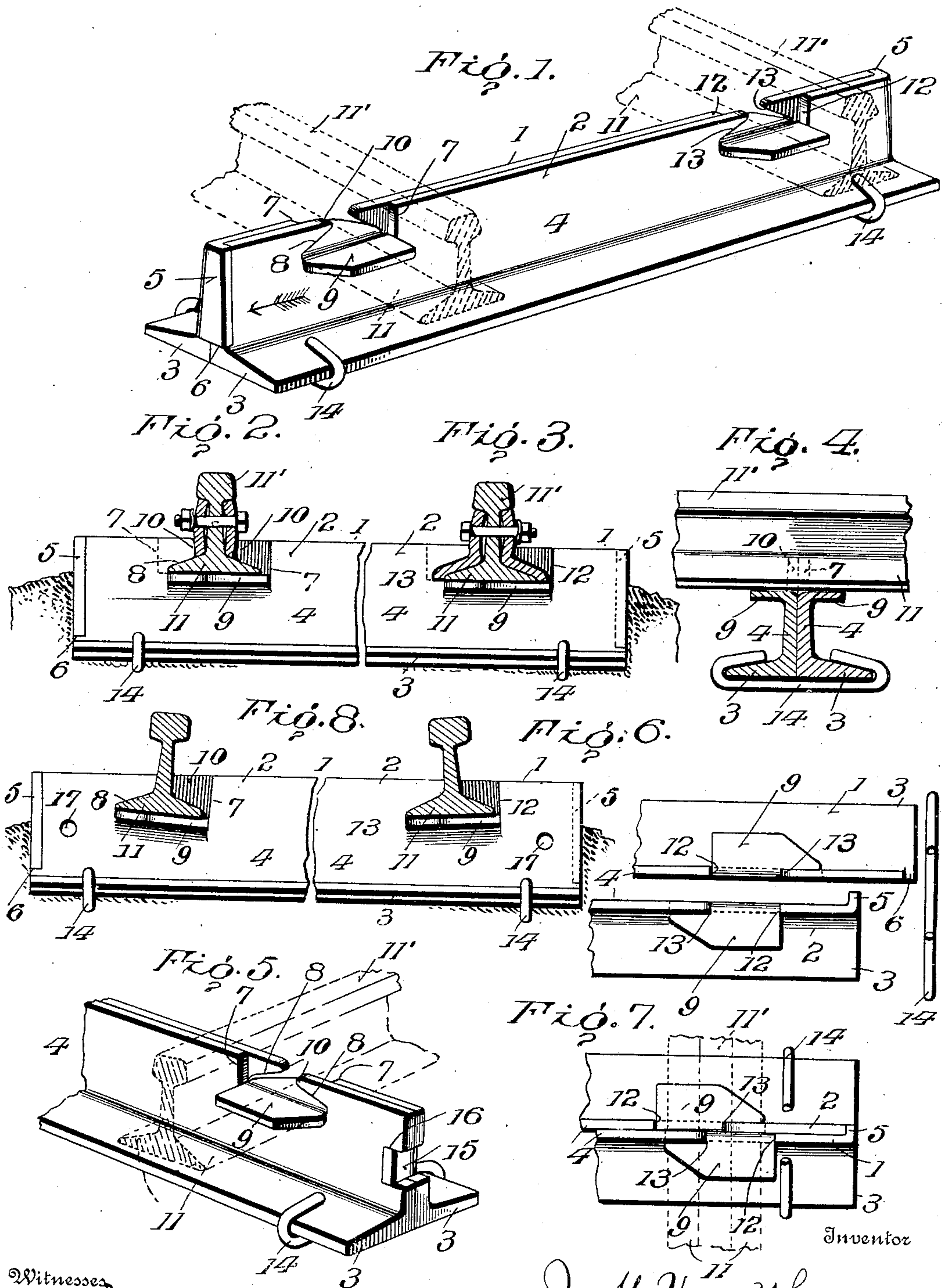


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PATENTED AUG. 28, 1906.

J. M. VAN WHY.
METALLIC RAILWAY TIE.
APPLICATION FILED APR. 27, 1906.



Witnesses
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METALLIC RAILWAY-TIE.

No. 829,814.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOSEPH M. VAN WHY, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Metallic Railway-Ties, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in metallic railway-ties.

The object of my invention is to provide a tie of this character which is made of two sections constructed precisely alike and interlocking and so constructed that the interlocking of the two sections securely locks the rail to the tie and the same cannot be removed, the sections being also constructed so that the tie can be placed under the rail at any point and locked in position, thus making the replacing of a tie easy and reducing the cost of repairing or replacing of new ties in the road-bed.

