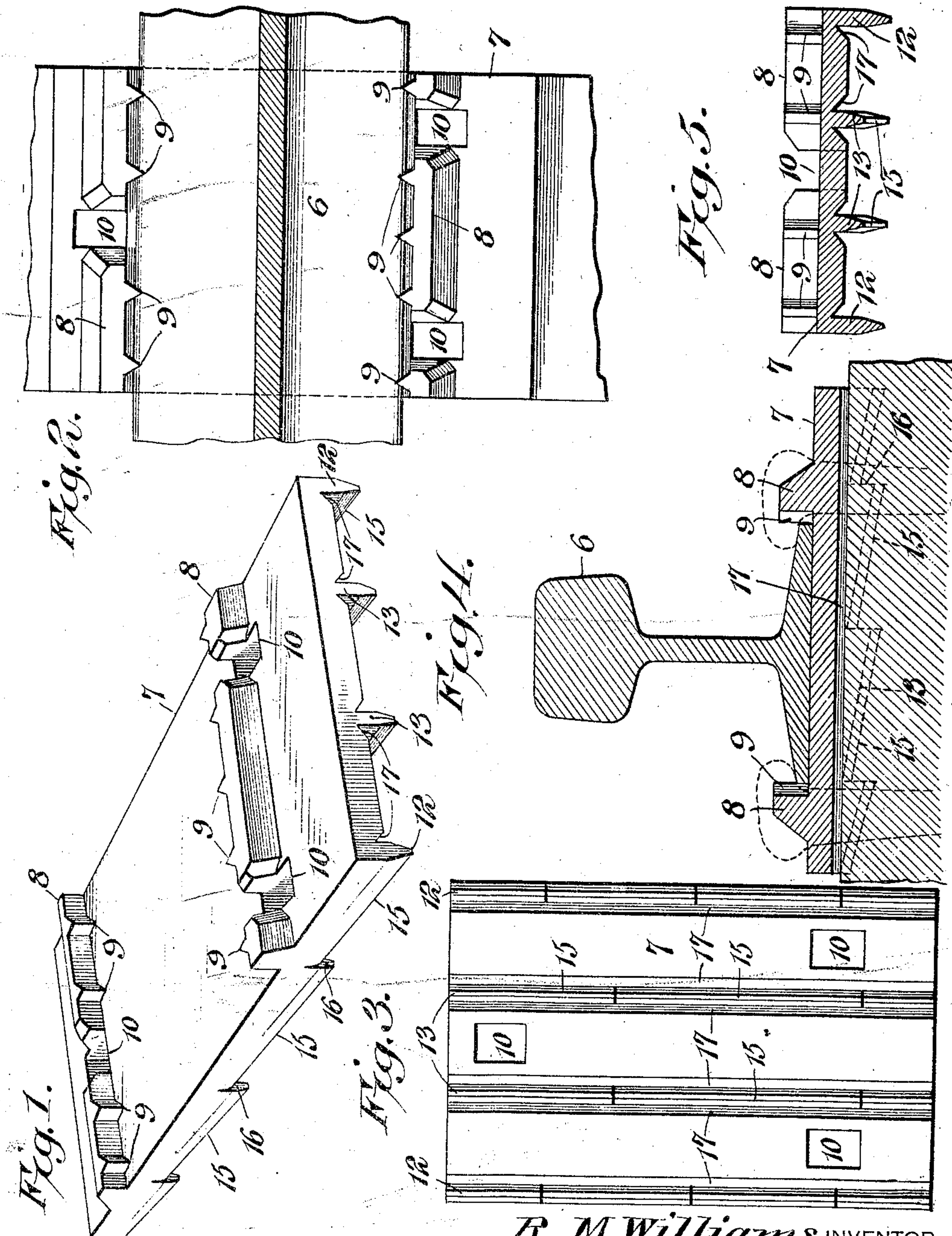


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RAIL CHAIR.  
APPLICATION FILED NOV. 7, 1910.

994,290.

Patented June 6, 1911.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## RAIL-CHAIR.

994,290.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed November 7, 1910. Serial No. 591,133.

*To all whom it may concern:*

Be it known that I, ROBERT M. WILLIAMS, a citizen of the United States, residing at Junior, in the county of Barbour and State of West Virginia, have invented a new and useful Rail-Chair, of which the following is a specification.

My invention relates to rail chairs or rail-way tie-plates of the class that are interposed between the base of the rail and the tie, stringer, or other substructure, on which the rail is held and supported.

The main object of my invention is to provide an improved tie-plate which will prevent the longitudinal movement or creeping of the rail over the tie.

Another object is to provide a tie-plate of such construction as to afford maximum strength with minimum weight, at the same time affording improved means integral with the underside of the plate and auxiliary to the usual spikes for gripping the plate to the tie.

