

No. 649,629.

Patented May 15, 1900.

R. B. CHARLTON.
RAILWAY TIE PLATE.

(Application filed Apr. 17, 1899.)

(No Model.)

Fig. 1.

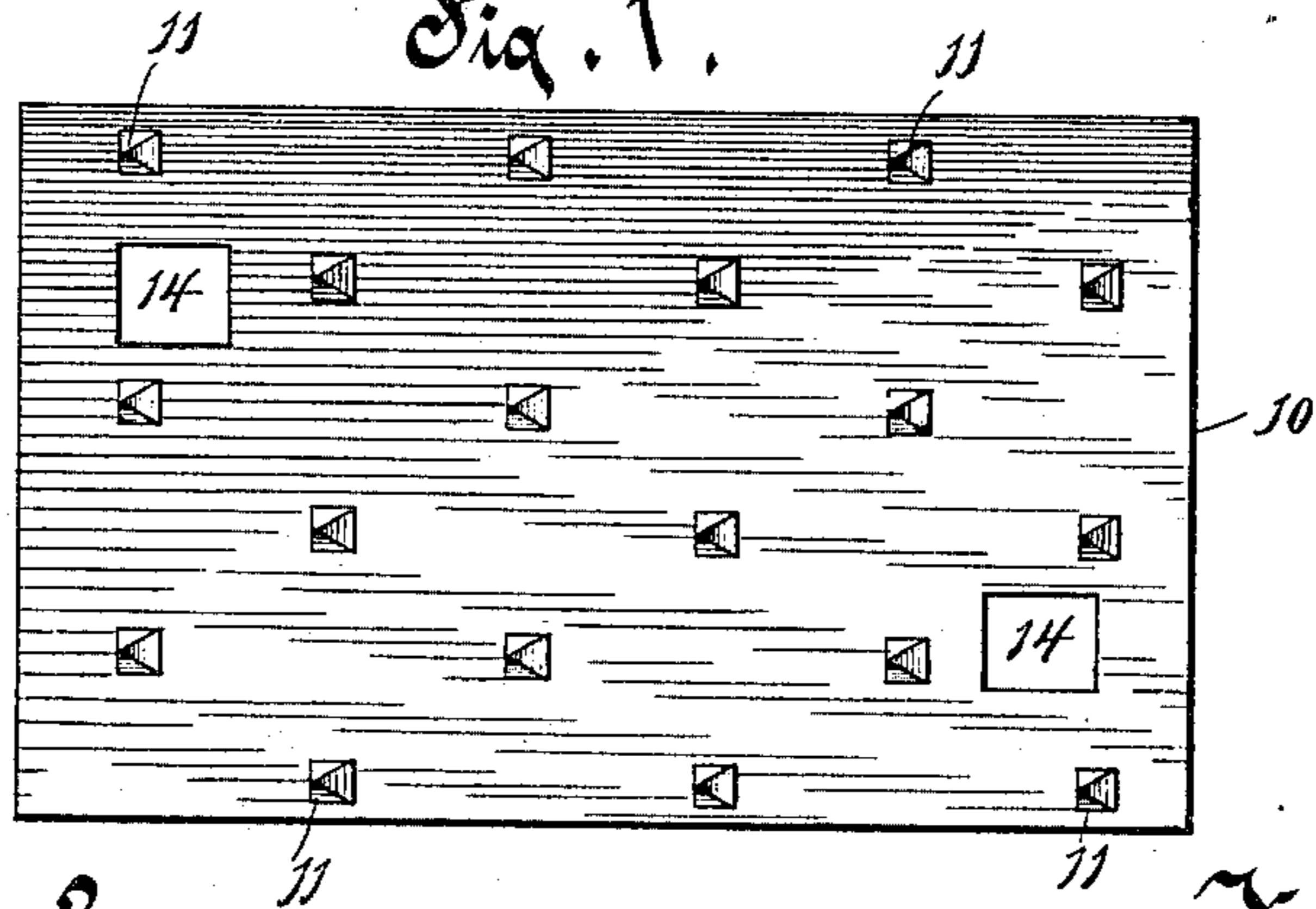


Fig. 2.

