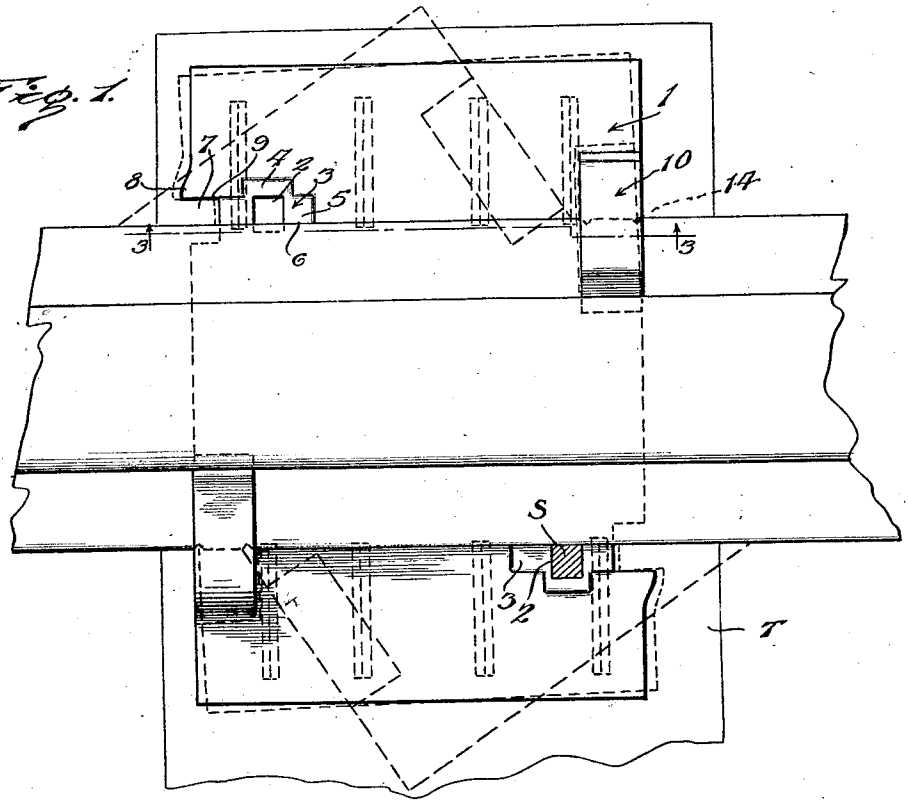
March 30, 1926. 1,579,157

W. P. SINGELTARY

TIE PLATE

Filed Jan. 26, 1925 2 Sheets-Sheet 1

Fig. 1.



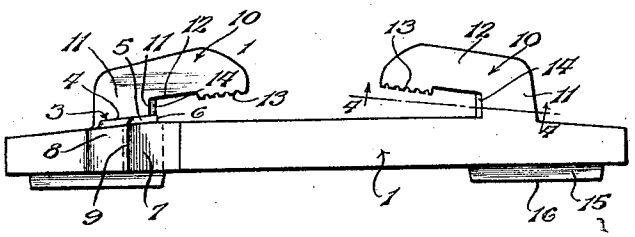


Fig. 2.

Fig. 4.

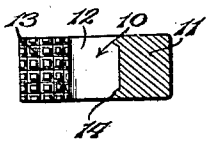
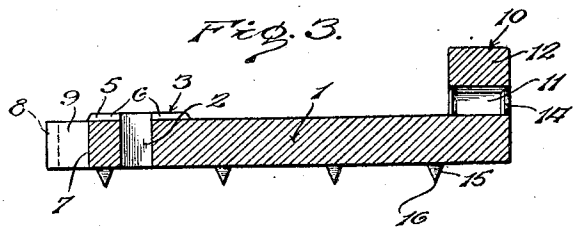


Fig. 3.



Inventor

W. P. Singeltary

By

Lacy & Lacy, Attorneys

March 30, 1926. 1,579,157

W. P. SINGELTARY

TIE PLATE

Filed Jan. 26, 1925 2 Sheets-Sheet 2

Fig. 5.

