A. L. WORSWICK.

RAIL TIE AND CLIP.

APPLICATION FILED OCT. 30, 1913.

1,130,952. Patented Mar. 9, 1915.

Fig. 1.

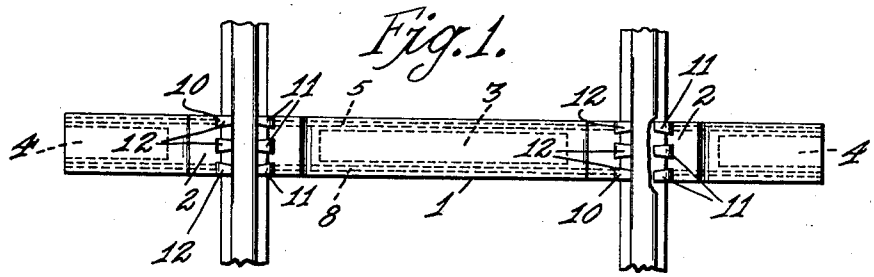


Fig. 7.

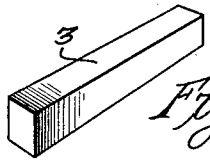


Fig. 2.

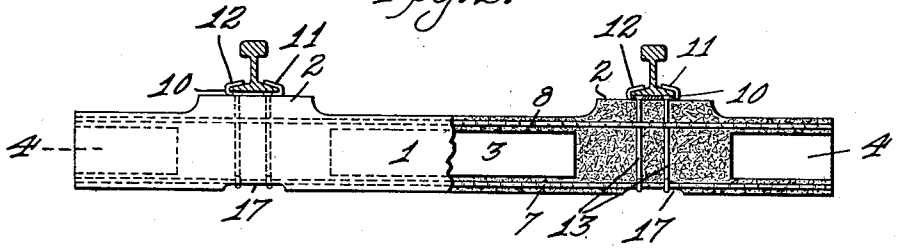
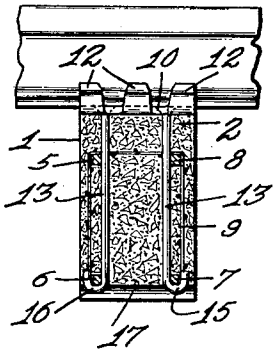
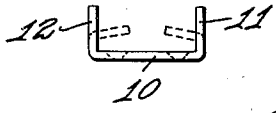


Fig. 3.

Fig. 4.





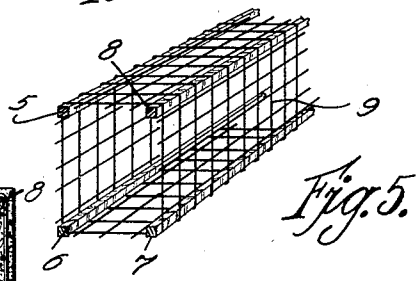


Fig. 5.

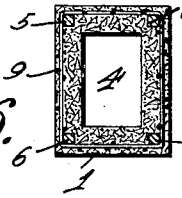


Fig. 6.

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UNITED STATES PATENT OFFICE.

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RAIL TIE AND CLIP.

1,130,952. Specification of Letters Patent. Patented Mar. 9, 1915.

Application filed October 30, 1913. Serial No. 798,253.

To all whom it may concern:

Be it known that I, AI LACY WORSWICK, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Rail Tie and Clip, of which the following is a specification in such full and clear terms as will enable those skilled in the art to construct and use the same.

This invention relates to a composite concrete tie reinforced with steel rods and an object of the invention is to provide means whereby the weight of the tie can be reduced thereby making a cheaper tie to construct as well as making a tie which is cheaper to handle.

Another object of the invention is to provide a solid support under each rail thereby making a strong construction.

Another object of the invention is to produce a clip which will be permanently secured to the tie and which will have its securing means embedded in the tie thereby preventing it from loosening and permitting the rail to be displaced and so positioning the clip securing bolts as to prevent the traffic from directly injuring the steel reinforcement of the tie.

A further object of the invention is to produce a clip which will not require a spike to secure a rail thereto.

Other objects of the invention will appear as the description proceeds.

An embodiment of the invention is shown in the drawing in which the same reference numeral is applied to the same portion throughout, but I am aware that there are several modifications thereof.

Figure 1 is a plan view of the tie showing the position of the rails thereon, one of said rails being broken away for purposes of illustration, Fig. 2 is a side elevation partly in section of the complete tie, Fig. 3 is a transverse sectional view of the tie adjacent one of the rails, Fig. 4 is a side elevation of the clip as it appears before the rail has been secured thereto, Fig. 5 is a perspective view of the reinforcing cage used, Fig. 6 is a transverse sectional view through the tie illustrating the use of the box therein to reduce the weight of the material in the construction of the tie, and Fig. 7 is a perspective view on a slightly smaller scale of the box used in the central part of the tie for reducing the weight thereof.

The numeral 1 indicates the body of the tie, said tie having upwardly extending haunches for the support of each of the rails and below each of the haunches the concrete is solid to the base of the tie. The central part of the tie has a rectangular box 3 therein, which box is left within the tie after it is placed in the mold so that the weight thereof is reduced by the amount of material which it takes to make up said box. This box is made from a cheap grade of sheet iron and is of such size as is deemed necessary to use.

The ends of the tie have hollowed portions 4 formed therein at the time the concrete is placed in the mold. The reinforcing cage consists of four bars 5, 6, 7 and 8 held together by means of the wire fabric 9 used to give the concrete the necessary stability in tension.

The clip which secures the rail in place on the tie is indicated at 10 and has four holes therein and six upstanding lugs 11 and 12, three on each side. This clip is secured to the tie by means of the rods 13, which rods have their lower ends hooked under the reinforcing rods 6 and 7 respectively as shown in Fig. 3 at 15 and 16.

The tie has a portion of the material thereof omitted therefrom at the point where the rods 13 hook under the reinforcing rods 6 and 7 as indicated at 17 in order to enable said rods to be removed and bolts inserted in their place when the clip has been completely worn out and when it is necessary to put a new one in place.

In use the two clips are placed on the tie at a proper distance apart, the tie is inserted under the rails and the lugs 11 and 12 are bent down over the lower flange of the rails with a hammer, thus securing them in place, and since the bolts which hold the clips in place are immediately under the rails and are hooked under the bottom reinforcing member, it is not possible for the bolts to be dislodged short of long usage.

It will of course be apparent that should the clip be ultimately worn out that the bolt can be forced through and driven out at the bottom of the tie and a new bolt and new clip inserted in position.

Having thus described my invention what

I claim as new and desire to secure by Letters Patent of the United States, is as follows, modifications within the scope of the claim being expressly reserved:

A reinforced concrete tie comprising a concrete mass having hollowed portions and a solid concrete mass under each rail, an upper and a lower set of reinforcing rods, clips for holding the rails in place, and a plurality of bolts for securing the clips to the tie, the lower ends of the bolts being hooked under the lower set of reinforcing rods and projecting through the lower side of the tie.

In testimony whereof I have hereunto set my hand this 23rd day of October A. D. 1913, in the presence of the two subscribed witnesses.

AI LACY WORSWICK.

Witnesses:
C. P. GRIFFIN,
L. H. ANDERSON.

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