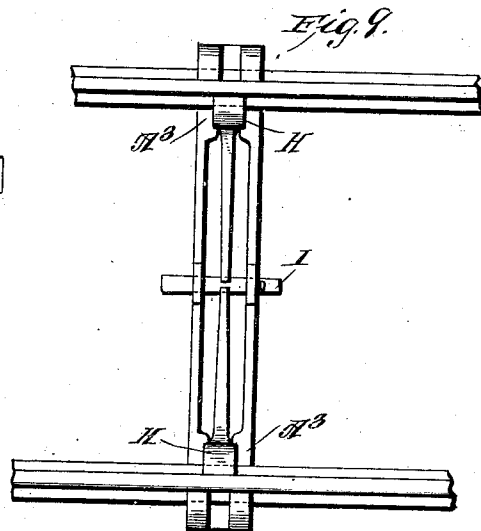
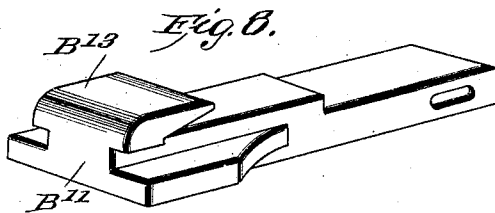
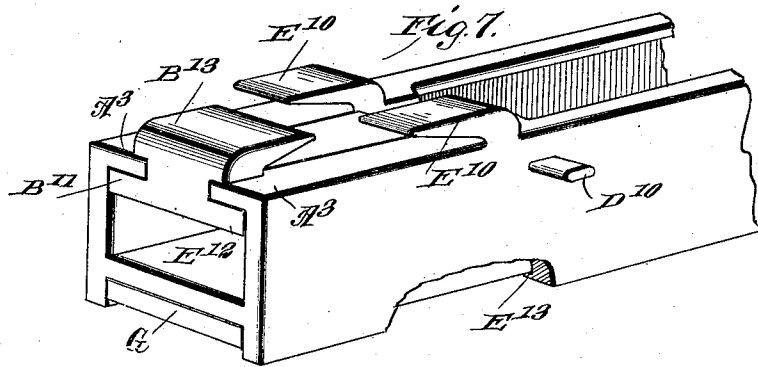
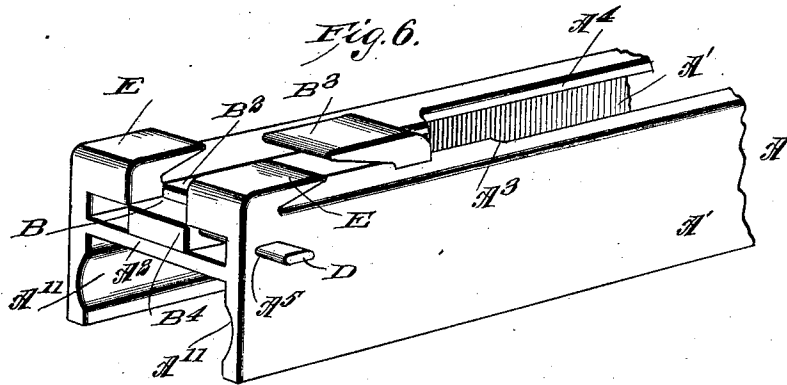


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RAILROAD TIE.
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2 SHEETS-SHEET 2.



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RAILROAD-TIE.

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To all whom it may concern:

Be it known that I, JOHN W. SNEDDEN, a citizen of the United States, and a resident of Falls Creek, in the county of Jefferson and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-Ties, of which the following is a specification.

This invention is an improvement in railroad ties, and consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

In the drawing Figure 1 is a top plan view of a section of a track provided with my tie and showing a curve. Fig. 2 is a detail section on about line 2—2 of Fig. 1. Fig. 3 is an end view of one of the ties, the rail being in place. Fig. 4 is a detail view of the rail clamp. Fig. 5 is a detail perspective view of one of the filling plates for use at the outer side of the outer rail of a curve. Fig. 6 is a detail perspective view of one end of one of the ties, the rail being removed. Fig. 7 is a detail perspective view similar to Fig. 6, and showing a somewhat different construction from that presented therein. Fig. 8 is a detail perspective view of the rail clamp shown in Fig. 7, and Fig. 9 is a top plan view showing the tie in which the rail clamps have their shank portions extended toward the middle of the track and are actuated by a key common to both of the clamps.

In carrying out the invention I employ the ties A, which have the opposite side plates A' connected by a cross plate A² at a point below their upper edges, and at the upper edges of the side plates A' I provide inwardly projecting flanges A³, which at the rail seat portions extend at their adjacent edges inwardly comparatively near each other as compared to their portions nearest the middle of the ties. These flanges A³ below the rail seat form supports for the rail clamps B,—see Fig. 4, and they also form keepers below which lateral shoulders B' on the rail clamps B bear in such manner as to keep the said rail clamps from upward movement, and this laterally projecting portion B' of the clamp B is arranged below the upper surface B² of the clamp B so that when the parts are applied as shown in Figs. 1, 2 and 3 the upper surface B³ of the clamp B will rest flush with the upper surface of the tie A and furnish a broad seat for the rails C. The space between the flanges A³ is widened at A⁴ at a point toward the mid-

dle of the tie, and said space is made of a width sufficient to permit the lateral extensions or shoulders B' of the clamp B to be inserted down below the level of the flange A³ in inserting the clamp which may then be moved laterally from the dotted line position shown at the left in Fig. 2, to the full line position shown in the same figure. This permits the application of the clamp B when the rail is in place, and facilitates the placing and removing of said clamps without necessitating the removal of the rails, and to such extent constitutes an important feature of my invention.