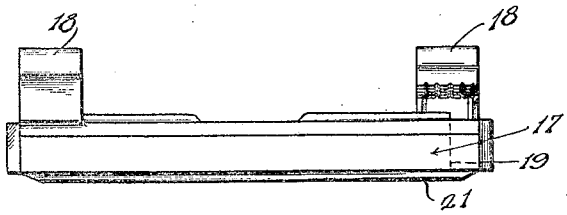
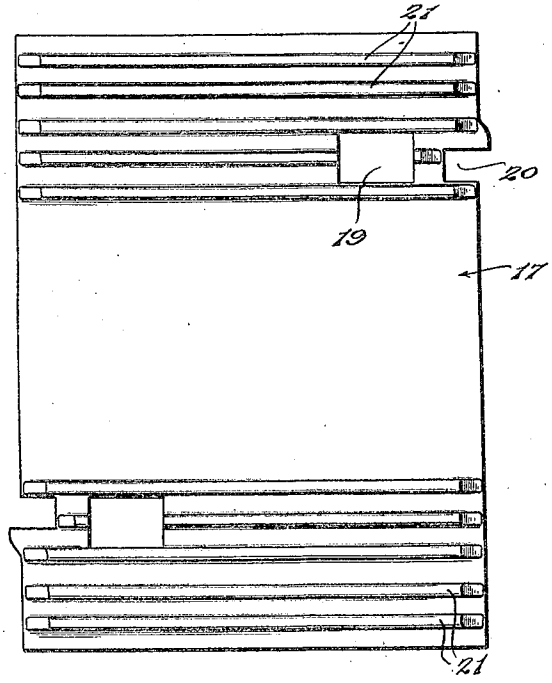


Fig. 6.



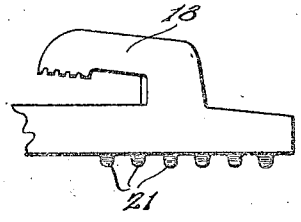


Fig. 7.

Inventor

W. P. Singeltary

By Lacey & Lacey, Attorneys

Patented Mar. 30, 1926. 1,579,157

UNITED STATES PATENT OFFICE.

WILLIAM P. SINGELTARY, OF ASHEVILLE, NORTH CAROLINA.

TIE PLATE.

Application filed January 26, 1925. Serial No. 4,845.

To all whom it may concern:

Be it known that I, WILLIAM P. SINGELTARY, a citizen of the United States, residing at Asheville, in the county of Buncombe and State of North Carolina, have invented certain new and useful Improvements in Tie Plates, of which the following is a specification.

This invention relates to railway tie plates and has as one of its objects to provide a tie plate so constructed that it may be secured in place by the use of but two spikes whereas the ordinary tie plate requires three or four spikes, and which tie plate may, furthermore, be more readily removed than tie plates of the ordinary construction.

Another object of the invention is to provide a tie plate so constructed as to firmly and securely grip the base flanges of the rail with which it is associated and thereby insure of rigid connection between the tie plate and rail.

Another object of the invention is to so construct the tie plate that it will firmly grip the tie, thereby preventing any displacement of the plate with relation to the tie.

Another object of the invention is to provide a tie plate embodying means for engaging the opposite longitudinal edges of the base flanges of the rail with which it is associated so as to prevent any lateral displacement of the rail or tie plate with relation to each other even in the event of loosening of the spikes by which the plate is secured to the tie.

Another object of the invention is to provide a tie plate embodying means for biting engagement with the opposite longitudinal edges of the base flanges of the rail with which the tie is associated whereby longitudinal movement of the rail with relation to the tie plate and likewise longitudinal movement of the tie plate with relation to the rail is prevented so that there will be no creeping of the rail.

In the accompanying drawings:

Figure 1 is a plan view of the tie plate embodying the invention and the tie and rail with which the plate is associated, the plate being shown in full lines in the position which it will occupy when properly forced into place; in dotted lines in the position it will occupy when nearly in place, and in broken lines in the position which it will initially assume at the time of its application to the rail.

Figure 2 is a side elevation of the tie plate illustrating the position occupied by the plate when in the dotted line position shown in Figure 1.

Figure 3 is a vertical sectional view taken substantially on the line 3—3 of Figure 1, looking in the direction indicated by the arrows.

Figure 4 is a sectional view taken substantially on the line 4—4 of Figure 2, looking in the direction indicated by the arrows.

Figure 5 is an end elevation illustrating a slightly modified form of tie plate.

Figure 6 is a bottom plan view of the plate shown in Figure 5.

Figure 7 is a fragmentary side elevation of one end of the plate.