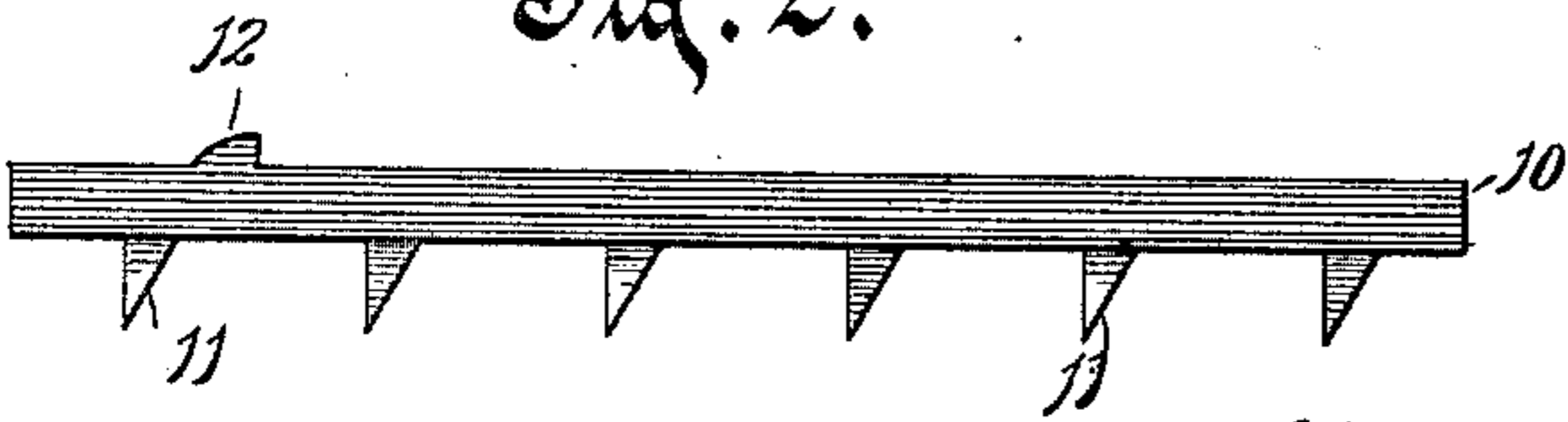


Fig. 3.

