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PATENTED AUG. 4, 1903.

J. K. THOMA.  
METALLIC RAILROAD TIE.  
APPLICATION FILED NOV. 14, 1902.

NO MODEL.

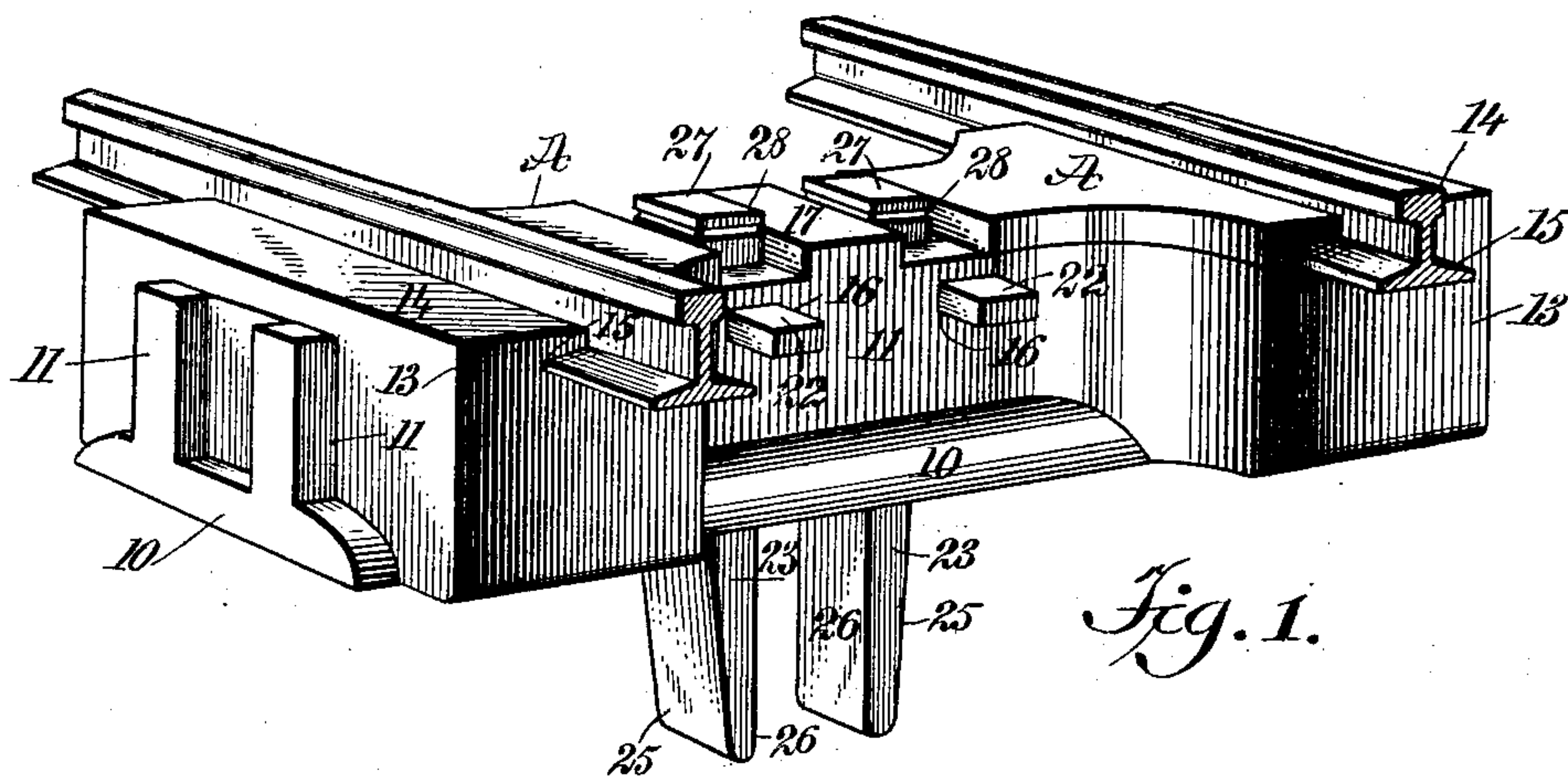


Fig. 1.

