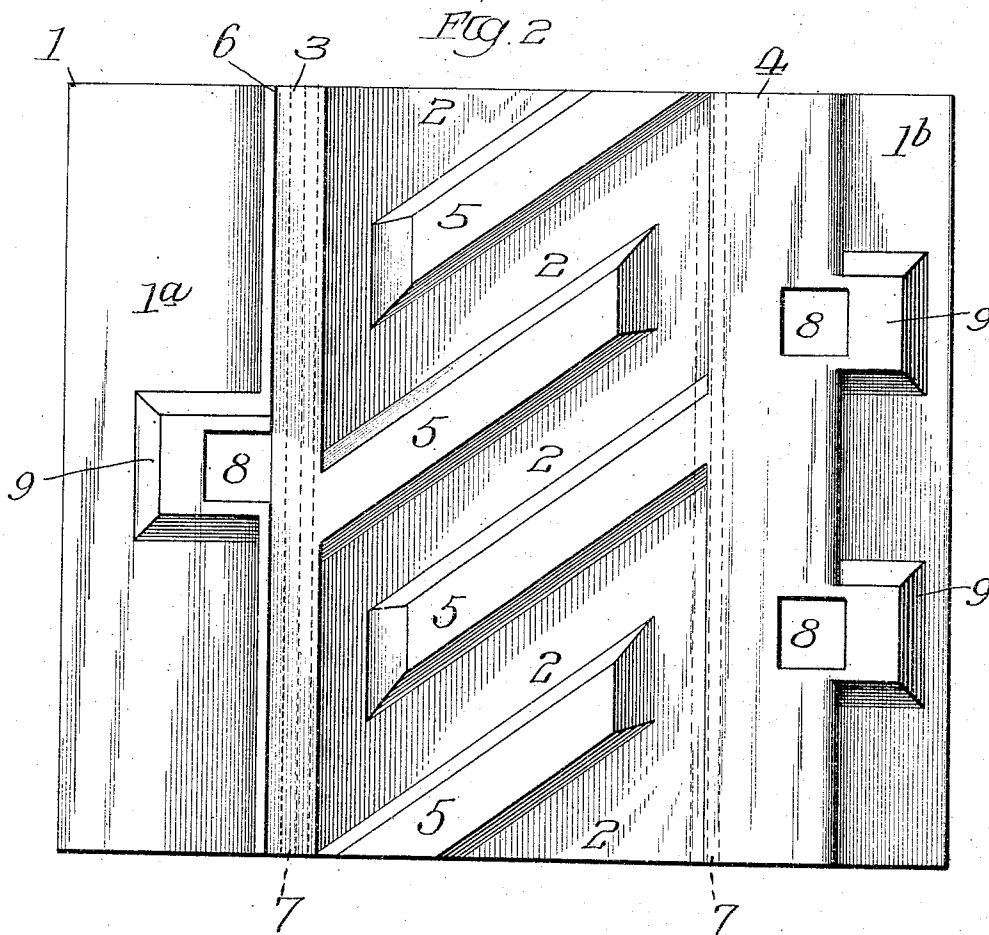
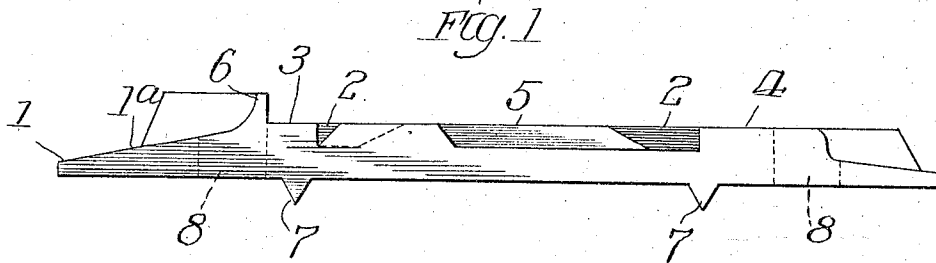


W. L. DE REMER.
TIE PLATE.
APPLICATION FILED AUG. 12, 1908.

933,164.

Patented Sept. 7, 1909.

