(No Model.)

E. L. TAYLOR.

METALLIC RAILROAD TIE AND RAIL FASTENING.

No. 461,775. Patented Oct. 20, 1891.

Fig. 1.

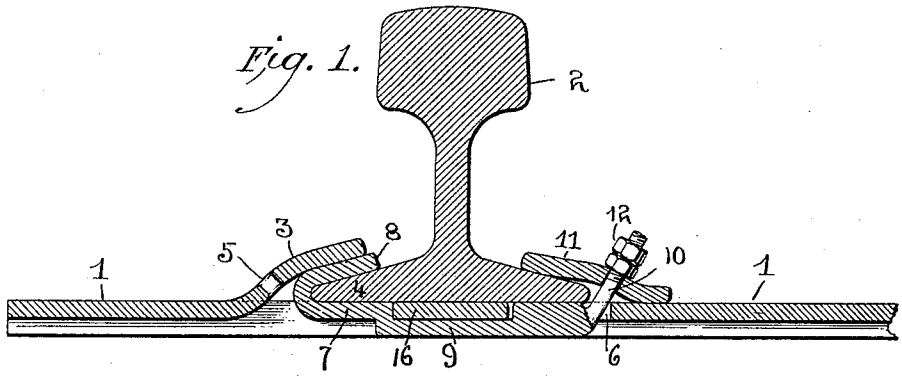


Fig. 2.

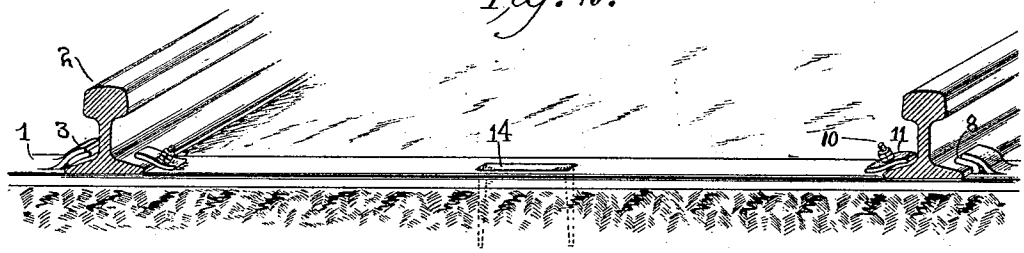


Fig. 3.

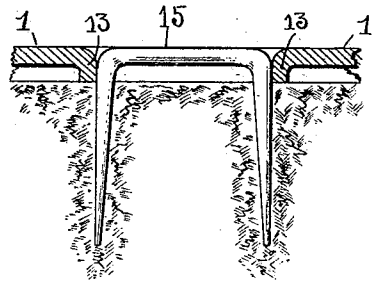


Fig. 5.

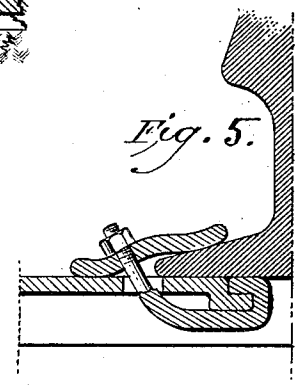
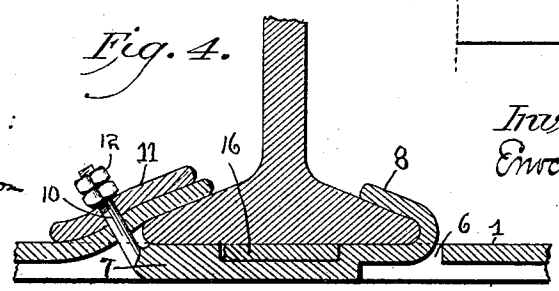


Fig. 4.



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UNITED STATES PATENT OFFICE.

ENOCH L. TAYLOR, OF PHILADELPHIA, PENNSYLVANIA.

METALLIC RAILROAD-TIE AND RAIL-FASTENING.

SPECIFICATION forming part of Letters Patent No. 461,775, dated October 20, 1891.

Application filed February 16, 1891. Serial No. 381,543. (No model.)

To all whom it may concern:

Be it known that I, ENOCH L. TAYLOR, of Philadelphia, in the county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Metallic Railroad-Ties and Rail-Fastenings, of which the following is a specification, due reference being had to the accompanying drawings, which illustrate my invention and form part hereof.

My invention relates to metallic railway-ties, particularly of the channel-tie pattern, and to the fastenings for securing the rails thereto, and has for its object cheapness and simplicity of construction, more secure and durable fastenings of the rails, ready means of setting and retaining rails of varying size at gage on the ties and of removing old and worn rails for their replacing by new rails, and, further, of efficient means for anchoring the tie against lateral displacement.

To the end sought my invention consists of the several novel features of construction, combination, and arrangement of parts hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a vertical sectional view of a tie, rail, and rail-fastening constructed and combined in accordance with my invention. Fig. 2 is a perspective view of a road-bed embodying my invention and showing means for anchoring the tie. Fig. 3 is a magnified view in section of the central portion of the tie represented in Fig. 2, showing the anchoring device for the tie and its binding-contacts. Fig. 4 is a modified form of tie, rail, and rail-fastening in arrangement, and represents the rail-fastening reversed and employed in combination with a heavier or larger rail; and Fig. 5 is a modified form of construction of tie and rail-fastening, showing the tie bent to an L shape, which engages the hook end of the fastening-strap, the other end of which passes through an aperture in the tie and is provided with the washer and nut.

