No. 855,277. PATENTED MAY 28, 1907.

R. L. BOWER.

RAILROAD TIE.

APPLICATION FILED JAN. 26, 1907.

Fig. 1.

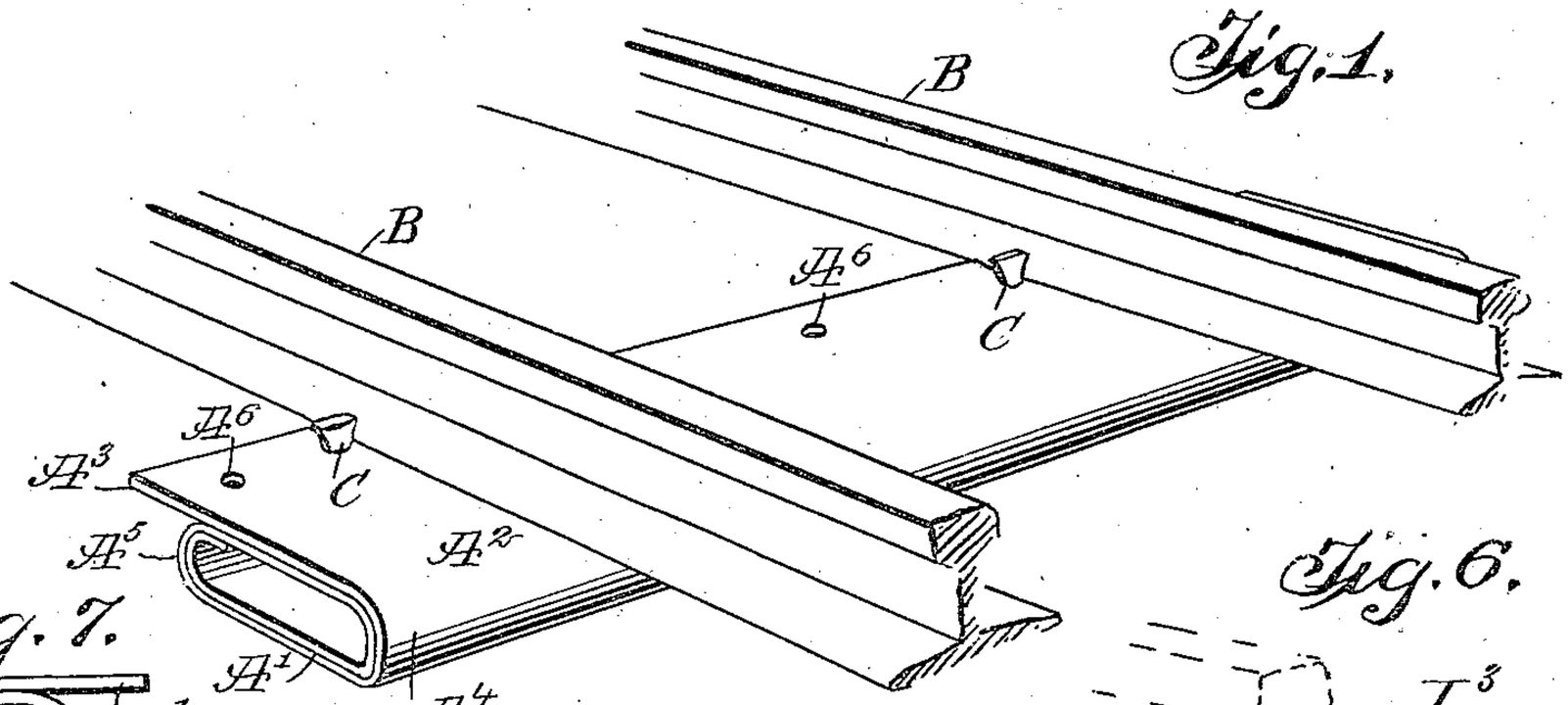


Fig. 7.

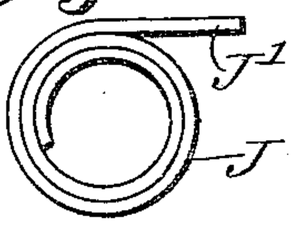


Fig. 6.

