

No. 668,796.

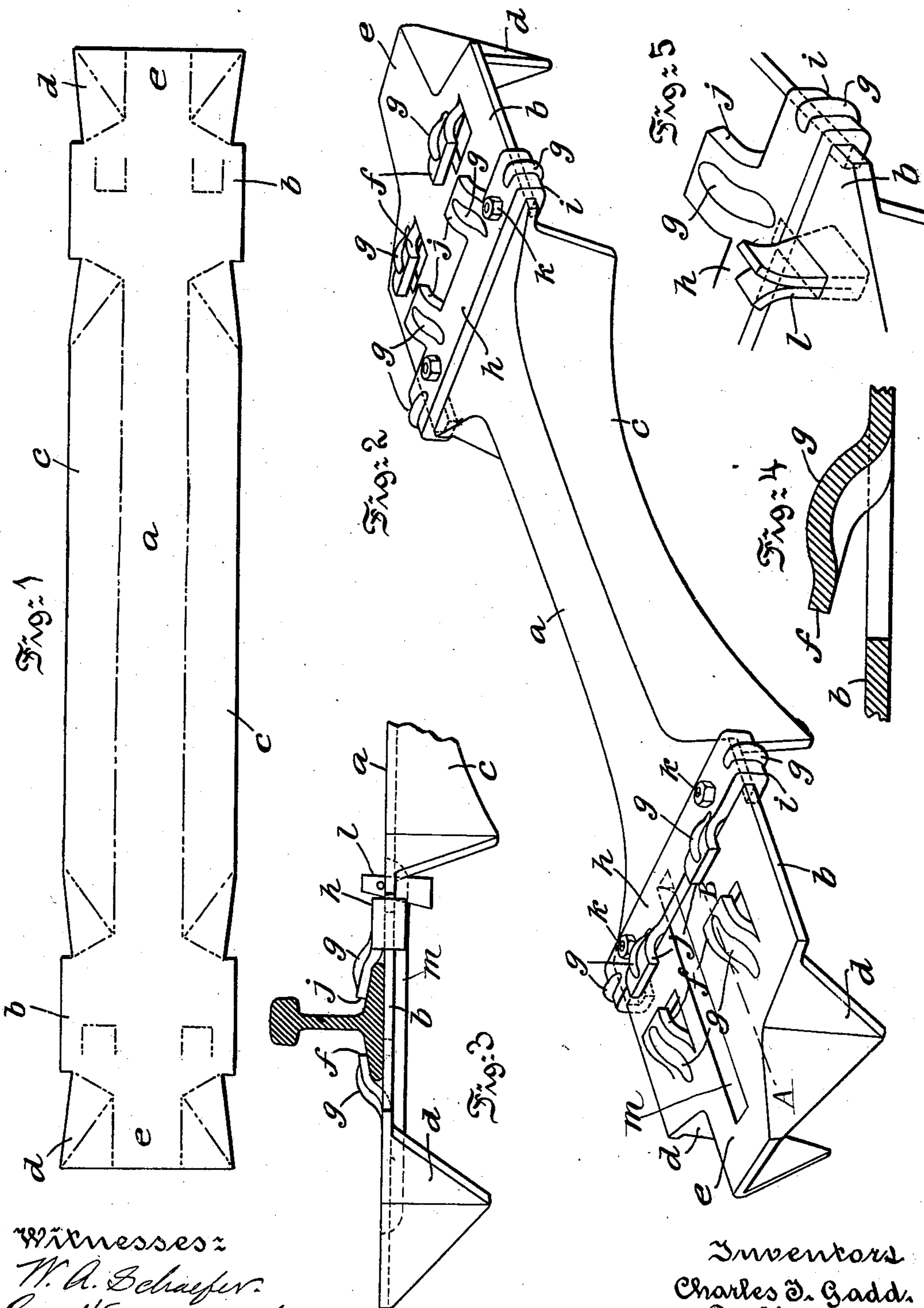
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C. J. GADD & D. MARTYN.

METALLIC RAILWAY TIE.

(Application filed May 18, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

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METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 668,796, dated February 26, 1901.

Application filed May 18, 1900. Serial No. 17,178. (No model.)

To all whom it may concern:

Be it known that we, CHARLES J. GADD and DAVID MARTYN, subjects of the Queen of Great Britain, and residents of the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Metallic Railway-Ties, of which the following is a specification.

Our invention relates to improvements in metallic railway-ties; and the objects of our invention are to furnish a metallic tie in which the maximum strength will be obtained with a minimum weight of metal, which may be formed in dies from a single piece of sheet metal, which will be so constructed that there will be no places in it for retaining water, which may be tamped with the same ease as the ordinary wooden tie, and which when in place in the road-bed will offer at least as much resistance to displacement as the ordinary wooden tie.

Our tie is formed from a single piece of sheet metal. The central part has the form of an inverted U, the sides of which may be straight or sloping as desired, and the ends are formed into chairs for holding the rails. The chairs are preferably furnished on top with ridges or grooves struck up in dies for the purpose of stiffening them and are furnished with or carry fasteners for the rail. The ends of the chairs are open to facilitate tamping the ballast, and they are furnished with downwardly-projecting pieces or legs, which, together with the sides of the tie, anchor the tie in the ballast.

