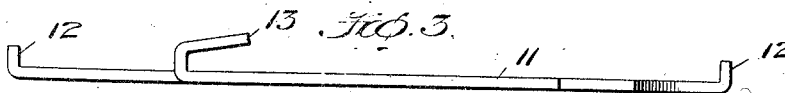
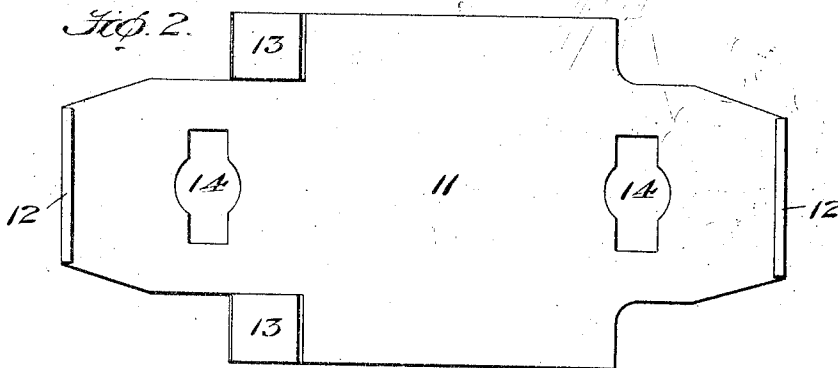
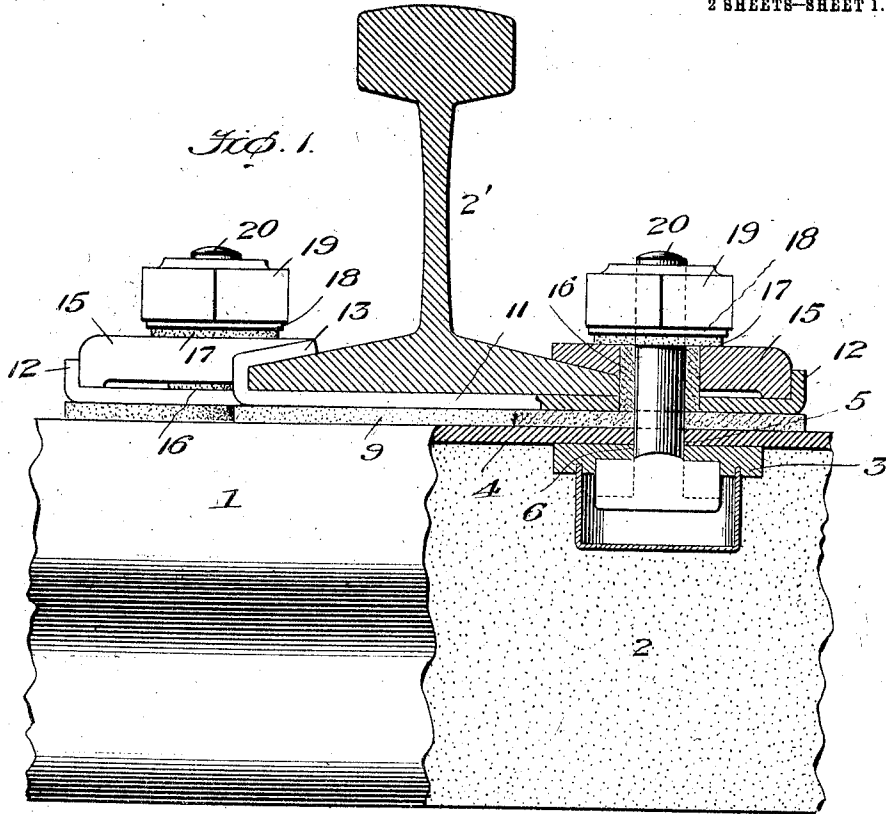


J. A. HYLE.
RAILWAY TIE AND RAIL FASTENING.
APPLICATION FILED DEC. 19, 1912.

1,058,435.

Patented Apr. 8, 1913.

2 SHEETS—SHEET 1.



WITNESSES

May M. Olyer

INVENTOR

Jacob A. Hyle
by *Jas. L. Skidmore*
his Attorney.

J. A. HYLE.
RAILWAY TIE AND RAIL FASTENING.
APPLICATION FILED DEC. 19, 1912.

1,058,435.

Patented Apr. 8, 1913.

2 SHEETS—SHEET 2.

Fig. 4.

