(No Model.) 2 Sheets—Sheet 1.

A. J. HARTFORD.

METALLIC RAILWAY TIE.

No. 487,733. Patented Dec. 13, 1892.

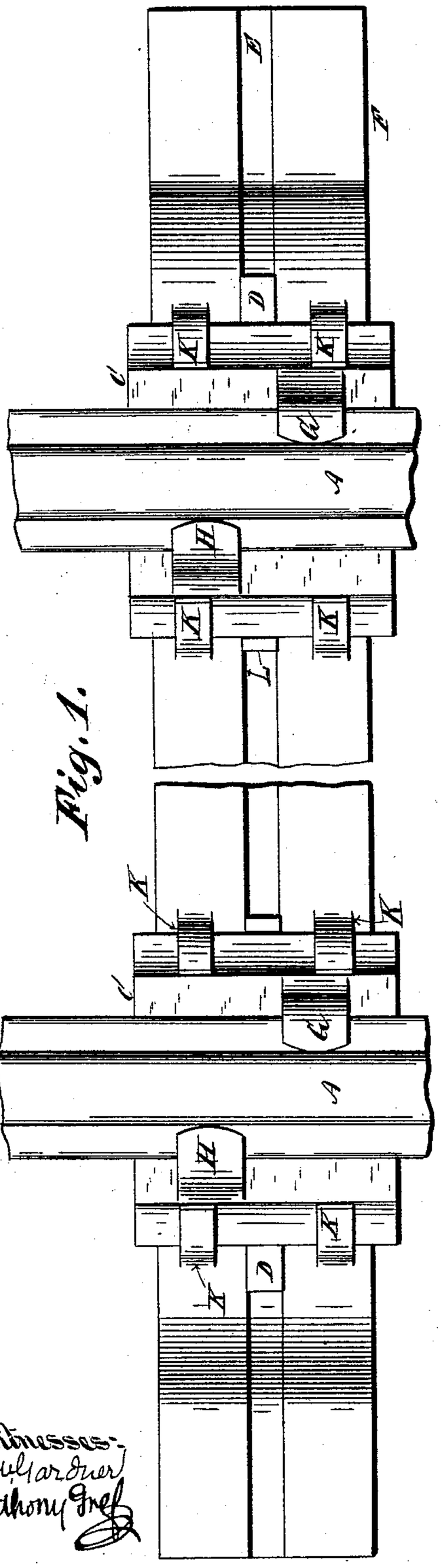

Fig. 1.

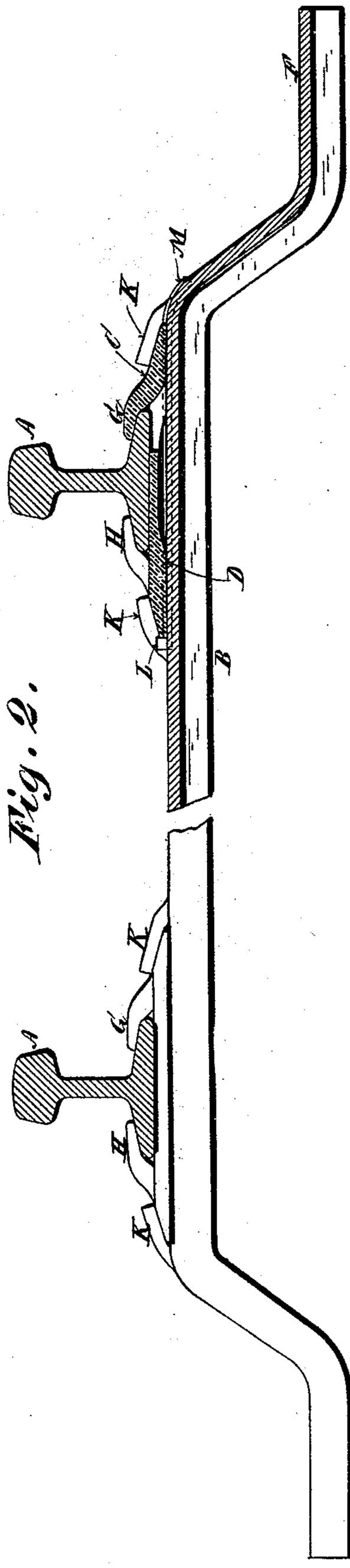

Fig. 2.

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Inventor:
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By his Attorney
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(No Model.) 2 Sheets—Sheet 2.

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No. 487,733. Patented Dec. 13, 1892.

