

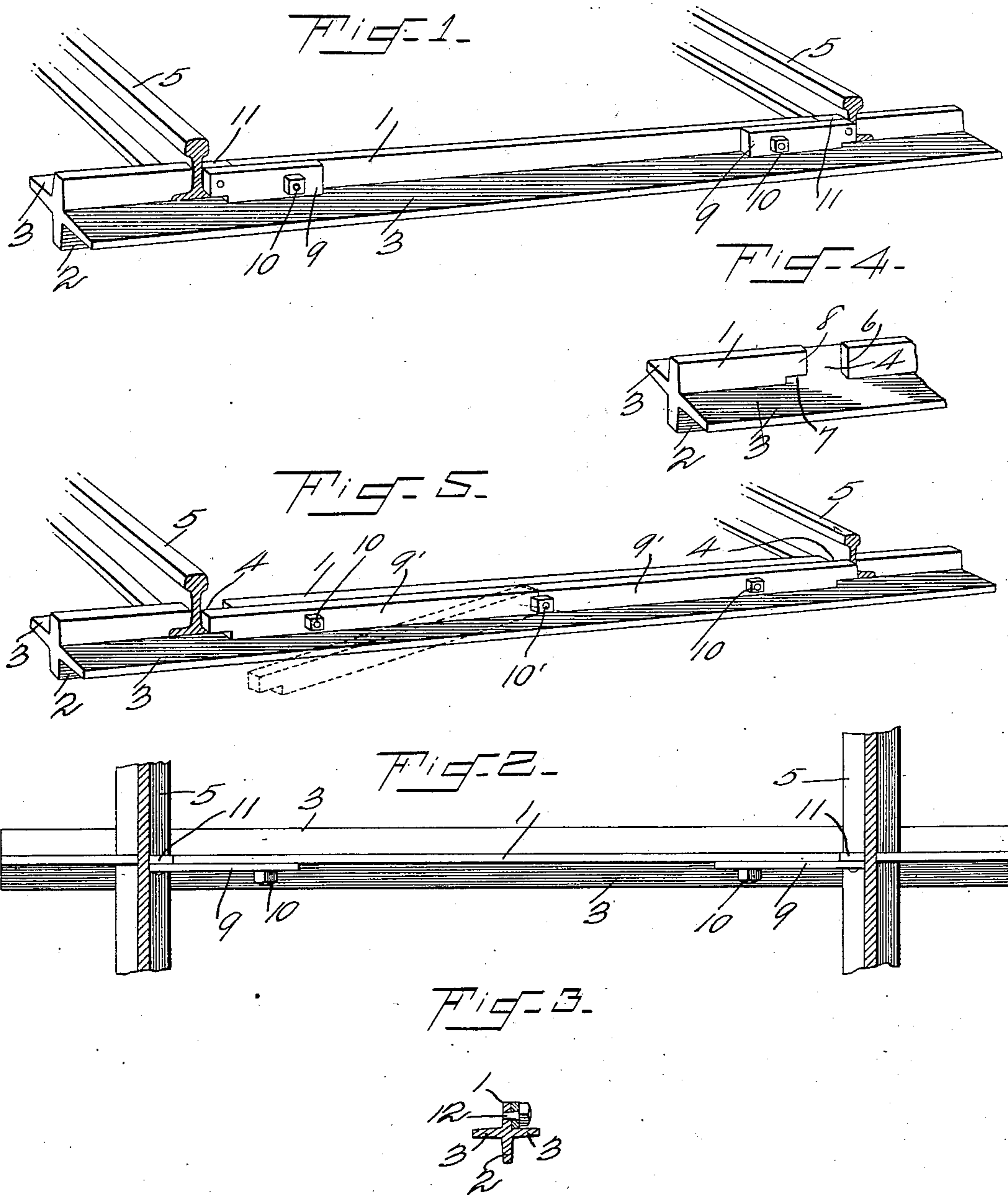
No. 730,787.

PATENTED JUNE 9, 1903.

S. McELFATRICK.  
RAILWAY TIE.

APPLICATION FILED FEB. 19, 1903.

NO MODEL.



Witnesses

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# UNITED STATES PATENT OFFICE.

SAMUEL McELFATRICK, OF PRINCETON, KENTUCKY.

## RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 730,787, dated June 9, 1903.

Application filed February 19, 1903. Serial No. 144,108. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL McELFATRICK, a citizen of the United States, residing at Princeton, in the county of Caldwell and State of Kentucky, have invented certain new and useful Improvements in Railway-Ties; and I do 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.

This invention relates to metallic railway-ties of the general class shown in my Letters Patent of the United States No. 490,586, dated January 24, 1893, and No. 497,678, dated May 16, 1893.

The object of the present invention is to provide a metallic railway-tie which is of maximum simplicity and cheapness of construction and which is adapted to hold the rails securely in place, and yet admit of their ready disconnection and removal when required.

