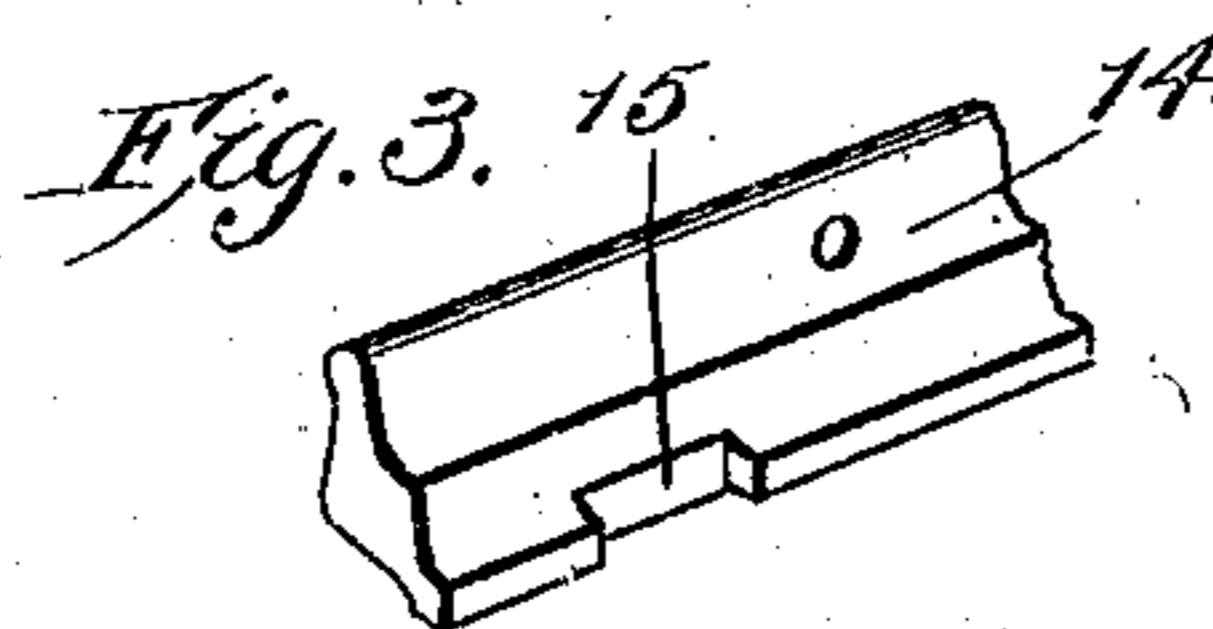
