

H. P. WHITE.
TIE PLATE AND RAIL FASTENING DEVICE.
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1,027,577.

Patented May 28, 1912.

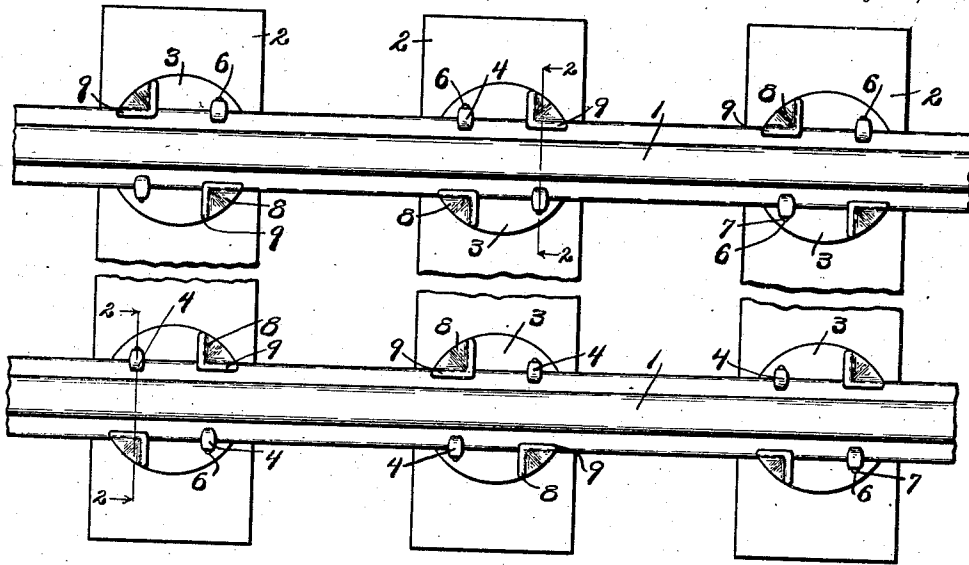


Fig. I.

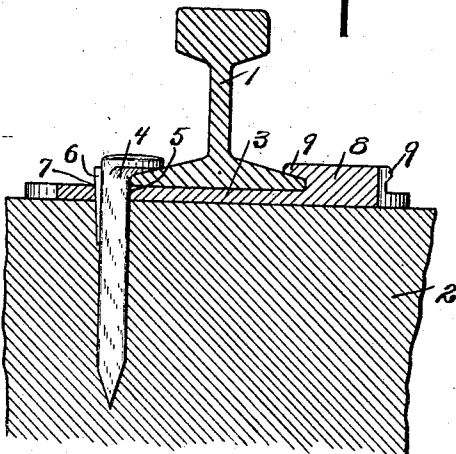


Fig. II.

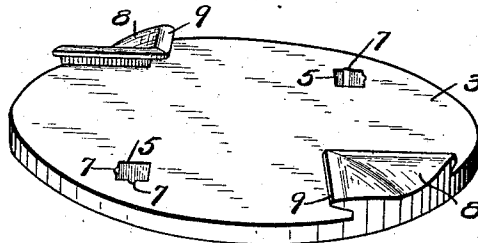


Fig. III.

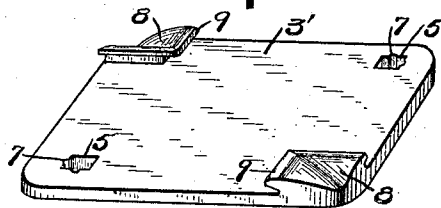


Fig. IV.

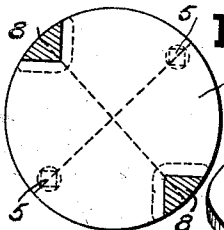


Fig. V.

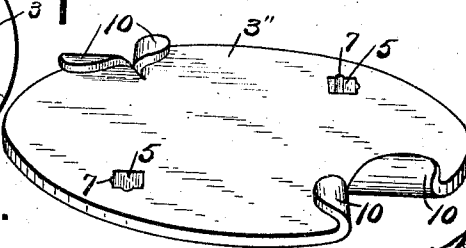


Fig. VI.

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TIE-PLATE AND RAIL-FASTENING DEVICE.

1,027,577.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY P. WHITE, a citizen of the United States, residing at Kalamazoo, Michigan, have invented certain new and useful Improvements in Tie-Plate and Rail-Fastening Devices, of which the following is a specification.

This invention relates to improved tie plate and rail fastening devices for railroad roads.

It is a main purpose to provide reversible anti-tip and anti-creeper tie plate.

The objects of this invention are to provide a simple and efficient reversible tie plate and fastening device for railways which shall be effective in use to prevent the rails from tipping, also to prevent the creeping of the rails and to secure the same with a minimum amount of spiking.

Objects pertaining to mere details will definitely appear from the description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

Structures constituting preferred embodiments of my invention are clearly illustrated in the accompanying drawing forming a part of this specification, in which,

Figure I is a detail plan view of the opposite rails of a railroad track, the ties being broken in section and the rails secured in place by my improved tie plate and rail fastening devices. Fig. II is an enlarged detail transverse sectional view on a line corresponding to lines 2—2 of Fig. I, of my improved tie plate and means. Fig. III is a detail perspective view of one of my improved tie plate and rail fastening devices in circular form, detached from the rail. Fig. IV is a detail perspective view of a similar structure in square form. Fig. V is a detail perspective view of the structure as it appears when stamped from a sheet of metal. Fig. VI is a diagram showing the disposition of the lugs and spike holes.

