W. LENIHAN.

RAILWAY TIE.

APPLICATION FILED JAN. 21, 1908.

919,442. Patented Apr. 27, 1909.

Fig. 1.

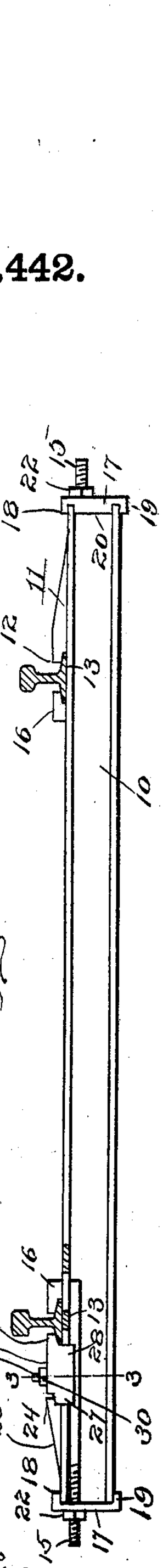


Fig. 2.

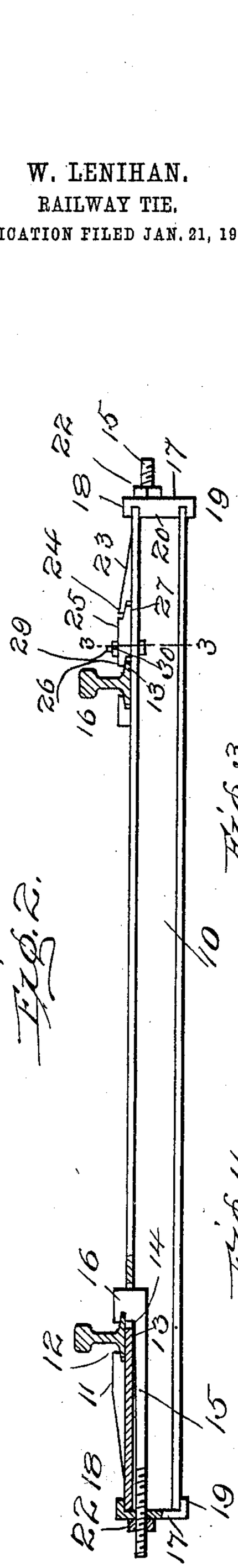


Fig. 3.

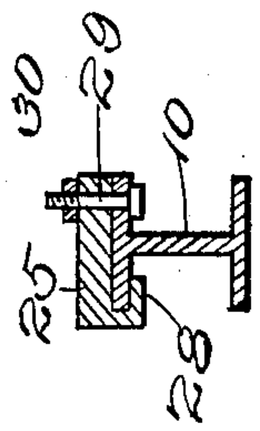
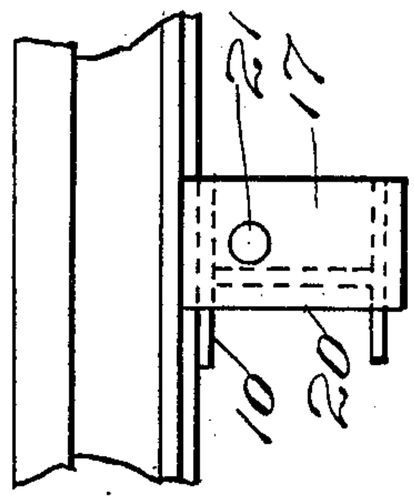


Fig. 4.



Witnesses

J. M. Fowler Jr

L. L. Morrill.

Inventor,

William Lenihan,

By Mason Fenwick & Lawrence.

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM LENIHAN, OF MIDDLEPORT, NEW YORK.

RAILWAY-TIE.

No. 919,442. Specification of Letters Patent. Patented April 27, 1909.

Application filed January 21, 1908. Serial No. 411,940.

To all whom it may concern:

Be it known that I, WILLIAM LENIHAN, a citizen of the United States, residing at Middleport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Railway-Ties; and I do hereby 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 railway ties, and has for an object to provide a metallic tie of improved construction produced from ordinary structural material and embodying improved features of economy, and reliability.

A further object of the invention is to provide a cross tie of the class described adapted to be conveniently inserted in position while the rails are in place.

A further object of the invention is to provide in a metallic rail tie means for producing yielding connection between the tie and rails.

