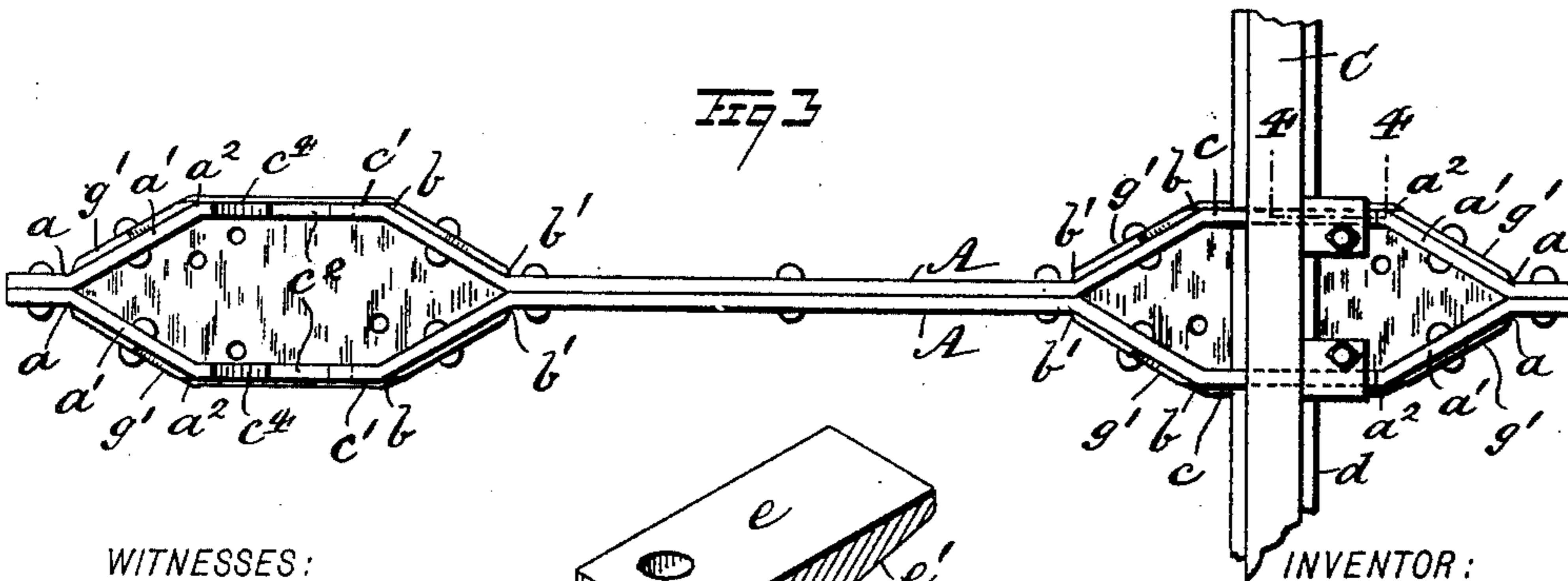
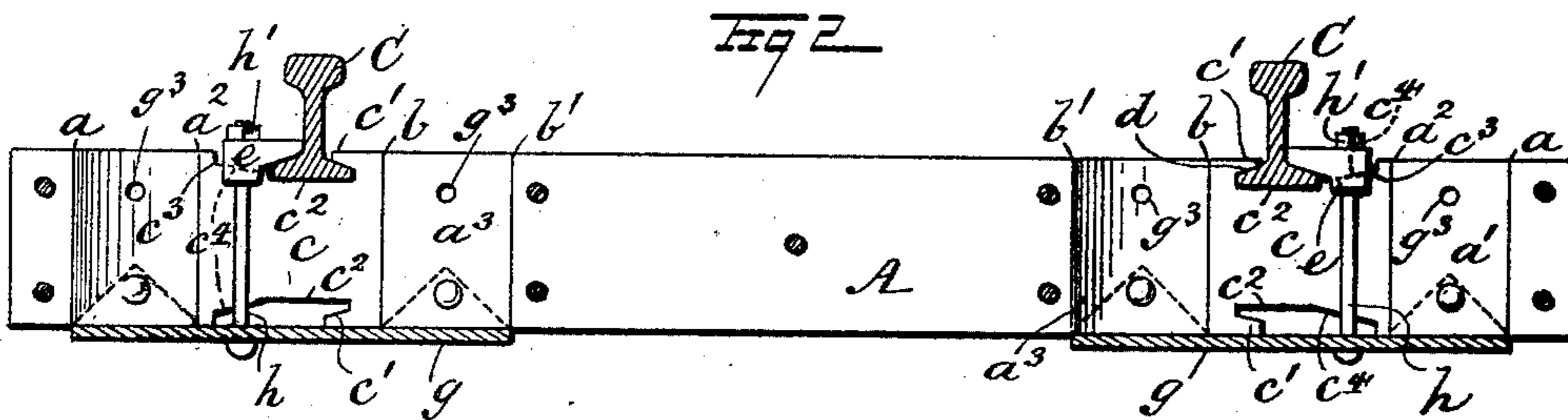