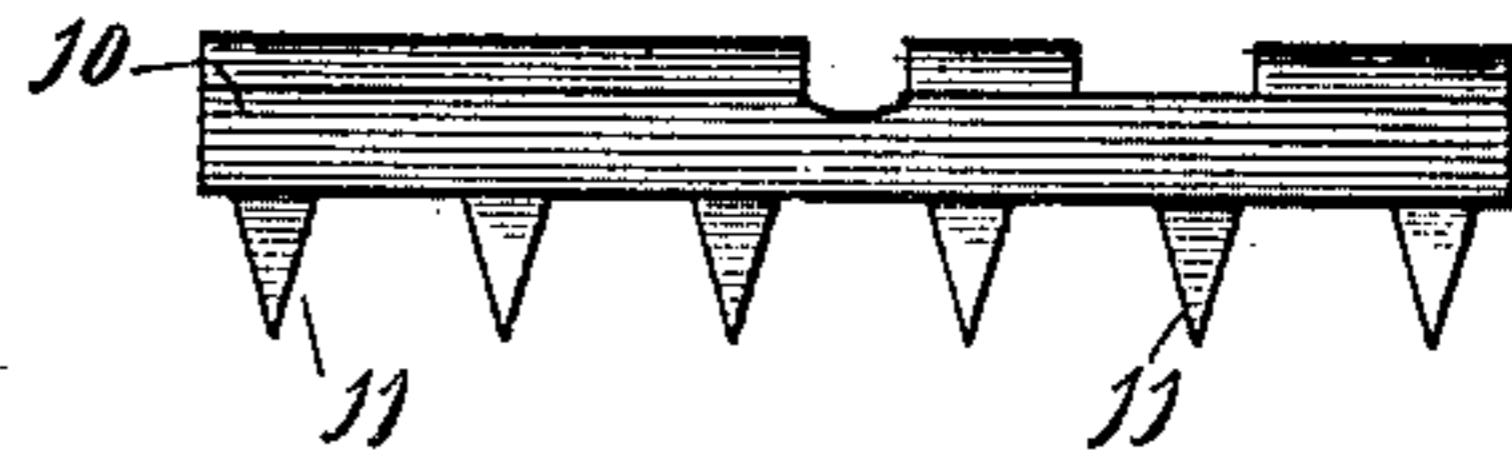


Fig. 4.