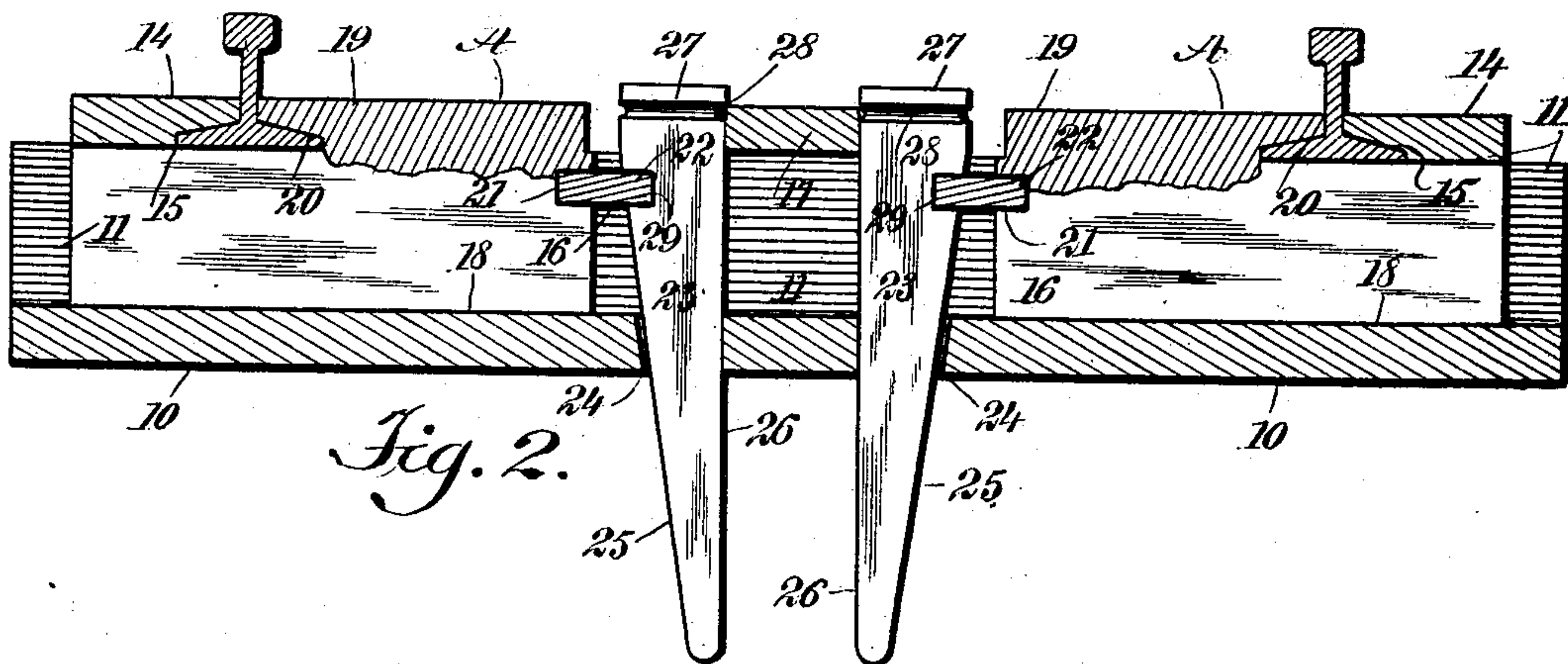


Fig. 2.

