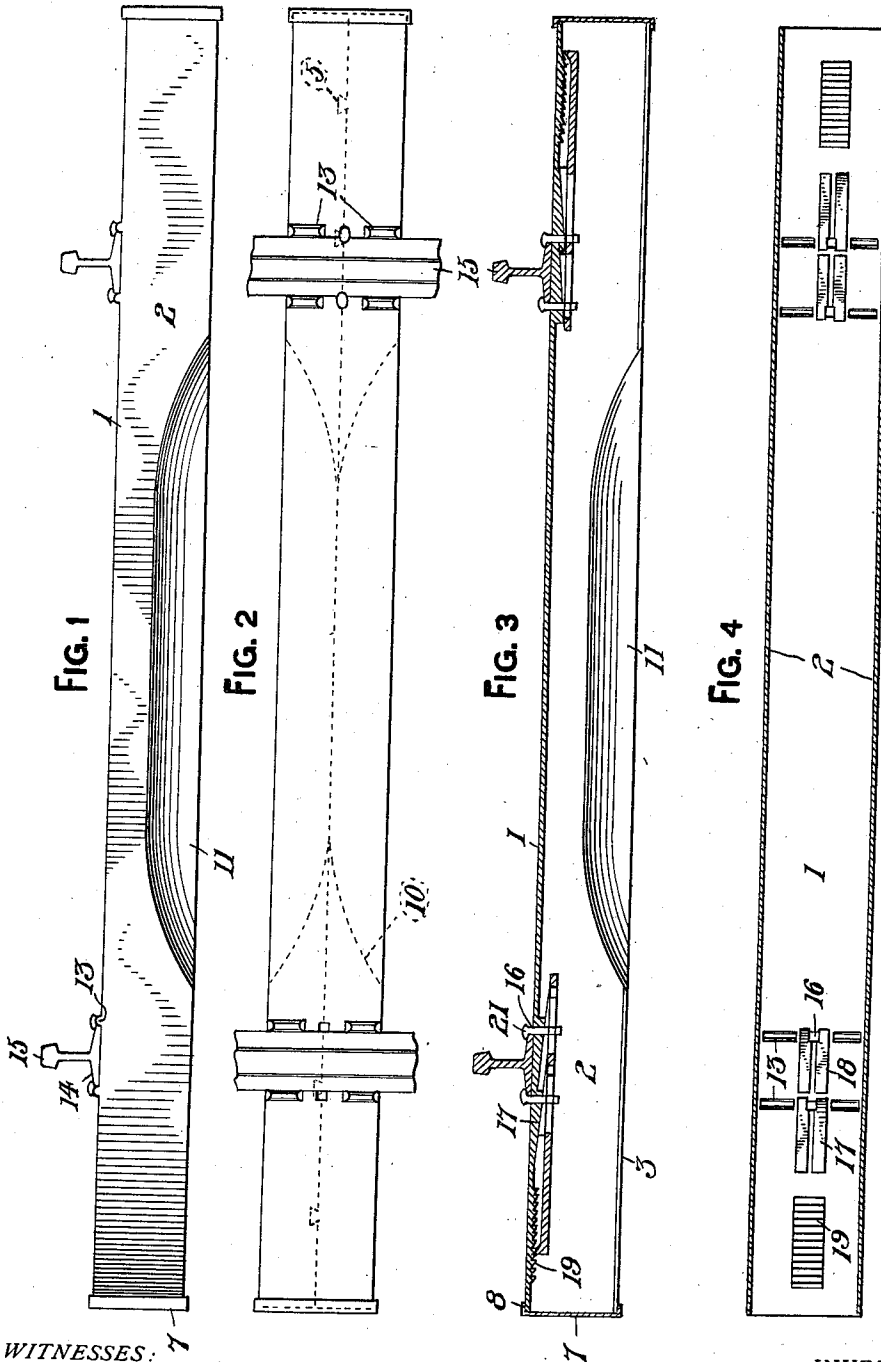


W. J. SHELDON.
METALLIC TIE AND RAIL FASTENER.
APPLICATION FILED JUNE 17, 1911.

1,008,868.

