

No. 857,363.

PATENTED JUNE 18, 1907.

A. S. REAVIS.  
RAILWAY TIE.  
APPLICATION FILED MAR. 19, 1907.

Fig. 1.

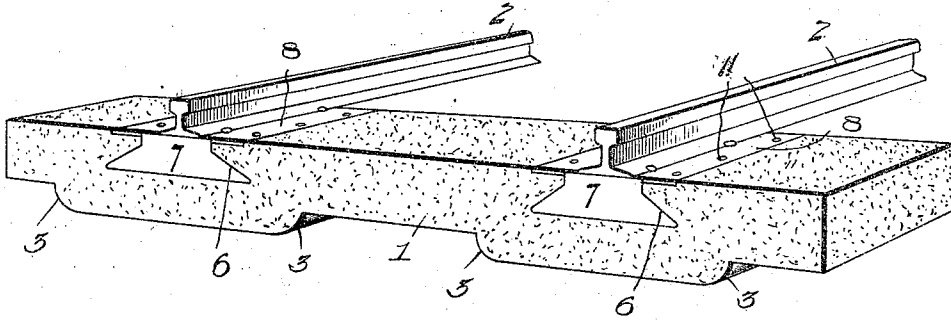


Fig. 2.

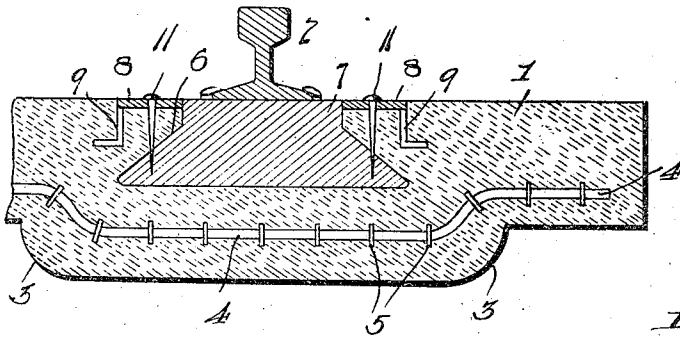


Fig. 3.

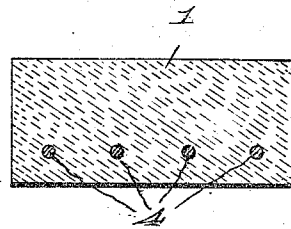


Fig. 5.

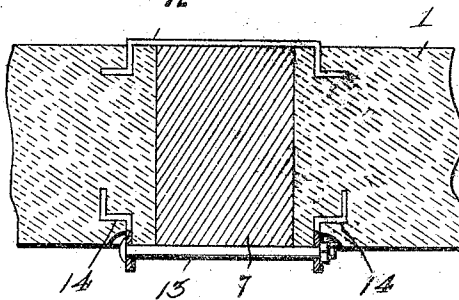
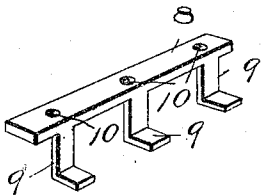


Fig. 4.



Inventor  
Albert S. Reavis.

Witnesses  
C. L. Mochman  
R. C. Braddock.

By *Rexford M. Smith,*  
Attorney

# UNITED STATES PATENT OFFICE.

ALBERT S. REAVIS, OF WASHINGTON, DISTRICT OF COLUMBIA.

## RAILWAY-TIE.

No. 857,363.

Specification of Letters Patent.

Patented June 18, 1907.

Application filed March 19, 1907. Serial No. 363,245.

*To all whom it may concern:*

Be it known that I, ALBERT S. REAVIS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a certain new and useful Railway-Tie, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to railway ties the object of the invention being to provide a practically indestructible article of the class referred to which will do away with the undesirable qualities of metallic ties and retain all of the excellent qualities of wooden ties, at the same time greatly reducing the expense incident to the replacing of worn out ties, the construction hereinafter described providing for the renewal of the rail bearing portions of the tie without the renewal of any other portion thereof and without removing the main body of the tie from its place in the road bed and ballast.

With the above and other objects in view the nature of which will more fully appear as the description proceeds the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of a railway tie embodying the present invention, showing rail sections fastened thereon. Fig. 2 is a longitudinal section through one end of the tie. Fig. 3 is a cross section through one end of the tie. Fig. 4 is a detail perspective view of one of the protector plates. Fig. 5 is a horizontal section through one end of the tie, showing other means for securing the rail blocks.

