F. McCUNE.

RAIL TIE AND RAIL FASTENING.

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1,067,127.

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Fig. 1.

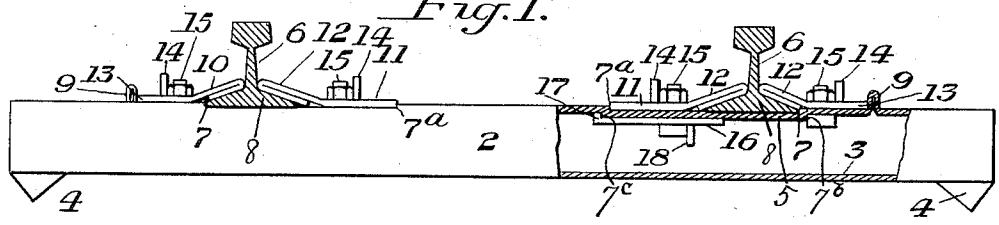


Fig. 2.

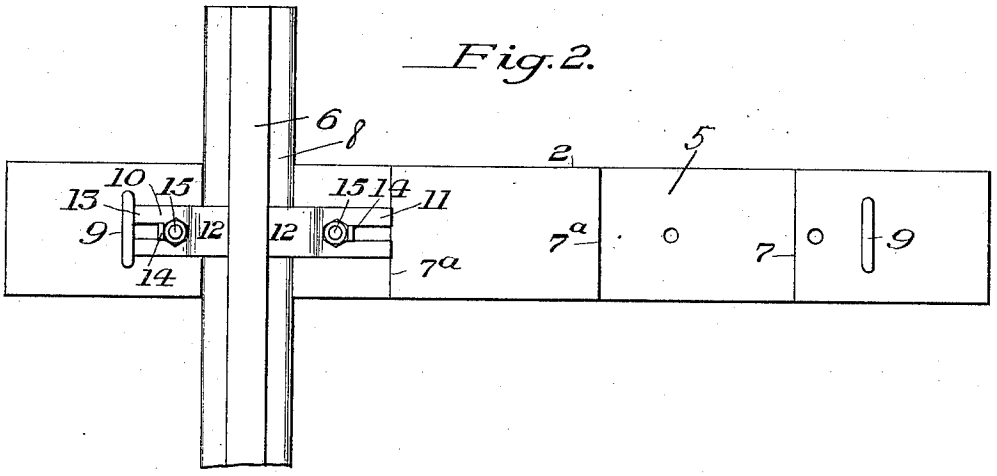


Fig. 3.

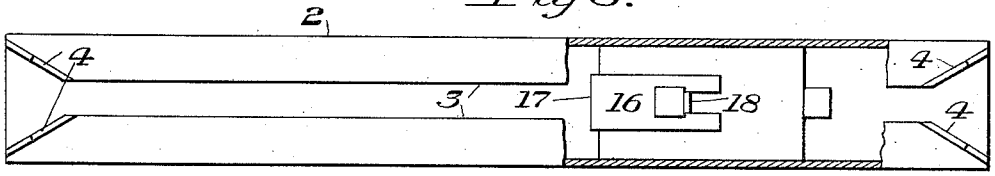


Fig. 4.

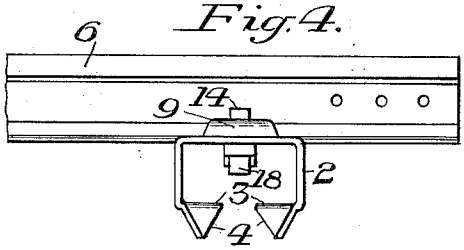


Fig. 5.

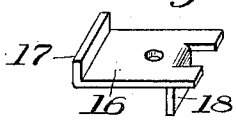
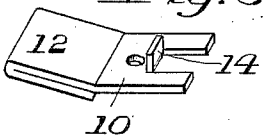


Fig. 6.



WITNESSES

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RAIL-TIE AND RAIL-FASTENING.

1,067,127. Specification of Letters Patent. Patented July 8, 1913.

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To all whom it may concern:

Be it known that I, FRANK McCUNE, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Ties and Rail-Fastenings, of which the following is a specification.

My invention relates to the construction of metal rail ties, the means employed therewith in securing the rails of a railway track on the ties and the means whereby the rail fastening means are held in position to maintain the rails in place on the ties.

One object of my invention is to provide a rail tie formed of a metal plate of light and durable construction and having improved means for preventing endwise movement of the ties on the roadbed of the railway track.

Another object of this invention is to provide a novel rail fastening whereby the rails are securely held in place on the ties, and spreading or sidewise movement of the rails on the ties is prevented.

A further object of the invention is to provide improved means co-acting with the rail fastenings and ties by which the rail fastenings are held in position to maintain the rails in place on the ties.

The invention consists in a wrought metal tie of novel construction, having rail clamps and washers for fastening the rails to the ties and having novel means whereby, when tightened in place, movement of the nuts on the fastening bolts, used in securing the rail clamps to the ties, is prevented.

