

W. G. HOWE & D. J. McDONALD.

RAILWAY TIE.

APPLICATION FILED JAN. 17, 1912.

1,044,389.

Patented Nov. 12, 1912.

Fig. 1,

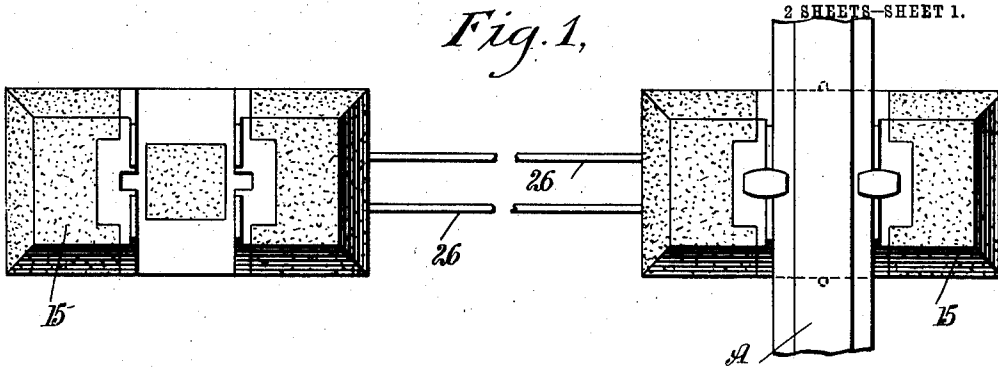


Fig. 2,

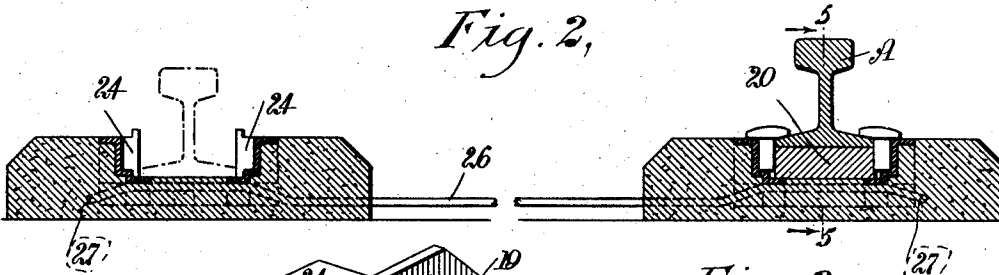


Fig. 3,

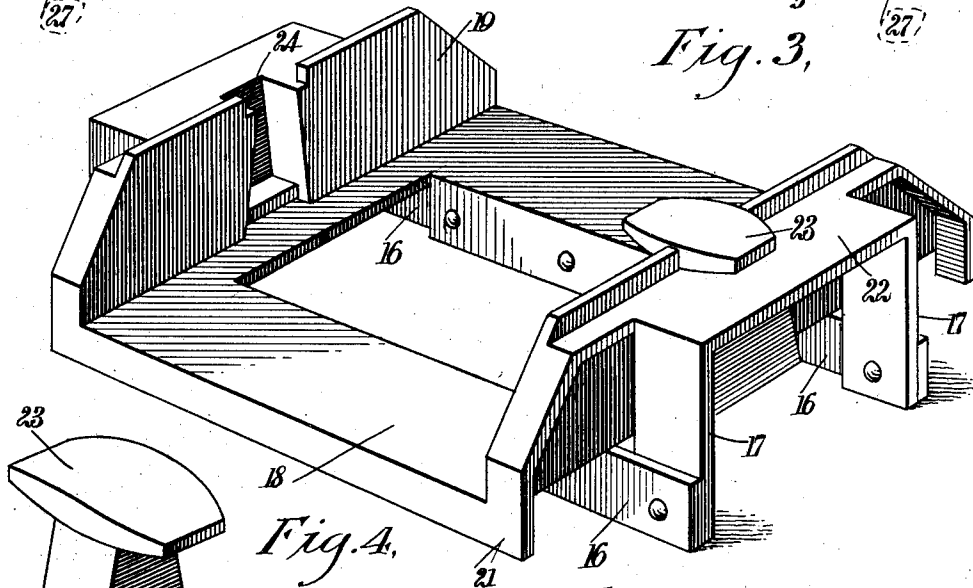


Fig. 4,

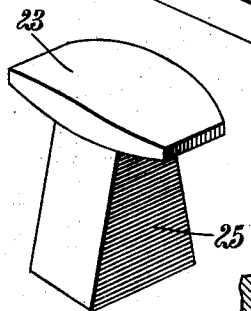
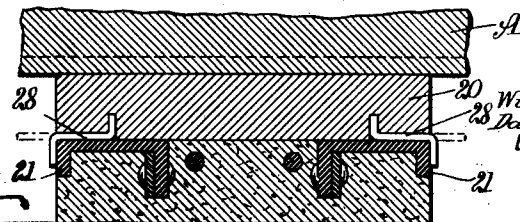


