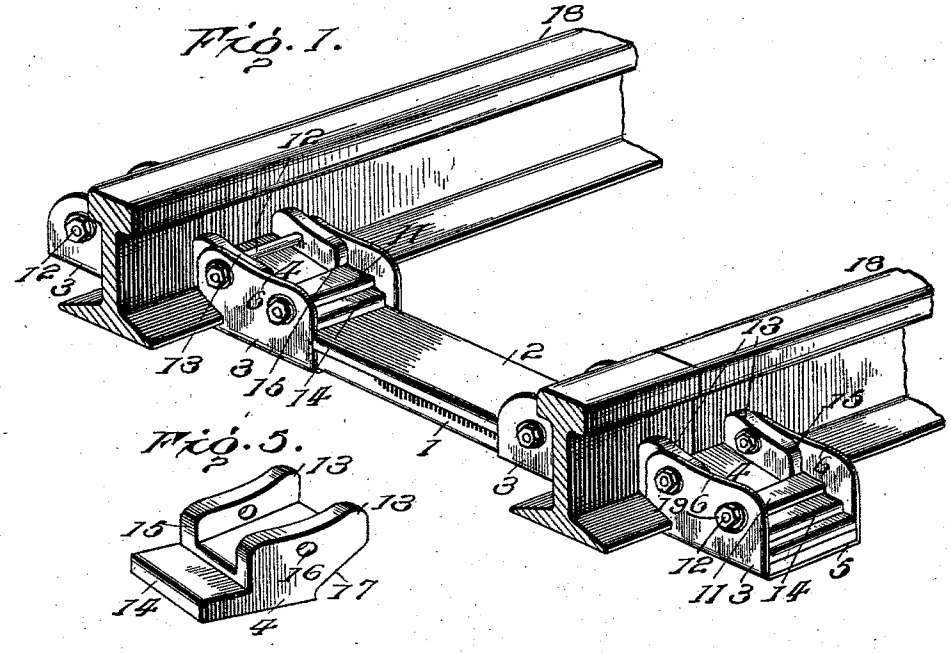


Fig. 5.

Fig. 2.

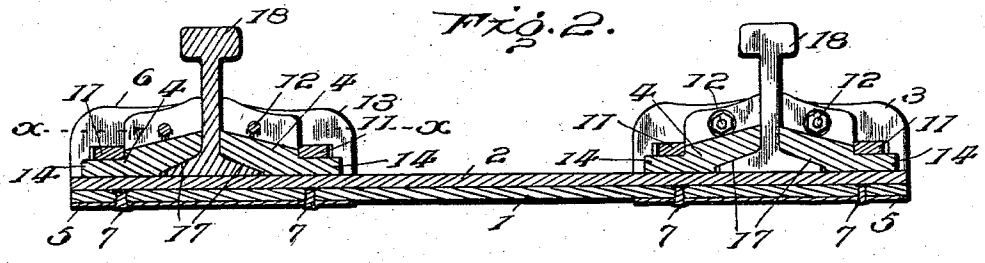


Fig. 3.

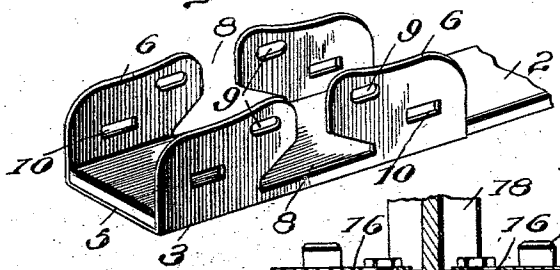
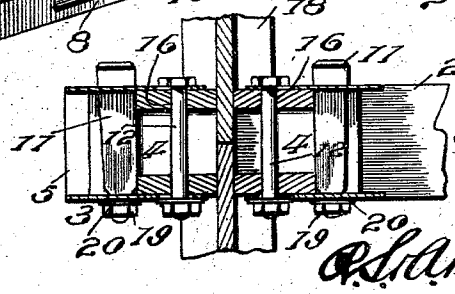


Fig. 4.



Witnesses

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No. 758,115. Patented April 26, 1904.

UNITED STATES PATENT OFFICE.

JOHN F. SMITH, OF BOLIVAR, WEST VIRGINIA, ASSIGNOR OF ONE-HALF TO JAMES G. HURST, OF HARPERS FERRY, WEST VIRGINIA.

RAILWAY TIE AND FASTENING.

SPECIFICATION forming part of Letters Patent No. 758,115, dated April 26, 1904.

Application filed January 27, 1904. Serial No. 190,809. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. SMITH, a citizen of the United States, residing at Bolivar, in the county of Jefferson and State of West Virginia, have invented certain new and useful Improvements in Railway Ties and Fastenings, of which the following is a specification.

The purpose of this invention is the provision of a tie for the companion rails of a railroad-track which will combine the advantages of metal and wood, obviate the use of the accustomed fish-plates at the joint, provide for a nicety of adjustment of the rails to properly space them when constructing the road, overcome the objectionable features attendant upon the loosening of nuts, and withal to provide a simple, effective, and comparatively cheap tie that will be durable and lasting.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a railway-tie embodying the invention and showing it in operative position. Fig. 2 is a central longitudinal section of the tie as illustrated in Fig. 1, showing one of the rails in cross-section and the other in end elevation. Fig. 3 is a perspective view of a rail-chair and an end portion of the metallic tie. Fig. 4 is a plan section of the joint and coöperating parts on the line X X of Fig. 2. Fig. 5 is a detail perspective view of a jaw or clamp member.

