(No Model.)

L. A. KENYON.

METALLIC RAILWAY TIE AND FASTENING.

No. 487,016. Patented Nov. 29, 1892.

Fig. 1.

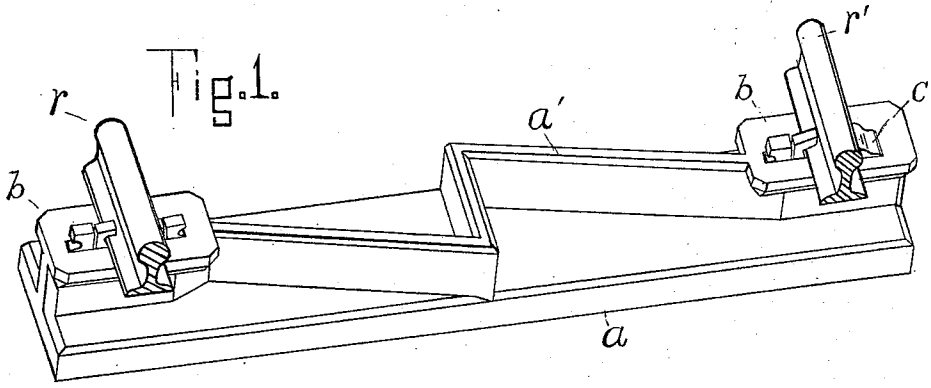
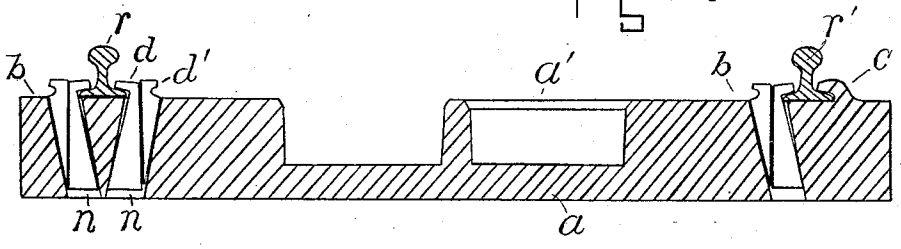


Fig. 2.



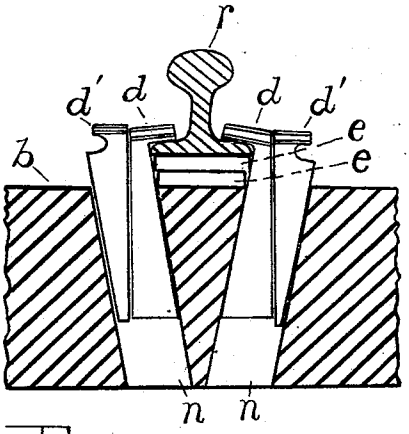


Fig. 3.

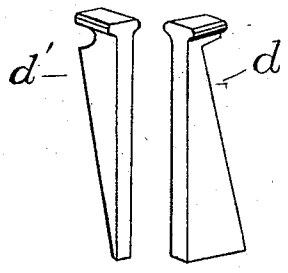


Fig. 4.

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METALLIC RAILWAY-TIE AND FASTENING.

SPECIFICATION forming part of Letters Patent No. 487,016, dated November 29, 1892.

Application filed February 24, 1890. Serial No. 341,489. (No model.)

To all whom it may concern:

Be it known that I, LOUIS A. KENYON, a citizen of the United States, residing at Fairwater, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Metallic Railway-Ties and Fastenings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in metallic railway-ties and fastenings, and has for its object to provide a metallic railway-tie that is simple in construction, strong, and durable, and adapted to all kinds of road-bed, and means whereby the rails may be adjustably and firmly attached to the same; and it consists in the peculiar construction, combination, and arrangement of the different parts, as hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings, in which like letters of reference indicate like parts, Figure 1 is a perspective view of my railway-tie with the rails attached thereto. Fig. 2 is a vertical sectional view lengthwise of the tie, showing the rail-fastenings. Fig. 3 is a vertical section near one end of the tie, on an enlarged scale, showing the adjustable fastening as adjusted to hold the rail when blocked up above the tie; and Fig. 4 is a detail view of the key and wedge used to fasten the rails to the tie.

Referring to the drawings, the letter *a* indicates the base of the tie, constructed of sufficient width to afford it a firm bearing on the road-bed. This tie is formed or provided at opposite ends with rail-supports *b*, substantially T shape in cross-section and connected by a zigzag rib or web *a'*, running longitudinally of the tie and serving to strengthen the same both lengthwise and crosswise and preventing its displacement either longitudinally or laterally by reason of the shoulders formed by the zigzag arrangement, against which the ballast is firmly packed or tamped.

From the sectional views of the drawings it will be seen that the end rail-supports are provided each with vertical channels *n n*, the sides bordering said channels being inclined inwardly from the upper surface of the tie, thus leaving a cone-shaped metallic partition therebetween, said cone having its base uppermost. The rails *r r'* are adapted to be supported upon these cones or partitions, the upper supporting-surfaces thereof in practice being preferably somewhat less in width than the rails.

