(No Model.)

# E. F. TAYLOR.

## METAL RAILROAD TIE.

No. 474,877. Patented May 17, 1892.

Fig. 1.

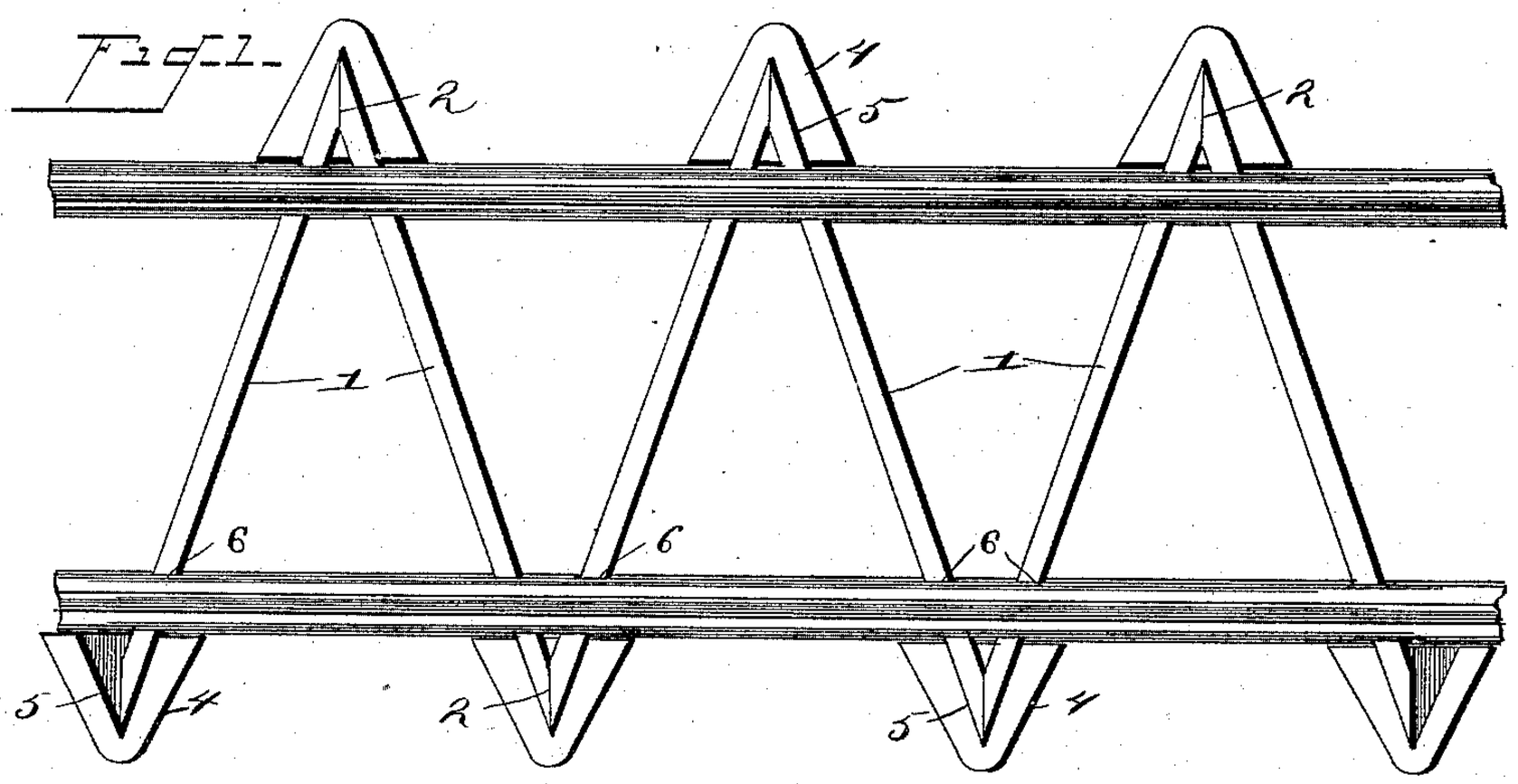



Fig. 2.

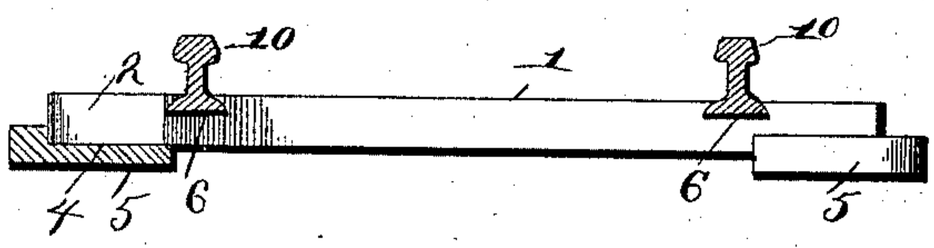



Fig. 3.