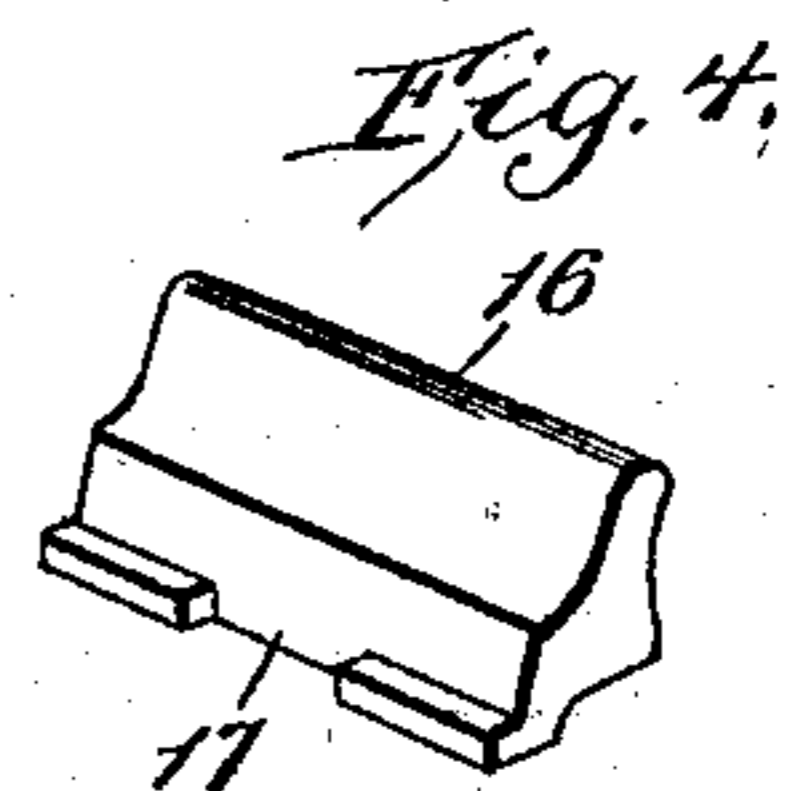
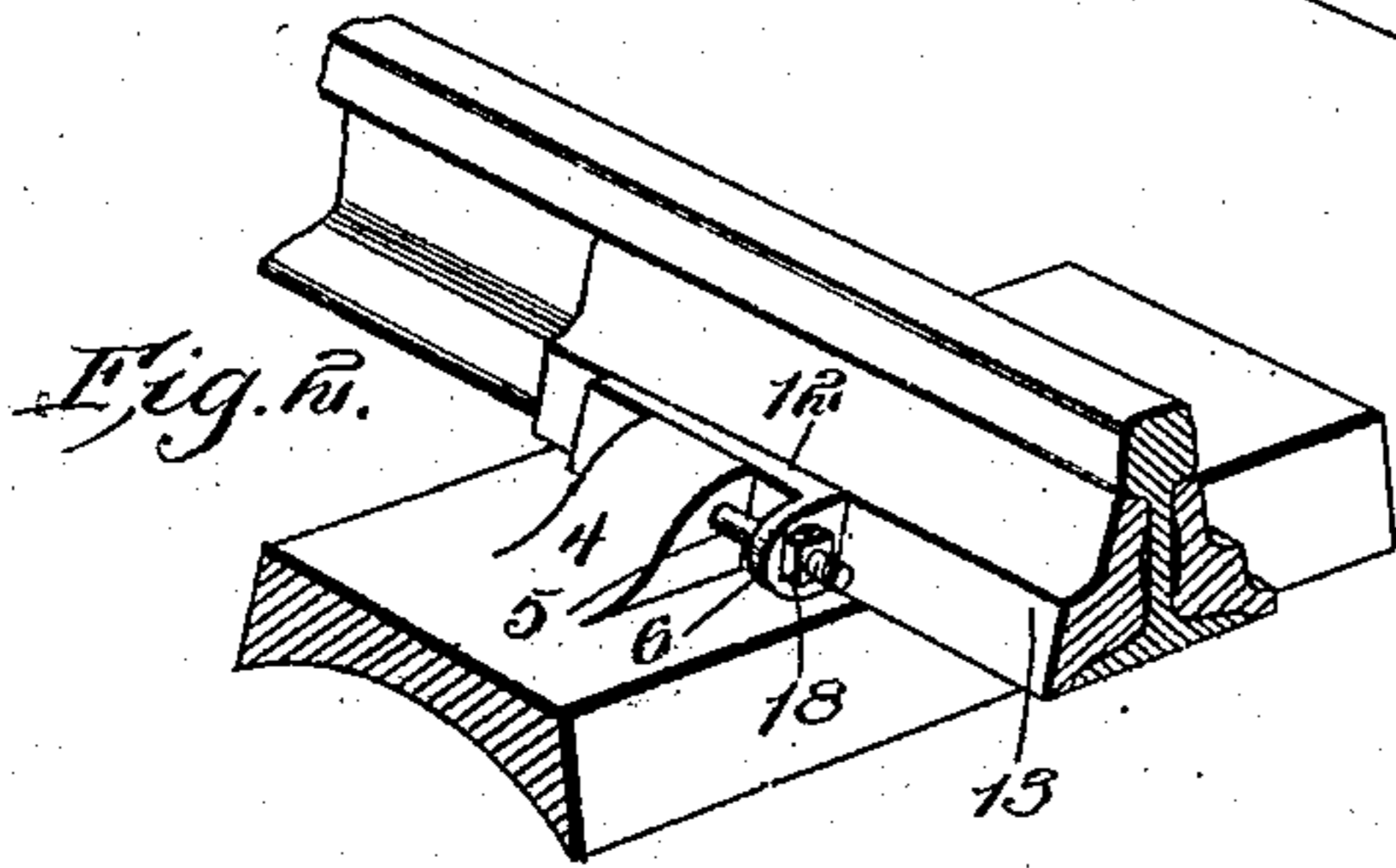
