A. C. RAPELJE.

CONCRETE TIE.

APPLICATION FILED OCT. 11, 1920.

1,376,580. **Patented May 3, 1921.**

Fig. 1.

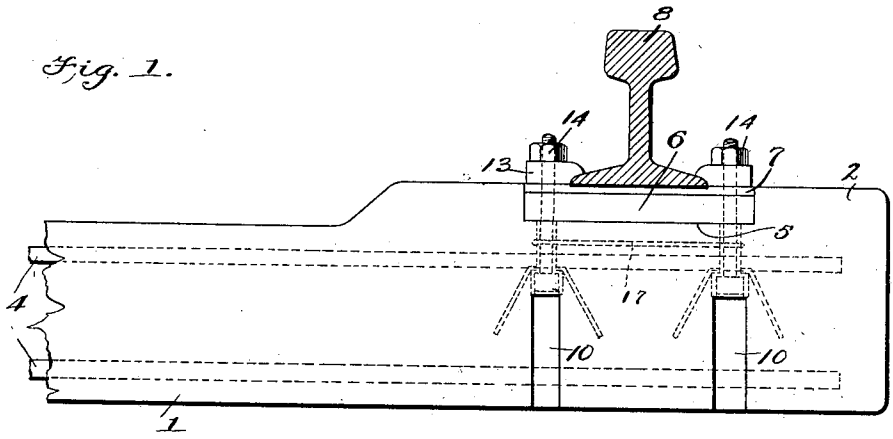


Fig. 2.

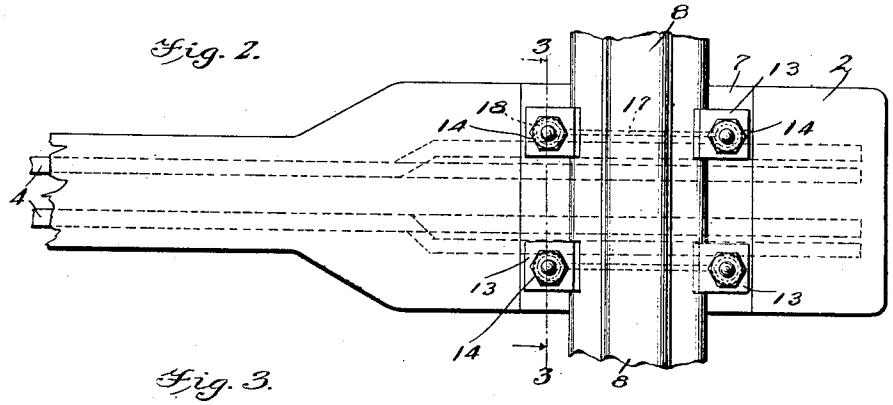


Fig. 3.

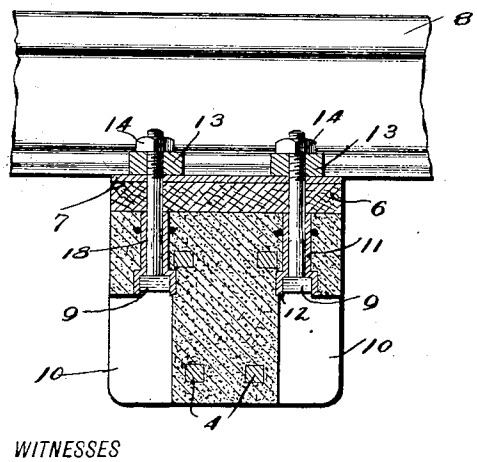
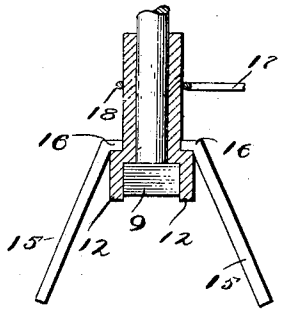


Fig. 4.



WITNESSES

L. O. Marshall.

O. E. Trainor

INVENTOR

Adrian C. Rapelje,

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

ADRIAN C. RAPELJE, OF HARRISBURG, PENNSYLVANIA.

CONCRETE TIE.

1,376,580. Specification of Letters Patent. Patented May 3, 1921.

Application filed October 11, 1920. Serial No. 416,043.

