No. 756,660. PATENTED APR. 5, 1904.

J. LEIGHTHAM.

COMBINED RAILWAY TIE AND RAIL FASTENING.

APPLICATION FILED NOV. 27, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

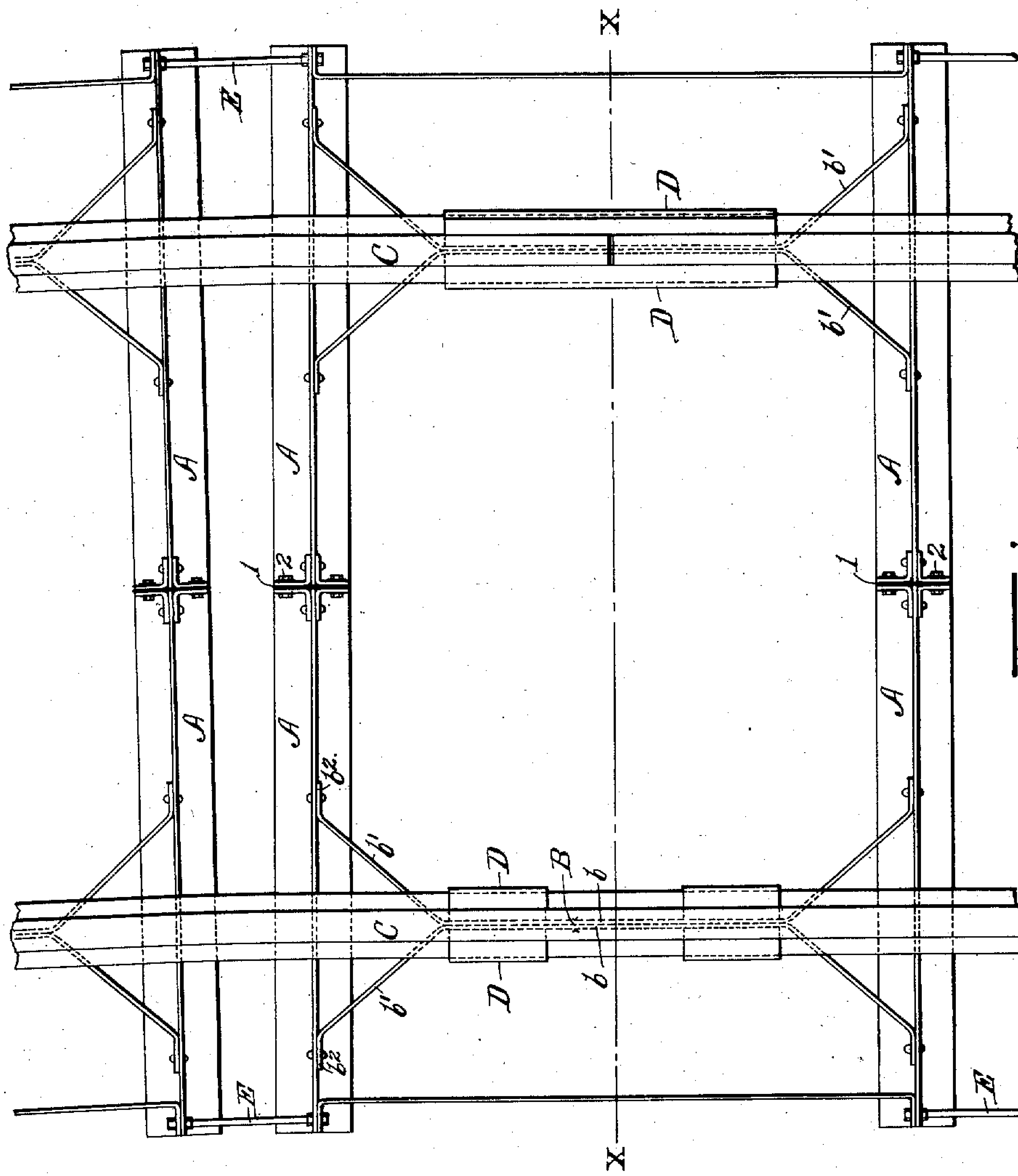

Fig. 1.