Referring to the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal side elevation, partly in section, showing a metal tie, and means employed in fastening the track rails thereto constructed in accordance with this invention. Fig. 2 is a plan of the tie shown in Fig. 1, one rail being omitted for the sake of clearness in showing the construction of the rail seats on the tie. Fig. 3 is an inverted plan, partly in section, showing the bottom of the tie illustrated in Figs. 1 and 2. Fig. 4 is an end elevation of the tie. Fig. 5 is a detail perspective view showing the clamps or washers employed in maintaining the fastening bolts and nuts in place in accordance with this invention. Fig. 6 is a detail perspective view showing the rail clips or clamps by which the rails are held in position on the ties.

In the drawings 2 designates the rail tie which as shown is constructed of a wrought metal plate bent lengthwise to form a hollow open ended box of substantially rectangular cross section. The marginal edge portions 3, 3 of the plate form the bottom of the tie, and are spaced a short distance apart, define the sides of a lengthwise extending groove or slot in the bottom of the tie, the corners of the portions 3, 3 of the plate being bent diagonally downward so as to form angularly extending lugs 4 by which movement of the ties on the roadbed of the railway track is prevented and overcome.

Located in the top of the tie 2 are depressions or recesses 5 forming rail seats. The length of the recesses is somewhat greater than the width of the base flanges on the rails 6, and the distance between the outer ends 7, 7 of the rail seats 5 is such as will position the rails 6 at the required gage when the flanges 8 of the rails are in engagement with ends 7 of the recesses 5. Between the depressions forming the rail seats 5 and the ends of the tie the top surface of the tie is struck up or folded so as to form lugs or projections 9 which extend transversely across the upper surface of the tie.

Rail clips 10 and 11 are employed to engage with the track rails 6 in fastening the rails to the tie, which are formed by bending or doubling one end of a metal plate upon itself until the surfaces thereof are in engagement, so that the inner rail engaging ends 12 of the clips are of double thickness. The ends of the folded or doubled portions of the rail clips 10 (the clips between the track rails and the end of the ties) are arranged to engage with the shoulder formed by the outer end 7 of the recesses or rail seats 5 and the opposite end 13 of these rail clips engages with the projection 9 formed on the upper face of the ties. The distance between the end 7 of the recess 5 and the projection or lug 9 is made equal to the distance between the end of the inturned or folded portion of the rail clips and the opposite end of the clips. The rail clips or clamps 10 and 11 are constructed so as to be exactly similar. The outer ends of the clips 10 and 11 are slit so as to provide a tongue 14 which is arranged to be bent upwardly

into engagement with the head of the fastening bolts or the nuts used on these bolts to prevent turning thereof after being tightened in place. Bolts 15 are employed to fasten the rail clips 10 and 11 on the tie, these bolts extending through registering openings in the top surface of the tie and in the rail clips. One side of the heads on the bolts through the clips 10 is arranged to engage with the shoulder 7^b formed by the depressions or rail seats 5 in the top surface of the tie so as to prevent turning of the bolts. The ends of the rail clips 11 which are located on the tie between the track rails 6, 6 engage directly with the jog or shoulder formed by the end 7^a of the recesses and as the holes for the bolts 15 used in securing the rail clips 11 in place are located some distance from the shoulder or jog, a washer or clamp 16 having one bent or upturned end 17 is placed between the head of these bolts and the under face of the top surface of the hollow tie, the upturned ends 17 of the washers engaging with the shoulders 7^c provided in forming the recesses or rail seats 5 in the top surface of the tie. The other end of the washers is slit in a similar manner to the rail clips 10 and 11 to provide tongues 18 which when bent to extend vertically downward will be in engagement with the bolt heads and prevent turning of the bolts.

The advantages of my invention will be apparent to those skilled in the art. The tie construction shown is simple and is easily and cheaply made. The recesses in the top surface of the tie, by engagement with the side edges of the rail flanges, form a positive stop which effectually prevents spreading of the track rails. The ends of the rail clips by engagement with the ends of the recesses forming the rail seats and the projections above the face of the ties prevent sidewise movement of the track rails on the ties and avoid putting the fastening bolts in shear. The bolts securely hold the rail clips in position and the tongues on the clips when bent into place prevent relative movement of the nuts and bolts so as to maintain the nuts in position on the bolts.

Modifications in the construction and arrangement of the rail tie and rail fastening may be made without departing from my invention as defined in the claim.

I claim:

A hollow metal railway tie provided in its upper face, adjacent to one end, with an integral upstanding lug, and with a depression of greater depth than the thickness of the edges of a rail-base and defining two upper and two under shoulders, the former being spaced apart a distance greater than the width of a rail-base, a pair of clips each of which is provided adjacent to one end with a flexible nut-locking tongue and at its other end with a rebent rail-base engaging clamp, the clip that will be positioned at the outside of a rail having its outer end disposed to engage with the lug and the edge of its clamp to engage with the adjacent shoulder, and the clip that will be positioned on the inside of a rail having its outer end disposed to engage with the adjacent shoulder, a third clip disposed beneath the face of the tie and provided with a terminal lug to engage with one of the under shoulders and with an intermediate flexible nut-locking tongue, a bolt passing through the outer clip and having its head in engagement with the other under shoulder, and a second bolt passing through the under and inner clips and having its head in engagement with the locking tongue of the under clip.

Pittsburgh, Allegheny county, Pennsylvania, July 10th, 1911.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."