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

A tie embodying the invention comprises the metal plate 1, wooden plate 2, placed upon the metal plate, chairs 3, secured to the ends of the metal plate 1, and jaws or clamp members 4, a pair being provided for each chair and a jaw or member of each pair being arranged upon opposite sides of the coöperating rail.

The metal plate 1 constitutes the tie proper and may be of any width and thickness and rolled or cast and may be of iron or steel, according to the character and predetermined cost of the road. The wooden plate 2 is preferably a plank of oak or other material and acts as a cushion to absorb vibration and reduce the wear and tear upon the road to a minimum amount. The wooden plate is placed loosely upon the metal plate or tie 1 and is held in place preferably by being clamped between the plate 1 and the rail and jaws coöperating therewith. This construction admits of the plate 1 being readily and cheaply replaced when required for any purpose.

A rail-chair is provided at each end of the tie and comprises a bottom plate 5 and side pieces 6 and is secured solely to the metal plate or tie 1 by rivets 7 or analogous fastenings, the end portions of the tie resting upon the plate 5 and coming between the side pieces 6. The side pieces 6 of each chair are cut away intermediate of their ends, as indicated at 8, to receive the lower portion of the rail, as indicated most clearly in Fig. 2, the chairs being strung upon a length of rail and properly positioned thereon preliminary to securing the same to the ties. The parts of the side pieces 6 bordering upon the cut-away portions 8 are provided with openings 9 and 10, the latter being adapted to receive keys 11 and the former to receive bolts 12.

Each jaw or clamp member comprises ears or flanges 13 and an extension 14, a shoulder 15 being provided at the juncture of the extension 14 and ears 13 for a key to engage with when exerting pressure to force the jaw tight against a side of the rail. The flanges 13 have openings 16 to receive the bolts 12. The inner lower corner of each jaw or clamp member is cut away, as shown at 17, to snugly fit over the base or foot of the rail when the parts are properly assembled, as indicated most clearly in Fig. 2.

In constructing a railroad in accordance with this invention the rails 18 are arranged to

break joint in the accustomed manner, as indicated in Fig. 1, and a tie is arranged opposite the joint between adjacent rails, so as to overlap said end, as indicated most clearly in Figs. 1 and 4, thereby precluding the necessity of providing fish-plates. If the chairs are fastened to the ties at the factory or mill, the same are strung upon the rails prior to placing the latter in position; but if the chairs are separate from the ties they are slipped upon the rails and the tie placed in position and fastened to the chairs. This phase of construction is immaterial and will depend upon the method adopted of constructing the road. After the ties and chairs are properly positioned the jaws or clamp members 4 are placed in position one upon each side of the rails, after which the bolts 12 and keys 11 are placed in position and by proper manipulation of the keys the rails may be adjusted so as to space them apart the required distance, after which the bolts 12 are tightened to hold the parts in place. The keys 11 serve to hold the jaws or clamp members against casual displacement even though the bolts 12 should from any cause become loosened. A single bolt may be provided for each flange of a jaw or clamp member, as indicated at the right hand of Fig. 1, or one bolt may pass through corresponding flanges, as indicated at the left hand of Fig. 1 and in Fig. 4. The keys 11 rest upon the outer or rear extensions 14 and their inner longitudinal edges abut against the shoulders 15, and longitudinal movement of the keys serves to force the jaws or clamp members close against the sides of the rails, as will be readily comprehended. The keys may be driven home; but it is preferred to provide threaded extensions 19 at their smaller ends and supply the same with clamp-nuts 20 for the twofold purpose of forcing the keys home and securing them when tightened or moved to the required position.

Having thus described the invention, what is claimed as new is—

1. In a railway-tie, the combination of a metal plate, rail-chairs secured to the ends of the metal plate, each comprising a bottom and side plates, the latter being cut away intermediate of their ends for reception of the rails and provided with corresponding openings to receive fastenings, a wooden plate supported by the metal plate and adapted to receive the rails, a pair of jaws or clamp members for each chair and arranged to receive the rails between them, keys to admit of adjustment and forcing of the jaws tight against opposite sides of the rail, and fastenings for securing said jaws or clamp members to the chairs when tightened, substantially as set forth.

2. In a railway-tie, the combination of a chair comprising side pieces cut away intermediate of their ends for reception of the rail and having corresponding openings to receive fastenings, a pair of jaws or clamp members for the chair, each having an outer or rear extension and vertical flanges and having a shoulder at the base of said outer extension, keys to engage over the outer extensions of the jaws and exert a pressure against the aforesaid shoulders to hold the jaws both from upward and outward displacement, and fastenings coöperating with the flanges of the jaws to secure them to the side pieces of the chair, substantially as set forth.

3. In a railway-tie, a metal plate, chairs comprising a bottom and side plates and embracing the end portions of the metal plate and secured thereto, the side plates of the chairs being cut away intermediate of their ends to receive the rails and provided with corresponding openings, jaws or clamp members fitted to the chairs, each comprising an outer or rear extension and vertical flanges, keys for forcing the jaws tight against opposite sides of the rails and securing them to the chairs against vertical and outward displacement, and fastenings passed through corresponding openings of the flanges of the jaws and the side plates of the chairs for securing the jaws in an adjusted position, substantially as set forth.

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

JOHN F. SMITH. [L. S.]

Witnesses:
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WILLIAM J. SMITH.