

N. M. HENCH.
METALLIC RAILROAD TIE.
APPLICATION FILED APR. 3, 1914.

1,177,103.

Patented Mar. 28, 1916.

2 SHEETS—SHEET 1.

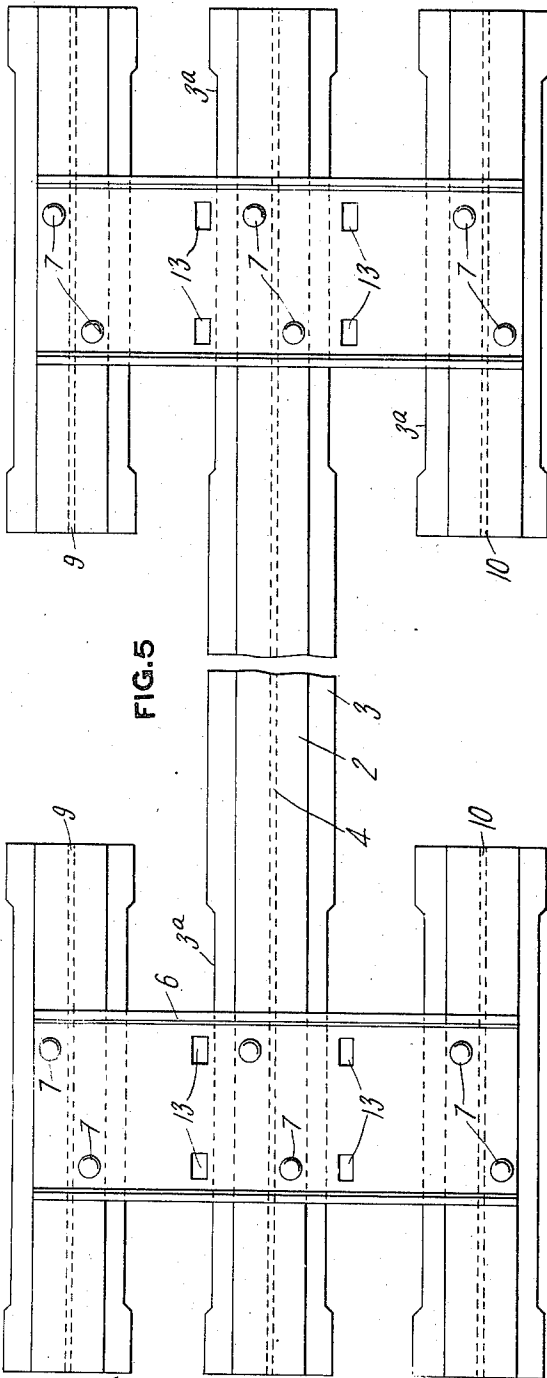


FIG. 5

WITNESSES

