

RAILROAD TIE.

994,902.

Patented June 13, 1911.

2 SHEETS—SHEET 1.



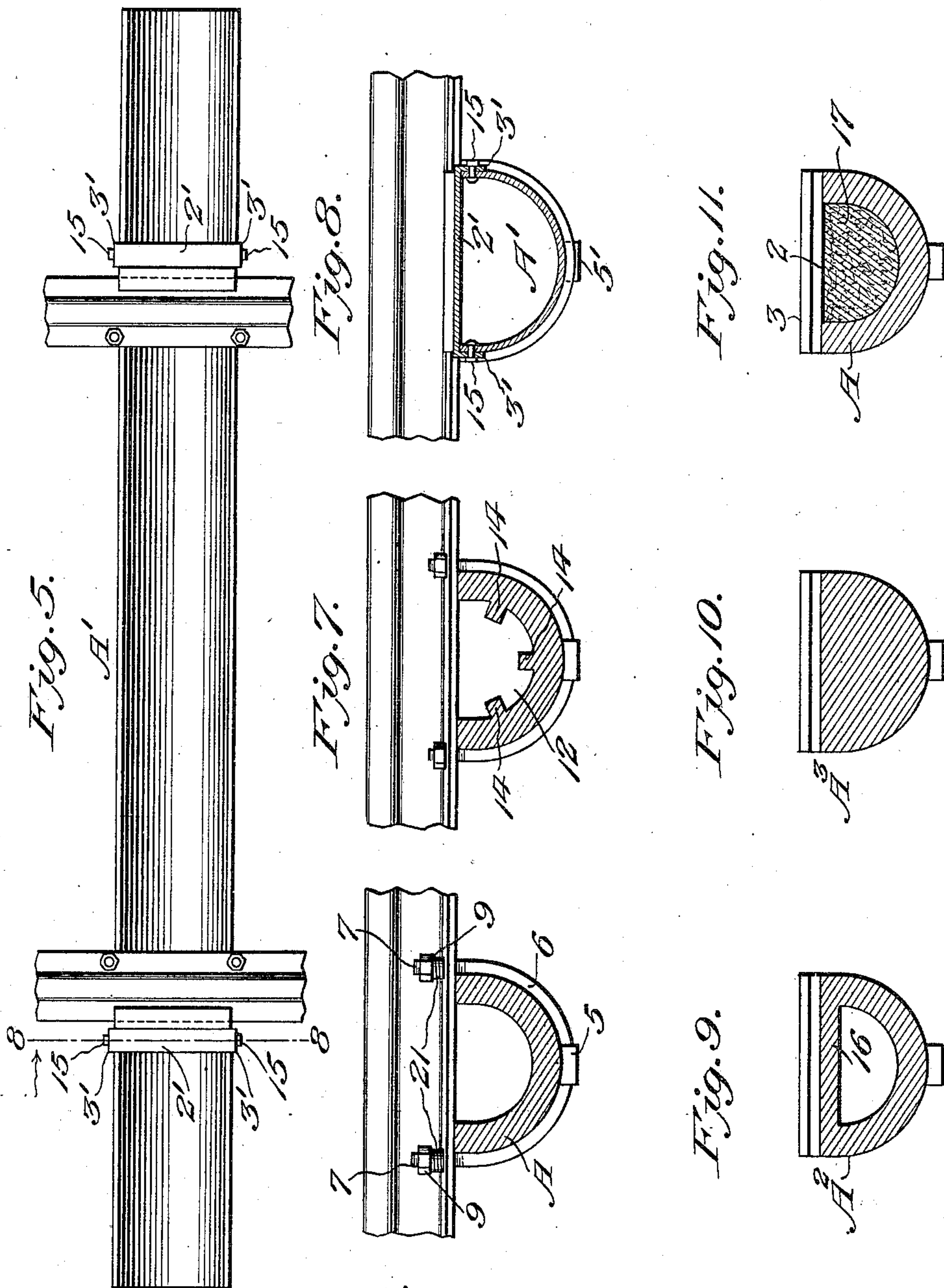
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Witnesses

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Fig. 6.

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UNITED STATES PATENT OFFICE.

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RAILROAD-TIE.

994,902.

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To all whom it may concern:

Be it known that I, WALTER J. BELL, a citizen of the United States of America, residing at Atlanta, in the county of Fulton and State of Georgia, have invented new and useful Improvements in Railroad-Ties, of which the following is a specification.

This invention relates to railroad ties, and it has particular reference to that class of ties which are constructed wholly or in part of metal, such as cast iron, wrought iron, steel or the like.

The invention has for its object to produce a railroad tie constructed partly or entirely of metal in a simple, durable and efficient manner.

A further object of the invention is to produce a tie of the character described which shall be provided with simple and efficient rail attaching means, said means being of such a nature that spreading of the rails shall be positively prevented.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the claims may be resorted to when desired.

In the drawings,—Figure 1 is a view in side elevation showing a simple and preferred form of the improved railroad tie. Fig. 2 is a bottom plan view of the same. Fig. 3 is a top plan view. Fig. 4 is a top plan view illustrating a modified form of the invention. Fig. 5 is a top plan view illustrating a further modification. Fig. 6 is a transverse sectional view taken on the line 6—6 in Fig. 3. Fig. 7 is a transverse sectional view taken on the line 7—7 in Fig. 4. Fig. 8 is a transverse sectional view taken on the line 8—8 in Fig. 5. Figs. 9, 10 and 11 are transverse sectional views illustrating modified forms of the invention.