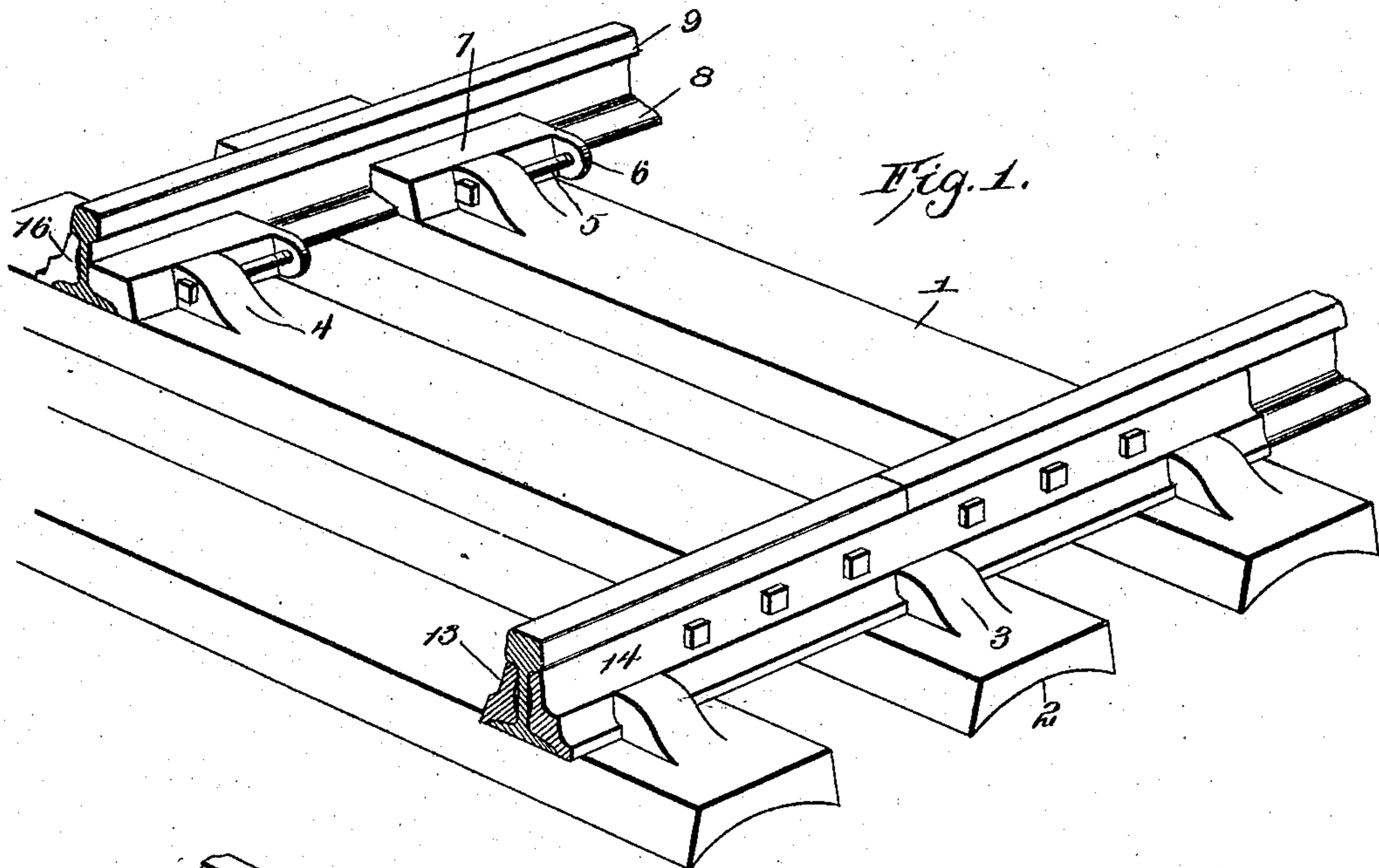