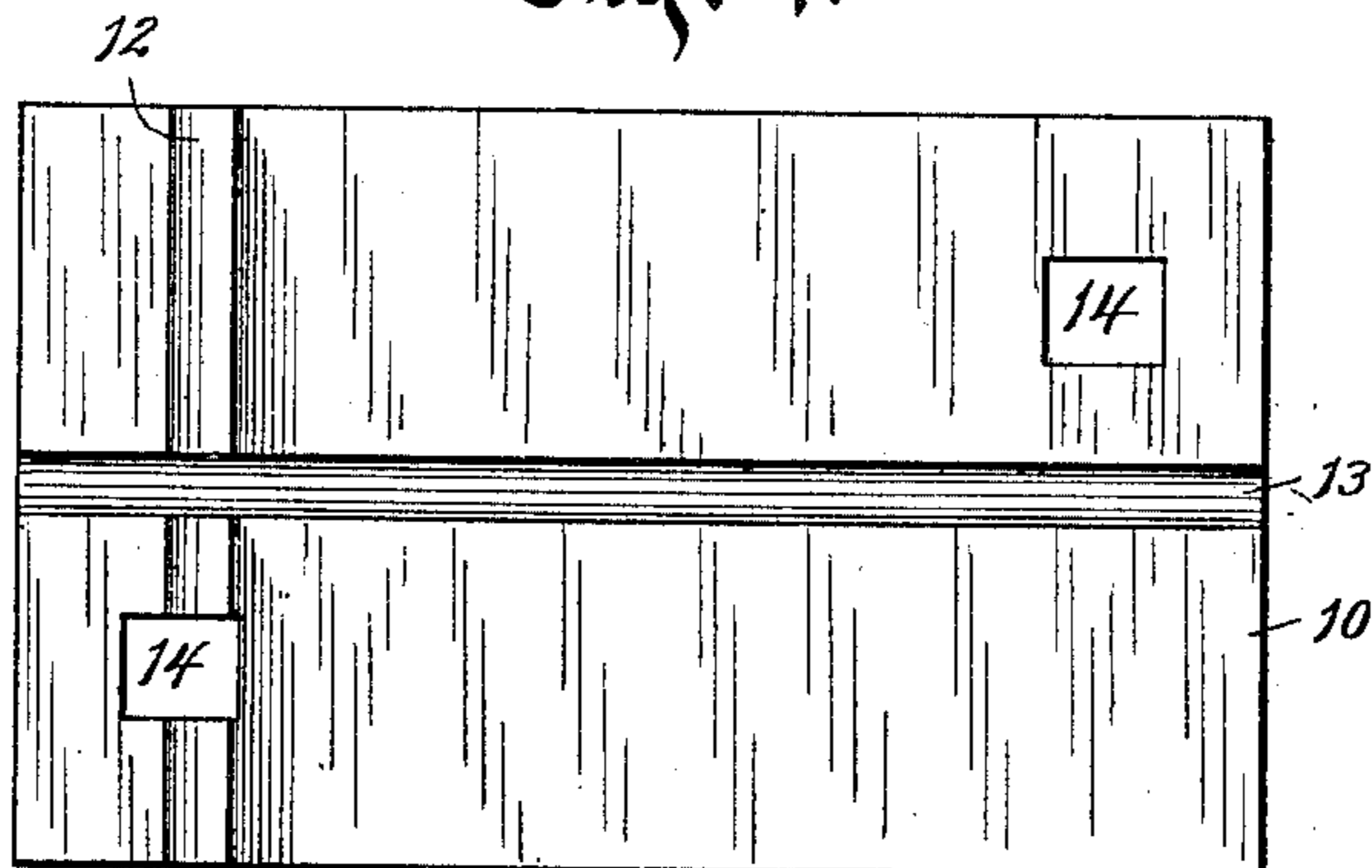


Fig. 5.