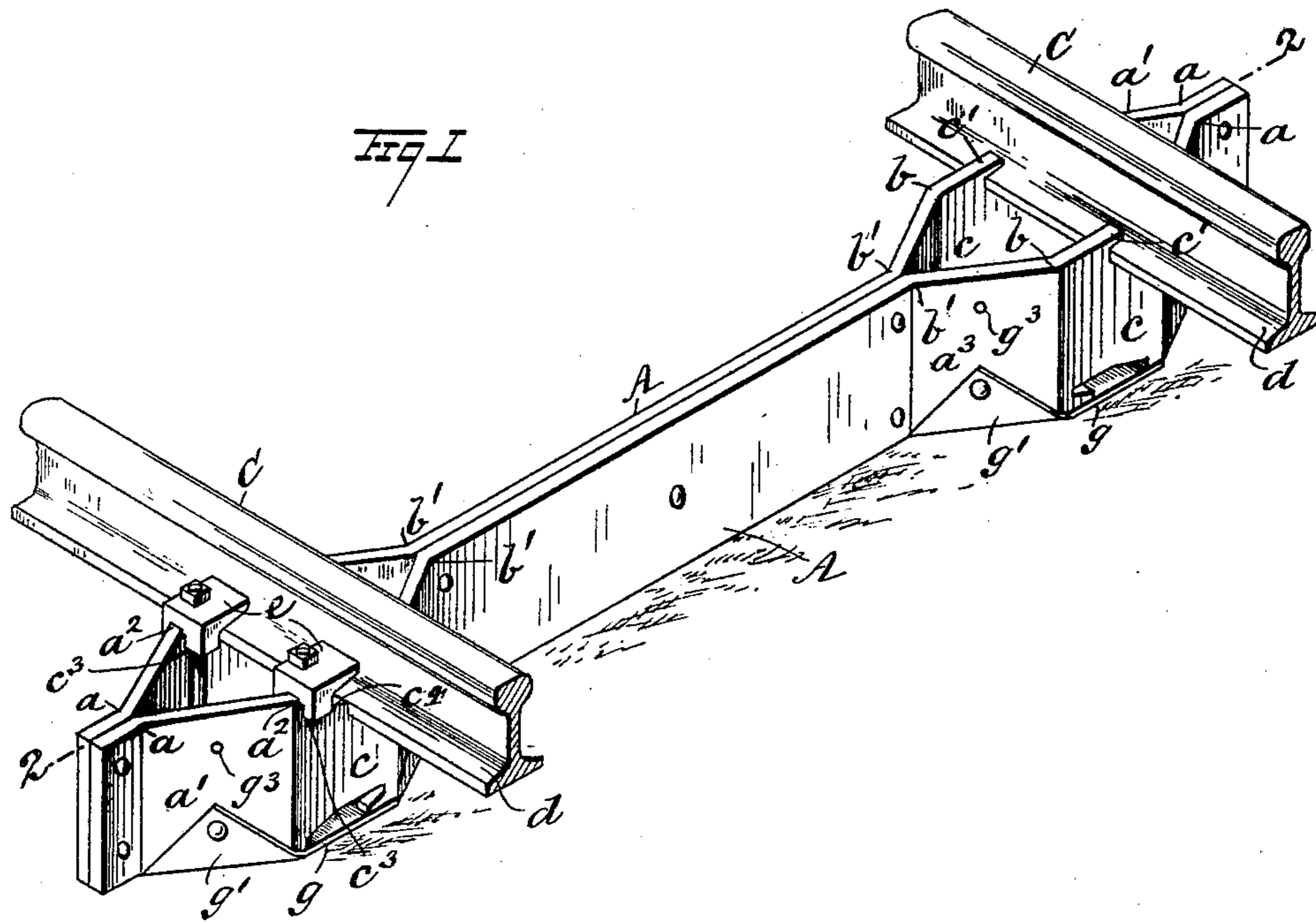


