

(No Model.)

C. M. REED.
RAILWAY TIE AND RAIL FASTENER.

No. 487,642.

Patented Dec. 6, 1892.

Fig. 1.

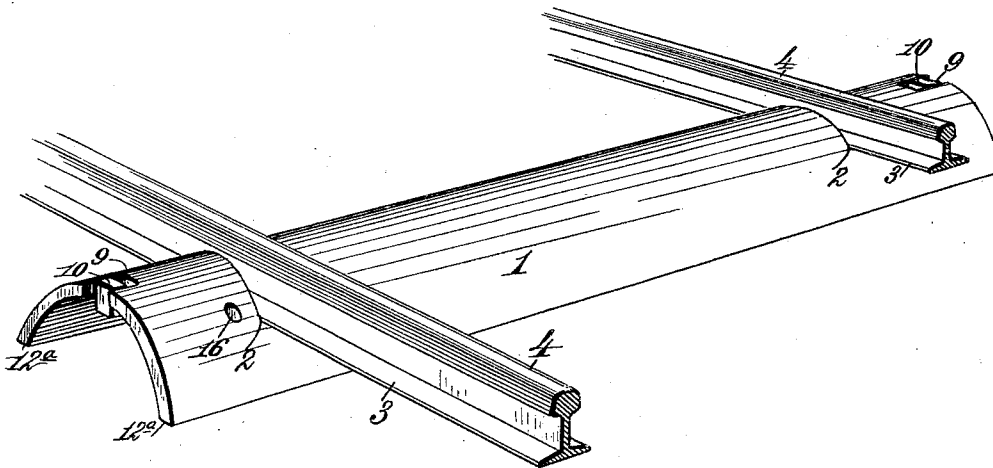


Fig. 2.

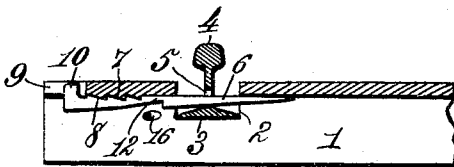


Fig. 3.

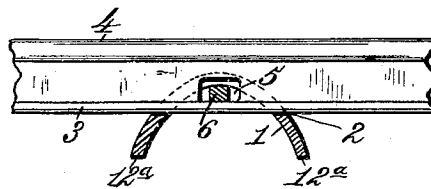
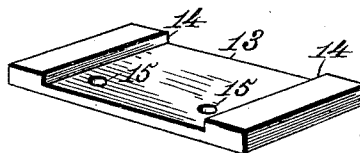


Fig. 4.



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UNITED STATES PATENT OFFICE.

CALVIN M. REED, OF HOPPENVILLE, PENNSYLVANIA.

RAILWAY-TIE AND RAIL-FASTENER.

SPECIFICATION forming part of Letters Patent No. 487,642, dated December 6, 1892.

Application filed June 27, 1892. Serial No. 438,119. (No model.)

To all whom it may concern:

Be it known that I, CALVIN M. REED, a citizen of the United States, residing at Hoppenville, in the county of Montgomery and State of Pennsylvania, have invented new and useful Improvements in Railway-Ties and Rail-Fasteners, of which the following is a specification.

This invention has for its object to provide novel, simple, durable, and efficient means for supporting and securing railway-rails without the use of spikes or bolts for attaching the rails to the cross-ties.

To this end the invention consists in the combination of an arched metallic railway-tie having a transverse orifice cut in its crown or highest portion to form a rail-seat, a railway-rail having its flanged base arranged in the rail-seat and provided with a transverse perforation which lies or extends beneath the lower or inner surface of the crown of the arch, and a wedge-shaped key passing through the perforation in the rail and bearing against the lower or inner surface of the tie.

The invention also consists in the combination of an arched metallic railway-tie provided with a transverse orifice in its crown or highest portion and having its lower or inner surface notched, serrated, or corrugated, a railway-rail having its flanged base arranged in the transverse orifice and provided with a perforation which lies or extends beneath the lower or inner surface of the arched tie, and a wedge-shaped key passing through the perforation in the rail and having a toothed portion which engages the notched, serrated, or corrugated part of the tie.