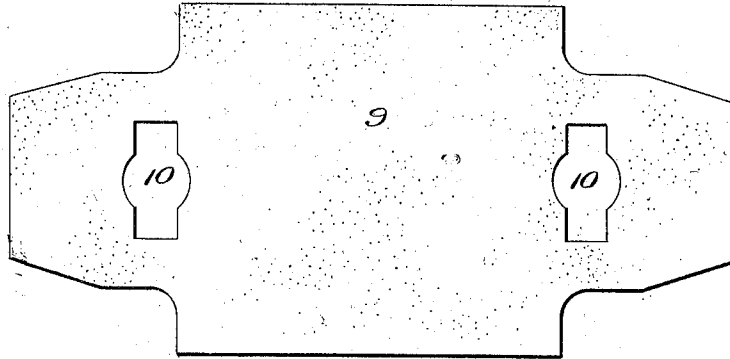


Fig. 5.

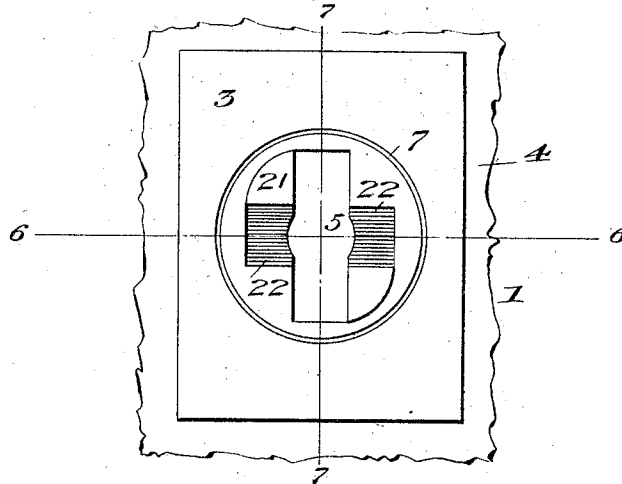


Fig. 6.

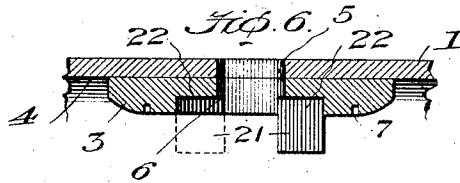
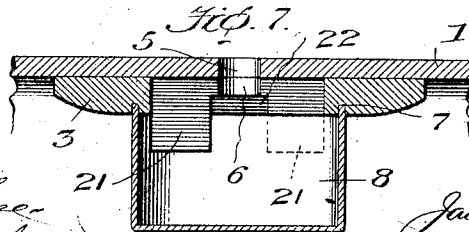


Fig. 7.



WITNESSES

May M. Hyle.

INVENTOR

Jacob A. Hyle,
by *Joe L. Skidmore*
his Attorney.

UNITED STATES PATENT OFFICE.

JACOB A. HYLE, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHICAGO STEEL RAILWAY TIE COMPANY, OF PHOENIX, ARIZONA, A CORPORATION OF ARIZONA.

RAILWAY-TIE AND RAIL-FASTENING.

1,058,435.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed December 19, 1912. Serial No. 737,657.

To all whom it may concern:

Be it known that I, JACOB A. HYLE, 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 Railway-Ties and Rail-Fastenings, of which the following is a specification.

My invention relates to a metallic railway tie and means for rigidly and securely fastening the tie to the track rails of steam and electric railways.

The prime object of the invention is to provide an improved railway tie in connection with simple, strong, economical, durable and efficient means for firmly securing the track rails to the said improved metallic tie.

Another object of the invention is to furnish novel securing means for firmly fastening the track rails to a metallic railway tie, and means for the insulation of the track rails from said metallic tie.

Another object of my invention is to provide improved means located within the metallic tie near each end thereof serving as a reinforcement to the upper surface of the tie, and as a locking means for the head of each of the fastening bolts.

A further object of the invention is to provide means rigidly secured between the base of the track rails and the upper surface of the metallic tie which will serve as an insulating and resilient cushion, and also to deaden the rumbling and rattling noise common on railways.

The foregoing and such other objects as may occur from the ensuing description, are accomplished by the means hereinafter more fully described, and by the combination, construction, arrangement and location of the parts illustrated in the accompanying drawings and particularly pointed out in the claims appended hereto.