The letters *d d* indicate keys, which are adapted to be inserted into the channels *n n* upon opposite sides of the cone-shaped metallic partition. These keys, it will be noticed, have their inner edges inclined to register with the inclinations of the partitions, while their outer edges are straight or approximately so. They are also provided with an inwardly-extending head adapted to fit over the base of the rail, and said head in turn, as shown in Figs. 3 and 4, may be provided with side flanges, affording a better chance to secure a hold thereon and preventing the keys from falling too far into the channels when being placed in position.

In order to bring the keys in contact with the rails after the former have been placed in the slots or channels *n*, I provide wedges *d'*, having their outer edges inclined to register with the inclined bordering walls of the slots and their inner edges approximately straight to register with the corresponding edges of the keys. As shown in Fig. 3 and upon the left of Figs. 1 and 2, these keys and wedges are placed upon opposite sides of the rail with the wide lower ends thereof down into the channel *n* and the wide ends of the wedges occupying the uppermost position. When the keys are thus placed in position and the wedges driven into the channels against the keys, the rails are securely and firmly fastened to the tie, as the inwardly-extending heads of the keys are in this manner made to engage said rails.

As it is sometimes necessary to level up a track, especially in northern climates, where they are thrown out of true by the effects of frost and subsequently become frozen in the ground and rendered difficult to move, or by reason of one part of the road-bed settling more than another, or from any other cause, I employ blocks *e e'*, which are inserted be-

tween the rails and tie, thereby elevating the former, and by reason of the upper end of the cone-shaped partition being somewhat less in width than the base of the rail, as previously stated, the keys and wedges are enabled still to hold the rails firmly notwithstanding their adjustment to a more elevated position. Again, if for any reason it becomes necessary to adjust the rails laterally or to vary the width of the rails apart, I can readily accomplish this by simply raising the wedge upon one side and driving the opposite wedge in tighter. In this way a fastening is produced which is adjustable either vertically or horizontally.

In order to release the keys *d*, the wedges *d'* may be raised with an ordinary claw-bar, as used ordinarily for railway-spikes.

If desired, some of the ties may be provided with double fastenings at the ends for rail-joints, &c.

In case of bridges, elevated roads, or other structures in which it is not desired or necessary to place blocks for the purpose of elevating the tracks or rails, the tie may be formed with an upward-curved extension C at one or both ends (shown only at one end on the right in Figs. 1 and 2) to engage with one side of the rail, as shown, preferably with the outside of the rail at one end of the tie and with the inside at the opposite end of said tie when formed on both ends, so as to enable the tie to be removed and replaced underneath the rails without removing the latter, it only being necessary to force out the wedge and key fastening the rails on the opposite sides to said tie and sliding the tie endwise underneath the rails. By preference the ties should be placed in position alternately over opposite sides of the track, so that the rigid rail fastenings or claws C will engage alternately on opposite sides. It is furthermore to be noted that the rail-support at each end of the tie projects far enough laterally from the rail to give a good bearing for the claw-bar to force out the wedges, and, as before stated, the zigzag rib *a'* will prevent the tie being easily moved endwise when the ballast of the road-bed is packed closely each side of it and over the base *a*.

From the foregoing description it will be seen that this is a strong, durable, and adjustable tie and fastening, simple in construction, adapted for all kinds of road-beds, and which may be put in place and the rails attached or removed by ordinary laborers or section-men with the tools now in general use and without requiring a skilled mechanic or special tool.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with the rails, the tie formed with a broad base, a zigzag rib or upward extension running lengthwise of the tie, rail-supports at each end of the tie, and means whereby the rails may be adjustably secured to said tie, substantially as and for the purpose set forth.

2. In combination with the rails, a metallic railway-tie formed with slots or channels running downward from the upper face of said tie at an angle underneath the edges of the rails, adjustable wedge-shaped keys adapted to engage at the wide end underneath the upper inclined faces of said slots or channels and provided with heads or lateral projections at their narrow ends adapted to engage with the rails, and wedges whereby said keys may be adjustably secured in place, as desired, substantially as and for the purposes set forth.

3. In combination with the rails, the tie formed with wedge-shaped portions underneath the rails, slots or channels *n n* at the sides of said wedge-shaped portions, wedge-shaped keys *d d*, adapted to engage with the rails and underneath the sides of said wedge-shaped portions of the tie, and wedges *d' d'*, adapted to hold or lock said keys *d d* in position, substantially as and for the purposes set forth.

4. The tie formed with a base *a*, a zigzag rib *a'*, rail-supports *b b*, channels *n n*, keys *d d*, and wedges *d' d'*, substantially as and for the purposes set forth.

5. As an improved article of manufacture, a railway-tie consisting of a base and a zigzag rib projecting above said base, substantially as set forth.

6. In a metallic rail tie and fastening, the combination, with a tie having each extremity provided with vertical slots or channels, the edges of the central partitions therebetween being inclined inwardly from the upper surface of the tie and the outer bordering walls of the channels having corresponding inclinations, of rails or tracks supported upon said partitions, keys provided with inwardly-extending heads adapted to rest upon the bases of the rails and having their inner edges inclined to register with the inclined edges of the partitions and their outer edges straight, and wedges having straight inner edges registering with the contiguous edges of the keys and inclined outer edges registering with the inclinations of the bordering walls of the slots or channels, substantially as set forth.

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

LOUIS A. KENYON.

Witnesses:
MARTIN C. SHORT,
M. POST.