R. D. Little
W. T. Stohman

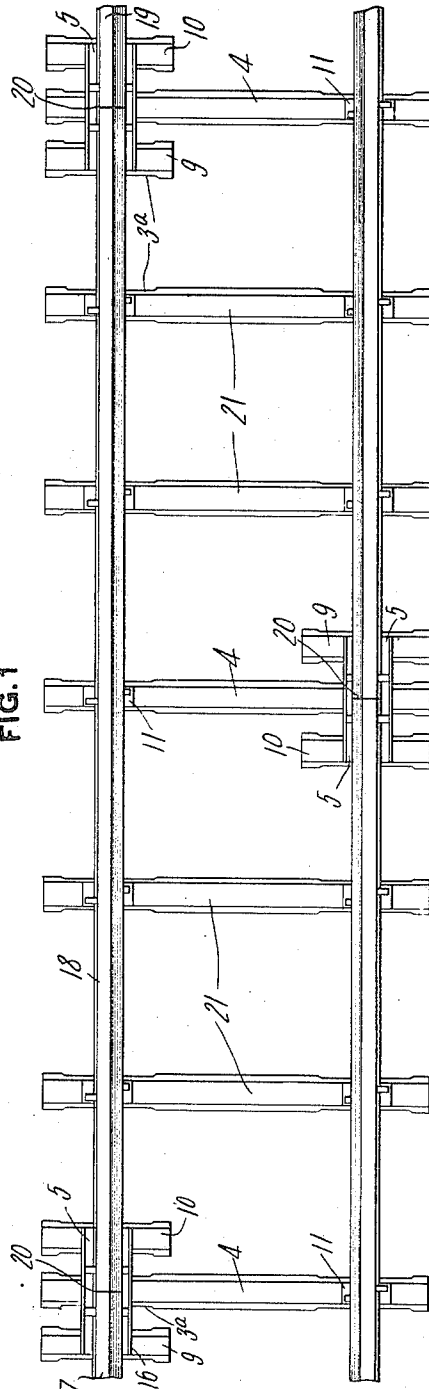


FIG. 1

INVENTOR

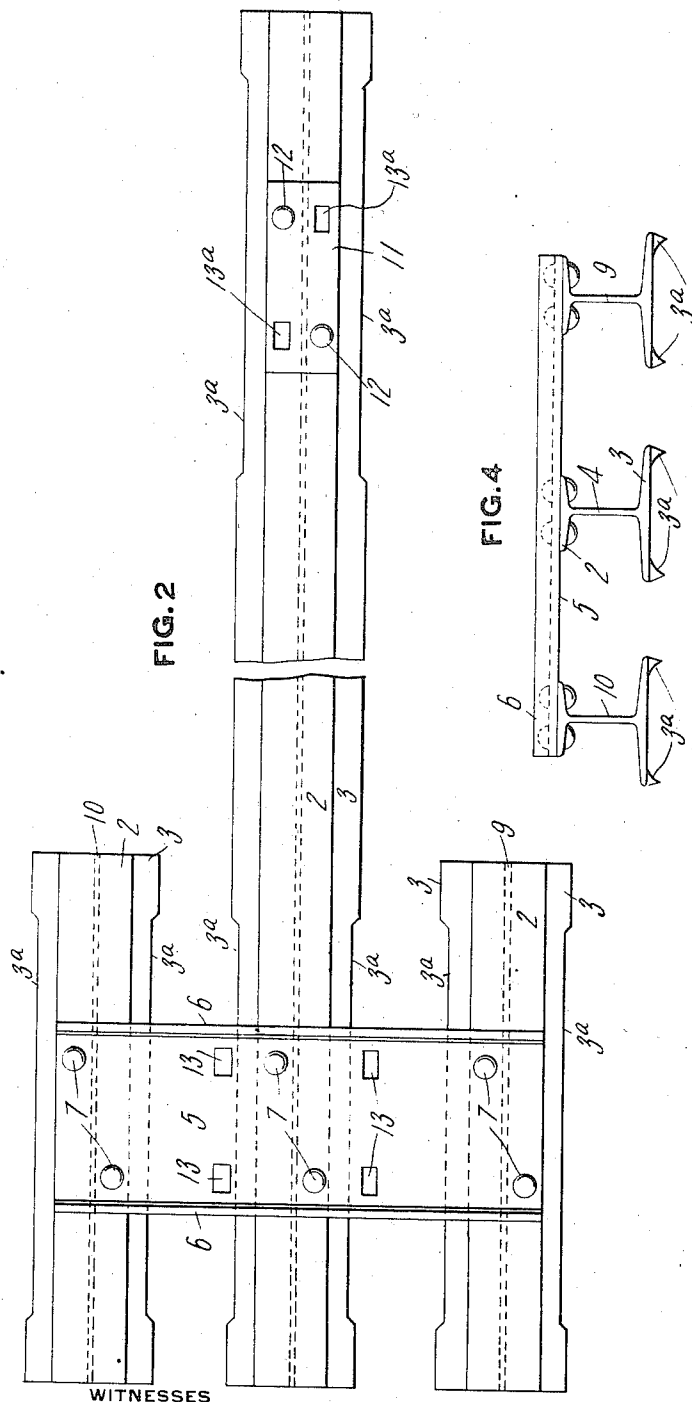
N. M. Hensch
by Luthicium, Belts & Fuller
his Attorneys

1,177,103.

