

J. A. HYLE.
RAILWAY TIE AND FASTENING MEANS THEREFOR.
APPLICATION FILED JULY 3, 1911.

1,016,690.

Patented Feb. 6, 1912.

2 SHEETS—SHEET 2.

Fig. 2.

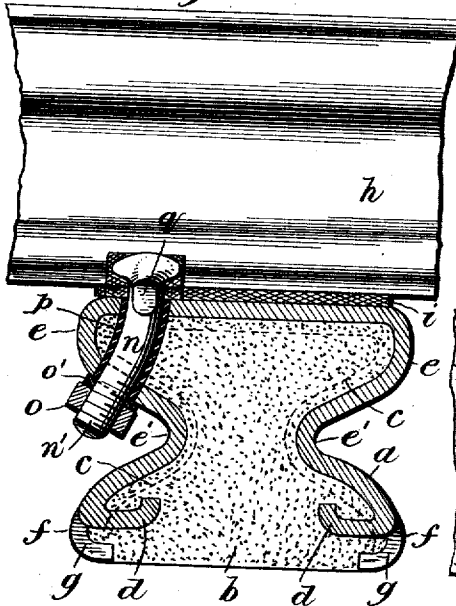


Fig. 3.

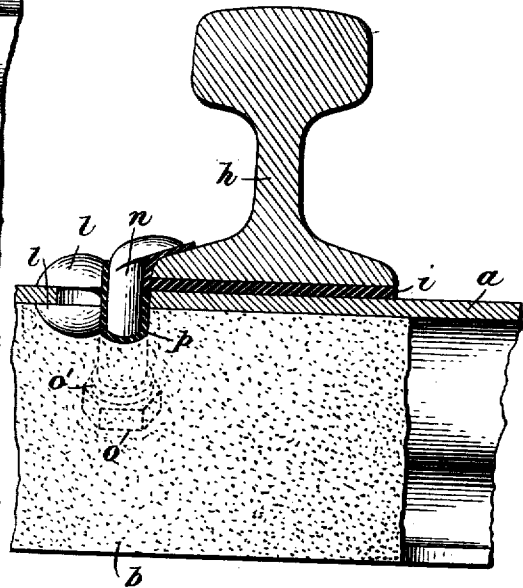


Fig. 4.

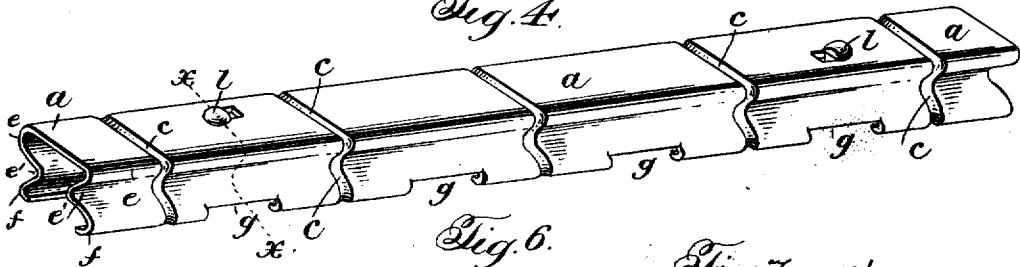


Fig. 6.

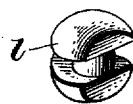


Fig. 7.

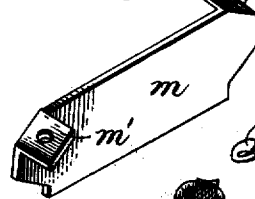


Fig. 9.

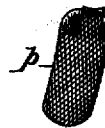


Fig. 10.



Fig. 5.

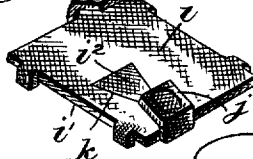
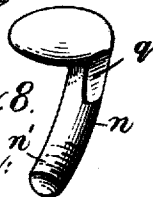


Fig. 8.



Witnesses:

Jas. Hutchinson
Thos. R. Strath

Inventor:

Jacob A. Hyle,
By Jas. L. Skidmore, Attorney.

UNITED STATES PATENT OFFICE.

JACOB A. HYLE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOSEPH A. PEMENT, OF CHICAGO, ILLINOIS.

RAILWAY-TIE AND FASTENING MEANS THEREFOR.

1,016,690.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed July 3, 1911. Serial No. 636,795.

To all whom it may concern:

Be it known that I, JACOB A. HYLE, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Ties and Fastening Means Therefor, of which the following is a specification.

This invention has reference to an improvement in railway ties and track fastening means used in connection therewith, and said ties are specially constructed for utilization in connection with steam and electric railways.

This invention has for its object to provide railways with a safety construction of railway beds; increase the efficiency of said beds, and the safety of railway traffic.