Reference now being had to the accompanying drawings which form a part of this specification and in which similar numerals of reference indicate like parts, it will be seen that: Figure 1, is a transverse section through one of the track rails, and a longitudinal section of a portion of the fastening means and metallic tie embodying my invention, and showing in side elevation a portion of the tie and track rail securing means. Fig. 2, is a plan view of the track rail se-

curing plate. Fig. 3, is a side view of the track rail securing plate. Fig. 4, is a plan view of the insulating plate, pad or cushion removed from the tie. Fig. 5, is a plan view of a portion of the inner surface of the tie, showing an inverted plan view of one of the plates resting against said inner surface of the tie. Fig. 6, is a longitudinal section on the line 6—6, Fig. 5, and Fig. 7, is a transverse section on the line 7—7, Fig. 5.

In carrying out my invention I provide an improved railway tie 1 of suitable dimensions throughout its length, which may be formed in any desirable manner, and made of any suitable metal capable of accomplishing the objects sought to be attained. The tie is filled in any suitable or desirable manner with concrete material 2 thereby adding weight, strength and durability thereto and forming a solid and rigid interior for the same. Before filling the tie with the concrete material it is inverted and a plate of metal 3 is placed in contact with the inner upper surface 4 of said tie directly beneath each opening 5 made through the upper portion of the tie to permit the head of each fastening bolt hereinafter described to pass therethrough, an opening 6 being made in each plate 3 of the same shape and adapted to register in line with each opening in the tie, in order to permit the head and a portion of the stem of the bolt to pass through said openings. The underside of each plate 3 is provided with a circular groove or recess 7, adapted to receive the upper edge of a cup-shaped sheet metal member and retain the same in its upper place, as clearly shown in Fig. 1; of the drawings, the tie is then properly filled with the concrete material by which both the plates and cup-shaped pieces of material are permanently held securely in place beneath each opening in the tie, and said cup-shaped pieces form a chamber 8 beneath each opening adapted to receive the headed portion of each rail securing bolt, said plate 3 serving to reinforce the upper portions of the tie by adding more body thereto and providing a more secure fastening for the bolt heads.

On the upper surface of the tie beneath each track rail is placed an insulating pad or plate 9, made of a number of thin pieces of insulating paper, thus constituting an insulation and forming a resilient cushion or plate and serving to prevent the rumbling

noise common on railways, said plate or pad having openings 10 therethrough near each end. Upon the said plate or pad 9, is placed a metal plate 11, provided at each end thereof with an upwardly bent portion 12, and near one end having two upward and inward overhanging portions 13 adapted to clamp the upper surface of the base of the track rail, and having openings 14 near either end, said openings being in line with the openings in the tie and insulating plate 9. On top of the plate 11 at each end thereof, and over the openings therein is placed a rail fastening clip 15, the rear upright portion of which rests in contact with the inner surface of the upwardly bent portion 11, the lower surface of the inner portion of said clip being inclined upwardly and adapted to rest in contact with and clamp the upper surface of the base of the rail 2', and said clip 15 is provided with a circular opening therethrough to receive the stem of the securing bolt and an insulating sleeve 16 of fiber which surrounds a portion of the bolt. A washer 17 of insulating fiber is placed on the upper surface of the clip 15, and upon this washer rests a metal washer 18, both of said washers being securely held in place by a fastening nut 19 on the threaded end of the fastening bolt.

The securing bolts 20, as shown in Fig. 1, are screw-threaded at one end to receive a fastening nut 19, the other end of each bolt having a rectangular shaped head, the stem or body portion of the bolt being of greater diameter than the width of the head portion, hence the peculiar shaped opening formed in the upper surface of the tie and through the insulating plate 9, the metal plate 11 and the plates 3 located within the tie all of said openings being adapted to register in line with each other so that said bolt head and a portion of the bolt may be passed therethrough and the bolt head rest within the chamber 8 formed within the tie.

By reference to Figs. 5, 6 and 7 it will be seen that the lower portion of each plate 3 is provided with depending projections 21, and recessed portions 22, so that in applying the securing bolt 20 the headed portion is passed downward through the said openings until it has reached a position below said depending projections 21 on the plate 3, when the bolt is given a greater turn in either direction and is then lifted upward until the upper portion of the head is caused to rest within the recesses 22 in said plate 3, whereby the bolt head is locked in position and cannot be turned in any direction or withdrawn until the securing nut is loosened and the bolt dropped sufficiently to permit its head to clear the projection 21, when by giving the bolt a quarter turn in either direction the head

will be caused to register in line with the openings and said bolt may be removed.

