(No Model.)

C. J. SCHENCK.

PLATE FOR RAILWAY RAILS.

No. 565,801. Patented Aug. 11, 1896.

Fig 1

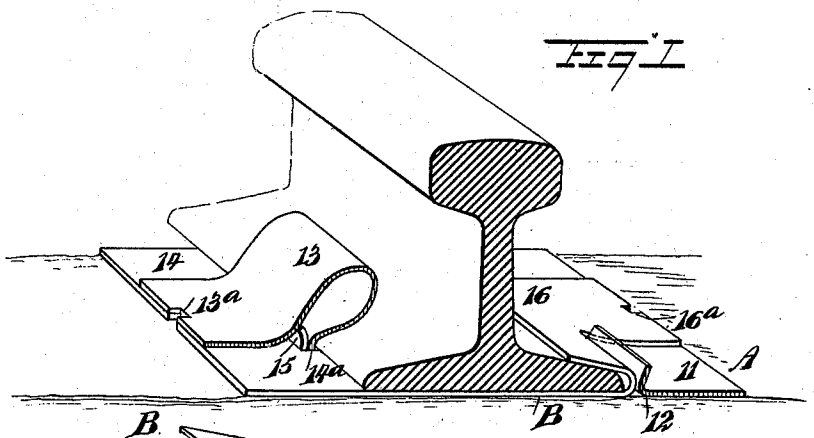


Fig 2

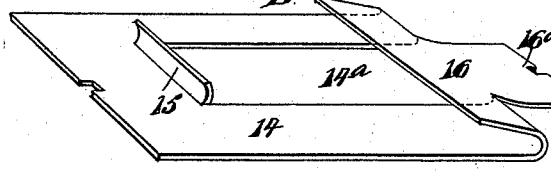


Fig 3

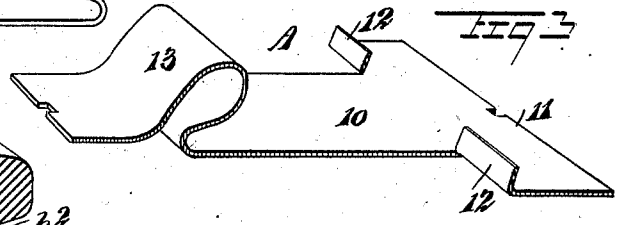


Fig 4

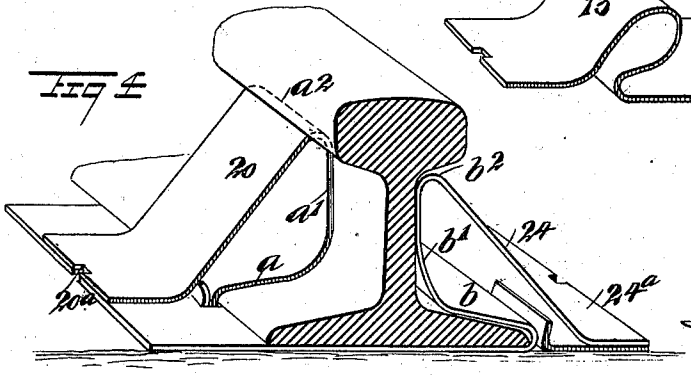


Fig 7

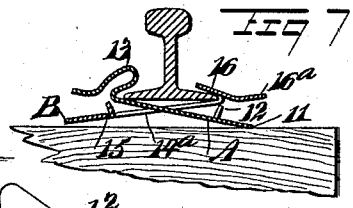


Fig 6

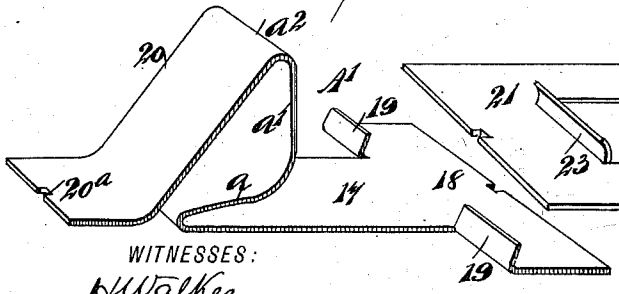
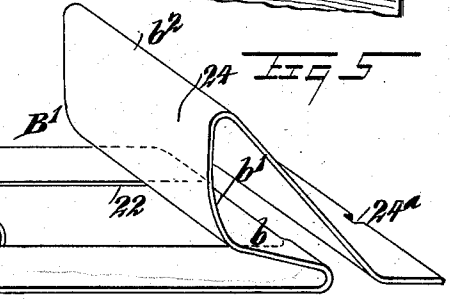


Fig 5



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UNITED STATES PATENT OFFICE.

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PLATE FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 565,801, dated August 11, 1896.

Application filed March 12, 1896. Serial No. 582,889. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. SCHENCK, of Gila Bend, in the county of Maricopa and Territory of Arizona, have invented a new and Improved Tie-Plate for Railway-Rails, of which the following is a full, clear, and exact description.

The object of the invention is to so construct the tie-plates for railway-rails that the grip of the said plates on the said rails will be so rigid and of such a character that it is equivalent to doubling the area of the base of the rail without raising its height, thereby materially increasing the resisting power of the rails, and since the rail rests upon many ties if a liberal quantity of tie-plates is used for each rail the rail will remain in proper position, although it may be badly broken.

A further object of the invention is to provide a means whereby portions of the gripping-surface of the tie-plates may be extended upward to engage with the head of the rail at one or both sides, forming thereby a superior brace for the rails, especially at their outer sides upon a curve and where the tie-plates are employed instead of fish-plates to connect the ends of the rails.

A further object of the invention is to construct the tie-plates in such manner that they may be expeditiously and conveniently applied to the rail, and in such manner that many combinations may be formed for use for especial purposes, the tie-plate being likewise so constructed that when applied to the rail it will entirely prevent creeping of the same.