

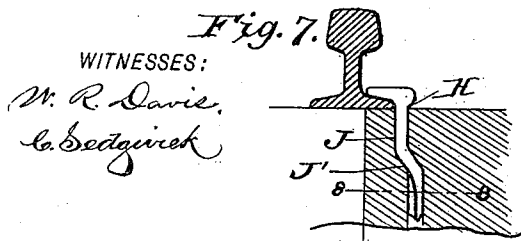
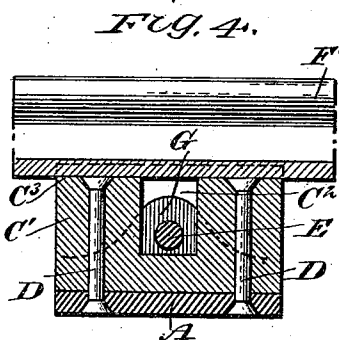
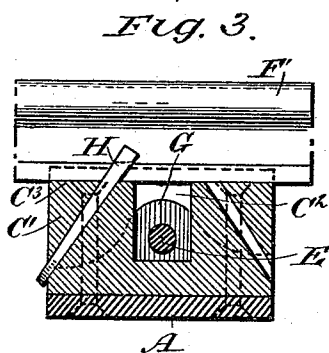
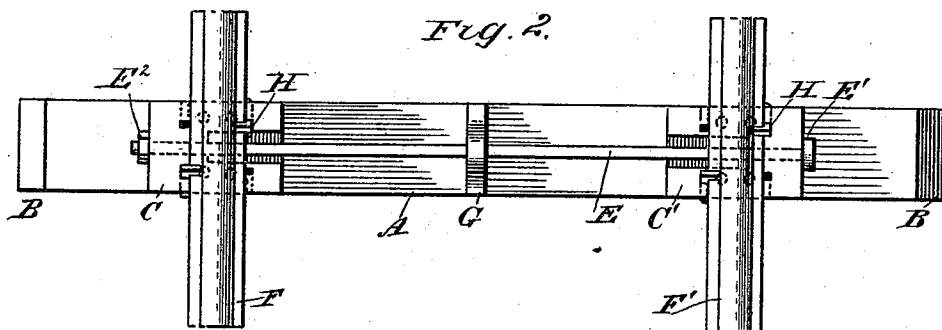
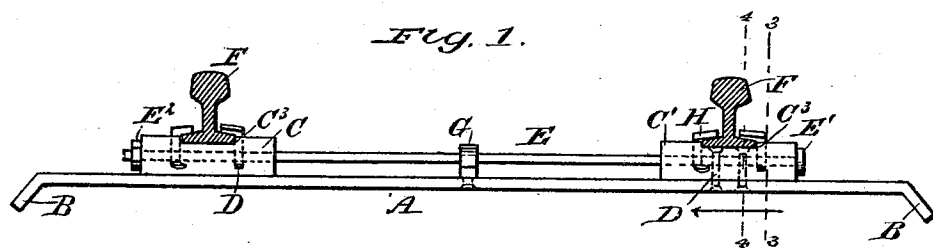
(No Model.)

2 Sheets—Sheet 1.

E. SAUNDERS.
METALLIC RAILROAD TIE.

No. 463,456.

Patented Nov. 17, 1891.



(No Model.)

2 Sheets—Sheet 2.

E. SAUNDERS.
METALLIC RAILROAD TIE.

No. 463,456.

Patented Nov. 17, 1891.

Fig. 5.