N. M. HENCH.
METALLIC RAILROAD TIE.
APPLICATION FILED APR. 3, 1914.

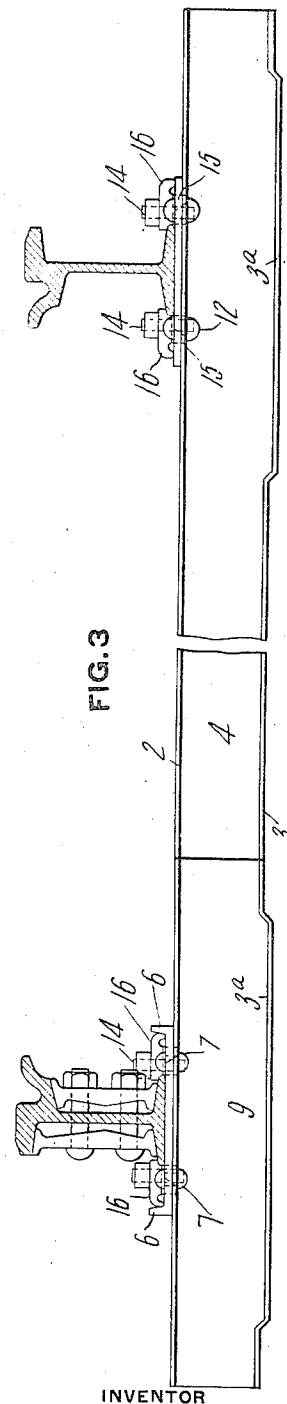
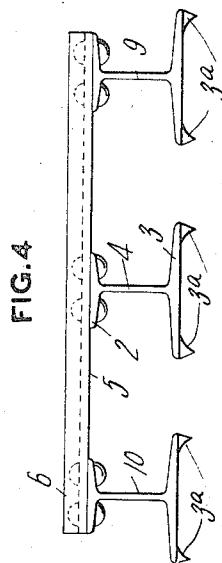
Patented Mar. 28, 1916.

2 SHEETS--SHEET 2.



WITNESSES

R. D. Little
W. T. Holmes



INVENTOR

N.M. Hauch
by Luthien, Bell & Fuller
his Attorneys

UNITED STATES PATENT OFFICE.

NORMAN M. HENCH, OF WILKINSBURG, PENNSYLVANIA.

METALLIC RAILROAD-TIE.

1,177,103.

Specification of Letters Patent.

Patented Mar. 28, 1916.

Application filed April 3, 1914. Serial No. 829,287.

To all whom it may concern:

Be it known that I, NORMAN M. HENCH, a citizen of the United States, and resident of Wilksburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Metallic Railroad-Ties, of which the following is a specification.

My invention has relation to the construction of metallic rail ties and more particularly relates to the construction of the rail ties used at or beneath the rail joints of a railway track.

One object of my invention is to provide a metallic rail tie of novel construction having improved means whereby the rails of a railway track are more effectively supported and maintained in alinement at the joints formed by the abutting ends of the track rails.

Another object of my invention is to provide a metallic rail tie having novel means whereby bending of the tie plate forming part of my improved rail tie is prevented and liability of its distortion when the rail ties are in service avoided and overcome.

Still further objects of the invention will appear hereinafter and be more fully described in the specification and appended claims.

Referring to the accompanying drawings, forming part of this specification, Figure 1 is a plan showing a section of railway track having rail ties as constructed and arranged in accordance with this invention. Fig. 2 is a plan, on a larger scale, showing in detail the metallic rail tie construction forming this invention. Fig. 3 is a longitudinal side elevation of the tie construction shown in Fig. 2. Fig. 4 is an end elevation of the tie construction of Figs. 2 and 3. Fig. 5 is a plan similar to that of Fig. 2 showing a modified form of tie constructed and arranged in accordance with my invention.

In the accompanying drawings referring to Figs. 2, 3 and 4 the numeral 2 designates the top flange and 3 the bottom flange of a metallic tie 4 of I-beam form. As shown, the marginal side edges of the bottom flange 3 of the tie have portions 3^a, 3^b which are bent or curved downwardly for some distance on either side of a line through the vertical center of the rail seats on opposite ends of the tie.

Secured on the top flange 2 of the tie adjacent to one end thereof, is a tie plate 5,

this tie plate extending transversely across the top flange 2 for some distance on either side thereof. The tie plate 5 is preferably provided with an upstanding flange 6 along each side edge thereof, and is permanently fastened to the top flange 2 of the tie by means of rivets 7 extending through registering holes in the tie plate 5 and flange 3 of the tie.