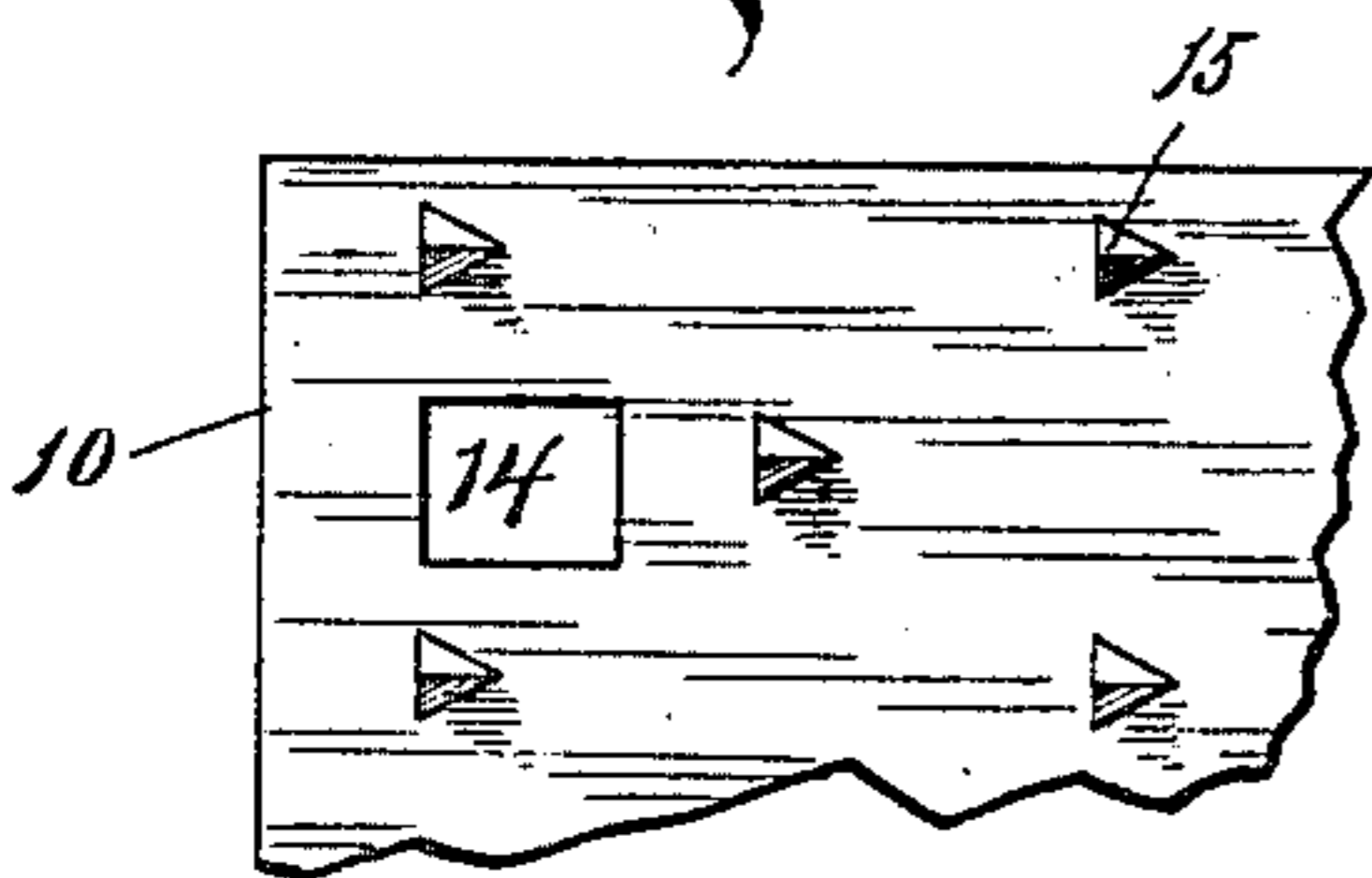


Fig. 6.