2 SHEETS—SHEET 1.



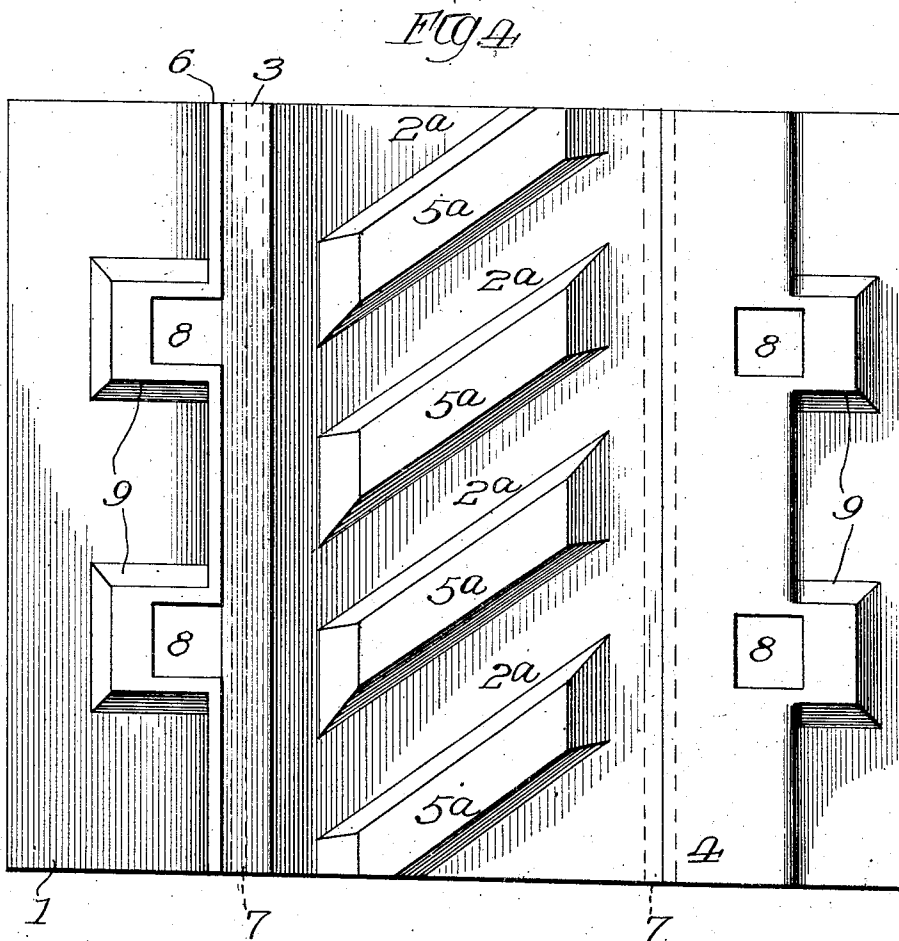
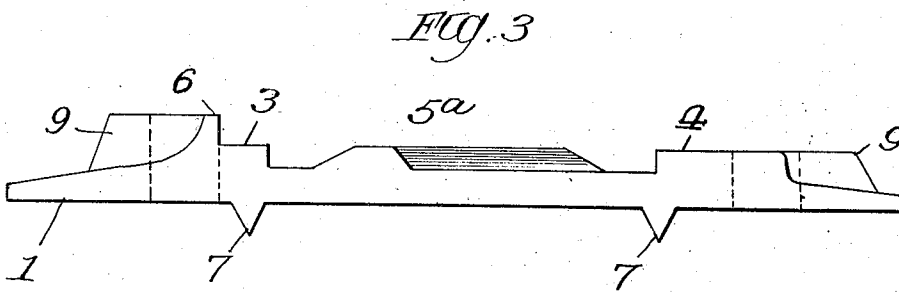
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UNITED STATES PATENT OFFICE.

WILLIAM L. DE REMER, OF CHICAGO, ILLINOIS.

TIE-PLATE.

933,164.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed August 12, 1908. Serial No. 448,242.

To all whom it may concern:

Be it known that I, WILLIAM L. DE REMER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tie-Plates, of which the following is a specification.

My invention relates to a tie-plate as used by railroads for supporting the rails upon a tie, and the object thereof is to produce a simple, efficient and durable plate of this character. Besides the advantages named, my tie-plate possesses the additional advantage of lightness without the sacrifice of strength and rigidity, and is also of such formation that it can be economically rolled. Moreover, my tie-plate affords continuous support for the rail and at the same time provides grooves or recesses to drain away water and sand from between the tie-plate and rail.

The various features of advantage and utility in my new tie-plate will be apparent from the description hereinafter given.

In the accompanying drawing, Figure 1 is an edge view of my tie-plate, Fig. 2 a plan view thereof, Fig. 3 an edge view of a modified form of plate, and Fig. 4 a plan view thereof.

Referring to the present embodiment of my invention as herein shown, the tie-plate 1, which in practice is rolled, is formed with a series of diagonal grooves or depressions 2 of suitable number and located between the continuous rail-supporting surfaces 3 and 4 extending from side to side of the tie-plate in the direction of the rail. These grooves are formed by or between the correspondingly diagonal ribs 5 whose flattened and somewhat extended tops form bearing or supporting surfaces for the rail, the same being on the same plane as the said surfaces 3 and 4, as clearly shown in Fig. 1. These ribs by preference have beveled edges for ease of rolling or manufacture but may have straight or actual edges.