The invention consists in the construction and combination of parts hereinafter described, and more fully pointed out in the appended claims, reference being had to the accompanying drawings, forming a part of this specification.

In the drawings, Figure 1 is a perspective view of a tie-plate embodying my invention; Fig. 2 is a top plan view of my device with the rail applied thereto, showing the web of the rail in section; Fig. 3 is a plan view of the underside of my improved tie-plate; Fig. 4 is a longitudinal section of my improved device applied to a tie, with the rail fitted thereto; Fig. 5 is a central cross section of the tie-plate showing the improved tie-engaging means.

The same numerals refer to similar parts throughout the several views.

Referring to the drawing, 6 denotes a rail to which my tie-plate 7 is applied, the plate being substantially rectangular in outline, and provided on its upper side with a central flat rail-receiving portion or seat, which is bounded at opposite sides by upwardly extending flanges 8. The flanges are provided on their inner edges, facing the rail-receiving seat, with teeth 9, said teeth being adapted to bite into and engage the lower flange of the rail and prevent the latter from moving across the plate when the rail is in position as shown in Fig. 4. These

flanges extend transversely across the tie-plate and are spaced some distance from the adjacent ends thereof, the distance between the inner end of the plate and the adjacent flange being less than the space between the outer end of the plate and the outer flange. By the terms "inner" and "outer", I refer to the parts of the plate nearest to or farthest from the inner side of the rail when the plate is in its position transversely beneath the rail. The side of the flanges facing the base flange of the rail, is substantially vertical, being broken at intervals by the V-shaped teeth 9, while the other or outer side is beveled as shown.

Spike holes 10, are made in the plate and are cut through the two flanges, being arranged diagonally opposite each other, two holes being made in one flange and one in the other. On the under side of the plate, are provided spaced, longitudinally-extending ribs 12 and 13, extending throughout the length of the plate, said ribs being divided into sections and shaped to form engaging teeth having an inclined edge 15, and an abrupt vertical shoulder or face 16, the inclined edge tapering toward that end of the plate which is on the inside of the rail when the plate is in position. The inclined edge 15 is tapered or sharpened to facilitate its insertion into a tie. It will be noted that the inclined edge 15 terminates at its lowest point in the vertical shoulder 16, while at its highest point, or where the said edge merges into the under side of the plate, it meets with the shoulder of the next adjacent tooth. As shown, there are four of the longitudinal ribs, provided on the under side of the tie-plate; two (marked 12) along the side front and rear edges of the plate, and the other two (marked 13) being between and spaced equal distances from each other and from the ribs 12. By referring to Fig. 3 it will be seen that the shoulders 16 of the teeth on the ribs 12 are in alinement with each other, and this is true also of the shoulders of the teeth on ribs 13, but the shoulders of the teeth on the two sets of ribs 12 are out of alinement with the shoulders of the teeth of ribs 13. The plate is further provided on its underside, contiguous to the ribs 12 and 13, with longitudinally extending grooves 17, which provide a means for water running along the tie to escape from between the plate and tie when



they are in position, and thus prevent the water accumulating under the plate to cause the rotting of the tie.

In providing a tie-plate or chair with depending teeth and having the abrupt shoulder of the same facing toward that end of the plate which is adjacent the outside of the rail, it follows that any tendency of the plate to slide or move will be resisted, as the shoulders of the various teeth will engage the grain of the tie at different and spaced points. The flanges on the top of the plate being provided on their inner edges facing the rail with teeth, will provide a means for preventing any creeping of the rail on the said plate. To cause the teeth to engage the edge of the base flange of the rail, notches must first be cut in said edge with a file, said notches to be of sufficient depth for the teeth to enter the same. Obviously the plate may be made of any desired width, and the number, size and disposition of the ribs and teeth may be changed to suit varying conditions.

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

A railway tie-plate comprising a substantially rectangular plate provided at its up-

per side with means for engaging the opposite edges of a rail base, and having on its underside a series of spaced parallel longitudinally disposed ribs extending throughout the length of the plate, two of the ribs being arranged at and along the front and rear edges of the plate and the other ribs being located between the front and rear ribs, each rib being formed with a series of connected teeth and each tooth having a downwardly inclined sharpened edge terminating at its lowest point in an abrupt vertical shoulder, said sharpened edge extending upwardly and merging into the underside of the plate and meeting with the shoulder of the next adjacent tooth, the shoulders of all the teeth on all the ribs facing in the same direction, some of the shoulders being in alinement transversely of the plate and some out of transverse alinement, substantially as described.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ROBERT M. WILLIAMS.

Witnesses:

ELZA TWIGG,  
GAVE JENKINS.