In the accompanying drawings, forming part of this specification, and in which similar letters of reference indicate similar parts throughout the several views, Figure 1 is a plan of one form of blank from which our improved tie may be struck; Fig. 2, a perspective view of tie fitted with one form of fastener for the rail; Fig. 3, a side elevation of one end of tie, showing rail in place; Fig. 4, an enlarged section through the chair on line A B, Fig. 2; Fig. 5, a perspective view of part of chair and movable fastening, the latter being held in place by a split key.

The central part *a* of our tie is of a channel or inverted-U form, closed at the top and sides and open at the bottom. *b* represents chairs at the ends of the tie. The sides *c* of the cen-

tral part *a* of the tie extend outwardly to the inner sides of the chairs, and as the chairs are preferably longer than the width of the top of the central part *a* of the tie the sides *c* are curved outwardly, so as to join or almost join the outer sides of the chairs, as shown, this construction affording the greatest strength for the amount of metal used. The outer sides of the chairs are struck down to form legs or sides *d*, which engage and hold the ballast under the chair and at the same time serve to support and stiffen it. The sides flare from the top downwardly and outwardly, and upon the passage of a train or car, the weight of which tends to force the chair downwardly, serve to crowd the ballast up against the under part of the chair, and thereby limit its downward movement at this time. The legs *d* may be of any convenient form. We prefer, however, to construct them as shown—that is, to strike them down from the blank from which the tie is formed, so that their upper parts joining the chair will be upon a curve or upon two straight lines joined by a curve, their lower ends pointed and their surfaces concave on the outside and convex on the inside. For this construction we furnish the outer sides of the chairs with a projection *e*, as shown, which has practically the same width as the top of the central part of the tie. The ends of the chairs are open to facilitate the placing and tamping of ballast, which is held in place under the chair by the legs *d* and the sides *c* of the central part *a* of the tie.

The chairs may be furnished with any suitable form of fastener for holding the rails. The fastener shown in the drawings consists of two parts—first, the lugs *f*, struck up from the chair itself, which are adapted to engage the outside of the rail-base and which are punched up along their tops at *g* to form a stiffening-rib, these lugs being formed integrally with and at opposite ends of the tie and serving as stops to maintain an absolute gage between the rails, and, second, of the movable parts *h*, which are bent down, as shown, at their ends and adapted to be slid along the tops of and to engage the chairs, as shown. The parts *h* are furnished with lugs *j*, adapted to engage the side of the base of the rail opposite to the side engaged by the stationary

lugs *f*. The parts *h* may be secured to the chair in any suitable manner. In Fig. 2 they are shown secured by bolts and nuts *k*, and in Figs. 3 and 5 by a split key *l*, which is wedge-shaped, so as to draw the part *h* tightly against the rail. The ends *i* of the movable parts *h*, as well as the lugs *j*, carried by these parts, are struck up at *g*, similarly to the lugs *f*, in order to stiffen them.

m is a rib struck up or down on the top of the chair, which serves to stiffen this top.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A metallic railway-tie consisting of a longitudinal central part having the form of an inverted **U** closed at its top and open at its bottom and having on its ends chairs at right angles to said longitudinal part, said chairs being open at their ends, joined at their sides to said longitudinal part and furnished at their outer sides with downwardly-projecting legs adapted to engage the ballast.

2. A metallic railway-tie consisting of a longitudinal central part having the form of an inverted **U** closed at its top and open at its bottom and having at its ends chairs at right angles to said longitudinal part, said chairs being open at their ends, joined at their inner sides to said longitudinal part and furnished at their outer sides with downwardly-projecting legs adapted to engage the ballast, the whole formed from a single piece of metal.

3. A metallic railway-tie consisting of a longitudinal central part having the form of an inverted **U** closed at its top and open at its bottom and having formed integrally at its ends transverse chairs having the form of an inverted **U**, the ends of said chairs being open

to facilitate tamping, the inner sides being joined to the central part of the tie, and the corners of the outer sides being bent downwardly, all substantially as and for the purposes set forth.

4. A metallic railway-tie consisting of a longitudinal central part having the form of an inverted **U** closed at its top and open at its bottom and having formed integrally at its ends transverse chairs having the form of an inverted **U** closed at its top and open at its bottom and ends, said chairs having outwardly-flaring inner sides joined to the sides of said central **U**-shaped part.

5. The combination with a metallic railway-tie consisting of a longitudinal central part having the form of an inverted **U** closed at its top and open at its bottom and having formed integrally at its ends transverse chairs having the form of an inverted **U**, the tops of said chairs being substantially flat and being furnished with upwardly-projecting lugs adapted to engage one side of the rail-base, of a movable fastener consisting of a piece of metal adapted to lie on the top of the chair and having its ends bent downward and inward so as to grasp the ends of the top of the chair and the tops of which are furnished with upwardly-projecting lugs adapted to engage the side of the rail-base opposite to that engaged by the lugs carried by the chair-top, and means for securing said movable fastener to the chair-top.

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