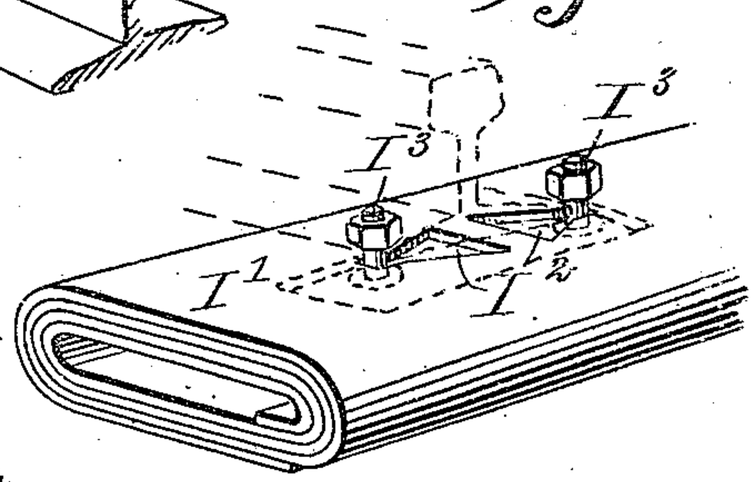


Fig. 2.

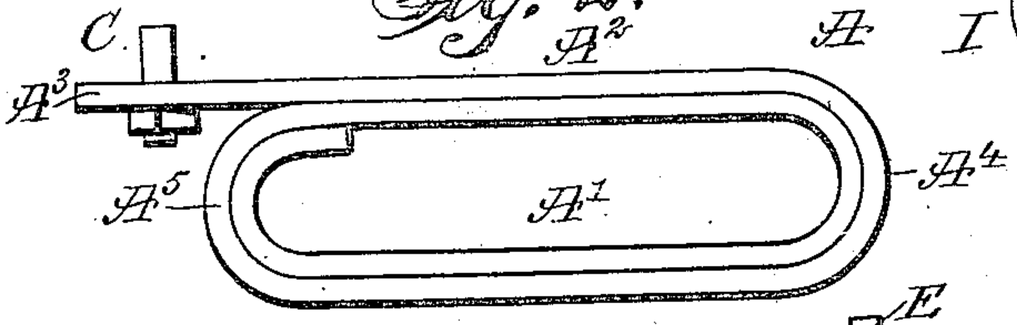


Fig. 3.

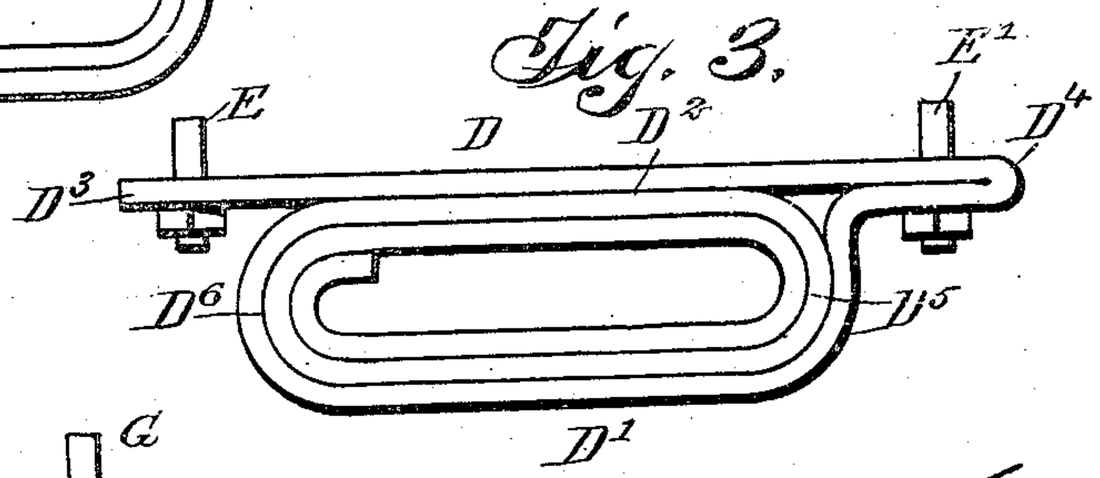


Fig. 4.

