May 5, 1925. 1,536,674

C. JONES

RAIL TIE

Filed Sept. 24, 1924

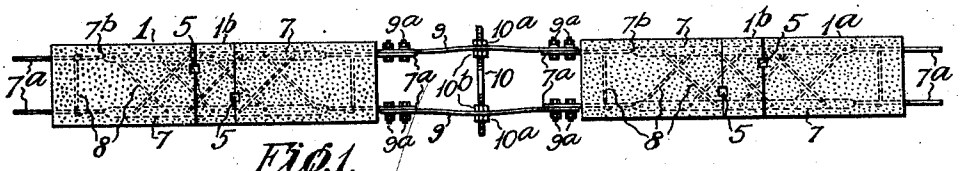


Fig. 1.

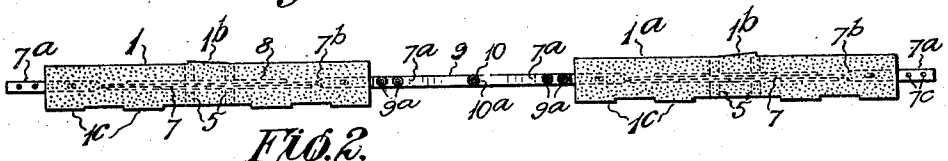


Fig. 2.

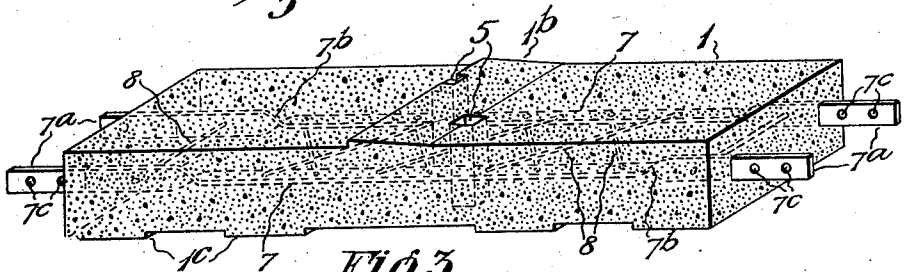


Fig. 3.

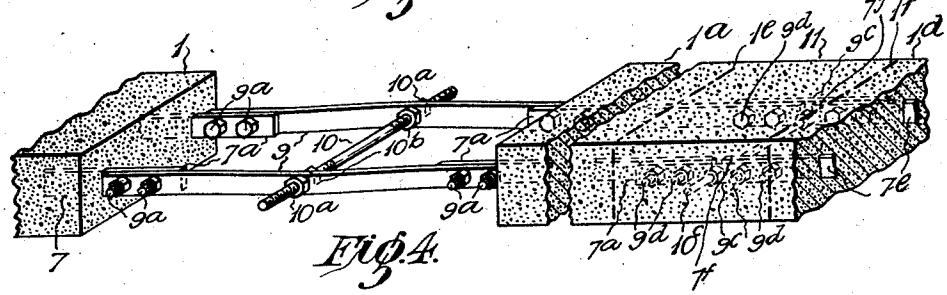


Fig. 4.

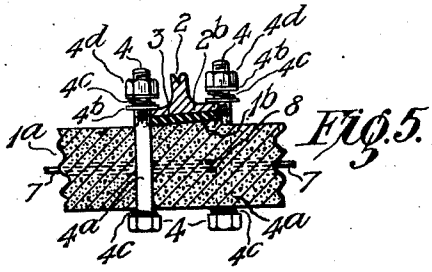


Fig. 5.

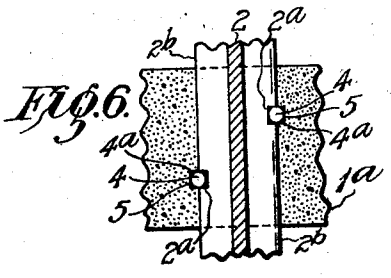


Fig. 6.

CHARLES JONES

INVENTOR:

BY

HIS ATTORNEY.

Patented May 5, 1925. 1,536,674

UNITED STATES PATENT OFFICE.

CHARLES JONES, OF GEELONG, VICTORIA, AUSTRALIA.

RAIL TIE.

Application filed September 24, 1924. Serial No. 739,497.

To all whom it may concern:

Be it known that I, CHARLES JONES, a subject of the King of Great Britain and Ireland, residing at Sidonia, 26 Marshall Street, Chilwell, Geelong, in the State of Victoria, Commonwealth of Australia, have invented certain new and useful Improvements in Rail 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.

By this invention I improve upon permanent way rail ties made of reinforced concrete. I claim no particular concrete mixture, but prefer to use as an ingredient pumice stone to reduce weight, the reinforcement ensuring strength. The concerete is not necessarily of the same quality throughout, as its surfacing may advantageously be of stronger and of more waterproof cementitious materials than the interior.

My rail tie is of compound block type, that is there are two main blocks, each of any desired pattern and dimensions, connected as will be described.

