No. 614,614. Patented Nov. 22, 1898.

J. M. HOON.

METALLIC RAILWAY TIE.

(Application filed Apr. 9, 1898.)

(No Model.)

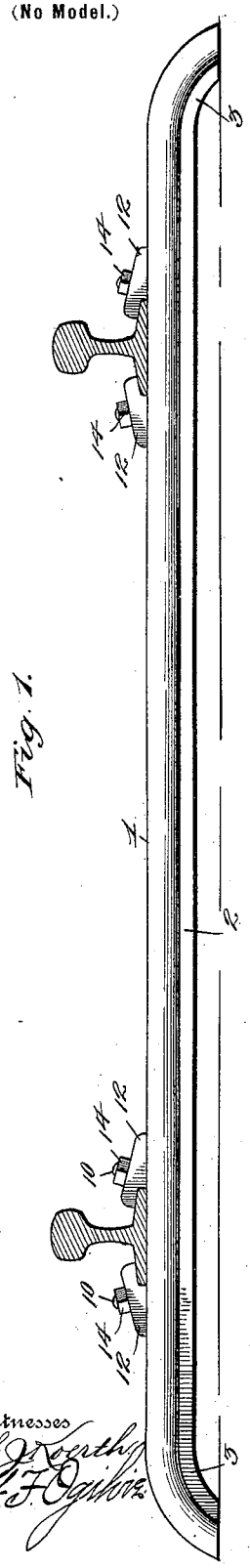


Fig. 1.

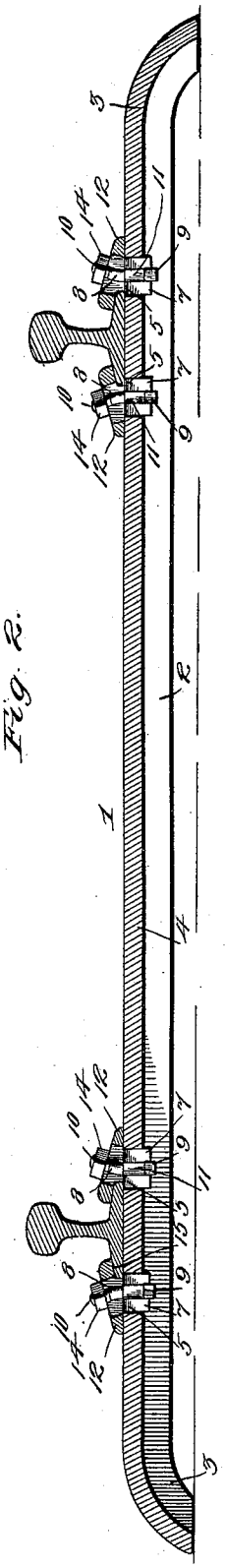


Fig. 2.

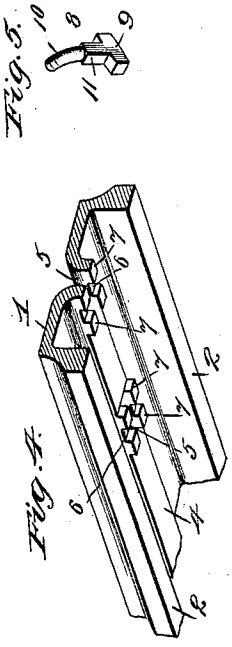


Fig. 4.

Fig. 5.



Fig. 6.

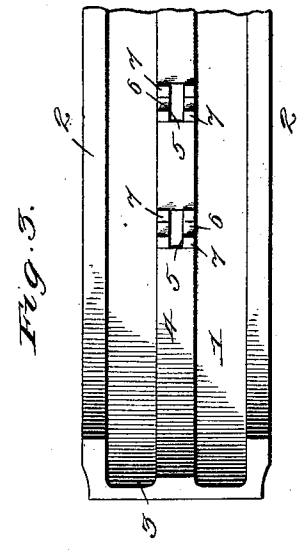


Fig. 3.

Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN M. HOON, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE FORT DEARBORN IRON COMPANY, OF SAME PLACE.

METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 614,614, dated November 22, 1898.

Application filed April 9, 1898. Serial No. 677,028. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. HOON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Metallic Railway-Ties, of which the following is a specification, reference being had therein to the accompanying drawings.

In metallic railway-ties it is very important that they should be so constructed as to prevent lateral and longitudinal displacement on the road-bed and also be able to withstand the impact and strain of heavy and rapidly-moving trains. It is also important that the bolts should be capable of being easily and rapidly engaged with the tie and disengaged therefrom when necessary without removing the tie from the road-bed. In these ties also the holes made for the passage of the bolts necessarily weakens the ties, so that they should be strengthened or reinforced at such points.

