

W. McKEE.
TIE PLATE.

APPLICATION FILED DEC. 9, 1909.

954,538.

Patented Apr. 12, 1910.

Fig. 1.

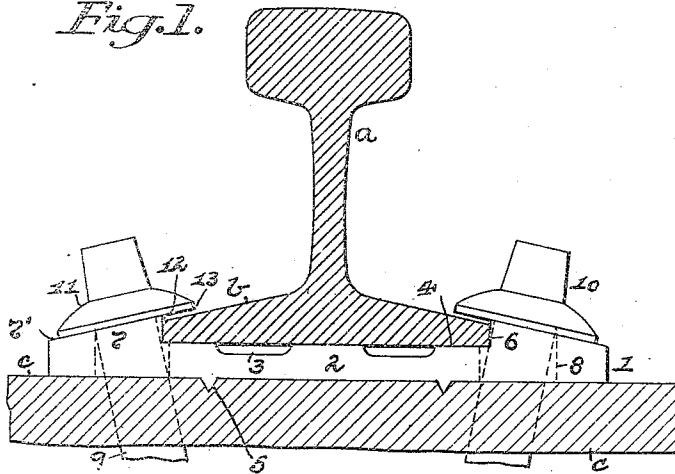


Fig. 2.

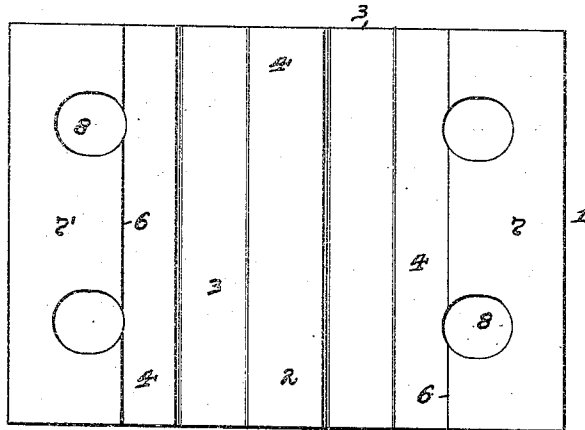
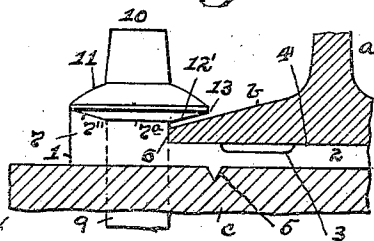


Fig. 3.



WITNESSES

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TIE-PLATE.

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To all whom it may concern:

Be it known that I, WILLIS McKEE, a resident of Elyria, in the county of Lorain and State of Ohio, have invented a new and useful Improvement in Tie-Plates; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to tie-plates, and to what are generally known as tie-plates for railway rails.

The object of my invention is to provide a cheap, simple and efficient form of a tie-plate, which can be rolled from a metal bar or billet, such as steel, will enable it to be produced in a rapid, easy and convenient manner, and will provide such a form as will enable the rail to have sufficient play when in place thereon, while at the same time allowing for the proper supporting of the rail thereon and maintaining the rail and plate in their proper positions.

My invention consists, generally stated, in the novel arrangement, construction and combination of parts, as hereinafter more specifically set forth and described and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved tie-plate, I will describe the same more fully, referring to the accompanying drawing, in which—

Figure 1 is an end elevation of my improved tie-plate showing the same in position with the rail and tie. Fig. 2 is a top plan view of the plate. Fig. 3 is a detail view of another form of my improved plate.

Like symbols of reference herein indicate like parts in each of the figures of the drawing.

As illustrated in the drawing, 1 represents my improved tie-plate, which is preferably rolled from a bar or billet of metal, such as steel, into lengths, and then such lengths are cut across the same in any suitable manner to form such plate. This tie-plate 1, as shown in Figs. 1 and 2 when so rolled or formed is provided with the body portion 2 having longitudinal grooves or depressions 3 in the upper face of the same to form broad rail bearing surfaces 4 on said face, and with longitudinal depending ribs or flanges 5 on the lower face of said body, which are preferably formed of triangular shape with sharpened edges for entering the tie in the usual manner and are so located as

to come under the bearing surfaces 4 and at the outer sides of the depressions 3. The tie-plate 1 is also provided with a rail-abutting shoulder 6 at each side of the same, and such shoulders extend up from and at the outer side of the outer bearing surfaces 4, and to a height slightly above the flange *b* of the rail *a* employed therewith, as hereinafter described. Extending from the shoulders 6 to the outer sides of the plate 1 and forming part of said shoulders are the longitudinal spike-bearing portions 7, which have their top surfaces 7' formed on a downward incline from said shoulders and on the same plane as the top of the flange *b* of the rail *a* to be employed therewith. After the plate 1 has been so formed, spike-holes 8 are formed therein in any suitable manner, which extend through the bearing portions 7 on the plate for the reception of the shanks 9 of the screw-spikes 10, and such holes are in a vertical line and of sufficient size by elongating the same, so that such spikes may enter the tie *c* employed therewith at an incline toward the center of the plate and under the rail *a*, when the parts are in position.