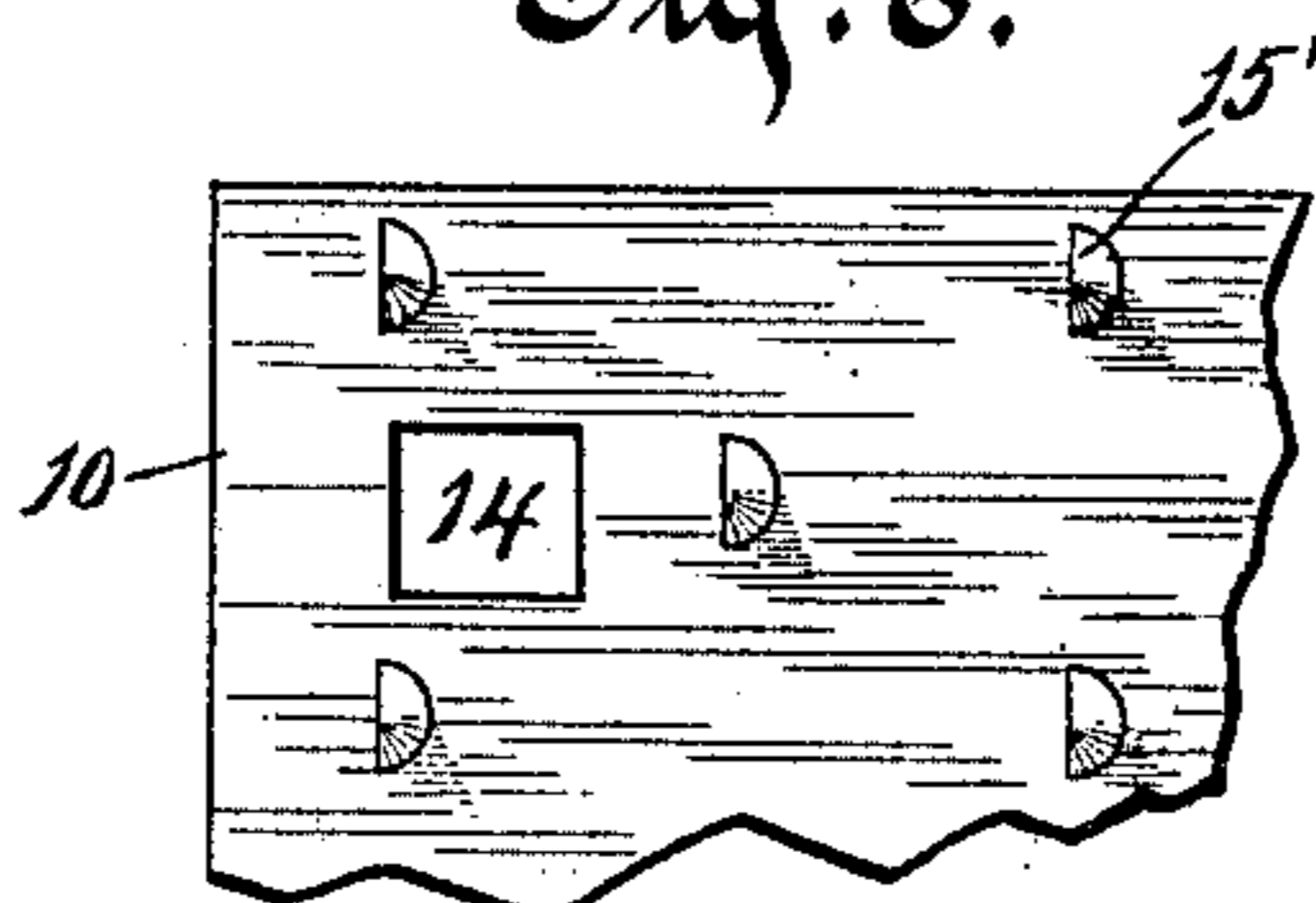
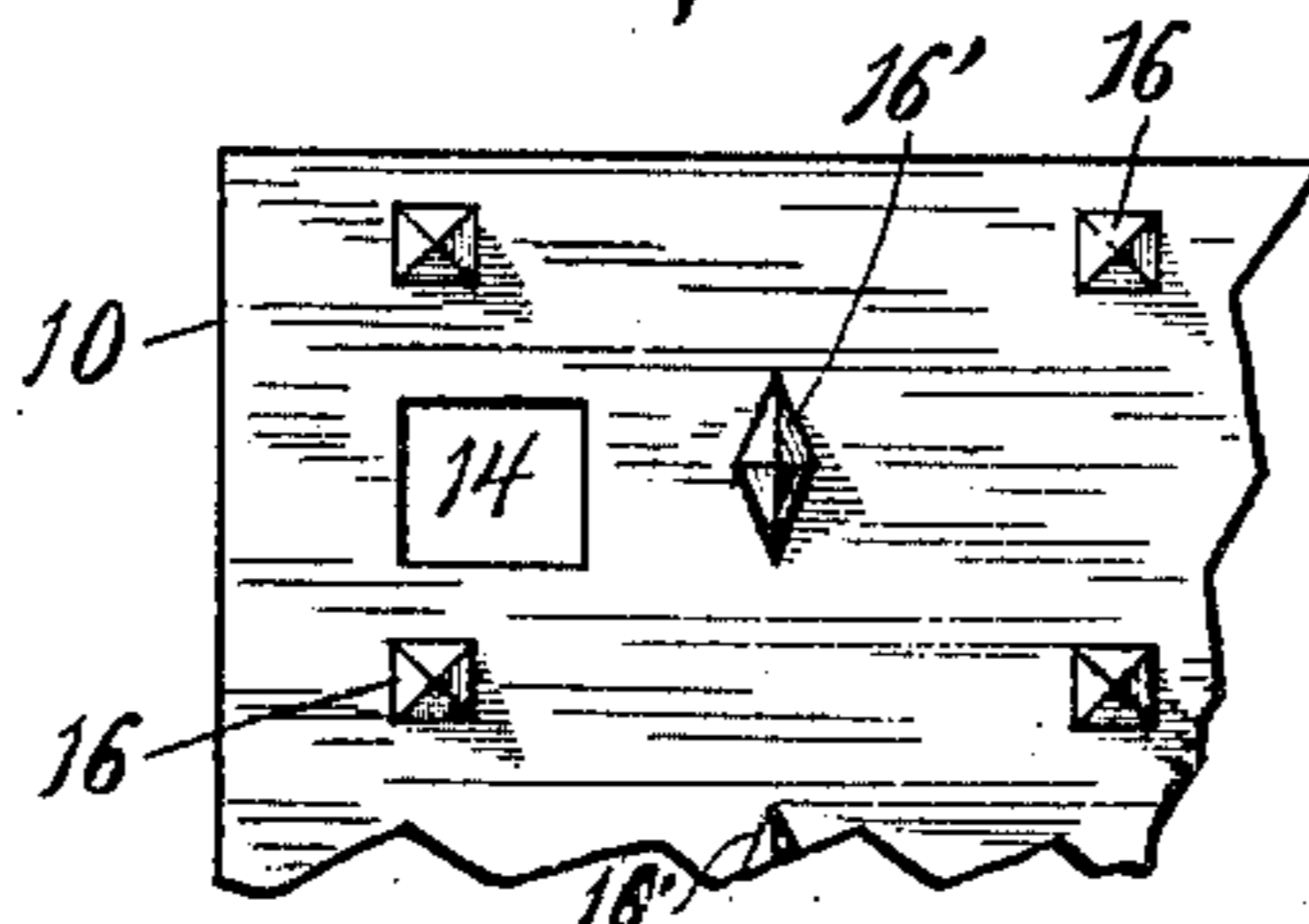


