R. C. LUKENS.

RAILWAY TIE.

APPLICATION FILED MAR. 27, 1908.

911,601.

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Fig. 1.

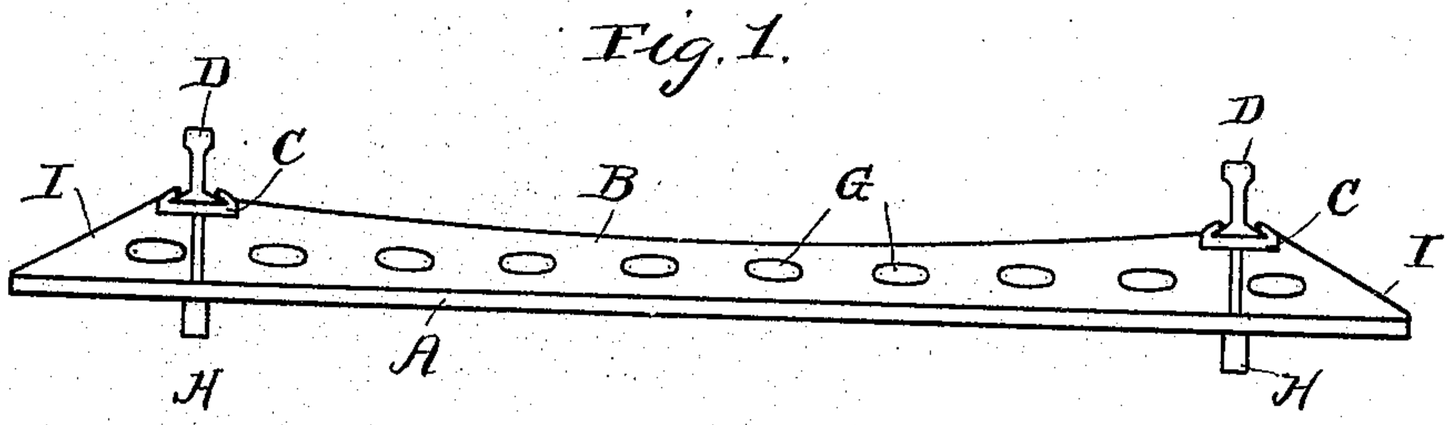


Fig. 2.

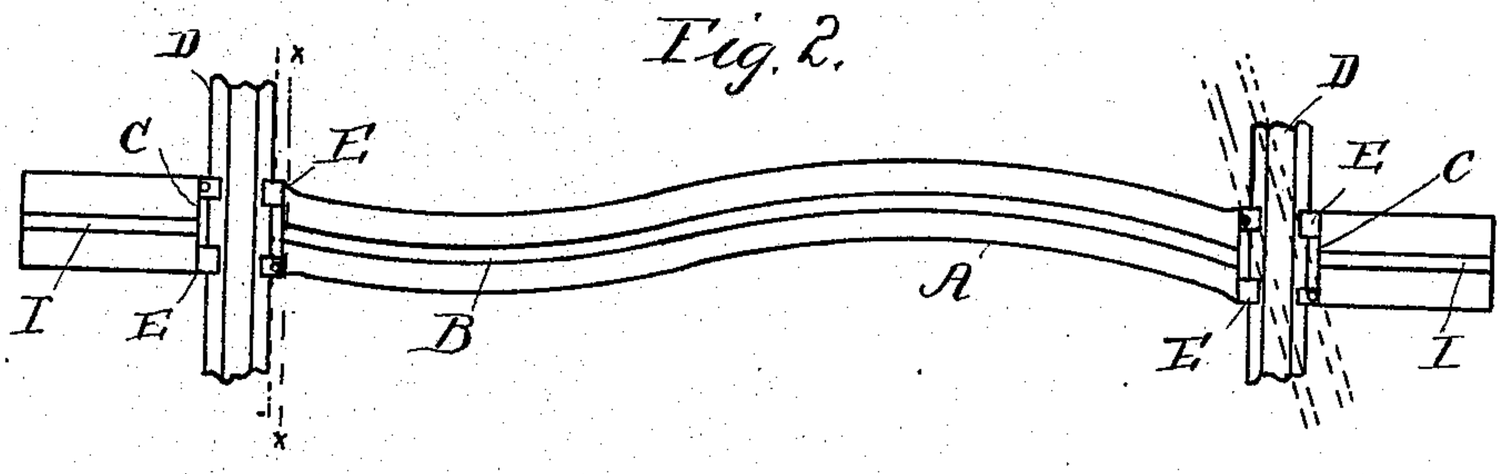


Fig. 3.