Fig. 5.



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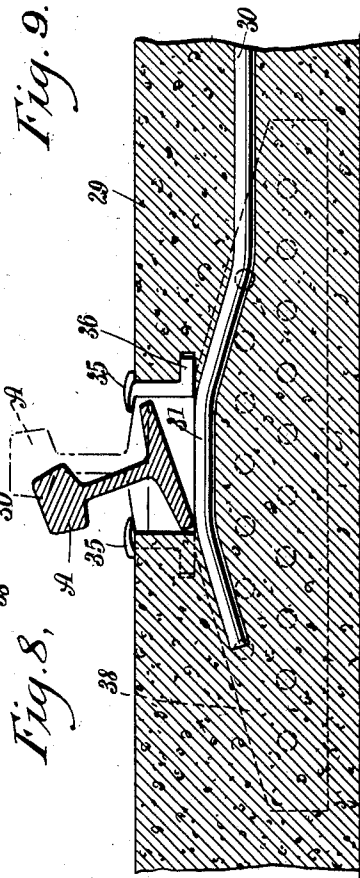
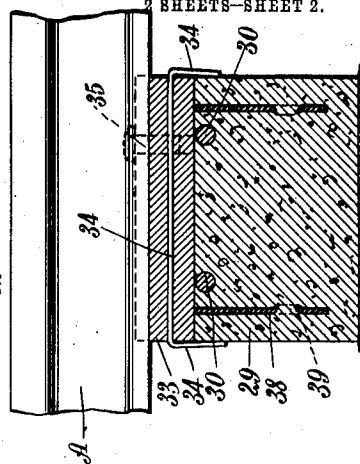
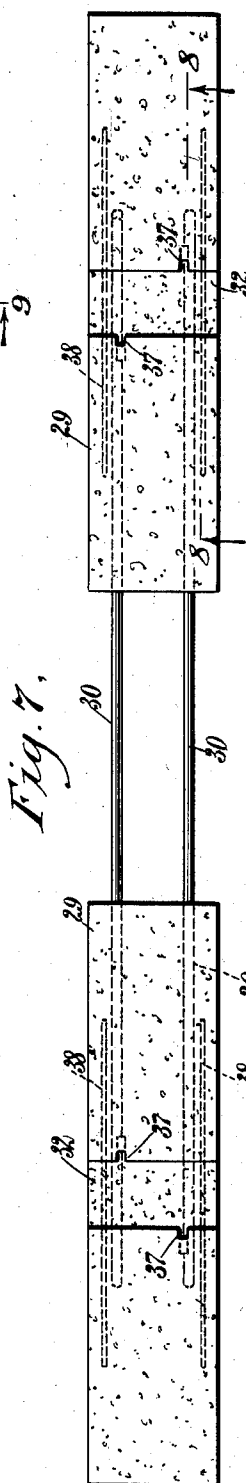
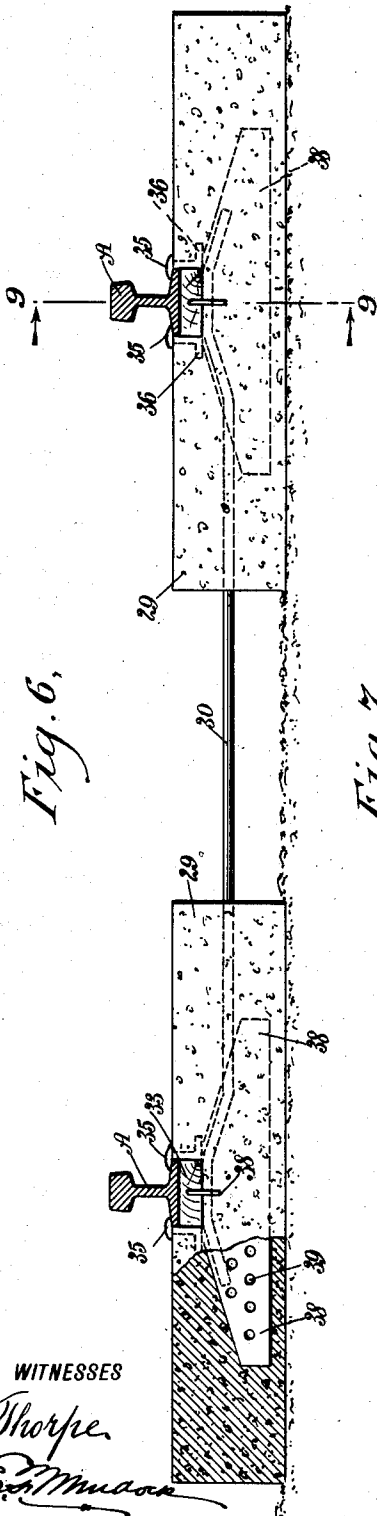
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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

