

1,058,568.

Fig. 1.

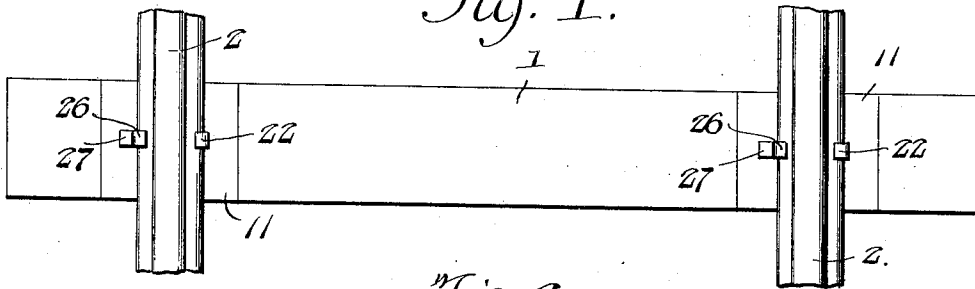


Fig. 2.

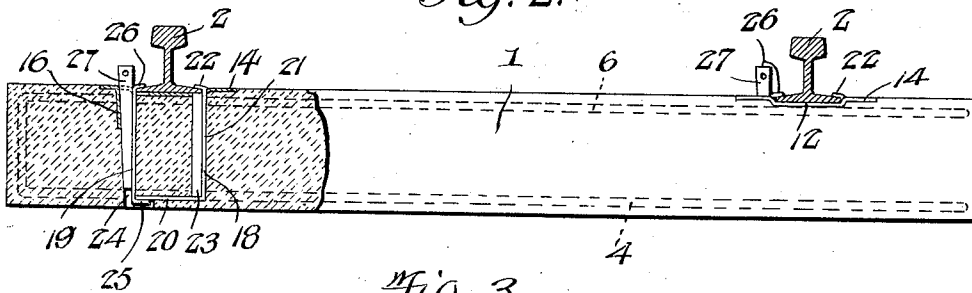


Fig. 3.

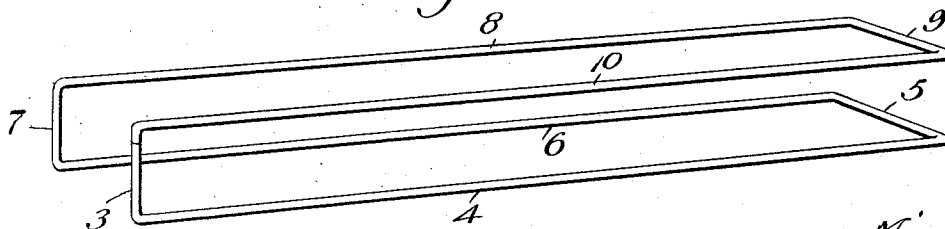


Fig. 4:

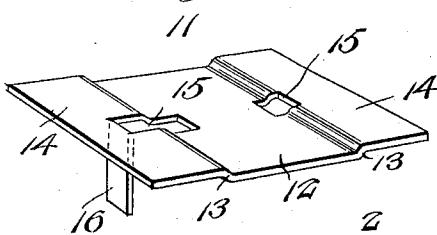


Fig. 5.

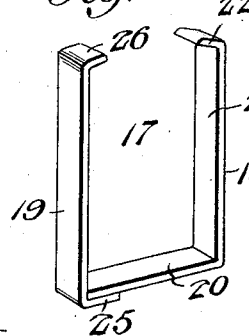


Fig. 6.

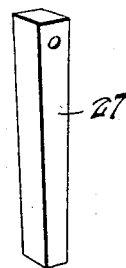
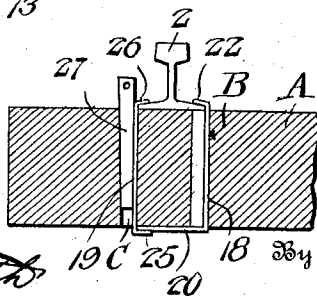


Fig. 7.



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TIE FOR RAILWAY-RAILS.

1,058,568.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed January 16, 1913. Serial No. 742,481.

To all whom it may concern:

Be it known that I, JOHN W. EISENMAN, a citizen of the United States, residing at Rochester, in the county of Fulton and State of Indiana, have invented new and useful Improvements in Ties for Railway-Rails, of which the following is a specification.

The present invention relates to improvements in ties for railway rails, and primarily to ties constructed of reinforced concrete or the like.

In carrying out my invention I propose to provide a tie which shall have rail fastening elements associated therewith that are so constructed and arranged as to readily permit of the insertion or application of rails to the tie or the ready removal of the rails or the fastening elements from the tie without destroying the tie or the said rail fastening elements.

I further aim to provide a reinforced concrete tie with metallic bearing plates for the rails which are arranged upon the tie to effectively prevent movement thereon or displacement therefrom, and to also provide the tie and plates with rail fastening members, one of which ordinarily remaining a fixed element with the tie, and the second fastening element arranged for detachable locking engagement with the tie and the first member of the rail fastening device.