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a portion of a rail and a tie-plate applied to the same, the plate being especially adapted for use upon straight lines of track, or tracks which are substantially straight. Fig. 2 is a detail perspective view of the female member of the tie-plate shown in Fig. 1. Fig. 3 is a perspective view of the male member of the plate illustrated in Fig. 1. Fig. 4 is a perspective view of a portion of a rail and a tie-plate applied to the same, the plate being slightly modified in form and particularly adapted for use at the joints of the rails. Fig. 5 is a detail perspective view of the female member of the tie-plate shown in Fig. 4. Fig. 6 is a detail perspective view of the male member of the same plate; and Fig. 7 is a vertical section through a rail and the tie-plate shown in Fig. 1, illustrating the manner in which the members of the tie-plate may be separated to conveniently receive the rail.

The tie-plate is made in two sections, a male section A and a female section B.

When the tie-plate is to be used on a straight line of track, or a line of track that is substantially straight, the members of the plate are made as shown in Figs. 2 and 3, in which the male member A consists of a horizontal shank 10, having a horizontal head 11, formed at one of its ends, extending beyond the sides of the shank, and at each inner edge of the said head an upwardly-extending flange 12 is formed. A spring-bearing 13 is produced at the opposite end of the shank, the said bearing being formed by bending the metal, which is a continuation of the shank, over the aforesaid shank, and then outward upon itself, forming practically a loop, which is carried downward substantially to the end portion of the shank, and then the metal is carried horizontally outward in alinement with the end of the shank, forming a flange 13^a. The spring-bearing and flange in this form of male section of the plate is preferably of the same width as the width of the shank.

The female member B, adapted to receive the male member A, consists of a plate 14, usually made rectangular and of greater length than the width of the rail at its flange. A longitudinal opening 14^a is made in the aforesaid plate, and at one end of this opening an upwardly-extending flange 15 is formed, while adjacent to the opposite end of the opening 14^a a spring-bearing 16 is formed by bending the material of the plate upward and inward over the upper surface of the said plate, and a flange 16^a, extending downwardly and outwardly, is preferably made integral with

the central portion of the outer side edge of the aforesaid spring-bearing 16.

