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J. CAMPBELL.
RAILWAY TIE.

APPLICATION FILED DEC. 5, 1906.

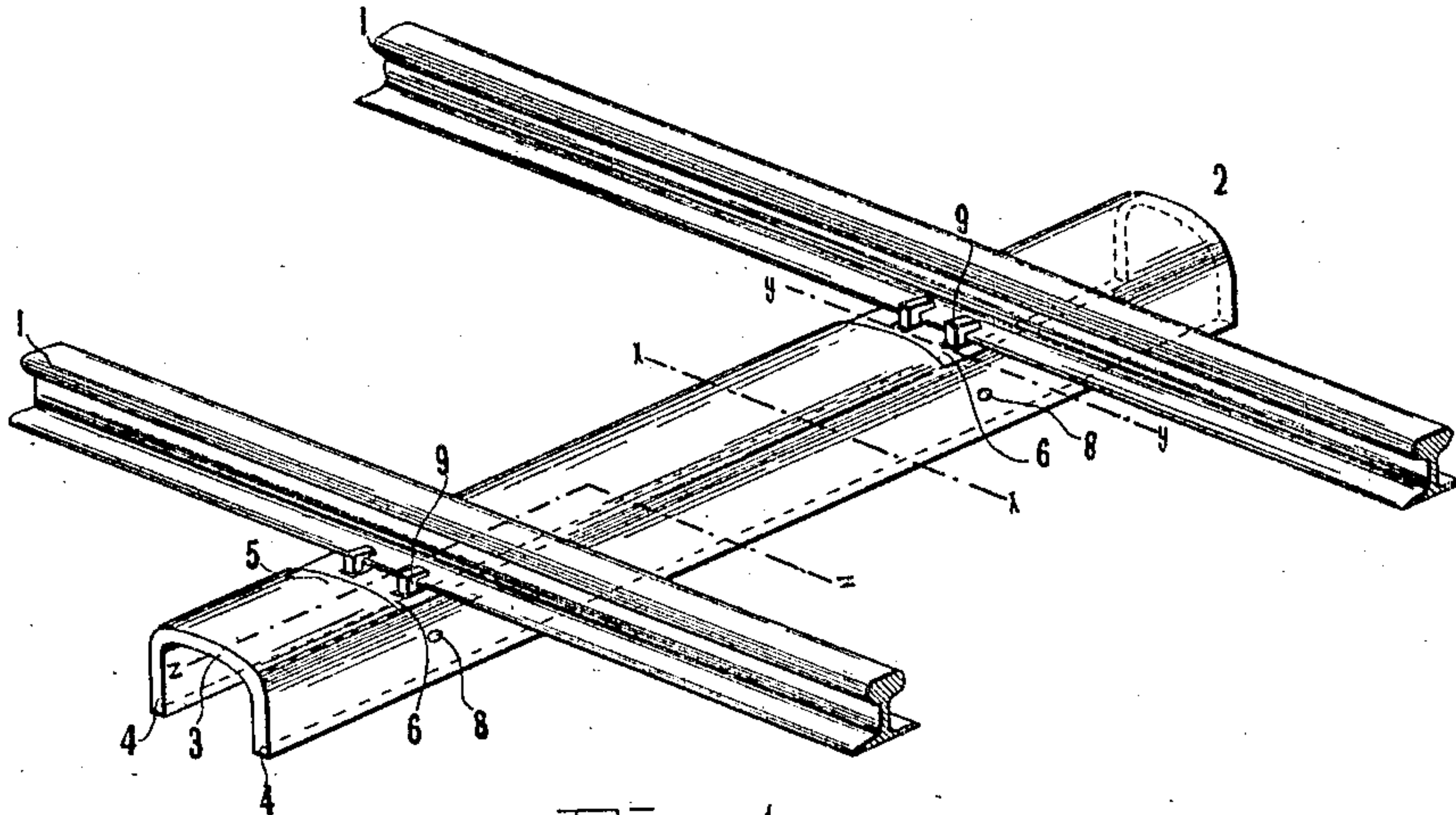


Fig-1

Fig-2

