June 26, 1928. 1,675,178.

W. H. KOCH

TIE PLATE

Filed Oct. 19, 1927

Fig. 1.

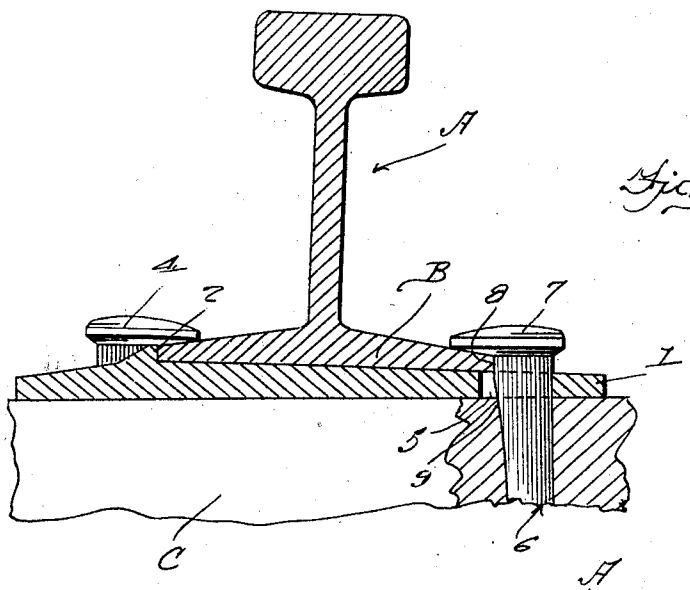


Fig. 3.

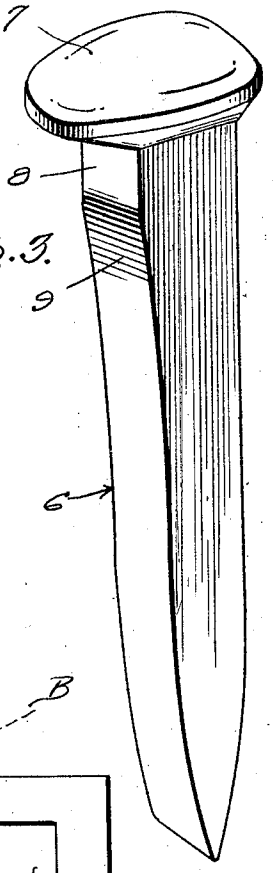
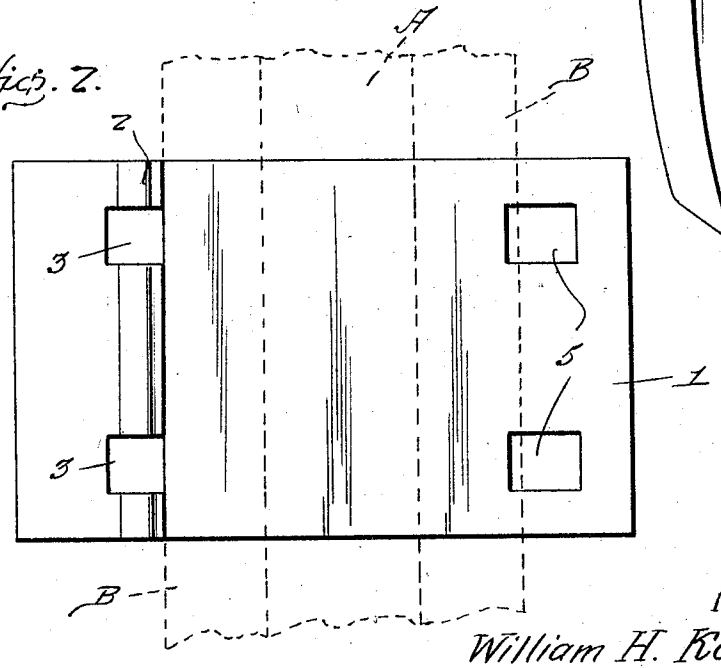


Fig. 2.



Inventor

William H. Koch

By Clarence A. O'Brien

Attorney

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UNITED STATES PATENT OFFICE.

WILLIAM H. KOCH, OF ONEONTA, NEW YORK.

TIE-PLATE.

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The present invention relates to improvements in tie plates, and has for its primary object to provide a structure for disposition beneath the base of the rail, and for rest on the cross tie, the tie plate being provided with spike receiving openings and a transverse shoulder for engagement with one edge of the base of the rail, so that when the spikes are driven home into the tie, the rail will be properly secured on the tie plate, and lost motion as well as lateral play will be prevented.

