

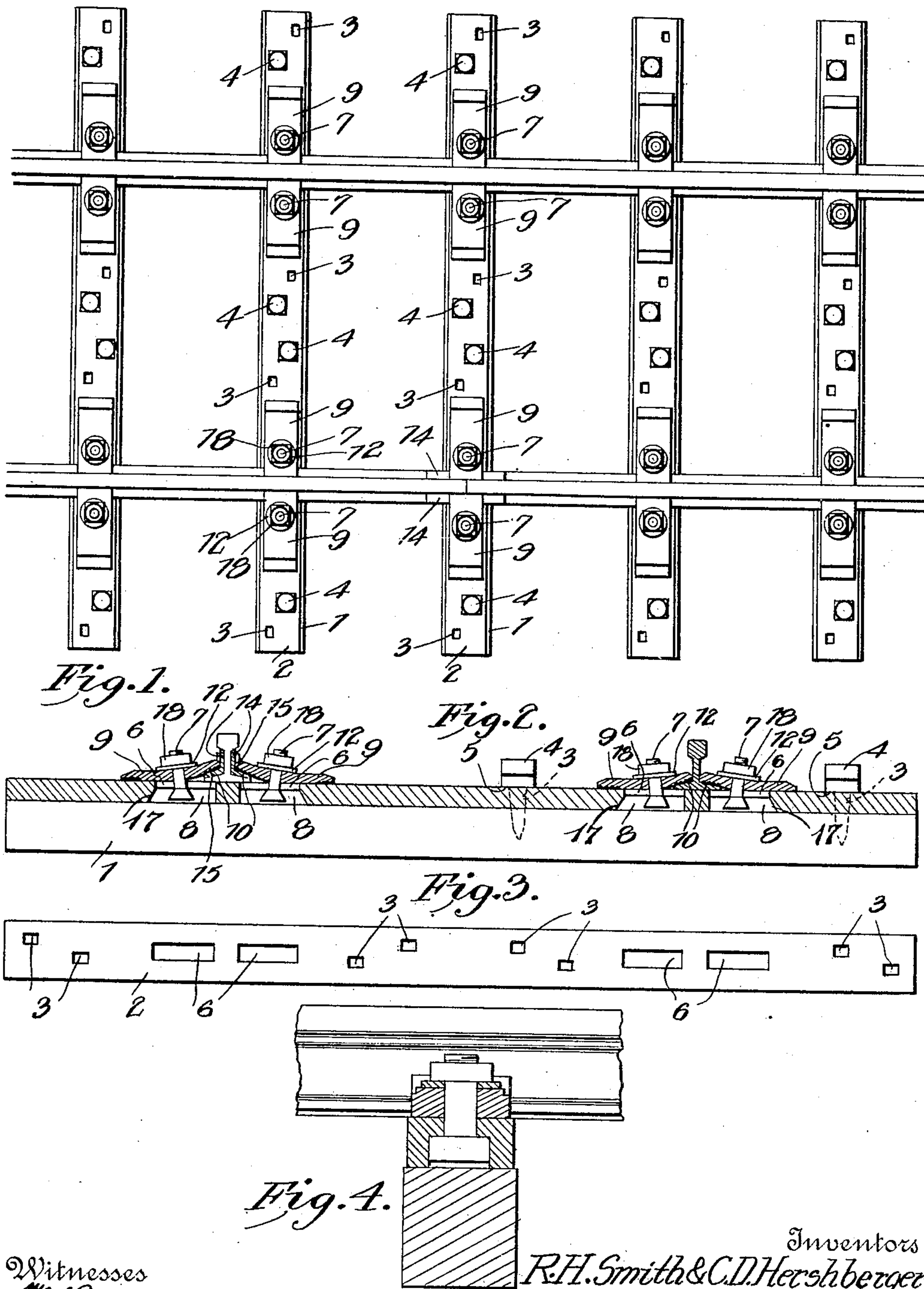
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RAILWAY TIE PLATE.

APPLICATION FILED JULY 13, 1908.

912,195.

Patented Feb. 9, 1909.



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UNITED STATES PATENT OFFICE.

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RAILWAY-TIE PLATE.

No. 912,195.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed July 13, 1908. Serial No. 443,237.

To all whom it may concern:

Be it known that we, REUBEN H. SMITH and CHARLES D. HERSHBERGER, citizens of the United States, residing at Bedford, in the county of Bedford and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Tie Plates; and we do 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 appertains to make and use the same.

This invention relates to improvements in railway tie plates, and means for securing the rail thereto.

The object of the invention is to provide a tie plate adapted to be secured to a tie and having means whereby the rails are rigidly fastened to the plate and prevented from spreading.

With the above and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be described and particularly pointed out in the appended claims.