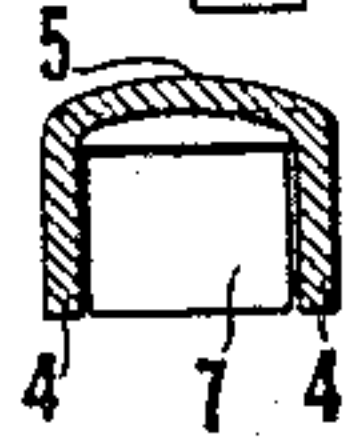


Fig-3

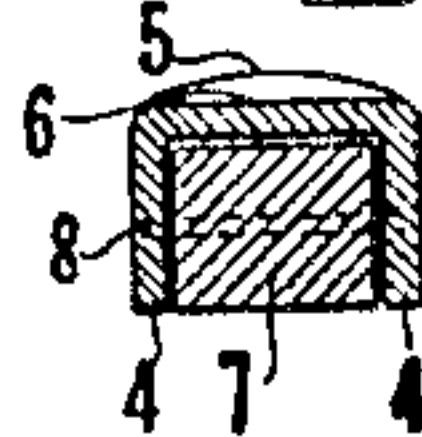


Fig-4

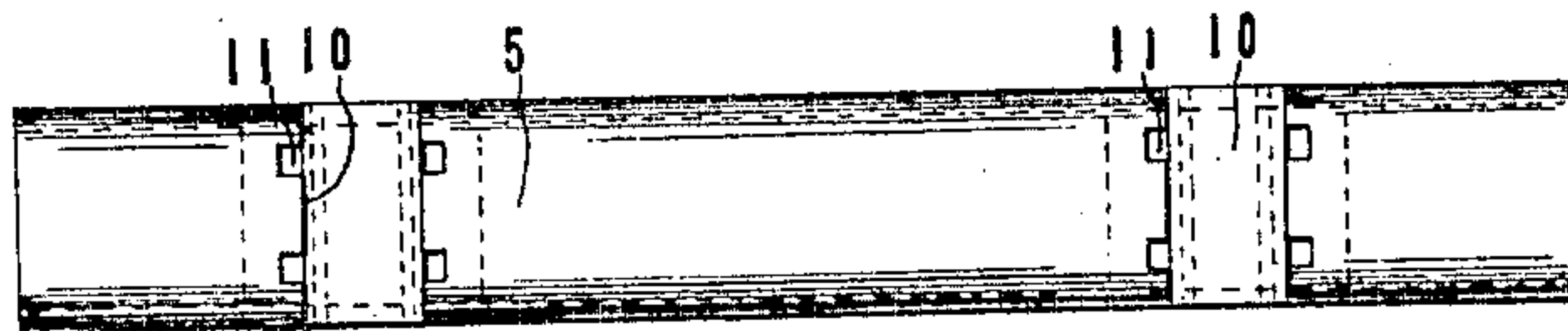
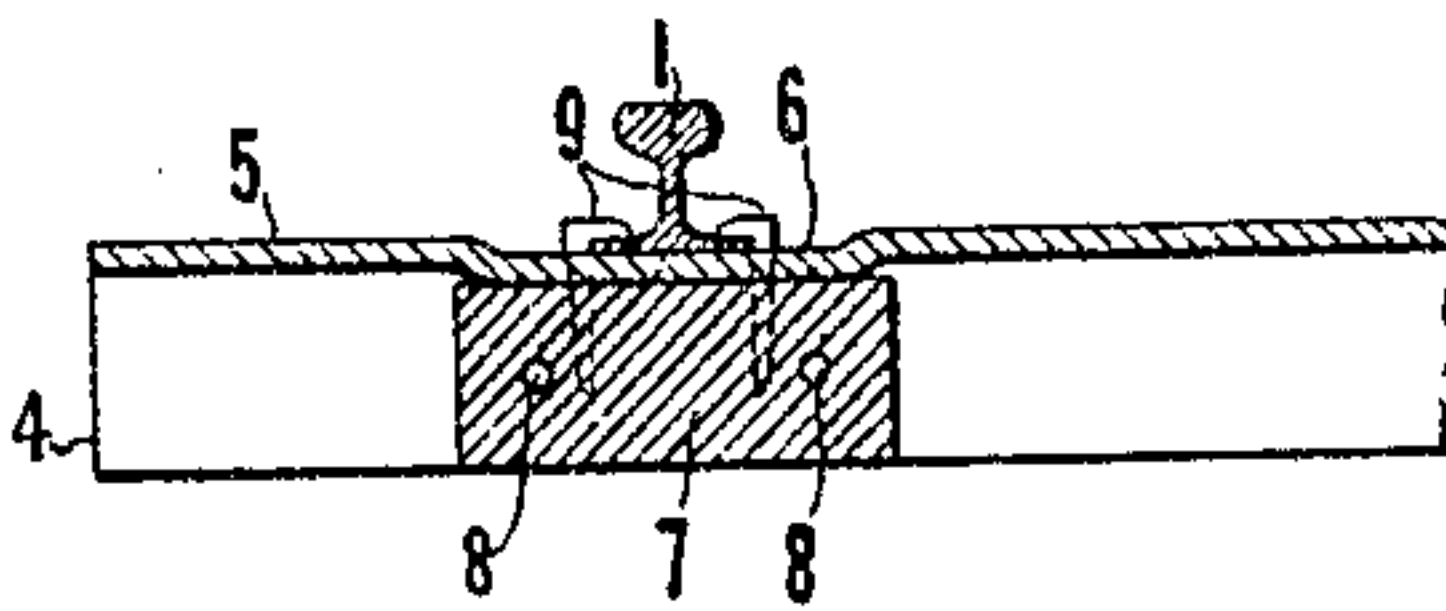