(No Model.)

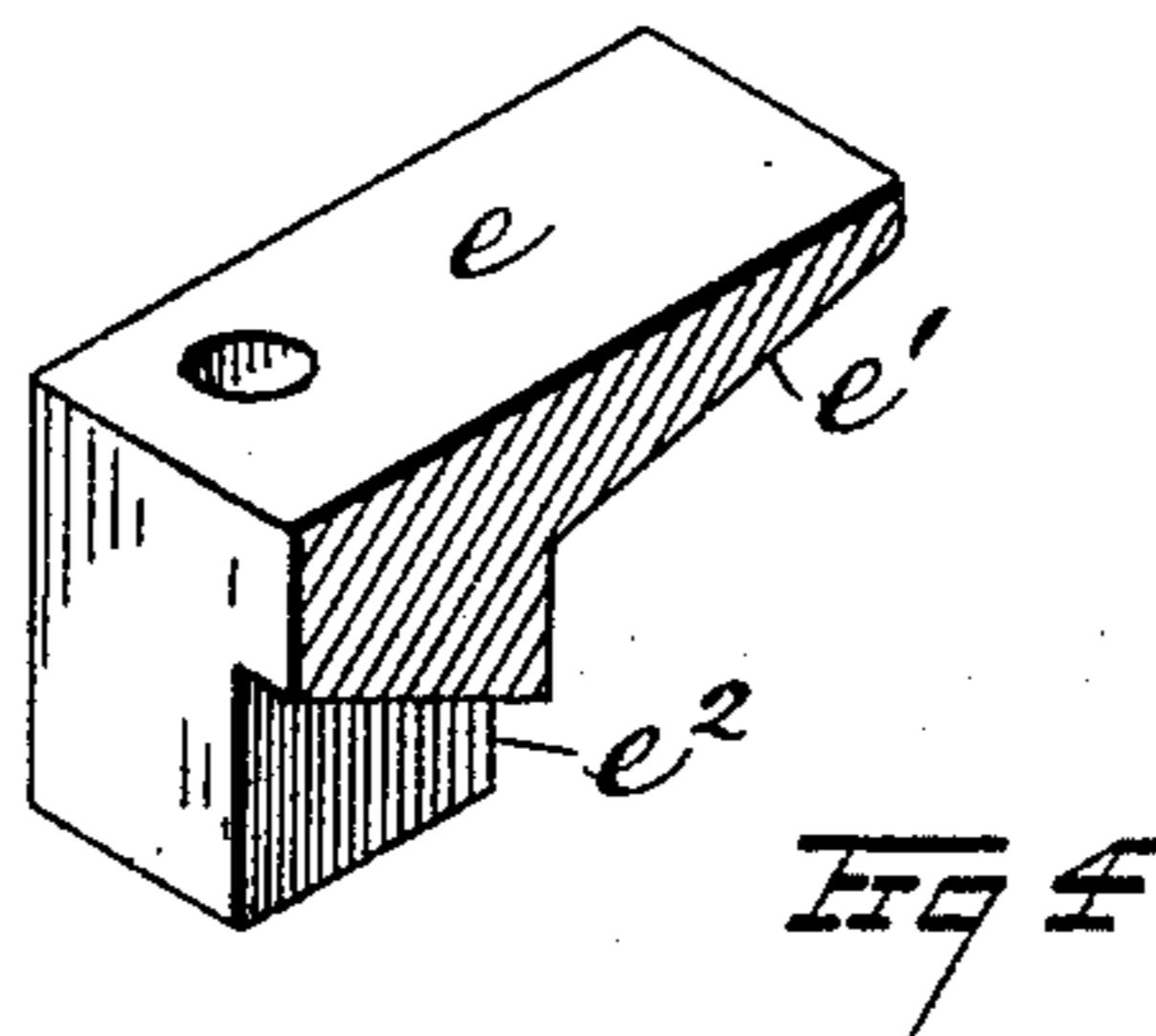
W. H. DUTTON.
PLATE METAL RAILROAD CROSS TIE.

