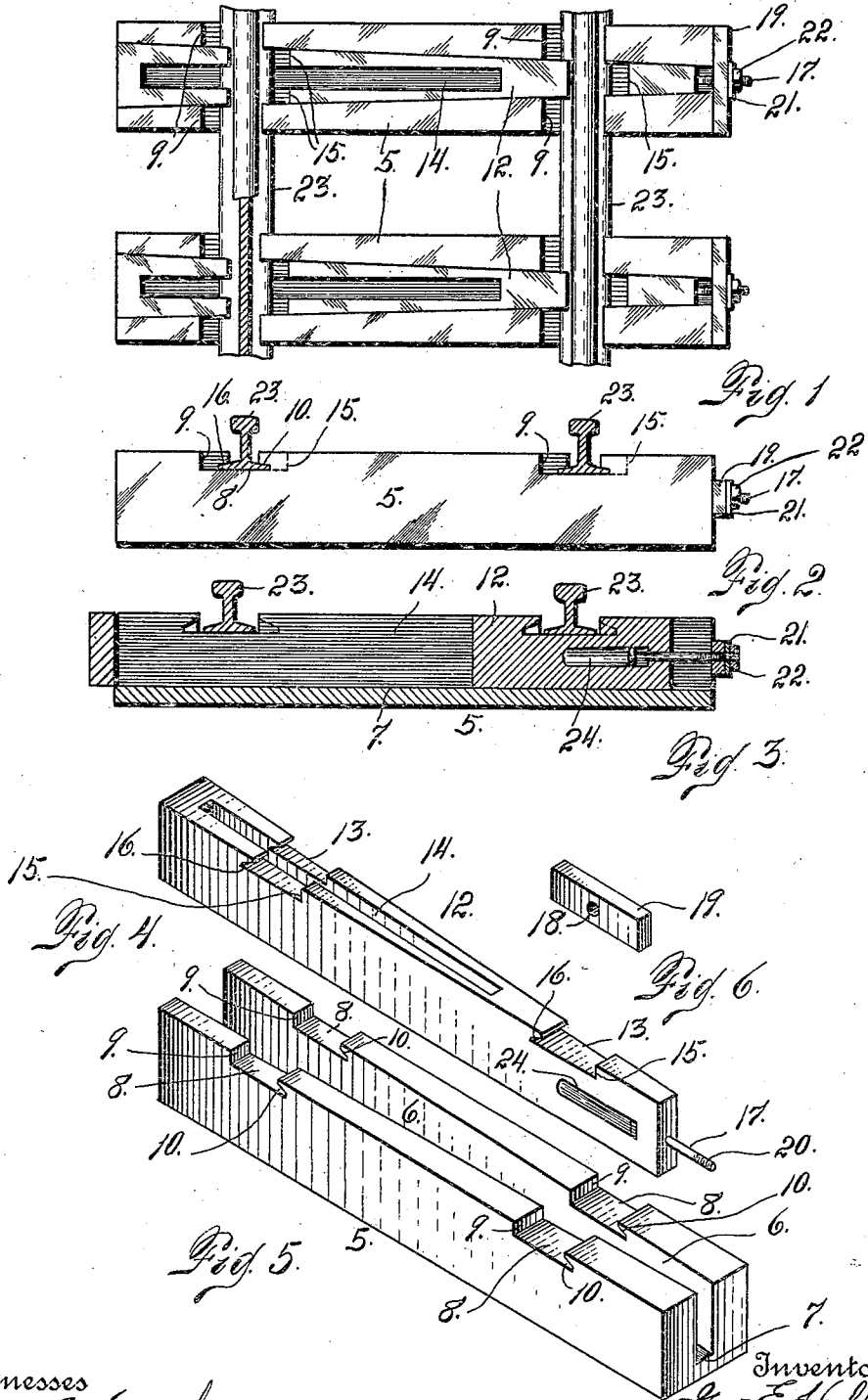


G. E. HALL.
 METAL RAILWAY TIE.
 APPLICATION FILED JULY 19, 1909.

961,070.

