

(No Model.)

J. W. YOUNG.
METALLIC RAILROAD TIE.

No. 284,157.

Patented Aug. 28, 1883.

Fig. 1.

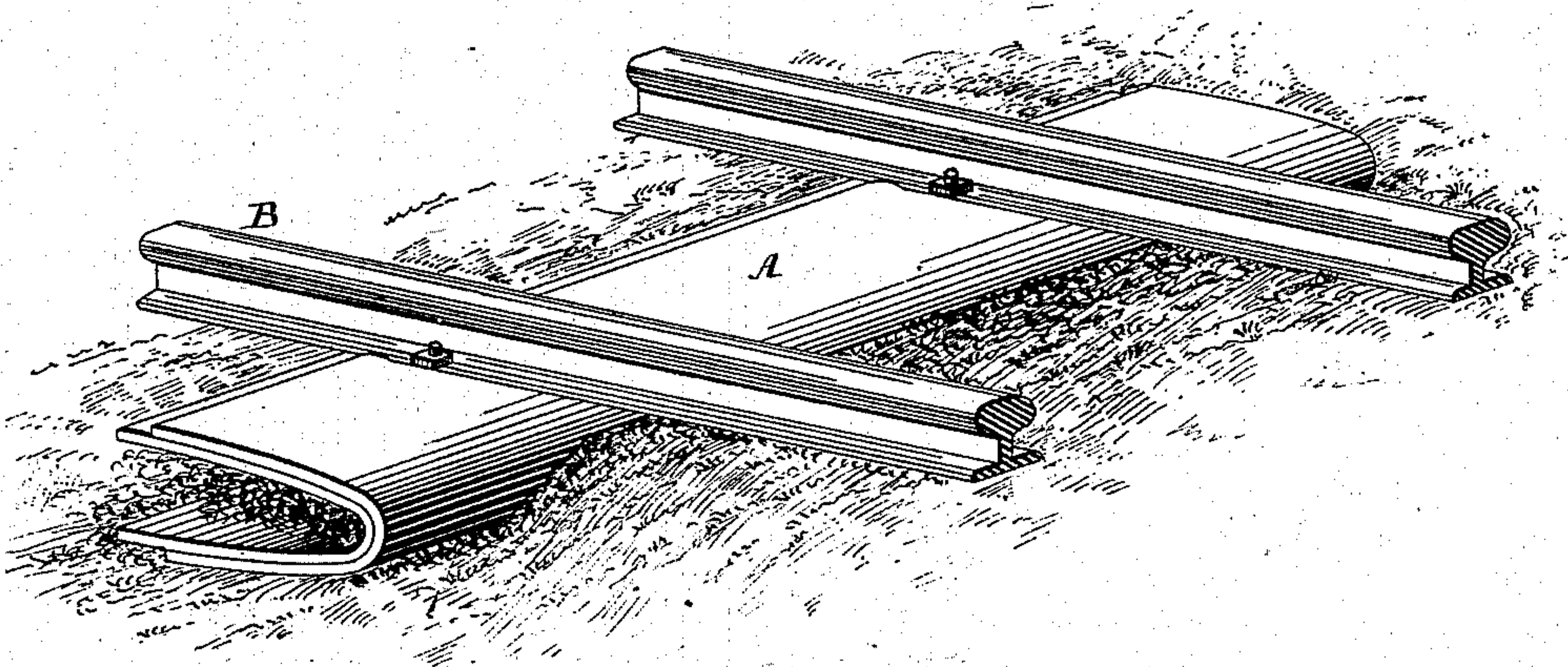


Fig. 3.