The tie plate embodying the invention is indicated in general by the numeral 1 and except as hereinafter noted, is flat upon its upper and under sides, the plate being of substantially oblong rectangular form. The plate is formed near two of its diagonally opposite corners with rectangular spike openings indicated by the numeral 2, and the plate is formed upon its upper side at each opening with a shallow boss 3 including a portion 4 extending along that side of the spike opening 2 which is next adjacent the respective lateral edge of the plate, and other portions 5 located at the ends of the portion 4 and extending along opposite sides of the spike opening 2, the said portions 4 and 5 being substantially continuous with one another. The sides of the portion 5 of each boss which are presented inwardly or toward the rail seating intermediate portion of the plate are vertically disposed on a straight line to provide shoulders 6 which are to engage against the outer edges of the base flanges of the rail with which the plate is associated. It will be understood, of course, that the bosses 3 therefore constitute abutments for the edges of the base flanges of the rail and that their shoulders 6 are parallel to each other and are located on lines spaced apart a distance equal to the width of the base of the rail. It will also be evident that the bosses 3 serve to reinforce the tie plate at the points of location of the spike openings.

Opposite each spike opening 2 the respective end edge of the plate is formed with a

recess indicated by the numeral 7 and the said edge of the plate is further preferably formed at the outer side of the recess with a reinforcing projection 8. It will be observed that one wall 9 of each recess is disposed at right angles to the edge of the plate in which the recess is formed and on a line parallel to the shoulders 6 of the respective boss 3. The recesses 7 serve to accommodate the lower end of a crow bar which may be employed in adjusting the tie plate to the rail and the wall 9 constitutes a shoulder against which the crow bar may be brought to bear.

The plate 1 is formed upon its upper side near each of its other diagonally opposite corners and at its two end edges, with base flange engaging lugs indicated in general by the numeral 10. Each lug comprises a portion 11 attached to the plate and a portion 12 which extends inwardly from the portion 11 and at an angle of inclination, the said portion 12 overhanging the plate 1, and the base flanges of the rail being designed to engage between the under sides of the portions 12 of the lugs 10 and the upper side of the plate 1. The portion 12 of each lug or boss is formed upon its under side at its free end with serrations indicated by the numeral 13 and it will be understood at this point that the said ends of the bosses are adapted to more securely anchor the base of the rail due to the engagement of the serrated surfaces 13 with the upper side of the respective base flanges of the rail.

The inwardly presented sides of the portions 11 of the two clamping lugs 10 are located in vertical planes spaced apart a distance substantially equal to the width of the rail base and the said side of each portion 11 is formed with a pair of spaced vertically extending sharp-edged ridges 14 designed to bite into the edges of the base flanges of the rail, it being understood that these ridges will prevent longitudinal creeping of the rail with relation to the plate.

The plate 1 is formed upon its under side with a plurality of longitudinally extending ribs 15 which are preferably arranged in two transverse series at opposite ends of the plate, the ribs of each series extending from a point substantially vertically below the line of extent of the edge of the respective base flange of the rail to a point slightly short of the corresponding transverse edge of the plate. The ribs 15 are preferably formed with sharp edges 16 and it will be evident that they will bite into the surface of the tie upon which the plate is disposed.

In applying the tie plate to the tie and rail, the tie plate is disposed beneath the rail in an oblique position substantially as shown in broken lines in Figure 1 of the drawings, and is then shifted to position between the rail and tie. The tie plate is then driven by a sledge to assume substantially the position shown in dotted lines in the said figure, and in this position of the tie plate the edges of the base flanges of the rail will bear upon the upper sides of the portions 5 of the bosses 3, the tie plate being nearly but not quite at right angles to the line of extent of the rail. Likewise, in this position, the ridges or teeth 14 will be in contact with the edges of the base flanges of the rail and the serrated ends 13 of the lugs 10 will be more or less firmly engaged with the upper sides of the said base flanges. Then, by striking additional blows with the sledge, the plate is further shifted to assume the full line position shown in Figure 1. As it assumes this position, the shoulders 6 of the portions 5 of the bosses 3 will ride from beneath the edges of the base flanges of the rail and, at the same time, the ridges 14 will bite into the said edges of the flanges. Therefore, when the plate is adjusted to the full line position in Figure 1, the shoulders 6 will engage squarely against the edges of the base flanges of the rail and the ridges 14 will, as stated, bite into the said edges. Likewise, as the plate is forced into this position, the serrated faces 13 of the lugs 10 will bear more and more firmly upon and dig into the upper sides of the respective rail base flanges.

