

(No Model.)

W. P. HALL.
METALLIC RAILWAY TIE.

No. 462,900.

Patented Nov. 10, 1891.

Fig. 1.

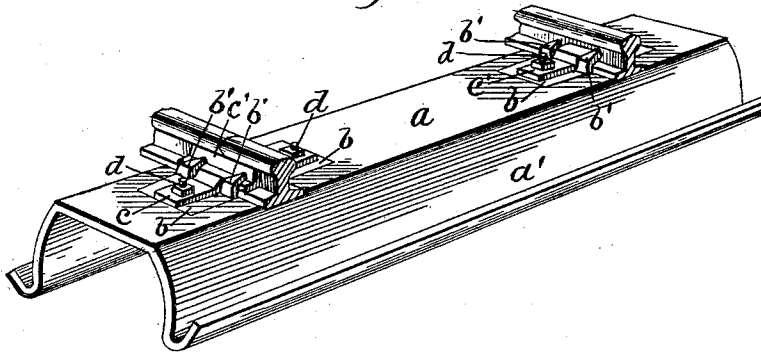


Fig. 2.

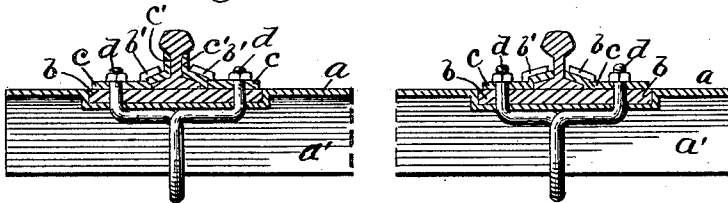


Fig. 3.

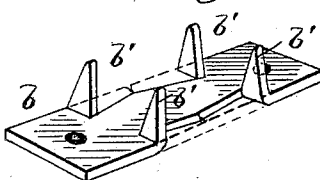


Fig. 4.

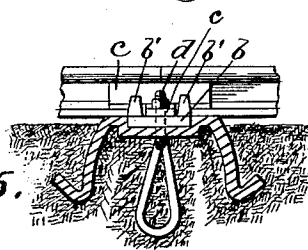
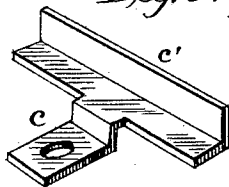


Fig. 5.



Witnesses

F. H. Gibson.

Randel Simpson

Inventor

W. P. Hall

By his Attorneys

Alexander Davis

UNITED STATES PATENT OFFICE.

WILLIAM P. HALL, OF PIQUA, OHIO.

METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 462,900, dated November 10, 1891.

Application filed April 27, 1891. Serial No. 390,524; (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. HALL, a citizen of the United States, residing at Piqua, in the county of Miami and State of Ohio, 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 the accompanying drawings, Figure 1 represents a perspective view of the improved tie; Fig. 2, a vertical longitudinal sectional view; Fig. 3, a perspective of one of the rail-chairs; Fig. 4, a vertical transverse sectional view of the tie, and Fig. 5 a detail view of one of the combined rail-clips and fish-bars.

The invention relates to that class of metallic ties which are formed by a single plate of sheet metal bent into shape by means of suitable rolls or tools; and it consists of certain novel features of construction and combinations of parts that will be fully hereinafter described, and particularly pointed out in the claims appended.

The tie is rolled, pressed, or stamped from a single sheet of thin steel or iron, and is provided with a broad bearing-surface *a* and depending flanged sides *a'*. Formed in the broad bearing-surface, one near each end thereof, are two rectangular depressions, in which fit snugly rail-carrying plates or chairs *b*, which are preferably constructed of thicker metal than the tie, and have cut or struck up from them lugs or ears *b'*, adapted to be bent down over and clamped upon the rail-flanges. Each plate is provided with two pairs of lugs, so that a pair will grasp each of the rail-flanges upon opposite sides of the rail. The lugs are formed by cutting up portions from both edges of the plates, the recesses or notches formed in the edges by cutting up the lugs coming under the rails and being hidden thereby. These rail-carrying plates are set in flush with the bearing-surface of the tie, so that the rails rest upon both the former and the latter. A pair of clips *c* is bolted upon each of the plates *b* by vertical bolts *d*, a clip being secured upon each side of the rails between the ears *b'* and adapted to assist the said ears in securely holding the rails in place. As shown at the left end of Figs. 1 and 2 and in Figs. 4 and 5, the clips *c* may have formed on their inner ends fish-bars