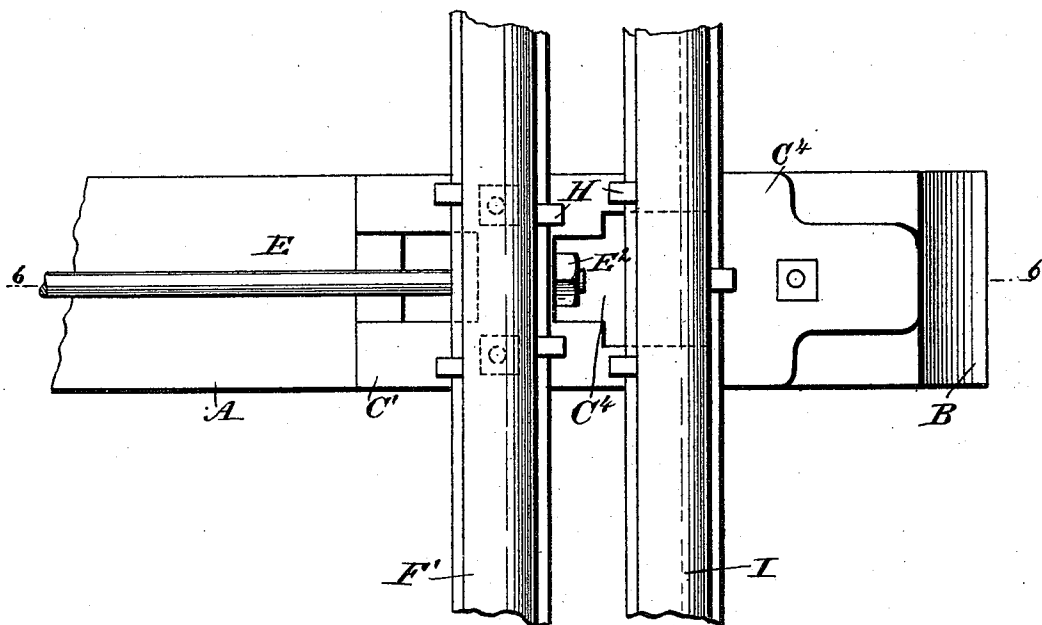
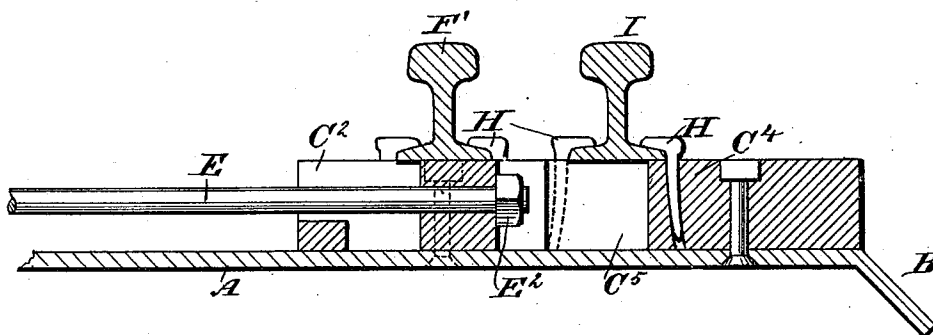


Fig. 6.



WITNESSES:

H. Walker
L. Sedgwick

INVENTOR

E. Saunders
BY Munn & Co.

ATTORNEY.

UNITED STATES PATENT OFFICE.

ELLISON SAUNDERS, OF AUSTIN, TEXAS.

METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 463,456, dated November 17, 1891.

Application filed June 8, 1891. Serial No. 395,422. (No model.)

To all whom it may concern:

Be it known that I, ELLISON SAUNDERS, of Austin, in the county of Travis and State of Texas, have invented a new and Improved
5 Metallic Railroad-Tie, of which the following is a full, clear, and exact description.

The invention relates to metallic railroad-ties such as shown and described in the Letters Patent of the United States No. 450,498,
10 granted to me April 14, 1891.

The object of the present invention is to provide a new and improved metallic railroad-tie which is simple and durable in construction, and prevents spreading of the rails or
15 bending of the tension-rod and base-plate.

The invention consists of certain parts and details and combinations of the same, as will be described hereinafter, and then pointed out in the claims.

20 Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an end elevation of the improvement with the rails in section. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged longitudinal section of the same on the line
25 3 3 of Fig. 1. Fig. 4 is a like view of the same on the line 4 4 of Fig. 1. Fig. 5 is an enlarged plan view of a modified form of the improvement. Fig. 6 is a sectional side elevation of the same on the lines 6 6 of Fig. 5. Fig. 7 is an enlarged sectional side elevation of a modified form of fastening, and Fig. 8 is
30 an enlarged sectional plan view of the same on the lines 8 8 of Fig. 7.