Patented June 7, 1910.



Witnesses
Otto E. Haddock.
J. D. Thornburgh.

Inventor
Geo. E. Hall.
 By *A. J. O'Brien.*
 Attorney

UNITED STATES PATENT OFFICE.

GEORGE E. HALL, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO GEORGE L. RICE,
OF DENVER, COLORADO.

METAL RAILWAY-TIE.

961,070.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed July 19, 1909. Serial No. 508,523.

To all whom it may concern:

Be it known that I, GEORGE E. HALL, a citizen of the United States, residing at the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Metal Railway-Ties; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in metal railway ties, my object being to provide a construction adapted to take the place of the wood ties heretofore used. It is well known that wood is becoming very scarce for tie-making purposes, and my object is to provide a metal device which shall be extremely simple in construction, and which shall also be comparatively cheap, exceedingly durable and therefore economical.

In my improved construction the tie consists of two members which I will designate the main or body member and the clamping member respectively. The main member is provided with a central, longitudinally-disposed, wedge-shaped slot or groove, the wedge of the slot extending longitudinally thereof, and adapted to receive a clamping member of counterpart shape, the two members being transversely grooved to receive the base of the track rails. Provision is made for securing the clamping member in operative relation with the main member and with the track rails when the parts are properly adjusted.

Having briefly outlined my improved construction, I will proceed to describe the same in detail, reference being made to the accompanying drawing, in which is illustrated an embodiment thereof.

In this drawing: Figure 1 is a top plan view showing two of my improved ties with the track rails in place, the tie members being secured in the rail-clamping position. Fig. 2 is a side view of one of my improved ties with the track rails in place, the latter being shown in cross section. Fig. 3 is a vertical longitudinal section taken centrally through one of my improved ties, the track rails being shown in place and in cross sec-

tion. Fig. 4 is a perspective view in detail, illustrating the central, wedge-shaped, clamping member of my improved tie. Fig. 5 is a similar view showing the main member of the tie. Fig. 6 is a perspective view of the securing block.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate the body member of my improved tie, which may be of any desired exterior shape that may be thought necessary or desirable, in order to give lightness and save material. This body member is provided with a central, longitudinally-disposed, wedge-shaped groove or slot 6, extending from one end of the member to the other, the incline of the walls of the wedge-shaped cavity extending longitudinally of the member. This slot or groove is open at the top of the member and closed at the bottom, as shown at 7. This member is provided with two sets of recesses 8, formed in its opposite side parts at the top, the said pairs of recesses being adapted to receive the track rails, the recesses being of such size as to allow the base of the rails to enter them from the top. These recesses are straight on one side, as shown at 9, and under-cut or dove-tailed on the opposite side, as shown at 10, whereby they are adapted to fit and over-lap the base of the rail on one side. Originally when the rails are placed in the two pairs of recesses, the under-cut sides 10, of the grooves are not engaged by the bases of the rails, the latter simply occupying positions adjacent thereto. The rails, however, are forced into engagement with the under-cut sides of the grooves, by the longitudinal movement of the wedge-shaped clamping member 12, which is adapted to enter the central groove 6, of the body of the tie, when the members are assembled. This wedge-shaped clamping member 12, is also provided with rail-base-receiving recesses 13, formed near the opposite ends thereof, and adapted to register with the two sets of recesses 8, formed in the body member of the tie. As the member 12 is cored, as shown at 14, the recess 13, near one end of the tie, is divided, while the recess 13, near the opposite end is intact, since the cavity formed by the coring out of the member, terminates before reaching the last named recess. The coring of the member 12, as shown at 14, is

for the purpose of saving material and reducing the weight of the said member.

