

T. SPOONER.  
RAILROAD TIE.  
APPLICATION FILED MAY 27, 1914.

1,114,926.

Patented Oct. 27, 1914.

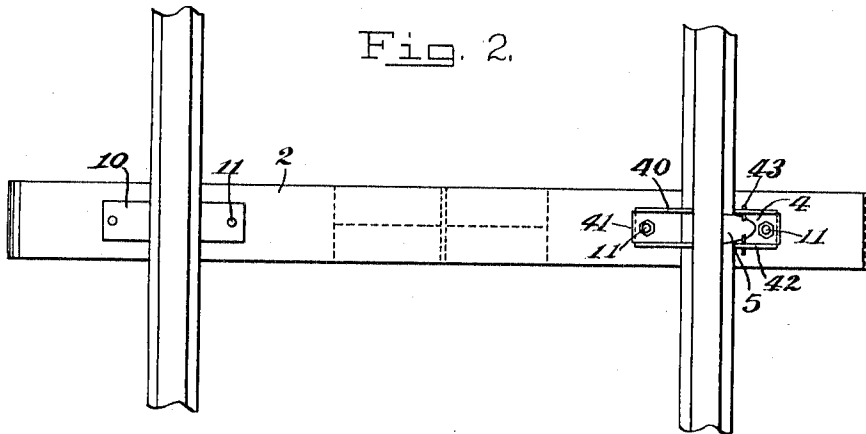
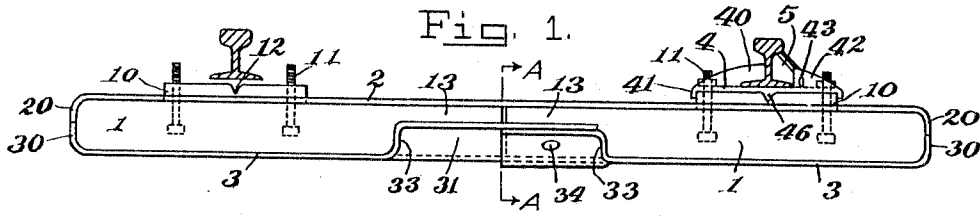


Fig. 4.

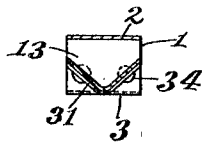
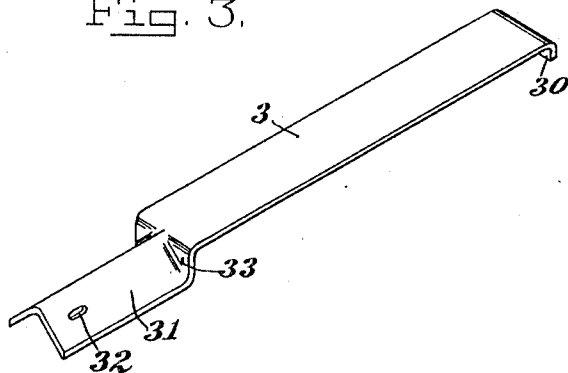


Fig. 3.



Witnesses

Charles L. Reynolds.  
Ben C. Graham

Inventor

Thomas Spooner  
by Henry L. Reynolds.  
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# UNITED STATES PATENT OFFICE.

THOMAS SPOONER, OF MAPLE VALLEY, WASHINGTON.

## RAILROAD-TIE.

1,114,926.

Specification of Letters Patent.

Patented Oct. 27, 1914.

Application filed May 27, 1914. Serial No. 841,395.

*To all whom it may concern:*

Be it known that I, THOMAS SPOONER, a British subject, and resident of Maple Valley, King county, Washington, have invented certain new and useful Improvements in Railroad-Ties, of which the following is a specification.

My invention relates to railroad ties and particularly to ties composed of concrete and iron in combination.

My invention consists of certain features of construction and parts which will be hereinafter described and particularly pointed out by the claims.

The accompanying drawings show my invention in the form which is now preferred by me.

Figure 1 is a side elevation of a tie showing the manner of securing the rails thereon. Fig. 2 is a plan of a tie with the rails thereon. Fig. 3 is one of the underside metal plates shown in perspective, the underside being uppermost. Fig. 4 is a section on the line A—A of Fig. 1, looking in the direction indicated by the arrows.

