

J. F. LEWIS.
 RAIL FASTENING.
 APPLICATION FILED APR. 26, 1911.

1,013,408.

Patented Jan. 2, 1912.

FIG. 1

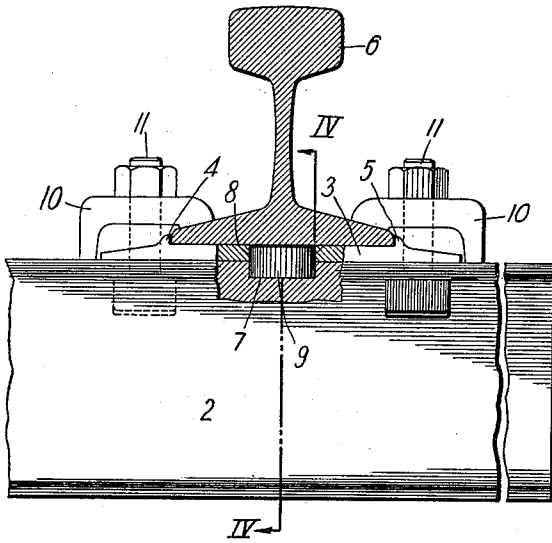


FIG. 4

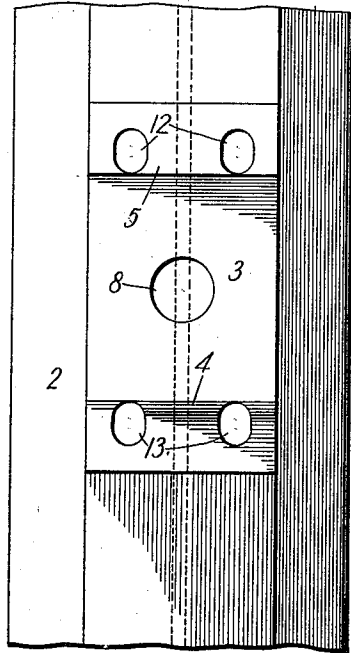
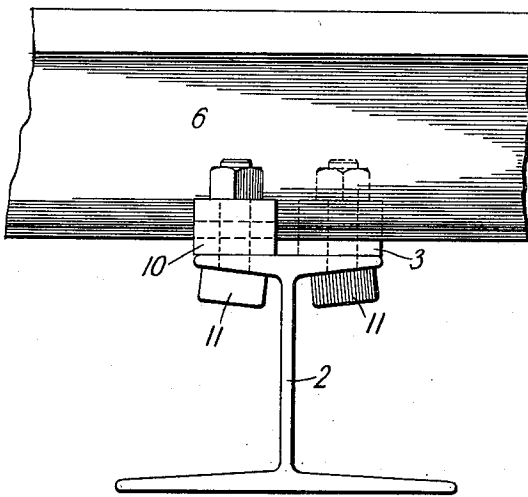
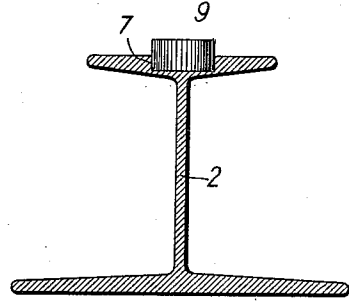


FIG. 2

FIG. 3

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JOHN F. LEWIS, OF BRADDOCK, PENNSYLVANIA.

RAIL-FASTENING.

Patented Jan. 2, 1912.

1,013,408.

Specification of Letters Patent.

Application filed April 26, 1911. Serial No. 623,390.

To all whom it may concern:

Be it known that I, JOHN F. LEWIS, a citizen of the United States, and a resident of Braddock, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Rail-Fastening, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to apparatus used in securing the rails of a railway track in position on the ties and more particularly relates to the construction of railway tracks employing tie plates and metal ties to which the rails are fastened when in place.

Heretofore, it has been the practice to depend upon the bolts used for securing the rails in place on the ties to take the side thrust on the rails caused by sidewise pressure of the rolling stock passing over the rails.

The object of my invention is to provide a rail fastening having novel means whereby side thrust caused by the sidewise pressure of the rolling stock on the rails is transmitted from the rails through the tie plates to the ties independently of the bolts employed in securing the rails in place on the ties, the necessity of having the bolts in shear when in use is avoided and overcome and by which the strength of the tie fastening is thereby greatly increased.

Referring to the drawings, Figure 1 is a side elevation, partly in section, of a metal tie showing my improved means for securing the tie plate and rail in position on the tie. Fig. 2 is an end elevation of the tie showing the rail secured in place thereon. Fig. 3 is a plan showing the tie plate in position on the tie, and showing the registering bolt holes and the holes provided in the tie plate and the top face of the tie, with the plug or dowel pin placed in position therein in accordance with my invention. Fig. 4 is a sectional end elevation on the line IV—IV of Fig. 1, showing the recess or opening in the top face of the tie and the plug or dowel pin by which relative transverse movement of the tie plate and tie is prevented, the rail and tie plate being removed for the sake of clearness.

