No. 828,367. PATENTED AUG. 14, 1906.

M. BARTLEY.

RAILWAY TIE.

APPLICATION FILED OCT. 4, 1905.

Fig. 5.

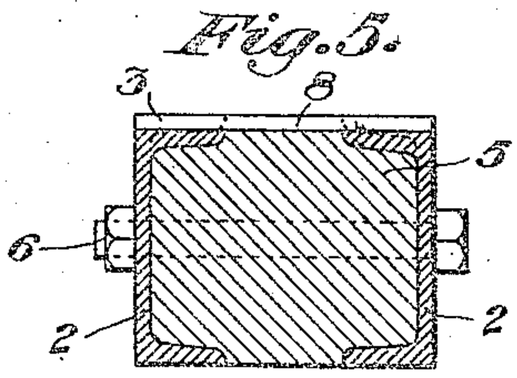


Fig. 1.

Fig. 2.

Fig. 3.

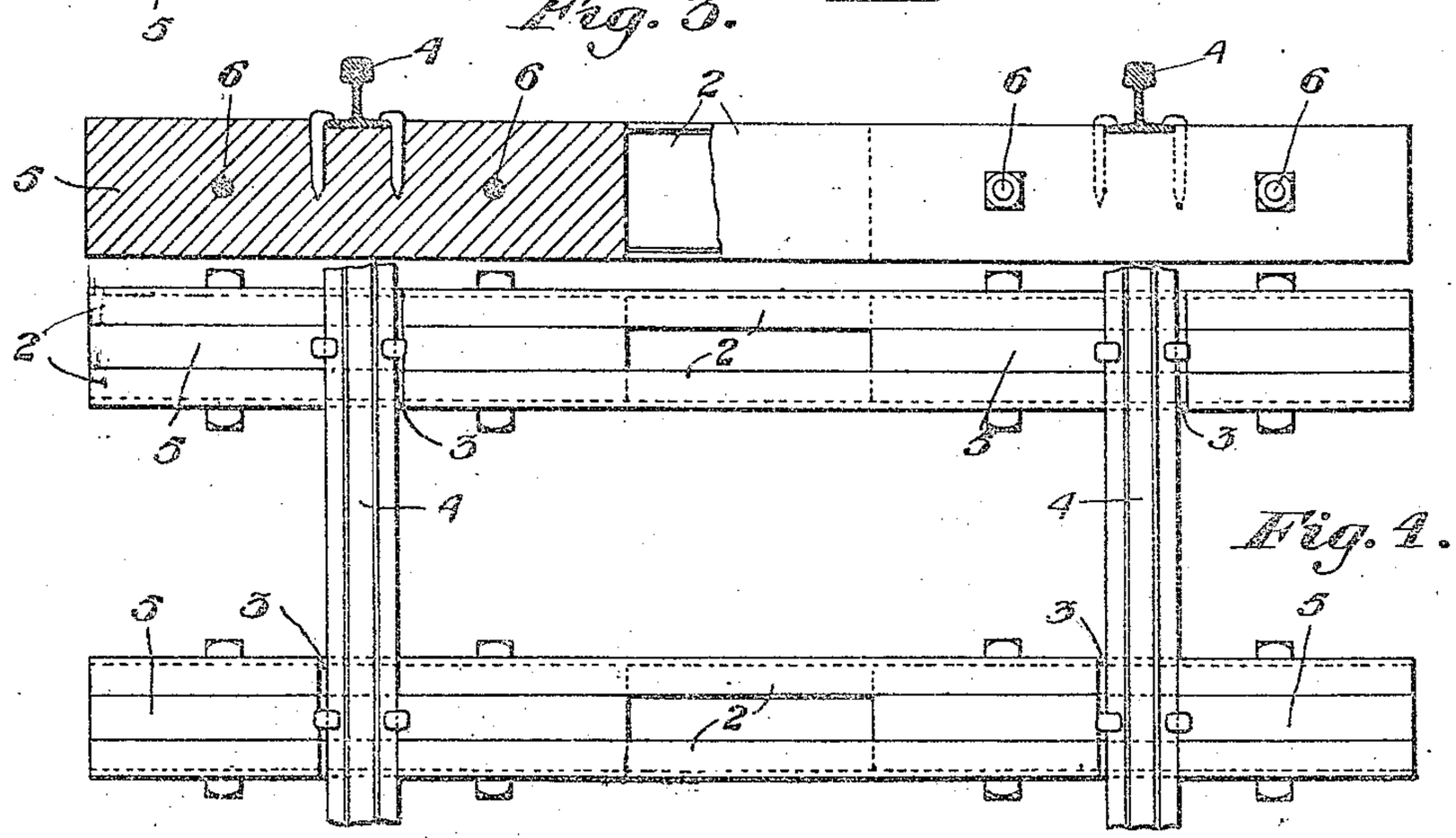


Fig. 4.