It will be understood from the foregoing description of the invention, that when the tie plate is forced into place upon the rail, the engagement of the ridges 14 in the edges of the rail flanges will effectually prevent any longitudinal shifting of the rail or creeping thereof with relation to the tie plate. This is likewise prevented by the engagement of the serrated faces 13 of the lugs 10 with the upper sides of the base flanges of the rail. Also, the engagement of the edges of the base flanges of the rail with the shoulders 6 of the bosses 3 effectually provides against any lateral displacement of the rail and the tie plate with respect to each other, as does also the engagement of the edges of the base flanges of the rail with the inner faces of the portions 11 of the said lugs 10. Consequently, the tie plate and rail are securely locked together and cannot be separated except by the application of force as, for example, through the medium of a pinch bar. The securing spikes, one of which is shown in Figure 1, and indicated by the reference letter S may then be driven into the spike openings 2 and, as the spikes are driven into place, their relatively adjacent faces will bind firmly against the edges of the base flanges of the rail, their outer faces binding firmly against the outer walls of the spike openings 2.

As before stated, the ribs 15 bite into the upper surface of the tie, which is indicated by the reference letter T, and the tie plate is, in this manner, held against movement with relation to the tie in the direction of extent of the rail. The ribs 15, being arranged in series, will likewise prevent displacement of the tie plate longitudinally of the tie for the reason that the ends of the ribs will engage the fiber of the tie.

The modified form of tie plate shown in Figures 5, 6 and 7 of the drawings, is indicated in general by the numeral 17 and is provided with rail base flange engaging lugs 18 corresponding in every particular to the lugs 10 of the previously described form, the plate being likewise provided with spike openings 19 corresponding to the openings 2. The plate is also provided with notches 20 which correspond to the notches 7 of the previously described embodiment of the invention.

In the form of the invention shown in Figures 1 to 4 inclusive, the tie plate is provided upon its under side with ribs 15 which are designed to bite into the surface of the tie upon which the plate is disposed and thus prevent creeping of the tie plate, the ribs extending longitudinally of the plate or, in other words, at right angles to the line of extent of the rail supported by the plate. In the form of the invention shown in Figures 5, 6 and 7, the plate is provided upon its under side with two series of ribs 21 which extend transversely of the plate near the opposite ends thereof or, in other words, parallel to the line of extent of the rail supported by the plate. The plate shown in these figures is designed primarily for use in supporting the rails near their meeting ends and the ribs are arranged as shown and described in order to permit of slight creeping of the plate upon the ties to compensate for expansion and contraction of the rails.

Having thus described the invention, what I claim is:

1. A tie plate having spike openings adjacent two of its diagonally opposite corners, and rail base engaging lugs overhanging the plate adjacent the other corners thereof, the plate being provided upon its upper side adjacent each spike opening with a shoulder, the shoulders being designed to engage the opposite side edges of the base of a rail and being spaced apart on lines coincident with the inner sides of the lugs.

2. A tie plate having spike openings adjacent two of its diagonally opposite corners, and rail base engaging lugs overhanging the plate adjacent the other corners thereof, the plate being provided at its upper side with bosses partly surrounding the spike openings, each boss having an abrupt side constituting a straight shoulder to engage the edge of the respective base flange of a rail with which the plate is associated, the shoulders extending on parallel lines spaced a distance equal to the width of the rail base.

3. A tie plate having spike openings adjacent two of its diagonally opposite corners, and rail base engaging lugs overhanging the plate adjacent the other corners thereof, each of the said lugs having a shallow projecting serrated portion upon its under side to engage the upper side of the respective base flange of a rail with which the plate is assembled, the plate being provided upon its upper side with shallow bosses partly surrounding the spike openings and each boss having an abrupt side constituting a straight shoulder to engage the edge of the respective base flange, the said shoulders extending on lines parallel to each other and spaced apart a distance equal to the width of the base of the rail.

4. A tie plate having spike openings adjacent two of its diagonally opposite corners, and rail base engaging lugs overhanging the plate adjacent the other corners thereof, the edges of the plate having the spike openings adjacent thereto being formed with recesses terminating in spaced relation to the spike openings for the working engagement therein of a forcing tool.

In testimony whereof I affix my signature.

WILLIAM P. SINGELTARY.