Fig. 7.



Witnesses:
C. H. Keeney.
Anna C. Faust.

Inventor.
Richard B. Charlton
By Benedict & Morrell
Attorneys

UNITED STATES PATENT OFFICE.

RICHARD B. CHARLTON, OF MILWAUKEE, WISCONSIN.

RAILWAY-TIE PLATE.

SPECIFICATION forming part of Letters Patent No. 649,629, dated May 15, 1900.

Application filed April 17, 1899. Serial No. 713,274. (No model.)

To all whom it may concern:

Be it known that I, RICHARD B. CHARLTON, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Railway-Tie Plates, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention relates to improvements in tie-plates that are adapted to be placed on wood ties to support steel railway-rails thereon. In railway chairs or tie-plates for the purpose stated it is desirable to have the plates made as light in weight as is possible, while yet being so strong and enduring as to be incapable of being broken or distorted by the pounding and wear thereon caused by the running of heavy trains over them on the rails; to have the plates so constructed as to be capable of ready application to the surface of the wood ties and when so applied to so surely engage the ties as not to be liable to slide thereon, especially in the direction of the thrust produced by the travel of trains over the rails thereon, and in such engagement with the ties to not destroy the texture or material of the tie beyond what is absolutely necessary to obtain such secure engagement therewith; to also provide means for preventing the movement of the rail thereon laterally under the thrust of the train; to provide a means for gathering and removing sand that might otherwise get between the plate and the thereon-supported rail and produce undesired abrasion thereof, and, finally, to provide opportunity for spiking, and thereby securing the rail and the plate permanently to the tie.

The object of my invention is to provide such improvements in tie-plates as to most successfully and satisfactorily secure the desired qualities and purposes above stated.

My invention consists of the tie-plate, its parts, and combinations of parts, as herein described and claimed, or their equivalents.

In the drawings, Figure 1 is a view of the under side of my improved tie-plate. Fig. 2 is a view of the edge of the tie-plate at one side. Fig. 3 is a view of the end of my improved tie-plate. Fig. 4 is a top view of the improved tie-plate. Figs. 5, 6, and 7 are respectively views of the under sides of modified forms of my improved tie-plate.

In order that the tie-plate while being sufficiently strong and unyielding for the purpose for which it is intended may yet be as light in weight as possible, it is desirable to construct the plate of rolled metal. In order that such a plate be constructed at a minimum of expense, it must be so formed in all its parts that it can be made and finished by passing the bar or plate of metal of which it is made through the properly-designed rolls of a rolling-mill. In a plate so constructed there can be no overhanging or undercut parts, and all parts projecting much from the principal surfaces of the plate must have a certain amount of inclination or bevel for the proper "draw" of the metal from the rolls.

