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A. J. REITZ & J. H. LANGE.

METAL RAILWAY TIE.

(Application filed Dec. 23, 1901.)

(No Model.)

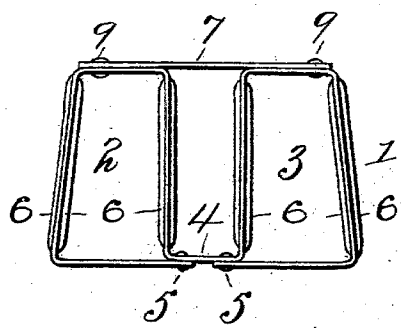


Fig. 2.

Fig. 1.

Fig. 3.

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT J. REITZ, OF PORTSMOUTH, OHIO, AND JOSEPH H. LANGE, OF ALLEGHENY, PENNSYLVANIA.

METAL RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 704,932, dated July 15, 1902.

Application filed December 23, 1901. Serial No. 86,943. (No model.)

To all whom it may concern:

Be it known that we, ALBERT J. REITZ, a resident of Portsmouth, Ohio, and JOSEPH H. LANGE, a resident of Allegheny, Pennsylvania, have invented a new and useful Improvement in Metal Railway-Ties, which invention is fully set forth in the following specification.

Our invention relates to metallic railway ties or sleepers, and has for its object to provide a tie of this character which can be cheaply manufactured, while at the same time being strong and durable and capable of being effectively and securely retained in place in the ballast or road-bed.

A further object is to provide means for effectively securing the rails in position upon the ties.

With these objects in view the invention consists in a tie formed of a plurality of tubular metal sections secured together by a connecting-web. Preferably said tubular sections or parts are each nearly rectangular in cross-section, with the side walls slightly inclined toward each other and the distance across the bottom wall a little greater than across the top wall. Preferably, also, the connecting-web connects the lower adjacent corners of the parallel tubular parts, so as to form a channel between said parts, which channel is thus closed as to its sides and bottom and open as to its ends and top. This channel is adapted to receive ballast to aid in securing the tie in its position in the road-bed, while the connecting-web and bottoms of the tubular sections or parts form a broad base for the tie to rest upon. In order to counteract any tendency of the tie to move or slip endwise, some or all of the side walls of the tubular sections or parts may be corrugated, the corrugations preferably extending vertically up and down said walls.

The rails might, if desired, rest directly upon the top of the tie; but we prefer to use a bed-plate bolted or otherwise secured to each tubular section, the rail being connected to the tie by a bolt passing through said bed-plate and the top wall of the tie, which bolt is provided with means for enabling it to securely clamp the rail to the tie. In its preferred form the tie is constructed of a single metallic plate rolled or pressed into shape, so as to form the plurality of tubular sections and their connecting-web.

It will be apparent to the skilled mechanic that the inventive idea involved in our improved tie may receive various mechanical expressions without departing from the spirit of the invention, and for the purpose of illustrating the invention we have shown one of the forms thereof in the accompanying drawings, in which—

Figure 1 is a perspective view of the tie. Fig. 2 is a cross-section thereof. Fig. 3 is a side elevation of the rail-securing bolt-nut and clamp, and Fig. 4 is a plan of said clamp.

Referring to the drawings, 1 is the tie, composed of the two tubular parts or sections 2 and 3, arranged substantially parallel to each other and connected by the web 4. In its preferred form and as here shown the tie is formed as a single sheet of metal rolled or pressed into proper shape, with the edges of the plate secured to the web 4 by rivets or bolts 5. The side walls of the sections 2 and 3 are provided with corrugations or indentations 6, in which the ballast or material of the road-bed engages and counteracts the tendency of the tie to slip or creep endwise. Bed-plates 7 are secured to the top of the tie, near the opposite ends thereof, as a bed or resting-place for the rails 8, though said plates 7 may be omitted. When employed, however, they may be secured in place either by bolts or rivets 9, Fig. 2, or by the same bolt used in securing the rails 8 in place upon the tie. Such bolt is shown in detail in Fig. 3, in which 10 and 11 are, respectively, an ordinary bolt and nut, and 12 is a clamping-finger, having an opening 13 of sufficient diameter to slip over the bolt 10, and having a lip 15, whose under surface is shaped to correspond with the upper surface of the bottom side flange of the rail, while the other side or edge of the clamping-finger has a rib 16 on its under surface. When in position, the bolt passes upward through the upper wall of the tie (and the bed-plate, if one is used) at the side of the rail, the clamping-finger is placed in position on the bolt with the lip 15 resting on the rail and the rib 16 on the tie or bed-plate, as the case may be, and the nut 11 is then screwed onto the bolt,

thereby forcing the lip 15 down with great power upon the rail.

Having thus described our invention, what is claimed is—

1. A metallic railroad-tie consisting of a plurality of connected tubular sections having corrugated walls.

2. A metallic railroad-tie consisting of a plurality of tubular sections connected by a rigid web and having corrugated walls.

3. A metallic railroad-tie consisting of a plurality of substantially rectangular tubular sections connected at their lower adjacent corners by a rigid web, said sections having their upright walls corrugated.

4. A metallic railroad-tie consisting of a plurality of connected tubular sections formed of a single continuous sheet or plate of metal and having corrugated walls.

5. A metallic railroad-tie consisting of a plurality of tubular substantially rectangular sections with their lateral walls corrugated and connected along their lower adjacent angles by a web, said web and sections being formed of a single continuous sheet or plate of metal.

6. The combination of a metallic railroad-tie consisting of a plurality of substantially rectangular tubular sections connected along their lower adjacent angles by a web, a bed-plate resting on said tubular sections, a rail resting on said bed-plate, a clamping-finger having a lip engaging the rail and a rib bearing on the plate, and a bolt passing through the clamping-finger, bed-plate and tie, whereby the rail is firmly secured in position.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

ALBERT J. REITZ.
JOSEPH H. LANGE.

Witnesses to Albert J. Reitz's signature:
EDGAR T. DRAPER,
JOHN W. BERNDT.
Witnesses to Joseph H. Lange's signature:
JOSEPH HOWAT,
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