In the accompanying drawing, Figure 1 is a plan view of a portion of a railway showing the invention applied thereto; Fig. 2 is a vertical longitudinal sectional view through a tie, the tie plate and the fastening devices for securing the rails thereto; Fig. 3 is a plan view of the tie plate; and Fig. 4 is a vertical transverse sectional view through the tie, tie plate and the rail fastening device, showing a slightly modified construction of the tie plate at this point.

Referring more particularly to the drawings, 1 denotes a railway tie of the usual construction, on the upper side of which is arranged a metallic tie plate, 2, which preferably extends the entire length of the tie, as shown. The tie plate, 2 is provided at each end and at its central portion with a number of spike holes, 3, with which are adapted to be engaged spikes, 4, whereby the plate is secured to the tie. By providing a number of spike holes the spikes may be shifted from one position to another as the tie becomes rotted or worn in parts, thereby greatly prolonging the usefulness of the tie. The spikes, 4, may be of the usual or any desired construction, but are preferably provided with shoulders, 5, which engage the upper

side of the tie plate and prevent the spike from being driven entirely in, thereby providing a space between the plate and the head of the spike to receive the claw of an extracting lever, whereby the spikes may be readily withdrawn from the tie.

At suitable positions, adjacent to each end of the tie plate are formed pairs of slots, 6, with which are engaged fastening bolts, 7, the heads of which are adapted to be engaged with elongated recesses, 8, formed in the underside of the tie bar below the slot, 6. The upper ends of the bolts 7 project through the slot, 6, and are engaged with rail fastening plates, 9, which are arranged on the upper sides of the tie plate, and have their inner ends beveled on the lower side to engage the upper sides of the rail flanges, as shown. The beveled lower sides of the plates, 9, are preferably roughened or serrated as shown at 10 to more firmly grip the flanges of the rail, while the lower sides of the outer ends of the plates are also preferably serrated to more firmly grip the upper sides of the tie plate, thereby preventing any lateral slipping or movement of the fastening plates when the latter has been moved into engagement with the rail flanges. The upper ends of the bolts, 7, are provided with washers, 12, and clamping nuts, 18, by means of which the plates are clamped into tight engagement with the tie plate and rail flanges, thus securely holding the rail in place and preventing the same from spreading.

The meeting ends of the rail sections are fastened together by fish plates, 14, having on their lower edges flanges, 15, to engage the upper side of the rail flanges and wherever the joints appear in the rails, the flanges, 15, of the fish plates are engaged by the beveled serrated inner ends of the fastening plates, 9, in the same manner that said plates are engaged with the flanges of the rail between the joints of the latter. The engagement of the fastening plates with the fish plates serves to strengthen the connection of the latter with the ends of the rail.

The recesses, 8, in the inside of the tie plate may be of any suitable shape and are shown in Fig. 2 of the drawing as having inclined walls, 17, with which are engaged the heads of the bolts, 7, said heads being provided with beveled edges to fit said inclined walls of the slots of the recesses, as shown.

In Fig. 4 of the drawing, is shown a slightly modified arrangement of the recesses 8, the latter being shown in this instance as having vertical walls, and of greater width than the slots, 6. The heads of the bolts, 7, when used in connection with this form of recess are provided with square edges to engage the square walls of the recesses. The recesses, 8, are formed in the underside of the tie to provide for the reception of the bolt heads whereby the outer sides of the same are flush with the lower side of the tie plate, said recesses also serving to hold the bolts against rotation when the clamping nuts are screwed onto the upper ends thereof.

By means of a tie plate constructed as herein shown and described, the rails are firmly supported and prevented from wearing into the tie, and by means of the rail fastening devices employed in connection with the tie plate, the rails are securely clamped to the tie plate and prevented from spreading. By providing the slots 6 in the tie plate to receive the clamping bolts of the fastening devices, the latter may be readily shifted upon loosening the nuts, thereby permitting the rail to be readily disengaged and removed from the tie plate.

From the foregoing description, taken in connection with the accompanying drawing, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages

of the invention as defined in the appended claims.

Having thus described our invention, what we claim as new and desire to secure by Letters-Patent, is:

1. In a device of the character described, a tie plate having formed therein adjacent to each end pairs of slots, said slots having under-cut lower edges, apertured rail fastening plates arranged on said tie plate over said slots, and clamping bolts arranged through said fastening plates and the slots in said tie plate, said bolts having heads to fit the under-cut lower edge of said slots and to lie within the same.

2. In a device of the character described, a tie plate having a series of spike holes, irregularly arranged therein and pairs of aligned slots adjacent to its opposite ends, said slots having beveled edges on the under side of the tie plate, apertured rail fastening plates arranged on said tie plate over said slots, and clamping bolts arranged through said fastening plates and the slots in said tie plates, said bolts having beveled heads to fit the beveled edges of the slots and to lie within the latter, whereby said fastening plates are adjustably secured to the tie plate to fasten the rails in place.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

REUBEN HENRY SMITH.

CHARLES DEWAIT HERSHBERGER.

Witnesses:

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WALTER S. PRICE.