(No Model.)

E. P. CALDWELL & C. W. DAVISON.

TIE PLATE.

No. 540,482. Patented June 4, 1895.

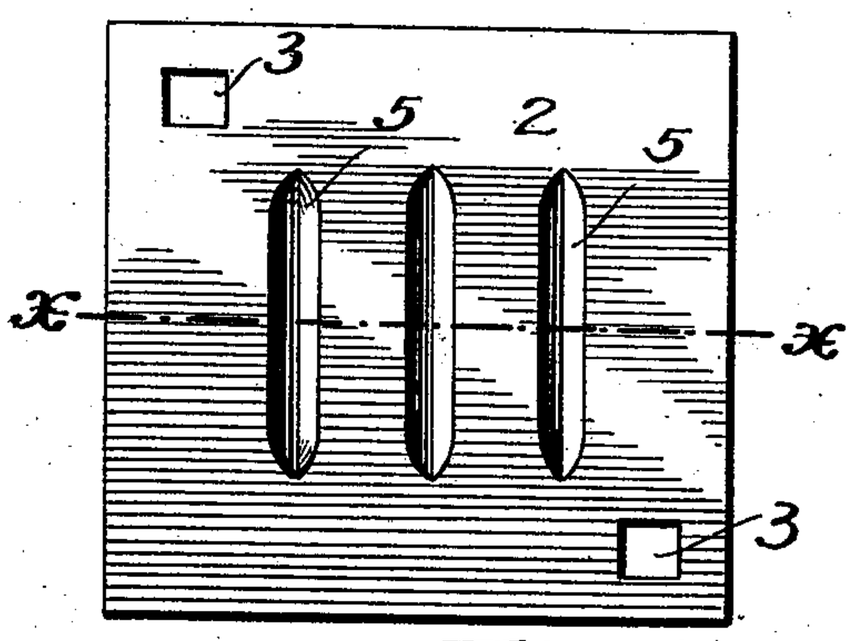

Fig. 1.

Fig. 2.

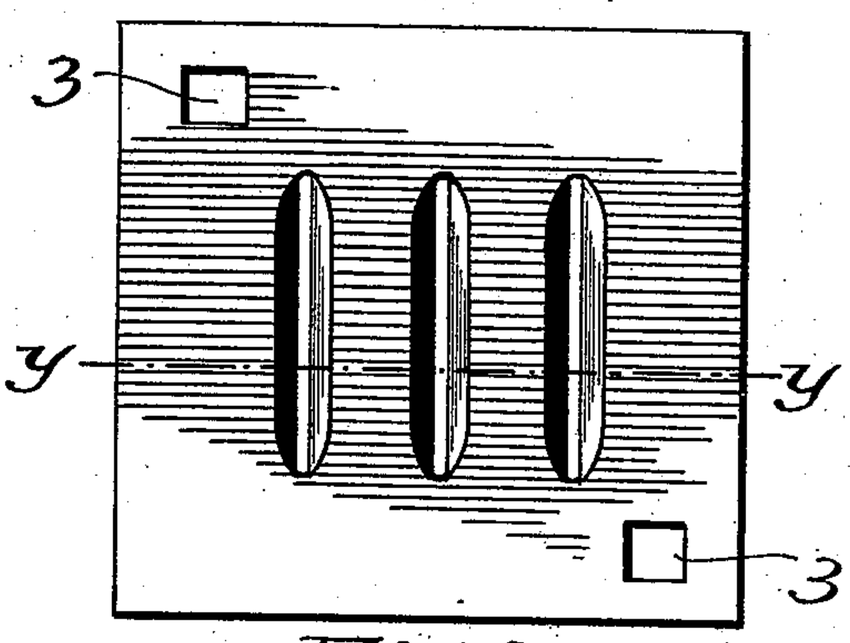

Fig. 3.

Fig. 4.