In assembling the parts of the tie-plate shown in Figs. 1, 2, and 3 the shank 10 of the male member is passed upward through the opening 14^a of the female member, the said opening being of corresponding width to that of the shank, or practically so. When the shank is so passed through the aforesaid opening, the curved end portion of the shank will be practically in engagement with the flange 15 of the female member, while the flanges 12 of the male member will be in position to pass upward at each side of the flange 16^a of the female member, while the bearing-surface 13 will be in position to engage with the upper face of the flange of the rail, the said bearing-surface being of such height that it will extend but partially up the inclined face of the flange.

By bending opposing ends of the two plate members downward, as shown in Fig. 7, their bearing-surfaces 13 and 16 will be carried outward from one another, and out from engagement with the flanges 12 and 15, as shown in Fig. 7. The rail may now be readily introduced between the bearing-surfaces, and when the plates are brought to a common level, in order that they may lie flat on a tie, the bearing-surfaces will be brought down to positive and clamping engagement with the flanges of the rail, as illustrated in Fig. 2, and the two members may then be spiked or otherwise fastened to the tie, suitable openings or recesses for the reception of the spikes having been formed in their side edges.

In Figs. 4, 5, and 6 I have illustrated a slight modification in the form of the tie-plate, in which the male member A′ is provided with a shank 17 corresponding to the shank 10, heretofore described, a head 18 corresponding to the head 11, (shown in Fig. 3,) and flanges 19, which are formed at the inner edges of the head in the same manner as shown under the construction of the male member illustrated in Figs. 1 and 3; but the bearing member 20 at the opposite end of the shank 17 is made higher than the bearing member 13 of the male member A, and is carried over the upper face of the shank, thence upward and from the upper portion downward and outward, terminating opposite the end of the shank in a horizontal flange 20^a. The inner section of the bearing-surface 20 is provided with an inward curve a where it rises from the shank, adapted to extend transversely over the flange of the rail, a straight intermediate surface a', adapted for engagement with the web of the rail, and an upper cylindrical surface a^2, shaped to engage with the under face of the head of the rail, as illustrated in Fig. 4. The female member B′ in this modified form of the tie-plate is of substantially the same construction as the female member B of the form of plate shown in Figs. 1 and 2, the plate 21 of the female member B′ being provided with a longitudinal opening 22, a flange 23 at one end of the opening, and a spring-bearing 24 at the opposite end of the said opening. The bearing 24 is shaped in the same manner as the bearing 20 of the male member A′, but the bearing 24 of the female member B′ extends from one side edge of the plate to the other, and is consequently of much greater width than the bearing 20 of the male member, it being of a width corresponding to that of the shank 17, adapted to be passed through the opening 22 in the female member.

The inner portion of the bearing 24 comprises an inner curved surface b to extend up the flange of the rail, a comparatively-straight surface b' for engagement with the web of the rail, and an upper cylindrical surface b^2 for engagement with the head of the rail, the lower outer end of the bearing 24 terminating in a flange 24^a. In assembling the parts of the tie-plate (shown in Fig. 4) the bearing of the male member is passed through the opening in the female member until the curved end of the shank 17 is in position to engage with the flange 23^a of the female member, and the two bearing-surfaces 20 and 24 will then be opposite. By pressing or bending downward the two members of the tie-plate, as shown in Fig. 7, the rail may be introduced between the bearings of the tie-plate, and when the tie-plate is flattened out at its bottom the rail will be thoroughly clamped in position.

When the female member B′ is used, the bearing 24 is placed on the outside, especially at a curve in a track, and under the form of tie-plate shown in Fig. 1 the bearing 13 will be preferably in engagement with the inner face of the rail.

By extending one of the bearing-surfaces upward to an engagement with the head of the rail, the said surface forms a superior brace, especially on the outside of the rail and when employed at a curved portion of the track. By extending both bearing-surfaces upward sufficiently high to engage with the head of the rail, and making both members about ten inches wide instead of six, as is ordinary, and placing the tie-plate on a ten-inch tie, the fish and angle plates now employed to secure the ends of the rails may be done away with, especially on a practically level piece of road.

