

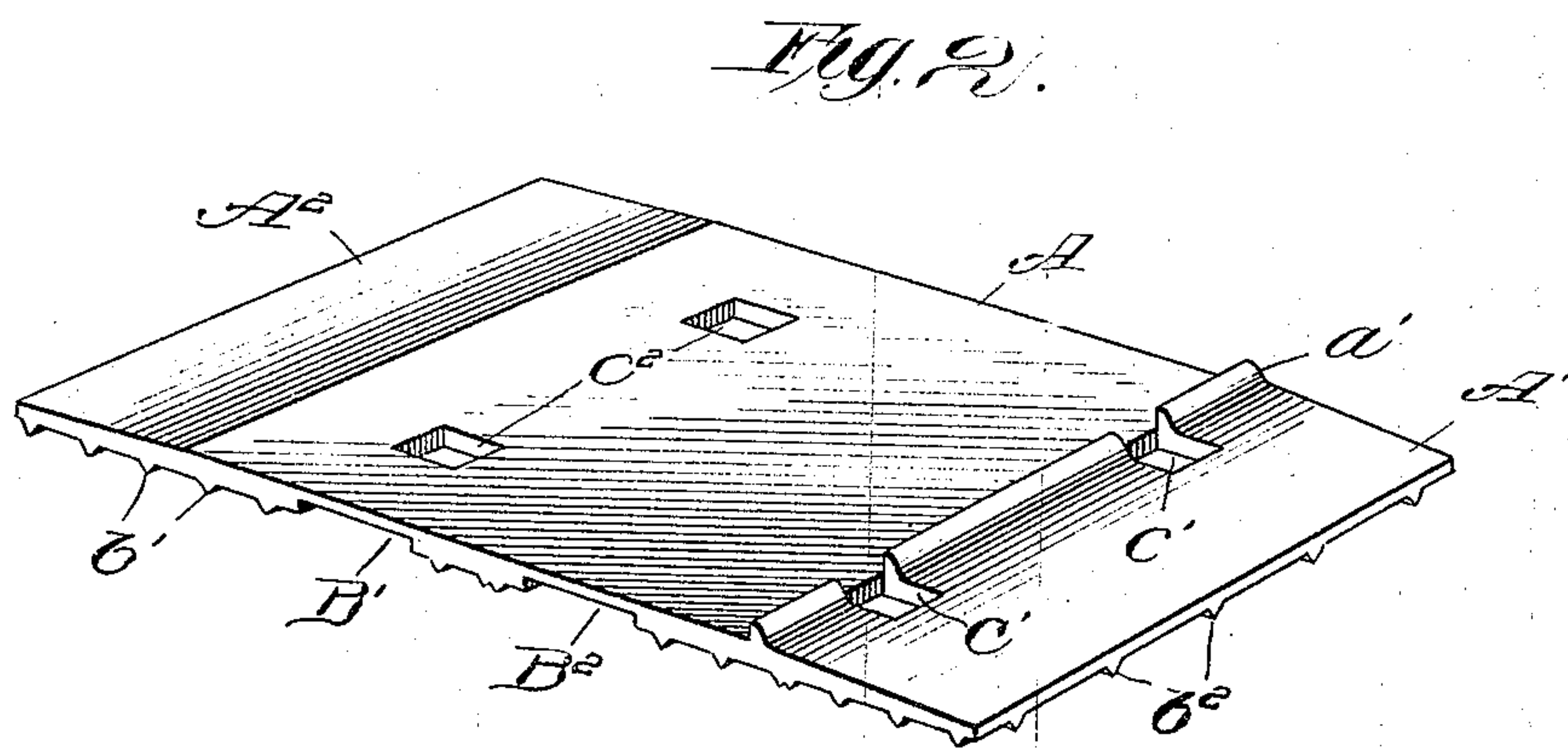