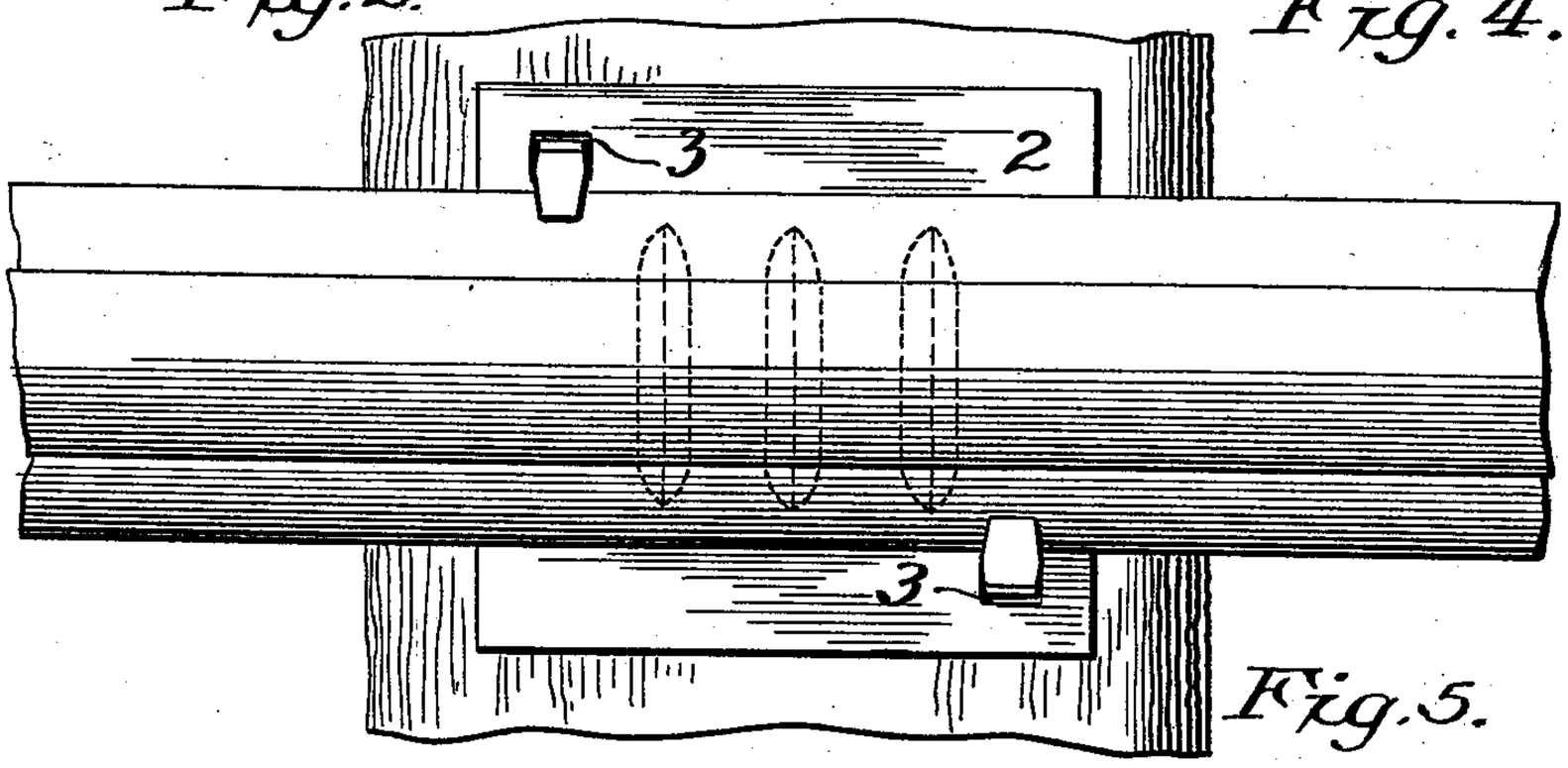

Fig. 5.

