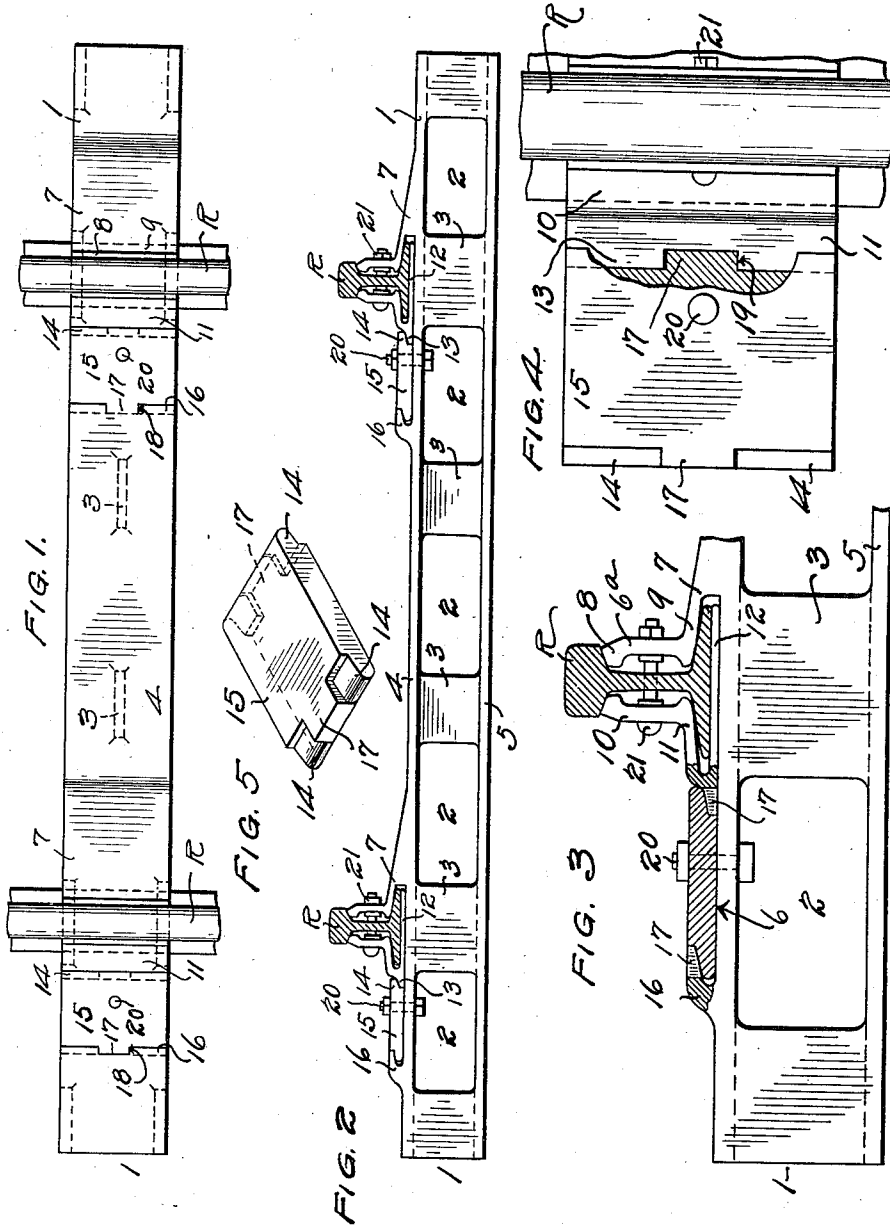


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RAILWAY TIE AND FASTENING.
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UNITED STATES PATENT OFFICE.

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RAILWAY-TIE AND FASTENING.

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To all whom it may concern:

Be it known that we, JESSE C. ANDERSON and DANIEL F. COLLINS, citizens of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Railway-Ties and Fastenings, of which the following is a specification.

10 This invention relates to the subject of metallic railway ties and means for fastening the track rails thereto.

To this end, the invention contemplates an improvement in the construction of 15 metallic railway ties which not only involves a simple and thoroughly practical means for rigidly fastening the track rails thereto, but also means for reinforcing and bracing the rail in such a manner as to 20 brace the same against lateral shocks or thrusts, thereby insuring the maintenance of the gage under the heaviest traffic conditions.