In the drawings herewith I illustrate my rail tie, but there could be modifications of some of the details shown within the scope of my claims.

Figure 1 is a plan of the rail tie.

Figure 2 is a front view of the rail tie.

Figures 3 to 6 are on a larger scale.

Figure 3 is a perspective view of one of the concrete blocks.

Figure 4 is a perspective view showing the two blocks connected, also showing one block elongated.

Figure 5 is a view in section of part of a rail tie under a chair which is under a rail the base of which is shown.

Figure 6 is a plan of the parts in Figure 5, but with the nuts and washers removed.

The concrete blocks are most easily transportable before they are connected; connection can be made at the place of laying; the rail tie will then stand hard usage.

In these drawings 1, 1^a are blocks of reinforced concrete, either or both being when desired elongated. Each has a top surface 1^b on which will be located a chair 3 of suitable resilient material, as rubber, under a rail 2,—surface 1^b being inclined if and as required by engineering practice.

To allow of insertion of bolts 4 having stems 4^a of suitable, as of rectangular, section, there are holes 5 in each block; and there are recesses 2^a in the rail webs 2^b when desired to enable each rail 2 to be restrained from creeping longitudinally.

Each bolt is shown with a plain washer 4^b, a resilient washer 4^c, and a fastening nut 4^d. The space around each bolt will in some cases be filled with grouting.

On the underside of each block I provide at will ribs 1^c extending across the rail tie. These ribs are a form of roughening of the surface their purpose being to grip the ground or foundation.

In each block 1, 1^a, I embed the bodies of longitudinal reinforcing bars 7, each bar having ends 7^a which project at the respective ends of each block. These ends are to be coated with anti-rust material in suitable cases. These bars are made irregular, as by twisting at 7^b, the irregular parts being embedded in the concrete to resist tendencies to longitudinal displacement of the bars.

In each block there is also reinforcement 8 which connects the bars all the said reinforcement being assembled in a suitable mould, before all the concrete is added.

All the projecting ends of bars 7 are usable as handles for facilitating transport of the blocks until the latter are connected; but when connected, the outer end projections only are so usable.

To form the rail ties of two blocks with intermediate connections the blocks are assembled, and those bar ends which are then central are connected by attaching bars 9, as by bolts 9^a. Sets of bars 9 are then bolted together; thus 10 are screw-threaded bolts, each carrying a pair of outer nuts 10^a and a pair of inner nuts 10^b. The spacing apart of bars is regulated by positioning these nuts, and consequently the distance apart of the concrete blocks, the rail bolt holes, and ultimately of the rails.

From time to time the nuts 10^a, 10^b, will be adjusted upon the bolts to locate bars 9 parallel, or to locate them more or less out of parallel, to position the concrete blocks at a maximum distance apart, or if desired closer together. Fine adjustment of block positions can be effected in this way. Holes 7^c, in the ends 7^a facilitate the assembly, and may be bored at any appropriate time. The outside ends 7^a of a rail-tie may be covered with ballast to complete the track, and later on can be uncovered and used as handles to facilitate any desired adjustment

or removal of the rail-tie, or if it be desired to elongate the tie as next explained these projections can then be utilized. A wooden rail tie is often moved by first driving a pick into it and then using the pick as a handle or lever but that is not practicable with concrete ties.

In Figure 4 the extremity of block 1^a is shown by dotted line 1^e and the nearest extremity thereto of block 1^d mentioned in the next paragraph is shown by dotted line 1^f.

To elongate a tie bar, for use for example at a track intersection, at one or at both ends, I apply as the case may require, one or more extension blocks 1^d, an end of which is shown in Figure 4. Each extension block is of any suitable transverse cross sectional form or forms and length, and carries embedded bars 7^e having projecting ends 7^f. The extension is to be placed in position leaving any distance desired between it and the nearest block 1 or 1^a, the ends of the respective bars which project from the blocks, being connected either directly to one another, as when they overlap, this not being illustrated but clearly to be understood as a mechanically simple operation, or they are connected by means of bars 9^e and bolts as 9^d and 10^e each of any suitable length, when there is not such overlap. The space between the end of the block 1^d and the adjacent block, is to be filled in any suitable obvious manner with concrete 11 so that the rail tie is made continuous.

I claim:—

1. A rail tie of the character described, comprising spaced blocks for supporting rails, said blocks having projections, normally parallel links connecting the projections of one block with those of the other, and means for adjustably forcing said links out of parallelism to reduce the space between the blocks.

2. A rail tie as claimed in claim 1, including reinforcing bars passing through said blocks and projecting from the latter to form said projections.

3. A rail tie as claimed in claim 1, said means comprising a transverse member carried by said links, and means carried by said transverse member for altering the space between said links.

4. A rail tie as claimed in claim 1, said means comprising a transverse threaded member passing through said links, and nuts on said member adjacent each side of each link.

In witness whereof I have hereunto set my hand.

CHARLES JONES.

Witness:
GEORGE G. TURRI.