Fig. 6.

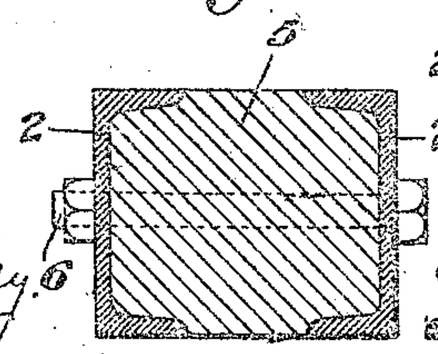
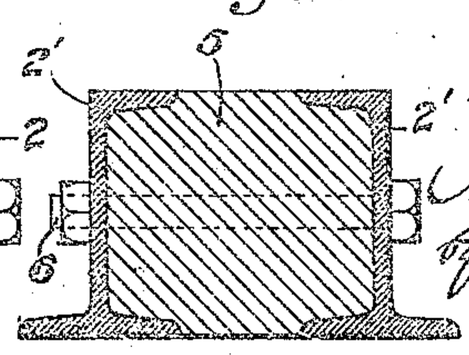


Fig. 7.



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UNITED STATES PATENT OFFICE.

MILTON BARTLEY, OF ALLEGHENY, PENNSYLVANIA.

RAILWAY-TIE.

No. 828,367. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed October 4, 1905. Serial No. 281,221.

To all whom it may concern:

Be it known that I, MILTON BARTLEY, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification, reference being had therein to the accompanying drawings, forming part of the specification, in which—

Figure 1 is a perspective view of my improved tie. Fig. 2 is a similar detail view showing the recessed seat in one of the side structural members. Fig. 3 is a view in side elevation, partly in section, of one of the ties, showing the rails in position thereon. Fig. 4 is a partial plan view of the track, illustrating the arrangement of the ties. Figs. 5, 6, and 7 are cross-sectional detail views showing various constructions.

My invention refers to improvements in railway-ties; and it has for its object to provide a combination metal and wood tie or a tie having a main structural body portion comprising two oppositely-located longitudinal side members secured together with intervening blocks of wood or other suitable bearing material upon which the rails may rest and to which they may be secured by the usual spikes.

The construction of the invention, its mode of operation, and its various advantages are more fully hereinafter described.

Referring now to the drawings, 2 2 represent the side members of the tie, which may be of any suitable structural form, as channel-bars, as clearly shown in the various views, said members being provided with upper and lower flanges. The advantage of such structural form, which may also include I-beams, Z-bars, &c., is that the upper flanges provide bearing-surfaces for the flanges of the rail, the lower flanges provide bearing-surfaces adapted to rest upon the ballast, while the intervening web portions provide inclosing sides between which the intervening supplemental bearing-blocks may be secured by bolts, rivets, or in any other suitable manner.

The side members 2 are preferably provided with shouldered recesses 3, adapted to receive the flanges of the rail 4, as clearly shown in Fig. 3, said recesses being pressed or rolled in the side members in the process of their manufacture, as will be readily understood and as clearly indicated in Fig. 2. Ordinarily the recesses 3 should be of a width corresponding to the width of the flanges of the rail to be used, so that the rail-bases will fit neatly therein; but in practice these recesses may be made of a sufficient width to receive the heaviest weight of rail or slightly larger, thereby adapting the tie to be used with any weight of rail. In such cases the ties are laid in the manner indicated in Fig. 4, whereby the flange at one side of the tie will bear against one of the shoulders at one side of the recess and on the next adjacent tie the opposite flange will bear against the opposite shoulder, the next adjacent tie and each alternate tie being arranged in the same manner as the first, the intervening ties being located like the second tie. The advantage of this construction is that the rail is positively engaged by the shoulders of the upper flanges of the ties alternately on opposite sides throughout the length of the track, thereby firmly bracing the rails at both sides and positively preventing their displacement or spreading.

