

(No Model.)

C. H. DUNHAM, Dec'd.
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RAILROAD TIE PLATE.

No. 469,386.

Patented Feb. 23, 1892.

FIG. 1.

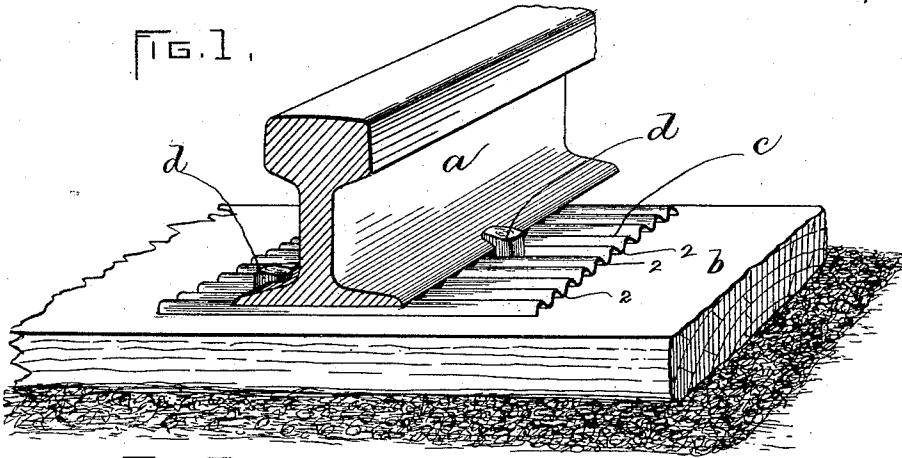


FIG. 2.

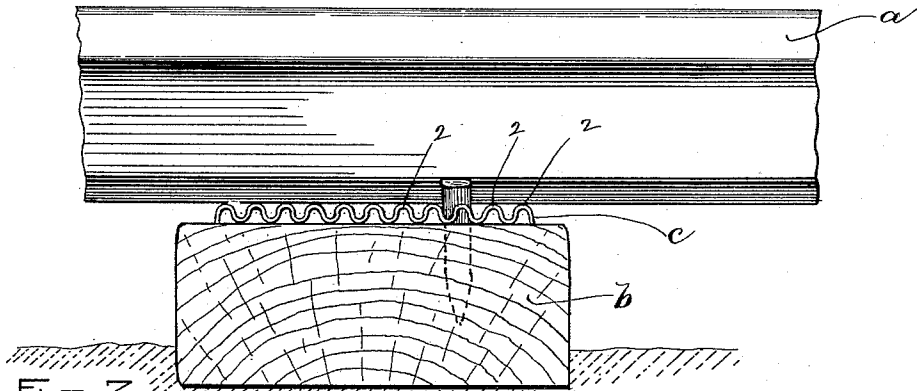


FIG. 3.

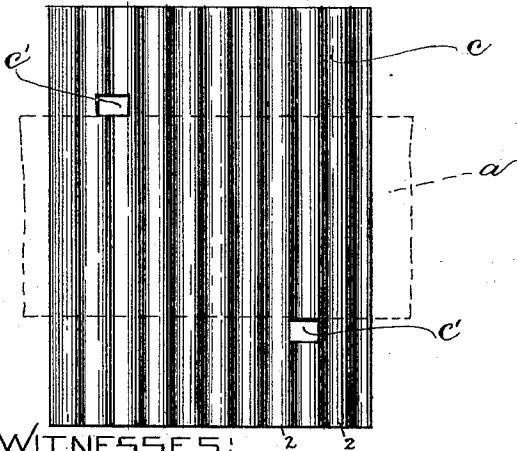
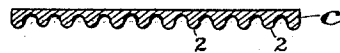


FIG. 4.



WITNESSES:
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UNITED STATES PATENT OFFICE.

CHARLES H. DUNHAM, OF CHICAGO, ILLINOIS; DOROTHY F. DUNHAM
ADMINISTRATRIX OF SAID CHARLES H. DUNHAM, DECEASED.

RAILROAD-TIE PLATE.