It will be seen that the insulating sleeve 16 is passed through the opening in the clip 15 and metal plate 11, the lower portion of said sleeve resting in contact with the insulating plate 9, and the upper portion of the sleeve resting in contact with the insulating washer, said sleeve surrounding the bolt and preventing the latter from coming in contact with the metal clip, and the insulating washer prevents contact of the securing nut with the clip, thus forming in connection with the insulating plate 9, a thorough and complete insulation between the tie and track rails, and preventing interference with the operation of electric signals such as are now used on railways.

It will be perceived that the metal rail securing plate 11 is provided near one end thereof with two upward and overhanging portions 13, adapted to contact with and clamp the upper surface of the base of the rail alternately on the outside of the rail when placed on one tie and then on the inside of the rail when placed on the next tie, the said plate being reversed end for end when placed on each tie, the said overhanging portions resting in close contact with and over the upper base portion of the rail prevents the rail from spreading or getting out of alinement, while the upwardly bent portion 12 at each end of the plate not only prevents the fastening clip 15 from spreading or turning to one side, but serves to receive the strain of a side motion of the rail thus relieving the fastening bolt from taking all of the strain, and prevents the bolt from being bent away from the rail when subjected to unusual and heavy strains.

It is obvious that slight alterations may be resorted to in the details of the construction herein set forth 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 having a series of openings through its upper surface, a concrete filling therein, a metal plate within said tie beneath each opening, a metal cup-shaped member fitted to each of said plates, said plates and cup-shaped members being permanently secured within the upper portion of the tie by the concrete filling therein.

2. A metallic railway tie having a series of openings in its upper surface, a concrete filling therein, a metal plate within said tie beneath each opening, a metallic member adapted to rest against the underside of each plate and to form a chamber beneath each plate, said metal plates and metallic members being permanently secured within the upper portion of the tie by the concrete filling therein.

3. A metallic railway tie having a series of openings in its upper surface, a concrete filling therein, a metal plate within said tie beneath each opening, said plate being provided with a circular groove in its under side, a metal cup-shaped member fitted in the said groove and adapted to form a chamber below the plate, the said metal plate and cup-shaped member being fixedly secured within the upper portion of the tie by the concrete filling therein.

4. A metallic railway tie having a series of openings in its upper surface, a concrete filling therein, a metal plate within said tie beneath each opening, said plate being provided on its under side with depending projections and recesses, a metallic member fitted against the underside of each plate adapted to form a chamber beneath each plate, said plates and metallic members being fixedly secured to the upper portion of the tie by the concrete filling therein.

5. A metallic railway tie having a series of openings in its upper surface, a concrete filling therein, a metal plate within said tie beneath each opening, said plate being provided on its underside with two depending projections and two recesses and with a circular groove, a metal cup-shaped member fitted into said groove to prevent sidewise movement of said member, said plates and cup-shaped members being firmly secured to the upper portion of the tie by the concrete filling therein.

6. A metallic railway tie having a series of openings in its upper surface, a concrete filling therein, an insulating resilient cushion plate located on top of the tie, and rail fastening means comprising a metallic plate

having an upward extension at each end thereof and two upward and inward overhanging portions near one end adapted to clamp the upper surface of the base of the rail, a fastening clip at each end of said metallic plate, the rear end of each clip resting against the said upward extension at each end of the metal plate and the forward end clamping the upper surface of the base of the rail, and a fastening bolt passing through said clip and plates with its head secured within the tie.

7. A metallic railway tie having a series of openings in its upper surface, a concrete filling therein, an insulating resilient cushion plate located on top of the tie, and rail fastening means comprising a metallic plate having an upward extension at each end thereof and two upward and inward overhanging portions near one end adapted to clamp the upper surface of the base of the rail, a fastening clip at each end of said metallic plate, the rear end of each clip resting against the said upward extension at each end of the metal plate and the forward end clamping the upper surface of the base of the rail, and a fastening bolt passing through said clip and plates with its head secured within the tie, an insulating fiber sleeve surrounding a portion of said bolt, and an insulating fiber washer resting against the upper surface of the fastening clip.

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

JACOB A. HYLE.

Witnesses:

ALFRED B. DENT,
MAY M. PLYER.