J. H. THOMPSON.
Railway Cross-Tie.

No. 207,320 Patented Aug. 20, 1878.

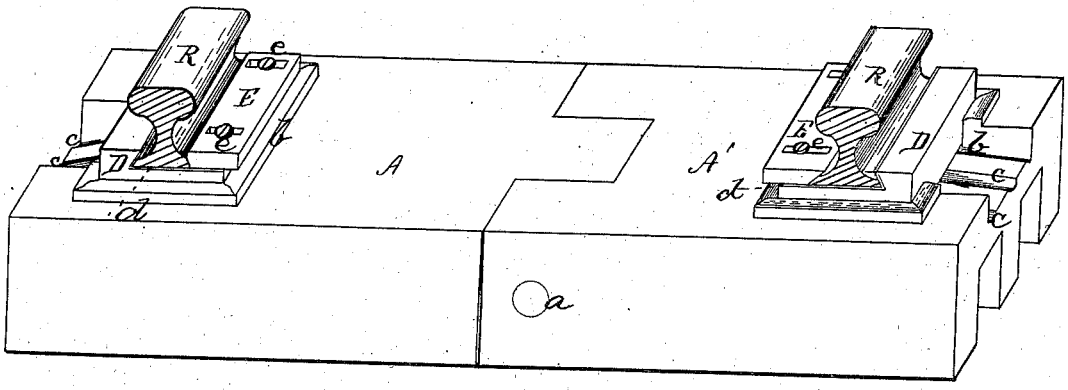

Fig. 1.

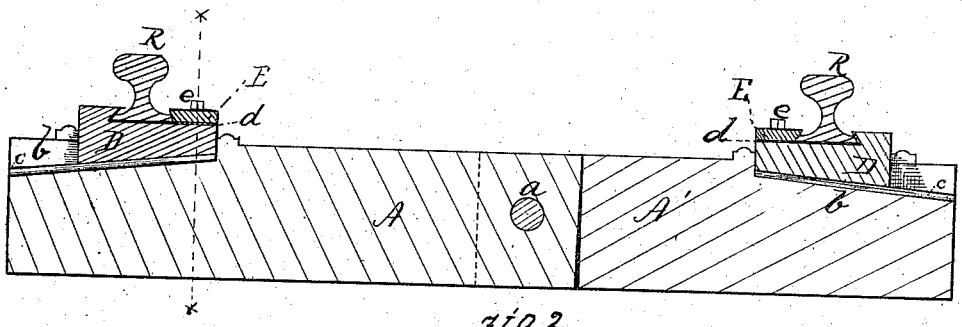

Fig. 2.

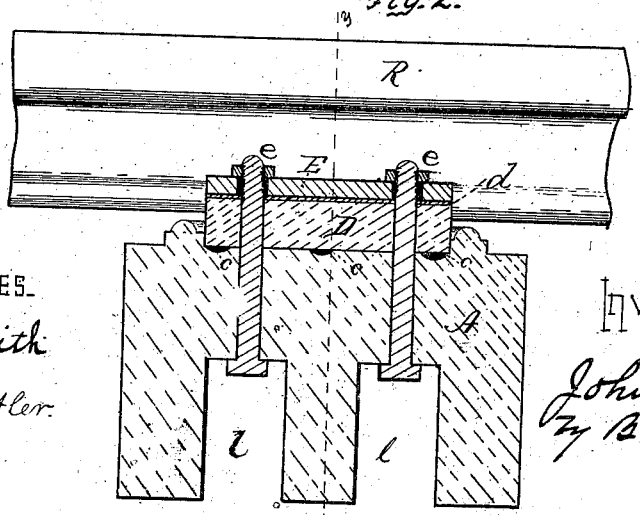

Fig. 3.

Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN H. THOMPSON, OF GRAND JUNCTION, IOWA, ASSIGNOR TO HIMSELF AND WM. H. HAGER.

IMPROVEMENT IN RAILWAY CROSS-TIES.

Specification forming part of Letters Patent No. **207,320**, dated August 20, 1878; application filed June 22, 1878.

To all whom it may concern:

Be it known that I, JOHN H. THOMPSON, of Grand Junction, in the county of Greene and State of Iowa, have invented a new and useful Improvement in Cross-Ties for Railroads; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is an elevation, in perspective, of devices embodying my invention. Fig. 2 is a longitudinal central section, and Fig. 3 is a transverse section, of the same.

Like letters refer to like parts wherever they occur.

My invention relates to the construction of cross-ties for railroad-tracks; and consists in the formation of drains in the metal cross-ties beneath and around the wooden chairs, whereby dampness and the decay of the wooden chair are guarded against; also, in details of construction hereinafter more specifically set forth.

The scarcity of timber in some sections of the country and the cost and difficulty of obtaining cross-ties for the construction of railroad-tracks have induced the invention of metallic cross-ties; but the main objection to such ties is their rigidity, which leads to the rapid destruction of both track and rolling-stock.

Heretofore sliding and jointed sectional metallic ties have been devised, and also longitudinally-corrugated ties, to permit the track to give under the passing train; but such devices only in a measure overcome the objection.

The object of the present invention is, as far as practicable, to obtain a metallic cross-tie having all the advantages of a wooden cross-tie.

I will now proceed to describe my invention, so that others skilled in the art to which it appertains may make and use the same.

In the drawing is shown a cross-tie formed in two parts, A A′, connected at or near the center by a bolt, *a*, or equivalent device, so as to form a vibrating joint, which will allow the track to give somewhat under sudden weight or pressure—as on the passing of a train. Each of the sections A A′ has, near its extremity, a chair seat or cavity, *b*, for the reception and retention of a wooden block or chair. The chair-seat *b* is made sloping and with gutters or depressions *c* to drain the water from the wooden chair, and also to permit the air to circulate beneath the same, whereby the wood will be preserved and will last for a greater length of time.

D represents the chair for the reception of the rail, said chair being formed of a wedge-shaped block of some hard and durable wood, preferably arranged with the grain end of the timber to the rail, and should be capped by an iron or steel plate, *d*, upon which the flange of the rail R may rest.

E indicates a slotted sliding metallic plate adapted to hold the rail on the chair, and said plate E may be secured by the same bolts, *e e*, which fasten the chair D to the cross-tie.

The cross-tie A A′ may be formed of either cast-iron, wrought-iron, or steel, as may be found most desirable, and should be provided with the longitudinal grooves *l l* upon its under surface, so as to obtain lightness combined with strength and purchase or hold upon the ground.

The wooden chairs D and plates E may be secured to the cross-tie A A′ by the bolts *e*, and the tie laid in the usual manner, after which the bolts *e* may be loosened, the plate E slid back, the flange of rail R inserted and secured by pushing up plate E and tightening the bolt.

The advantages of my devices are strength, durability, and cheapness, the spring and action of wooden ties, and the saving in wear and tear of rolling-stock; also, the cheapness with which repairs can be made, the saving in time and labor in making repairs, and the ability to utilize the broken ties or sections by recasting the same.

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

1. The metallic cross-tie provided with the sloping chair-seat adapted to drain the chair, substantially as and for the purpose specified.

2. The metallic cross-tie provided with the grooved or guttered and sloping chair-seat, substantially as and for the purpose specified.

In testimony whereof I, the said JOHN H. THOMPSON, have hereunto set my hand.

JOHN H. THOMPSON.

Witnesses:

LEWIS K. ALDER,

S. E. MAYNARD.