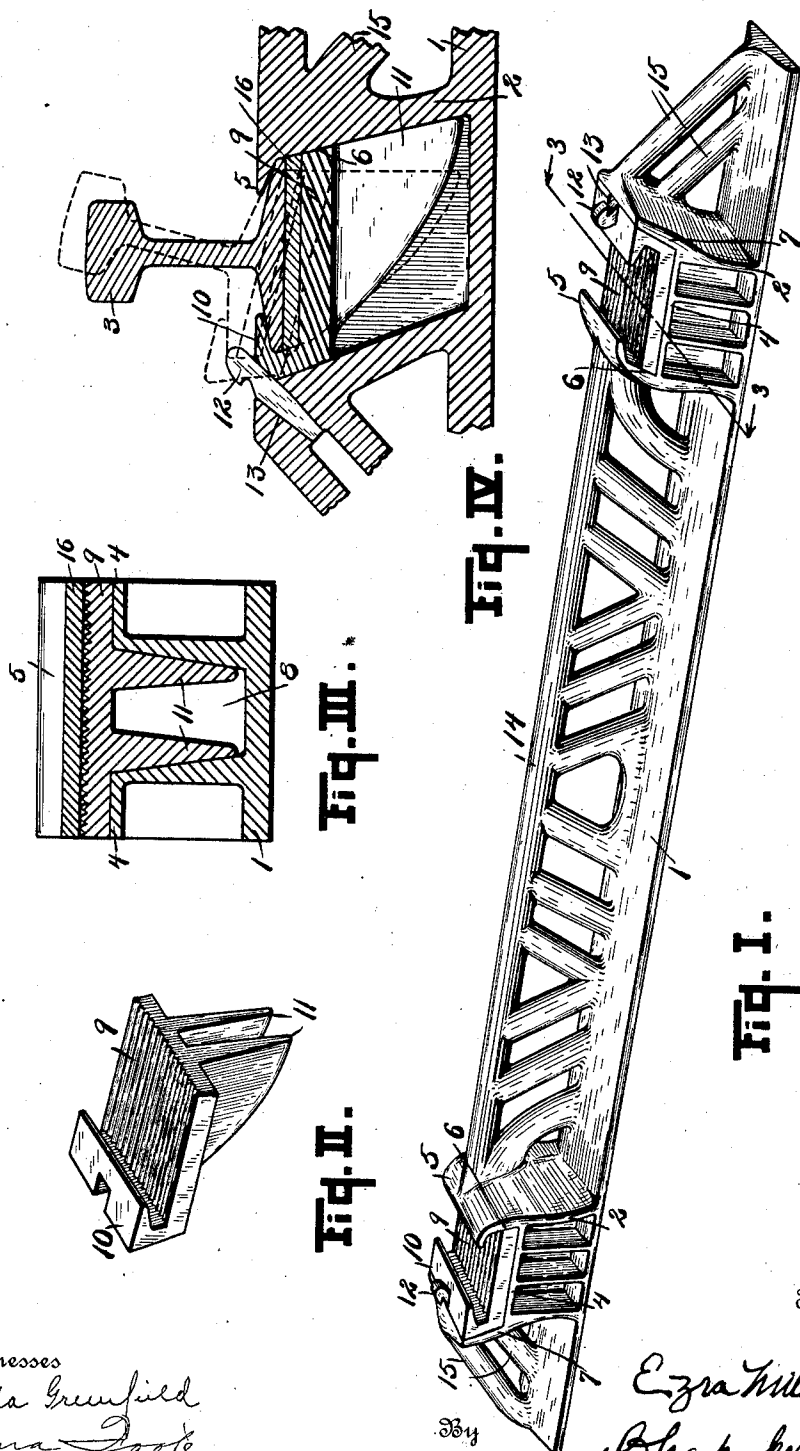


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RAILWAY TIE.
APPLICATION FILED JUNE 12, 1912.

1,043,126.

Patented Nov. 5, 1912.



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RAILWAY-TIE.

1,043,126.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed June 12, 1912. Serial No. 703,251.

To all whom it may concern:

Be it known that I, EZRA MILLER, a citizen of the United States, residing at Sterling, county of Arenac, and State of Michigan, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

This invention relates to improvements in railway ties.

10 The main objects of this invention are: First, to provide an improved metal railway tie and rail securing means. Second, to provide in a metal railway tie an improved rail securing means, by means of which the rails
15 may be quickly and easily secured to the tie, and are very securely supported.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

20 I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

25 A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

30 Figure I is a perspective view of my improved railway tie. Fig. II is a perspective view of one of the rail plates 9. Fig. III is a vertical transverse section taken on a line corresponding to line 3—3 of Fig. I, looking in the direction of the little arrows at the
35 ends of the section lines. Fig. IV is a detail longitudinal section with a rail in position, one of the positions of the rail plate and rail in assembling the parts being illustrated by dotted lines.

40 In the drawings, similar reference numerals refer to similar parts throughout the several views.

Referring to the drawing, the tie 1 consists of a plate-like base portion having a pedestal 2 at each end for the rails 3. The pedestals are provided with a seat 4 having outwardly-projecting rail base engaging flanges 5 at their inner ends, the flanges overhanging the seats. The inner and outer ends 6 and 7 of the seats 4 are inclined outwardly. The seats are provided with sockets 8 having downwardly converging side walls, as clearly shown in Fig. III, and outwardly-inclined end walls.