No. 815,251.

PATENTED MAR. 13, 1906.

J. AUSTIN & R. McKENDRICK.
STEEL CROSS TIE AND RAIL FASTENER.

APPLICATION FILED OCT. 23, 1905.



Witnesses

Louis R. Heinrich
Herbert D. Lawson

Inventors
Joel Austin
Robert McKendrick

By
W. J. Fitzgerald
Attorneys

UNITED STATES PATENT OFFICE.

JOEL AUSTIN AND ROBERT McKENDRICK, OF WINDBER, PENNSYLVANIA.

STEEL CROSS-TIE AND RAIL-FASTENER.

No. 815,251.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed October 23, 1905. Serial No. 284,118.

To all whom it may concern:

Be it known that we, JOEL AUSTIN and ROBERT McKENDRICK, citizens of the United States, residing at Windber, in the county of Somerset and State of Pennsylvania, have invented certain new and useful Improvements in Steel Cross-Ties and Rail-Fasteners; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to rail-fastenings; and its object is to provide a tie of peculiar construction having means thereon whereby rails may be firmly fastened to the tie without use of spikes or other like fastening means, said rails being securely held against spreading or turning.

The invention consists of a tie having holding-ears extending from it, said ears being arranged in pairs and each pair being adapted to receive a rail therebetween. Rail-engaging blocks are engaged by the ears and overlap the base-flanges of the rails, and disposed upon the inner face of said rails are wedging devices whereby the rails are securely clamped and held immovably in position.

The invention also consists of certain other novel features of construction and combination of parts, the preferred form whereof will be hereinafter more clearly set forth.

In the accompanying drawings we have shown the preferred form of our invention.

In said drawings, Figure 1 is a perspective view showing rails secured by means of our improved fastening devices. Fig. 2 is a perspective view of a portion of a rail and tie, showing the means for clamping a rail in position where a fish-plate is employed. Fig. 3 is a detail view of a portion of the fish-plate adapted to be used in connection with our improved means, and Fig. 4 is a perspective view of one of the outer holding-blocks adapted to be used at points where there is no fish-plate.

Referring to the figures by numerals of reference, 1 is a tie, preferably of rolled steel, having its lower surface concave, as shown at 2, so as to bite into the road-bed and be held against movement. Outer ears 3 and inner ears 4 are formed integral with the tie and extend upward therefrom, and these ears 3 and 4 are arranged in pairs and have their adjoining ends beveled or overhanging. The inner ears 4 are provided with bolts 5, which

extend therethrough, and these bolts are adapted to extend through lugs 6, formed at the ends of the wedges.

Two kinds of wedges are utilized, one construction, such as shown at 7, being so shaped as to overlap and fit snugly upon the base-flange 8 of a rail 9, while the other form 12, which has been shown in Fig. 2, has its inner surface flat and adapted to abut against the smooth face of a fish-plate 13, which in turn is so shaped as to fit snugly upon the base-flange 8 and against the web and head of a rail. The outer fish-plates 14, adapted to be used in connection with this device, are shaped similarly to the fish-plates 13, with the exception that notches 15 are formed in their faces at regular intervals, so as to receive the outer ears 3 of the tie. Holding-blocks 16, similar in contour with outer fish-plate 14, engage the outer base-flanges of the rails at points where no fish-plates are located, and these holding-blocks are of the same length as the width of the tie and are likewise notched, as shown at 17, to receive the outer ears 3.