The improved metallic railroad-tie is provided with a base-plate A, having downwardly and outwardly turned ends B, and preferably
40 made of wrought iron or steel of suitable width. On the top of the plate A are arranged the blocks C and C', each secured by rivets or bolts D to the base-plate A, as is plainly shown in Fig. 4. The blocks C and C'
45 are preferably of cast or malleable iron of a suitable height and length.

The two blocks C and C' are connected with each other by a tension-rod E, the head E' and nut E² of which abut or bear against the
50 outer ends of the blocks C and C'. Each of the blocks C and C' is formed in its top with a transversely-extending recess C³, through

which passes part of the tension-rod E, it being understood that the said recess extends from the inside to within a suitable distance
55 of the outer end. On the top of each block is also formed a longitudinally-extending recess C³, forming a seat for the base of the rail F or F', respectively, so that sidewise movement of the rail on the blocks is prevented. 60
The recesses C³ are of a depth corresponding to the thickness of the base of the rail.

The tension-rod E passes through a block G, supported on top of the base-plate A at or near the middle of the latter, between the
65 blocks C and C'. The block G is fastened by a rivet or bolt to the base-plate, so as to prevent accidental displacement.

The rails F and F' are secured in their seats in the blocks C and C' by spikes H,
70 either similar in construction and arrangement to the ones shown in the patent above referred to and shown in Figs. 1, 2, and 3, or as shown in Figs. 5 and 6, in which the spikes are formed with a curve or twist and driven
75 into straight apertures in the block, which have a slight twist, so as to twist the spikes and prevent pulling out.

The preferable form of fastening the rails by spikes is illustrated in Figs. 7 and 8. The
80 apertures J for the spikes H are formed with a bend and twist J' at about half-way down the blocks C or C', so that the lower half is out of alignment with the upper half of the aperture J, as shown in Fig. 8. The ordinary spike
85 when driven in this aperture follows its shape and is consequently bent at the middle and twisted in at its lower half, so that the spike is not liable to get loose.

It is understood that by adjusting the nut
90 E² on the tension-rod E any desired tension is given to the blocks and base-plate to prevent spreading of the rails. In order to prevent bending of the tension-rod E and the base-plate A at or near the middle, the block G is
95 inserted in the manner above described. On curves or switches the guard or switch rails I are fastened on an extension C⁴ of the respective block C or C', as plainly shown in Figs. 5 and 6. This extension C⁴ is formed
100 under the rail I with a recess C⁵ to lighten the block to form room for the nut or head of the tension-rod E.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. In a metallic railroad-tie, the combination, with the base-plate, the blocks riveted or bolted to the base-plate with their lower faces resting on top thereof, rail-receiving recesses in the top faces of the blocks, and spike-receiving apertures at opposite sides of the recesses, of the headed tension-rod extending through the said blocks above the base-plate and provided with an adjusting-nut, substantially as set forth.

2. In a metallic railroad-tie, the combination, with a base-plate, of blocks secured by rivets or bolts to the said base-plate, a tension-rod extending through the said blocks and bearing against the solid outer ends of the same, and a block interposed between the said base-plate and rod midway between the other two blocks, substantially as shown and described.

3. In a metallic railroad-tie, the combination, with a base-plate, of blocks secured by

rivets or bolts to the said base-plate and each having on its top a longitudinal recess forming a seat for the base of the rail, a rod extending through the said blocks and bearing against the solid outer ends of the same, and a second block held between the said base-plate and rod midway between the other two blocks, substantially as shown and described.

4. A metallic railroad-tie provided with a block having a spike-aperture formed with a bend and twist at its lower half, substantially as shown and described.

5. In a metallic railroad-tie, the combination, with a spike, of a block having an aperture adapted to receive the said spike and formed at or near its middle with a bend and twist at its lower half, substantially as shown and described.

ELLISON SAUNDERS.

Witnesses:

E. F. McCARTY,

R. M. ARMSTRONG.