A further object is to provide a railway tie of the construction hereinafter particularly illustrated and described, in connection with its fastening devices, whereby said tie will, in connection with my improved securing devices, constitute an improved medium for providing a maximum of safety for the road-beds of steam and electric railways.

Further, my invention provides improved means whereby the tie may be easily, readily and securely placed, and will be so secured and positioned as to afford an unusual solid support for the railway track rails; can be readily ballasted; securely held in alignment and so arranged that a smaller percentage of ties are required than are now usually used in the proper equipment of a given piece of track of a railway road-bed. Further, I have provided for the safety of the laying of tracks of various curves, and for providing for the gage of the track rails with respect to the grades and curves required in the construction of railways.

Another important object of my invention is to construct the ties with means in connection with additional securing means, whereby I can furnish security which will prevent the spreading of the tracks both at a curve as well as at a rail joint.

The foregoing and such other objects as may occur from the ensuing description are attained by the means hereinafter more particularly described, and by the combination and arrangement of the devices illustrated in the accompanying drawings and particularly set forth in the appended claims.

Having reference to the accompanying drawings which form a part of this specification in which similar figures of reference indicate like parts, it will be seen that:—

Figure 1, represents a disclosure of the device embodying my invention, showing the rivets, hereinafter described, and the track fastening means forming a part of this invention. Fig. 2, indicates a view of a transverse section of my improved tie, showing the fastening means, and the track in longitudinal section; said tie being in cross section on the line $x-x$, Fig. 4. Fig. 3, is a longitudinal view of the tie indicating the fastening means, as well as the insulating means, both the fastening means and track being shown partly in section. Fig. 4, illustrates a tie embodying my invention and provided with a series of corrugations arranged transversely to the tie. Fig. 5, is a view showing in perspective the insulating fiber placed between the track and tie, the said fiber for the purpose being constructed of two pieces, one of which is adjusted, as hereinafter referred to, within the area of the major portion of said insulating fiber. Fig. 6, is a perspective view of a rivet employed in combination with a bolt or spike. Fig. 7, indicates in perspective a view of the longitudinally arranged plate or bar secured between two ties and depending vertically between said ties. Fig. 8, is a detail view showing a view of a bolt or spike provided with a squared surface at one side thereof, a head, and a lower threaded end. Fig. 9, is a view in detail showing a tube or sleeve of insulating material adapted to assist in insulating the rails from the railway tie. Fig. 10, is a detail view of a member representing a detached portion of the plate shown in Fig. 5, and illustrating its form when disconnected from the plate.

It will be obvious, that in carrying out my invention, the improved railway tie a may be constructed of any desirable metal which will perform the objects sought to be attained, hence it may be cast, rolled, pressed or stamped, since the metal shell is filled with a suitable concrete mixture b , which forms a solid interior for said tie a .

The tie is formed with an upper flat surface, with the exception of a series of transversely arranged and internally projected

ribs *c*, the latter constituting, in connection with the upturned inner portions of the tie, as shown at *d*, Fig. 2, what may be termed the locking portions of the said interior filling, which makes for all practical purposes, a solid railway tie.

The upper flat surface of the tie *a*, at each side thereof is rounded slightly at *e*, thence extending downward and inward, thence a rounding portion, such as shown at *e'*, Figs. 2 and 4, and an outward depending portion, terminating in a downwardly extended rounded portion *f*, and oppositely, but inwardly and upwardly projecting portions *g*, at the bottom of the tie, arranged in a line parallel with the upper surface thereof.

The aforesaid tie, it will be seen by reference to Fig. 4 of the drawings, is provided with a series of recessed or slotted portions *g*, turned or bent upwardly to form by the terminal ends an additional locking medium for the concrete filling such as at *d*, Fig. 2.

The track rails *h* may be formed of any suitable material and shaped in any desirable manner which will make them applicable or serviceable in connection with my improvements.

As will be perceived by reference to Figs. 2 and 3 of the drawings, I provide an insulating plate *i*, made of fiber or other suitable material, located beneath the base of the rail and the railway tie. This plate *i* is composed of two pieces or members *i'* and *i''*, and is further provided with inwardly bent and overhanging portions *j*, the latter overlapping the upper portion or surface of the base of the rail *h*, and designed to clamp the rail base at points diagonally opposite of the said plate *i*. This plate, as will be seen by reference to Fig. 5 is dovetailed at *k*, so that the member *i''*, may be easily inserted or removed.

At the outer side of each track rail, I provide the tie with a specially constructed rivet *l*, such as clearly shown in Fig. 6, which rivet is inserted in any suitable manner, the upper and lower head portions of each rivet having a flattened perpendicularly constructed face for the purpose hereinafter referred to.