Fig-5

WITNESSES

Howard Perry
Arthur J. Green

INVENTOR

J. Campbell
BY *Duell, Warfield & Duell*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN CAMPBELL, OF HARRISBURG, PENNSYLVANIA.

RAILWAY-TIE.

No. 852,166.

Specification of Letters Patent.

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Application filed December 5, 1906. Serial No. 346,381.

To all whom it may concern:

Be it known that I, JOHN CAMPBELL, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Ties, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

10 This invention relates to railway ties and the like.

One of the objects thereof is to provide a device of the above nature, cheap in construction and efficient in use.

15 Another object is to provide a device of the above nature in which the chances of splitting, decay or warping are reduced to a minimum and durability and reliability correspondingly enhanced.

20 Another object is to provide a device of the nature first mentioned in which spikes of the well known and thoroughly tested type are employed and the necessity for dependence upon unreliable and complicated fastening means thus done away with.

Other objects will be in part obvious and in part pointed out hereinafter.

30 The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

35 In the accompanying drawing, wherein are shown one or more of various possible embodiments of the several features of my invention, Figure 1 is a perspective view of one of the same; Fig. 2 is a sectional view taken on the line $x-x$ of Fig. 1; Fig. 3 is a similar view taken on the line $y-y$ of Fig. 1; Fig. 4 is a longitudinal sectional view taken along the line $z-z$ of Fig. 1; Fig. 5 is a plan of a slightly different embodiment.