Another object of my invention is to provide a tie of this character in which no bolts are used, yet when locked together and placed in position it will be impossible for the two sections to become separated, and thus absolutely preventing the spreading of the rails.

A still further object of my invention is to provide a more simple, cheap, and effective tie of the metallic form.

In the accompanying drawings, Figure 1 is a perspective view of my improved tie, showing the two sections locked together and the rails shown in dotted lines held therein. Fig. 2 is a transverse sectional view showing my tie as it would appear when arranged opposite a joint where a fish-plate is used. Fig. 3 is a similar view to Fig. 2, only showing a different style of fish-plate. Fig. 4 is a transverse sectional view taken at right angles to Fig. 3. Fig. 5 is a perspective view of a modification, showing the rail in dotted lines. Fig. 6 is a top plan view of the two sections separated and in a position to receive the rail; and Fig. 7 is a top plan view of the sections after being moved lengthwise and locked together, locking the rail therein, as indicated in dotted lines. Fig. 8 is a transverse sectional view showing a modified form of my tie.

Referring now to the drawings, 1 represents one section of my improved tie, and 2

the other section, which are preferably rolled from a sheet of metal and made of an angular form and both sections made precisely alike, which greatly reduces the cost of manufacturing, as well as the cost in laying the tie, there being no right or left sections, any two sections being adapted to be used or locked together.

As before stated, the ties or sections are rolled in an angular form and in continuous strips and cut off the proper length. The portion 3 of the tie forms the base, and vertical portion 4 forms the rail-supporting means when placed together, forming practically an inverted-T-shaped tie. The vertical rail-supporting portion 4 at one end is provided with the extended portion 5, which is left thereon during the cutting operation, and said portion 5 is bent at right angles. The opposite end of the rail-supporting portion 4 is provided with a cut-away portion 6, which is of a width equal to the thickness of the portion 5, and when the two interlocking sections are in their normal locked position the portions 5 are flush with the ends of the supporting-base 3 of the sections, forming practically a solid tie and preventing any longitudinal movement of either section.

The vertical rail-supporting portions of the sections are provided adjacent each end with a vertical slit 7 and the curved slit 8, the metal 9 between the same being turned down at right angles to the portion 4 to form a broad rail-supporting base. The distance between the cut 7 and the upper inner end of the cut 8 is slightly greater than the width of the base of the rail, whereby it may be simply lowered into the opening, the same as upon the ordinary rail. The curved slit 8 is such that it will correspond with the curve of the base 11 of the rail 11', as will be hereinafter described.

The opposite end of the sections, as shown in Fig. 1, is provided with similarly-arranged slits and cuts, only the vertical cut 12 is adjacent the end of the section, while the curved cut or slit is on the inside. The distance between the upper ends 10 of the curved slits is just equal to the width of the gage of the road-bed or the distance between the inner side of one rail and the outer side of the other rail, as clearly shown in the drawings. The sections, as before described, being made precisely alike, when placed in reverse posi-

tion to form a tie it will be seen that the curved slit at one end of one section is engaging the inside of the rail and the slit at the opposite end is engaging the outside of the rail, while the opposing section is just the reverse.

In applying the tie to the rail, or vice versa, the two sections of the tie are placed side by side a short distance apart, so that the vertical walls and curved walls of the openings are arranged in a transverse line, as clearly shown in Fig. 6. The rail is then lowered into the openings of the two sections and supported by the horizontal portion 9. The two sections are then moved longitudinally in respect to each other to bring the curved walls of the openings over the flange of the rails, and the sections are then brought together with the flanges at the end overlapping each other and preventing any longitudinal movement of either of the sections. The strain upon ties of this character is longitudinal, and any strain by the rail, as indicated by the arrow in Fig. 1, will cause the section 2 to move up against the flange 5 of the section 1, and the flange 5, carried by the section 2, engages the section 1, and thus the rails cannot spread, but would have a tendency to move the whole tie, which could not take place, as the same is held through the medium of the other ties and the rails.

Passing around the flanges 3 of the sections are metal loops which are driven thereon and hold the sections against any transverse movement in respect to each other. When the ties are tamped in the roadbed, it will be seen that the loops cannot possibly have any longitudinal movement upon the sections, and thus they are locked together and cannot be removed from the rail until the loops are removed.

As shown in Figs. 2 and 3, I have shown the openings in the vertical portion of the sections slightly different in curvature, so as to fit the rails at a joint where the fish-plate is applied, and it will thus be necessary in the construction of a road-bed to use different sections at the joint of the rails. I have shown two different forms of fish-plates.