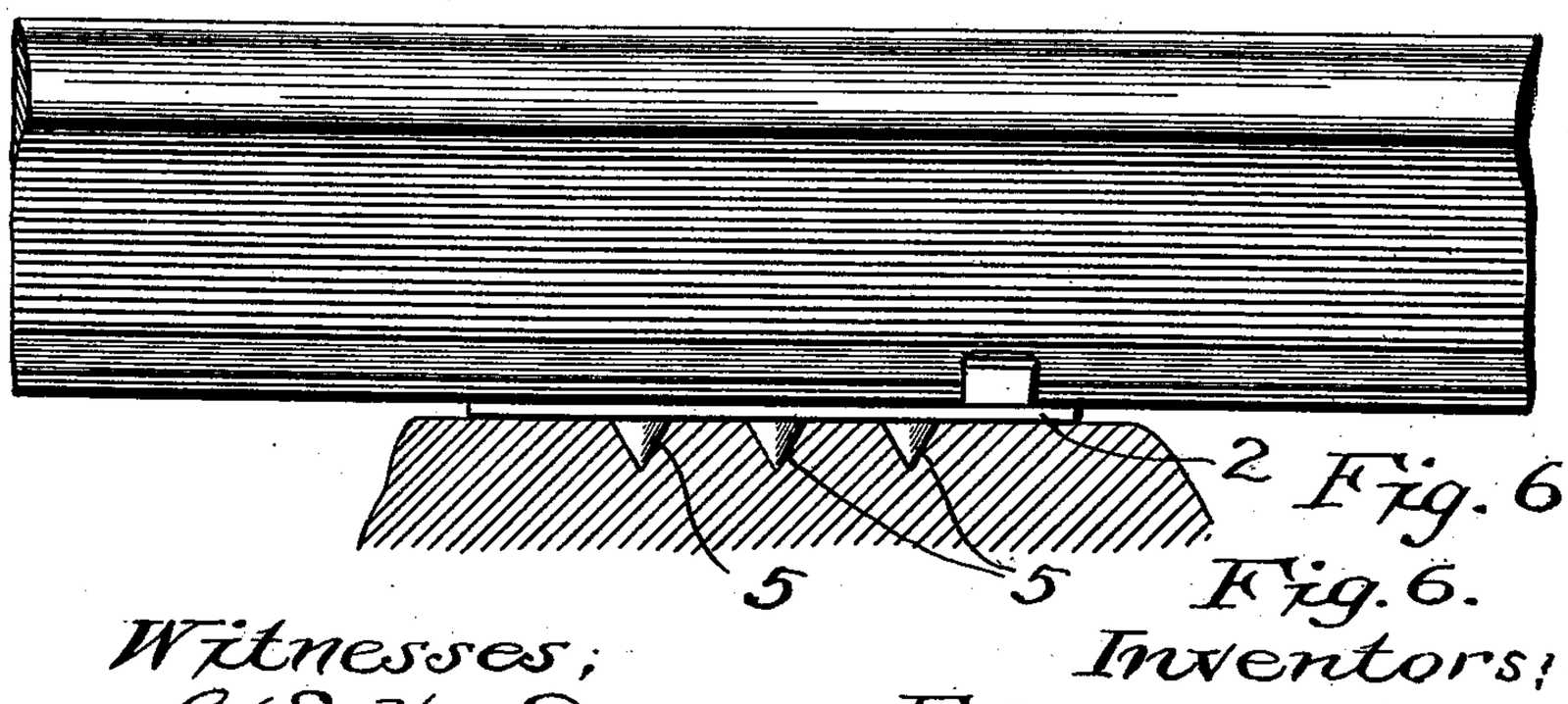

Fig. 6.

Witnesses;
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UNITED STATES PATENT OFFICE.

EDWARD P. CALDWELL AND CHARLES WRIGHT DAVISON, OF MINNEAPOLIS, MINNESOTA.

