

(No Model.)

2 Sheets—Sheet 2.

B. WOLHAUPTER.
RAILWAY TIE PLATE.

No. 530,738.

Patented Dec. 11, 1894.

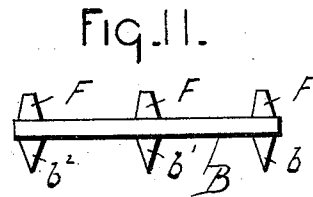
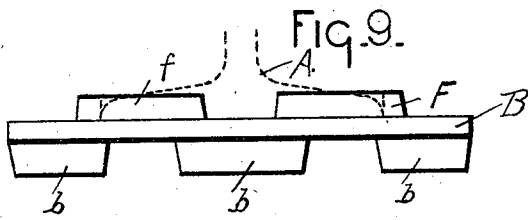


Fig. 10

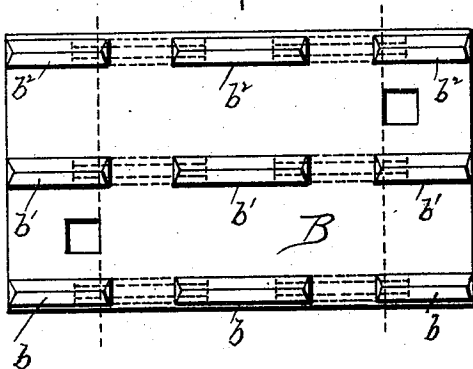


Fig. 12

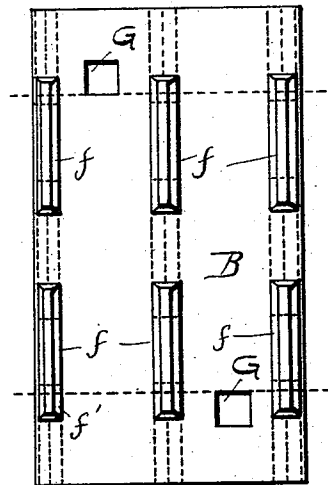


Fig. 13.

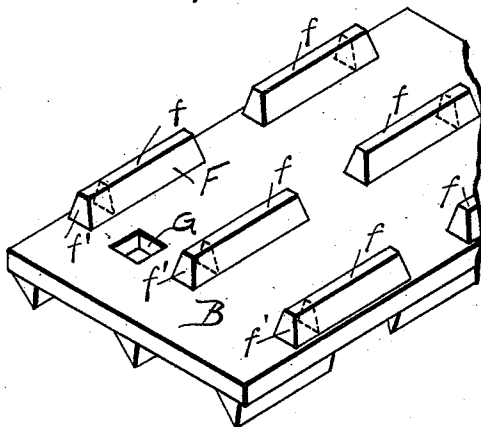


Fig. 14.

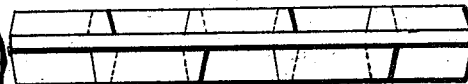
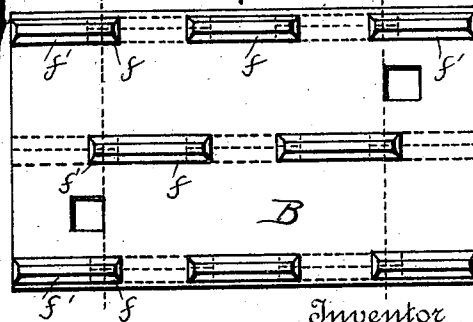


Fig. 15.



Witnesses.
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UNITED STATES PATENT OFFICE.

BENJAMIN WOLHAUPTER, OF MORGAN PARK, ILLINOIS.

RAILWAY TIE-PLATE.

SPECIFICATION forming part of Letters Patent No. 530,738, dated December 11, 1894.

Application filed March 10, 1894. Serial No. 503,111. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN WOLHAUPTER, a subject of the Queen of Great Britain, residing at Morgan Park, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Railway Tie-Plates; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object the production of a railway tie plate, that is to say, a plate that is interposed between the rail and tie of a railway track.