45 Similar reference characters refer to similar parts throughout the several views of the drawing.

50 Certain dominant aims and features of this invention will be the more readily understood if the following facts be borne in mind: The wooden railway ties now in broad use are objectionable, not only on account of their high cost and short life, but for many other reasons among which may be noted their lack of uniformity, their tendency to sink or shift in the roadbed, to absorb and hold moisture,

and to take fire. The latter feature is of considerable importance in the case of lines of railroad having light traffic in which weeds and other vegetation rapidly spring up and are best destroyed by burning from a moving car. If it be attempted to remedy these defects by the simple substitution of a metal tie, this device is found to be heavy, costly and otherwise impracticable, as on account of the difficulty in securing the rail thereto. If, on the other hand, a cement tie be employed, the same is quickly cracked or torn from the rail and is otherwise unadapted for practical use. If a composite tie in part metal and in part cement be used, there results merely a cumulative effect of the individual defects above noted. The above and other disadvantageous features are eliminated and many positive advantages attained in constructions of the nature of that hereinafter described.

Referring now to Fig. 1 of the accompanying drawing, there are shown rails 1 mounted upon a tie 2 which comprises a member of a general channel-shaped conformation having the transverse portion 3 with depending edges or flanges 4. The web or portion 3 is preferably slightly crowned or upwardly convexed as shown at 5, and is provided with flattened portions 6 forming seats upon which the rails 1 rest. Within this channel-shaped member are secured, beneath each of the rails, blocks 7 which are held in position as by the transverse bolts or pins 8. These blocks are preferably formed of wood, but may be of any material adapted to receive and hold the spikes 9, and it may here be noted that by the expression "means into which spikes are adapted to be driven" or its equivalent, is meant a material adapted to receive and hold spikes driven thereinto. It may also be noted that although this invention is peculiarly adapted to be employed in connection with railway spikes of the well known type, nevertheless it comprehends the use of threaded fastening means if it be desired to use such devices.

105 In Fig. 5 is shown an embodiment of certain features of my invention in which the curved portion 5 is brought up, as at 10, so as to fit the sides of the base of the rail and thus tend to interlock with the same and hold these parts more securely against lateral displacement.

The method of use of the above described embodiments of my invention is substan-

tially as follows: The blocks 7 being bolted within the outer metallic channel-shaped member, the entire device is sunk within the roadbed so as to be substantially flush with the surface thereof or to project to a slight extent above the same, and by reason of the packing of the ballast or soil of the roadbed within the open lower portion of the channel, the tie is securely anchored against displacement in any direction. The rails 1 are then laid upon the flattened portions 6 and spikes 9 driven through the openings 11 in the outer metallic member into the blocks, thus securely holding these parts in assembled relation. By reason of this disposition of the parts there is provided a tie which is substantially indestructible, the inner blocks 7, which are the only portions subject to decay, being inclosed by the outer member and protected against cracking, moisture and fire, and in the rare event of the same becoming decayed, they are readily replaced at an insignificant cost. It will thus be seen that I have provided a device in which the objects of my invention are achieved and the above enumerated advantages are, among others, present. The entire construction is of a neat and uniform appearance, is securely interlocked with the roadbed, the material of which is packed between the flanges and around the blocks, thus preventing lateral or longitudinal shifting. Also, the first cost and cost of maintenance thereof are reduced to a minimum. By reason of the open bottom of the tie, moreover, the construction is self-draining and the wooden blocks thus kept in a dry, well preserved state. These features are attained, moreover, without sacrifice of lightness or strength, and the entire device is well adapted to withstand the most severe practical use.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, in combination, means into which spikes are adapted to be driven, and metallic means disposed over said first mentioned means and secured thereto and extending downwardly into the roadbed.

2. In a device of the class described, in combination, a railway tie comprising a metallic member of inverted channel conformation, and means disposed within said member into which spikes from the rails are adapted to be driven.

3. In a device of the class described, in combination, a railway tie comprising a metallic member of inverted channel conformation, and a pair of members within said first mentioned member into which spikes from each rail are adapted to be respectively driven.

4. In a device of the class described, in combination, a railway tie comprising a metallic member of inverted channel conformation, a pair of members within said first mentioned member into which spikes from each rail are adapted to be respectively driven, and means independent of the spikes holding said second members within said first member.