The invention is illustrated by the accompanying drawings, in which—

Figure 1 is a detail perspective view of the improved railway-tie, showing portions of the rail secured in position according to my invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view; and Fig. 4 is a detail view of a wear-plate, hereinafter described.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein the numeral 1 indicates a metallic cross-tie, which is of arched form in cross-section and in practice is cast of malle-

able or wrought metal with a thickness sufficient to provide the requisite strength to fulfill the conditions required. The crown of the arched metallic cross-tie is formed near each end with a transverse orifice constructed by cutting out or omitting the metal for the purpose of forming a rail-seat 2, in which the flanged base 3 of the railway-rail 4 is arranged, so that the bottom wall of the orifice sustains the rail, while the side walls or edges of such orifice prevent lateral movement of the rail. The flanged base of each rail is provided with a perforation 5, which lies or extends beneath the lower or inner surface of the crown of the arch for the purpose of receiving a wedge-shaped key 6, which can be driven through the perforation 5 and bears against the lower or inner surface of the tie for the purpose of securely locking the rail to the tie. The lower or inner surface of the crown of the arch is formed with a series of notches, serrations, or corrugations 7, and the wedge-shaped key 6 is formed with a toothed portion 8, adapted to engage or interlock with the notched, serrated, or corrugated portion 7 of the tie in such manner that when the wedge-shaped key is driven through the orifice 5 a sufficient distance to lock the rail to the tie the toothed portion of the wedge engages the notched portion of the tie, and thereby effectually prevents the accidental movement of the wedge in a direction which would loosen the rail.

The cross-tie is here shown as provided at each end with a slot 9 to receive and expose the head 10 of the key, and the latter is constructed with a reduced or thin portion 12 near the middle of its length to render it somewhat elastic, so that its outer end or head portion 10 can be depressed to release the toothed part 8 of the key from the notched or serrated part 7 of the cross-tie.

My invention provides railway-ties and rail-attaching devices which are simple in construction and durable and efficient in practice, while repairs can be quickly and conveniently effected and the rail can be tightened as occasion may demand by a few taps on the keys.

To replace a rail, it is only necessary to use a pick and hammer, the pick being employed to depress the head portion 10 of the key from engagement with the notched, serrated, or cor-

rugated part of the tie, whereupon the hammer can be employed to drive the key out of position, and a new rail can then be placed in the rail-seat and a key inserted to lock it in position.

5 The invention enables me to avoid the use of railway-spikes, clips, or bolts for attaching the rails to the cross-ties, and the devices are so simple that the cost of constructing rail-
10 ways and repairing and renewing the same is largely reduced.

The peculiar arched construction of the cross-tie causes it to present longitudinal edges 12^a, which rest on the roadway; but
15 where the ties are used on bridges or trestles it is desirable to prevent these edges from cutting or pressing into the wood, and to accomplish this I provide wear-plates 13, one of which is exhibited by the perspective view,
20 Fig. 4. The plates are each provided with a depression to form lateral shoulders 14, between which the cross-tie is arranged, and the wear-plates are provided with bolt-holes 15, coinciding with bolt-holes 16 in the cross-tie
25 for the passage of bolts to connect the plates with the cross-ties and the trestle or bridge.

The wedge-shaped key is composed of steel, so that it will be slightly elastic to permit it to be sprung out of engagement with the
30 notched or serrated part of the tie.

Having thus described my invention, what I claim is—

1. The combination of an arched metallic railway-tie having a transverse orifice cut in its crown or highest portion to form a rail-
35 seat, a railway-rail having its flanged base arranged in the rail-seat and provided with a transverse perforation which lies or extends beneath the lower or inner surface of the crown of the arch, and a wedge-shaped key
40 passing through the perforation in the rail and bearing against the lower or inner surface of the tie, substantially as described.

2. The combination of an arched metallic railway-tie provided with a transverse orifice
45 in its crown or highest portion and having its lower or inner surface notched, serrated, or corrugated, a railway-rail having its flanged base arranged in the transverse orifice and provided with a perforation which lies or ex-
50 tends beneath the lower or inner surface of the arched tie, and a wedge-shaped key passing through the perforation in the rail and having a toothed portion which engages the notched, serrated, or corrugated part of the
55 tie, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

CALVIN M. REED. [L. S.]

Witnesses:

W. B. KEELY,
C. H. SHADE.