No. 707,362. Patented Aug. 19, 1902.

C. S. SHALLENBERGER.

TIE PLATE.

(Application filed Nov. 14, 1901.)

(No Model.)

Fig. 1.

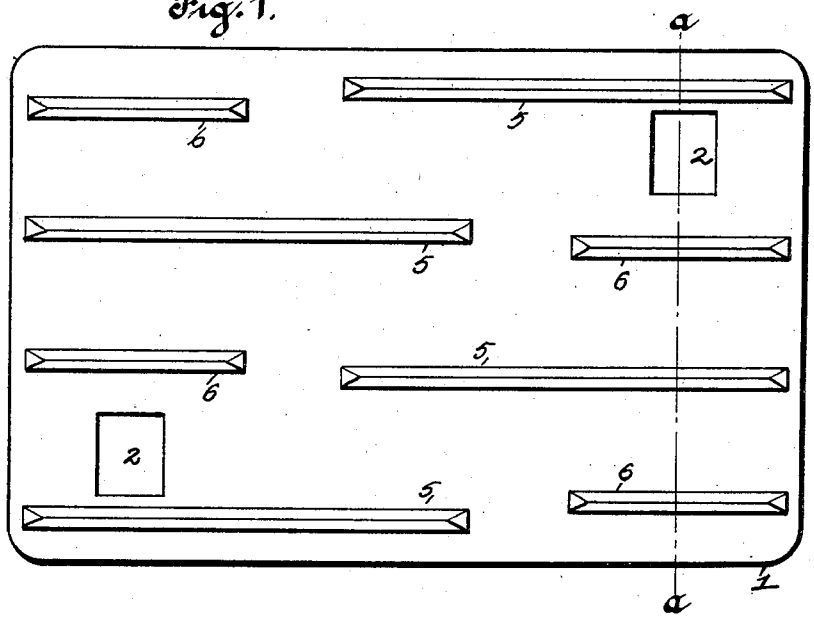
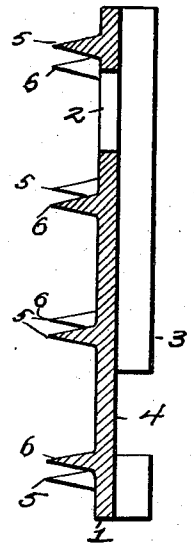


Fig. 2.



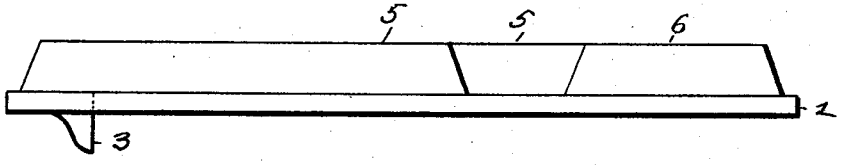


Fig. 3.

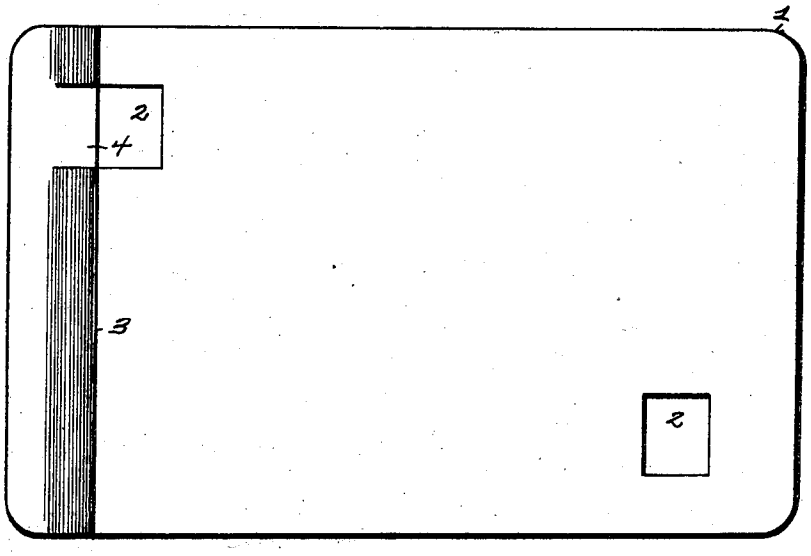


Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES S. SHALLENBERGER, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF TO EDWARD S. MARSHALL, OF ST. LOUIS, MISSOURI.

TIE-PLATE.

SPECIFICATION forming part of Letters Patent No. 707,362, dated August 19, 1902.