5. In a device of the class described, in combination, a pair of members in which spikes from each rail are adapted respectively to be driven, and a metallic member resting upon said first mentioned members through which the spikes pass and provided with a depending portion adapted to extend downwardly into the roadbed and anchor the same.

6. In a device of the class described, in combination, a pair of members into which spikes from each rail are adapted to be respectively driven, and a metallic member mounted upon said first mentioned members and spacing the same one from another and provided with a convexed upper surface and having flattened portions at points at which the rails rest.

7. In a device of the class described, in combination, a metallic member of an inverted channel conformation having a convexed upper surface and flattened at portions at which the rails rest, and means within said member into which spikes from the rails are adapted to be driven.

8. In a device of the class described, in combination, a metallic member of an inverted channel conformation having a convexed upper surface and flattened at portions at which the rails rest, and a pair of blocks positioned within said member under each of said rails into which the spikes are adapted to be driven.

9. In a device of the class described, in combination, a metallic member of an inverted channel conformation upon which the rails are adapted to rest, a pair of blocks within said member into which spikes from said rails are adapted to be driven, and bolts passing transversely through said blocks and securing the same within said first mentioned member.

10. A railway tie comprising a horizontal

portion adapted to support the rails, a pair of flanges depending from opposite edges of said horizontal portion, each of which is adapted to enter the roadbed and form a substantially open bottomed tie between the flanges of which the material of the roadbed is free to enter, and a pair of wooden blocks respectively positioned beneath the rails and disposed between said flanges whereby spikes co-acting with the rails and passing through said first-mentioned portion may pass into and be held by said blocks.

11. A railway tie comprising a horizontal portion adapted to support the rails, a pair of flanges depending from opposite edges of said horizontal portion, each of which is adapted to enter the roadbed and form a substantially open bottomed tie between the flanges of which the material of the roadbed is free to enter, and a pair of wooden blocks respectively positioned beneath the rails and disposed between said flanges whereby spikes co-acting with the rails and passing through said first-mentioned portion may pass into and be held by said blocks, said flanges being disposed substantially at right angles with said first-mentioned portion.

12. A railway tie comprising a horizontal portion adapted to support the rails, a pair of flanges depending from opposite edges of said horizontal portion, each of which is adapted to enter the roadbed and form a substantially open bottomed tie between the flanges of which the material of the roadbed is free to enter, and a pair of wooden blocks respectively positioned beneath the rails and disposed between said flanges whereby spikes co-acting with the rails and passing through said first-mentioned portion may pass into and be held by said blocks, said

flanges and horizontal portion being cast in a single piece.

13. A railway tie comprising a horizontal portion adapted to support the rails, a pair of flanges depending from opposite edges of said horizontal portion, each of which is adapted to enter the roadbed and form a substantially open bottomed tie between the flanges of which the material of the roadbed is free to enter, and a pair of wooden blocks respectively positioned beneath the rails and disposed between said flanges whereby spikes co-acting with the rails and passing through said first-mentioned portion may pass into and be held by said blocks, said flanges and horizontal portion being cast in a single piece with the flanges substantially at right angles with said first-mentioned portion.

14. A railway tie comprising a horizontal portion adapted to support the rails, a pair of flanges depending from opposite edges of said horizontal portion, each of which is adapted to enter the roadbed and form a substantially open bottomed tie between the flanges of which the material of the roadbed is free to enter, and a pair of wooden blocks respectively positioned beneath the rails and disposed between said flanges whereby spikes co-acting with the rails and passing through said first-mentioned portion may pass into and be held by said blocks, said first portion being formed with a convex upper surface flattened to receive the rails and cast integral with said flanges.

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

JOHN CAMPBELL.

Witnesses:

RAYMOND G. STOVER,
EDWARD Z. GROSS.