Patented Nov. 14, 1911.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

FIG. 5

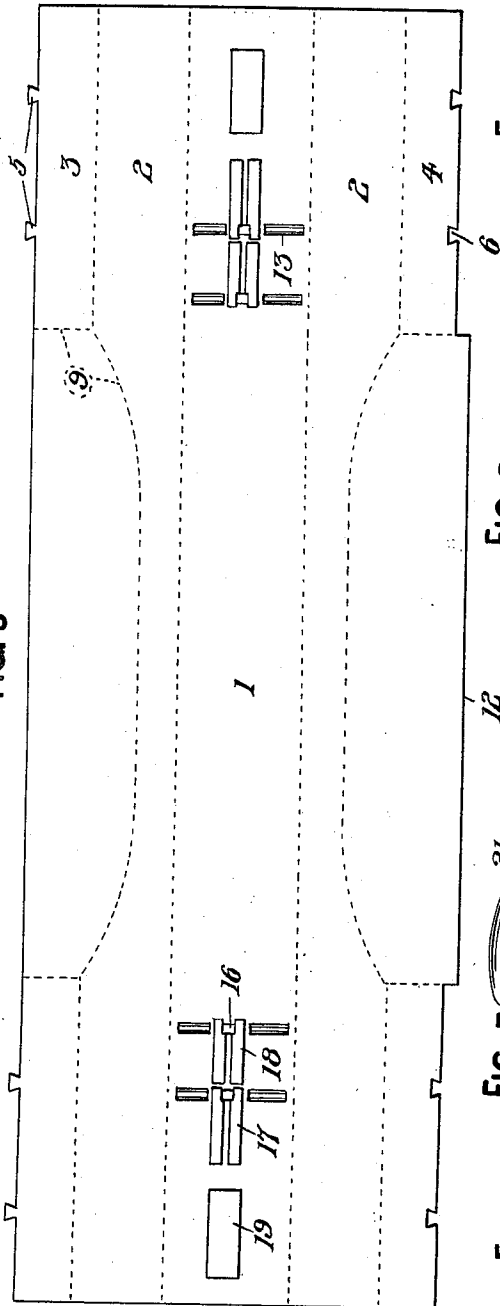


FIG. 6

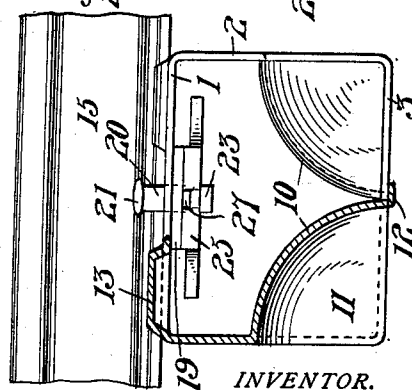


FIG. 7



FIG. 9

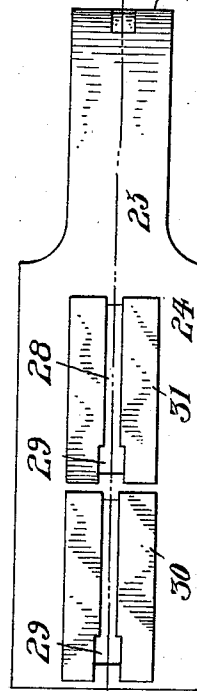


FIG. 11

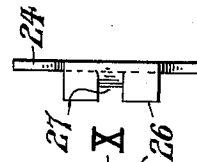
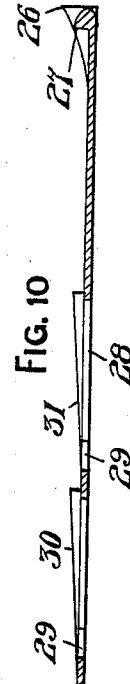


FIG. 10



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UNITED STATES PATENT OFFICE.

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METALLIC TIE AND RAIL-FASTENER.

1,008,868.

Specification of Letters Patent.

Patented Nov. 14, 1911.

Application filed June 17, 1911. Serial No. 633,668.

To all whom it may concern:

Be it known that I, WILLIAM JOHN SHELDON, a citizen of the United States of America, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Metallic Ties and Rail-Fasteners, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to metallic ties and rail fasteners, and the object of my invention is to obviate the necessity of using wooden ties or sleepers, spikes or bolts and nuts as the supporting fastening means of a track.

