W. N. STEUART.

RAILROAD TIE.

APPLICATION FILED DEC. 13, 1912.

1,088,940. Patented Mar. 3, 1914.

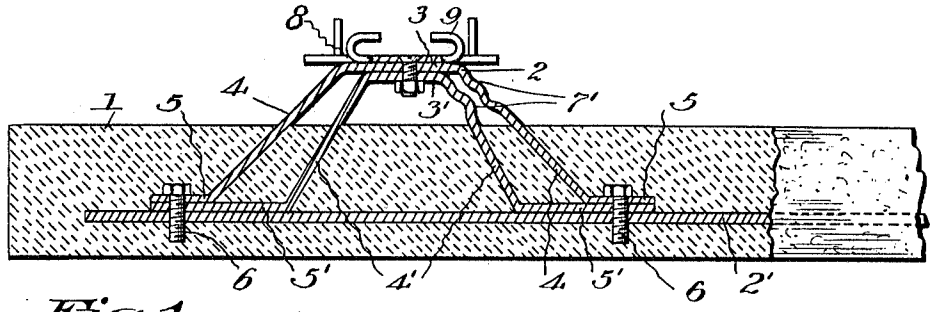

Fig. 1.

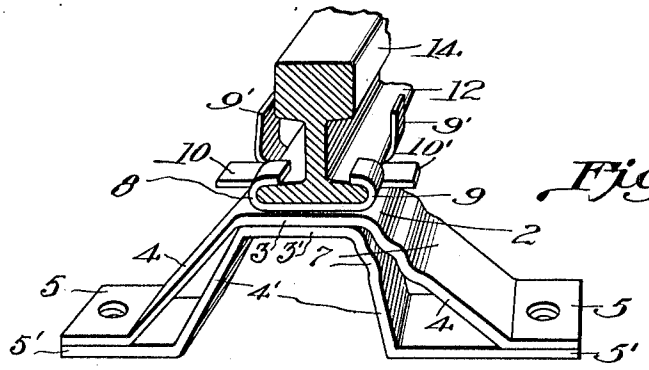

Fig. 2.

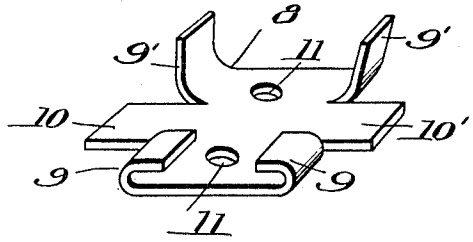

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILMOT N. STEUART, OF BROOKFIELD, OHIO.

RAILROAD-TIE.

1,088,940. Specification of Letters Patent. Patented Mar. 3, 1914.

Application filed December 13, 1912. Serial No. 736,653.

To all whom it may concern:

Be it known that I, WILMOT N. STEUART, a citizen of the United States of America, residing at Brookfield, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Railroad-Ties, of which the following is a specification.

My invention relates to improvements in railroad ties in which the rails are held in position by clamps fastened on resilient, bow-formed plates or saddles attached to the ties. I am aware that the use of such saddles, either in single or double, in pairs; and the use of clips formed by bending over ears left cut for the purpose so as to extend beyond the level of the tops of such saddles and to overlap one flange of the rail when seated, are not new and, in themselves, they form no part of my invention and I do not claim them broadly or *per se*.

The objects of my invention are, first, to provide a cushioned, concrete railroad tie on which the rails are supported resiliently; second, to increase the resiliency of the rail supports without reducing their strength; third, to provide more effective means for retaining the rails in position on the saddles and at the same time reduce the number of parts, the cost of such retainers and the time required to put them in operation; and, fourth, to provide effective, cheap and easily operable means for repairing the rail retainers if they break in part, and to renew them in their entirety if they are beyond repair, without disturbance of the ties, rails or saddles.

I attain those objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1, is a longitudinal vertical sectional view through one end of a concrete railway tie in accordance with my invention. Fig. 2, is a perspective of my improved rail supporting saddle with a broken away piece of a railroad rail secured therein by my improved rail retainer; and Fig. 3, is a perspective of my rail retainer.

Similar numerals refer to similar parts throughout the several views.

A railroad tie 1 is made by pouring concrete into a mold after a pair of tie supporting saddles 2 have been positioned so as to stand partially embedded near either end thereof, and attached to and connected by a reinforcing bar 2′. The saddles 2 can be, and sometimes are made of a single strip of flat metal so bent as to form a table 3′, outwardly extending legs 4′, 4′ and flat feet 5′, 5′, but as a preferred form I use also a second strip of metal superimposed on the first one and having a table 3, legs 4, 4, slightly longer than legs 4′, 4′, and terminating in feet 5, 5, shorter than feet 5′, 5′, to which latter they may be welded, or the respective pairs of legs may be bolted together by bolts 6, 6, which may extend down into the concrete to lend stability. As suggested, saddles so constructed are not new, but to increase their resiliency without reducing their strength I put a plurality of horizontal corrugations 7, 7 in the legs 4 and 4′.