It is a further object of the invention to provide a tie which has associated therewith rail supporting or bearing members having cooperating rail fastening elements, the bearing members and rail securing elements being so disposed as to properly retain the rails at a proper gage.

A further object of the invention is the provision with a rail tie, of rail fastening means which will entirely dispense with the employment of spikes, nuts and bolts or analogous devices which tend to weaken the ties or to inflict an injury upon the flanges of the rails to which they are ordinarily applied.

With the above recited objects in view, and others which will appear as the nature of the invention is more fully understood, the improvement resides in the novel construction, combination and operative arrangement of parts set forth in the following description and falling within the scope of the appended claims.

The essential features of the invention in-

volved in carrying out the objects above indicated are necessarily susceptible to embodiment in various forms of construction without departing from the scope of the invention, but certain preferable and practical embodiments have been exemplified by the accompanying drawings in which,

Figure 1 is a top plan view of the improvement, the rails being shown in position thereon, Fig. 2 is a central longitudinal sectional view of the same, Fig. 3 is a perspective view of the metallic reinforcement for a plastic tie, Fig. 4 is a perspective view of the wear or rail bearing plate, Fig. 5 is a perspective view of the rail fastening members, Fig. 6 is a perspective view of the locking key, and Fig. 7 is a detail sectional view illustrating the manner in which my rail fastening members may be employed in connection with a metallic tie.

In the drawings, in which like reference characters designate corresponding parts throughout, the numeral 1 designates a tie which, in the showing of Figs. 1 and 2, is constructed of plastic material, in the nature of reinforced concrete. The tie 1 is of the proper length and width to accommodate properly spaced rails 2. In molding the tie I employ a metallic reinforcing member which is formed from a single element, in the nature of a rod, as illustrated in Fig. 3 of the drawings. The rod has one of its ends 3 provided with an angular longitudinally extending member 4. The end 3 is disposed at one of the corners of the tie, and its extension 4 is arranged adjacent its longitudinal lower edge at one of the faces of the tie. The longitudinal member 4 has its end bent inwardly, as at 5, the said portion 5 being arranged to the lower edge of one of the ends of the tie, and the portion 5 has an angularly arranged longitudinally extending crossing 6 which is disposed in a plane parallel to the plane of the portion 4, the said portion 6 being disposed adjacent one of the lower longitudinal edges of the tie. The portion 6 is formed with an angular extension 7 which is arranged parallel to and in proper spaced relation with the end 3, and the said portion 7 is adapted to be arranged within the corner of the tie opposite to that within which the end 3 is embedded. The angular member 7 is provided with a longitudinally extending portion 8 which is embedded within one of the longitudinal upper edges of the tie, the said portion 8 having its

end bent at an angle, as at 9, the said portion 9 being arranged above the portion 5 and disposed within the tie adjacent the upper corner of one of its ends, and the portion 9 is provided with a longitudinal extension 10 which is disposed within the tie adjacent one of the longitudinal edges thereof, and the said portion 10 is welded or otherwise secured to the end 3. By such an arrangement it will be noted that all of the edges of the tie are reinforced, except the upper and lower edges of the outer end of the tie, and these outer ends are protected in a manner which will hereinafter be set forth.

The numerals 11 designate the rail-receiving wear-plates for the tie. Each of these rail plates is arranged a suitable distance from the opposite ends of the tie, and, of course, said plates are disposed thereon in proper spaced relation with each other to permit of the gaging of the rails without the employment of separable devices, which are commonly employed for this purpose. The plates 11 each include a flat central or bearing face proper which is indicated by the numeral 12, and the said plates are extended upwardly at an angle to provide shoulders 13, and are from thence extended in opposite directions to provide the flat ends 14 which are disposed above but in a plane parallel to the plane of the depressed central portions 12. The plates 11 are arranged upon the ties when the said ties are molded, and the shoulders 13, as well as the edges of the members 14, provide abutting elements which tend to securely retain the said plates upon the tie. The upper faces of the portions 14 are disposed in a plane flush with the upper faces of the ties, and each of the said plates is formed with an elongated opening 15 which is arranged at the shoulders 13 thereof and which enter both the central portions 12 and the portions 14 of each of the said plates. When the plates are arranged upon the tie, one of these openings 15 is disposed adjacent one of the ends of the tie, the opening 15 of the second plate being disposed toward the center of the tie. The plates 11 are also provided with slitted portions which are disposed centrally of their opposite shoulders 13 and which enter the portions 12 as well as the portions 14 of the said plates. The metal provided by the said slits is bent downwardly to provide tongues 16 which are arranged below the portions 14 at this end of the plate. The tongues 16, of course, enter the plastic body of the tie, and one of the said tongues being disposed a suitable distance from the end of the tie whose corners are not reinforced by the bent rod, heretofore described. The tongues 16 also serve as means for sustaining the plates upon the tie, as well as for an additional purpose which will hereinafter be fully set forth.