The main body of the tie is formed of concrete or what is known as reinforced concrete and in its general form it resembles the ordinary wooden tie now in common use, except that under the places where the rails cross the tie, the latter is made of greater depth from top to bottom for a twofold purpose, first to strengthen the tie where it is recessed to receive the rail blocks and secondly to form oppositely disposed offsets or shoulders 3 which, when the tie is embedded in the ballast, keeps the tie from moving lengthwise. As a further means of strengthening the tie, reinforcing rods or bars 4 are molded or embedded in the tie, the same extending lengthwise thereof as shown in Fig. 2, and these rods or bars are preferably provided

with shoulders 5 to prevent "creeping" of the concrete.

Extending transversely of the tie are recesses 6 in which are received rail blocks or cushions 7 of wood, the recesses and blocks being dovetailed in shape to prevent the blocks from escaping from the recesses in an upward direction and also to provide for receiving the spikes or fasteners which hold the blocks in position against endwise movement. The rails 2 are secured to and upon the blocks 7 by the usual spikes as shown. Protector plates 8 extend along opposite sides of the recesses 6 and reach to the edges of the concrete which bound such recesses as clearly shown in Figs. 1 and 2, thereby protecting the edges of the concrete from being broken in the operation of driving the spikes for example. Each plate 8 is provided with a plurality of anchor feet 9 having angular toe portions, the said feet with their toe portions being embedded in the concrete tie while in a plastic condition and forming a secure anchoring means for the protector plate. The plates 8 are formed with holes 10 for the reception of spikes or nails 11 which are driven through corresponding holes in the tie body down into the laterally projecting portions of the rail blocks as clearly shown in Fig. 2. In this way the blocks 7 are held securely against endwise movement.

Another plan of securing the blocks 7 is illustrated in Fig. 5 in which it will be seen that one end of the block is held by a bar 12 extending along the side of the tie and having its opposite ends bent inward and hooked and embedded in the concrete. The opposite end of the block is held by a bar in the form of a bolt 13 which passes through the projecting ends of a pair of anchor pieces 14 consisting of pieces or strips of metal embedded in the concrete and bent or offset therein as shown. By removing the bolt 13 and the rail spikes the block 7 may be slid out of the recess in the tie and another new block may then be introduced in its place.

From the foregoing description it will be understood that the wooden block 7 may be renewed quickly and easily without displacing the tie and the ballast surrounding the same. The tie itself is practically indestructible and when once firmly in place in the road bed it cannot shift in any direction. If desired the blocks 7 may be painted or coated or saturated with any suitable preservative to resist the action of the elements.

The tie will last indefinitely, it only being necessary to renew the rail blocks when they become worn.

I claim:—

5 1. A railway tie embodying a concrete body offset on its lower side to provide oppositely located transverse shoulders, and reinforcing bars extending lengthwise of the tie and embedded therein and also offset to  
10 correspond with the offsets in the body of the tie.

2. A railway tie embodying a concrete body provided in its upper side with recesses, rail blocks seated in said recesses, and rein-  
15 forcing bars provided at numerous intervals intermediate its ends with rib shoulders and embedded in the tie.

3. A railway tie embodying a concrete body provided in its upper side with recesses,  
20 rail blocks seated in said recesses, and edge protector plates extending along opposite sides of said recesses in parallel relation thereto.

4. A railway tie embodying a concrete  
25 body provided in its upper side with recesses,

rail blocks seated in said recesses, and parallel edge protecting plates extending along the opposite sides of said recesses and provided with holes through which fasteners may be driven into the blocks.

5. A railway tie embodying a concrete body provided in its upper side with recesses, rail blocks seated in said recesses, and plates extending along the opposite sides of said recesses and provided with extensions or feet  
35 which are embedded in the tie.

6. A railway tie embodying a concrete body provided in its upper side with dovetailed recesses, dovetailed blocks seated in said recesses, plates extending along the op-  
40 posite sides of the recesses and overhanging the sides of the blocks, and fasteners driven through said plates into the blocks.

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

ALBERT S. REAVIS.

Witnesses:

REXFORD M. SMITH,  
E. H. PARKINS.