

G. D. BLAISDELL.
Railway-Ties.

No. 146,376.

Patented Jan. 13, 1874.

Fig. 1.

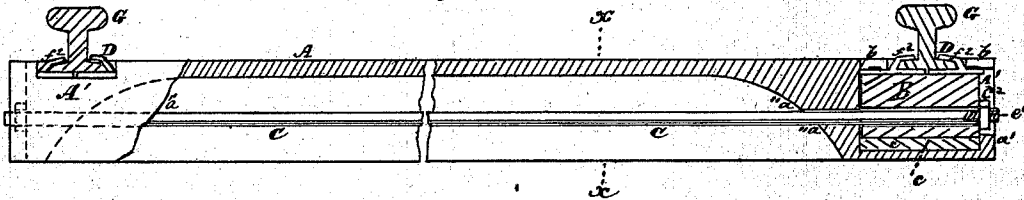


Fig. 2.

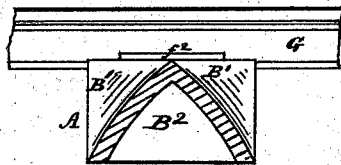
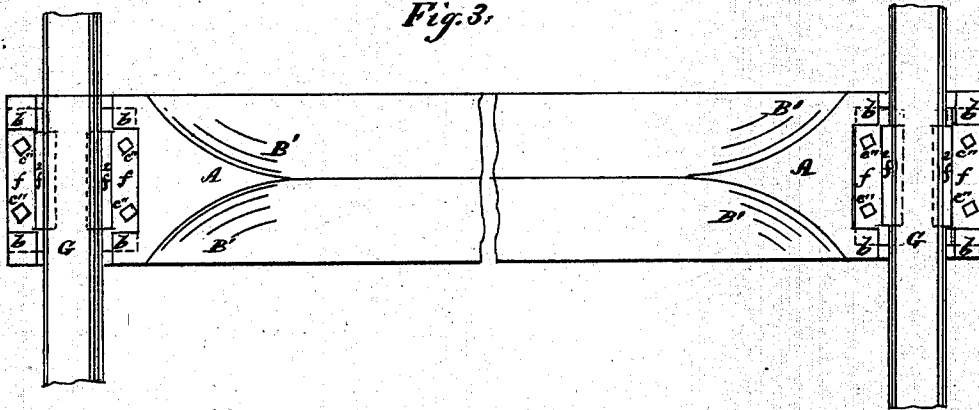


Fig. 3.



Attest.
Wm. Tunney
Superior Lockwood

George D. Blaisdell
per
James A. Whitney
att'y

UNITED STATES PATENT OFFICE.

GEORGE D. BLAISDELL, OF CAMBRIDGE, VERMONT.

IMPROVEMENT IN RAILWAY-TIES.

Specification forming part of Letters Patent No. **146,376**, dated January 13, 1874; application filed June 14, 1873.

To all whom it may concern:

Be it known that I, GEORGE D. BLAISDELL, of Cambridge, in the county of Lamoille and State of Vermont, have invented certain Improvements in Metallic Railway-Ties, of which the following is a specification:

This invention is designed to substitute iron for wood in the construction of railway-ties, and to provide a strong, durable, and elastic support for the rails, constituting a part of the permanent way.

Figure 1 is a side view and partial central vertical longitudinal sectional view of a railway-tie made according to my invention. Fig. 2 is a vertical transverse section of the same, taken in the line *x x* of Fig. 1. Fig. 3 is a plan view of the same.