The different male and female sections may be interchangeably used, as, for example, the male section A forms a tie-plate especially designed for straight tracks, as illustrated in Fig. 1, and when the female section B is used in connection with the male section A′ a tie-plate is obtained especially adapted for curves, the bearing-surface of the male section A′ being placed on the outside, as a brace for the rail. When the male section A is used in connection with the female section B′, a plate is obtained especially adapted for use at the joint of the rails, the bearing-surface 24 of the female member being placed on the outside.

Upon many roads the rails have a strong tendency to work downgrade, especially on curves, the outside of the rail pulling the inside upgrade a slight distance, and as the end ties are the only ones that are fastened to the rail so that they cannot slip they are frequently pulled out of line by the sliding of the rails; but when the rails are secured by the tie-plates shown and described the rails will be held so tightly to the ties that they cannot possibly "creep." When a rail is removed from a track, the tie-plate shown in Fig. 4 may be advantageously used at the joint. By unlocking the members B′ and A′ used in this form of the plate, slipping them back on the rail in place on the track, and then after the new or meeting rail is placed in position the said plate is slipped back over the joint and then pressed downward and locked to the tie.

By making the bearing-surfaces of the members A′ and B′ when used together fit tight to the web of the rail the tie-plate will make a joint almost as solid as the rail itself, and is superior in many instances to the plate made by the male section A and the female section B′.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A railway tie-plate comprising a male and a female member, the female member being provided with a longitudinal slot and a spring-bearing at one end carried inwardly over one end of the said member, a male member consisting of a shank adapted to be passed through the opening in the female member, having a spring-bearing formed at one of its ends, adapted when in position to be opposite the spring-bearing of the female member, and a head at the opposite end of the shank, extending beyond the sides thereof, being adapted also to extend beyond the spring-bearing of the female member, the head of the male member having flanges for engagement with the outer end of the bearing of the female member, as and for the purpose set forth.

2. A tie-plate for railway-rails, comprising a male and a female member, the female member being provided with a longitudinal slot, a flange at one end of the slot, and a bearing at the opposite end, extending inward and upward, being provided with an outwardly-extending flange, the male member consisting of a shank adapted to pass through the opening of the female member and fit to the same, a double spring-bearing being formed at one end of the said shank, terminating in a flange, the opposite end of the shank having a head extending beyond its sides, and flanged projected from the inner extended edges of the said head, whereby, when the two members are assembled, their spring-bearings will be opposite, and one end of the shank will rest against the flange of the female member, the head of the male member supporting the flange of the female bearing, and the flanges of the male member engaging with the outer edge of the said female bearing, as and for the purpose specified.

3. A tie-plate for railway-rails, consisting of a male and a female member arranged for interlocking engagement, each member being provided with a spring-bearing surface for engagement with opposite sides of the rail, the spring-bearing surfaces of the members facing one another when the members are assembled, and a flange on each plate, the flange of one plate being engaged by the other plate, as and for the purpose specified.

4. A tie-plate for railway-rails, consisting of a male and a female member arranged for interlocking connection, one member being loosely pivoted in the other, the said members having opposing spring-bearing surfaces adapted for engagement with opposite sides of the rail, and stops formed upon both members, the stop of one member having engagement with the bearing-surface on the opposing member, as and for the purpose set forth.

5. A tie-plate for railway-rails, consisting of a male and a female member arranged for interlocking connection, one member being loosely pivoted in the other, the said members having opposing spring-bearing surfaces adapted for engagement with opposite sides of the rail, stops formed upon both members, the stop of one member having engagement with the bearing-surface on the opposing member, and flanges projected from opposite ends of the two members, the said flanges being horizontally disposed and adapted to be secured to the surface on which the tie is to rest, as and for the purpose specified.

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Witnesses:
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L. KALTENBACH.