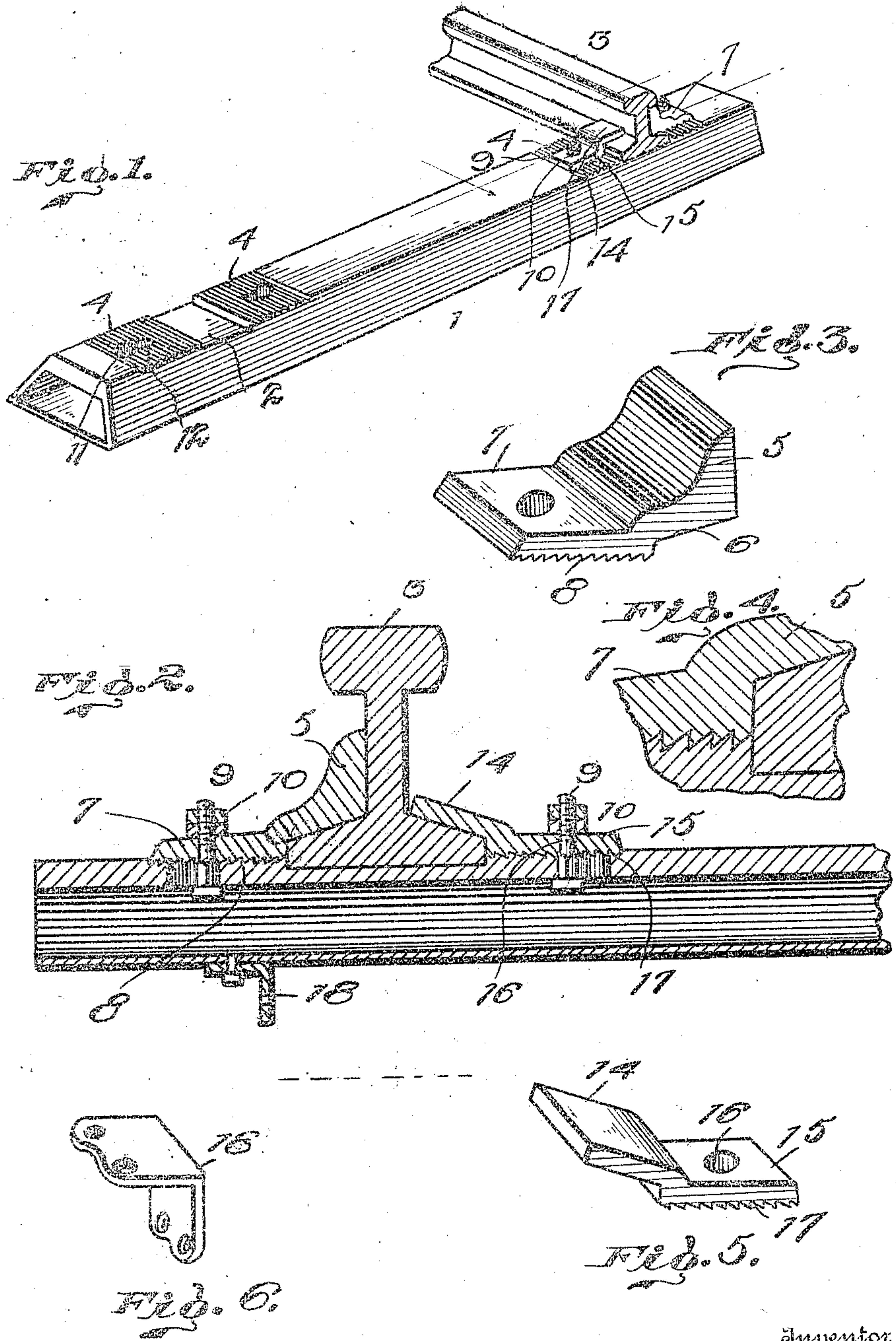


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METALLIC CROSS TIE AND RAIL FASTENER.  
APPLICATION FILED JUNE 7, 1910.

982,126.

Patented Jan. 17, 1911.



Inventor

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Witnesses

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# UNITED STATES PATENT OFFICE.

HENRY CHRISTMAN, OF AVENA, ILLINOIS.

METALLIC CROSS-TIE AND RAIL-FASTENER.

982,126.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed June 7, 1910. Serial No. 565,491.

*To all whom it may concern:*

Be it known that I, HENRY CHRISTMAN, a citizen of the United States of America, residing at Avena, in the county of Fayette and State of Illinois, have invented certain new and useful Improvements in Metallic Cross-Ties and Rail-Fasteners, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to railroad rail ties, and means for securing the rails thereto, and has for its object to provide an improved railroad tie and improved means for securing the rails thereto.