To all whom it may concern:

Be it known that I, ADRIAN C. RAPELJE, a citizen of the United States, and a resident of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Concrete Ties, of which the following is a specification.

My invention is an improvement in concrete ties, and has for its object to provide a tie of the character specified, wherein the body of the tie is composed of reinforced concrete, having at each end a rail seat across which the rail extends, said rail seat being of fibrous material and being anchored to the tie by the same means which connects the rail to the tie.

In the drawings:

Figure 1 is a side view of one end of the improved tie,

Fig. 2 is a top plan view of Fig. 1,

Fig. 3 is a section on the line 3—3 of Fig. 2,

Fig. 4 is an enlarged sectional detail of the socket.

In the present embodiment of the invention, the improved tie comprises a body 1 of plastic material, as for instance, concrete having each end enlarged, as shown at 2, the enlargement being lateral and upward. That is, the body of the tie is reduced intermediate its ends, laterally and on top, the greater portion of the material which forms the tie being at the ends where the rails cross the tie.

The improved tie is reinforced in the present instance, by four bars 4, of metal, which extend longitudinally of the body of the tie near the corners thereof. At each of the enlarged ends on the upper face, the tie body has a transverse groove or channel 5 of greater width than the width of the rail base which will be used with the tie, and in each of these channels there is seated a block 6 of fibrous material, as for instance, wood or the like.

This block is of the same width as the enlarged end of the tie, and of somewhat lesser depth than the depth of the channel, and a tie plate 7 is seated on the upper face of the block, the upper face of the tie plate being flush with the upper face of the body.

The rail 8 is secured to the tie by means of bolts 9. These bolts as shown in Fig. 3, are passed upwardly through openings in the tie body, and it will be noticed that at its lower face the tie is cut away at each of the openings as indicated at 10. Thus the bolt may be inserted from the side of the tie from the cut away portions 10 without the necessity of moving the tie from its seat. These openings for the bolts are of greater cross section than the cross section of the bolt heads, and a socket 11 is held in the upper end of each opening, each socket being shaped to receive a bolt and having an enlargement 12 shaped to receive the head of the bolt.

The sockets are of a length to extend from the underface of the block 6 to slightly below the underface of the bolt head. Holding plates or clips 13 are provided on the bolts for engaging the rail base at the opposite side edges thereof, and these plates or clips are held on the bolts by nuts 14. Each of the sockets 11 is anchored to the tie body by means of inclined anchor bars 15 which are embedded within the material of the tie.

These anchor bars are arranged in inclined position at opposite sides of the socket, and at their upper ends the bars have inwardly extending lugs 16 which engage the shoulder formed between the body of the socket and the enlargement 12. The sockets 11 at each side of the rail are anchored and braced against separation by means of wires or rods 17. Such wires or rods are embedded in the material of the tie, and at each end each wire or rod has a loop or eye 18 which engages the adjacent socket.

I claim:

1. A tie of plastic material having at each end and on the upper face a transverse channel or groove, a block of fibrous material seated in each groove and having on its upper face a tie plate flush with the upper face of the tie, bolts passing through the tie, the block and tie plate for connecting the parts and having rail holding clips at their upper ends, each tie having a vertical opening for each bolt of a size to receive the head thereof, a socket held in each opening at the top thereof and shaped to fit the bolt and head, to hold the bolt from turning, and an anchor connection between the sockets, said sockets being anchored to the tie by inclined anchor braces.

2. A tie comprising a body, tubular socket members extending through the tie and formed with enlarged heads adapted for the

reception of the heads of rail fastening bolts, anchoring rods having angularly extended end portions engaging the enlarged heads of said tubular socket members, and bracing wires having their ends connected to said socket members.

3. A tie comprising a body, tubular socket members extending through the tie and formed with enlarged heads adapted for the reception of the heads of rail fastening bolts, and anchoring rods having angularly extending end portions engaging the enlarged heads of said tubular socket members.

4. A rail tie comprising a body, tubular socket members extending through the body and formed with enlarged heads, rail fastening bolts extending through said tubular socket members and having heads arranged in the enlarged heads of said tubular socket members, and bracing devices connected to the intermediate portions of said tubular socket members, the sides of said body being provided with openings communicating with the tubular socket members to permit of the application or removal of the said bolts.

ADRIAN C. RAPELJE.