B. B. BETTS.

COMBINED ANTICREEPING RAIL AND TIE PLATE.

APPLICATION FILED DEC. 4, 1916.

1,240,407. Patented Sept. 18, 1917.

Fig. 1

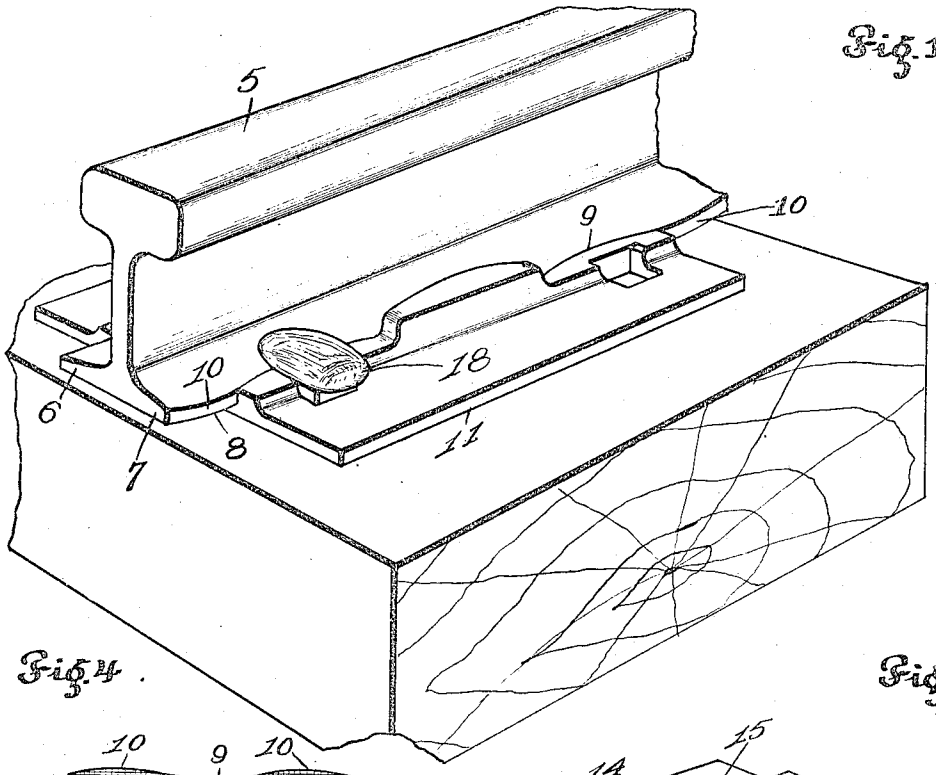


Fig. 4.

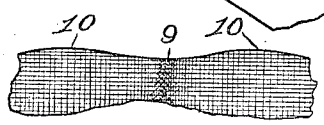


Fig. 2

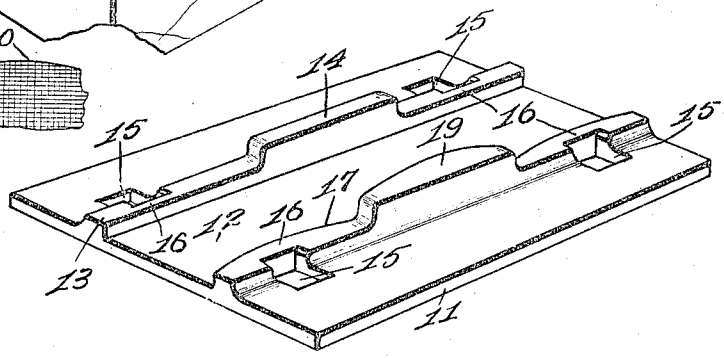
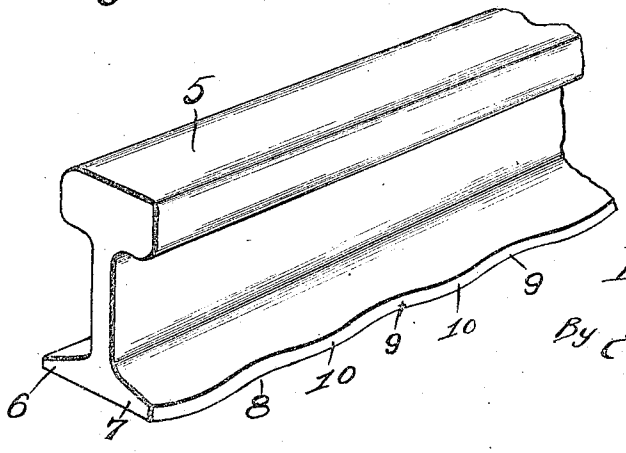


Fig. 3



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COMBINED ANTICREEPING RAIL AND TIE-PLATE.

1,240,407. Specification of Letters Patent. Patented Sept. 18, 1917.

Application filed December 4, 1916. Serial No. 134,997.

To all whom it may concern:

Be it known that I, BENJAMIN B. BETTS, a citizen of the United States, and resident of St. Louis, State of Missouri, have invented certain new and useful Improvements in Combined Anticreeping Rails and Tie-Plates, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in combined anti-creeping rails and tie plates and has for its object the construction of a rail and tie plate, which jointly act to prevent creeping of the rails caused by the movements of rolling stock, as well as to prevent relative lateral movements of the plate and rail when the spikes have been partially lifted or withdrawn, and also to preserve uniformity in the spacing of the ties.

With the above objects in view, my invention consists in certain novel details of the construction and arrangement of parts which will be hereinafter fully, clearly and concisely set forth in my specification, pointed out in my claims and illustrated in accompanying drawings in which—

Figure 1 is a perspective view of my invention applied to a tie, a portion of the rail being broken away.