No. 435,806.

Patented Sept. 2, 1890.



WITNESSES:
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UNITED STATES PATENT OFFICE.

WALTER H. DUTTON, OF EAST BETHANY, NEW YORK.

PLATE-METAL RAILROAD CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 435,806, dated September 2, 1890.

Application filed January 16, 1890. Serial No. 337,042. (No model.)

To all whom it may concern:

Be it known that I, WALTER HERBERT DUTTON, of East Bethany, in the county of Genesee and State of New York, have invented a new and useful Plate-Metal Railroad Cross-Tie, of which the following is a full, clear, and exact description.

The objects of my invention are to produce a light, strong, and durable railroad-tie from plate metal, and provide the same with efficient means to retain track-rails in position thereon.

To these ends my invention consists in the construction and combination of parts, as hereinafter described, and indicated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a metal tie embodying the improvements and portions of track-rails secured thereon. Fig. 2 is a longitudinal vertical section of the device, taken on the line 2 2 in Fig. 1. Fig. 3 is a plan view of the tie and a portion of a track-rail secured thereon at one end; and Fig. 4 is a sectional elevation of the rail-clamping block, taken on the line 4 4 in Fig. 3.

A A are two rectangular plates of sheet metal of proper dimensions for their use and constitute the body of the tie, to form which they are bent in duplicate shape, as will be described. The plates A, being rectangular and of suitable height, are bent laterally and oppositely, first at a near their ends, to produce divergent inclined walls a' , and are again bent toward each other at a^2 to form the parallel walls c . At b each plate A is bent inwardly at the same angle as at a^2 , and then outwardly at b' , forming the converging walls a^3 , which conformation of the plates produces two hexagonal boxes when said plates are joined by bolts or rivets, as shown.

The parallel walls c of the boxes B, defined by the angular corners $a^2 b$, are of such proportionate length as to afford seats for the track-rails C, and to properly secure the rails in place thereon the edges of the parallel portions c are cut away to form overhanging ears c' thereon, and below said ears level faces c^2 ,

whereon the rails may rest, as shown in Fig. 2. The ears c' are preferably formed on the free edges of the parallel walls c near the angular corners b , and from a point c^3 on each parallel side of the rectangular boxes near the angular corners a^2 the walls are cut away to produce inwardly and downwardly inclined faces or edges c^4 thereon. The inclined edges on the vertical parallel walls c extend to a point near the edges of the base-flanges d of the track-rails C, and on these inclines the clamping-blocks e are mounted, as will be further explained. If it is desired to make the cross-tie reversible, which may be of use in case the ears c' are broken off, the opposite edges of the boxes B may be cut into form similar to that already described, so that the normally lower side of the tie may become the top side when necessary alterations are made to adapt it for such use, as will be described.