The numerals 17 designate the rail fastening members, which comprise a pair of substantially angular or L-shaped members designated by the numerals 18 and 19 respectively. The member 18 is embedded within the tie in the process of the construction of the tie, and its lower and longer arm 20 is arranged within the tie a slight distance from the lower face thereof, while its angular arm 21 is arranged within the tie vertically thereof so that its upper portion is arranged adjacent or contacts with the transverse wall of the opening provided upon the portion 14 of the plate 11. This arm 21 has its upper extremity formed with an inclined lip 22 which is disposed directly over the opening 15 of the plate. It is to be understood that the lip 22 is of a size sufficient to readily pass through the opening 15, and embedded within the tie below the lip 22 and contacting with the inner face of the arm 21 is a plug 23. By such an arrangement it will be noted that a blow delivered upon the head of the lip 22 will force the member 18 downwardly of the tie to cause its arm 20 to break through the lower face of the tie, and with the employment of a suitable punch the entire member as well as the plug 23 may be removed from the tie.

The tie is formed with openings of a size corresponding to the openings provided by the slitted portions of the plates, the said openings being disposed directly below the said openings of the plates, and the member 19 of the rail fasteners is adapted to be passed through, each, one of the said openings which are designated by the numerals 24. The lower angular end 25 of the member 19 is adapted to engage beneath the lower face of the end of the arm 20 of the element 18, the lower face of the tie being notched or grooved to permit of this engagement, and the upper end of the member 19 is provided with an inturned lip 26 which overlies the central and bearing face of the plate 11. By such an arrangement it will be noted that the rails 2 may be arranged upon the plates 11 and have their base flanges engaged by the lips of the fastening members. It is, of course, essential that the fastening members be retained in proper engaging relation with the rails, and also to sustain the flange 25 of the member 19 in interlocking engagement with the arm 20 of the member 18, and to accomplish this I provide locking keys 27 which are of a size and length to permit of the same being forced to within the opening 24 and to bear tightly against the outer faces of the members 19 and against the inner faces of the tongues 16.

With such an arrangement, it will be noted that I have provided a simple, cheap, but thoroughly effective tie and rail fastening means therefor, one wherein the plates

11 may, if desired, be disconnected from a tie and properly arranged upon a second tie should injury occur to the first mentioned tie, one wherein the rail fastening elements may be readily removed if desired, or wherein the element 19 may be removed or applied without interfering with the association of the member 18 to the tie or with the rail bearing plates of the tie, and further one wherein the element 19 may be, through the medium of the locking key 27, forced into tight engagement with the base flange of the rails.

In Fig. 7 of the drawings, I have illustrated my fastening device in applied position upon a metallic tie. The tie is designated by the letter A, and may be either of a hollow or solid construction. The tie is provided adjacent its ends with suitable openings B and C, the opening B being adapted to receive the member 18 of the rail fastening, and the opening C being adapted to receive the member 19 of the fastening. The fastening elements are similar to those previously described, and the opening C is sufficiently large to receive the locking key 27 to retain the member 19 within the opening, its lip 26 into engagement with the base flange of the rail, and its flanged end 25 into secure engagement with the underface of the arm 20 of the member 18.

Having thus described the invention, what is claimed is:

1. A tie having L-shaped rail securing members arranged in pairs, one of which being secured within the tie, the second member being removable, and means comprising a wedge block adapted to engage with the last named member to secure the same within the tie and its angular end into interlocking engagement with the angular end of the first mentioned member.

2. A tie having a rail fastening device which includes a pair of substantially L-shaped members each having their upper ends formed with an intumed lip, one of said members being secured within the tie, the second member being removably arranged upon the tie, and means comprising a removable key for sustaining the second member upon the tie and its offset end into engagement with the lower arm of the first mentioned L-shaped member.

3. A tie having a rail fastening which includes two co-acting members, each having

rail engaging lips, one of said members being embedded within the tie, a block contacting with one of the arms of the said member, the said member having a lower angular arm which is arranged adjacent to the lower face of the tie, the second member of the fastener being removable, the said second member adapted to extend through an opening in the tie and having its lower end offset to engage with the lower arm of the first mentioned member, and removable key adapted to be arranged within the opening of the tie and to frictionally contact with the removable member of the fastening.

4. In a rail tie, a plastic reinforced body, rail bearing plates upon the plastic body and having their end portions arranged flush with the upper face of the said body, the central portions of the said plates being depressed to provide flat rail receiving members, the said plates at the juncture of their central portions and one of their extending ends having openings, a rail fastening device comprising a pair of members, one of said members being embedded within the tie and projecting through the opening in the plate and being provided with an intumed lip which overlies the opening of the plate, a block embedded within the tie below the opening of the plate and contacting the said fastener, the fastener also including an angular arm which is disposed within and adjacent the bottom of the tie, the plate adjacent its opposite end being slitted and the metal downturned to provide a tongue, the tie being provided with an opening to receive the tongue, the second member of the fastener embodying an L-shaped element which is adapted to be arranged within the last mentioned opening to have its lower offset end engaged with the lower angular portion of the first named member, the opposite end of the second mentioned member having an intumed lip, and a wedge member arranged within the opening and contacting with the outer face of the second fastening member and the tongue of the plate.

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

JOHN W. EISENMAN.

Witnesses:

WM. J. KOERTH,
BENNETT S. JONES.