Fig. 2 is a perspective view of the tie plate, which I employ in carrying out my invention.

Fig. 3 is a perspective view of a portion of a rail which I also employ in carrying out my invention.

Fig. 4 is a diagrammatic sectional view of the corrugated flange illustrating the unequal density thereof.

Referring to the drawings, 5 indicates my improved rail which is of the ordinary construction, except the base. The rail base consists of the base flanges 6 and 7, the base flange 6 being of the ordinary construction and provided throughout its length with a straight edge, whereas the base flange 7 is corrugated or is provided with a corrugated edge 8. The corrugated edge 8 is formed on the flange by being rolled while the rail is hot enough to be susceptible of having the valleys or grooves 9 compressed. The corrugated edge is formed on the flange by passing the rail while hot, through corrugated rollers so arranged as to compress the metal at regular distances apart to form the valleys or grooves 9.

By forming the corrugated edge 8 by the rolling operation, no metal of the base flange is removed and the flange is not weakened and the rail possesses its original weight and strength, although the base is of irregular width, being narrow at the depressions or valleys 9 and being widest, or the original width of the base flange, at the crests or ridges 10, the difference in widths being about one-eighth of an inch.

As above stated, the corrugated edge is rolled or pressed on to the base flange 7 without removing any metal of the flange, or without any vertical displacement of metal on the bottom or top surface of the flange. By compressing the flange by means of corrugated rollers while the flange is hot, and in producing no displacement on the top or bottom surface of the flange, I produce a rail flange of an unequal or irregular density, the greatest density being at the valleys or grooves 9, and the least density at the crest or ridge of the corrugation, the maximum density being at points where the rail base is the narrowest.

My improved rail when completed, may therefore, be characterized as one having a base of irregular or different widths and having a flange whose edge is of unequal density.

11 indicates my improved tie plate, which I employ in carrying out my invention which is rolled or pressed and is provided with a rail-bearing seat 12, and rail-bearing shoulder or abutment 13, which has a straight inner surface and is provided with a guiding projection 14 which projects above the top edge of the shoulder.

15 indicates spike openings being adjacent the rail-bearing shoulder or abutment 13, but are set back from the inner face of the shoulder 13 so as to leave portions 16 of the shoulder between the spike opening and the inner face of the shoulder. These portions 16 when the tie plate is in use, serve as a protection to the shank of the spike, thus preventing wear or what is commonly known as "throat cutting" of the spike. By positioning spike openings 15 as described, the inner surface of the shoulder 13 is left unbroken or uninterrupted, thus giving a maximum contact between the edge of the rail flange and the shoulder.

The projection 14 arising above the top of the shoulder 13 is for the purpose of guiding the rail back to its seat, should the spikes become loosened and the rail displaced. This shoulder is rigid and not intended to be bent and has its inner face in the same plane as the inner face of the body of the shoulder 13.

Formed opposite the shoulder 13 and adjacent the rail-bearing seat 12 is a corrugated shoulder 17 adapted to snugly fit into the corrugated edge 8 of the rail flange. The spike openings 15 adjacent this shoulder, are likewise set back from the corrugated face of the shoulder, thus leaving portions 16 of the shoulder between the spike openings and the corrugated face of the shoulder, and are located at the thickest point of the shoulder.

In Fig. 1 I have shown a spike in position, wherein it will be observed that the head 18 of the spike overlaps or breaks the joint between the flange and the corrugated face of the shoulder, the head of the spike when seated being on the top surface of the rail base flange. The corrugated shoulder 17 is likewise provided with a guiding projection 19, performing the same function as the projection 14, and it will be observed that it has a rounded or curved inner surface, corresponding with the flange corrugations.

Having thus described my invention what I claim is:

1. In a rail anti-creeper, a rail with opposite base flanges one of which is corrugated along its edge, the density of the metal of the base on lines transverse to the rail being greatest opposite the valleys of the corrugated edge, whereby the rail strength is preserved where its transverse dimensions are diminished, and tie plates on which the rail is confined having opposite bearing shoulders, one of each being corrugated to fit the corrugated edge of the rail.

2. A rail anti-creeper, comprising a rail having a rolled corrugated flange of unequal density, and a tie plate having a rolled corrugated shoulder, said tie plate being provided with spike openings intersecting said corrugated shoulder and removed from the corrugated face thereof.

3. A rail anti-creeper comprising a rail having a continuous straight edge flange throughout its length and a uniformly corrugated flange throughout its length, the said corrugated flange being formed by passing the rail through a corrugated roller, thus compressing the material of the flange and not removing the same at certain distances apart, whereby the original weight and strength of the rail are preserved, and a rolled tie plate provided with a corrugated shoulder adapted to snugly fit the corrugations of the rail flange, said corrugated shoulder being provided with a rigid upstanding guiding lug for guiding the rail back to its original seat, should it become displaced by the loosening of the spikes.

4. A rail anti-creeper comprising a rail provided with a straight flange and a corrugated flange, the corrugations of the corrugated flange being formed by rolling and a tie plate provided with a corrugated rail-bearing shoulder formed by rolling, and with spike openings, the said spike openings passing through the shoulder and body of the plate and being removed from the corrugated face of the shoulder, thus leaving portions of the shoulder between the spikes and corrugated rail flange.

5. A rail anti-creeper comprising a rail having a straight flange and a rolled corrugated flange of unequal density, a tie plate provided with a straight and a corrugated rail bearing shoulder and with spike openings intersecting said shoulders, and a lug carried by each shoulder between the spike openings.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

BENJAMIN B. BETTS.

Witnesses:
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