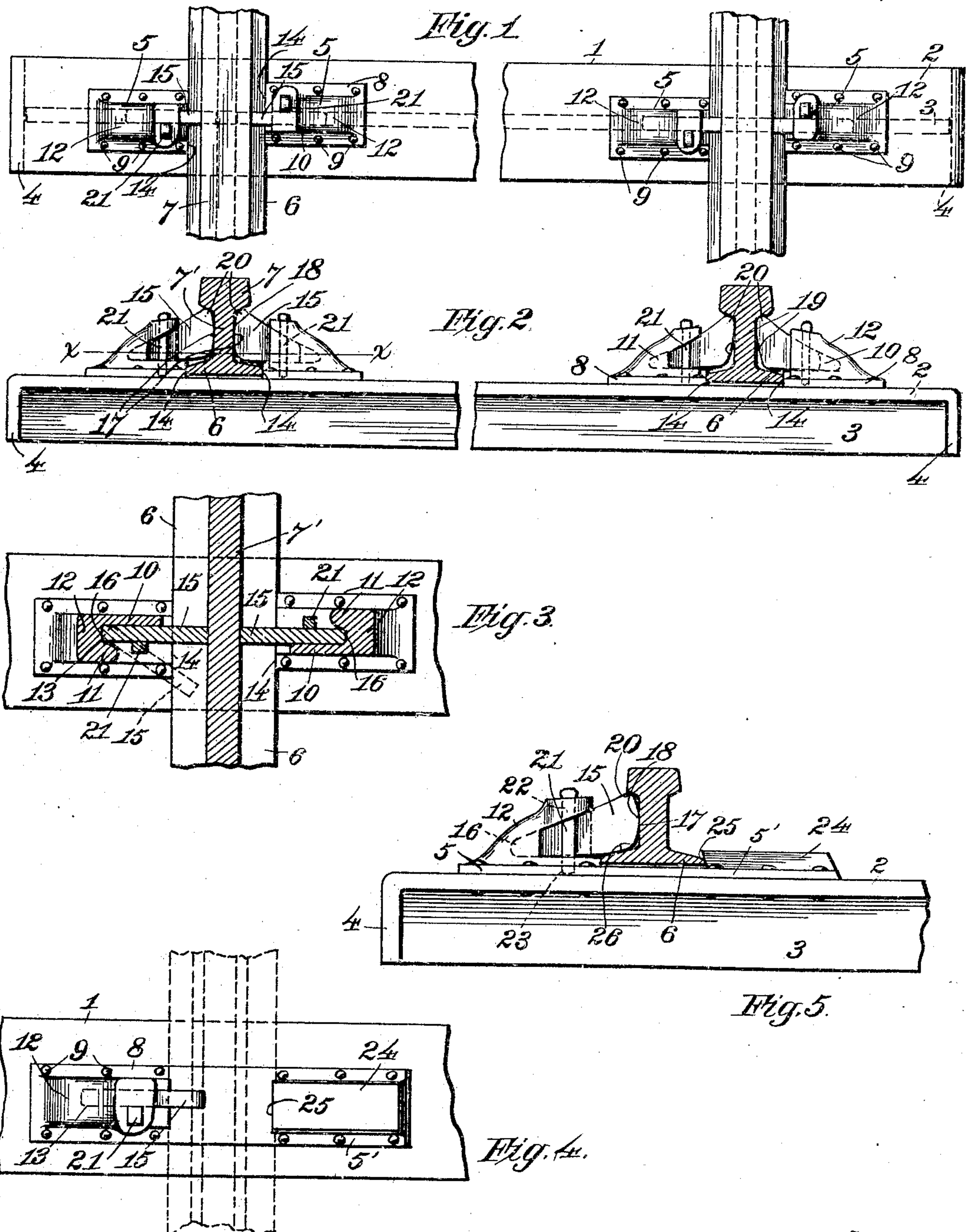


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RAILWAY TIE.
APPLICATION FILED JAN. 14, 1910.

959,065.

Patented May 24, 1910.



Witnesses

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RAILWAY-TIE.

959,065.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed January 14, 1910. Serial No. 538,157.

To all whom it may concern:

Be it known that I, CLAUS A. OLSON, a citizen of the United States, residing at Hibbing, county of St. Louis, and State of Minnesota, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

My invention relates to metal railway ties and to means for securing the rails to the ties.

The object of my invention is to provide a railway tie formed of metal and which shall be of simple construction, of low cost to manufacture and one which shall not be readily displaced in the road bed.

A further object of my invention is to provide a rail tie with improved means for securing the rails thereto whereby a large percentage of the jar to the rolling stock is obviated.

A further object of my invention is to provide improved means for securing the rails to the ties whereby the weight of the rolling stock shall clamp the rail firmly in position and whereby the rail shall be free to expand and contract except when the rolling stock is resting thereon.

A further object of my invention is to provide a railway tie equipped with rail fastening means whereby the rail may be readily and quickly secured in position and as readily removed when necessary.

Other objects will appear hereinafter.

With these objects in view my invention consists generally in a tie formed of a metal T beam having the ends of the web cut away and the corresponding ends of the flanges bent downwardly to form anchors to prevent displacement of the tie in the road bed longitudinally of the tie, the web serving to prevent lateral displacement thereof. The tie is provided adjacent each end with a pair of socket members between which the rails are adapted to rest, and locking plates or members are arranged in the sockets and adapted to clamp against opposite sides of the web of the rail. One wall or side of each socket is partially cut away to permit inserting or removing of the locking plates and means are provided for securing the plates in clamping position. The locking members bear against the web of the rail and the under face of the ball thereof and are of sufficient length to support the rail with the flange above the sur-

face of the tie. The locking members normally hold the rail securely against displacement but permit of expansion and contraction of the rails and as the rolling stock passes over the rails the weight presses the rails downwardly and causes the locking members to clamp securely against the rails to hold the same firmly in position.