The heads 11 on the spikes 10 are provided with the flat circular surface 12 on their under sides, so that when the plate 1 is in position on the tie *c*, as shown in Fig. 1 and the rail *a* is in position on the bearing surfaces 4 of said plate and between the shoulders 6 thereon, the spikes 10 when screwed to the position shown, will enable the outer and side portions of the flat surfaces 12 on their heads to be brought into surface contact with and bear against the inclined surfaces 7' on the bearing portions 7 of the plate, while the inner portions of said flat surfaces on said spike-heads will extend over and slightly above the top of the rail flange *b* and form a clearance or space 13 between said heads and flange, as shown in Fig. 1, by reason of the rail-abutting shoulders 6 on the plate 1 and forming part of the bearing surfaces 7 for said spikes being at a greater height than the outer edge of said flange.

In Fig. 3 is shown another form of my improved tie-plate, in which the screw-spike 10 is set in a vertical line, instead of in any inclined position extending under the rail, and in this case the head 11 of the spike is provided with an inclined under surface

12', while the spike-bearing portions 7 on the plate are inclined upwardly and outwardly toward the outer sides of the plate, as at 7'' and from a straight or flat bearing portion 7^a extending outwardly from the shoulders 6. In such case the outer and side portions of the inclined under face 12' on the spike-head 11 will bear against the portions 7'' and 7^a and the inner portion on said face will be raised slightly above the top of the rail flange 6 by the elevation of the shoulders 6 above said flange top to form the clearance or space 13 between the spike-head and rail flange with a line contact between said head bearing portion 7''.

Various other modifications and changes in the design and construction of my improved tie-plate may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

It will thus be seen that my improved tie-plate will allow the rail to have a fixed amount of play when connected to a tie-plate, and at the same time the plate will be securely held in position by being firmly fixed to the tie and will permit the rail to move away from the same if so required. This form of plate will enable a sufficient amount of contact with the spike-head, and as the spike would wear away the rail would have the proper play, so as to act to stop the pumping of the ballast and thereby prevent the entrance of the same and dirt into the parts of the device, which will thus overcome any undue wearing out of such parts. It will also be seen that my improved tie-plate can be formed by straight rolling into lengths for the proper shape required easily and quickly, and such plate can also be formed by other methods or processes and from various materials, if desired. The plate so formed will enable a surface or line contact between the head of the spike and the plate, as well as a complete and substantial support for the back and sides of the spike-head, and such head will be assured of a good and broad bearing on the plate in any position of the spike. It will further be seen that my improved tie-plate will provide for a spike bearing surface which is raised in a plane parallel to but above the plane or top of the rail base, and so constructed that the spike can be drawn down tight on said surface and hold the plate tight but will leave a predetermined looseness to the rail, while at the same time

such bearing surface can extend around the rear and around both sides of the center line of the spike, so that such spike can be firmly tightened without coming in contact with rail base or flange.

What I claim as my invention and desire to secure by Letters Patent is—

1. A tie-plate for rails having a rail abutting shoulder at the side of the same and forming a spike bearing surface extending above the top of the rail flange so that the spike can be securely drawn down tight on said surface to hold the plate tight and leave a pre-determined looseness to the rail.

2. A tie-plate for rails having a rail abutting shoulder at the side of the same and forming a spike bearing surface which is in a plane parallel to but raised above the plane of the top of the flange of the rail base.

3. A tie-plate for rails having a rail abutting shoulder at the side of the same and forming a spike bearing surface which extends above the top of the rail flange and around the rear and on both sides of the center line of the spike, so that the spike can be firmly tightened on said surface without coming in contact with the rail flange.

4. A tie-plate for rails having a rail abutting shoulder at the side of the same and forming a bearing portion for the head of the spike extending outwardly from said shoulder and above the plane of the top of the rail flange to form a space between said head and flange.

5. A tie-plate for rails having a rail abutting shoulder at the side of the same and forming an inclined bearing portion for the head of the spike extending outwardly from said shoulder and above the plane of the top of the rail flange to form a space between said head and flange.

6. A tie-plate for rails having a rail abutting shoulder at the side of the same and forming a bearing portion for the head of the spike extending outwardly at a downward incline from said shoulder and above the plane of the top of the rail flange to form a space between said head and flange.

In testimony whereof, I, the said WILLIS McKEE, have hereunto set my hand.

WILLIS McKEE.

Witnesses:

HENRY KOEHN,
GEORGE J. W. MATHEWS.