(No Model.)

G. W. B. NEAL.

RAILWAY CROSS TIE.

No. 304,746. Patented Sept. 9, 1884.

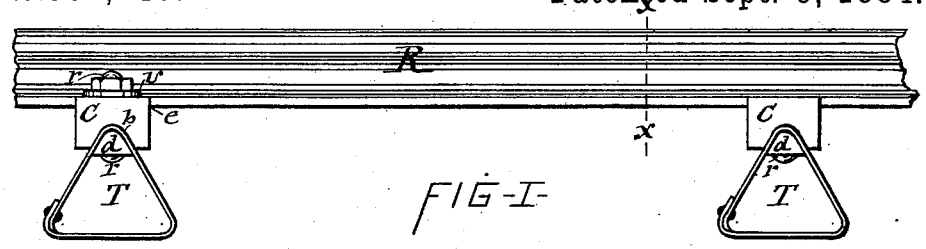

FIG-I-

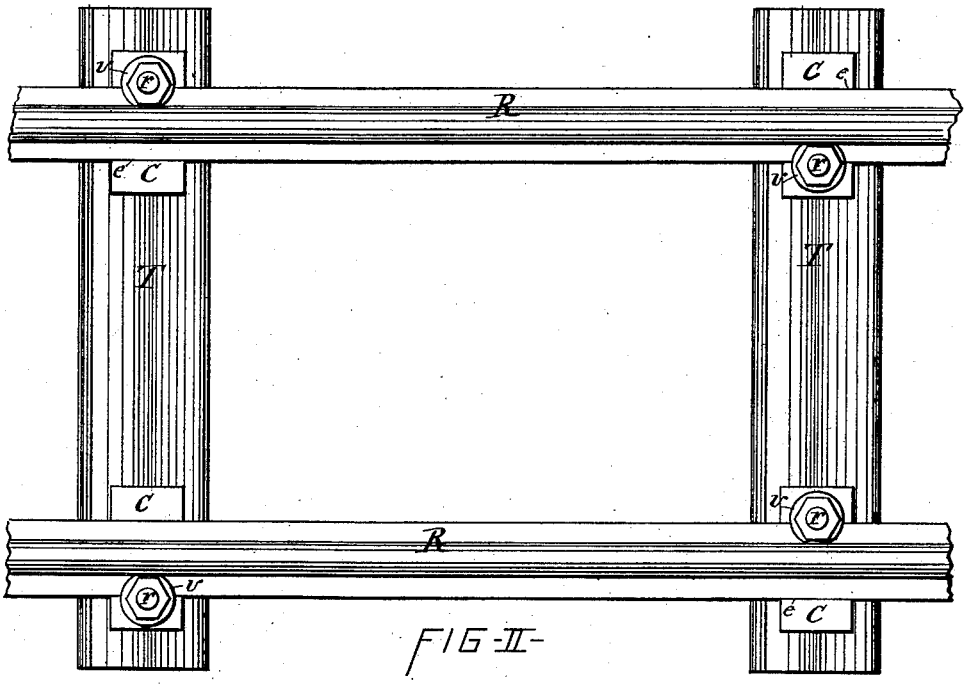

FIG-II-

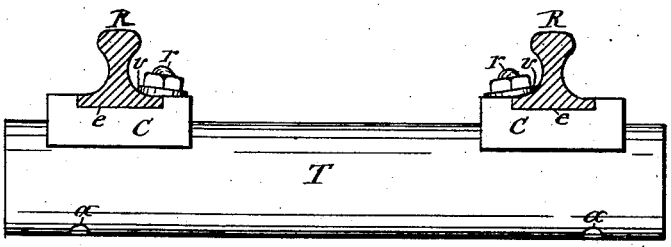

FIG-III-

WITNESSES

C. Bundison

W. C. Raymond Jr.

INVENTOR

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per Duell, Lacey & Hay

his attys

UNITED STATES PATENT OFFICE.

GEORGE W. B. NEAL, OF HAYT'S CORNERS, NEW YORK.

RAILWAY CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 304,746, dated September 9, 1884.

Application filed April 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. B. NEAL, of Hayt's Corners, in the county of Seneca, in the State of New York, have invented new and useful Improvements in Railway Cross-Ties, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

The object of this invention is to provide a metallic railway cross-tie in which shall be combined simplicity of construction and the maximum stability with the minimum weight of metal, and which shall also be reversible, so as to admit of using different portions thereof for the bearings on the road-bed, and for the support of the rail.

The invention consists in the combination of a hollow metallic cross-tie of triangular form in cross-section, and certain novel devices for securing thereto the rail or its supporting-chair, all as hereinafter more fully described, and specifically set forth in the claims.

In the annexed drawings, Figure I is a side view of a railway-track provided with my invention. Fig. II is a plan view of the same, and Fig. III is a transverse section on line *x x* in Fig. I.

Similar letters of reference indicate corresponding parts.

T represents the hollow metallic cross-tie, of triangular form in cross-section, preferably formed of boiler-iron or other suitable heavy sheet metal, bent into the form of a triangular tube, having overlapping longitudinal edges riveted together.

C denotes the rail-supporting chair, consisting of a block of wood or iron provided on its under side with a V-shaped recess, *b*, by which it rides on the upper corner of the tie, which rests with its opposite side on the road-bed, as best seen in Fig. I of the drawings. The top of the chair is provided with a recessed seat, *e*, for the rail R, and the rail and chair are fastened to the cross-tie by a bolt or bolts, *r*, which pass through holes *a* in the corner of the tie at the side of the rail, and through the chair C. A triangular washer, *d*, is placed on the inside of the aforesaid corner to form a bearing for the head of the bolt, and under the nut on the outer end of the bolt is placed a washer, *v*, which bears on the flange of the rail and holds the rail in position. The tie is open at both ends, and thus affords convenient access to the bolt-holes *a* for inserting the bolts *r*.

In order to render either corner of the tie available for supporting the rail, I provide each corner with the aforesaid holes, the opposite side invariably forming the bed of the tie, and affording a broad bearing-surface on the road-bed.

It will be observed that a tie constructed of the form herein described possesses great stability, with sufficient elasticity to prevent excessive jars on the cars traveling over them.

Having described my invention, what I claim as new is—

1. The combination of a hollow metallic cross-tie, of triangular form in cross-section, and a rail-supporting chair having on its under side a V-shaped transverse recess riding on the upper corner of the tie, substantially as described and shown.

2. The combination of a hollow metallic cross-tie, of triangular form in cross-section, open at its ends and provided with bolt-holes for the attachment of the chair, the chair provided with a V-shaped recessed bearing on the upper corner of the tie, and a bolt or bolts passing through the tie and chair, for fastening said parts together, substantially as described and shown.

3. The combination of the hollow triangular metallic cross-tie T, provided with holes *a*, the chair C, provided with the V-shaped recess *b* and depressed rail-seat *e*, the triangular washer *d*, the bolt *r*, extended from the inside of the tie through the chair at the side of the rail, and the washer *v*, bearing on the flange of the rail, all constructed and combined substantially in the manner described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 19th day of March, 1884.

GEORGE W. B. NEAL. [L. S.]

Witnesses:
FREDERICK H. GIBBS,
WM. C. RAYMOND.