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RAILWAY-TIE.

1,044,389.

Specification of Letters Patent.

Patented Nov. 12, 1912.

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To all whom it may concern:

Be it known that we, WILLIAM G. HOWE and DANIEL J. McDONALD, citizens of the United States, and residents of Culebra, Canal Zone, Panama, have invented a new and Improved Railway-Tie, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide ties of the character mentioned, wherein the life of the article is prolonged; to provide ties in part constructed of concrete, the concrete being reinforced to support service strains; to provide a structure of the character mentioned adapted for rapid installation; to provide cushions for the railway rails, interposed between the rails and concrete structure to save the said rails and structure from the extra wear occasioned by pounding of the rail on the ties; and to provide fastenings for securing the rail to the ties, which fastenings are readily installed in position.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a plan view, showing, in conjunction with a fragment of railway rail, a railway tie constructed and arranged in accordance with the present invention; Fig. 2 is a vertical longitudinal section of the same, showing in full lines and in section a railway rail in service position, and in broken lines a railway rail in the position preliminarily set for adjustment to service position; Fig. 3 is a detail view, on an enlarged scale, in perspective, showing a metal saddle forming part of the present invention; Fig. 4 is a detail view, on an enlarged scale and in perspective, showing a rail spike constructed and arranged in accordance with the present invention; Fig. 5 is a vertical cross section, on an enlarged scale, taken on the line 5—5 in Fig. 2; Fig. 6 is a side view of a modified form of railway tie, constructed and arranged in accordance with the present invention, showing in conjunction therewith and in section, the railway rails in service position; Fig. 7 is a top plan view of the form of tie shown in Fig. 6, the railway rails being removed; Fig. 8

is a detail view on an enlarged scale and in vertical longitudinal section, showing one of the blocks and a railway rail in the position in which it is adjusted preliminarily to being raised to the service position shown in broken lines in the same figure; and Fig. 9 is a cross section, on an enlarged scale, taken on the line 9—9 in Fig. 6.