My improved tie is characterized by having the concrete body thereof in two pieces, the line of division being transverse the tie and at the center of its length. Each part, 1, is half the length of the complete tie, and, in the main, is of the usual rectangular section. A short section 13 of each piece at the inner end, or the end which is placed at the center of the track, is beveled on its under surface, the corners being taken off until the two beveled surfaces at opposite sides very nearly or quite join, leaving what is substantially a sharp edge for presentation to the sustaining ballast.

The central part of the road bed, or that part lying between the rails is naturally rather more resistant to displacement by the loads placed thereon than the outer edges, for the reason that the central zone is supported on each side by the material of the road bed, while the standard cross section given the road bed provides a terrace or slight bank just outside the ends of the ties, from which it follows that the ballast under the ends of the ties is less well supported against displacement.

In addition, the standard length of ties is such that the rails are placed much nearer the ends of the ties than to their center, whereby the ties are not symmetrically loaded. This fact, taken in connection with

the lesser capacity of the outer part of the road bed as compared with its central part, should any settlement occur, as is practically certain, produces a bending and breaking strain at the center of the tie over the more resistant central part of the bed. To counteract this tendency I break the body of the tie at the center of its length, so that each half forms an independent bearing, and also give the section 13 which is placed at the center, a sharp or angular lower face so that it will easier sink into the bed. The result is a more nearly balanced rail supporting effect. I also provide a metal cover or tie-plate 2 which connects the two parts of the tie, preventing relative lengthwise movement and also protecting the upper surface of the tie. I also provide each concrete section of the tie with a raised table 10 for the reception of the rail and the plate 2 with holes for the passage of these raised tables. The tie thus secured between the two sections 1, will prevent their relative lengthwise movement. I however turn down the ends of the plate 2, forming flanges 20 which engage the ends of the concrete body sections 1 to further prevent their separation. By supporting the rail in raised position such that it will not contact with the metal plate 2, the two lines of rails may be kept insulated to such an extent as not to prevent their use as electrical circuits for track signaling systems. I may also use lower metal plates 3, which, if used, would be divided into two parts, their inner ends overlapping enough to permit connection, as by rivets 34, the holes for these rivets, in at least one of these plates, should be elongated into a slot, as 32 shown in Fig. 3, and the riveting should be loose, so that there may be a limited longitudinal play.

The inner ends of plates 3 should be bent into the angular form, as shown at 31, to fit the shape of the concrete tie sections. Their outer ends may also be provided with upturned flanges 30 which engage the ends of the ties. With the flanges 20 and 30 of a length to meet and the plates 2 and 3 of the width of the desired ties, they will be capable of serving as a mold for pouring the concrete, if supplementary molds for the tables 10 are provided.

Any suitable means for securing the rails to the ties may be used, such means being located within the areas of the tables 10. The means shown employ bolts 11 or equiv-

alent holding members which are embedded in the concrete. In connection with these are rail chairs 4 which have flanges 40 at one end cut to provide overhanging ends adapted to engage the upper surface of the rail base. At the other end the chair is provided with flanges 42 having holes for the reception of pins 43 which also pass through a brace 5 and by holding it in place hold the other side of the rail. The particular form of rail holding means forms however no part of the present invention.

What I claim as my invention and desire to patent is:

- 15 1. A railroad tie having a concrete body transversely divided in the middle of its length to form two like parts, a metal cover plate extending over both said body sections and having holes and the concrete sections  
20 having raised tables extending upward through said holes to a level above the upper level of the plate, said raised tables being of a size and so located as to receive the rails and the securing means therefor.
- 25 2. A tie having a concrete body divided transversely centrally of its length, the inner ends of each half of the said body having a short section beveled beneath to present a

corner downwardly, each half of the tie having an upwardly raised table adapted for the reception of the rail holding means, and a metal cover plate having engagement with the two halves of the tie body to prevent relative displacement.

3. A tie having a concrete body transversely divided centrally of its length into two parts, the inner end of each part having a section with under surfaces inclined to the horizontal, a metal tie-plate extending lengthwise the tie and having engagement with the outer end surfaces of both parts of the concrete body to prevent their separation, and two bottom plates extending, each under its half of the tie body and overlapping at the center, the inner ends of said plates being bent to fit the inclined under surfaces of the tie bodies, and a locking engagement between these plates permitting a small longitudinal movement between them.

In testimony whereof I have hereunto affixed my signature this 22nd day of May, 1914.

THOMAS SPOONER.

Witnesses:

HENRY L. REYNOLDS,  
CHARLES L. REYNOLDS.