With these and other objects in view, the invention comprises certain novel constructions, combinations and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings:—Figure 1 is a view in side elevation of the improved tie. Fig. 2 is a view of the tie partly in side elevation and partly in longitudinal vertical section. Fig. 3 is a transverse, sectional view of the improved tie taken on line 3—3 of Figs. 1 and 2. Fig. 4 is a view of the improved tie in end elevation.

Like characters of reference designate corresponding parts throughout the several views.

The body of the improved tie forming the subject-matter of this application is constructed of structural material preferably an I-beam as shown at 10 having its transverse flanges disposed respectively at the top and bottom of said tie. At one end of the I-beam a block 11 is rigidly secured preferably by welding to make the same substantially integral with the body of the tie and to prevent shearing strain upon bolts. The block 11 is provided with a nose 12 proportioned and positioned to overhang and bear upon the top of one side of the flange 13 of the rail and properly positioned to position the rail. Through the upper flange of the I-beam a slot 14 is formed and a bolt 15 having a hooked end 16 is inserted with its hooked end upwardly through the upper flange engaging over the flange of the rail opposite the engagement by the block 11.

At the end of the tie a washer 17 is employed having flanges 18 and 19 engaging respectively over the upper and lower flanges of the I-beam and a flange 20 engaging upon one side of the web of the I-beam. The washer 17 is provided with a hole or opening 21 through which the bolt 15 extends outwardly beyond the end of the tie and along the web of the I-beam and a nut 22 engages upon the threaded end of the said bolt to exert tension upon the said bolt 15 and the hook 16 to clamp the rail firmly against the block 11. At the opposite end of the tie a block 23 is secured similar to the block 11 but shorter, its inner end stopping short of the position occupied by the rail and provided with an overhanging nose 24 similar to the overhanging nose 12 of the block 11.

A block 25 is employed having a nose 26 similar to the nose 12 and nose 24 and with its reverse end provided with a beveled shoulder 27 proportioned to be inserted under the nose 24. The block 25 is also provided with a hooked flange 28 proportioned to engage under the top flange of the I-beam and the bolt 29 is inserted through the upper flange and the block 25, and a nut 30 positioned thereon to clamp the block 25 firmly upon the upper flange of the I-beam.

It will be noted that the bolt 15 having the hooked end 16 does not clamp that side of the rail with absolute rigidity to the top flange of the I-beam, permitting a very limited yielding movement of the rail under strain thereby obviating the objection of the rigid securing of a rail to a metallic tie and the crystallization of the metal of the tie, the rail and the fastening means.

It will be noted that at one end the block 11 produces an abutment for the rail practically integral with the tie so that with the rails in position the tie may be inserted beneath such rails until the abutment 11 engages the flange 13 of the rail and the other end of the tie then lifted to position, the block 25 placed against block 23 as an abutment and clamped to position clamping the outer side of the rail firmly to the tie. The bolts 15 may then be inserted with the hooked ends 16 in engagement with the rails and clamped to position by the nuts 22 bearing against the washer 17 so that the rails are clamped rigidly against the abutments upon

the outer sides but in such position as to permit of a very limited movement against stress applied against the inner side.

What I claim is:—

1. A rail tie comprising an I-shaped body, an abutment at each end of the body arranged for the disposal of a rail thereagainst, the body having in its upper flange a slot inwardly of each abutment, a plate disposed against each end of the body, each of the said plates being formed with flanges engaging the upper and lower flanges of the body and with a flange engaging with the web of the body, a bolt passed through each of the plates and formed with a rail engaging head which projects through one of the slots in the body, and a nut engaged upon each of the bolts and bearing against the corresponding plate.

2. A rail tie comprising an I-shaped body, an abutment upon the body, a rail engaging block disposed against one end of the abutment and formed with a flange engaging with the upper flange of the body at one side thereof, a bolt passed through the block and the said flange at the other side thereof, and a rail engaging device upon the body inwardly of the abutment and rail engaging block.

3. A rail tie comprising an I-shaped body, a rail seat formed upon the body, the body having in its upper flange a slot, a plate disposed against the end of the body and formed with means for engagement with the web and upper and lower flanges of the body, and means passed through the plate and extending through the slot in the said upper flange of the body for engaging the rail and holding the same against the abutment.

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

WILLIAM LENIHAN.

Witnesses:

PATRICK H. LAHEY,

THOMAS P. HAMMOND.