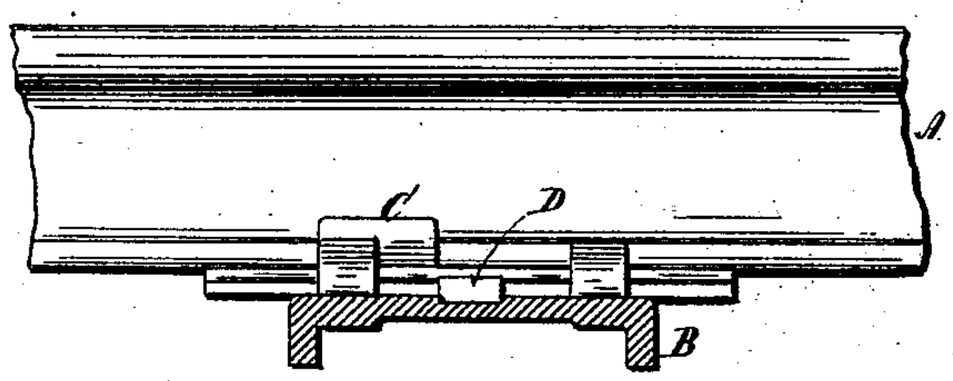


Fig. 3.

Fig. 4.

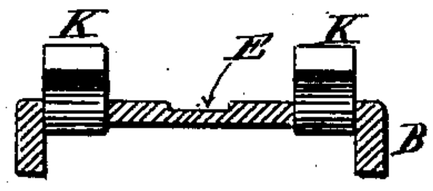
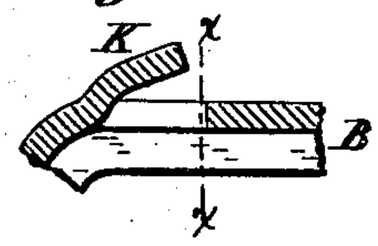


Fig. 5.



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UNITED STATES PATENT OFFICE.

ARTHUR J. HARTFORD, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE A. J. HARTFORD STEEL RAILWAY TIE MANUFACTURING COMPANY, OF WEST VIRGINIA.

METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 487,733, dated December 13, 1892.

Application filed March 2, 1888. Serial No. 265,972. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR J. HARTFORD, of the city, county, and State of New York, have invented a new and useful Improvement in Metallic Railway-Ties, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

This invention relates to an improvement in metallic railroad-ties simple and cheap in construction, and when in place permanently retaining the rail in position without reliance upon bolts or nuts. The arrangement likewise permits of the removal of a rail without disturbing the tie or the replacing of a tie without disturbing the rail.

The invention is clearly shown in the accompanying drawings, in which—

Figure 1 represents a plan view of a tie broken in the center, showing two rails in position; Fig. 2, an elevation, partly in section, of the same; Fig. 3, a lateral view showing the tie-retaining mechanism; Fig. 4, a section through the tie proper on the line *x x*, Fig. 5, showing its retaining-lips; and Fig. 5, a section at right angles to Fig. 4.

The invention consists of the construction and novel arrangement of parts, as hereinafter set forth.

The tie itself consists of a channel-beam, the section of which is clearly shown in Figs. 3 and 4. The ends of the tie are depressed at F, so as to prevent the longitudinal movement of the tie and to afford a space upon the ends of the tie, by means of which the tie may be ballasted down.

The tie itself is rolled with a longitudinal channel E, and eight lips K are punched up for the purpose of retaining the chairs. The chairs C are shown in section, Fig. 2, and are each provided with, preferably, two retaining-lips G H, punched up from the body of the chair, as clearly shown. The lower part of this chair has a channel corresponding to the channel E, as clearly shown in Fig. 3 and in dotted lines at Fig. 2. A lock D is provided, which is adapted to fill the chamber made by the correspondence of these two channels. This bolt has one end turned up at right angles, as at L, so as to prevent the withdrawal of the bolt at the opposite end. The opposite end may be depressed, as at M, locking the bolt from movement in either direction. The method of arranging the rail in position upon the tie can now be understood.

The ties having been placed in position, a suitable flanged rail is laid upon them and the chair is swung between the ties, so that the flanges of the rail A will drop between the lips H and G, sufficient distance between these lips being allowed for that purpose. The chair is then put into the position shown in the drawings, Fig. 1, and driven beneath the lips K. The lips K and the lips H and G may be then thoroughly tightened by the blows of a hammer and the bolt D driven into position, and when its end M has been driven down around the curve of the tie the rail is firmly held in position.

It is obvious that the chair can be retained upon the rail by various other mechanisms and that the depression of the tie ends F is not essential so far as the locking of the rail upon the tie is concerned.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a tie having a longitudinal channel and lips for retaining a chair, a chair having a corresponding longitudinal channel, and a bolt for holding the chair upon the tie when it is driven beneath the lips of the tie, substantially as described.

2. The combination of the tie B, having lips K, the chair C, having lips G H, the bolt D, and the rail A, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR J. HARTFORD.

Witnesses:

ANTHONY GREF,

WM. A. POLLOCK.