As shown in Figs. 1 and 7, I provide a member *m* which is secured in a vertical position between two railway ties, said member *m*, having oppositely and laterally extended portions *m'* and rigidly secured to the tie by the same means utilized for securing the railway rails to the said tie. The aforesaid members *m* may be rigidly secured between every two ties when said ties are located on a curved portion of a railway track, or they may be arranged to alternate between every other section of two or more ties, dependent upon the traffic and purposes of the railway yet I wish it understood, that it will be readily obvious that by the use of said mem-

ber *m*, depending and extending in both vertical and longitudinal direction, it will be practically impossible to cause an adjustment, sliding action or shifting action of the road-bed, without first shifting the tracks, and all appurtenances relating thereto, hence a minimum liability as to the spreading of the track rails or loosening of the several parts, since the parts must necessarily shift as a unit, thus avoiding curve accidents such as have heretofore occurred under other conditions.

Figs. 2 and 3 of the drawings illustrate fastening means whereby the track rails *h*, are rigidly and firmly secured to the railway tie, the said fastening means comprising, a bolt *n*, having a spike-shaped head adapted to overlap the upper base portion of the rails, a curved body portion, and a lower threaded portion *n'*. This bolt is adapted to pass through apertures in the upper surface of the tie; through an opening suitably provided through a portion of the concrete filling within the tie; extend through the tie near the point *e'*, and secured by a nut or nuts *o*, and a washer of insulating fiber *o'*. Surrounding said bolt *n* will be seen a sleeve or tube of insulating fiber *p*, (see Figs. 2, 3, and 9), which as will be readily understood is especially designed for the purpose of insulating the track and securing means from the railway tie. The bolt *n* is also provided with a flattened face or side portion *q*, adapted to rest, when in use, against the vertical faces of the rivet, shown in Fig. 6, thus serving as a brace to the bolt to avoid spreading of the rails, and also preventing any rotary or angular movement of the bolt, thereby insuring rigidity and solidity to the securing means.

Spikes of a suitable construction may be driven or secured on the inner side of the base of each rail, thereby furnishing an additional securing medium.

Slight changes may be made in the specific details without departing from the spirit of my invention.

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

1. A metallic railway tie made of substantially the same dimensions throughout its length, said tie having a series of transverse internally projecting ribs, and being provided at its lower portion or base with a series of recessed or slotted portions, and upwardly extended portions constituting locking projections for the filling of the tie.

2. A metallic railway tie, a solid filling therein, a series of transversely arranged and internally projecting ribs formed on the tie, the upper portion of the tie being provided with a plurality of rivets, the latter having their upper and lower head portions provided with a vertical face, and a curved bolt

having a flattened upper portion resting in alinement with each vertical face of the rivet, substantially as described.

3. A metallic railway tie, a solid filling
5 within said tie, a series of slotted portions at the base thereof, a plurality of vertical faced rivets secured to the upper surface of the said tie, and a plurality of openings in said
10 upper surface of the tie to receive a curved bolt, each curved bolt having a flattened upper portion resting in alinement with each vertical face of the rivet, substantially as described.

4. A metallic railway tie, a solid filling
15 within said tie, a series of slotted portions located at each side of the base of said tie, at intervals throughout its length, and a series of upturned portions for forming a locking means for said filling at intervals
20 throughout the length of the tie.

5. A metallic railway tie, a solid filling within said tie, rivets provided with a vertical face portion attached thereto, curved bolts each having a flattened upper portion,
25 openings in the upper surface of the tie to receive said curved bolts, and a base portion provided with terminal inwardly and upwardly projecting portions forming a locking medium for the solid filling of the tie.

30 6. A metallic railway tie, a solid filling within said tie, and a curved threaded fastening bolt adapted to pass through an opening in the upper surface of the tie, and emerge at a point intermediate of the surface and base of the tie, each bolt having a
35

flattened upper portion, substantially as described and for the purposes set forth.

7. A metallic railway tie, a solid filling within said tie, and a curved threaded fastening bolt adapted to pass through an opening in the upper surface of the tie, and
40 emerge at a point intermediate of the surface and base of the tie, said bolt being provided with a flattened side at the upper portion thereof, substantially as described and
45 for the purposes set forth.

8. A metallic railway tie, a solid filling within said tie, a threaded fastening bolt adapted to pass through an opening in the upper surface of the tie, and emerge at a
50 point intermediate of the surface and base of the tie, said bolt having a flattened surface at the upper portion thereof, and an insulating sleeve of fibrous material surrounding said bolt, substantially as described and
55 for the purpose set forth.

9. A railway road-bed, comprising track-rails, a metallic railway tie provided with a solid filling, a fibrous resilient insulating plate between said rails and tie provided
60 with inwardly projecting portions, a threaded fastening bolt adapted to pass through a portion of the tie in an oblique direction, means for securing said bolt outside of the tie, and an insulating fibrous sleeve surrounding said bolt.
65

JACOB A. HYLE.

In presence of—

ALFRED B. DENT,

MAY M. PLYER.