Application filed November 14, 1901. Serial No. 82,312. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. SHALLENBERGER, of the city of Milwaukee, Milwaukee county, State of Wisconsin, have invented certain new and useful Improvements in Tie-Plates, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to tie-plates; and it consists of the novel construction, combination, and arrangement of parts hereinafter shown, described, and claimed.

The object of this invention is to provide an improved metallic tie-plate to support the rails to prevent the same from cutting into the ties and which is formed with a series of ribs or projections on its under side adapted to engage in the ties and arranged in staggered form, so that they will engage in different parts of the grain of the tie, so that the latter will not be split or cracked because of their presence therein.

Figure 1 is a view of the tie-plate, showing the ribs on the under side thereof. Fig. 2 is a cross-section taken on the line *a a* of Fig. 1. Fig. 3 is a side elevation of the tie-plate inverted. Fig. 4 is a plan view of the tie-plate.

In forming my improved tie-plate I provide the plate 1, which may be of any suitable size and shape and which is provided with openings 2, through which the spikes can be driven to secure the rails in position. The upper side of the tie-plate is provided with an integral transverse ridge or elevation 3, against which the base of the rail abuts and which serves as a stop or brace for the same and also as a guide to assist in placing the tie-plate in the required position. The said part 3 is broken away adjacent to the opening 2, as indicated by 4, so that there will not be any obstruction in the way of insertion of the spikes.

5 indicates a series of longitudinal ribs or projections which are integral with the under side of the plate and which extend somewhat more than one-half of the length thereof. The ribs or projections extend from both ends of the plate and are parallel and are adapted to engage in the tie at different points and parallel with the grain thereof. The tie-plate is provided with a short rib or projection 6 at one end of the projections 5 and out of alinement therewith to engage in a different part of the grain, and thereby serve to resist the grain from being forced open by the projections 5 and to prevent the tie from becoming split or cracked thereby. It will thus be seen that the ribs or projections 5 and 6 serve as mutual stays to protect the tie and prevent the same from being split by the oscillation of the tie-plate when in position. By such an arrangement the tie will be protected and the tie-plate will be held more securely in position, forming a better protection for the tie and leaving no cracks therein within which water or moisture may become lodged to cause the tie to become weakened. The projections 5, extending longitudinally on the tie-plate, reinforce the same and give additional strength to prevent it from becoming bent by long use. The staggered arrangement of the projections 5 6 affords double abutments to hold the tie-plate against longitudinal movement, as can be seen by referring to Fig. 2—that is, double the amount of wood must be displaced for the tie-plate to move longitudinally than would be displaced if these projections were alined. Thus it will be seen that these projections form mutual stays to hold the grain of the wood against splitting and cracking and also double the abutting or resisting surfaces as well as to strengthen the tie-plate to hold the same against being bent. The projection or elevation 3 also forms an abutment for the rail and is of great assistance in holding the rail in position at curves and bends in the track. All these advantages are combined in a simple, durable, and inexpensive tie-plate constructed as above described.

I claim—

1. The improved metallic tie-plate comprising the plate 1 having spike-openings 2, a stop 3 located on the upper side of said plate, a series of longitudinal projections 5 formed integral with the under side of said plate and

extending more than half the length thereof, and a series of shorter projections 6 arranged at one end of the said projections 5 but out of alinement therewith, substantially as herein specified.

2. A tie-plate, comprising an integral metal plate having on its under surface two series of thin, parallel ribs, one series extending from near one edge to beyond the middle transverse line of the plate, and the other series extending from near the opposite edge of the plate to beyond the middle transverse line of the plate, the two series overlapping each other at their inner ends at the middle portion of the plate.

3. A tie-plate consisting of an integral metal plate having on its under surface two series of ribs, one series extending from near one edge to beyond the middle transverse line of the plate, the two series overlapping each other at their inner ends at the middle portion of the plate, and similar elongated but shorter ribs supplemental to said long ribs in the spaces at the ends of the long ribs but separated a distance therefrom.

4. A tie-plate comprising an integral metal plate having on its under surface two series of parallel ribs, one series extending from near one edge to beyond the middle transverse line of the plate, and the other series extending from near the opposite edge of the plate to beyond the middle transverse line of the plate, the two series overlapping each other at their inner ends at the middle portion of the plate, and similar elongated but shorter ribs supplemental to said long ribs in the spaces at the ends of the long ribs but separated a distance therefrom, the ribs being severally out of endwise alinement with every other rib on the plate.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES S. SHALLENBERGER.

Witnesses:

ALFRED A. EICKS,

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