Another important object of the invention is to provide an improved spike structure for association with the tie plate whereby to afford a wedging action of the rail against an upstanding shoulder formed on the tie plate when the spike is driven home.

A further object is to provide a tie plate which is simple in construction, inexpensive, strong and durable and further well adapted to the purposes for which it is designed.

Other objects and advantages of the invention will become apparent from the following description when taken in connection with the accompanying drawing.

In the accompanying drawing forming part of this application and in which like numerals indicate corresponding parts:

Figure 1 is a vertical sectional view through a rail showing the manner in which the same is anchored on my improved tie plate, the wedging spike being also shown in its anchored position.

Figure 2 is a top plan view of the tie plate, and

Figure 3 is a detail perspective view of the locking spike.

In the drawing wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 1 designates a substantially rectangular shaped tie plate, the same being constructed of steel or any other desirable metal. A transversely extending shoulder 2 is formed on the upper face of this plate adjacent the outer end thereof, and as is clearly shown in Figure 1, the upper face of the tie plate is beveled and inclines gradually from the shoulder 2 to the inner end of the plate so that the rail A will be disposed slightly at an incline, as is clearly shown in Figure 1, when the base B of said rail rests on the tie plate.

The outer end portion of the tie plate is formed with the spaced openings 3 and these openings are preferably formed in the plate so as to extend through the shoulders whereby the inner ends of the openings will be substantially flush with the base engaging face of the shoulder as is clearly shown in Figure 2. Locking spikes of the conventional construction such as are shown at 4 are driven through the openings 3 into the tie C on which the tie plate 1 rests, and the heads of these bolts are adapted to engage the upper face of the outer edge portion of the base B of the rail in the manner as shown in Figure 1.

The tie plate is formed with an additional pair of elongated slots 5 adjacent its inner end and these slots are so arranged as to cause the inner end portions thereof to be disposed beneath the inner edge portion of the base B of the rail, when the base of the rail rests on the tie plate.

A spike such as is shown at 6 with reference more particularly to Figure 3 is adapted to be driven through each of these slots 5 and this spike is provided with the base engaging head 7 at its upper end, the inner face or edge portion of the spike directly below the head being straight or parallel with the outer edge of the spike and this straight portion is designated by the numeral 8. Directly below this straight portion 8 the inner edge of the spike is inclined as at 9 whereby to afford a wedging action when the spike is driven downwardly into the tie C, and when said spike 6 is driven home, the outer edge portion of the spike will engage the outermost ends of the respective slot 5 while the straight inner edge portion 8 will engage the inner edge portion of the base B. In this manner, the rail will be properly secured on the tie plate, with no lost motion or lateral play, the spikes 6 having greater holding power than the spikes 4, whereby the spikes 6 driven in the slots 5 would have to yield under the tie plate and under the load of the traffic. The spikes 4 cannot push out or back until the spikes 6 are kinked under the tie plate.

Furthermore the tie plate will be secured in position on the cross tie beneath the rail in such a manner as to prevent any possibility of the same rattling.

While I have shown the preferred embodiment of my invention it is to be understood that minor changes in the size, shape, and arrangement of parts may be resorted to without departing from the spirit of the in-

vention and the scope of the appended claim.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:—

In combination with a rail and a cross tie, a tie plate for disposition between the base of the rail and the cross tie, a shoulder formed on the upper face of the tie plate for engagement with the outer edge of the base of the rail, the upper face of the tie plate being gradually inclined from said shoulder to the inner end of the plate, said tie plate provided with spike receiving openings adjacent the outer end thereof, the inner sides of the openings lying flush with the base engaging face of the shoulder, said tie plate being provided with additional slots in the inner end portions thereof, the inner ends of the slots extending under the inner edge of the base of the rail, wedging spikes driven into the tie through the last mentioned slots for locking the base of the rail on the tie plate in engagement with the shoulder, each of the wedging spikes including a shank having a head formed on its upper end for engagement with the upper face of the adjacent portion of the base of the rail, the lower end of the spike being pointed, the outer edge of the shank being straight, the inner edge of the shank directly below the head being straight, the portion of the shank below the upper straight portion on the inner edge being gradually inclined toward the pointed lower end.

In testimony whereof I affix my signature.

WILLIAM H. KOCH.