c', which are bent longitudinally and adapted to fit in the angle formed by the webs and flanges of the rails. These bars *c'* are clamped down between the rail-holding ears *b'* and the rail-flanges, whereby a very strong and rigid locking device for the rails is provided. The clips with fish-bars attached are particularly adapted for use at the joints of the rails; but of course they may be used with advantage at points between the joints. The clamping-bolts *d* pass up through the tie, plates *b*, and the clips, and have nuts tapped upon the upper ends. The bolts of each pair are bent toward each other close under the tie and then turned downward and connected together, so as to form a loop adapted to enter the road-bed and assist in anchoring the tie. The bolts of each pair are preferably formed of a single rod bent into shape and screw-threaded at its ends for the nuts.

A sheet-metal tie thus constructed possesses a number of important advantages. The depressions being formed by bodily depressing (without cutting) a portion of the metal of the bearing-surface not only serve to materially strengthen and stiffen the sheet-metal tie, but they also serve as firm seats for the rail-chairs and absolutely prevent them being displaced, whereby the rails will always be kept in perfect alignment. The thick plates fitted snugly in the depressions add strength to the tie and afford a secure means for fastening the rails and keeping them in alignment, the spreading of the rails being absolutely prevented by their peculiar construction. The bolts not only serve to securely tie the parts together, but their looped extensions extended into the road-bed also serve to securely anchor the tie.

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

1. The combination of a tie, rail-clips bolted thereto and provided with bars or fish-plates adapted to fit against the flanges of the rails, and ears adapted to clamp down on said fish-plates, substantially as described.

2. The combination of a tie provided with depressions in its bearing-surface, plates set in these depressions and extended under the rails and provided with clamping-ears, and rail-clips bolted to the said plates and pro-

vided with fish-bars adapted to fit the flanges and webs of the rails, substantially as described.

3. The combination of a metallic railway-tie provided with a bearing-surface and depending flanged sides, rail-clips on the bearing-surface, and a pair of bolts *d d* passed up through the bearing-surface and the clips and provided with nuts on their upper ends, the lower portions of the bolts being provided with shoulders abutting against the under side of the tie and formed into a depending anchoring loop extending into the road-bed, substantially as and for the purpose described.

4. The combination of a sheet-metal tie having a rectangular depression in its surface near each end and metal plates fitted in these depressions and having rail-clamping ears cut from their longitudinal edges and bent up so as to clamp the rail-flanges, the said plates extending across under the rails, so that the latter shall cover the notches formed by cutting up the rail-clamping flanges, substantially as and for the purpose described.

5. The combination of a tie, clips secured thereto, and bolts securing the clips to the tie, said bolts being passed up through the tie and clips and being bent laterally under the tie to form shoulders and then extended into the road-bed, substantially as described.

6. The combination of a sheet-metal railway-tie having depressions in its bearing-sur-

face, plates set in said depressions and provided with rail-clamping ears, rail-clips upon the said plates between the said ears, and vertical bolts passed up through the tie and plates and clips and having their lower ends extended into the road-bed, substantially as described.

7. The combination of a sheet-metal railway-tie having a broad bearing-surface, this bearing-surface having formed in it near each end a recess, said recesses being formed by bodily depressing a portion of the metal surface, a metal plate fitted in each of said depressions, and rail-clips, substantially as described.

8. The combination of a sheet-metal railway-tie having depending sides and a broad bearing-surface, this bearing-surface having a recess formed in it near each of its ends, said recesses being formed by bodily depressing portions of its bearing-surface, metal plates fitted in these recesses and extending transversely under the rails and coming flush with the bearing-surface of the tie, and rail-clips carried by said plate, substantially as described.

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

WILLIAM P. HALL.

Witnesses:

WALTER D. JONES,
FRANK H. REYNER.