

UNITED STATES PATENT OFFICE.

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METALLIC RAILROAD-TIE.

No. 829,655.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, HIRAM KIPP and JOHN J. ROSS, subjects of the King of Great Britain, residing at Chatham, county of Kent, Province of Ontario, Canada, have invented a certain new and useful Improvement in Metallic Railroad-Ties; and we 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification—

Our invention relates to an improvement in metallic railroad-ties and the means for engaging the rails to the tie, shown in the accompanying drawings and described in the following specification and claims.

In the drawings, Figure 1 is a perspective view of the tie, showing the rails locked in position. Fig. 2 is a perspective view of the tie. Fig. 3 is a longitudinal sectional view through the tie, showing the rails clamped in position. Fig. 4 is a perspective view of one of the clamps or fastening devices employed in securing the rails to the tie. Fig. 5 is a view of the clamp employed on the opposite side of the rail. Fig. 6 shows detail views of the locking-wedges employed to secure the clamps when in position.

The object of this invention is to construct a metallic tie simple in formation provided with rail-fastening devices which may be quickly applied and when in position will absolutely secure the rails against lateral movement, the construction being such that when it is necessary to remove the rail for repairs or other purposes it may be readily and quickly accomplished.

A further object of our invention is to provide a construction which may be partially formed of cement by filling the channels of the tie.

Other advantages will hereinafter appear. Referring to the letters of reference shown in the drawings, A represents the tie, B B the rails, and C C the outside clamping devices provided with depending side walls C', designed to enter relatively narrow slots *a*, pierced in the top of the tie. These slots are located the proper distance apart to determine the exact gage of the track.

C² represents hooks formed in the side walls and designed to engage the tie on the under side at a part below the rails. The side walls of the clamp C are also notched,

as shown at C³, so that the projecting portion or hook may extend under the upper wall of the tie to more fully secure it to the tie when in position.

c indicates the part overlapping the flange of the rail and forming a broad flat bearing on same, and *c'* the raised portion designed to bear against the web of the rail, extending upward to a point directly below the tread of the rail.

*c*² denotes a tailpiece formed by cutting away the side walls, permitting the upper portion of the clamp to project beyond the openings pierced in the tie, which thus forms a broad flat bearing-surface on top of the tie.

D D are the inside clamps, also provided with depending side walls, their forward ends formed with hooks adapted to engage the tie beneath the rail. The upper portion of the clamp is formed with a lip, as shown at *d*, to bear upon the flange of the rail, while the central portion of the lip is raised, as indicated at *d'*, to form a bearing-surface for the web of the rail.

*d*² indicates a tailpiece designed to bear upon the upper surface of the tie and projects inwardly from the ends of the side walls.

E E' are locking-wedges which are each formed with hooks *e*, designed to enter at the end of the slots *a'* directly back of the shoulder *d*³, formed in the clamp D.

e' represents lugs formed on the wedge E' and designed to lap over and engage the wedge E after the same is bent to overlap the wedge E'.

F is a cement filling lodged within the channels A' A', formed by the central rib A². In order to provide the necessary apertures for the reception of the clamping devices in the body of the cement, the tie is first inverted and the clamping devices set in position. The channels are then filled with cement, and when the cement is set the clamping devices are removed, leaving the proper channels for the reception of the clamps.

It will be seen that the construction of the clamping devices is such that they may be made of sheet metal by means of forming-dies, though it is equally apparent that they may be made of cast metal, if desired.

Having thus described the several parts of our invention, the manner of clamping the rails in position will be readily understood. The outside clamps C C are first placed in position and the rails brought against the upstanding portions *c'*, which determine the

proper gage. The inside clamps are then placed in position and the locking-wedges E E' inserted in the end of the slots a' directly back of the shoulders d^3 , formed on the side of the clamps. The wedges are then turned down over the tailpiece of the inside clamps and caused to overlap each other, the lugs or ears e of the wedge E' being bent over the overlapping wedge E to lock the two together, thus securing the clamp in position and the rail to the tie.

Having thus described our invention, what we claim is—

1. A metallic railroad-tie having relatively long narrow openings to receive the side walls of rail-locking clamps, the clamps provided with a hooked portion designed to pass through the openings in the tie to bear against the wall of the same, and means for locking said clamps against displacement, substantially as described.

2. A metallic railroad-tie provided with relatively long narrow openings to receive the depending walls of the rail-clamp, the rail-clamp, the depending walls of which are provided with hooks to engage under the upper wall of the tie and provided with a relatively broad flat bearing-surface to engage the flange of the rail, said clamps having a projecting tailpiece designed to bear upon the upper side of the tie, substantially as described.

3. A metallic railroad-tie pierced with relatively narrow openings to receive the en-

gaging walls of a rail-clamp, the rail-clamp having a hooked portion to engage the tie, a relatively broad surface to engage the web of the rail, a projecting tailpiece to bear upon the upper side of the tie, locking-wedges having hooked portions to engage the tie through the slots, said locking-wedges adapted to overlap each other and the tailpiece of the clamp, the construction being such that when overlapped they may be locked together, substantially as described.

4. A railroad-tie pierced with relatively long narrow openings to receive the depending walls of the rail-locking clamps, a concrete or cement filling in said tie formed with channels in line with the slotted openings of the metallic portion, substantially as described.

5. A metallic railroad-tie provided with relatively long narrow openings to receive the depending walls of the rail-clamp, the rail-clamp C having depending walls C' provided with hooks C² and C³ to engage the tie, and the portions c and c^2 to engage the flange of the rail and the top of the tie respectively, substantially as described.

In testimony whereof we sign this specification in the presence of two witnesses.

HIRAM KIPP.
JOHN J. ROSS.

Witnesses:

S. E. THOMAS,
HENRY E. VILLEROT.