In the accompanying drawings, 2 designates a metal tie of a railway track, the type of tie shown being of general I-beam form, although, obviously, my invention is adapted for use with metal ties of any approved

form. Mounted on the top face of the tie are tie plates 3 having lugs or flanges 4 and 5 which are arranged to engage with the marginal edges of the rail flanges. Secured upon the seat formed in the tie-plates 3 by the projecting lugs or ribs 4 and 5 are the track rails 6 and as will be clearly seen from Figs. 1 and 3, a hole or recess 7, preferably cylindrical is formed in the top face of the tie and a similar hole 8 is formed in the tie plates so as to register with the recess or hole 7 and be located beneath the rail bases when the tie plates and rails are assembled in place on the tie. A metal plug or dowel pin 9 is inserted in the recesses formed by the holes 7 and 8 so as to prevent any sidewise motion of the tie plates on the top face of the ties, or relative to the track rails, the base of the rails 6, when placed in position on the tie plate, covering the openings 7 and plugs 8 and maintaining the pins or plugs 9 in position. Rail clips 10 are employed to secure the rails in position on the ties, the clip bolts 11 passing through suitable bolt holes or openings 12 and 13 in the tie plate and in the rail clips so as to securely fasten the rails in position.

In assembling a track construction employing my improved fastening the tie plates are placed in position on the ties so that the hole 8 registers with the openings 7 in the top face of the tie. A dowel pin or plug 9 is then placed in each of these registering openings, the pins being of a length approximating the combined depth of the registering holes or openings. The track rails are then placed in position on the top faces of the tie plates, and the clips are secured to the tie by the bolts 11 extending through the upper face of the ties and the tie plates, in position so as to engage the flanges of and securely hold the rails in place. It will be seen that when in such position it is impossible for the dowel pins 9 to become dislodged and that any side thrust put upon the rails by rolling stock passing over the track will be transmitted through the ribs 4 or 5 to the tie plate and, by means of the pins 9 to the ties independently of the bolts, and that the bolts are utilized only to maintain the rails and tie plates in position on the ties of the track construction without at any time subjecting the bolts to shearing strains or stresses. The advantages of my invention will be apparent to those skilled in the art. By the

simple expedient of providing registering recesses in the tie plate and tie and inserting a dowel pin or plug in these openings so as to neatly fill the openings, and by providing lugs or ribs on the top face of the tie plates, which are engaged by the side edges of the rail flanges, the shearing stresses heretofore put upon the bolts by which the rails are secured to the ties is avoided and a very much stronger fastening is obtained, while relative sidewise movement of the tie plates with respect to the ties and with respect to the rails is avoided and made practically impossible.

Modifications in the construction and arrangement of the parts may be made without departing from my invention as defined in the appended claims. But one rib may be provided on the tie plate when desired instead of two as shown, in such case the rib being placed in the proper position relative to the rails to take up and transmit the side thrust from the rails to the ties. The tie plates may be bolted to the tie independently of the clip bolts instead of utilizing the clip bolts to maintain the tie plate in position as shown, the form of the clip used may be changed, and other modifications may be made.

I claim:—

1. In a railway track construction having a metal tie, a rail fastening comprising a tie plate on the tie having a projecting rib engaging the side edge of the rail flange, registering openings in the tie plate and tie and a plug seated in said openings whereby rela-

tive movement of the tie plate and tie is prevented and means including a rail clip and clip bolt for securing the rail and tie plate in position on the tie.

2. In a railway track construction having a metal tie, a rail fastening comprising a tie plate on the tie having a projecting rib engaging the side edge of the rail flange, registering openings in the tie plate and tie, a plug loosely seated in said registering openings, registering bolt holes in the tie plate and tie and rail fastening means including rail clips and clip bolts extending through the bolt holes in the ties and rail clips for securing the rails in position on the ties.

3. In a railway track construction having a metal tie, a rail fastening comprising a tie plate on the tie having a projecting rib engaging the side edge of the rail flange, registering openings in the tie plate and tie, a plug loosely seated in said registering openings, registering bolt holes in the tie plate and tie and rail fastening means including rail clips and clip bolts extending through the bolt holes in the ties and rail clips for securing the rails in position on the ties, said plugs being located beneath and held in place in the tie plate and tie by the base flanges of the track rails.

In testimony whereof, I have hereunto set my hand.

JOHN F. LEWIS.

Witnesses:

W. A. McDEVITT,
J. K. BOYD.