When it is desired to fasten a rail to a tie, such as herein described, the same is placed between one set of ears 3 and 4, and a holding-block 16 is then inserted between the rail and the outer ear 3, so that said ear will rest within the notch 17. As this ear has a beveled end which partly overlaps the block 16, said block will be held against accidental removal. After the block 16 has been properly positioned a wedge 7 is inserted between the ear 4 and the rail, and a bolt 5 is projected through lug 6, and a nut 18 is secured thereon. The face of the wedge 7 which contacts with ear 4 is beveled to conform with said ear, and therefore by securing the nut upon the bolt the wedge will be forced longitudinally between ear 4 and the rail and will clamp said rail tightly between the wedge and the holding-block 16, and it will be absolutely impossible to remove the rail except by first loosening the bolt 5.

Where two rails come together, their ends are placed between the ears 3 and 4 of the tie, and fish-plates 13 and 14 are then inserted between said ears and the rails, and the notches 15 are located so as to receive the ears 3. The fish-plates are then bolted to the rails, after which wedges 12 are inserted between the inner fish-plate 13 and the adjoining ears 4, and these wedges are tightened by means of the bolts 5 engaging their

lugs 6. The contacting faces of the wedges 12 and fish-plate 13 are beveled, so that the wedges partly overlap the fish-plate, and therefore it will be seen that when the wedges 5 12 are tightened in the manner described the rails and fish-plates are firmly clamped between the ears 3 and 4, and it becomes absolutely impossible for any of the parts to get loose unless the bolts 5 are first detached.

10 It will of course be understood that where fish-plates are employed the wedges 12 must be of less thickness than where there are no fish-plates, and this difference in size will be noticed by comparing the wedges 7 and 12.

15 Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with a tie having ears extending therefrom, of rail-engaging means 20 adapted to be engaged by one of the ears, a wedge to be engaged by the other ear, and means for adjusting the wedge and locking it to its ear, said wedge and engaging means adapted to be disposed at opposite sides of 25 the rail.

2. The combination with a tie having ears extending therefrom, of a rail-engaging device adapted to be engaged by one of the ears, a wedge engaging the other ear and 30 adapted to clamp the rail between the ears, and means engaging the wedge for adjusting and locking it.

3. The combination with a tie having ears thereon, of a rail-engaging device engaged 35 by one of the ears, a wedge engaged by the other ear and adapted to clamp the rail between the ears, a lug extending from the

wedge, and means extending through the lug and from the ear engaging the wedge for adjusting the wedge and locking it against 40 movement.

4. The combination with a tie having ears thereon, of engaging devices interposed between the ears and adapted to engage opposite sides of the rail, one of said devices being 45 engaged by one of the ears, a wedge interposed between the other device and the other ear, and means for adjusting the wedge and locking it against movement.

5. The combination with a tie having ears 50 thereon provided with overhanging ends, of rail-engaging devices interposed between the ears and adapted to receive a rail therebetween, one of said devices being notched to receive an ear and adapted to be overlapped 55 by said ear, a wedge interposed between the other ear and the other engaging device, said wedge overlapping the engaging device contacting therewith, and means for adjustably securing the wedge and the adjoining ear. 60

6. The combination with a tie having ears thereon, of a bolt extending from one of the ears, a wedge interposed between the ears and adapted to clamp a rail therebetween, and a lug upon the wedge and adjustably secured upon the bolt. 65

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOEL AUSTIN.

ROBERT McKENDRICK.

Witnesses:

ANDREW ZEMANY,
GEORGE J. HUDÁKY.