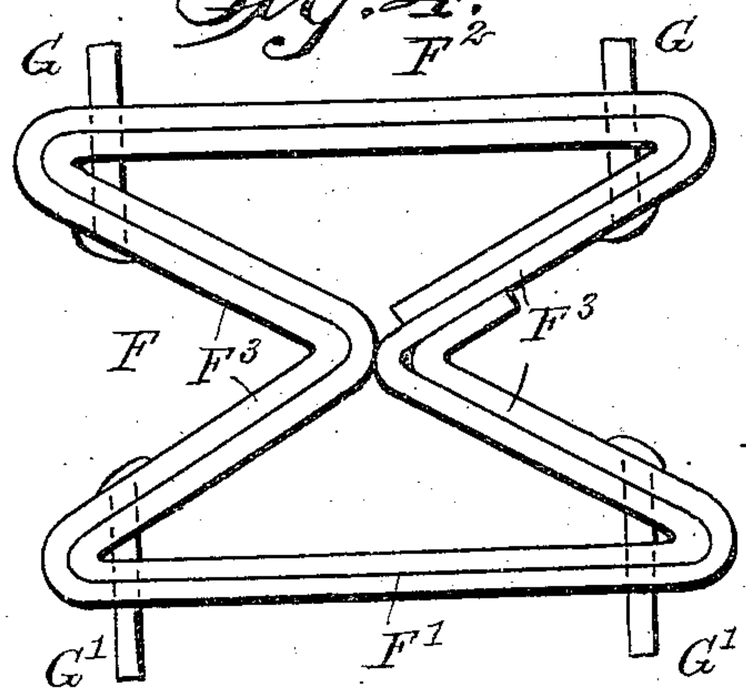


Fig. 5.

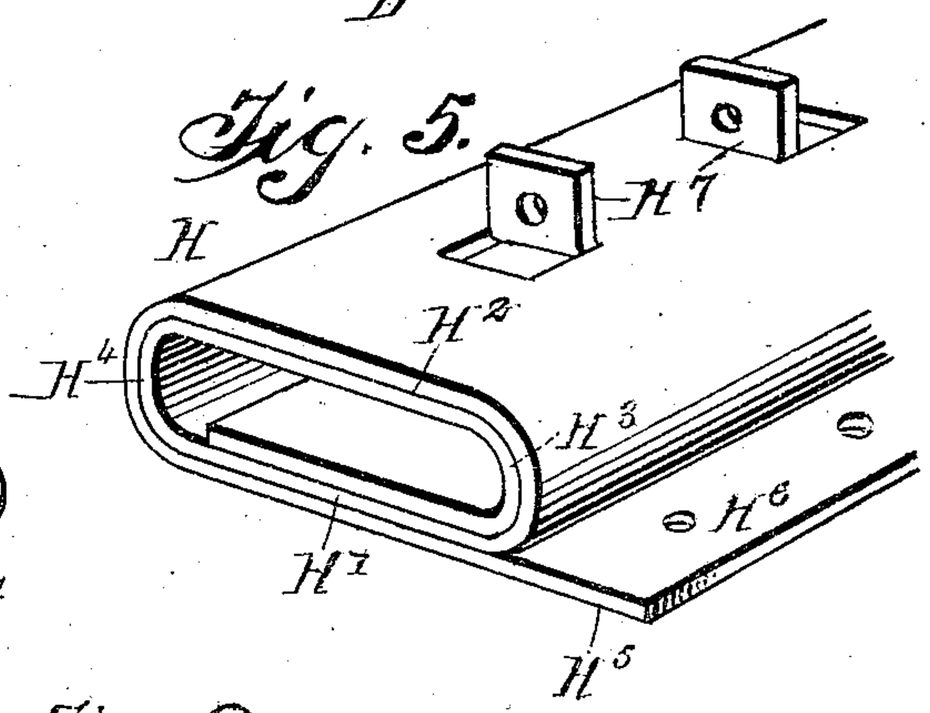
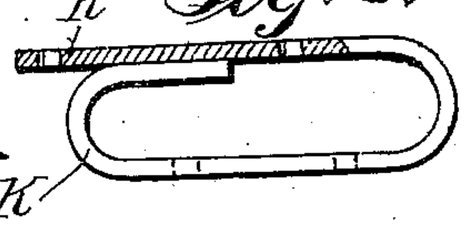


Fig. 8.



