E. M. McVICKER.

RAILWAY TIE PLATE AND FASTENING AND ANTICREEPER.

APPLICATION FILED SEPT. 21, 1918.

1,319,168. Patented Oct. 21, 1919.

3 SHEETS—SHEET 1.

Fig. 1.

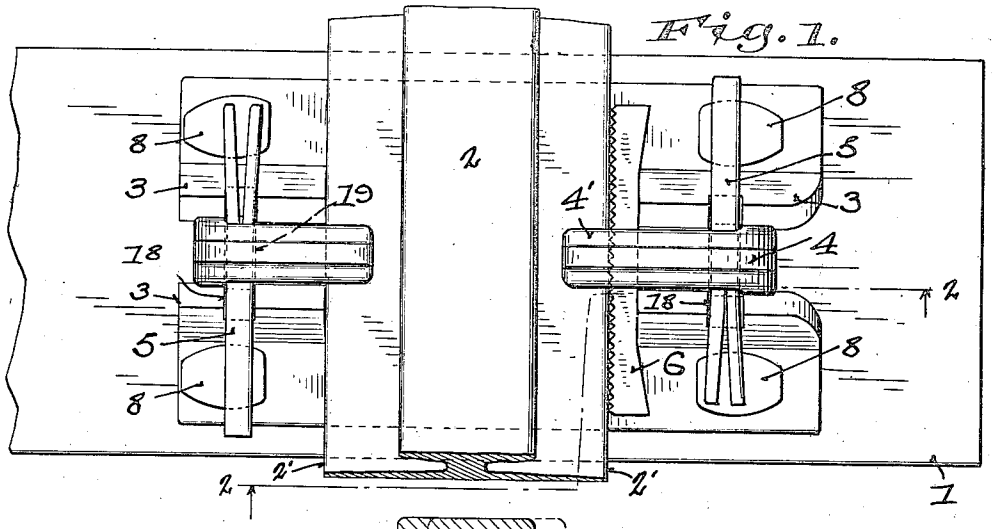


Fig. 2.

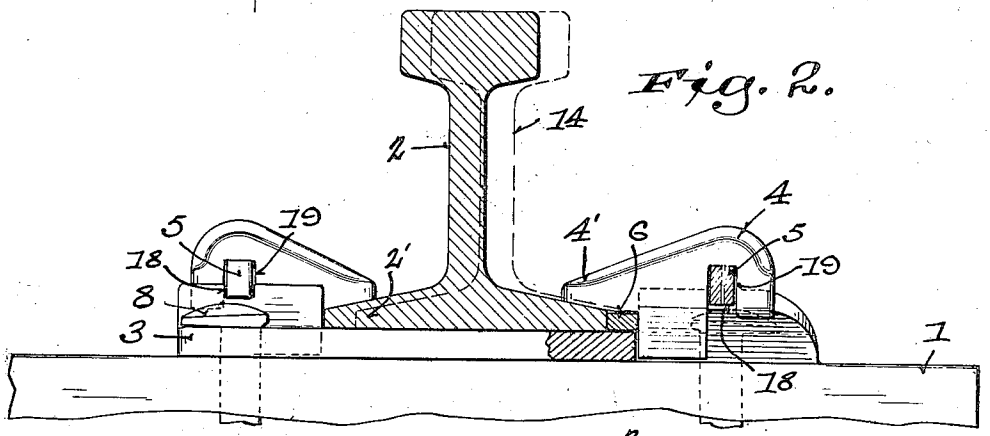


Fig. 3.

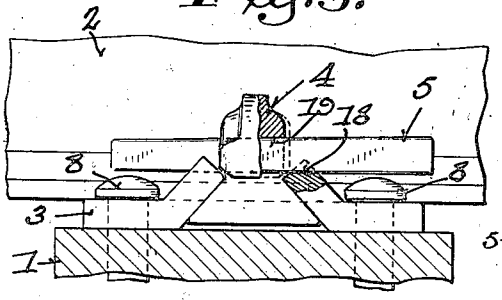


Fig. 4.