At one end, their inner ends as shown in Figs. 1, 2, and 6, the clamps B are provided with jaws B³ to overlie the base C' of the rail and at their opposite ends, their outer ends, see Figs. 1, 2, and 6, the clamps B, at points beyond the rail seat are reduced in thickness at B⁴, and are provided with transverse openings B⁵ to receive the keys D by which the clamps are secured in position, see Figs. 1, and 2 of the drawings. These keys D are passed through the openings at D⁵ and through coincident openings A⁵ in the side plates A' of the ties A, and are preferably tapered forming wedges which operate to draw the jaws B³ of the clamps B firmly into engagement with the inner edges of the rail bases C', thus operating to secure said rail bases as shown in Fig. 1.

At their outer ends the ties are provided with jaws E fitting over the outer edges of the rail bases, see Figs. 1, 2, and 6, and these jaws E and B³ coöperate in securing the rail base firmly in connection with the tie. It will be noticed this is effected without the use of spikes and in such manner that the rail clamps B extending beneath the rails operate to supplement the rail bases of the ties as will be understood from Figs. 1 and 2 of the drawings. An important feature of this part of my invention is an extension of the rail clamps below the rails and securing the said rail clamps at the opposite side of the rail from the jaws of the said rail clamps. This feature of my invention will also be found in the construction shown in Fig. 7, which is somewhat in the nature of a reversal of the construction as shown in Figs. 1 and 6, and while the construction shown in Fig. 7 may be used in some instances without departing from the broad principles of my invention, the construction and arrangement as presented in Figs. 1, 2 and 6, is preferred

because in that I provide the jaws rigid with the tie at the outer side of the rail, this being desirable especially on curves, as it provides a bearing integral with the tie in such manner as to resist the outward thrust experienced at curves of tracks. In the construction shown in Fig. 7 the rail clamp has a jaw B¹³ to overlie the outer edge of the rail base and laterally extending portions B¹¹ which underlie the top flanges A³ of the ties, and the clamp extends below the rail seat, and to the opposite side thereof from the jaw B¹³, and is secured by a wedge key D¹⁰, the fixed jaws E¹⁰ being arranged to engage upon the inner edges of the rail base, as will be understood from said Fig. 7.

In the construction shown in Figs. 1, 2, 3 and 6, the cross plate A² is arranged up close to the under side of the clamp B and the depending portions of the side plates A' receive a concrete filling F, being preferably recessed at A¹¹ in their inner faces to more securely hold the said concrete F, the latter operating to steady the tie in position and prevent it from sliding on and breaking the ballast when the latter is placed in the practical use of the invention. In Fig. 7 I dispense with the concrete construction and arrange the cross-plate E¹² between the side plates of the tie near the lower edges thereof, and a plank G of wood may be inserted below the said cross-plate E¹² and be held by inwardly projecting lugs E¹³ on the side plates at their lower edges, as shown in Fig. 7, the said plank operating in place of the concrete F to steady the tie in position for use.

In Fig. 8 I illustrate in detail the rail clamp shown in Fig. 7, the said rail clamp being secured in a somewhat similar manner to the rail clamp B, as more fully described heretofore.

In the construction shown in Fig. 9, I arrange the movable rail clamps H to engage with the inner edges of the rail bases, and the opposite clamps H are both operated by the key I at the middle of the track and common to both clamps H. In this construction the tie has its top flanges A³ similar to those shown in Figs. 1 and 6, and cut away toward the middle of the tie to permit the introduction of the underlying portions of the clamps H corresponding to the lateral projections B' of the clamp B shown in Fig. 4.

It is well understood that in the use of rails on curves the inner face of the tread of the outer rails becomes worn from time to time and in order to preserve the gage it is desirable to set the outer rail of the curve

in at times toward the inner rail and in doing this I find it desirable to employ a filling plate J shown in detail in Fig. 5 and applied in Figs. 1 and 2 of the drawings. This filling plate J is curved to coincide with the inner faces of the rail securing jaws E and to properly fit upon the rail base and is provided at its ends with out-turned lugs J' to engage on opposite sides of the rail clamping jaws to prevent any longitudinal displacement of the filling plate. These filling plates may be provided in different thicknesses in order to provide for different adjustments of the rail, as will be understood from Figs. 1, 2 and 5 of the drawings.

I claim—

1. The combination in a railroad tie of the tie proper having depending side plates recessed in their inner faces, a cross-plate connecting said side plates above the recesses therein and below the upper face of the tie proper and having at the upper edges of the side plates inwardly projecting flanges cut away toward the middle of the tie and having fixed rail securing jaws at the outer end of the tie, a movable rail clamp having at its inner end a rail securing jaw to overlie the inner edge of a rail base and having a body portion provided with lateral projections to underlie the inwardly projecting flanges of the tie and adapted to be inserted below said flanges at the cut away portion thereof, the body of the rail clamp having its upper surface coinciding with the upper surface of the tie and having at its outer end a transverse opening, and a key inserted through said opening and through corresponding openings in the tie, all substantially as and for the purposes set forth.

2. A railroad tie comprising a tie proper, having side plates, a cross plate connecting said side plates below their upper edges, and flanges projecting inwardly from the upper edges of the side plates and cut away toward the middle of the tie whereby the inner edges of the flanges at the ends of the tie are exposed, fixed rail securing jaws at the outer end of the jaw, and a movable rail clamp having at one end a jaw to overlie the inner edge of a rail base, and having a body portion grooved to receive the inwardly projecting flanges of the side plates of the tie, and means for securing said rail clamp in position for use, substantially as set forth.

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