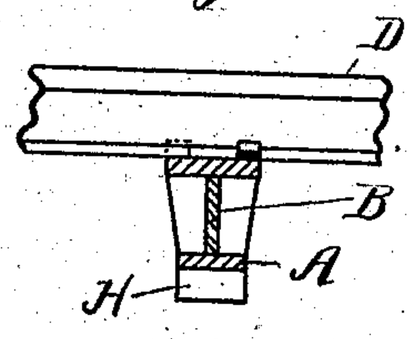
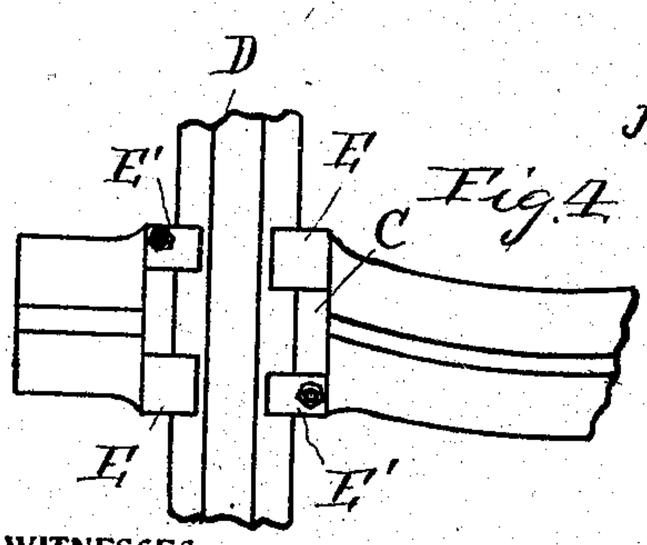


Fig. 4.



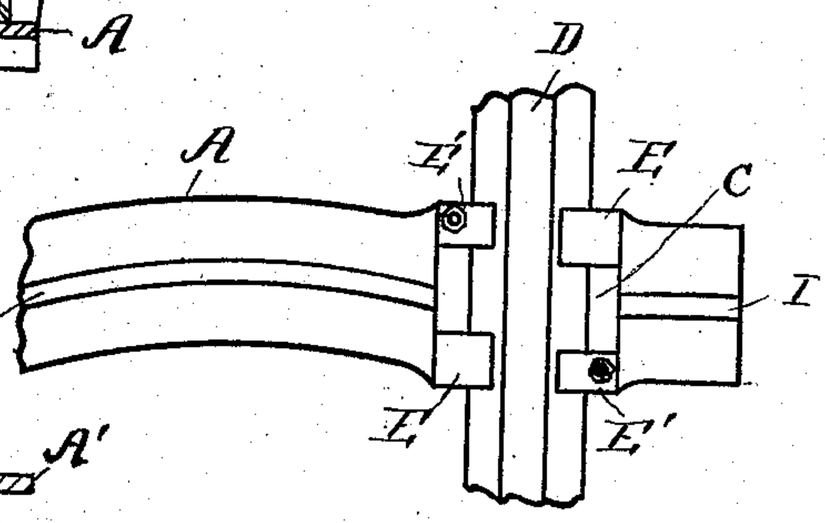


Fig. 5.

WITNESSES

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RAILWAY-TIE.

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Application filed March 27, 1908. Serial No. 423,536.

To all whom it may concern:

Be it known that I, RUDOLPH C. LUKENS, a citizen of the United States, residing at Merion, county of Montgomery, and State of Pennsylvania, have invented a certain new and useful Improvement in Railway-Ties, of which the following is a specification.

My invention relates to a new and useful improvement in railway ties, and has for its object to provide a metallic tie which will overcome the many disadvantages which have heretofore been experienced in attempts to substitute metallic ties for wood ties, such as providing for the give of the tie at right angles to its length as well as lengthwise, and also to provide for securing the rails upon the tie in such manner that they cannot spread, and still further to provide a firm bearing in the road-bed or ballast and prevent the creeping or shifting of the tie in the road-bed.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail, referring by letter to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a side elevation of a tie made in accordance with my improvement showing the rails seated thereon. Fig. 2, a plan view. Fig. 3, a section at the line X—X of Fig. 2, and Fig. 4, an enlarged plan view showing a slight modification in which certain of the clamp lugs are removable. Fig. 5, is a cross section of a slightly modified form of tie.