The grooves 2 merely extend between the continuous supporting surfaces 3 and 4 and are connected at their alternate ends owing to the staggered relationship of the ribs 5 inasmuch as the latter are free at one end and alternately connected at the other end to their continuous supporting surfaces respectively, as clearly indicated in Fig. 2. The tie-plate is further provided on its upper face with a shoulder 6 along one side of

the continuous supporting surface 3 to abut against one side of the rail flange, and on its lower face with a plurality of flanges 7 triangular in cross-section to engage the tie and located in the present instance immediately below the said continuous supporting surfaces 3 and 4, and extending in the same direction.

As shown, the ends of the tie-plate at 1^a and 1^b are by preference formed thinner so as to give considerable bearing or footing upon the tie with minimum amount of metal. As usual, the tie plate is provided with the spike openings or holes 8 which may be square to receive the usual square section spike or round to receive the screw spike now coming into use. By preference, these holes are surrounded by the bosses 9 which extend sufficiently high to afford substantial backing or support for the spikes.

In the particular form of tie-plate above described, the ribs 5 connect at one of their ends with the rail supporting surfaces 3 or 4. However, some measure of my invention may be obtained by omitting such connection but leaving the ribs and consequently the grooves diagonal and located between said surfaces. I have illustrated such modified form of tie-plate in Figs. 3 and 4, in which the same parts have the same reference characters. In this form the ribs 5^a are diagonal and extend between the rail supporting surfaces 3 and 4 forming the grooves 2^a which are connected at their opposite ends inasmuch as the ribs are disconnected from said surfaces. In other respects the two plates are the same.

A tie-plate embodying my invention as above described possesses the greatest strength consistent with its weight and moreover provides the grooves necessary for drainage of water and sand from between the tie-plate and rail, while at the same time giving ample rail-supporting surface, part of which is continuous from side to side of the plate. Furthermore, the formation of the tie-plate is such that it may be easily and conveniently rolled from the metal.

I claim:

1. A tie-plate having two continuous surfaces of substantially uniform width for supporting the opposite edges of the rail, and a series of grooves extending between and at an angle to but not penetrating said surfaces; substantially as described.

2. A tie-plate having two continuous rail-

supporting surfaces of substantially uniform width, and a series of grooves extending between and at an angle to but not penetrating said surfaces and formed between ribs whose top surfaces are on the same plane as said surfaces and also constitute rail-supporting surfaces; substantially as described.

3. A tie-plate having two continuous rail-supporting surfaces, and a series of grooves extending between and at an angle to said surfaces, the ends of said grooves being formed by the inner sides of said surfaces; substantially as described.

4. A tie-plate having two continuous rail-supporting surfaces, and a series of grooves extending diagonally between said surfaces and formed between diagonal ribs whose top surfaces constitute rail-supporting surfaces, the ends of said grooves being formed by the inner sides of said surfaces; substantially as described.

5. A tie-plate having on its upper side continuous parallel rail-supporting surfaces, and a series of diagonal ribs located between said surfaces, said ribs being beveled; substantially as described.

6. A tie-plate having on its upper side a series of ribs forming a rail support and on its underside a series of depending flanges extending at an angle to said ribs; substantially as described.

7. A tie-plate having on its upper surface a series of grooves connected at their alternate ends; substantially as described.

8. A tie plate having two continuous rail-supporting surfaces, and a series of grooves extending between and at an angle to said surfaces and formed between ribs which are connected at their alternate ends to said surfaces; substantially as described.

9. A tie-plate having two continuous rail-supporting surfaces, and a series of grooves extending diagonally between said surfaces and formed between diagonal ribs which are connected at their alternate ends to said surfaces respectively; substantially as described.

10. A tie-plate having on one side parallel continuous rail-supporting surfaces of substantially uniform width and a series of grooves extending between and at an angle to but not penetrating said surfaces, and having parallel flanges projecting from the other side of the plate; substantially as described.

11. A tie-plate having on one side parallel continuous rail-supporting surfaces, a series of grooves extending between said surfaces, and parallel flanges on the other side of the plate, which flanges are arranged below the said surfaces; substantially as described.

12. A tie-plate 1 having on one side a series of diagonal grooves 2 connected at their alternate ends and formed between the diagonal ribs 5, bearing surfaces 3 and 4 for the rail, the ribs being connected at one of their ends alternately with said surfaces respectively, and flanges 7 on the other side of the plate; substantially as described.

13. A tie-plate having on its upper side parallel rail-supporting surfaces, grooves located between said surfaces, spike openings at the sides of said surfaces and bosses located at said holes to form a support for the spikes; substantially as described.

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