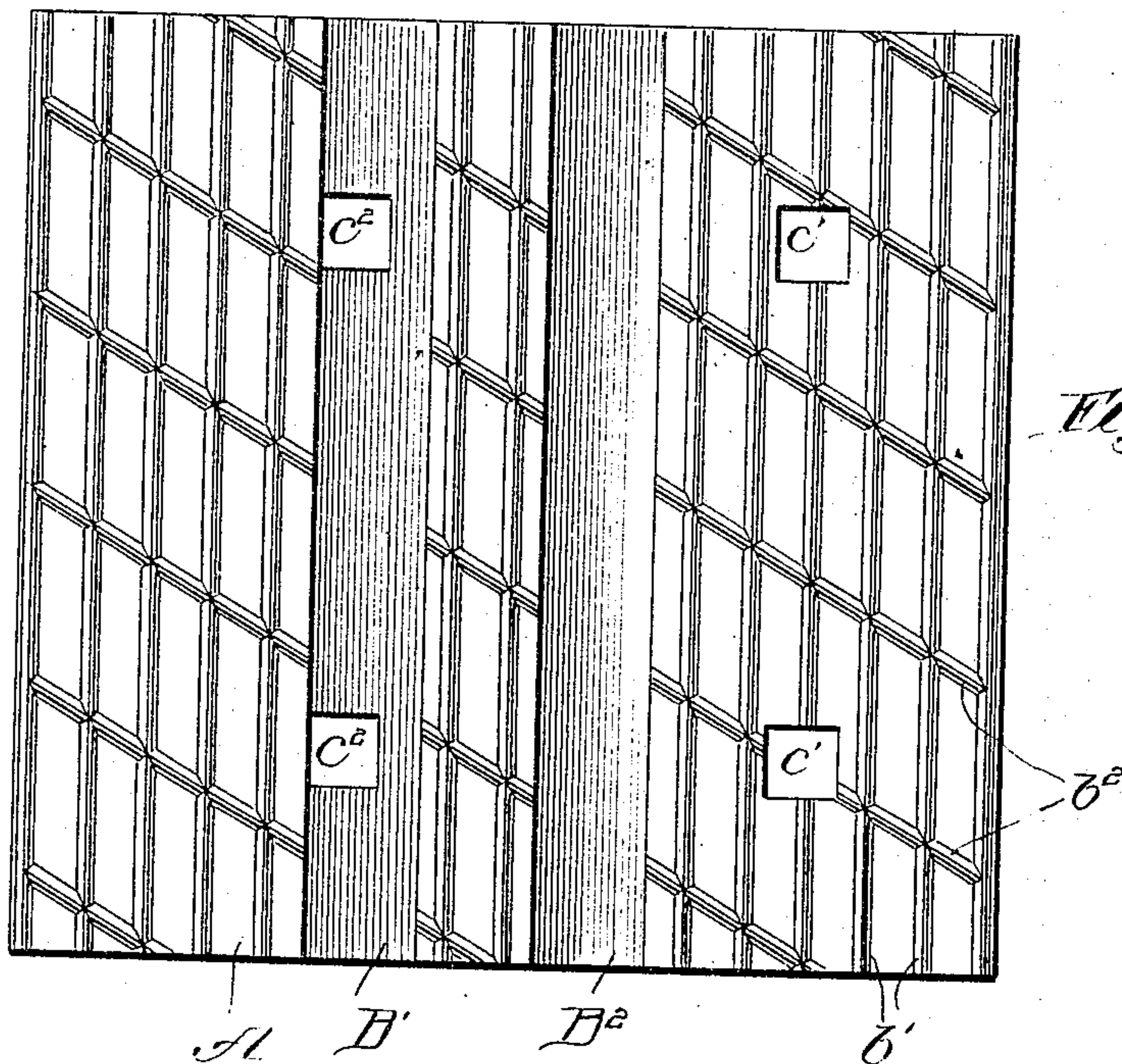
No. 824,678.