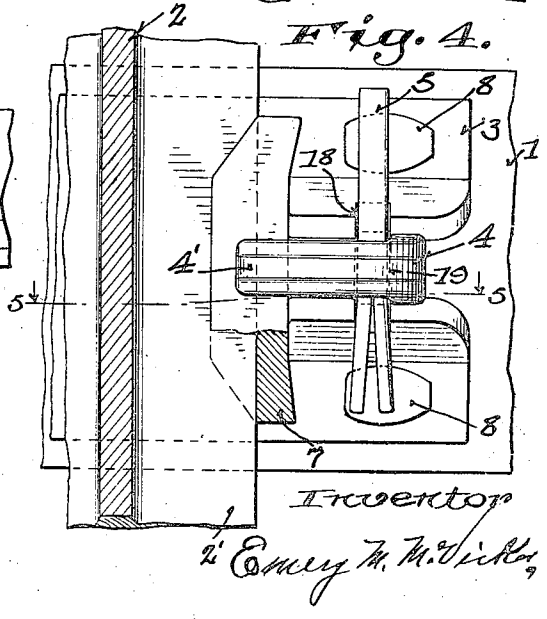
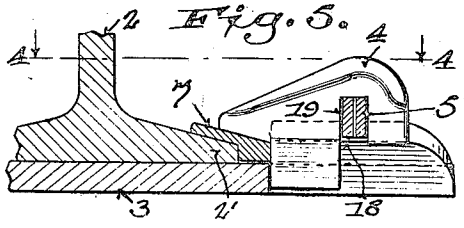


Fig. 5.



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3 SHEETS—SHEET 2.

Fig. 6.

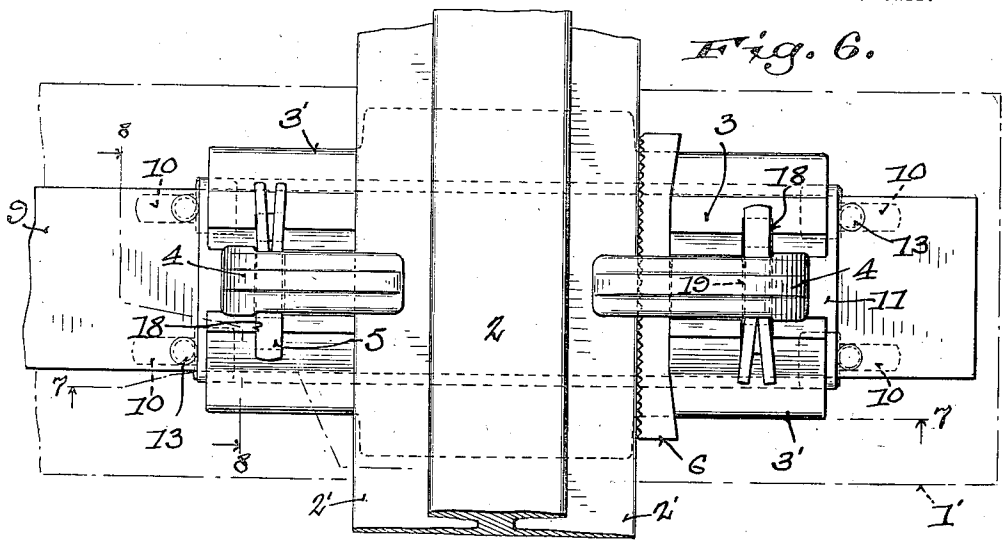


Fig. 7.