The invention consists in the combination of features hereinafter described and claimed.

In the drawings: Figure 1 is a cross section of a portion of a rail showing the plate in edge elevation. Fig. 2 is a view of the under side of the plate. Fig. 3 is a cross section of a portion of a rail with the plate in elevation showing a flange on the top side of the plate. Fig. 4 is a plan view of the plate. Figs. 5 and 6 are views of the under side of the plate, each showing a slight variation in the form of the ridges. Fig. 7 is a perspective view of the under side of the plate. Fig. 8 is an edge elevation of a portion of the plate shown in Fig. 6. Fig. 9 is an edge elevation of a variation in the form of the top side of the plate. Fig. 10 is a plan view of the same. Fig. 11 is an end edge elevation. Fig. 12 is a plan view at right angles to Fig. 10. Fig. 13 is a perspective view of the plate. Fig. 14 is an edge elevation, and Fig. 15 a plan.

Heretofore in the manufacture of this class of plate two broad styles or forms of plates have been manufactured, namely: those wherein the ridges or engaging devices on the under side of the plate are adapted to enter the tie parallel with the grain of the tie and not to cut the fiber, but merely to separate it on the line of the grain thereof; and secondly, those in which the engaging devices whereby the plate is engaged to the tie were so arranged as to extend transversely of the grain of the fiber and thus cut into and sever

the fiber. These two forms are clearly distinct from each other, since each proceeds on an entirely different theory. Those plates in which the engaging devices are parallel with the grain of the tie are manufactured on the theory that it is undesirable to cut the grain of tie since the tie is thereby weakened, and the grain being cut transversely the moisture is permitted to enter the fiber and thus rot it, while those who prefer the second class assert that the cutting of the fiber is a secondary consideration when the fact that the plate is prevented absolutely from creeping along the tie and thus widening the gage of the road is considered; or in other words the advocates of the transverse engaging devices, that is, those that cut into the grain at right angles or substantially right angles to the grain, base their argument upon the ground that the plate forms a positive and absolute stop against lateral movement by the rail without depending on the spikes to prevent it.

My invention relates to those plates wherein the engaging devices extend parallel with the grain, or in other words, parallel with the length of the tie, and has for its object the production of such a form of engaging device as that while the fiber is not injured or cut transversely yet an effective means is provided whereby the plate is prevented absolutely from creeping along the tie in the direction of the grain. With this explanation and bearing in mind always that this invention belongs to that class in which the ridges or its engaging devices extend parallel with the grain of the fiber of the tie, I will proceed to more particularly describe the parts.

A represents the rail, B the plate and C the spike. On the under side of the plate is a series of ridges extending along the plate in such a manner that when the plate is placed upon the tie the ridges will be parallel with the grain of the fiber of the tie. These ridges are divided into sections b , b' , b'' , &c.

In Fig. 2 I have shown the plate provided with five ridges, two of them divided into two sections each, and three of them divided into three sections each. These divided ridges

are so arranged that a division of one ridge will be out of transverse alignment with the division of the next adjacent ridge. For instance, each of the sections b is out of transverse alignment with each of the sections b' while each of the sections b' is out of transverse alignment also with each of the divisions b^2 . Now it will be seen that when this plate is placed upon the tie and the ridges b , b' , b^2 pressed into the fiber there will be a space between each of the divisions of each ridge where the fiber will not be pressed apart or disturbed. Each of the ends b^3 therefore becomes an abutting end to prevent the plate from creeping along the tie in the direction of its length, since for the plate to move these blunt ends must separate the fiber. The capacity therefore of resisting any movement of the plate along the tie is very largely increased because of the divided ridges. Again the placing of these divisions of the ridges out of transverse alignment with each other prevents the plate from buckling since each part of the plate is reinforced owing to the fact that the ends of each division lap over slightly the division of the next adjacent ridge. Again by extending the ridges parallel with the grain the plate is prevented from buckling or bending since the ridges are extended at right angles to the rail. This is important since there is no tendency to buckle in a direction parallel to the rail since the load is distributed throughout the length in this direction, but the plate extending beyond the edges of the rail flange brings the load in the middle of the plate and permits the edges thereof to curl up or buckle unless reinforced by the ridges extending at right angles to the rail.