PATENTED JUNE 26, 1906.

A. H. SMITH.

TIE PLATE.

APPLICATION FILED FEB. 14, 1906.



Witnesses:
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UNITED STATES PATENT OFFICE.

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TIE-PLATE.

No. 824,678.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed February 14, 1906. Serial No. 300,948.

To all whom it may concern:

Be it known that I, ADOLPH H. SMITH, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have
5 invented a certain new and useful Improvement in 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
10 and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates in general to railroad-track fastenings, and more particularly to
15 tie-plates.

It is customary to interpose metallic plates between railroad-rails and the supporting-ties in order to prevent the wearing away of the ties by the rails and in order to more
20 firmly secure the rails to the ties, and thereby prevent both longitudinal creeping and lateral spreading of the rails with respect to the ties.

It is desirable that tie-plates should have
25 ribs or projections on their under surfaces to prevent movement of the plates upon the ties; but such projections should be so arranged as not to injure the ties when the plates sustain the loads of trains passing over
30 the rails. When tie-plates are provided with ribs or projections alining with the grain of the ties, such ribs become embedded in the ties, and when subjected to the movement incident to passing trains soon abrade and
35 wear the wood.

The primary object of my invention is to provide a tie-plate which when applied to a tie will not creep thereon, will not wear away the wood, and from which the rail will not be
40 detached by usage.

A further object of my invention is to provide a tie-plate of simple, durable, and economical construction.

My invention, generally described, consists
45 of a tie-plate the under surface of which is provided with one or more channels extending longitudinally beneath the rail and having on each side of such channels intersecting ribs extending at an angle to the grain of
50 the tie.

My invention will be more fully described hereinafter with reference to the accompanying drawings, in which the same is illustrated

as embodied in a convenient and practical form, and in which—

Figure 1 is a plan view of the under surface
55 of the tie-plate, and Fig. 2 a perspective view of the plate.

The same reference characters are used to designate the same parts in the two figures of
60 the drawings.

Reference character A indicates a tie-plate made of suitable material—such, for instance, as metal rolled into the desired form. The upper surface of the tie-plate is provided
65 with a flat intermediate portion, upon which the base of the rail rests. A shoulder a' is provided on the upper surface of the plate, against which the outer edge of the base of the rail engages. The portions A' and A'' of
70 the upper surface of the plate on the opposite sides of the flat intermediate portion may conveniently be inclined downwardly, as shown in Fig. 2. The under surface of the plate A is provided with ribs of V-shape
75 cross-section, such ribs being arranged at an angle to the grain of the tie. The ribs may conveniently be formed in two series, one series b' extending parallel to the rail, and consequently transversely with respect to the
80 fiber of the tie. The other series of ribs b'' extend diagonally with respect to the first series, so that they also extend at an angle to the grain of the tie. Two channels B' and B'' are provided at the under surface of the
85 plate, arranged parallel with and beneath the base of the rail. It is obvious that one of such channels may be provided or more than two, as desired.

The tie-plate is provided with the usual
90 holes therethrough for the passage of spikes to secure the base of the rail to the plate and to secure the plate to the tie. c' indicates two of such holes extending through the shoulder a' , while c'' indicates other holes
95 spaced apart from the shoulder a' a distance conforming to the width of the base of the rail.

The channels in the under surface of the rail result in the load imposed upon the plate
100 being sustained by the portions of the plate at the sides of such channels, thereby forcing the ribs against the upper surface of the tie and preventing the creeping of the plate during the passage of trains. The channels also
105 serve to decrease the weight of the plate and

render the same more economical in manufacture. By arranging the ribs at an angle to the grain of the wood they do not become embedded in the tie, but serve to prevent the creeping of the plate, owing to their lower edges being forced against the tie.

From the foregoing description it will be observed that I have invented an improved tie-plate which though simple and economical in construction will securely connect the rail to the tie without either creeping or wearing away the surface of the tie.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A tie-plate having a series of parallel ribs on its under surface extending transversely with respect to the grain of the tie, and a second series of parallel ribs intersecting the ribs in the first series.

2. A tie-plate having one or more channels in its under surface extending longitudinally with respect to the rail and also having intersecting ribs on its under surface extending at an angle to the grain of the tie.

3. A tie-plate having one or more channels in its under surface extending longitudinally with respect to the rail, and having a series of parallel ribs on its under surface extending transversely to the grain of the tie, and a second series of parallel ribs intersecting the ribs in the first series.

4. A tie-plate having a plurality of parallel channels in its under surface extending longitudinally with respect to the base of the rail, the under surface of the plate intermediate of said channels having projections adapted to engage the surface of the tie.

5. A tie-plate having two parallel channels in its under surface extending longitudinally beneath the base of the rail, the under surface of the plate intermediate of said channels having intersecting ribs extending at an angle to the grain of the tie.

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

ADOLPH H. SMITH.

Witnesses:

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