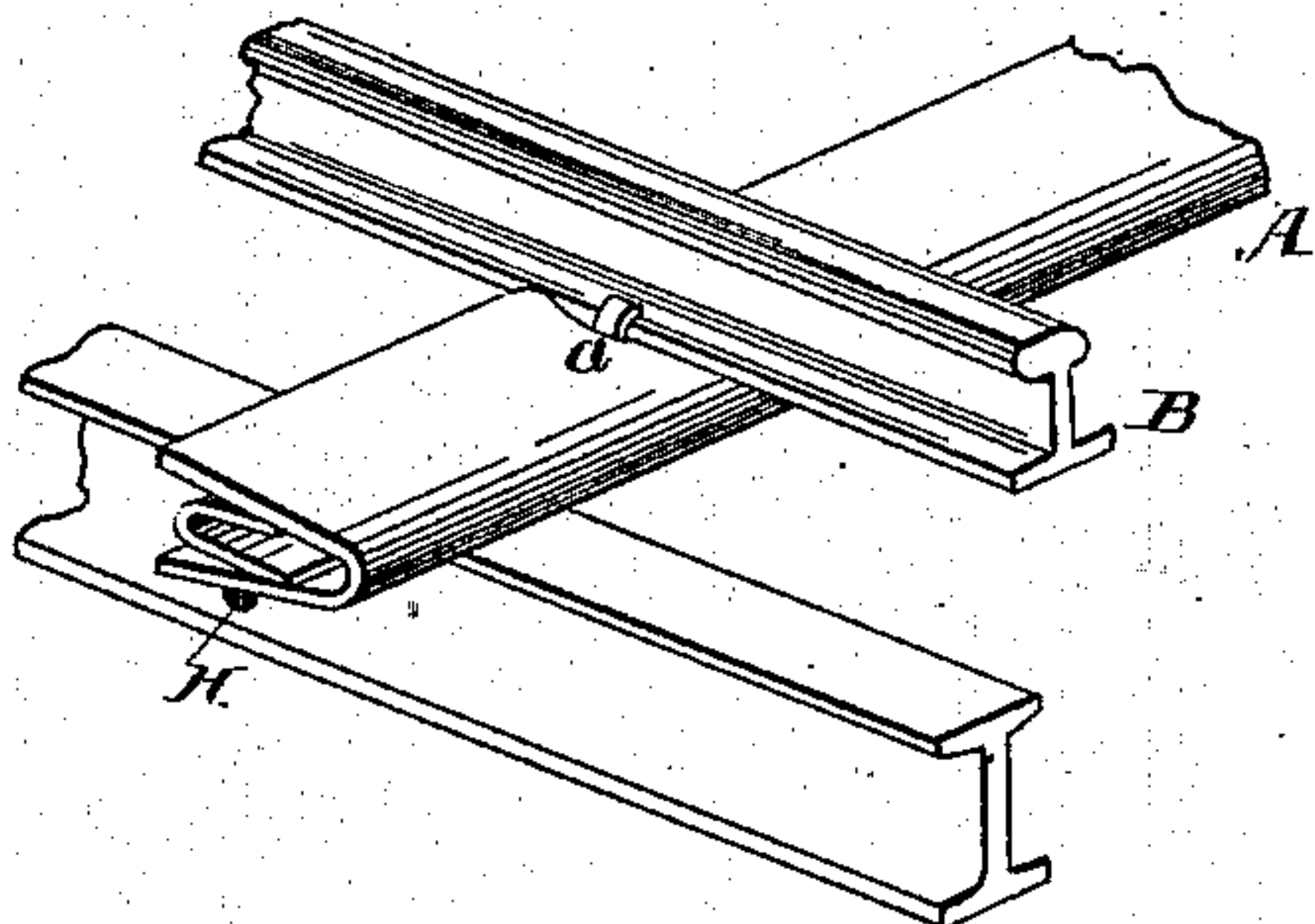


Fig. 4.