Witnesses
Caleb J Bieber
D M Stewart

Joseph Leightham Inventor

By Attorney W. Stewart

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.

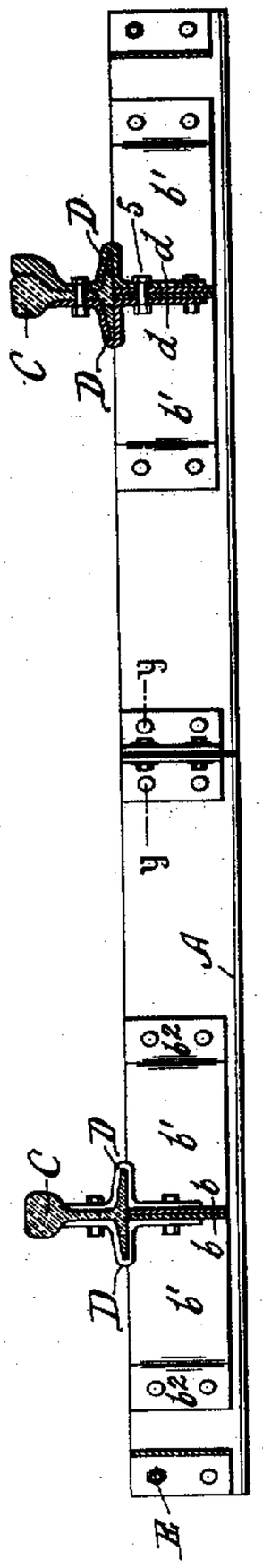


Fig. 4.

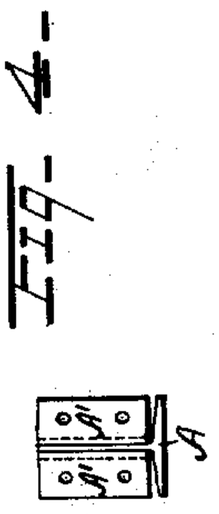
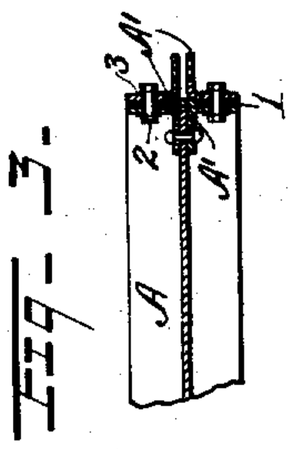


Fig. 3.



Witnesses
Caleb J Dyer
D. M. Stewart

Joseph Leightham Inventor
By Attorney D. M. Stewart

No. 756,660. Patented April 5, 1904.

UNITED STATES PATENT OFFICE.

JOSEPH LEIGHTHAM, OF READING, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JACOB NOLDE, OF READING, PENNSYLVANIA.

COMBINED RAILWAY-TIE AND RAIL-FASTENING.

SPECIFICATION forming part of Letters Patent No. 756,660, dated April 5, 1904.

Application filed November 27, 1903. Serial No. 182,706. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH LEIGHTHAM, a citizen of the United States, residing in the city of Reading, county of Berks, State of Pennsylvania, have invented certain new and useful Improvements in a Combined Railway-Tie and Rail-Fastening, of which the following is a specification.

My invention relates to railway construction, and particularly to an improved tie and rail connection thereto.

The invention is fully described in connection with the accompanying drawings and the novel features are specifically pointed out in the claims.

Figure 1 is a plan view of a two-section double tie embodying my complete invention, the rail supported thereon being indicated in dotted lines. Fig. 2 is a cross-sectional view taken on the line *x x* of Fig. 1, the location and connection of the rails thereto being indicated. Fig. 3 is a cross-sectional view on line *y y* of Fig. 2, and Fig. 4 is an inner end view of one of the half-ties.