Referring further to the drawings which illustrate my invention, in which the parts are indicated by numerals, similar numerals denoting like parts, 1 is the tie, which is of the ordinary channel-bar or inverted-U-shaped trough pattern, and 2 sixty-pound rails thereon. A tongue 3 is cut in the body of the tie and so raised above the plane of the tie and bent, shaped, or formed as best to adapt it to receive one-half of the lower flange 4 of the rail 2. This tongue is provided with a hole or aperture 5, extending through the same at or near its line of juncture with the plane of the tie, and the tie is further provided with an aperture or opening 6, located a prescribed distance from the tongue 5, all for purposes presently explained.

The fastening device 7 for securing the rail to the tie consists of a flat metal strap preferably bent or shaped to the form shown—that is to say, hooked at one end 8, given an elongated U shape 9 for part of its length, and at its other end 10 rounded and screw-threaded for receiving the washer 11 and nut or nuts 12 for effecting close contact or union of the rail with the tie. This washer 11 is so constructed in form, preferably of flat metal, as to best adapt it to effect a binding contact with the flange 4 of the rail and the surface of the tie.

The tie about midway of its length is cut to form meeting tongues 13, which are bent downward and provide binding-surfaces for and furnish an opening 14 in the body of the tie to permit the passing of an anchor 15, which is preferably a U-shaped staple of flat bar metal, that is driven into the earth and serves to hold the tie against lateral displacement, as best shown in Fig. 3.

In securing an ordinary sixty-pound rail to the tie the hooked end 8 of the fastening or binding strap 7 is passed up under the tongue 3 of the tie and over the rear half of the lower flange 4 of the rail 2, and its other extremity 10 brought up through the aperture 6 in the tie, where it receives its washer 11, which rests upon the opposite portion of the flange 4 of the rail and also on the surface of the tie, and then its nut or nuts 12, which are turned until the parts are in close contact or union, rigid and firm. The U-shaped portion 9 of the strap 7, as will be understood, receives the solid or intervening portion 16 of the tie, extending between the tongue 3 and aperture 6, the location and extent of the portion 9 of the strap being such as when used

in the manner just described—that is, with, say, a sixty-pound rail—the vertical extension thereof nearest its hooked end 8 will bind against the left-hand edge of the portion 16 of the tie and leave a space beyond its opposite or right-hand edge, as clearly shown in Fig. 1, and by such a construction permits the reversal of the strap for engagement and use with rails of size and weight in excess of the ordinary rail, as instanced in Fig. 4, which represents a ninety-pound rail. In such use the end 10 of the strap 7 passes through the hole 5 in the tongue 3, and then receives its washer 11 and nut 12, the tongue 3 of the tie engaging the rear portion of the flange 4 of the rail, and the hooked end 8 of the strap 7 receives the opposite portion of the rail-flange 4. Combined ties and rail-fastenings constructed in accordance with my invention therefore provide ready means of rigidly mounting rails of different sizes at gage, and the tie is securely anchored against lateral displacement.

I do not wish to be understood as restricting my invention to the exact construction and arrangement of parts as shown and described, but may vary the same in any manner to better carry out the principle of my invention without departing from the true scope thereof.

I claim—

1. A metallic railroad-tie of the character described, having a tongue formed integral therewith and elevated above the plane of the tie and an aperture adjacent to said tongue, in combination with a binding-strap or fastening device for securing a rail to the tie, hooked at one end to engage a portion of the base of the rail beneath the tongue and be re-enforced thereby, its other end screw-threaded and bent to an angle relatively to its main body portion, and its main body portion adapted to receive and hug the intervening portion of the tie between its tongue and said aperture beneath the rail and abut against the under surface of the rail each side thereof, and means for said threaded end for effecting union and rigidity of parts, the whole constructed, arranged, and combined as described, and for the purposes set forth.

2. A metallic railroad-tie of the character herein described, having a tongue formed integral therewith and adapted to receive a portion of the base of a rail, an aperture in said tie adjacent to said tongue to permit the passing of a binding-strap, a reversible binding-strap or fastening device of the construction shown and described for securing at gage rails of varying sizes and weight to the tie in the manner described, hooked at one end to engage a portion of the base of the rail, its other end screw-threaded and bent to an angle relatively to its main body portion, and its main body portion adapted to receive and hug the intervening portion of the tie between its tongue and said aperture beneath the rail and abut against the bottom of the rail each side thereof, means for said threaded end for effecting union and rigidity of parts, and a hole in said tongue at or near its line of juncture with the tie to receive the threaded end of the binding-strap when the position of the latter is reversed for use with and to hold at gage rails of the larger sizes, the whole constructed, arranged, and combined as described, and for the purposes set forth.

3. A metallic railroad-tie of the character herein described, having an aperture in its body portion, provided with downwardly-extending lugs or flanges, in combination with a device for anchoring the tie against lateral displacement, consisting of a U-shaped staple adapted to snugly fit the aperture and bind against the said lugs or flanges and of length sufficient to be driven into the ground beneath the tie, as and for the purpose set forth.

In testimony whereof I have hereunto signed my name this 5th day of December, A. D. 1890.

ENOCH L. TAYLOR.

In presence of—
JOHN JOLLEY, Jr.,
W. ALEX. ROBINSON.