The object of my invention is to provide an improved construction of metallic tie formed with downwardly-extending longitudinal flanges at the sides and having downwardly-curved ends which engage with the road-bed to prevent lateral and longitudinal displacement, a central strengthening-rib extending from end to end of the tie, and rectangular bolt-holes near each end formed with downwardly-extending longitudinal walls having opposite recesses formed by swaging or stamping the metal of said walls up against the under side of the rib, forming seats for the heads of the bolts and also strengthening the tie at such points.

It is also an object to provide a bolt and clip to be used in connection with the tie for holding the rail thereon, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a railway-tie constructed in accordance with my invention, showing a rail secured thereto near each end. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a detail bottom view of the tie. Fig. 4 is a detail perspective view looking from the under side. Fig. 5 is a perspective view of one of the bolts. Fig. 6 is a perspective view of one of the clips.

In the said drawings the reference-numeral 1 designates the metallic tie having the sides bent downwardly, forming flanges 2, and the ends turned downwardly, forming curved portions 3. Upon the under side the tie is formed with a central reinforcing or strengthening rib 4, extending from end to end thereof. Near each end the tie is formed with two longitudinal rectangular bolt-holes provided at their under sides with downwardly-extending flanges 5, formed with opposite central recesses or seats 6, with reinforcing or strengthening portions 7.

The tie is produced by suitable machinery, and the bolt-holes are formed by first making a longitudinal slit of a length equal to the hole, then forging or swaging the metal at the sides of the slit, forming downwardly-extending flanges 5, and then forming the seats or recesses 6 by forging or swaging the metal of said flanges intermediate the ends thereof. The above operations can all be performed by suitable machinery while the metal is at high temperature, and said recesses form seats for the heads of the bolts, as hereinafter described.

The numeral 8 designates the bolts, comprising the elongated rectangular head 9, of a length about equal to that of the holes, a screw-threaded shank 10 to receive a nut, and a square shoulder 11 intermediate said head and shank. The said shank is bent or inclined outwardly at an angle to the head, so as to allow the nut to fit squarely on the beveled upper side of the clip.

The numeral 12 designates the clips, cut away at their inner sides, forming shoulders 13, which overlap the base of the rail and having their upper sides beveled and their under sides flat.

The numeral 14 designates the nuts.

In practice the ties are laid on the road-bed and the rails placed thereon, so that the bases of the rails will come between each pair of bolt-holes. The threads of the bolts are then passed through the bolt-holes till they clear the under side of the tie, when they are

given a quarter-turn, so that they will come into coincidence with the seats 6. They are then drawn upward into said seats, the square portions engaging between the holes above said seats. It will now be impossible to withdraw the bolts from the holes, as the ends of the heads project beyond the sides of the bolt-holes. The shanks of the bolts pass through slots in the clips and are engaged by the nuts. To remove the bolts, the nuts are loosened, and then they are given a quarter-turn backward, when the heads of the bolts and the bolt-holes will come into longitudinal alinement, when they can be readily withdrawn.

Having thus fully described my invention, what I claim is—

1. As an improved article, a metallic railway-tie, provided with a central longitudinal strengthening-rib, and formed near each end with rectangular bolt-holes having downwardly-depending parallel flanges recessed to form seats opposite to each other, substantially as described.

2. As an improved article a metallic railway-tie, having downwardly-depending side flanges, downwardly-curved ends, a central longitudinal strengthening-rib on its under side, and formed near each end with rectangular bolt-holes, having downwardly-depending parallel sides or flanges, provided with opposite seats or recesses, substantially as described.

3. The combination with a metallic railway-tie, having a central longitudinal strengthening-rib on its under side, formed with rectangular bolt-holes near each end, and downwardly-depending sides or flanges, formed with reinforced seats or recesses registering with each other, of the bolts, comprising the elongated heads, the square shoulders and the screw-threaded shanks, substantially as described.

4. The combination with a metallic railway-tie, having a central longitudinal strengthening-rib on its under side, formed with rectangular bolt-holes near each end, and downwardly-depending sides or flanges, formed with opposite alined reinforced seats or recesses, of the bolts having elongated heads, and shoulders and the inclined screw-threaded shanks, the clips having beveled upper sides and the nuts, substantially as described.

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

JOHN M. HOON.

Witnesses:
GEO. M. COPENHAVER,
WM. H. DE LACY.