I will now proceed to explain some variations in my plate.

In Figs. 3 and 4 I have shown on the top side of the plate a ridge D against which the rail may abut so that the rail cannot move laterally upon the plate.

In Figs. 5 and 6 I have shown slight fins or projections E extending from the ridges laterally, thus materially increasing the resisting capacity of the plate to longitudinal movement on the tie.

On sheet 2 I have shown a variation in the form of the top side of the plate. The plate is originally formed with a series of ridges F on the top side, and then the portion f of these ridges cut away to form a place within which to rest the rail, the portion f' forming a projection or shoulder against which the flange or rail may rest. The reason for thus forming the ridges F on the top side is that it can be conveniently done in rolling the plate and afterward cutting them away. It will be noticed by reference to Fig. 11 that these ridges F are substantially the same width as the ridges b , b' , b^2 , and as the thickness of the plate, thus enabling them to be easily cut away to form the way for the rail. Spike holes G may or not be provided de-

pending upon the length of the plate, but I prefer to make the plate long enough so that the spike holes will have to be provided. I am aware that plates have heretofore been made in which ridges on the under side have been caused to enter the tie parallel with the grain. I am also aware that plates have heretofore been constructed in which divided ridges were extended transversely of the grain of the tie, but these divisions were obviously not for the purpose of my divided ridges. Constructions such as just named, I do not of course claim, but

What I claim is—

1. A railway tie plate provided on its under side with one or more elongated divided ridges inside the outer edges of the plates, said ridges extending when in position upon the tie parallel with the grain of the tie, substantially as described.

2. A railway tie plate provided on its under side with one or more elongated divided ridges inside the outer edges of the plate, said ridges extending when in position on the tie, parallel with the grain of the tie and on its upper side with one or more rail abutting ridges, substantially as described.

3. A railway tie plate provided on its under side with one or more elongated divided ridges inside the outer edges of the plate, said ridges extending when in position on the tie parallel with the grain of the tie, a division of one ridge being out of transverse alignment with the divisions of the next adjacent ridge, substantially as described.

4. A railway tie plate provided on its under side with a series of divided ridges extending when in position on the tie parallel with the grain of the tie, a division of one ridge being out of transverse alignment with the divisions of the next adjacent ridge and the ends of a division of one ridge overlapping the ends of a division of the next adjacent ridge, substantially as described.

5. A railway tie plate provided on its under side with a series of ridges extending parallel with the grain of the tie, one or more of the ridges provided with spurs or projections, substantially as described.

6. A railway tie plate provided on its under side with a series of divided ridges extending when in position on the tie parallel with the grain of the tie, one or more of the divisions provided with projecting spurs, substantially as described.

7. A railway tie plate provided on its under side with a series of engaging devices consisting of one or more divided ridges adapted to engage it to the tie, and on its upper side with a series of ridges extending at right angles to the rail, said ridges being adapted after the plate is rolled to be cut away to form a way for the rail, substantially as described.

8. A railway tie plate provided on its under side with a series of divided ridges extending when in position parallel with the

grain of the tie and on its upper side with a series of ridges extending parallel with the ridges on the under side, each of the said upper ridges being adapted after being rolled to be cut away to form a way for the rail, substantially as described.

9. A railway tie plate provided on its under side with a series of divided ridges extending when in position on the tie, parallel with the grain thereof, and provided on its top with a series of divided ridges parallel

with the ridges on the under side, the ends of the divisions of the upper ridges overlapping the ends of the divisions of the lower ridges, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

BENJAMIN WOLHAUPTER.

Witnesses:

WALTER H. CHAMBERLIN,
FLORENCE KING.