WITNESSES

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RAILROAD-TIE.

No. 855,277. Specification of Letters Patent. Patented May 28, 1907.

Application filed January 26, 1907. Serial No. 354,173.

To all whom it may concern:

Be it known that I, ROBERT L. BOWER, a citizen of the United States, and a resident of Blandburg, in the county of Cambria and State of Pennsylvania, have invented a new and Improved Railroad-Tie, of which the following is a full, clear, and exact description.

The invention relates to metallic railroad ties, and its object is to provide a new and improved railroad tie which is simple, durable and exceedingly strong in construction, practically indestructible, cheap to manufacture and sufficiently elastic to slightly yield according to the load.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improvement as applied; Fig. 2 is an enlarged end elevation of the improvement; Figs. 3 and 4 are end elevations of modified forms of the improvement; Fig. 5 is a perspective view of another modified form of the improvement; Fig. 6 is a perspective view of another modified form of the improvement; and Figs. 7 and 8 are end elevations of other modified forms of the improvement, part of Fig. 8 being shown in section.

The metallic railroad tie is made from a single piece of sheet metal A of a width corresponding to the length of the tie, the sheet metal being rolled up so as to produce a tie of uniform strength and of practically normal width and thickness, as plainly indicated in the drawings. The sheet of metal A may be rolled up in various forms, as indicated in the drawings, but in such a manner that each tie is preferably provided with a base A′ and a flat top A^2, arranged to support the rails B, as indicated in Fig. 1. In the preferred construction shown in Fig. 1, the base A′ as well as the top A^2 are flat and are formed of multiple layers.

The uppermost layer of the top A^2 is preferably extended, as at A^3, beyond one side of the tie, and on this extended portion are held suitable fastening means C for engaging the base of the rail, to securely hold the same in position on the top A^2 of the tie.

As illustrated in Figs. 1 and 2, the fastening means C are in the form of a bolt having an enlarged head at the upper end for engagement with the base of the rail, but I do not limit myself to the particular fastening means described, as the same may be varied without deviating from my invention.

It will also be noticed by reference to Figs. 1 and 2 that one end of the sheet of metal forming the tie is the uppermost layer of the bottom or base A′ of the tie, while the other end of the piece of sheet metal forms the upper layer of the top A^2 as well as the extension A^3.

The sides A^4 and A^5 of the tie are formed of two layers, and both sides A^4 and A^5 are curved or arched, so as to give considerable strength to the hollow or tubular metal tie. The extension A^3 of the top A′ is provided with apertures A^6 for receiving spikes, bolts or other fastening means, to allow of fastening the tie to bridge planks or other supports.

In the modified form shown in Fig. 3, the sheet of metal D is rolled up to form three contacting layers at the bottom D′ and the top D^2, and the uppermost layer of the top D^2 is extended at both sides, as at D^3, D^4, to form flanges for receiving the fastening means E, E′, similar to the fastening means C above described. The extension D^4 is doubled up and the fastening means E′ pass through both layers, as indicated in Fig. 3. The sides D^5 and D^6 are formed of three contacting layers, and both sides D^5 and D^6 are rounded or arched for the purpose previously mentioned.

In the modified form shown in Fig. 4, the piece of sheet metal F is rolled up to form contacting layers, producing a flat bottom F′ and a flat top F^2 and angular sides F^3 in diagonal shape, as will be readily understood by reference to Fig. 4.

Fastening means G for securing the rails in place are held on the upper portion of the tie, and similar fastening means G′ are arranged on the lower or base portion of the tie, to securely fasten the latter to girders or other supports on bridges and the like.