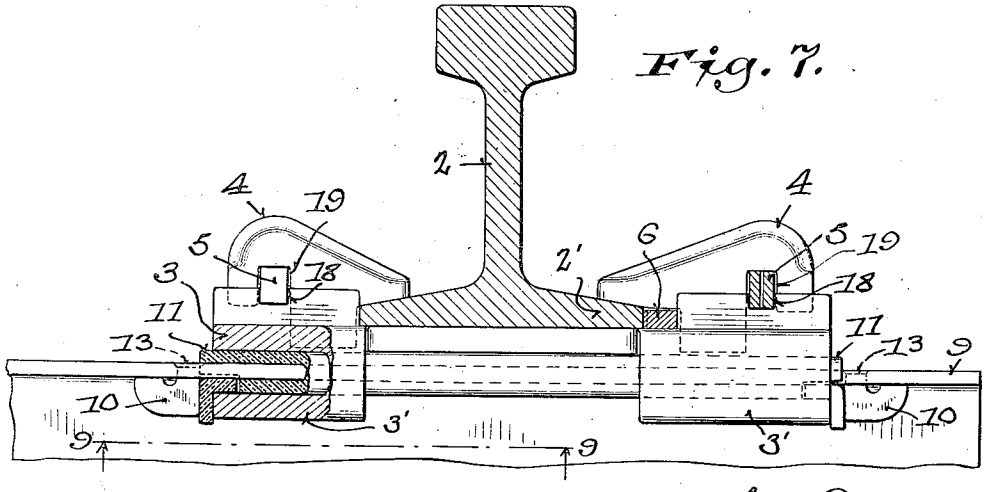


Fig. 8.

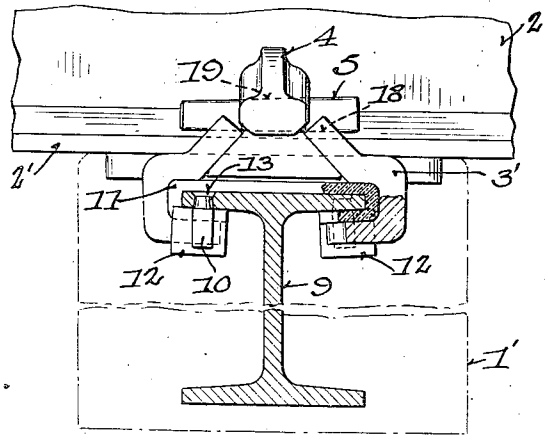
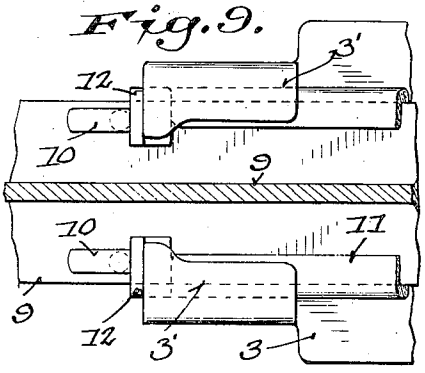


Fig. 9.



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3 SHEETS—SHEET 3.

Fig. 10.

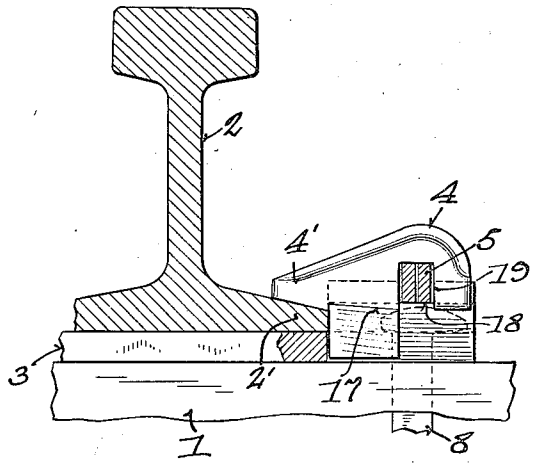
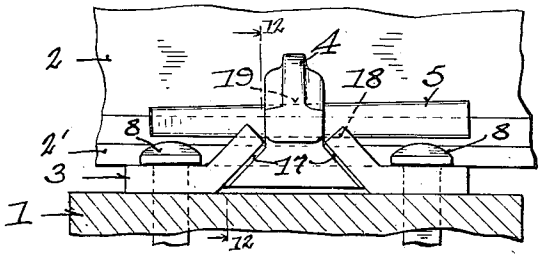


Fig. 11.



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UNITED STATES PATENT OFFICE.

EMERY M. McVICKER, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF TO J. F. McVICKER, OF MILWAUKEE, WISCONSIN.

RAILWAY-TIE PLATE AND FASTENING AND ANTICREEPER.

1,319,168. Specification of Letters Patent. Patented Oct. 21, 1919.

Application filed September 21, 1918. Serial No. 255,112.

To all whom it may concern:

Be it known that I, EMERY M. McVICKER, a citizen of the United States, and resident of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Railway-Tie Plates and Fastenings and Anticreepers, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to an improvement in railway tie plates and anticreepers in combination with the railway rail and railway cross ties.