TIE-PLATE.

SPECIFICATION forming part of Letters Patent No. 540,482, dated June 4, 1895.

Application filed February 23, 1895. Serial No. 539,357. (No model.)

To all whom it may concern:

Be it known that we, EDWARD P. CALDWELL and CHARLES WRIGHT DAVISON, of Minneapolis, Hennepin county, State of Minnesota, have invented a certain new and Improved Tie-Plate, of which the following is a specification.

Our invention relates to tie-plates for use upon railroad ties, the same being adapted to form seats or rests for the rails which are thereby prevented from sinking or crushing into the wooden ties.

The object of our invention is to provide a tie-plate of an extremely simple and cheap construction, a tie-plate which may be formed from comparatively thin sheets or strips; and a further object is to provide a tie-plate having integral means for strengthening the plate beneath the rail, and incidentally to provide a tie-plate which will form a complete watershed for the part of the tie beneath the plate, whereby the collection of moisture and the rotting of the tie beneath the plate are prevented.

Our invention consists in the various details of construction all as hereinafter described and particularly pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a plan view of a tie-plate embodying our invention. Fig. 2 is a longitudinal and vertical section thereof on the line *x x* of Fig. 1. Fig. 3 is a plan view of a similar plate having split trusses. Fig. 4 is a sectional view thereof on the line *y y* of Fig. 3. Fig. 5 is a plan view showing the rail resting upon a tie-plate. Fig. 6 is a side elevation thereof, the tie being in section to permit the depending hollow trusses to be shown.

As shown in the drawings, the tie-plate 2 is made of a comparatively thin and preferably square sheet or strip of iron or steel. In diagonally opposite corners of this plate holes 3 are punched for the spikes to be driven on each side of the rail flange. The middle part of the plate is depressed on one or more transverse lines to form the pockets 5, which pockets however are incidental to the integral depending trusses 6 thus formed. These trusses extend transversely with respect to the line of the rail and strengthen the plate against buckling under the rail. Further it will be noticed that the trusses are substantially equal in length to the width of the rail base and that the plate itself has a large margin all around the trusses, which margin forms a very effectual water or rain shed above and around the depressions which are made by the sharp trusses sinking into the wood of the tie. These trusses are preferably rolled, as in such a process they may be given a sharp lower edge so that they will sink into the wooden ties more readily. They may, however, be stamped.

In all cases the tie-plate is made of wrought-metal, either iron or steel, so that the trusses may be rolled or stamped therein and be integral therewith. A plate thus formed will be no heavier than a simple flat plate and will therefore be of substantially the same cost to manufacture, while being many times stronger than the ordinary flat tie-plate.

In some cases we may prefer to split the trusses, as shown in Figs. 3 and 4. This may be done by forcing the dies past one another during the process of manufacturing the plates. When tie-plates of this construction are employed a portion of the wood of the tie will pass up through the slots in the bottoms of the trusses and aid in securing the plates firmly in place, though this is altogether unnecessary, as the plates are held by the spikes. The principal object therefore of Figs. 3 and 4 is to show that the plates may be struck from cold metal, in which case some of the trusses would be split or cracked without fatal result as to the usefulness of the plate.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A tie-plate, comprising a metal plate having hollow depending trusses of less length than the width of said plate said trusses being arranged wholly within the margin of the plate and transversely to the line which the rail assumes when laid upon it, substantially as described.

2. A tie-plate, comprising a wrought metal plate provided with spike holes, and with depressed portions forming hollow trusses of less length than the width of the plate, said trusses being arranged wholly within the margins of the plate and transversely to the line which the rail assumes when laid upon it substantially as described.

In testimony whereof we have hereunto set our hands this 5th day of February, A. D. 1895.

EDWARD P. CALDWELL.
CHARLES WRIGHT DAVISON.

In presence of—
RICHARD PAUL,
FREDERICK S. LYON.