With this and other objects in view the invention consists in certain novel features of construction, combination, and arrangement of parts, which will be hereinafter more fully set forth, and particularly defined in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of my improved tie, showing the application of the rails thereto. Fig. 2 is a horizontal section through the upper vertical webs of the same and webs of the rails. Fig. 3 is a cross-section. Fig. 4 is a view of a fragment of the tie, showing the rail-receiving slot therein; and Fig. 5 is a perspective view showing a modification.

In carrying my invention into practice I make the tie of substantially + form in cross-section, the same having an upper vertical web 1, a lower vertical web 2, and horizontal webs 3, integrally united, thus forming a tie which may be readily and cheaply made and which is of maximum simplicity of construction. The vertical flange or web 1 is formed with slots 4 for the reception of the rails 5, these slots extending down to the plane of the horizontal webs 3, on which the base-flanges of the rails are designed to rest. The slots 4 are of greater width than the rails, and at one side each slot has an abutting shoulder 6, which is designed to stand off from

the inner side of the rails, and at its opposite side communicates with an intersecting notch 7, forming a superposed locking projection 8, the said notch being adapted to receive the outer side of the base-flange of the rail and the projection to extend over upon said flange and bear against the web of the rail to hold the latter against outward movement.

In order to secure the rails in position, a fastening bar or plate 9 is used, one for each rail. This bar or plate is detachably secured to the web 1 by a bolt 10 and is shaped to fit at its outer end against the inner side of the base-flange of the rail. Formed or secured upon one side of the outer end of the bar or plate is a clamping-block 11, which is of such form as to fill the space between the web and inner side of the base-flange of the rail and the shoulder 6 and is adapted when so applied to force the rail under the projection 8, and thus clamp it securely in position. This block when formed independent of the plate or bar 9 may be adjustably secured thereto by means of a tapered pin 12, which will permit the same to be moved to a limited extent longitudinally of the bar to compensate for wear and enable it to be adjusted when required to firmly clamp a loosened rail in position. It will be seen by reference to Figs. 1 and 2 that when the fastening blocks or plates are applied in the manner described the rails will be held firmly against movement in either direction, and hence cannot spread or shift out of their proper positions.

The sides of the lower vertical web 3 and the under sides of the horizontal web 4 flare or taper toward the outer side edges of the web, thus causing the webs to diminish in thickness toward their outer edges, whereby increased strength with less weight of metal is secured. This construction also allows better tamping of the ballast beneath the horizontal flanges and adapts the tie to become more solidly supported upon the ballast and to be sustained more firmly in position under weight or pressure from above. By the construction described it will be seen that as the slots 4 are of greater width than the rails in detaching a broken rail it is simply necessary to first remove the fastening plate or bar 9 and block 11, whereupon the rail may be shifted inwardly out of engagement with the notch

7 and then lifted vertically out of the slot without the necessity of altering the grade or changing the position of the tie. The lower vertical flange 2 forms a depending anchor  
 5 which is embedded in the road-bed, so as to prevent shifting of the tie and rail.

In the construction shown in Fig. 5 the two fastening-bars 9' are made of greater length and contact at their inner or meeting ends,  
 10 whereby they are adapted to form a strainer-bar for clamping the rails in position without the use of the blocks 11. In applying this strainer-bar one section thereof is first brought to bear against the inner side of one of the  
 15 rails and secured in position, and the other section is then swung inward on the inner end of the secured bar as a fulcrum, as indicated in broken lines, and driven into position to engage the other rail and then secured, by  
 20 means of which the two rails are forced outward into interlocking engagement with the notch 7 and projections 8, and are thereby held securely against movement. In releasing either rail one section or the other of the  
 25 strainer-bar is released from the web 1 and said section then swung outward in an obvious manner, whereupon the rail clamped thereby may be withdrawn from the slot 4 in the manner previously described. The bars  
 30 9' are secured by bolts 10, the same as the bars 9, and may be additionally secured by recessing their inner edges for passage of a central bolt 10'.

From the foregoing description, taken in  
 35 connection with the accompanying drawings, the construction, mode of operation, and advantages of my invention will be readily apparent, it is thought, without requiring a more extended explanation.

40 Various changes in the form, proportion,

and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of my invention.

Having thus described my invention, what 45 I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A metallic rail-tie of + form in cross-section, the upper vertical flange of which has a rail-receiving slot; said slot being of greater 50 width than the rail and formed at one side with a projection to fit over upon the outer side of the base of the rail, and a fastening plate or bar disposed upon the inner side of the rail, parallel with the upper vertical flange 55 of the tie, secured to said tie and having its outer end shaped to fit over the inner side of the base of the rail, and serving to hold the outer side of the base of the rail beneath the said projection, substantially as described. 60

2. A railway-tie of + form in cross-section, the vertical flange of which is formed with slots to receive the rails, each slot being of greater width than the rail and having at one side thereof a shoulder and at the other side 65 a projection to fit over upon one side of the base-flange of the rail, a block adapted to occupy the space between the other side of the web and base-flange of the rail and the said shoulder, and a fastening-plate carrying the 70 block and connecting the same to the said vertical web of the tie, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SAMUEL McELFATRICK.

Witnesses:

A. B. HOPPER,  
 W. P. MORSE.