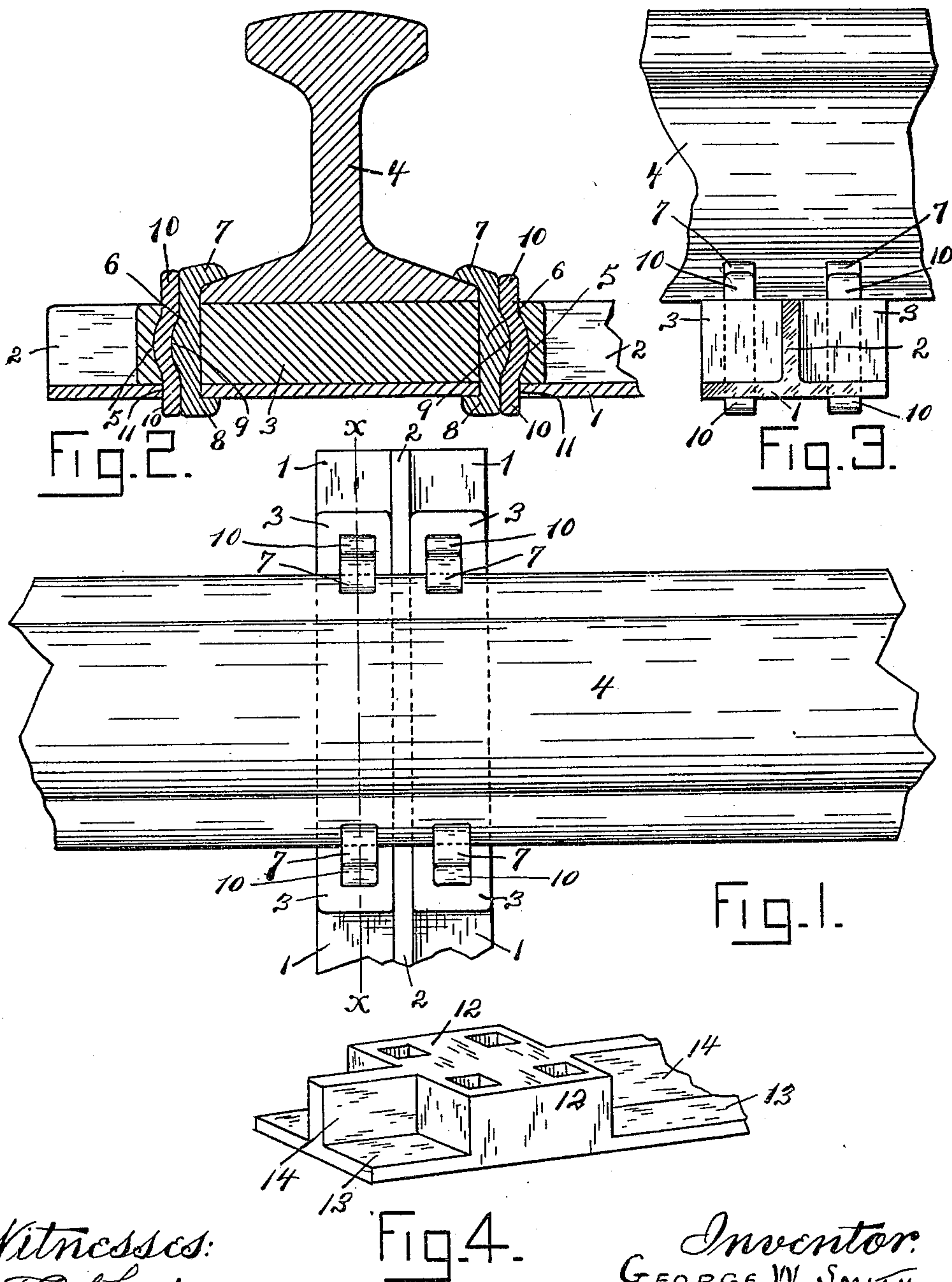


No. 819,941.

PATENTED MAY 8, 1906.

G. W. SMITH.
METAL RAILWAY TIE.
APPLICATION FILED AUG. 24, 1905.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE W. SMITH, OF BUFFALO, NEW YORK.

METAL RAILWAY-TIE.

No. 819,941.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed August 24, 1905. Serial No. 275,594.

To all whom it may concern:

Be it known that I, GEORGE W. SMITH, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Metal Railway-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in metal railway-ties, and more particularly to an improved type which is specially designed for use with a railway-rail fastener, for which Letters Patent No. 768,243 were granted to me on the 23d day of August, 1904.

The object of my invention is to provide a construction which will involve a minimum of material with the requisite structural rigidity.

To that end my invention consists of certain details of construction, all of which will be fully hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view of one end of my improved tie, showing a rail secured thereto. Fig. 2 is a vertical longitudinal section taken in the line *x x* of Fig. 1. Fig. 3 is an end view of Fig. 2, and Fig. 4 is a perspective view of a modified form.

Referring to the drawings, it will be seen that my improved tie is composed of the flat horizontal base 1 and the central vertical longitudinal rib 2, extending the entire length of the horizontal base, giving to the tie an inverted-T-shaped formation, as clearly shown in Fig. 3.

In the form shown in Figs. 1, 2, and 3, which is of rolled steel, I employ separate supporting filling-pieces 3 3, which are located on opposite sides of the vertical rib 2 at the points where the rails 4 cross and are secured to the tie. These filling-pieces extend beyond the base of the rail on each side thereof to accommodate the fasteners for securing the rail to the ties. The apertures in these filling-pieces have vertical side walls, and their inner walls are also vertical; but their outer end walls 5 are more or less concaved. The clamp for holding the rail consists of the shank 6, having the upper lip 7, adapted for

engagement with the flange of the rail 4, and the lower lip 8, somewhat shorter than the upper lip 7 and adapted for engagement with the under surface of the horizontal base 1 of the tie. The outer face of the shank 6 is more or less convexed, such convexity being made to correspond in configuration and position with the concave wall 5 of the aperture in the filling-piece.

The remaining part of the fastener is the locking-wedge 10, which is preferably made of malleable iron.

In assembling the different parts to lock the rail upon the tie the lower end of the clamp, with its lip 8, is passed down through the aperture in the filling-piece, as well as through the registering aperture 11 in the horizontal base 1 of the tie. The straight inner side of the shank 6 lies snugly against the inner vertical wall of the aperture, and the convexed face 9 of shank 6 lies opposite the concaved wall 5 of the aperture, thus producing a curved passage for the locking reception of the wedge 10, which is driven down through, causing it to assume the curve of the passage, thus rigidly locking the clamp in engaging position with the rail and tie.

The fastener just described is the form covered by my Letters Patent herein mentioned and is peculiarly adapted for coöperation with my improved tie, although the rail could be secured to the tie with other types of fastener.

In Fig. 4 I have shown a modified form of tie, which instead of being rolled is cast, in which event the supporting filling-pieces are integral with the horizontal base and vertical rib 14 of the tie.

I claim—

The combination with a metal railway-tie having a flat horizontal base and a central vertical longitudinal rib and apertured supporting filling-pieces on opposite sides of the vertical longitudinal rib at the points where the rails cross, of clamps and locking-wedges in the apertures of the filling-pieces, for securing the rails to the tie.

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

GEORGE W. SMITH.

Witnesses:

W. B. SMITH,
W. T. MILLER.