(No Model.)

W. A. GRAEBER.

METALLIC RAILWAY TIE.

No. 477,112. Patented June 14, 1892.

Fig. 4.

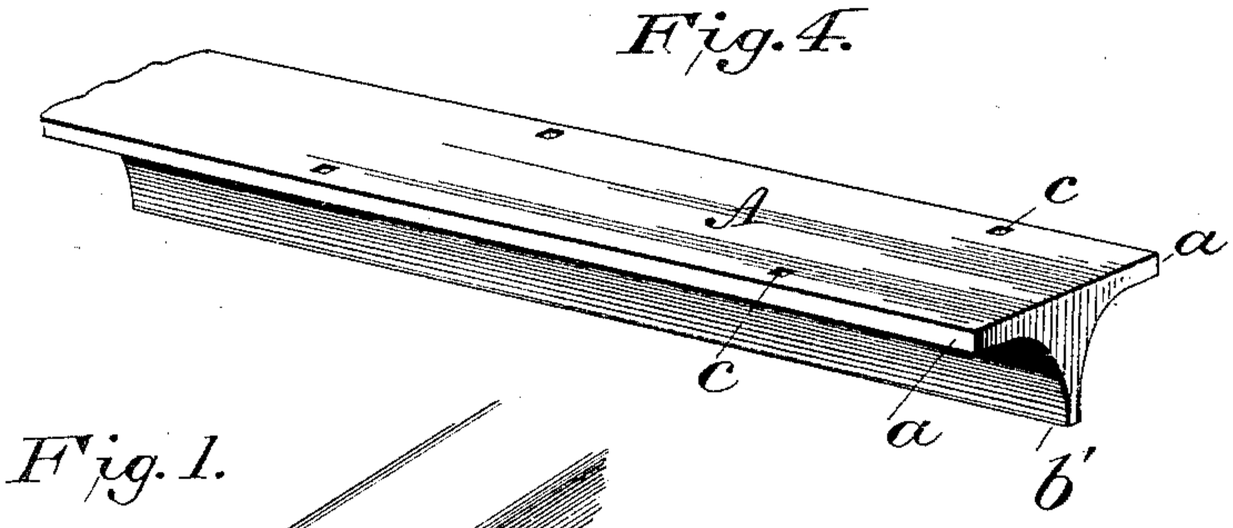


Fig. 1.