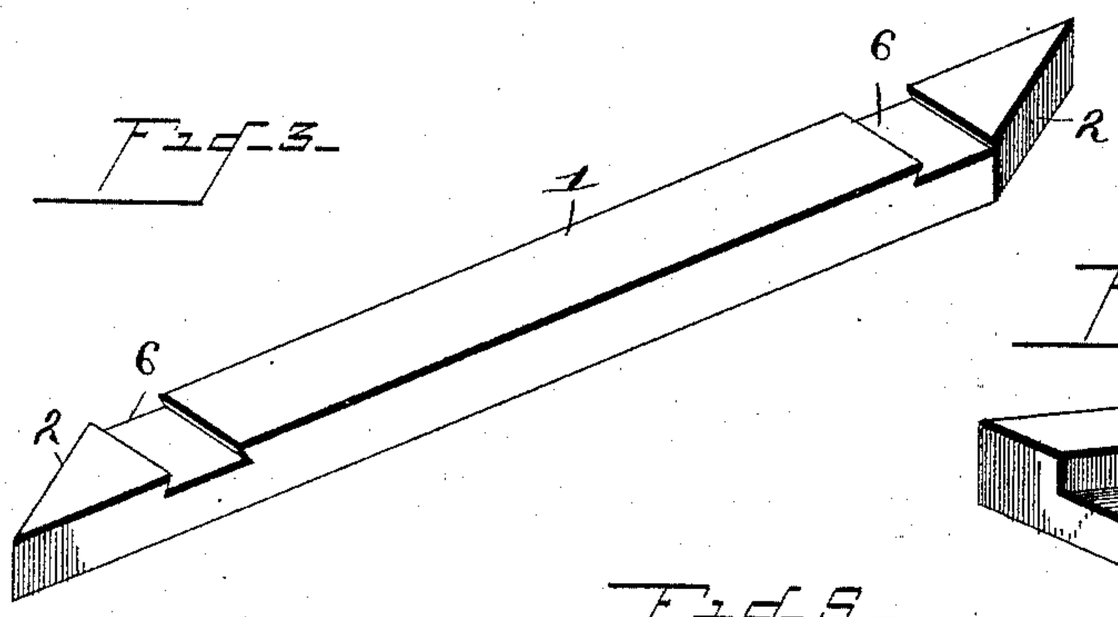



Fig. 4.

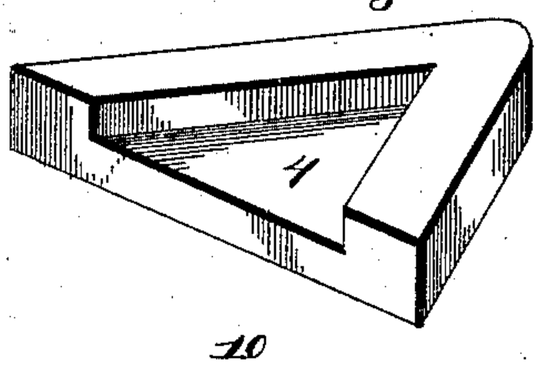
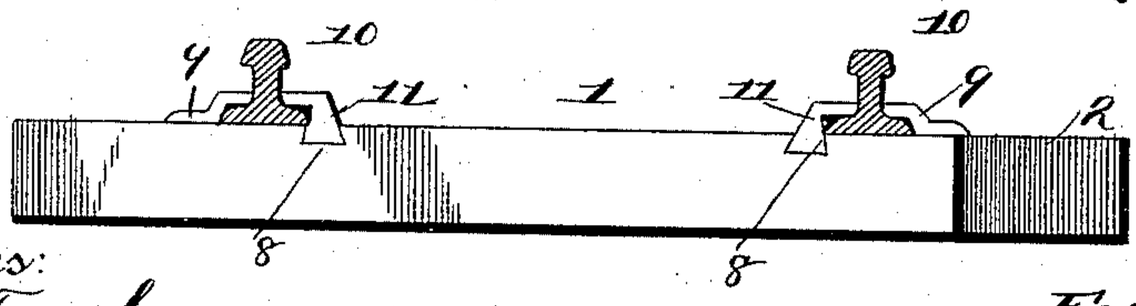



Fig. 5.

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# UNITED STATES PATENT OFFICE.