The body or main portion A of the tie is of cast-iron, formed in one piece. In each end of this body or casting is provided a rectangular socket, indicated at A', and open at the top and outer end. From the inner ends of these socketed extreme portions of the body A the upper lateral portions are sloped away, as shown at B', to give the main length of the said body in its cross-section a triangular or arched external form. The under side of this just specified portion of the body is recessed to corresponding shape, as shown at B² in Figs. 1 and 2; this shape being given to the body A, unites therein the maximum of strength and stability when laid with the greatest practicable economy of material. Across the outer ends of the bottoms of the sockets A' are upwardly-projecting ridges or flanges a', which serve to keep from sliding out the rubber blocks hereinafter mentioned. At the top of each of the said sockets are four inwardly-projecting studs, b, one at each corner, and all cast in one with the body A. In the lower part of each socket is placed a flat piece or block, c, of india-rubber, of any desired thickness, and upon this a block, B, of wood. Provided longitudinally through the end portions of the body A, in a line more or less approximating the axis of the latter, are holes or slots a''. The blocks B are bored with holes, which, when the said blocks are arranged in the sockets, are coincident with those marked a'' in the body A. The wrought-iron rod C is passed through the holes in the blocks B, as

also through those just mentioned of the body A, and, being furnished with a head at one end and a screw-thread and a nut, e, at the other, is snugly tightened to retain the said blocks in place. The holes a'', however, when the wood blocks B are placed upon or above the rubber blocks c, are made of such diameter in a vertical direction as to admit of the depression of the blocks when the rubber yields from superincumbent pressure, as by the passage of a train upon the track. Upon each of the blocks B is placed a chair, D, composed of two parts. Each of these parts comprises a flat foot-plate, f, which rests upon the block B, and a portion curved upward. When the two parts of the chair are placed in position, each upon the block, the flange of the rail G is gripped above by the lips f² of the said parts, and below by the inner portions of the foot-plates f. The blocks B c, and their surroundings and adjuncts, are so proportioned that when arranged as set forth the outermost corners of each will be brought snugly underneath the contiguous stub b, and thereby held against displacement in an upward direction. The edge of the inner one of the two parts of each chair is crowded against the rigid surface presented at the end of the socket, as indicated in Figs. 1 and 3, while the outermost part of the chair is crowded firmly against the rail to clutch and hold the same, as previously herein described, and held against end movement away from the rail by being rigidly spiked to the block B, as shown at c'.

It will be seen that the form given to the body A insures great strength with comparatively little material; that the rod C holds the blocks B in their places, and, at the same time, by trussing the body A, gives it greater power of resistance to strain vertically exerted. The india-rubber blocks c also give a cushioned support to the rail G, which nullifies in a great measure the evil results of the constant jarring and concussion experienced in the running of trains upon ordinary rigidly-supported tracks. The wooden blocks, while capable of use without the rubber, when a minor degree of elasticity in the track is desired, afford a broad bearing upon the rubber to secure to the full extent the efficient operation of the same, and the chairs, constructed as described, may be

adjusted to firmly hold rails having flanges of varying width, the studs *b* being arranged to hold them against vertical displacement, while the abutting inner surfaces of the sockets afford an endwise bearing to the inner parts of each chair, and the retention of the chairs in position with the least possible number of spikes is provided for.

When, for any reason, the considerable degree of elasticity given by the use of the rubber blocks *c* is not desired, the latter may be dispensed with, the wooden blocks being made of such size as to fill the sockets to the requisite extent. In still other cases, when preferred, the rubber blocks may be placed above and the wooden blocks below, when arranged in the sockets. It will also be understood that the sloping contour given to the surface of the tie at *B*¹ enables the wheels of a train, in the event of running off the track, to mount and pass over the ties, instead of crushing the same by a direct impact, as would otherwise occur.

What I claim as my invention is—

1. The hollow body *A*, made of well defined arched or triangular cross-section in its main or central part, and with the sloping surfaces *B*¹ at or near its ends, substantially as herein set forth, for the purpose specified.

2. The combination of the wood blocks *B*, either with or without the india-rubber blocks *c*, with the socketed body *A* and the holding and truss rod *C*, substantially as and for the purpose specified.

3. The rail-holding chairs *D*, composed of the plates *f*, each constructed with a rail-holding lip, *f*², and arranged, with reference to the rails, substantially as and for the purpose specified.

4. The arrangement, with reference to the chairs *D*, constructed and applied in the manner set forth, of the rigid studs *b*, substantially as and for the purpose specified.

GEO. D. BLAISDELL.

Witnesses:

C. D. GATES,
M. V. PARKER.