To afford stability for the tie and a proper base on which it may rest when in position, base-plates g are provided, which consist of flat blanks of plate metal cut rectangular in form, of a width and length to correspond to that of the tie-boxes, but slightly wider than the same, so that when applied and secured on said boxes to afford bottoms therefor their edges will extend a short distance beyond the outer faces of the side walls c , as shown in Fig. 3. The corners of the base-plates g are each turned up at right angles to the general surface of the same, causing the bent portions g' to fit against the walls $a' a^3$ of the boxes B, to which they are affixed by rivets or similar means. Perforations at proper points g^3 may be made near the upper edges of the box walls $a' a^3$, adapted to align with the perforations in the corner portions g' of the base-plate g , which latter may thus be readily reversed and bolted to the normal top surface of the tie when it is desired to reverse the same.

The clamping-blocks e are all alike, so that a description of one will suffice. Referring to Fig. 4, the block shown has a lug e' , produced thereon by cutting away the lower surface of one end of the same inwardly and downwardly, which will provide an inclined lower face for the lug, thickening the same at its junction with the remaining portion of

the block *e* and adapting said lug to fit upon the top surface of the base-flange *d* of the track-rail. The heavy portion of the clamping-block *e* is grooved on the lower side in a manner to afford an inclined bottom *e*² thereto, which in degree of inclination mates that on the vertical parallel walls *c* of the cross-tie boxes *B*, so that when there are rails *C* placed on a series of cross-ties properly disposed on a road-bed, and the clamping-blocks secured in position by the screw-bolts *h* and nuts *h'*, the clamping-blocks will wedge against the adjacent rail-edges, forcing the opposite rail-edges under the ears *c'*, and at the same time clamping the engaged portions of the base-flanges *d* firmly upon the cross-ties.

Owing to the material employed and the manner of construction shown, this metallic cross-tie affords a secure but elastic base for track-rails, which will absorb the shock of percussion thereon and increase the durability of the track-rails, at the same time securing the advantages incidentally accruing from the employment of metallic cross-ties instead of the ordinary wooden timbers for such service.

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

1. A metal cross-tie composed of duplicate metal plates laterally bent near each end in opposite directions, producing box-like enlargements, which are supported by plate-metal bases that conform to the enlargements and are thereto secured by bolts or rivets, substantially as specified.

2. A metallic cross-tie composed of two rectangular plates of metal bent oppositely near each end, producing lateral recesses thereon which when joined form boxes, rail-seats and integral ears on the top edges of said boxes adapted to receive and retain

track-rails, base-plates attached to the opposite edges of said boxes, and clamping-blocks adapted to rest on the top edges of said boxes and wedge the track-rails laterally and hold them to the tie when the blocks are bolted thereto, substantially as set forth.

3. In a metallic cross-tie, the combination, with two corresponding elongated metal plates having opposite recesses produced in their sides near each end, forming boxes when the plates are joined, ears cut on the top edges of said boxes oppositely, and base-plates attached to the opposite edges of said boxes, of grooved clamping-blocks on said top edges adapted to wedge the rail laterally and clamp it perpendicularly when bolted to the tie-body, substantially as set forth.

4. In a metallic cross-tie, the combination, with a tie-body composed of two metal plates having boxes bent therefrom, rail-seats on the edges of said boxes, locking-ears integral with said edges, and inclines produced on said edges opposite the locking-ears, of clamping-blocks adapted to rest on said inclines, and the base-flanges of track-rails, substantially as set forth.

5. In a metallic cross-tie, the combination, with a tie-body composed of two metal plates secured together laterally and having boxes formed near each end, rail-seats and integral ears on the top edges of said boxes, inclines cut opposite the ears on said edges, and base-plates secured on the opposite edges of said boxes, of clamping-blocks provided with lugs at one end and grooved to engage the inclines of the box edges, and bolts securing the clamping-blocks to the tie-body, substantially as set forth.

WALTER H. DUTTON.

Witnesses:

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