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## METAL RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 474,877, dated May 17, 1892.

Application filed January 25, 1890. Renewed April 16, 1892. Serial No. 429,465. (No model.)

*To all whom it may concern:*

Be it known that I, EZEKIEL F. TAYLOR, a citizen of the United States, residing at Washington, in the county of Mason and State of Kentucky, have invented a new and useful Metal Railroad-Tie, of which the following is a specification.

This invention has relation to improvements in metal railroad-ties and the fastenings for the same and the rails; and the objects and advantages of the invention, together with the novel features thereof, will hereinafter appear, and be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan of a railroad constructed in accordance with my invention. Fig. 2 is a transverse section. Fig. 3 is a perspective of one of the ties. Fig. 4 is a similar view of one of the tie-supporting plates. Fig. 5 is a side elevation of a modified construction of tie and means for securing the rails thereto.

Like numerals of reference indicate like parts in all the figures of the drawings.

The metal ties 1 may be of any suitable shape in cross-section, and in this instance are rectangular, and each has its opposite end beveled, as at 2, at opposite sides, so that by combining two ties and disposing them at an angle to each other the adjacent ends of said ties will form a miter-joint. In building the road the ties are thus disposed in zigzag manner, so that each tie will in a measure support the other and partake of any strain to which the other is subjected. By this disposition of the ties all lengthwise or independent movement or spreading of the rails is entirely overcome and a very rigid strong support for the rails is provided.

The mitered ends or joints of the ties rest in similarly-shaped recesses 4, formed in cast-metal supporting-plates 5, of substantially semicircular shape, one being located under each joint of the ties and the plates resting upon the ground, to which latter they may be anchored, if desired, in any suitable manner. By the provision of the plates mentioned the excessive weights to which the rails and ties are subjected will not exert a tendency to force the ends of the ties into the ground or bury the same; but each joint having a broad bearing the track is adapted to withstand immense weights without varying in parallelism or sinking.

The upper surface of each of the ties is provided with a recess 6, the opposite walls of which are inclined so as to conform to the base of the rails received thereby, and the rails are slid longitudinally within the recesses a length at a time, so that it is impossible to withdraw any of the rail sections or lengths from the recesses in a vertical direction. I do not limit my invention to this manner of securing the rails to the ties, as other means of fastening will readily suggest themselves to those skilled in this particular art. For instance, referring to Fig. 5, I may provide each tie with a small recess 8, and opposite the same with an L-shaped keeper 9. The rails 10 now may be inserted laterally under the L-shaped keeper 10 and a movable keeper-block 11 inserted within the recess 8, the same acting as a wedge to bind the flange of the rail to the opposite rigid keeper. By knocking the blocks from out the grooves or recesses the rails may be removed for the purpose of repair or otherwise. I prefer, however, to employ the undercut recesses previously mentioned, for the reason that unauthorized tampering with the rails by train-wreckers and other evil persons is prevented.

Having thus described my invention, I claim—

1. In a railroad, a series of metal ties, each alternate tie being similarly disposed and each intermediate tie oppositely disposed, the meeting ends of each pair of ties being beveled at their adjacent corners to form a miter-joint, substantially as specified.

2. In a railroad, a series of ties arranged zigzag and having their meeting ends mitered and secured together, in combination with supporting-plates mounted under each joint and means for securing the ends of the ties to the plates, substantially as specified.

3. In a railroad, a series of cross-ties arranged zigzag or in alternate directions and at an angle to each other, the meeting ends of each pair of ties being mitered and connected, in combination with a metal plate seated under each joint and having an angular recess agreeing with and for the reception of the

miter-joints of the ties, substantially as specified.

4. In a railroad, a series of ties arranged zigzag or at an angle to each other and having their adjacent ends beveled to form a miter-joint, the upper surfaces of the ties being provided with undercut recesses, a series of rail-sections slid longitudinally in the recesses, and metal plates seated under each of the joints of the ties and having recesses for the reception of the same, substantially as specified.

5. In a railroad, the combination, with a series of ties arranged at an angle to each other in alternately-opposite directions and having their meeting ends beveled to form a miter-joint, of metal plates seated under each of said joints and having a recess for the reception of the same, a series of rails mounted on the ties, and means for securing the rails thereto, substantially as specified.

6. In a railroad, the series of ties arranged zigzag and having their meeting ends secured together by a joint-plate having a recess fitting the meeting ends of the ties, which plate is seated under and also serves the purpose of a support for the ties, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EZEKIEL F. TAYLOR.

Witnesses:
W. R. WARDER,
E. M. NEWMAN.