As shown in the accompanying drawings, the preferred form of tie consists in two blocks 15, 15. The blocks 15 are preferably constructed from hydraulic cement, cast in shape about reinforce bars 16, 16 and uprights 17, forming a portion of saddles 18. The saddle 18 is provided with side pieces 19, which, together with the floor of the saddle, constitutes a channel wherein is disposed in service position a cushion block 20. To further reinforce the saddle 18, I have provided a flange 21, which, at the upper portion thereof, is enlarged to form a plate 22 to support the thrust of a spike 23. To hold the spike 23, the saddle is provided at each side with a dovetailed recess 24. The dovetailed recesses 24 are let into the side pieces 19 sufficiently deep to permit the passage upward between the shank 25 of each spike 23, to dispose the flange of the rail under the overhang of the heads of the spikes 23. Coincident with the casting of the blocks 15, tie-rods 26 are cast to remain in the said blocks 15. To anchor the rods 26 in the blocks 15, the rods are provided with bent sections 27, shown best in Fig. 2 of drawings.

When installing the rails A, the same are preliminarily disposed in the channels formed in the saddles 18. The spikes 23 are next adjusted in the recesses 24. The flange of the rail A, resting on the floor of the saddle 18, permits the introduction of the shank 25 into the recesses 24. The rails A are next lifted to permit the insertion thereunder of the cushion block 20. The block 20 is preferably constructed of wood, to form a proper cushion for the rails A. If necessary, the blocks 20 may be trimmed to more snugly fit below the rails A.

It is to secure the blocks 20 in position in the saddles 18 that each block is provided with clips 28, 28. The clips 28, 28 are constructed preferably from any suitable band of metal, which, after the block 20 is driven into position, may be turned from the

straight position, as shown in broken lines in Fig. 5, to the downward lapped position shown in full lines in said figure, the outer ends of said clips lapping the flanges 21 of the saddle 18. The clips 28 are provided with up-turned extensions, which are driven into the body of the blocks 20 prior to inserting the same under the rails A and within the saddle 18.

When the blocks 20 are disposed in service position, and secured within the saddle 18, it will be found that the flanges of the rail A are firmly pressed against the overhang of the spikes 23, and that the rails are securely held in position.

In Figs. 6 to 9 of the drawings is shown a modified form of the invention. In the modification illustrated, the blocks 29, 29 are each provided with a seat 32, which seat is formed by casting or otherwise forming a recess extended transverse the said block, at the top thereof. The depth of the said recess varies to suit service conditions. The seat 32 is provided to preliminarily support the cushion 33 upon which rests the railway rail A. The cushions 33 are preferably constructed of wood, as being the material best suited to the conditions of railway traffic. It will be understood, however, that cushions constructed from any other material may be substituted for the wooden cushions shown in the accompanying drawings. The said cushions 33 are provided with retaining rods 34, which are bent down, as best seen in Fig. 9 of the drawings, to overlap the sides of the blocks 29.

The rails A are held in position on the blocks 29 by means of spikes 35. The spikes 35, as best seen in Fig. 8 of the drawings, are provided with perpendicular anchoring extensions 36 which extend within pockets formed in the blocks 29, in line with the perpendicular slots 37, which are formed in the perpendicular sides of the recess in the seat 32.

The plates 38 are cast in the blocks 29, to reinforce the same. The plates are preferably provided with perforations 39, through which the ingredients composing the blocks 29 pass to form holding buttons or retaining devices for the plates 38, thereby incorporating more intimately the said plates into the structure of the blocks 29.

As will be noticed in the drawings, the intermediate space between the connected blocks permits the introduction therebetween of comminuted rock or other suitable ballast for the roadbed. The open space between the rods 26, or 30 affords the necessary facilities and room for the tamping of the said ballast, and the leveling or truing of the roadbed. Because of this construction, it will be understood that each, or both, of the blocks 15 and 29 may be elevated and rammed to raised or lowered position, as

would the ends of the ordinary wooden ties. Further, that by thus providing shortened blocks at the ends of the ties, to leave an intermediate space, saves labor in the installation of the tie, it being necessary only to pack or ram the block portion of the said tie when truing the roadbed. It will also be observed that the length of the blocks 15 and 29 is determined by the service conditions, and thereby the cost of manufacture of the said ties is reduced to its lowest practical margin.