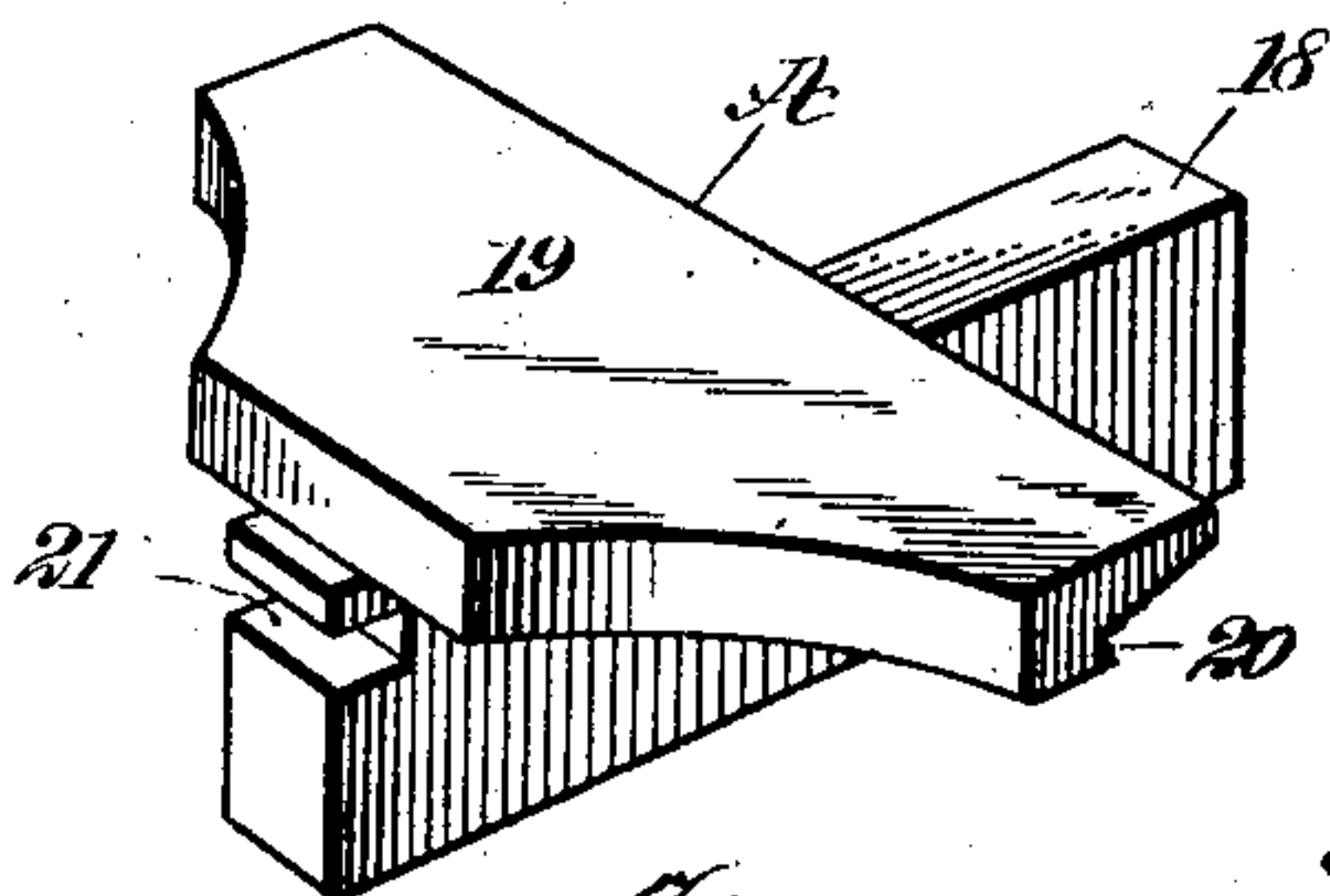


Fig. 3.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 735,619, dated August 4, 1903.

Application filed November 14, 1902. Serial No. 131,310. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES K. THOMA, a citizen of the United States, and a resident of Cooperstown, in the county of Otsego and State of New York, have invented a new and Improved Metallic Railroad-Tie, of which the following is a full, clear, and exact description.