55 The rail plates 9 are adapted to rest in the seats and to receive the bases of the rails.

The plates are provided with rail base engaging flanges 10 at their outer ends. The ends of the plates are inclined to abut the ends of the seats, see Fig. IV. On their
60 under sides, the plates 9 are provided with socket-engaging webs 11. The sides of these webs are inclined to fit the side walls of the sockets. The inner ends of the webs are inclined to abut the inner ends of the sockets,—that is, the inner end walls of the sockets.
65

The lower edges of the webs 11 are curved or inclined outwardly, so that the webs serve as rockers or inclined supports on which the plates may be slid into their seats after the rails have been placed thereon. These webs also serve to reinforce the plates and prevent lateral movement thereof.
70

The ends of the seats being inclined and the ends of the plates being correspondingly inclined, the plates readily slip into and wedge into their seats. The plates are retained in their seats by means of keys 12, which are driven into sockets 13 provided
80 therefor. The seat flange 5 and the plate flange 10 are preferably arranged so that a shim or cushion block 16 may be inserted between the rail and the rail plate. This block is of wood and serves as a cushion to
85 deaden noise and also as a wedge to insure a close fit between the flanges and the rail base. The rail plates 9 are longitudinally corrugated. These corrugations embed in the cushion blocks, which are held in place
90 thereby.

The tie 1 is provided with a web 14 extending between the pedestals, the web being preferably provided with openings, as shown, in order to reduce the weight and the
95 amount of metal, and also to better receive the ballast. At the outer sides of the pedestals are brace or supporting members 15. By thus forming and arranging the parts, the rails are easily placed, and when positioned, are securely held, as it is impossible
100 for the rail plate to work out of its seat, or be removed from its seat without withdrawing the keys, and the tendency is for both the seat and the keys to wedge farther
105 into their sockets.

The side walls of the pedestals are chambered, as shown, in order to reduce the weight of the tie, and also to receive the ballast to better support the tie against longitudinal movement.
110

I have illustrated and described my im-

provements in a simple embodiment thereof. I am aware, however, that considerable variation in structural details is possible without departing from my invention, and I desire to be understood as claiming the same specifically as illustrated, as well as broadly within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination of the tie body having a seat provided with an overhanging outwardly-projecting rail base engaging flange at its inner end and a socket, the outer end of the seat and the end walls of the socket being inclined outwardly, the side walls of the socket being converged downwardly; a rail plate adapted to receive a rail and having a rail base engaging flange at its outer end and provided with downwardly-projecting webs fitting the side walls of the socket, the ends of the plate and the inner ends of the webs thereon being inclined to abut the ends of the seat and the inner end of the socket, the lower edges of said webs being upwardly and outwardly inclined; and a key engaging the outer end of said plate.

2. The combination of the tie body having a seat provided with an overhanging outwardly-projecting rail base engaging flange at its inner end and a socket; a rail plate adapted to receive a rail and having a rail base engaging flange at its outer end and provided with downwardly-projecting webs fitting the side walls of the socket, the lower edges of said webs being upwardly and outwardly inclined; and a key engaging the outer end of said plate.

3. The combination of the tie body having a seat provided with an overhanging outwardly-projecting rail base engaging flange at its inner end and a socket, the rail engaging face of said flange being inclined inwardly, and a rail plate adapted to receive a rail and having a rail base engaging flange at its outer end the rail engaging face of said plate flange being inclined outwardly, said plate being provided with a socket engaging member adapted to guide the plate into its seat.

4. The combination of the tie body having a seat provided with a rail base engaging flange at its inner end and a socket, the rail engaging face of said flange being inclined inwardly, the outer end of the seat being inclined outwardly; and a rail plate adapted to receive the rail and having a rail base engaging flange at its outer end the rail en-

gaging face of said plate flange being inclined outwardly, the outer end of the plate being inclined to fit said seat, said plate being provided with a triangular socket engaging member arranged with its base inward, the outer end being spaced from the outer end of the plate.

5. The combination of the tie body having a seat provided with a rail base engaging flange at one end, the other end of the seat being inclined; a rail plate having a rail base engaging flange at one end, the end of the plate having the flange being inclined to fit the inclined end of the seat, the face of said plate being longitudinally corrugated; and a cushion block arranged on said plate to wedge the rail base against the seat and rail plate flanges.

6. The combination of the tie body having a seat provided with a rail base engaging flange at one end, the other end of the seat being inclined; a rail plate having a rail base engaging flange at one end, the end of the plate having the flange being inclined to fit the inclined end of the seat; and a cushion block arranged on said plate to wedge the rail base against the seat and rail plate flanges, the rail engaging faces of said seat flange and rail plate flange being inclined so that as the plate with the rail thereon is forced to position, the rail is clamped upon the cushion block.

7. The combination of the tie body having a seat provided with a rail base engaging flange at one end; a rail plate having a rail base engaging flange opposite to the flange on said seat, the face of said plate being longitudinally corrugated; and a cushion block arranged on said plate to wedge the rail base against the seat and rail plate flanges.

8. The combination of the tie body having a seat provided with a rail base engaging flange at one end; a rail plate having a rail base engaging flange opposite to the flange on said seat; and a cushion block arranged on said plate to wedge the rail base against the seat and rail plate flanges, the rail engaging faces of said seat flange and rail plate flange being inclined so that as the plate with the rail thereon is forced to position, the rail is clamped upon the cushion block.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

EZRA MILLER. [L. S.]

Witnesses:

R. M. GORDON,
JAMES ADAMS.