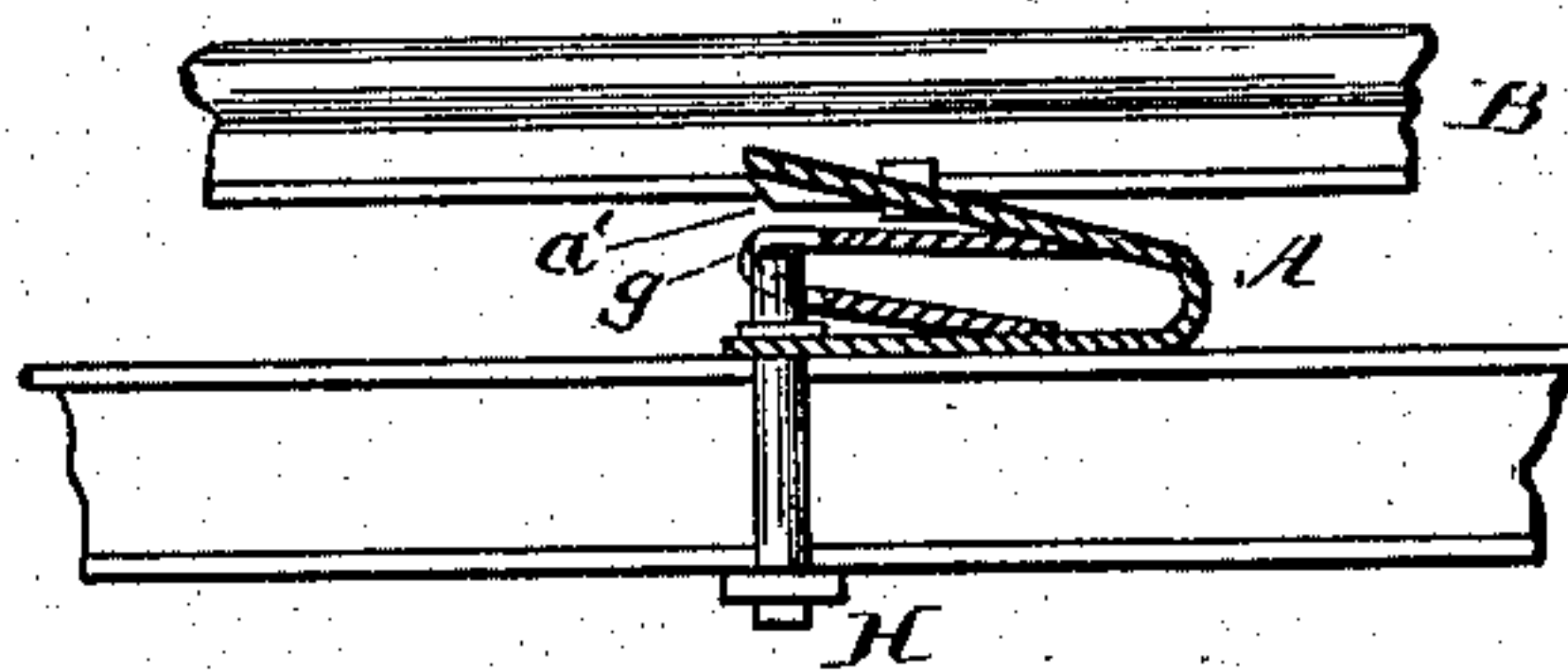
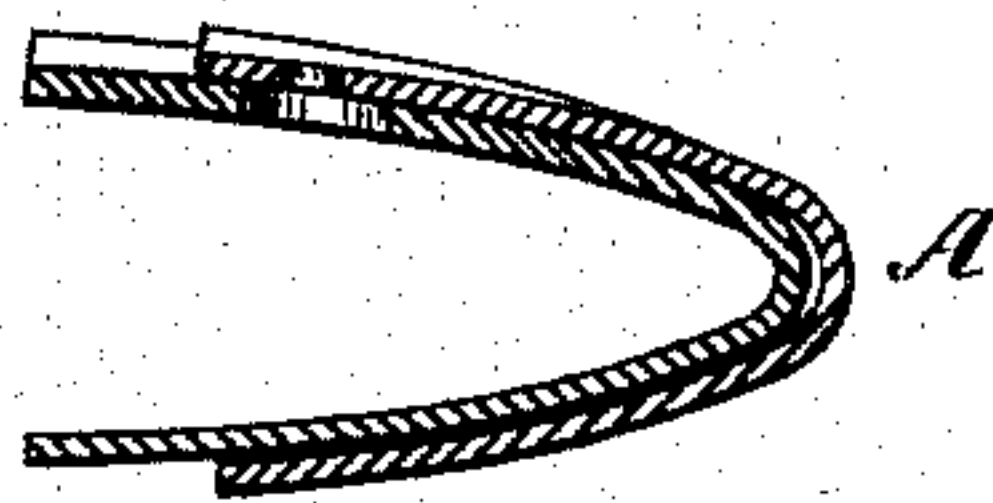


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. YOUNG, OF FORT MORONI, ARIZONA TERRITORY.

METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 284,157, dated August 28, 1883.

Application filed March 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. YOUNG, a citizen of the United States, residing at Fort Moroni, in the county of Yavapai and Territory of Arizona, have invented certain new and useful Improvements in Metallic Railroad-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 or figures of reference marked thereon, which form a part of this specification.

This invention relates to a metallic tie or sleeper for railroads of all kinds, and has for its object to combine cheapness and durability of construction and greater elasticity than is possessed by metallic railroad-ties heretofore known.