The purpose of my invention is to provide a metallic tie for railroads so constructed that rails of any description will be firmly held in place and the locking device for the rails utilized not only to hold the rails upon the ties, but also to anchor the ties and to prevent the ties and rails from creeping or moving from their set position.

Another feature of the invention is to so construct the railroad-tie that the rails supported thereby can be quickly and conveniently fastened in place and as readily removed from engagement with the ties.

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 characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved tie, illustrating rails secured thereto. Fig. 2 is a longitudinal central section through the tie, a portion of the removable locking members for the rails being broken away; and Fig. 3 is a perspective view of one of the removable locking members for the rails.

In the construction of the tie the base 10 may be of any suitable dimensions and is preferably flat at its under face, being provided with two parallel webs 11, extending from end to end at an equal distance apart throughout the length of the base and an equal distance from the outer edges of the base. These webs 11 may be of any desired type.

At each end of the tie a block 13 is located, preferably integral with the webs 11; but the blocks 13 may be secured to the webs in any approved manner. Each block 13 is provided with a horizontal section 14, extending over the upper surface of the webs 11, as is shown in Fig. 1, and in the inner face of each block

extension 13 formed upon the base an undercut recess 15 is made.

At the central portion of the tie a bridge 17 is formed, extending from one web 11 to the other, and at each side of this bridge corresponding horizontal recesses 16 are made in the webs 11. The body of the tie, comprising the base 10, the webs 11, and the end block extensions 13, is provided with two rail-locking members A, and each of said locking members is constructed as shown in Fig. 3, wherein a locking member is shown as composed of a guide-section 18, adapted to fit neatly and slide between the webs 11 of the tie, and the said guide-section is normally of sufficient length to extend from the inner edge of a block 13 to the outer end of the web 11, together with a rail-clamping section 19, which is secured to or is made integral with the guide-section 18, extending transversely of the upper face of the guide-section, and this rail-clamping section has an undercut recess 20 made in its outer edge, or the edge which is adapted to face the rail.

The top surfaces of the rail-clamping section 19 and the section 14 of a block 13 are in the same horizontal plane. When a rail is to be placed upon the tie, the flange at one side is slid in the undercut 15 of an end extension-block 13, the bottom of the rail resting upon the body of the upper surface of the extension-block and upon the top portions of the webs 11 of the tie. A locking member A is then placed in position, which is accomplished by the guide-section 18 being introduced between the webs 11 of the tie and slid outward between the said webs, as is shown in Fig. 2, until the clamping-section 19 is brought down upon the upper surface of the web 11 and the recessed portion 20 of the clamping-section is received by and bears upon the inner flange of the rail.

The upper or horizontal portion 14 of a block 13 extends over the flange of the rail to an engagement with its web, as does likewise the outer or recessed portion of the clamping-section of a locking member A, and these two opposing parts are made to firmly hold a rail between them through the medium of the following-named devices:

The inner end of the guide-section 18 of the locking member A extends, preferably, be-



yond the clamping-section 20 and is provided with a recess 21. After the rail has been placed between the upper portion of an extension-block 13 and the clamping-section 19 of a locking member A a wedge-pin 23 is passed down through the space between the webs 11 and through an opening 24 in the base 10 of the tie. This wedge-pin 23 is provided with an outer tapering longitudinal edge 25 and an inner straight edge 26, and the opening 24 is similarly formed. This wedge-pin is passed down through the tie at one side of the bridge 17, as is best shown in Fig. 2, and is provided with a recess 29 in its tapering outer edge 25, which recess when the wedge-pin is in place is opposite the recess 21 in the guide-section 18 of the locking member A.

The wedge-pin 23 is provided with a head 27 and a recess 28 just below the head extending entirely around the said wedge-pin, so that a crowbar or an equivalent tool may be introduced into the recess 28 for the purpose of drawing the wedge-pin upward and out from engagement with the tie. The wedge-pin 23 is of sufficient length to extend some distance down below the bottom of the base 10 of the tie, and this lower portion of the wedge-pin 23 is adapted to enter the ground and to hold the tie in position, thus preventing the tie from moving or creeping and likewise the rail which is carried by the tie.