It is not new to anchor the rail to the tie or the tie plate, or to shift the rail laterally to take up the gage of the track, but what I claim as new is an anti creeper bar or wedge shaped plate, in connection with my tie plate and rail, to prevent the rail from creeping, and to shift the rail laterally by transposing the anti-creeper bar from one side of the rail to the other, and fastening the rail to the tie plate, and the insulation of the metal reinforcement in a concrete tie from the metal tie plate.

The object of my invention is to prevent the rails from creeping and to shift the rails laterally or remove the rails without pulling the spikes in the tie and to hold the spikes down in place in the tie and insulate the metal reinforcement in the concrete ties.

I prevent the rails from creeping and shift the rails laterally by using a wedge shaped anti-creeper bar in combination with my tie plate and railroad rail and I hold the rails firmly to the tie plate and the spikes in the tie with my detachable rail clamps and keys, which also allow the removing of the rails without disturbing the spikes or fastenings holding the tie plate to the tie and to the reinforcement in the concrete tie.

There is a great and economical advantage in having an anti-creeper bar connected with the tie plate and the rail to prevent the rail from creeping and also to shift the rail laterally to change the gage of the track from time to time taking up the wear on the inside of the rail and the usual slight spreading of the track caused by usage and side pressure, and removing the rail without pulling the spikes and re-spiking because this weakens the tie and leaves holes to collect water and rot the wood, and when reinforced concrete ties are used in order to be practical it is absolutely necessary to shift the rail laterally on the tie plate because the tie plate is permanently fastened to the reinforcement and cannot be shifted.

The novelty of my invention is illustrated by my drawings hereto attached, reference being had to the figures and numbers and which is more fully explained by my specifications and reference numbers.

Figure 1, shows a top view of my tie plate complete, spiked to the tie with the anti creeper bar or wedge shaped plate inserted in working position.

Fig. 2, shows a cross sectional view, on the broken line 2—2 Fig. 1, of the rail and the anti creeper, and a partial side view of the tie plate, rail clamp and wedge.

Fig. 3, shows an end view of the tie plate and rail clamp, a side view of the key through the rail clamp and on the spikes, and a cross section of a portion of the tie.

Fig. 4, shows a top view of a portion of the tie plate and base flange of the rail, and a modified form of the double wedge shaped anti creeper, clamped in position in the tie plate and on the rail and under the rail clamp.

Fig. 5, shows a cross section of the rail on lines 5—5 Fig. 4, and a side section of a tie plate and rail clamp; and cross section of the anti creeper wedge clamp.

Fig. 6, shows a top view of the tie plate complete with the anti creeper or plate fastened to the eyebar form of a reinforcement in a concrete tie.

Fig. 7, shows a cross sectional view of the rail, the key and anti creeper on the lines 7—7 Fig. 6, and a side view of the tie plate and a sectional view of the insulation.

Fig. 8, shows a cross sectional view on the lines 8—8 Fig. 6 of the eyebar reinforcement, and of the insulation, and an end view of the tie plate and rail clamp.

Fig. 9, shows an inverted horizontal section of the eyebar reinforcement and the underside of the tie plate extending around the reinforcement and the insulation on lines 9—9 Fig. 7.

Fig. 10 shows a cross sectional view of the rail and a side portion of the beveled portion of the rail clamp.

Fig. 11, shows a side view of the rail and an end view of the beveled portion of the rail.

Similar numerals refer to similar parts throughout the several views:

1 in Figs. 1 to 5 inclusive, and 10 represents the ordinary wood tie on which my tie plate is spiked. 1′ in Figs. 6 to 9 inclusive, represents the concrete tie with its reinforcing eyebar within it; 2 a section of the railway rail; 2′ the base flange of the rail; 3 my tie plate; 4 my rail clamp fastening; 4′ an extended end of the rail clamp fastening; 5 the split keys holding the clamp in position on the tie plate; 6 the anti-creeper bar or plate wedge shaped at each end to prevent the rail from creeping either way; 7 in Figs. 4 and 5 my modified form of the anti-creeper plate or clamp; 8 the ordinary railway spikes in Figs. 1 to 4 and 10 and 11; 9 the reinforcing eyebar in the concrete tie; 10 the braces; 11 the insulation between the plate and the reinforcing eyebar in the concrete tie; 12 the insulation between the brace and the tie plate; 13 the rivet held in the reinforcing eyebar; 14, in Fig. 2, the position of the rail when shifted laterally by the transposing of the anti-creeper bar or wedge from one side of the rail to the other; 17 the beveled portion of the rail clamp tapering to the outer end to give it a tilting pressure in the groove nearest the rail so that the inner end will be pressed down against the top of the base flange of the rail when the outer end of the clamp is raised by the tapering key 5; 18 the key seat cut across the upward turned inclined sides of the tie plate receiving the wedge or key which holds the rail clamp in position against the rail.