My improved tie, as shown, is made up of two similar sections, each comprising two parallel half-ties united by bridge-plates forming rail-supporting sills between the ties, said sections being separably united midway between the rails and insulated when desired, so as to prevent electrical communication between the rails when the latter are utilized as conductors, as is now commonly done for signal or other purposes. These similar separable sections each comprise parallel half-ties A A, formed of inverted T-beams, as shown, of approximately half the length of ordinary ties and rigidly united by a bridge B, which forms a stringer or sill beneath one of the rails C. This bridge-sill consists, as shown, of two metal plates *b b* of a width corresponding with the height of the T-beams A and the middle portions of which are arranged parallel and rigidly riveted or bolted together in connection with depending fish-plates or rail connections, as hereinafter described, while the end portions *b' b'* thereof are bent apart at a suitable angle and extended as angle-braces to abut against the respective ties A A, to the webs of which latter their extremities *b² b²* are rigidly secured, thus forming a double half-tie for a single rail. Owing to the rigidity and strength of this bridge construction and the support afforded to the rail between the ties by the bridge-sill B, the spacing of the ties A A may be considerably increased over the ordinary, while at the same time affording better support to the rail and permitting of its being immovably embedded in the roadway. By thus uniting two half-ties in a single-rail section the need of unnecessarily disturbing the connection of the other parallel rail is avoided, and at the same time I am enabled to readily insulate the two lines of rails, as already stated. To accomplish this, I merely insert between the bolting-flanges A' A', secured to the abutting inner ends of the ties A A of the separably-united single-rail sections. strips 1, of insulating material, at the same time passing the clamping-bolts 2 through insulating-bushings 3 in the bolt-holes, (see Fig. 3,) thus avoiding metal contact between the connected sections and enabling the rails to be used as independent electrical conductors.

The bridge-sills B in addition to serving as rigid connections between the parallel half-ties A A and as direct supports for the rail between said ties are also adapted to serve as a connecting means for the rails to the ties. To accomplish this, I employ in connection therewith rail-connecting plates D D, which, as shown, are in the form of fish-plates the upper portions of which engage the web and base of the rail, while depending portions *d d* below the rail are bolted against opposite sides of the bridge-sill B by transverse bolts 5, thus firmly securing the rails to each tie-section between the united half-ties A A.

In laying my improved double ties the space between them, as indicated by the showing of an adjacent section in Fig. 1, will be less than that between the united half-ties A A, owing to the fact that no bridge-sill B will be provided between such adjacent ties; but in order to permanently connect and space the latter independently of the rails I preferably employ spacing-bars E, adjustably connecting the outer ends of such adjacent ties, as indi-

cated in Fig. 1, thus permitting them to be set out of parallel, as required on curves, oblong holes being provided as required for the bolts 5, while at the same time positively maintaining the spacing of the connected tie-sections.

What I claim is—

1. A double tie for railways comprising parallel ties united by double bridge-plates forming a rail-supporting sill between the united ties and having their oppositely-inclined ends rigidly secured to the webs of the respective ties.

2. A double tie for railways comprising parallel ties united by double bridge-plates forming a rail-supporting sill between the united ties and having their oppositely-inclined ends rigidly secured to the webs of the respective ties and fish-plates having depending portions rigidly secured to said uniting bridge-sill.

3. A double tie for railways comprising parallel ties united by double bridge-plates forming a rail-supporting sill between the united ties and having their oppositely-inclined ends rigidly secured to the webs of the respective ties and spacing-bars for connecting the extremities of the double tie with similar adjacent ties.

4. A railway-tie made up of separable sections each of which comprises two parallel half-ties united by bridge-plates forming rail-supporting sills between the ties, said sections being united midway between the rails.

5. A railway-tie made up of separable sections each of which comprises two parallel half-ties united by bridge-plates forming rail-supporting sills between the ties, said sections having an insulated connection midway between the rails.

In testimony whereof I affix my signature in the presence of two witnesses.

JOSEPH LEIGHTHAM.

Witnesses:
CARRIE WICKEL,
G. CLEVELAND WICKEL.

Certificate of Correction.

No. 756,660.

It is hereby certified that in Letters Patent No. 756,660, granted April 5, 1904, upon the application of Joseph Leightham, of Reading, Pennsylvania, for an improvement in a "Combined Railway Tie and Rail-Fastening," was erroneously issued to Jacob Nolde, as owner of the entire interest in said invention; that said Letters Patent should have been issued to the inventor *Joseph Leightham and Jacob Nolde, jointly*, said Jacob Nolde being the assignee of one-half interest only in said patent, as shown by the record of assignment in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 26th day of April, A. D., 1904.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.

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