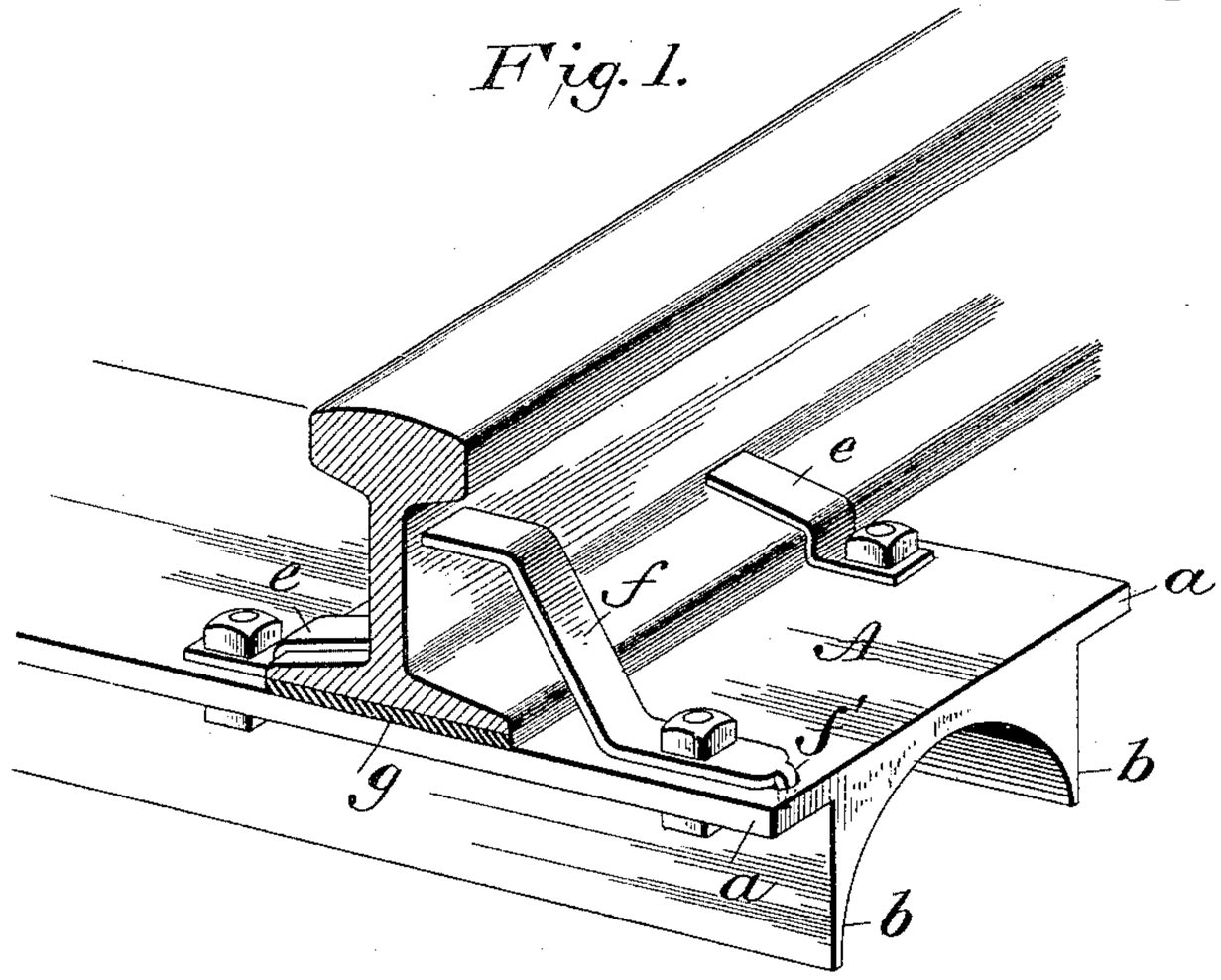


Fig. 2.

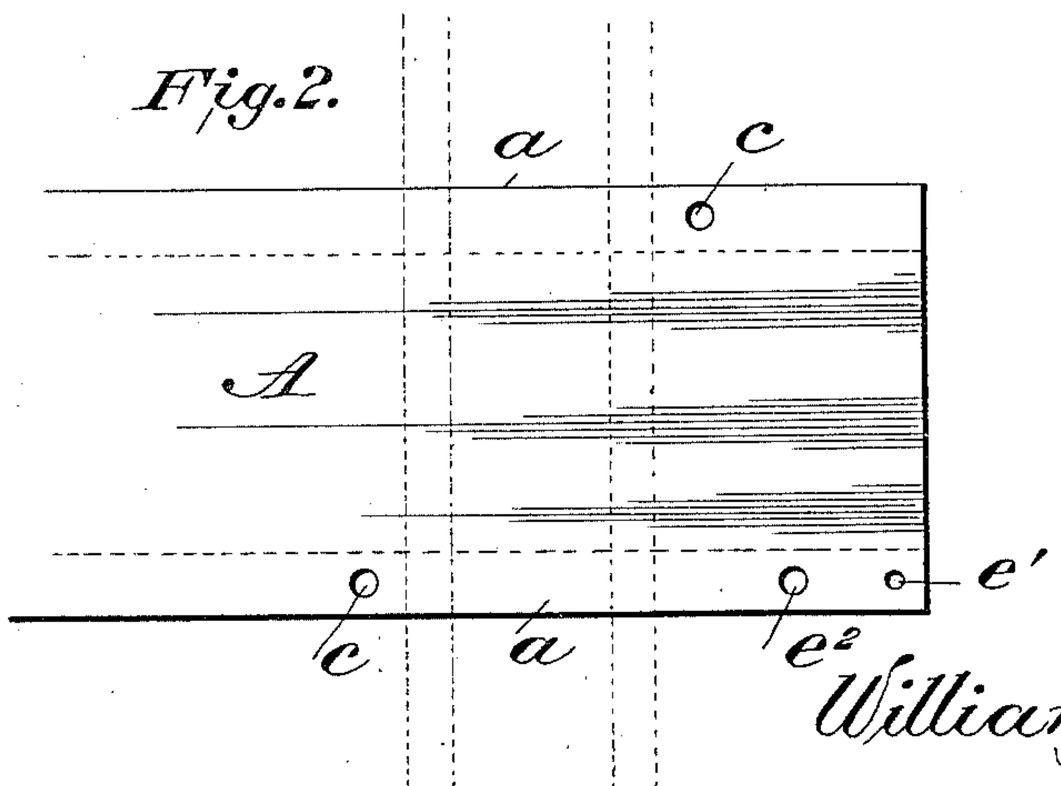
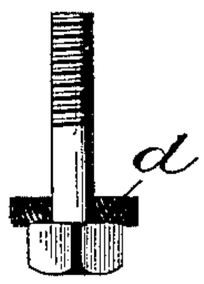