In Fig. 5 I have shown a modification in which instead of having the whole end of the section turned laterally, as in the other forms, I have shown the sections provided at one end with a laterally-turned reduced lug 15, which enters a cut-away portion 16 in the opposite end; but the operation and arrangement of the rail-supporting grooves are the same as the form shown in the other figures.

In the modification shown in Fig. 8 the cuts or slits 7 and 8 are so arranged that the downwardly-turned metal 9 is arranged at an angle and slants inwardly. The rails resting upon said metal 9 will necessarily be supported in an angular position, and the tread portion of the rails will be at an angle, which

causes the rail to wear on both sides alike, as the car-wheels are leveling. In this form I have shown the tie-sections provided with openings 17, which when the sections are placed together are oppositely arranged and through which bolts may be passed for securing the sections together. When the bolts are used, it will be understood that loops 14 will not be used. It will also be understood that in each and all of the other forms the sections may be provided with bolt-openings for receiving bolts for securing the sections together.

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

1. A metallic tie, comprising two sections interlocking against longitudinal movement, and loops passing over the sections for holding them against transverse movement.

2. A metallic tie, comprising two sections having rail-receiving openings, laterally-turned ends carried by each section and adapted to engage the opposite end of the abutting sections and hold the same against longitudinal movement, and means for holding the said sections against transverse movement in respect to each other.

3. A metallic tie, comprising two sections having rail receiving and locking openings, a laterally-turned end carried by each section and engaging the opposite end of each section and holding the same against longitudinal movement, and metallic loops passing around the base of the sections for holding the sections against transverse movement in respect to each other.

4. A metallic tie, comprising two sections having rail receiving and locking openings, a laterally-turned end carried by each section and the opposite end of each section being cut away to receive the laterally-turned end and holding the same against longitudinal movement, and means for holding the said sections against transverse movement in respect to each other.

5. A metallic tie, comprising two sections having cut-away portions adjacent each end of a width greater than that of the base of the rail, means for interlocking said sections together against longitudinal movement in both directions, and means for locking the sections together against transverse movement.

6. A metallic tie, comprising two sections having dovetail cut-away portions adjacent each end, the upper ends of a width slightly greater than the base of the rail and the lower end considerably greater than the base of the rail, means for interlocking the sections together against longitudinal movement in both directions, and means for locking the sections against transverse movement in respect to each other.

7. A metallic tie, comprising two sections

constructed precisely alike and having rail-receiving openings therein, but out of alinement with each other, and the rail locked in said openings by the longitudinal movement
 5 of the sections, laterally-turned flanges carried by one end of each section and extending over the end of the other section and holding the sections against longitudinal movement, and means for holding the sections against
 10 transverse movement in respect to each other.

8. A metallic tie, comprising two sections constructed just alike and having rail-receiving dovetail openings therein so positioned
 15 that when the sections are placed together they are out of an exact alinement, and the rail locked in said opening by the longitudinal movement of the sections, laterally-turned flanges carried by one end of each section and extending over the end of the other
 20 section and holding the sections against longitudinal movement, and loops passing around the base of the sections and holding them against transverse movement in re-
 25 spect to each other.

9. A metallic tie, comprising two sections having inwardly-inclined rail receiving and locking openings, a laterally-turned end carried by each section and the opposite end of
 30 each section being cut away to receive the laterally-turned end, and holding the same against longitudinal movement, and means for holding the said sections against transverse movement in respect to each other.

35 10. A metallic tie, comprising two sections having rail receiving and locking openings, a laterally-turned end carried by each sec-

tion and the opposite end of each section being cut away to receive the laterally-turned end, and holding the same against transverse
 40 movement in respect to each other.

11. A metallic tie, comprising two sections having rail receiving and locking openings formed by slits and turning the metal between the same downwardly to a horizontal
 45 position to form a broader rail-supporting base, and means for holding the sections against longitudinal and transverse movement in respect to each other.

12. A metallic tie, comprising two inter-
 50 locking sections having rail-receiving openings, the interlocking of the sections holding the same against longitudinal movement in both directions, and locking the rails in said openings.
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13. A metallic tie, comprising two sections having rail receiving and locking openings formed by slits and turning the metal between the same downwardly to a horizontal
 60 position to form a broader rail-supporting base, said sections having interlocking members, and the interlocking of said members locking the rails in the openings and locking the sections against longitudinal movement
 65 in both directions and means for holding the sections against transverse movement in respect to each other.

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

JOSEPH M. VAN WHY.

Witnesses:

FREDERICK W. SWAN,
 FRANC G. HUGHES.