In the application of my tie plate and anti-creeper to the wood tie, I spike my tie plate 3 to the tie 1, in Figs. 1 to 5 inclusive, and 10 to 11 inclusive. I then set the rail 2 on the tie plate 3 between the upwardly projecting shoulders of the tie plate and drop in the anticreeper wedge 6, or the modified form 7 on the tie plate 3, between the end shoulders of the tie plate and the side of the base flange 2′ of the rail. I may use a saw tooth edge on my anti-creeper next to the rail to more firmly grip the rail. I then slide the rail clamps 4 and 4′ from the outer end of the tie plate into position in the grooves in the tie plate 3 against and over the base flanges of the rail 2′, and insert the wedge shaped key 5 in position in the key seat 18, and through the rail clamp key seat 19, and over the heads of the spikes 8, and spread the key to hold it in position. My rail clamp 4′ is made longer so as to extend over the anti-creeper 6 and clasp the top of the base flange 2′ of the rail 2.

In the application of my tie plate and anti-creeper to the reinforced concrete tie, I rivet or clamp my tie plate to the eyebar reinforcement of the concrete tie 1′ by first slipping the insulation 11, as shown in Fig. 7, that is made to conform to the top and around the edges of the eyebar 9, onto the eyebar from the outer ends of the eyebar and into position. I then slip my tie plate 3, that has its sides of the tie plate 3′ bent around and under to conform with the eyebar and insulation as shown in Fig. 9 over the end of the eyebar 9, and over the insulation 11, into position on the eyebar, and then insert the insulation 12 into position at the outer ends of the tie plate 3. I then insert the stop 10 and rivet or fasten it into the hole in the eyebar 9, and against the insulation 12, so as to abut against the ends of the tie plate 3′. I then press the bent over sides of the tie plate 3′ down firmly against the insulation 11, so as to hold the tie plate firmly and rigidly to the eyebar 9, so as to give it a grip sufficiently strong to hold the tie plate 3′ firmly to the eyebar 9, in position when the eyebar is embedded in the concrete and when the concrete tie is in position in the track. The stops 10 abutting against the end of the tie plate 3′, hold the tie plate firmly to the eyebar 9 and prevent the movement endwise of the tie plate 3′ on the eyebar 9. I may also use the common form of riveting or bolting the tie plate 3′ to the eyebar 9 with the insulation 11 between to hold the tie plate firmly in position on the eyebar, and then use insulation ferrules and washers around the bolts and under the heads of the bolts to completely insulate my tie plate 3′ from coming in contact with the eyebar 9, thus preventing all electrical connection.

The object of my anticreeper constructed in the form of a plate or bar with a wedge shape at each end and pressing against the rail so as to have the movement of the rail either way tighten the wedge at one end or the other is to prevent the rail from creeping forward or backward. My method of using the anticreeper between the tie plate and the rail, and constructed in a wedge shaped form at each end holds the rail tight against the tie plate shoulders and prevents the rail from creeping either way and provides for shifting the rail laterally, and this plan simplifies the construction of the anti-creeper and tie plate and reduces the cost.

The construction of the tie plate so that there is a space between the tie plate and the rail is to permit the insertion of the anticreeper at one side of the rail or the other, and it has the advantage of shifting the rail laterally by means of exchanging or transposing the anticreeper from one

side of the rail to the other and thus using the anticreeper wedge for a double purpose, namely; preventing the rail from creeping lengthwise either way, and enabling the shifting of the rail laterally to change the gage of the track. The shifting of the rail laterally is important to take up the spread of the rails and narrow the gage of the track caused by the wear on the inside of the rail by the flange of the car wheels and to permit the use of rails of different sizes or widths of base.