Secured to the tie plate 5 at each end thereof by means of rivets 7, 7, is a short tie of the same I-beam form as that just described, these short sections 9 and 10 being provided to prevent bending or twisting or other distortion of the tie plate when tamping the ties and when the ties are in rail securing position in the road bed of the railway track construction of which they form part. The bottom flanges 3 of the short sections 9 and 10 have downwardly bent portions 3^a, the same as the long tie sections 4.

Rectangular holes 13 are provided in the tie plates 5 for the clip bolts 14 and projections or lugs 15 on the under side of the rail clips 16.

On the opposite end of the long section of the tie 4, a narrow tie plate 11 is secured by rivets 12 to the upper flange of the tie 4 and the tie plate and upper flange 2 of the tie have registering rectangular holes 13^a to receive the clip bolts 14 and the heel or projection 15 provided on the under face of the rail clips 16 in fastening the track rails to the tie plate and ties to prevent the clip bolts being put in shear when in service.

In constructing a railway track one tie 4 such as has been described is used beneath each joint in the track formed by the abutting ends of the track rails, so as to rigidly support the abutting rail ends and prevent undue deflection of the rails at the joints in the railway track.

Ordinarily the joints in track rails on one side are staggered with relation to the joints of the track rails on the other side of the railway track, so that one of my improved ties will be used beneath the abutting ends of each pair of rails on each side of the track.

In cases where the ends of the rails on one side of the track are in line transversely with the ends of the rails at the other side of the track, instead of being staggered, a tie plate 5 and two short tie sections 9 and 10 will be used on each end of the interme-

diate section 4 of the tie, in the manner illustrated in Fig. 5, the second tie plate 5 being employed in place of the tie plate 11 of the construction shown in Figs. 1, 2, and 3 of the drawings.

In building a railway track employing ties constructed in accordance with my invention, the ties are placed in position on the road bed, one of my improved ties with the tie plate 5 on one end thereof being positioned so as to support the abutting ends of the adjoining rails, 17, 18, or 18, 19, or stated in other words, the tie plate 5 of my improved tie construction is beneath each rail joint 20 of each line of rails forming a railway track. The intermediate ties 21 used to support the rails between the joint ties may be of any of the numerous known constructions.

The rails are securely fastened to the tie plates 5 by means of the rail clips 16 and clip bolts 14 extending through the openings 13 in the tie plates in the manner as heretofore described.

The track rails are then leveled and the ties are tamped, and when desired, especially when using my improved tie construction in forming street railway tracks, a bed of concrete may be placed around the ties to rigidly hold the ties in place on the road bed, instead of employing the usual rock ballast.

The advantages of my invention will be apparent to those skilled in the art. By the use of a tie plate beneath the joints of the rails which is rigidly secured to the tie and by the use of the short ties at the ends of the tie plates, the joints at the ends of adjacent rails are rigidly supported against deflection by the weight of the rolling stock and the liability of bending or distorting the tie plates in tamping the ties is prevented and overcome. The provision of the tie plate and short ties at each end of the tie plate, provides a strong and durable construction with a minimum amount of material and at a minimum cost.

Modifications in the construction and arrangement of the parts may be made without departing from my invention as defined in the claims. The tie plates may have a plane upper surface instead of having the upstanding ribs or flanges as shown. The length of the tie plates and of the short tie sections may be varied, the manner of securing the tie plates to the ties may be changed and other variations may be made without departing from my invention as defined in the appended claims.

I claim:—

1. In a railway tie the combination of a metallic rail connecting member of I-beam form having a tie plate member secured thereto and forming a rail seat, the ends of said tie plate member overhanging the sides of the rail connecting member and short supplemental metallic members of I-beam form secured to the ends of the tie plate member and extending parallel to said rail connecting member, said short metallic members transmitting the load on the ends of the tie plate member to the road bed of the railway and thereby preventing bending of said tie plate member.

2. In a railway tie the combination of a metallic rail connecting member of I-beam form, thin elastic tie plate members on the ends of the rail connecting member forming seats for the track rails, the ends of said tie plate members overhanging the sides of the rail connecting members and short supplemental metallic members of I-beam form secured to the ends of each tie plate member to extend lengthwise parallel with the rail connecting member and adapted to transmit strains on the tie plate member to the road bed of the railway track and thereby prevent bending of the tie plate members.

In testimony whereof, I have hereunto set my hand.

NORMAN M. HENCH.

Witnesses:

JAMES W. HAMILTON,
J. B. NORRIS.