A wedge-pin 23 having been placed in position, as described, a key 22 is passed through the opposing slots 16 in the webs of the tie and through the recess 21 in the guide-section of the locking member A and through the opposing recess 29 in the wedge-pin 23, as is shown particularly in Fig. 2. Thus it will be observed that through the medium of the key 22 and the wedge-pin 23, acting in conjunction with a locking member A, a rail is firmly clamped to a tie and that a rail may be readily withdrawn at any time by first removing the key 22 and then the wedge-pin 23, the locking member A being then slipped inward or in direction of the bridge 17. As two wedge-pins are employed for each tie, the said tie will be firmly secured in position on the road-bed; but should the two pins prove not sufficient to hold the tie in position other well-known expedients may be employed.

A tie when constructed as above described will effectually and firmly hold rails in position, and a less number of ties may be employed than when ties of the ordinary form and construction are used. Furthermore, the tie is durable, being of metal, and is economic in construction for a tie of its class, and rails may be quickly and conveniently secured in position on the ties or removed therefrom as required and the rails are positively held against spreading.

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

1. The combination with a base portion

having upwardly-extending webs, and blocks at the ends of said webs, of clamping members slidable on said base relative to the blocks, rails held between the clamping members and the blocks, means passing through the base portion for securing the latter stationary, and means interposed between the base-securing means and the sliding clamping members, for preventing the movement of said members.

2. The combination with a base portion having upwardly - extending webs spaced apart, and blocks formed on the base at the ends of said webs, of clamping members mounted to slide on the base between the webs, a bridge formed on the webs between the sliding members, means passing through the base between the bridge and the block, for anchoring said base, a rail between the clamping member and the block, and means passing through the base and engaging with the base-anchoring means for locking the sliding clamping-sections against movement, substantially as set forth.

3. The combination with a base-section, a rail thereon, and a sliding clamping member engaging with said rail, of means for locking the sliding member against movement, such means comprising anchoring means for the base, extending through said base into the ground, and a locking-pin engaging with a recess in the anchoring means, and bearing against the sliding section, substantially as set forth.

4. A metallic railroad-tie provided with an anchoring-spike passed through the tie into the ground, said spike having a recess therein, and a locking-pin seated in said recess, substantially as set forth.

5. The combination with a railway-tie having rigid abutments at its ends, clamping-sections movable relative to the abutments, and rails held between the abutments and the sliding members, of recessed spikes passing downward through the tie into the ground, and locking-pins seated in the recesses transversely of the spikes, substantially as set forth.

6. In metallic railroad-ties, a base, webs extending longitudinally upward from the base, extension-blocks from the outer sides of the webs, provided with upper connecting members having undercut grooves in their inner longitudinal edges, a locking member at each end of the tie, comprising a guide-section adapted to slide between the webs and an upper clamping-section, the clamping-sections of the locking members having undercut recesses therein facing the connecting members of the extension-blocks, a bridge extending from one web to the other at their centers, the said webs having registering longitudinal openings therein at each side of the bridge, the guide-sections of the locking members being provided with recesses at their inner portions between the said webs, wedge-



pins passed downward through the said webs  
at each side of the said bridge, extending  
downward beyond the base of the tie through  
correspondingly - shaped openings, each  
5 wedge-pin being provided with a recess in  
its outer longitudinal face, and keys passed  
through the opposing openings in the webs  
and through the recesses in the wedge-pins  
and the recesses in the inner portions of the  
10 guide-sections of the locking members, all

arranged for operation substantially as de-  
scribed.

In testimony whereof I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

JAMES K. THOMA.

Witnesses:

JESSIE M. BRANNING,  
HARRIS L. COOKE.