The object of the use of the insulation material is to prevent the electrical current passing from the rail to the reinforcement that runs from one rail to the other in a concrete tie when the concrete ties are used on the block signal lines of railway. The tie plates are anchored to the reinforcement in the concrete tie, which is preferably an eye bar, in order to prevent the tie plates from shifting on the eye bar, and spreading the track and it is necessary to insulate either the rail from the tie plates or the tie plates from the eye bar to prevent electric current from crossing along the reinforcing metal from one rail to the other.

The advantage of placing the insulation under my tie plate in the concrete tie is to protect the insulation from the elements by being embedded under the tie plate and on the reinforcements and surrounded by my tie plate and the concrete thus protecting the insulation also from abrasion caused by the moving rail, when it is placed underneath and between the rail and the tie plate, as is commonly practised.

The object of constructing my rail clamp with a beveled bottom tapering from the inner end of the beveled portion which comes up underneath the upturned edges of the tie plate nearest to the rail is to give it a tilting position to press the inner end of the rail clamp down firmly on to the top of the base flange of the rail, raising the outer end by driving in the tapering key to prevent the rail from creeping. In this modified construction I do away with the wedge shaped anti creeper plate when it is not desired to shift the rail laterally and yet it is important to hold the rail from creeping and a cheaper form of construction is desired.

The taper shaped wedge or key passing across the tie plate and through the rail clamp can be driven in farther from time to time to take up the wear occurring between the inner end of my rail clamp and the rail so as to always keep the rail clamp rigidly pressed down against the rail to prevent the rail from creeping.

Having thus described my invention, I claim as follows:

1. A tie plate with a wedge shaped bar tapering both ways inserted between the tie plate and the base flange of the railroad rail and pressing tightly against the edge of the rail and the tie plate, and adapted to be transposed from one side of the rail to the other into similar position to shift the rail laterally and to prevent the rail from creeping when in either position.

2. A tie plate with an anti creeper bar wedge shaped at each end, and pressing tightly against the tie plate and the edge of the base flange of the rail so as to tighten as the rail starts to creep either way on the tie plate, and thus prevent the rail from creeping either way.

3. A tie plate with detachable rail clamps and a wedge shaped bar tapering both ways inserted between an upwardly projecting portion of the tie plate and the base flange of the railroad rail, and pressing tightly against the edge of the rail and the tie plate so as to prevent the rail from creeping, and held down in position with the rail by the rail clamps.

4. A tie plate with rail clamps and a wedge shaped anti creeper bar tapering both ways inserted between an upwardly projecting portion of the tie plate and the base flange of the railroad rail and a side piece extending over the top of the base flange of the rail and adapted to be transposed to either side of the rail into similar position, and held tightly against the rail by the rail clamp.

5. A tie plate with upward projecting parts on each side of the rail, and a shifting wedged shaped bar fitting between the upward projecting part of the tie plate and the base flange of the rail on one side of the rail, and the other side of the rail fitting against upward projecting shoulders provided on the tie plate, the shifting bar adapted to be transposed from one side of the rail to the other fitting into similar position thereby shifting the rail laterally, and rail clamps connecting the tie plate and the base flange of the rail and holding the shifting bar in position as placed on either side of the rail.

6. A tie plate having upwardly projecting parts on opposite sides of the rail, providing undercut grooves in the tie plate, and rail clamps fitting into the undercut grooves and over the base flange of the rail, and engaging the upwardly projecting portions of the tie plate adjacent to the base flange of the rail and a wedge shaped key inserted between the tie plate and the rail clamp, and adapted to force the outer end of the rail clamp upwardly and the inner end downwardly and tightly against the base flange of the rail, so as to prevent the rail from creeping on the tie plate.

7. A tie plate with upward projecting shoulders on each side of the base flange of the

rail, a wedge shaped anti-creeper bar tapering both ways inserted between a shoulder and the rail flange, and rail clamps connecting the tie plate with the rail, with the inner end of one rail clamp longer than that of the other rail clamp so as to extend over the anti creeper bar on one side of the rail, and onto the base flange of the rail holding the rail onto the tie plate and the anti creeper bar in position, and adapted to fit into similar position on the other side of the rail.

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Witnesses:
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E. B. MILLSPAUGH.