If, during the operation of the road, it is found that the cushions 33 have become worn or flattened, it will be understood that, without removing the rail A, the said cushions 33 may be removed and replaced, the ends of the rods 34 being lifted to permit the driving of the said cushions from their seats 32. It will also be understood that in the operation of truing the rails, the cushions may be handled, as is common in all blocking, by wedging thinner and suitable extra pieces below or above the said cushions.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. In a railway tie having concrete supporting blocks, a mounting for a track rail comprising a metal saddle shaped to form a guide channel to receive the flange of the track rail and a cushion block therefor; recesses having overhung walls formed in the vertical portions of said saddle to hold rail fastening devices; a plurality of fastening devices to fit within said recesses and having projecting members to extend over the flange of said track rail; and a wearing block to fit said channel below the flange of said rail adapted to raise the flange of said rail into contact with said fastening devices.

2. In a railway tie, the combination of a plurality of rail supporting blocks, each block constructed from cement; a plurality of metallic saddles, each saddle being incorporated in one of said blocks and each of said saddles having raised sides with recesses laterally extended therein for rail-holding keys; metal tie members rigidly connecting said blocks and cushion blocks to fit within said saddle below said rails.

3. In a railway tie, the combination of a plurality of rail supporting blocks, each block constructed from cement; a plurality of metallic saddles, each saddle being incorporated in one of said blocks and each of said saddles having raised sides with recesses laterally extended therein for rail-holding keys; metal tie members rigidly connecting said blocks and cushion blocks to fit within said saddle below said rails, and hook members mounted in said cushion blocks to be turned thereover, to hold said cushion blocks in service position.

4. In a railway tie such as described and

in combination a concrete block; a metal saddle mounted upon said block, said saddle having raised sides and lateral recesses formed therein, said recesses having over-
 5 hanging sides; a plurality of rail-holding members having spike heads and downwardly flaring shanks to fit within said recesses, said shanks being shortened to extend above the flange of the railway rail when
 10 said rail rests at the bottom of said saddle to provide means for removing laterally said spike members from said recesses, and a cushion block constructed from relatively
 15 resilient material adapted for driving or forcing between said railway rail and the bottom of said saddle to lift said railway rail in holding relation with said spike members.

5. In a railway tie such as described and
 20 in combination a concrete block; a metal saddle mounted upon said block, said saddle having raised sides and lateral recesses formed therein, said recesses having over-
 25 hanging sides; a plurality of rail-holding members having spike heads and downwardly flaring shanks to fit within said recesses, said shanks being shortened to extend above the flange of the railway rail when
 30 said rail rests at the bottom of said saddle to provide means for removing laterally said spike members from said recesses, and a cushion block constructed from wood adapted to bear the said saddle under the railway

rail and to lift the same against and under the heads of said spike members. 35

6. In a railway tie such as described and in combination a concrete block; a metal saddle mounted upon said block, said saddle having raised sides and lateral recesses formed therein, said recesses having over-
 40 hanging sides; a plurality of rail-holding members having spike heads and downwardly flaring shanks to fit within said recesses, said shanks being shortened to extend above the flange of the railway rail
 45 when said rail rests at the bottom of said saddle to provide means for removing laterally said spike members from said recesses, a cushion block constructed from wood adapted to bear the said saddle under
 50 the railway rail and to lift the same against and under the heads of said spike members, and a plurality of metallic clip fasteners mounted in said cushion block and adapted to be turned down and over the side of said
 55 saddle when said cushion block is in service position.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM GARFIELD HOWE.

DANIEL JOSEPH ^{his} X McDONALD.
 mark

Witnesses:

C. H. MANN,
 R. C. WORSLEY.