My invention aims to provide a tie and rail fastener having the following qualifications:—First, a tie possessing sufficient strength and firmness to support the great weight that travels over a railroad. Second, the requisite means of elasticity to prevent injury to the rolling stock of a railroad. Third, a tie having a bearing surface possessing the necessary superficial area for the adequate support of rails and which will afford sure and ready means for the fasteners of rails. Fourth, a tie that is extremely light, durable and can be manufactured at a minimum cost and installed by unskilled labor. Fifth, to furnish the tie with a fastener that will prevent lateral and vertical displacement of rails mounted thereon. Sixth, to provide a fastener that may be repeatedly adjusted to compensate for wear. Seventh, to provide an inexpensive and durable fastener that will preserve the alinement of rails and allow for expansion and contraction of the same.

The tie and rail fastener having the above characteristics will be hereinafter specifically described and then claimed, and reference will now be had to the drawings, wherein like numerals denote corresponding parts throughout the several views, in which:—

Figure 1 is a side elevation of the tie. Fig. 2 is a plan of the same. Fig. 3 is a longitudinal sectional view of the tie. Fig. 4 is a horizontal sectional view looking at the under side of the top of the tie. Fig. 5 is a plan or developed view of a blank from which the tie is formed. Fig. 6 is an end view of the tie partly broken away and partly in section. Fig. 7 is an enlarged side elevation of a detached fastener. Fig. 8 is a

front elevation of the same. Fig. 9 is an enlarged plan of a detached locking member. Fig. 10 is a longitudinal sectional view of the same taken on the line X—X of Fig. 9, and Fig. 11 is an end view of the same.

A tie in accordance with this invention is made of an oblong blank of malleable metal which can be bent and shaped to provide a hollow oblong body having dimensions approximately the same as the present type of wooden tie. The body of the tie consists of a top plate 1, side walls 2 and inwardly projecting bottom flanges 3 and 4. These bottom flanges have the confronting or meeting edges thereof connected by dovetail tongues 5 and dovetail grooves 6, the former being carried by the flange 3 and the latter being formed in the flange 4. The tongues and grooves are adjacent to the ends of the tie and to further maintain the rectangular formation of the tie the ends thereof are provided with caps 7 having flanges 8 fitting over the ends of the tie. The side walls 2 and the flange 3 intermediate the ends thereof, are bent upon the dotted lines 9 to provide inwardly projecting strength reinforcing portions 10, these portions providing cavities 11 adapted to receive the ballast of a roadbed. Besides strengthening and adding rigidity to the tie, these portions have the advantage of preventing lateral displacement or spreading of one tie relatively to another, and in consequence of such advantage, the tie can be advantageously used upon mountainous roadbeds where land slides and washouts often occur. The flange 4 has an extension 12 to overlap the edge of the flange 3 forming the portion 10, as best shown in Fig. 6 of the drawings.

The top plate 1 of the tie is punched or stamped, adjacent to the ends thereof, to provide sets of upwardly projecting transverse ribs 13 adapted to engage the edges of the base flanges 14 of rails 15 set upon the tie between said ribs. The top plate 1 of the tie is furthermore punched to provide fastener openings 16 between the confronting ends of the ribs 13. The under side of the top plate 1 is provided with integral beveled sets of enlargements 17 and 18, the former being located adjacent to the outer ends of the tie and the latter at a point beneath the rail seats of the tie. The top plate 1 has additional enlargements that are

toothed or serrated to provide racks 19 contiguous to the outer ends of the tie, and the object of these racks will hereinafter appear.

5 The reference numeral 20 denotes fasteners rectangular in cross section and adapted to fit in the openings 16. The fasteners have the upper ends thereof provided with heads 21 somewhat similar to spikes, said
10 heads overlapping the base flanges 14 of the rails 15. The lower ends of the fasteners 20 have the side walls thereof cut away, to provide gripping heads 23 at the lower ends of the fasteners.