In the drawings the sectional views are taken looking in the direction of the little arrows at the ends of the section lines, and similar numerals of reference refer to similar parts throughout the several views.

Considering the numbered parts of the drawing, the rails 1 of a railway are supported on the usual ties 2.

My improved tie plates are adapted to receive the rails on their upper surfaces, and are perforated at 5—5 to receive the usual or suitable railway spikes 4. The spikes retain the rails in a locked position because the wedging keys driven into the small slot 7, at the rear sides, force the spikes against the rail base and clamp it against the opposing lug 8 hereafter described.

The spikes 4—4 are disposed diagonally opposite each other on opposite sides of the rail, and right angles triangular shaped lugs 8 with overhanging flanges 9 are disposed in the corners alternating with the spikes and are so spaced as to engage the rails diagonally opposite from each other. The spike holes 5—5 are each so positioned in their relation to the overhanging lugs 8—8 as to coact with either of said lugs to secure and retain the rail in position, thus making it possible to dispose these plates symmetrically opposite in the manner indicated in Fig. I, which secures the rails very firmly in place without the necessity of giving attention to whether the plates are rights or lefts; in other words, the plates are reversible. This is of great advantage, in that it produces a rigid non-creeping track and avoids unnecessary strain upon the spikes. It also anchors the rails in such manner as to prevent them from tipping over under the side strain and load of a passing train, the result being the same as though the base of the rails were as wide as the tie plates in which they are thus securely locked.

In Fig. IV I show the structure modified, so that the plate appears as a square plate. This structure consumes less material for a given size of rail than the round structure, but it provides a narrower base to prevent the rails tipping; therefore the square structure will be preferred on straight tracks and the round structure will be preferred on curves where the anti-tip feature is of special importance.

In Fig. V I show the structure as it appears when struck up from sheet metal. The lugs 10—10 disposed at right angles to each other take the place of the lugs 8—8 with their overhanging flanges 9. This structure, however, is more expensive than malleable iron plates; which are stronger for the same cross section of metal, and therefore preferable.

When the spikes are driven in, a small

wedge 6 is driven into the notch 7 back of the spike to lock the same securely in position against the rail base and prevent the creeping of the rails. This locking wedge, however, may be dispensed with where there is no undue stress upon the rails.

In Fig. VI I show diagrammatically the relation of the lugs and spike holes in the plate, and the lines crossed at right angles at the center to show the relative disposition. I also indicate the spike holes by dotted lines as either round or square, showing the relation of the inner point thereof, which should be in line with the angular sides of the opposed engaging lugs as indicated.

I have illustrated and described those forms of my invention which I consider most desirable; but I wish to call attention to the fact that the details of construction might be varied to quite an extent without departing from my invention. To illustrate this fact, I have shown square perforations 5-5 to receive the spikes 4-4, provided with small slots 7 to receive the wedging keys 6 for securely locking the rails to the plates. It would be practical to use round perforations, large enough to receive the square spikes, and then drive the wedging keys 6 in the circular portion of the perforation back of the spikes. I have not specified lugs on the bottom side of the plates for anchoring the plates to the ties, but such could very readily be supplied. There is objection to them that in the minds of some outweighs their advantages.

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

1. In a railway tie plate fastening device, a symmetrical plate with diagonally disposed lugs having right angle faces with overhanging flanges cooperating with oppositely disposed spikes arranged in holes therein and wedges in suitable spaces back of the spikes for retaining the same, coacting for the purpose specified.

2. A symmetrical tie plate with diagonally disposed lugs with overhanging flanges disposed at right angles to each other, and perforations opposite the said lugs for receiving railway spikes, as specified.

3. A symmetrical reversible tie plate having diagonally disposed right angle lugs with overhanging flanges and so positioned in relation to the tie plate that a straight line passing over the center of the tie plate would pass over the right angle of each of the lugs and intersect the outside of the plate at a point equally distant from the right angle surfaces of the lugs, and suit-

able perforations for receiving rail spikes equally distant from the right angle of each of the said lugs and directly opposite thereto, adapted to coact with either of the said lugs, for the purpose specified.

4. A symmetrical reversible tie plate having diagonally disposed right angle lugs with overhanging flanges and having their right angles pointing toward the center of the plate, and square perforations opposite said lugs for receiving railway spikes, said right angle lugs and square perforations being so disposed in relation to each other that lines crossing the center of the plate at right angles will pass over the centers of the lugs and perforations at an angle of 45° to their respective side surfaces, and the right angles of the lugs and the inner right angle of each of the perforations will be intersected by lines equally distant from the center of the plate, said perforations being provided with small slots for wedges on their sides opposite said lugs, coacting as described for the purpose specified.

5. A symmetrical reversible tie plate having diagonally disposed right angle lugs with overhanging flanges and having their right angles pointing toward the center of the plate, and square perforations opposite said lugs for receiving railway spikes, said right angle lugs and square perforations being so disposed in relation to each other that lines crossing the center of the plate at right angles will pass over the centers of the lugs and perforations at an angle of 45° to their respective side surfaces and the right angles of the lugs and the inner right angle of each of the perforations will be intersected by lines equally distant from the center of the plate, coacting as described for the purpose specified.

6. A symmetrical reversible tie plate having diagonally disposed right angle lugs with overhanging flanges and having their right angles pointing toward the center of the plate, and perforations opposite said lugs for receiving railway spikes, said right angle lugs and perforations being so disposed in relation to each other that lines crossing the center of the plate at right angles will pass over the centers of the lugs and perforations and the right angles of the lugs and the inner point of each of the perforations will be intersected by lines equally distant from the center of the plate, coacting as described for the purpose specified.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

HENRY P. WHITE. [I. S.]

Witnesses:

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