The invention consists in constructing a tie or sleeper of a sheet-metal plate, which is rolled or bent into a trough or U shaped body, and is laid with one of its sides upon the ground. The track-rails rest upon the uppermost plate, and are secured to the free end of the latter, so that the tie will be elastic throughout its entire length, the rail-supporting surface being suitably shaped, so as to present a firm bearing for the rails, and seats being preferably formed at the front edge of the top plate of the tie by depressing the metal thereat. The tie is embedded in the ballast of the road and receives a filling of tamped earth or other material, so that it will retain its shape and retain its elasticity.

The invention also consists in a tie or sleeper constructed of a trough or U shaped inner plate or plates, which may be inverted for imparting additional strength to the latter, a tie of this construction being designed for use upon an elevated-road structure, or upon railways having a metallic or unyielding substructure or foundation. A tie having an interposed re-enforcing plate or body is secured to longitudinal girders or stringers by means of fastening devices, which are made sufficiently long to extend through notches made in the back of the interposed plate and prevent their lateral displacement.

The tie or sleeper A, for supporting the track-

rails B, is constructed of one or more sheet-metal plates bent or rolled into a trough or U form. It may suffice in light-traffic railroads to make the tie of a single plate; but to give greater strength and durability it is preferable to make the tie of two or more trough or U shaped bodies placed one within the other, as is shown in Figure 1.

A tie constructed of sheet metal in the manner stated is designed to be laid upon the ground or road-bed, with one of its sides resting upon the ground, as is clearly shown in Fig. 1, and a filling, preferably of earth, is packed into the tie and around the front and back of the same, so as to firmly hold it in the ground. It is not always necessary to completely cover the tie with the ballast of the road; but, when desired, the ballast, in the form of broken stone or earth, may be packed upon the tie between the rails.

I desire it to be understood that, although the ballast of the road may consist entirely of broken stone, it is deemed advisable to have the filling for the ties preferably of earth.

The track-rails are supported upon the top of the tie, or the upper plate or member thereof, and are secured thereto by means of bolts or equivalent devices *a*, which engage with the base-flanges of the rails, and extend through the top of the tie, at or near its front or free end. The tie, whether made of one or more plates, can be provided with elongated holes for the passage of the rail-fastening bolts or devices *a*, so as to permit the necessary play of the plate or plates upon the bolts.

The top of the tie, or those portions thereof lying under the rails, may be flattened, as shown at *a'*, so as to afford a bearing for the rails and form a chair to prevent the track from spreading.

It will be manifest that a sheet-metal tie laid on a road-bed in the manner shown, and containing a filling of earth or other material, will possess a great degree of elasticity and firmness, and it can be more easily handled than ties heretofore known.

In elevated or other railroads possessing a substructure of metal or rigid longitudinal supports for the cross-ties I propose to use ties which are constructed of an outer plate or trough-shaped body, as shown in Figs. 1 and

2, and an interposed plate or body, G, as is seen in Figs. 3 and 4. In this instance the lower plate of the outer body or tie proper is secured to the stringers by means of bolts H, which pass through the bottom plate of the tie. Instead of bolts, I may employ clips or clamps, which will firmly secure the tie to the stringers or supports and permit the top of the tie to yield or move without disturbing its bottom fastening.

In the form of re-enforced tie shown in Figs. 3 and 4 the interposed plate or body is of similar shape as the outer member or tie proper, but is inverted, the back of this interposed body being made with slots *g*, which receive the heads or upper ends of the bolts H, so as to secure or hold the component members of the tie by one and the same fastening device.

Instead of using a single inverted interposed plate, as shown in Figs. 3 and 4, a tie adapted for solid substructures may be constructed of several layers of plates nested into each other and held together in a suitable manner, so as to possess a maximum degree of strength without destroying its elasticity.

I am aware that sheet-metal railroad-ties have heretofore been proposed; but they have not, to my knowledge, been constructed and

used in the manner contemplated by me; and I am also aware that elastic ties composed of upper and lower flexible members are also not broadly new.

What I claim as new, and desire to secure by Letters Patent, is—

1. An elastic sheet-metal railroad-tie made of one or more troughs or U-shaped bodies, and having one of its side plates forming the top or rail-supporting portion of the tie, substantially as and for the purpose set forth.

2. The combination of an inverted re-enforcing body or plate, U-shaped, with an outer U-shaped tie adapted to support the rails upon its top, substantially as and for the purpose set forth.

3. The combination of the interposed inverted plate, having slots in its back, with the tie or outer plate, the supporting girders or stringers, and the bolts for holding the tie and interposed plate, substantially as and for the purpose set forth.

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

JNO. W. YOUNG.

Witnesses:

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