In the drawings, 10 is the tie-plate, the body or principal member of which is preferably of even thickness and of substantially-rectilinear form. On this plate 10 and projecting from the under surface thereof there are a number of spurs 11 11, constructed integrally therewith under the pressure of the rolls in the rolling of the plate and preferably formed with a flat face projecting at a substantially right angle from the surface of the plate, the other sides of the spurs being beveled or inclined outwardly from a point at the middle of the outer edge of the flat front surface of the spur, thus forming a spur having considerable thickness at its base, where it joins with the plate 10. Spurs thus made, as shown in Figs. 1, 2, and 3, are of a pyramidal form, with one flat face at a right angle to the other surfaces of the plate. These spurs are preferably so arranged on the plate 10 that they occur in series transversely of the plate, the front flat vertical faces of the spurs of each series being in a right line across the plate. These spurs, formed in the manner described, are adapted when the plate is placed on a wood tie with these spurs downwardly to be readily forced into the fiber of the wood with the minimum of destruction to the fiber of the tie, and when thus forced into the tie they present their flat vertical faces against the grain of the wood in the direction against which greatest resistance is desired—that is, in the direction against which the thrust of the moving train on the rails tends to push them.

On the top surface the plate is provided

with a transverse flange 12, adapted to receive against it the base-flange of a railway-rail and prevent its movement thereon laterally in a direction toward the nearest end of the plate. In the top surface of the plate and at a right angle to the direction of the flange 12 there is a groove 13, adapted to gather therein the sand that accumulates on the top of the plate and permit of its escape or removal from the plate. Spike-holes 14 14 are provided in the plate, through which spikes may be driven into the tie, which spikes may be of the kind in common use, that are provided with heads adapted to engage the base-flange of the rail and hold it and the tie-plate securely in position on the tie. In use these tie-plates are advisably placed on every tie underneath the rail, the flange 12 being placed at the outside of the rail or, if preferred, alternately at the outside and at the inside of the rail, thus alternating the direction of the facing of the spurs 11 on the ties under the rail, but advisably both in the same direction on the same tie.

25 In Fig. 5 a modified form of spur 15 is shown, in which the base of the spur is triangular in cross-section, but the spur has its vertical front face, the other two sides being beveled to a point centrally on the flat vertical face. In Fig. 6 a fragment of my improved plate is shown, in which there is another modified form of the spurs 15', in which there is a front flat vertical wall and a circular or semicone shaped exterior surface.

35 In Fig. 7 still another modified form is shown, in which the spurs 16 and 16' have all their walls inclined inwardly or beveled from the base to a central apex. This form of construction can also be readily produced in rolling out the plate and can be easily applied to the tie with a minimum of injury to its fiber, while in most cases the spurs will engage the

tie with sufficient persistency to surely hold the tie and rail thereon in position.

What I claim as my invention is—

1. A railway-tie plate consisting of a rolled-metal plate produced by rolling and as so rolled having a plurality of spurs integral with the plate projecting from the under surface thereof and severally terminating outwardly in a point each spur having a flat front face substantially at a right angle to the surface of the plate, the remaining wall or walls of the spur being beveled from the apex of the front face to the surface of the plate away from the flat front face forming a base of considerable extent in cross-section, the front flat faces of the spurs all facing in the same direction, said plate being provided in its upper surface with a transversely-disposed sand-groove.

2. An article of manufacture consisting of a rolled-metal plate, a plurality of pointed spurs projecting integrally from the under surface of the plate, a transverse flange on the upper surface of the plate adjacent to one end thereof, said plate being provided with a sand-groove in its upper surface at a right angle to said flange, and with a plurality of spike-holes through the plate.

3. An article of manufacture consisting of a rolled-metal plate, a plurality of pointed pyramidal spurs projecting integrally from the under surface of the plate arranged in right lines transversely of the plate, said plate being provided with spike-holes and a sand-groove, and a rail-retaining flange on its upper surface.

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

RICHARD B. CHARLTON.

Witnesses:

C. T. BENEDICT,
ANNA V. FAUST.