15 To retain the fasteners in engagement with the tie, whereby the rails will be held upon the tie, I employ locking members, each member comprising a plate 24 having the outer end thereof narrowed, as at 25
20 and provided with transverse teeth 26 and an intermediate lip 27, the lip 27 being of a less depth than the teeth 26 to permit of an instrument, as a crowbar being inserted between the confronting ends of the teeth
25 26. The plate 24 is provided with longitudinally alining slots 28 and the inner ends of said slots are enlarged to form openings 29 adapted to receive the lower ends of the fasteners 20. The top of the plate 24, at
30 the sides of the slots 28 and the openings 29, is provided with sets of beveled enlargements 30 and 31, said enlargements being beveled reversely to the enlargements 17 and 18.

35 After the rails have been positioned upon the tie and the fasteners 20 placed in the openings 16, the locking members are then placed in the ends of the tie prior to placing the caps 7 thereon. The locking mem-
40 bers receive the lower ends of the fasteners 20 in the openings 29 and then by pushing inwardly upon the locking members, said members ride upon the shoulders 32 of the heads 23 of the fasteners. As the members
45 are pushed inwardly the enlargements 30 and 31 engage the enlargements 17 and 18 respectively of the tie and as the faces of such enlargements are beveled the locking members will be forced downwardly to draw
50 the fasteners downwardly in the openings 16 and thereby snugly hold the heads 21 of the fasteners in engagement with the base flanges of the rails 15. As the inward movement of the locking members progresses the
55 teeth 26 recede over the racks 19 until the locking members have been driven home or as far inwardly as possible, when the locking members will be firmly held in position. The caps 7 can then be placed upon the ends
60 of the tie and the tie tamped in the ballast of a roadbed.

When it is desired to remove the rails from the tie, the caps 7 are removed and a suitable instrument as a crowbar inserted
65 between the teeth 26 of the locking members

to force the ends of the members downwardly to move the teeth 26 out of engagement with the racks and allow the instrument to grip the lip 27 of each member and assist in pulling the members outwardly to
70 release the fasteners 20.

From the foregoing it will be observed that the locking members are concealed within the tie and not subjected to the weather or to injury by brake riggings or
75 other parts of rolling stock contacting with the same. It is practically impossible for the fasteners to be sheared off and these fasteners cooperate with the ribs 13 in maintaining the rails in alinement and the track
80 of a prescribed gage. It is apparent that a less number of ties can be used than is the present practice and that in obviating the use of bolts and nuts the service of a track-walker can be dispensed with.
85

I would have it understood that the invention is susceptible of such variations as fall within the scope of the appended claims.

What I claim is:—

1. In a metallic tie and rail fastener, an
90 oblong hollow metallic body having the side walls thereof provided with reinforcing portions, transverse ribs carried by the top of said body and adapted to engage the base flanges of rails, fasteners adapted to extend
95 through the top of said body and hold the base flanges of rails thereon, racks carried by the under side of the top of said body, and locking members adapted to be shifted into engagement with the lower ends of said fasteners and engaging said racks.
100

2. In a metallic tie and rail fastener, an oblong hollow metallic body adapted to support rails, depending beveled enlargements carried by the under side of the top of said
105 body, fasteners adapted to extend through the top of said body and retain rails thereon, locking members arranged in said body and adapted to engage the lower ends of said fasteners, beveled enlargements carried by said
110 locking members and adapted to engage the enlargements of said body, and means carried by the under side of the top of said body and adapted to be engaged by said members to retain said members in a locked
115 position.

3. In a metallic tie and rail fastener, an oblong metallic hollow body having the side walls thereof provided with longitudinal reinforcements adapted to anchor the body in
120 a roadbed, caps detachably mounted upon the ends of said body, transverse ribs carried by the top of said body and adapted to engage the base flanges of rails mounted thereon, fasteners extending through the top
125 of said body, locking members adapted to engage the lower ends of said fasteners, means carried by said body and by said members and adapted to draw said fasteners into said body by an inward movement of
130

said members, and means carried by said tie and adapted to lock said members therein.

4. In a metallic tie and rail fastener, an oblong metallic tie body adapted to support
5 rails, depending beveled enlargements on the under face of the top of said tie body, fasteners engaging the base flanges of the rails and extending into said body, locking members detachably mounted in said body and
10 adapted to engage the lower ends of said fasteners, beveled enlargements carried by

said locking members engaging the enlargements of the tie body, and means arranged within said body and adapted to lock said members therein.

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

WILLIAM JOHN SHELDON.

Witnesses:

J. R. HAHN,

HERMAN C. HOLTZWARTH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."