In practice it is found that heavy trains tend to cant rails outward, often causing spreading of the rails and consequent disasters; to obviate that danger others have anchored the outer legs to the ties, leaving the feet of the inner legs loosely attached to the ties to permit of an inward sliding movement thereof. Such a construction would be impracticable in the use of concrete ties and I prefer that both feet of each saddle be held in a rigid fixed relation to the tie itself, as being a better and stronger construction, wherefore I obtain the same result of preventing the outward canting or "turning over" of the rail and of allowing the same "give" or displacement toward the center of the track for each rail by corrugating the inside legs of the saddle only, as shown at corrugations 7′, 7′, in Fig. 1. I consider and claim that improvement as of vital importance in railroad tie construction, whether adapted to concrete, metal or wooden ties.

In Fig. 3 I have shown a rail retainer 8, formed from a metal sheet and having a plurality of lips 9, 9, 9′, 9′ and 10, 10′, made by part-way cuts horizontally of said sheet, and having preferably a plurality of holes 11, 11 therethrough, conveniently located to correspond with holes through the tables 3 of saddles 2. I weld, or otherwise attach a retainer 8 on each saddle 2. For convenience in packing, the lips 9, 9, 9′, 9′ and 10, 10′ may be left flat, as lips 10, 10′ are shown. For use the outer lips are turned up as at 9′, 9′ and, after a rail has been seated on the retainer 8, four of the lips. 9, 9 and 9′, 9′, are sledged down over the flanges 12 of the rail 14. If either of the lips 9, 9, 9′ or 9′, become broken the retainer 8 can be repaired by bending up and sledging over the lips

10, 10′ to reinforce those remaining intact. One of the chief advantages of this feature of my improvement is that in any case where a track walker finds a defective rail retainer, whatsoever may be the reason for or condition of it, he can pry up a rail with a crowbar and, slipping in a new retainer 8, on top of the old one, can sledge its lips 9, 9 and 9′, 9′ over the rail flanges 12, 12 after having first bolted the new retainer 8 on top of the old retainer by bolts passing through the holes 11, 11 and the corresponding holes through the table 3, 3′.

Having clearly pointed out and disclaimed originality as to all of the features used in my improved method of securing railroad rails to ties which have heretofore been used or patented, and the advantages accruing from my improvements thereof being apparent I claim:—

1. The combination with a concrete railroad tie and a railroad rail, of rail supporting saddles partly embedded therein near the extremities of said tie, and comprising a top table, out spreading legs corrugated above the concrete, and horizontal feet in line with the tie longitudinally; a rail retainer welded on said table and consisting of a horizontal metal plate having a plurality of lips on either side thereof suitably formed to be crimped over the flanges of the railroad rail.

2. The combination of a concrete railroad tie and railroad rail, with a supporting saddle for said rail consisting of a table for attachment of the rail, feet embedded in said tie and legs having horizontal corrugations above the top line of said concrete.

3. In a saddle for a railroad rail seated above a railroad tie, obtusely angled legs extending from the top of said saddle and rigidly attached to said tie, and having horizontal corrugations in said legs.

4. The combination of a railroad tie and rails, with saddles to support said rails, comprising tables at their tops, feet at their bottoms, rigid legs on the outsides and corrugated, obtusely inclined legs on the insides, relatively of the railroad track.

5. The combination with a railroad tie, a railroad rail, a supporting saddle for said rail and a rail retainer welded to said saddle, of a second retainer having a plurality of lips for engagement with and over the flanges of said rail, on either longitudinal edge of said retainer and having holes therethrough for the reception of bolts passing through corresponding holes in said first, welded, retainer.

6. In combination with railroad ties, rail saddles attached thereto, rails seated thereon and retainers for holding said rails in position and having bolt holes therethrough; supplemental rail retainers capable of attachment by holes through said holes to said first retainers and having their longitudinal edges adapted for clamping over the flanges of said rails.

7. The combination with railroad ties and rails, of saddles, to support and retain them in position, rigidly attached at their feet to said ties and having legs of unequal resiliency, for the purpose set forth.

8. The combination with a concrete railroad tie and a railroad rail, of rail supporting saddles partly embedded in said tie near its extremities, and attached to and connected by a reinforcing bar, and comprising a top table, out spreading legs corrugated above the concrete, and horizontal feet in line with the tie longitudinally; a rail retainer welded on said table and consisting of a horizontal metal plate having a plurality of lips on either side thereof suitably formed to be crimped over the flanges of the railroad rail.

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

WILMOT N. STEUART.

Witnesses:
H. HAROLD,
J. F. HAYES.