Fig. 3.



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METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 477,112, dated June 14, 1892.

Application filed February 11, 1892. Serial No. 421,135. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. GRAEBER, a citizen of the United States of America, residing at Shenandoah, in the county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Metallic Railway-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in metallic railway-ties.

The object of the invention is to provide a metallic tie which is cheap in construction, easily placed in position, and adapted to have the earth packed under the same from the ends, said tie having side flanges, which are apertured for the reception of bolts for connecting the rail thereto; and the invention consists in providing elastic washers between the heads of the bolts and flange of the tie and in the construction and combination of the parts, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view showing a portion of a railway-tie constructed in accordance with my invention. Fig. 2 is a plan view. Fig. 3 is a detail view of one of the bolts detached, showing the elastic washer thereon. Fig. 4 is a perspective view of a modification.

A designates the metallic tie, which is preferably made of Bessemer steel, either cast or rolled, and presents a flat upper surface and side flanges *a a*. The body of the tie extends downward to provide webs *b b*, having straight outer sides, said webs being connected to each other by an arch, as shown, so as to give greater rigidity to the structure and provide the webs with tapered inner sides for the purpose hereinafter set forth. The laterally-projecting flanges *a a* are apertured at *c c* for the reception of bolts which are passed through from the under side of said flanges and provided with washers *d* of some suitable elastic material, and upon the upper ends of the bolts and upon the flat surface of the tie are placed the clamping-plates *e*, which engage with the base-flange of the rail. Where curves occur in the track, I employ a brace-plate *f*, through which passes a bolt for securing the same to the tie, the end *f'* of said brace-plate being bent down to engage with an aperture *e'* near the edge of the tie. Before the rails are placed in position a suitable elastic strip *g* is placed beneath the same and upon the tie, which serves to give the desired degree of elasticity between the parts.

In Fig. 4 of the accompanying drawings I have shown a metallic tie which, instead of being provided with depending webs, as shown in Fig. 1, has a single central depending web *b'*, the side edges of which are curved. In this form of construction I still preserve the laterally-extending flanges *a a* and perforations, and beneath the flanges the elastic washers may be placed. This form of tie is intended to support light rails or tracks, such as are used in mines, coke-ovens, &c.

I am aware that prior to my invention it has been proposed to provide metallic ties for railways, and I therefore do not claim such, broadly; but by providing a tie having a flat upper surface with depending webs, as *b*, with curved inner sides when the same is set or embedded in the ground said curved inner sides will force the earth or packing forming the roadbed within the same and prevent the earth being forced on each side of the tie and away from the same and the side flanges having the apertures will obviate the necessity of removing the tie should it be desired to replace the bolts after the tie has been set. It will be noted that the elastic packing used with the bolts is placed under the flanges *a*, so that it will be protected against the weather and will not deteriorate from exposure.

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

1. A metallic railway-tie having a flat upper surface, depending portions or webs *b*, connected to each other by an arched portion, and laterally-extending flanges *a a* beyond the straight walls of the webs, having apertures *c c*, substantially as shown, and for the purpose set forth.

2. The combination, in a metallic railway-tie having a flat upper surface and laterally-projecting flanges *a a*, vertical depending portions or webs having straight outer and curved inner sides, bolt-holes *c c*, extending through the flanges *a a*, clamps *e*, adapted to be engaged by bolts, and apertures *e'* and e^2, adapted to receive a bolt and the end of a brace-plate *f*, substantially as shown, and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM A. GRAEBER.

Witnesses:

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J. R. COYLE.