Corresponding parts in the several figures are denoted by like characters of reference.

In Figs. 1, 2, 3 and 4 the body of the

improved tie has been shown as consisting of a trough-shaped casting of approximately semi-circular cross section, the same being formed of iron, steel or other metal, and of suitable dimensions, and of such weight as to insure the necessary strength and durability. The tie body, A, is intended to be embedded in the ground with the convex side downward, and the cavity in the upper side may be filled with ballast.

Upon the upper side of the tie body are formed cross bars 2, 2 suitably spaced apart and having inwardly extending hook flanges 3, 3 which are adapted to overlap the outer portions of the base flanges 4 of the rails B. It is obvious that these flanged cross bars are to be properly spaced apart according to the desired gage of the rails, whether standard or otherwise, and it is also evident that when the rails are positioned with the base flanges engaging the flanged cross bars they will be held with absolute security against spreading or outward displacement.

Upon the convex underside of the tie body are formed lugs or projections 5, said lugs being positioned or extended beneath the rail supporting portions of the tie body. These lugs constitute stop members or anchors for the rail securing bolts which consist of approximately semi-circular yokes 6 embracing the undersides of the ties and having threaded ends 7 that are projected through apertures 8 in the inner portions of the base flanges 4 of the rails. Nuts 9 are threaded upon the bolts and tightened against the rail flanges, thus completing the secure attachment of the rails.

Owing to the fact that the stop lugs 5 are positioned or extended beneath the rail supporting portions of the tie, the bolt yokes will obviously be tilted to the inclined position clearly indicated in the drawings, thus causing a degree of stress to be exerted in an outward direction upon the rails when the nuts 9 are tightened against the flanges. Owing to this tilted or inclined position of the yokes the nuts will also be seated squarely upon the rail flanges which are usually beveled or inclined upon their upper faces, and as a natural result of this manner of positioning the bolt yokes, the rails will be tightly clamped against the cross bars 2 having the flanges 3 which overhang the outer portions of the rail flanges. The rails will thus be held with

absolute security, and lateral displacement will be impossible under any circumstances that are liable to occur.

Under the modified form of the invention illustrated in Figs. 4 and 7, the trough-shaped casting which constitutes the bottom of the tie is provided with rail-supporting partitions 12 adjacent to which the rail flange engaging hook members, here designated 13, are formed. The inner cavity of the tie is also reinforced by longitudinal ribs or flanges 14 extending between the rail supporting partitions 12.

Under the modified form illustrated in Figs. 5 and 8, the body of the tie, here designated A', is formed of sheet metal such as boiler plate of suitable thickness. Under this construction, it becomes necessary to form the stop members or lugs, here designated 5', by stamping or striking the same up from the metallic body, while the cross bars 2' having the overhanging flanges 3' are secured in position by means of fastening members, such as bolts 15.

In Fig. 9, the body of the tie, here designated A², is formed of cast metal, and it is provided with a top plate 16 integral therewith and extending the entire length thereof.

In Fig. 10, the semi-circular tie body, here designated A³, is shown as a solid casting of semi-circular cross section.

In Fig. 11 the tie body, the construction of which is essentially the same as shown in Figs. 1, 2, 3 and 6, is provided with a filling 17 of concrete or other suitable plastic material. It is desired to be understood that any of the different forms of the invention, excepting of course the one which consists of a solid casting, as illustrated in Fig. 10, may be provided with a similar filling which constitutes a permanent portion of the tie, instead of being simply filled with loose ballast.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of the invention will be readily understood. The improved tie which is extremely simple in construction may be manufactured at a moderate expense. It is practically indestructible. The rails, while held with absolute security, may be readily removed when required without loosening or interfering with the road bed, and the rails when in position will be held with a degree of security which absolutely precludes displacement.

As shown in Fig. 6 of the drawings, springs, 21, may be interposed between the nuts 9 and the rail flanges for the purpose

of resiliently connecting the parts. These springs, however, may be omitted when desired.

Having thus described the invention, what is claimed as new, is:—

1. A railroad tie comprising a metallic body of approximately semi-circular cross section provided upon its upper side with cross bars having inwardly extending rail engaging flanges and upon its underside with downwardly extending stop members positioned beneath the rail supporting portions of the tie, in combination with rail fastening members engaging and cooperating with said stop members and held thereby in an inclined position to draw the rail in the direction of the flanged cross bars.

2. A railroad tie comprising a metallic body of approximately semi-circular cross section provided upon its upper side with cross bars having inwardly extending rail engaging flanges and upon its underside with stop members positioned beneath the rail supporting portions of the tie, in combination with yoke-shaped rail engaging bolt members embracing the tie and abutting upon the stop members.

3. A railroad tie comprising a metallic body of approximately semi-circular cross section provided upon its upper side with cross bars having inwardly extending rail engaging flanges and upon its underside with stop members positioned beneath the rail supporting portions of the tie, in combination with rail engaging bolt members embracing the tie and abutting upon the stop members whereby said yokes are maintained in a tilted position, and nuts threaded upon the ends of the yokes and squarely meeting the inclined upper faces of the rail flanges.

4. A railroad tie comprising a trough-shaped metallic body of approximately semi-circular cross section provided upon its upper side with cross bars having rail engaging members and upon its underside with stop members, in combination with rail engaging yoke shaped bolt members embracing the body of the tie and abutting upon the stop members; the trough-shaped body of the tie being provided with a permanent filling of plastic material.

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

WALTER J. BELL.

Witnesses:

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