In carrying out my invention as here embodied, A represents the base of the tie which is in the form of a thin flat plate having formed therewith the rib B. Near the ends of the rib on the top edge thereof are formed the support plates C which are of sufficient width to accommodate the base of the rails D, and these support plates have formed thereon the lugs E so set as to engage the flanges of the base of the rails and firmly hold them in position as hereinafter set forth.

When the construction shown in Figs. 1 and 2 is utilized securing the rails to the tie is effected by turning the rail at an angle to the tie as shown in dotted lines upon the right of Fig. 2, or by turning the tie at a corresponding angle to the rail and setting the base of the rail upon the support plate C, when by bringing the rail to a position at right angles to the tie its flanges will pass under the lugs E and thus securely hold it in place. As the clamp lugs E are formed with the support plates and tie they will absolutely prevent the spreading of the rails and consequently the derailing of a train from that cause.

If desired as shown in Figs. 2 and 4 secondary clamp blocks E′ may be secured to the support plates C thus further securing the rails in place.

The body of the tie between the support plates is of sinuous form including both the plate A and the rib B for the purpose of preventing the endwise creeping or shifting of the tie when embedded in the road-bed and for the further purpose of permitting the tie to slightly stretch lengthwise thus providing a certain amount of give to the rails to reduce the shock and jar from the side thrust of the flanges of the car wheels, and this is an important feature for should the tie be absolutely rigid in this respect the strain upon the fastenings would be greatly increased as will be readily understood.

The rib or web B is preferably of less width at its center than at the point where the support plates are formed therewith which will permit the tie to have a slight spring at right angles to its length and this will afford a cushion to the train passing over the rails.

I prefer to form the holes or openings G in the web to reduce the weight thereof and also to permit the packing of the ballast in said holes thus offering a further resistance to the shifting of the tie, and as a still further means of anchoring the tie against shifting I provide the cross ribs H formed upon the bottom of the plate A, and these ribs projecting into the road-bed will anchor the tie. The web B outside of the plates C is inclined or beveled as indicated at I to further reduce its weight and also to permit the ballast to entirely cover these ends.

In practice the plate A being embedded in the ballast at a sufficient depth to bear upon the compact portion of said ballast will sustain considerably more weight than if it bore upon the top of the ballast and is less likely to shift sidewise.

While of course I do not confine myself to any particular way of manufacturing my

improved tie it may be cast of such material as to withstand the strains incident to its use while leaving it sufficiently light not to be over expensive or cumbersome, or the tie may be rolled if made in the form shown in cross section in Fig. 5, it being understood that the body of the tie would be sinuous, the top plate A′ extending the full length of the tie.

Having thus fully described my invention, what I claim as new and useful, is—

1. A railway tie consisting of a base plate, a web formed therewith, said web having openings therein, the web and plate being of sinuous form through a portion of their length, support plates formed upon the web, clamp lugs formed with the support plates for securing the rails in place, and cross ribs projecting downward from the bottom plate as and for the purpose set forth.

2. In a railway tie, the combination of a base plate, a web formed with said plate, said web having openings therethrough and gradually reduced in width toward its center, said plate and web being of sinuous form throughout a portion of their length, support plates formed with the web, clamp lugs formed upon the support plates, and secondary clamp lugs adapted to be bolted to the support plates, as specified.

3. In a railway tie, the combination of a base plate, a web formed with said plate, said web having openings therethrough and gradually reduced in width toward its center; said plate and web being of sinuous form throughout a portion of their length, support plates formed with the web, clamp lugs formed upon the support plates, secondary clamp lugs adapted to be bolted to the support plates, and cross ribs formed with the base plate and projecting downward therethrough as and for the purpose set forth.

In testimony whereof, I have hereunto affixed my signature in the presence of two subscribing witnesses.

RUDOLPH C. LUKENS.

Witnesses:
CHAS. H. FREDERICK,
S. S. WILLIAMSON.