In the modified form shown in Fig. 5, the piece of sheet metal H is rolled up into contacting layers forming a flat bottom H′, a flat top H^2 and curved sides H^3, H^4, similar to the one shown in Figs. 1 and 2. Both ends of the sheet of metal form portions of the bottom H′ and the outer end is extended, as at H^5, to produce a larger base, the extension H^5 being provided with apertures

H^6 for spikes, bolts and like devices, to permit of securing the tie to girders or other supports. The uppermost layer of the top H^2 of the tie shown in Fig. 5 is provided with struck up lugs H^7, between which passes the base of the rail resting on the upper surface of the top H^2, and the said lugs H^6 are provided with apertures for bolts to hold the rail in place on the tie.

In the modified form illustrated in Fig. 6, the piece of sheet metal I is rolled up into a large number of contacting layers, to form an exceedingly strong tie for heavy traffic. The uppermost or top layer I′ is provided with cut-out portions I^2 for the reception of bolts or like fastening devices I^3, to securely fasten the rail in place.

In the modified form shown in Fig. 7, the piece of sheet metal J is rolled up to form a round bottom and a flat extension top J′ for the rail to rest on, and in the modified form shown in Fig. 8, the piece of sheet metal K is rolled up to form a single convolution having an extension top K′ for the rail to rest on. This form is more especially designed for light traffic. In both forms shown in Figs. 7 and 8, the top is provided with holes for the reception of bolts or other fastening devices to secure the rails in place.

Although I have shown some forms of the approved tie it is evident that I do not limit myself to the same, as the piece of sheet metal may be rolled up into different shapes without deviating from the invention. It is understood, however, that by rolling up the sheet metal to form contacting layers an exceedingly strong and durable tie is produced and one which is sufficiently elastic and yielding to compensate for the load. It is understood that for light traffic the piece of sheet metal is rolled up to form, say one or two contacting layers, as illustrated in Figs. 1 and 8, but for heavier traffic three, four or more such contacting layers are preferred, so as to give the desired strength to the tie.

It will be evident from the description, that the improved tie consists of a sheet of metal rolled up to form a plurality of superimposed convolutions, and that the outermost or free edge of the sheet is extended at a tangent to the outer convolution to form a brace to prevent the rolling of the tie.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A railroad tie made of a sheet of metal rolled up to form a plurality of superimposed convolutions.

2. A railroad tie made of a sheet of metal rolled up to form a plurality of superimposed convolutions, and having a flat base for the railroad bed and a flat top for the rails to rest on.

3. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up to form contacting layers, the lower multiple layers producing a flat base and the upper multiple layers producing a flat top.

4. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up to form contacting layers, the lower multiple layers producing a flat base and the upper multiple layers producing a flat top, and fastening devices on the said top for securing the rails in place.

5. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up to form contacting layers, the lower multiple layers producing a flat base and the upper multiple layers producing a flat top, the latter terminating in a single layer, and fastening means on the said terminals for engaging the rails.

6. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up into tubular form, the tube having multiple layers at the flat top and the flat bottom.

7. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up into tubular form, the tube having multiple layers at the flat top and the flat bottom, one end of the said sheet forming the upper layer of the bottom of the tie and the other end of the said sheet forming the upper layer of the top of the tie.

8. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up into tubular form, the tube having multiple layers at the flat top and the flat bottom, one end of the said sheet forming the upper layer of the bottom of the tie and the other end of the said sheet forming the upper layer of the top of the tie, the said upper layer of the top of the tie being extended beyond one side thereof.

9. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up into tubular form, the tube having multiple layers at the flat top and the flat bottom, one end of the said sheet forming the upper layer of the bottom of the tie and the other end of the said sheet forming the upper layer of the top of the tie, the said upper layer of the top of the tie being extended beyond one side thereof, and fastening means on the said extended portion for securing the rails in place.

10. A railroad tie made of a sheet of metal rolled up to form a plurality of superimposed convolutions, the free edge of the sheet being extended at a tangent to the outer layer, whereby to form a brace to prevent rolling of the tie.

11. A railroad tie made of a sheet of metal rolled up to form a tube, the free edge of the sheet being extended at a tangent to the tube to form a brace to prevent rolling of the tie.

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

ROBERT L. BOWER.

Witnesses:

JUDSON H. CHASE,

J. A. MCDONALD.