Between the members 2 at each end of the tie and in positions corresponding to the positions of the rails are the blocks 5, of wood or any other suitable material, rigidly held between the sides 2, against which they fit by bolts or rivets 6 6 or otherwise. The blocks are also firmly held against longitudinal movement by their engagement against the under shoulders 7, formed in the lower sides of the upper flanges, the blocks being suitably cut out to provide clearance for the depressed portion of said flanges. The blocks 5 are also preferably cut out or recessed in their upper portion, as indicated at 8, to receive the rail-flanges and on the same level as the recesses 3 of the side members. If preferred, the surface of recesses 8 in the block may be slightly above the metal surfaces of recesses 3, thereby providing for some compression of the block and giving a resilient cushion for the rails. By this construction it will be seen that the rails may be spiked down upon the blocks 5 in the manner customarily employed with the usual wooden ties, and when assembled as shown and described the tie will constitute one practically solid construction from end to end of great rigidity and having all of the desirable qualities of a wooden tie. It will be observed that the lower portions of the blocks 5 will make solid bearing contact with the ballast of the road, which may also be tamped solidly

around, underneath, and above the lower bearing-flanges, while the center portion of the tie being open the construction thereby effectually prevents the tie from becoming center-bound. It will be understood also that the intermediate bearing members 3 may be made in one continuous piece, although I prefer to make them separate for the reasons stated.

While I prefer the construction just described, wherein the upper portion of the side members 2 and the block 5 are recessed, it is obvious that these surfaces may be left smooth and unrecessed, as indicated in Fig. 6, the tie merely resting and being secured upon said upper surface. Good results may be secured by such construction, which would not constitute a departure from the invention.

In Fig. 7 I have shown an arrangement wherein the side members 2′ are provided with flanges at each side, as in an I-beam, and it is obvious that the upper flanges may be also double, if preferred.

The advantages of the invention will be appreciated by all those accustomed to this class of devices. It is very simple and inexpensive in construction by reason of the facility with which the blocks 5 may be renewed, if worn or decayed, at small expense. The life of the tie is very much extended. It may be transported or laid in place in the ordinary way and by the use of unskilled labor and will be found to secure all of the advantages, as to resiliency, &c., of a wooden tie, with the additional advantages hereinbefore noted.

Various changes or modifications may be made in the invention by the skilled mechanic; but all such are to be considered as within the scope of the following claims.

What I claim is—

1. A tie consisting of outer structural members provided with depressed shouldered rail-receiving recesses and an intervening rail-bearing block, with means for securing said parts together, substantially as set forth.

2. A tie consisting of outer vertically-arranged flanged members provided upon their upper sides with shouldered recesses formed by depressing the metal of the flanged members adapted to receive the rails of a track, with an intervening rail-bearing block, and means for securing said parts together, substantially as set forth.

3. In a tie, the combination of outer vertically-arranged flanged members provided on their upper sides with shouldered recesses adapted to receive the rails of a track, formed by pressing the flanges downwardly, an intervening rail-bearing block engaging said downwardly-pressed flanges, and means for securing said parts together, substantially as set forth.

4. In a tie, the combination of outer vertically-arranged flanged members provided on their upper sides with depressed shouldered seats below the general plane of the flanged members adapted to receive the rails of a track, intervening rail-bearing blocks having bearing-surfaces on the same plane as said seats and securing-bolts passing through the webs of said flanged members and blocks whereby the parts are held rigidly together, substantially as set forth.

5. In a tie, the combination of outer vertically-arranged flanged members provided on their upper sides with shouldered recesses adapted to receive the rails of a track, intervening rail-bearing blocks provided with corresponding recesses adapted to securely support the rails and to receive driven holding-spikes, and securing-bolts passing through the webs of said flanged members and blocks whereby the parts are held rigidly together, substantially as set forth.

6. In a tie, the combination of two structural metal sides having upper horizontal flanges, rail-bearing seats and shoulders formed below the general plane of said flanges, intervening rail-bearing blocks having their upper bearing-faces on a plane with said seats and adapted to receive holding-spikes, and holding-bolts passing through the webs of said flanged members and blocks, substantially as set forth.

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

MILTON BARTLEY.

Witnesses:
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