With these and other objects in view 25 which will be apparent to those familiar with this art, the invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated and claimed.

30 A practical embodiment of the invention is shown in the accompanying drawings, in which—

Figure 1 is a top plan view of a railway tie and railway fastening constructed in accordance with this invention. Fig. 2 is a side elevation of the same structure, showing the rails in section. Fig. 3 is an enlarged detail elevation of one end portion of the tie, parts being broken away and 40 shown in section to expose more clearly the rail fastening means. Fig. 4 is a detail top plan view, partly in section, of the rail fastening detail of the tie structure. Fig. 5 is a detail in perspective of the reversible 45 clip plate forming a part of the rail fastening detail.

Like reference characters designate corresponding parts in the several figures of the drawings.

50 In the embodiment of the invention shown in the drawings, the numeral 1 designates the metallic tie body which may consist of a steel casting or forging, or may be otherwise suitably constructed to be given the 55 necessary strength and reinforcement for

withstanding the rigorous traffic conditions. As shown, the tie body 1 may be of a skeleton formation to provide a number of ballast-receiving openings 2, while at the same time leaving between such openings vertical 60 reinforcing webs or struts 3, the top and bottom plates 4 and 5 of the tie body being substantially flat and of uniform width throughout.

The metallic tie body 1 is provided on 65 each end portion thereof, and in its upper side, with a transverse channel 6 which may be termed a rail-fastening seat since it receives the rail and the elements for supporting and fastening it in position. 70

The rail, for each end portion of the tie body, may be designated by the reference letter R, and one side of the rail is engaged by the upright fish plate member 6^a of an upstanding rail brace 7 which is rigid, or, 75 otherwise rigidly formed, with the body of the tie at the upper side thereof. The fish plate member of the said rail brace preserves the conventional characteristics of an angle bar for rail fastenings, that is to say, 80 the said member includes a bearing head 8 that engages beneath the under side of the rail head, and also a foot flange 9 that engages over and upon the rail base flange, thus providing a firm and well balanced engagement between the rail brace and one 85 side of the rail.

The side of the rail opposite the rigid brace 7 is engaged by the upright fish plate member 10 of a rail chair 11 which is detachably applied to the rail. The rail chair 11 not only includes the fish plate member 10 which fits the fishing space of the rail at one side thereof, but also includes an integral horizontally extending, 95 rail-supporting base plate 12 that extends beneath the base of the rail and constitutes the supporting surface therefor, said base plate 12 resting flatly on the bottom of the channel or seat 6. Also, the chair 11 is provided along its bottom corner with an outwardly extending toe flange 13 adapted to be engaged by one of the holding lips 14 of a reversible clip plate 15 removably seated 100 in the channel or seat 6.

The clip plate 15 is provided at opposite edges with the reversely related holding lips 14 which respectively engage the toe flange 13 and beneath an abutment flange 16 at one side of the channel 6. These lips are also prefer- 110

ably formed with projecting holding lugs 17 which respectively engage keeper notches 18 and 19 in the flanges 16 and 13. This interlocking engagement between the clip 15 and the flanges 16 and 13 coöperates with the securing bolt 20, that holds the clip plate to the tie body, to prevent creeping or displacement of the clip plate, while the said securing bolt is greatly relieved from shearing stresses. Clamping bolts 21 pass through the opposing fish plate members 6 and 10 and the interposed rails, thus completing a strong and rigid fastening that securely and immovably holds the rail in place.

15 We claim:

1. In a railway tie and fastening, the tie body provided with a rigid upstanding rail brace adapted to engage one side of the rail, a detachable rail chair adapted to engage 20 the other side of the rail, and a fastening clip secured to the tie body, and having

separate interlocking engagement respectively with the tie body and with said chair.

2. In a railway tie and fastening, the tie body provided with an upstanding rail brace 25 and a notched abutment flange, a detachable rail chair adapted to embrace the rail at one side and the bottom and having a notched toe flange, and a reversible fastening clip secured to the tie body and having lips 30 provided with lugs respectively interlocking with the notched abutment and toe flanges.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

JESSE C. ANDERSON.
DANIEL F. COLLINS.

Witnesses:

ALFRED LIEBMAN,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."