15 The invention further has for its object to provide an improved railroad tie and improved means for securing the rails thereto, so constructed and arranged as to firmly secure the rails to the tie and hold the rails from spreading and the fastening means from becoming loose.

Referring to the accompanying drawings: Figure 1 is a view in perspective of a railroad rail tie constructed in accordance with this invention, and showing a portion of a rail secured thereon. Fig. 2 is an enlarged view in longitudinal section on the line  $x-x$  of Fig. 1 of the invention. Fig. 3 is an enlarged detail view in perspective of one of the rail clamping plates. Fig. 4 is a view in cross section and partly broken away, of a portion of a rail flange and the tie, and one of the clamping plates. Fig. 5 is a detail view in perspective of another rail clamping plate. Fig. 6 is a detail view in perspective of an angular plate which is used in connection with the ties.

In accordance with this invention, a hollow metallic tie 1 is provided, which is preferably wider at its bottom than at the top so as to rest squarely on the ground. The tie 1 has its upper surface formed adjacent to its ends with recesses 2 in which are seated the railroad rails, a portion of a railroad rail 3 being shown in Fig. 1 as seated in one of the recesses 2. The tie 1 is formed on its upper surface on each side of said recesses 2 with a set of transverse serrations 4, the teeth in each set of serrations 4 being inclined toward the recess 2. In order to securely secure the rails to the tie, a pair of clamping plates are provided, one of which is formed with the enlarged portion 5, the vertical face of which rests against the web of the rail and extends between its head and flange, the lower in-

clined portion 6 of which rests on the flange. The said plate is formed with a horizontal portion 7, adapted to fit over one of the sets of serrations 4 and having a serrated under surface 8 adapted to interlock with said set of serrations 4. The plate being in position and resting against the rail, as shown in Figs. 1 and 2, is secured to the tie by means of a suitable bolt 9 and nut 10, the bolt 9 first having been passed through the enlarged end portion 11 of an elongated slot 12 in said set of serrations 4, and extending through the top of the tie. The enlarged portion 11 of said slot permits the head of the bolt to pass through the same, and the bolt is then pushed forward in the slot and extends up through the bolt hole 12 in the portion 7 of the plate, and is clamped in place by means of the nut 10. In securing the plate to the tie, the bolt 9 is first passed up through the bolt hole 13 in the plate, and the nut 10 screwed onto the bolt. The plate then is placed on the top of the tie and the bolt as aforesaid, passed through the slot 12. The other clamping plate of the rail is formed with an inclined flat portion 14 which fits over the flange of the rail as shown, and with a horizontal flat portion 15, having a bolt hole 16, and its under side formed with a set of serrations 17 which are adapted to interlock with the set of serrations 4 on the top of the tie on which the plate 15 rests. The plate is secured in place by a bolt 9 and nut 10, the bolt extending through the bolt hole 16 of the plate and through a bolt hole 12 in the top of the tie similarly to the construction set forth in connection with the first-named clamping plate.

It will be seen that by means of this construction the clamping plates are securely held to the tie against thrusts from the rail, and that as each plate coöperates with the other to hold the rail against lateral movement, the spreading of the rail is prevented and the rail is held securely to the ties. The thrust of the wheels of a train tending to move the rails toward the outer end of the tie, the plate with the enlarged member bearing against the web of the rail and interlocked with the tie will firmly hold the rail against outward thrusts.

In order to hold the tie against lengthwise movement, a suitable device depending from the bottom thereof is provided which is adapted to engage the ground and hold the



tie against lengthwise movement, as for example an angle plate 18 which is riveted to the under side of the tie and is adapted to project into the earth.

5 Having described the invention, I claim:

10 A metallic railway tie having a transverse recess in its top adjacent to each end thereof, a serrated surface on the top of the tie adjacent to each side of said recess, each of said surfaces having teeth inclined in the opposite direction to those on the other surface, an elongated bolt hole with an opening at one end of said surfaces, a rail seated in each of said recesses, a clamping plate having an enlarged inclined head overlapping the flange of the rail on one side and bear-

ing against the web thereof and having a horizontal serrated portion interlocking with the serrated surface on the tie, a nut and bolt for securing said plate to the tie, 20 and a plate on the opposite side of the rail overlapping the flange thereof and having a serrated horizontal portion interlocking with the serrated surface of the tie, and a nut and bolt for securing said plate to the 24 tie.

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

HENRY CHRISTMAN.

Witnesses:

HENRY CHRISTMAN, Sr.,  
A. E. STINE.