My invention further consists in various details of construction and arrangements of parts all as will be fully described hereinafter and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawing forming a part of this specification and in which—

Figure 1 is a plan view of a railway tie and rail fastener embodying my invention in its preferred form, Fig. 2 is a side elevation thereof, the rails being shown in sections, Fig. 3 is a horizontal section taken on the line $x-x$ of Fig. 2 and illustrating in dotted lines the manner of removing the locking or clamping plates, Fig. 4 is a plan view of a slightly modified form of my invention illustrating the rail fastener as used adjacent to switches and other places where there is not sufficient room for the device as illustrated in Figs. 1, 2 and 3, and Fig. 5 is a side elevation of the device illustrated in Fig. 4.

Referring now to the drawings 1 indicates the tie proper which is formed of a T beam, 2 indicating the flange which constitutes the top of the tie and 3 the web which depends centrally therefrom. The ends of the web are cut away for a distance substantially equal to the depth of the web and the ends of the flange are turned downwardly as at 4. The web 3 and the downwardly projecting ends 4 are embedded in the road bed and serve as anchors to prevent displacement of the tie.

Arranged upon the upper face of the tie 1, and adjacent each end thereof is a pair of socket members 5—5, which are arranged a sufficient distance apart to receive the flange 6 of the rail 7 between them. Each socket member comprises a base 8 which is perforated adjacent its edges to receive the rivets 9 by which it is secured to the tie. Formed upon the base plate 8 and integral therewith is the socket proper which consists of a pair of parallel walls 10 and 11

extending longitudinally of the tie and at right angles to the rail and a diagonal top and end wall 12 which together form a socket 13. The wall 11 is cut away for a greater portion of its length adjacent the rail, to a point adjacent the inner end of the socket 13 as shown clearly in Fig. 3 for a purpose as will appear hereinafter.

The end of the wall 10 adjacent the rail is preferably formed with a vertical edge arranged a short distance inwardly from the adjacent end of the base, thereby giving ample space for the rail when placing the same in position, while the ends 14 of the bases receive the flange 6 of the rail snugly between them to prevent lateral displacement of the rail.

The sockets 13 above described are substantially triangular in vertical longitudinal section and arranged in said sockets are substantially triangular rail locking members 15. The angle of the socket is slightly greater than the corresponding angle of the member 15, thereby permitting vertical movement of the outer end of the member 15 with the inner end 16 as a pivot. The outer edge 17 of the member 15 is substantially vertical and is adapted to rest against the web 7' of the rail. The edge 17 may be slightly rounded as shown at 18 in Figs. 2 and 5 to form a rocking contact between the locking member and the rail or it may be slightly inclined as at 19 as shown on the right hand side of Fig. 2 in order that the members shall bear against the web directly beneath the ball of the rail only. In either case the length of the members 15 is such as to support the rail with the flange 6 a short distance above the tie. It is therefore obvious that when the weight of the rolling stock comes upon the rail it will be slightly depressed causing the members 15 to tightly clamp and rigidly hold the rail; however the rails are normally free to expand and contract without interfering with the fastenings. It should be noted that in all cases the upper outer ends 20 of the members 15 impinge against the under faces of the ball of the rail.

To place the members 15 in position the end 16 is inserted through the cut away portion of the wall 11 into the socket 13 and then turned until it rests against the inner face of the wall 10 as shown in full lines in Fig. 3. The members are secured in position by pins 21 extending through apertures 22 in the upper outer end of the wall 12 and into a recess or socket 23 in the base 5. To remove the members 15 the pins 21 are removed and the members swung laterally as shown in dotted lines in Fig. 3 until they may be removed from the sockets.

In some places, such as adjacent to switches and frogs there is not sufficient

room to arrange the socket members upon both sides of the rail. In such instances one of the sockets is omitted and replaced by an abutment block 24, as shown in Figs. 4 and 5. The block 24 is preferably cast integrally with the single socket member used in conjunction therewith, the base plate 5 being extended as at 5' to form a common base for both portions. The block 24 is quite low in order to take up a minimum amount of space and its inner end is beveled or inclined as at 25 to extend over the adjacent edge of the rail flange to hold the rail in place. The lower outer corner 26 of the member 15, or the lower outer edge of the said member rests upon the flange 6 on the opposite side of the rail from the block 24 to prevent the rail from tilting toward the block.

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

1. In a railway tie a body portion, in combination with a pair of socket members arranged adjacent each end thereof and the socket members of each pair being spaced apart to receive a rail between them and to form guides for the flange of the rail, rail clamping members pivotally mounted in the sockets and adapted to engage the web of the rail directly beneath the ball thereof to support the rail out of contact with the tie, substantially as described.

2. In a railway tie a body portion in combination with a pair of socket members arranged thereon and spaced apart to receive a rail between them, rail clamping members pivotally mounted in said socket members and adapted to engage the web of the rail directly beneath the ball thereof to support the rail out of contact with the tie, the base of the socket members forming guides for the flange of the rail and the socket members above the base being cut away to facilitate placing the rail in position, substantially as described.

3. In a railway tie a body portion in combination with a socket member arranged thereon, a rail clamping member mounted therein and adapted to impinge against the rail, one side of said socket member being cut away for a portion of its length to facilitate inserting and removing said clamping member, and means for locking said clamping member within said socket, substantially as described.

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

CLAUS ARVID OLSON.

Witnesses:

THOMAS F. BRADY,
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