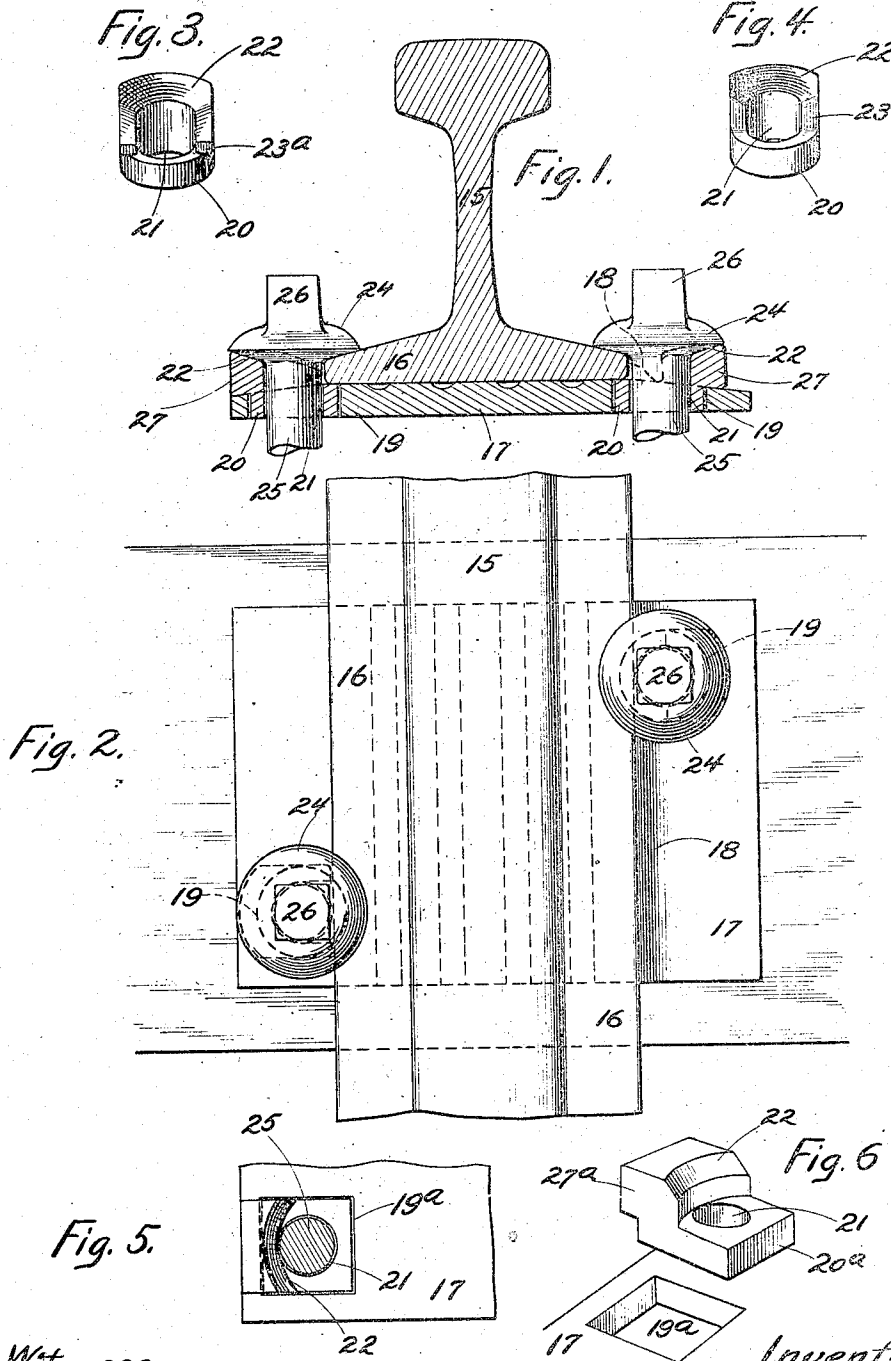


J. W. KENDRICK.
TIE PLATE WASHER.
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Patented Sept. 7, 1909.



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UNITED STATES PATENT OFFICE.

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TIE-PLATE WASHER.

933,182.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN W. KENDRICK, 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-Plate Washers, of which the following is a specification.