SPECIFICATION forming part of Letters Patent No. 469,386, dated February 23, 1892.

Application filed March 11, 1891. Serial No. 384,527. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. DUNHAM, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railroad-Tie Plates, of which the following is a specification.

This invention relates to metallic plates that are interposed between the base of a railroad-rail and the wooden tie by which the rail is supported, for the purpose of preventing the cutting of the fibers of the tie by the continued vertical oscillation of the rail under the weight of the rolling-stock passing over it.

My invention consists in the combination and arrangement of parts, as hereinafter described, and pointed out in the claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view of a portion of a railroad-tie, a portion of the rail thereon, and my improved corrugated tie-plate interposed between the tie and rail. Fig. 2 represents an end view of the same. Fig. 3 represents a top view of the tie-plate alone. Fig. 4 represents a modification.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents an ordinary railroad-rail, and *b* represents a wooden tie, forming one of the supports of the rail and resting on the road-bed, as usual.

c represents the tie-plate which constitutes my invention, said tie-plate being interposed between the upper surface of the tie and the base of the rail and secured to the tie both by the weight of the rail resting upon it and by the usual rail-securing spikes *d d*, which are driven through holes *c' c'* in the tie-plate into the tie, the heads of said spikes being formed, as usual or in any suitable way, to engage the flanges of the rail.

In carrying out my invention, I provide the tie-plate with a series of corrugations 2 2 2, extending, preferably, the entire length of the plate. I prefer to so locate the plate that the corrugations will be substantially parallel with the tie *b* and at right angles with the rail *a*, as shown in the drawings.

The chief advantages resulting from the corrugated form of the tie-plate are as follows:

First, the corrugations practically reinforce the metal of the plate to such an extent that a much thinner and lighter plate can be used than if the plate were flat. I have found by experience that a corrugated plate three-sixteenths of an inch thick will be stiffer and better adapted to resist the bending or buckling strain to which it is subjected by the weight of the rolling-stock than a flat plate which is five-eighths of an inch thick. A serious objection to flat-metal tie-plates is that they have to be made of such thickness to enable them to resist the bending or buckling strain imposed upon them that each plate becomes in effect an anvil, taking the blow transmitted by the rail from the rolling-stock and indenting or pounding out the wood of the tie. This difficulty is obviated by the employment of a thin tie-plate, which is made feasible by my improvement.

Secondly, the corrugations in the tie-plate form air-spaces between the bottom of the plate and the tie, preventing the long-continued presence of moisture in the wood under the tie-plate and thus obviating the rapid decay of the wood, which is found to take place under a flat tie-plate, the free access of air afforded by the corrugations to both surfaces of the tie-plate also having a tendency to prevent rusting of the tie-plate.

My invention is not limited to the particular form and arrangement of the corrugations above described. If desired, the corrugations may be arranged otherwise than parallel, and in some cases the plate may be flat on one side (preferably the upper) and corrugated only on the other side, as shown in Fig. 4, this construction affording the desired air-spaces between the tie and plate.

I am aware that it has been proposed to place a corrugated plate or chair in a groove or recess in a tie, said groove being of the width of the base of the rail and the said plate having flat flanges extending up and over the top of the tie each side of the rail. My construction differs from this in that by having the corrugated plate entirely on the upper surface of the tie the ends of the corrugations are left open for the circulation of air to more readily prevent long-continued presence of moisture in the wood under the

plate. Furthermore, by extending the plate considerably beyond the sides of the rail a broad bearing-surface is formed that prevents the rail from tending to cut the tie.

5 I claim—

The combination, with a railway-rail and its supporting flat-surfaced tie, of a metal plate interposed between said rail and tie, said plate having corrugations open at their
10 ends, whereby air-ducts are formed between the surfaces of the plate and tie, the said plate extending beyond the sides of the rail-

base and having holes in such extended portions for the reception of the spikes, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 7th day of March, A. D. 1891.

CHARLES H. DUNHAM.

Witnesses:

S. G. METCALF,
GEO. F. COLWELL.