





# UNITED STATES PATENT OFFICE.

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## RAILWAY-TIE AND FASTENER.

935,243.

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*To all whom it may concern:*

Be it known that I, EDWARD E. BAKER, of Warsaw, in the county of Wyoming and State of New York, have invented certain  
5 new and useful Improvements in Railway-Ties and Fasteners; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a  
10 part of this specification, and to the reference-numerals marked thereon.

The present invention relates to railway ties and it has for an object to provide a construction which may be made from metal  
15 and will have great strength and durability.

Another object is to provide a tie, of the type embodying two longitudinally adjustable members, constructed to prevent a center-bound track without weakening the  
20 structure and having means which will permit the securing of the members together at any point between two limits in order that the rails may be properly gripped.

Still another object is to provide a fastener which may be quickly and easily secured to a metallic tie and when in position will not be liable to work loose.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a perspective view of a tie embodying my improvements with portions of the rail secured thereto; Fig. 2 is a perspective view of the two members forming the tie, all movable parts being detached; Fig. 3 is a longitudinal section of  
40 one of the members, a part being shown broken away; Fig. 4 is a central transverse vertical section of a tie; and Fig. 5 is a detail perspective view of one of the rail fasteners.

45 In the present embodiment of the invention the tie comprises two longitudinally extending members A and B, which are preferably exactly like each other in order that only one set of tools will be required for the  
50 manufacture of both members. Each member preferably has a vertical longitudinally extending wall 1 which abuts against a like wall on the other member, while the outer vertical wall is recessed or cut away near its

center at 2 and curved transversely at 3 on 55 opposite sides of its recessed portion. The curved portions enable the tie to be properly tamped at each end, while the recessed portions reduce the tie at its center in order to prevent tamping at this point so that a center binding of the track can not take place. 60 Preferably the tie is made of hollow metal in order to secure lightness and strength. The two vertical abutting walls then form a web at the center of the tie where the greatest 65 strain comes, while the outer edges of the top walls are braced by the transversely curved walls 3.

The rails 4 are held to the tie by fasteners which in the present instance are inter- 70 locked with the tie, this being preferably accomplished by a movement of the fasteners in the direction of the longitudinal axes of the members. In this embodiment the upper and lower walls of the tie members 75 have openings 5 in the form of longitudinally extending slots, one near each end of each side, one on each side being nearer to its proximate end than the other is to its proximate end. The fasteners may have rail 80 engaging portions in the form of hooks 6 adapted to be passed through the slots from the lower sides thereof and to be supported therein by portions or hooks 7 that overhang the ties at the upper side of the slots, each 85 being interlocked with the tie by a movement in the direction of the longitudinal axis of its tie member. A head 8 of greater width than the slot coöperates with the tie at the lower side of the slot to prevent the 90 passage of the entire fastener through its slot. In installing these fasteners they are introduced into the hollow tie members and inserted through one of the slots 5 so that the portion 7 overhangs the upper face of a 95 tie at one end of the slot and is thus retained in position on the tie. The rail engaging hooks 6 of one tie member are disposed in one direction to engage the base of one rail on the outside and the base of the 100 other rail on the inside, while the hooks of the other tie member are disposed in the opposite direction to engage the bases of the rails on their other sides. The portions of the rail fasteners lying within the slots are substantially equal in width to the latter so that the fasteners by coöperating with the walls 105 of the slot are held against turning.



To lock the two tie members at any point between two limits of adjustment, each tie member may be provided with a slot 9 arranged obliquely to the longitudinal axis of its member. These slots are preferably formed in the abutting walls 1 and when the two members are fitted together are at an angle to each other. A fastener, such, for instance, as a bolt 10, with a squared portion 11 may fit in the slot and is held therein by a nut 12.

In using this invention the two members are laid side by side and connected by fasteners 10 and the rail fasteners are fitted in proper position thereon. The rails are then placed in position and the tie members are moved longitudinally by a crow bar or a jack to firmly grip the rail bases, after which the bolt 10 is tightened to hold the tie members in their adjusted positions. The slots 9 are so arranged that any adjustment between two points may be secured but once the bolt 10 is tightened, the friction of the walls of the slots on the squared portion prevents the accidental relative movement of the members.

From the foregoing it will be seen that there has been provided an inexpensive railway tie which will give all of the advantages of a wooden tie, and, at the same time, has advantages thereover. The center binding of the track is prevented without weakening the tie as the center of the latter is of an I cross section which provides great strength transversely. Each tie member is a duplicate of the other, even the slots for the rail fasteners and the bolt 10 being the same on both members. The rail fasteners are simple and are constructed so that the greater the strain thereon the greater is their interlocking connection with the tie.

I claim as my invention:

1. A tie comprising two longitudinal members having vertical abutting walls and each having its outer vertical wall recessed near its center and curved transversely on opposite sides of the recessed portion, and devices for securing said members together.

2. A metallic tie comprising two longitudinally extending hollow members having vertical abutting walls and each member being reduced at its center, and devices for securing said members together.

3. A tie member having a vertical longitudinally extending wall and another vertical wall recessed at its center and curved transversely on opposite sides of the recessed portion.

4. The combination with a tie comprising two longitudinally extending and relatively adjustable hollow members provided with longitudinal slots, of rail fasteners each having a portion to cooperate with the inner surface of the tie member at one side of the slot, and a hook adapted to be passed through the slot to engage a rail.

5. The combination with a tie comprising two longitudinally extending and relatively adjustable hollow members provided with longitudinal slots, of rail fasteners, each having a head to cooperate with the inner wall of the tie member at one side of a slot, and a pair of oppositely extending hooks adapted to be passed through a slot, one of said hooks being adapted to engage a rail and the other overhanging the tie at the other end of the slot.

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Witnesses:

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