My invention relates to washers adapted to be used in connection with the flat metal plates which underlie the rails where they are supported by the ties. In the past such tie plates have been made with square or rectangular holes, there being two such holes in each tie plate, one on either side of the rail adjacent to the base thereof. The ordinary spikes having square cross sections, were driven through these holes into the wooden tie, the heads of the spikes overhanging the edges of the rail base, and thus securing the rail down to the tie plate and the tie. I have found that it is desirable in many cases to use round screw spikes instead of the old square spikes. In some cases old ties can have the square spikes withdrawn, and can then be adapted for use with the screw spikes. In other cases it may be desirable to use screw spikes with new ties. In any such case the old tie plates are useless, unless they can be made over and adapted to be used with screw spikes. There are two respects in which the old tie plates are unsuitable for use with screw spikes, (1) the square holes are too small to receive the round screw spikes, and (2) the head of the screw spike needs to be supported on the side opposite to the edge of the rail base. I have invented a combination which adapts old tie plates to be used with screw spikes.

Referring to the accompanying drawings—Figure 1 is a cross section of a rail resting on a tie plate, and showing two different forms of my improvement at the sides thereof. Fig. 2 is a top plan view corresponding to Fig. 1. Figs. 3 and 4 are perspective views of the tie plate washers shown in Fig. 1. Fig. 5 is a top plan view of a third form of my invention. Fig. 6 is a perspective view of the same.

The rail 15 is shown with its base 16 resting upon the tie plate 17. On one side, this tie plate is shown as having a longitudinal ridge 18, which fits against the rail base 16, thus forming a seat on the tie plate 17 for the rail base. The tie plate 17 has large round holes 19 punched therein. In case an

old tie plate is made over, these round holes 19 will be formed by punching out the original square holes for the square spikes.

The tie plate washer comprises a ring 20, having substantially the same thickness on one side as the tie plate 17, and adapted to fit into the hole 19. The hole 21 through the center of the ring 20 is adapted to receive the shaft 25 of the screw spike. On one side of the ring 20 there is an offset 27 which hooks over the edge of the hole 19. Above the offset 27 is a concave shoulder 22 adapted to support the flaring head 24 of the screw spike. The ends of the offset 27 are indicated in Fig. 4 by the reference numeral 23, and they are adapted to rest against the ridge 18 on the tie plate.

In the modification shown in Fig. 3 and at the left of Figs. 1 and 2 the abutments 23^a rest against the edge of the rail base 16, there being no guide ridge 18 in this case.

In Figs. 5 and 6 I have shown still another modification having the holes 19^a in the tie plate 17 of square form. In this case the part 20^a which fits within the hole 19^a is also square. There is an offset 27^a similar to the offsets 27 in the earlier described forms. It will be observed that in this modification the ends of the offset 27^a do not necessarily abut against the rail base 16 or the ridge 18, (this being unnecessary, because the square form of the washer prevents rotation and keeps it in place.

Of course, my invention is not limited to use with old tie plates. Whether the tie plates be new or old the holes 19^a can be punched in them, and in case the tie plates already have square holes for square spikes, these can be punched out. In the case of the round holes in the tie plates rotation of the washer therein is prevented by the abutments 23 or 23^a coming in contact with the ridge 18 or the edge of the rail base 16. It is to be noted that the rail base 16 overlies the edge of the ring 20 or 20^a, thus helping to hold it definitely in place. The concave shoulder 22 affords a seat to support the spike head 24 on the side thereof opposite to the rail base 16.

I claim:

1. A tie plate washer comprising a part to fit entirely around a spike within a hole in the tie plate, said part having the same thickness as the tie plate on one side, and having an offset to overhang the opposite side of said hole.

2. A tie plate washer comprising a ring adapted to fit about a round spike within a hole in the tie plate, said ring having the same thickness as the tie plate on one side but being thickened on the opposite side so as to form a shoulder to support the head of the spike.
3. In combination, a tie, a tie plate having a hole therein, a ring in said hole, said ring having a shoulder on one side overhanging the edge of the hole, and a spike extending through said ring.
4. In combination, a tie plate having a hole therein, a ring within said hole, said ring being of the same thickness on one side as the tie plate and having a projecting shoulder on the opposite side, and a spike through the ring having a head supported on one side by said shoulder.
5. In combination, a tie plate, a rail thereon, said tie plate having a hole therein, a ring within said hole, the edge of the rail base overlapping one edge of said ring, and an offset on the opposite edge of the ring.
6. In combination, a tie plate having a hole therethrough, a complete ring within said hole, a rail resting on the tie plate, a projection from one side of said ring, and means to prevent rotation of the ring in the hole.
7. A tie plate washer comprising a part to fit around a spike within a hole in the tie plate, said part having the same thickness as the tie plate on one side and having a projecting shoulder on the opposite side, said shoulder having a concave seat to receive the head of a screw spike and support the same.
8. In combination, a tie plate with a hole therethrough, a rail on the tie plate at one side of the hole, a washer within the hole having a projecting shoulder opposite said rail, and a spike through the washer with its head resting on said shoulder and also on the edge of the rail base.

In testimony whereof, I have subscribed my name.

JOHN W. KENDRICK.

Witnesses:

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