The walls on one side of each of the recesses 13, are vertical, as shown at 15, while they are under-cut on the opposite side, as shown at 16. The under-cut and vertical walls of the grooves 13, are oppositely arranged as compared with the corresponding walls of the recesses 8 of the body of the tie, the under-cut walls 16, of the wedge-shaped member being adapted to engage the base of the rails on one side, while the corresponding under-cut walls of the body member are adapted to receive the opposite side of the bases of the rails, when the two tie members are adjusted to lock the rails in place. (See Figs. 1 and 2.)

To the smaller extremity of the wedge-shaped member 12, is applied a bolt 17, whose protruding extremity is adapted to pass through an opening 18, formed in the fastening block 19, the bolt having a threaded protruding extremity 20, to which a washer 21, and a securing nut 22, are applied, when the two tie members are fastened in operative engagement with the track rails, which are designated by the reference character 23.

As shown in the drawing, the smaller extremity of the wedge-shaped member 12 is transversely recessed, as shown at 24, intermediate its upper and lower surfaces, the said recess being of sufficient length to receive the bolt 17, which is inserted from the side of the member, after which the shank of the bolt is pushed through an opening for the purpose in the smaller end of the member, thus causing the bolt to protrude for securing purposes.

In using my improved metal ties, the two members are first placed in the position shown in Fig. 3, the member 12 being placed in the central groove of the body member and adjusted therein until the two members occupy the position shown in Fig. 3; that is to say, with the straight walls of the rail-receiving recesses of each member alined with the inner extremities of the under-cut walls of the opposite member so that the rails 23 may be set into the recesses 8 and 13 of both members, entering the said recesses from the top. When this is done, the parts being in the position shown in Fig. 3, the member 12, is moved longitudinally, until its under-cut walls are caused to engage the bases of the rails on one side, while the opposite sides of the bases of the rails are forced into engagement with the under-cut walls of the recesses of the body member. In this event, the bolt 17 of the member 12, is caused to protrude beyond the smaller extremity of the groove 6, of the body member, passing through the securing block 19, after which the washer 21, and the nut 22, are put in place, the parts being secured in

operative relation with each other by tightening the nut.

Having thus described my invention, what I claim is:

1. A metal railway tie composed of two cooperating members, namely:—a body member having a central wedge-shaped groove and a clamping member of counter-part shape, and adapted to enter the groove of the body member, the clamping member being adjustable in the groove of the body member, the two members having rail-base-receiving recesses, open at the top, the walls of the said recesses of the two members being under-cut on opposite sides, whereby the under-cut walls of one member engage the bases of the rails on one side, while the corresponding walls of the opposite member engage the bases of the rails on the opposite side, and suitable means for securing the tie members in the assembled relation with each other, and in interlocking relation with the track rails, substantially as described.

2. A metal railway tie, composed of two cooperating wedge-shaped members, one member having a wedge-shaped groove adapted to receive its cooperating member, the two members having rail-receiving recesses, formed in the top, the recesses of each member having under-cut walls on one side and vertical walls on the opposite side, the straight and under-cut walls of the two members being arranged in opposing relation for the purpose set forth.

3. A metal railway tie composed of two cooperating wedge-shaped locking members, one member having a wedge-shaped groove to receive its counter-part composed of the other member, the two members being adjustable and having rail-base-receiving recesses, and suitable means for connecting the two members, whereby they are caused to clamp the base of the rails, substantially as described.

4. A metal railway tie composed of two cooperating parts, one member having a wedge-shaped groove formed therein, while the other member is the counter-part of the said groove, and adapted to fit therein, the two wedge-shaped members having cooperating rail-base-receiving recesses, and suitable means for locking the members in clamping relation with the rails substantially as described.

5. A metal railway tie composed of two cooperating clamping members, one of the members having a wedge-shaped groove formed therein, while the other member is the counter-part of the said groove, and adapted to enter the same, the two members having rail-base-receiving recesses, the members being adjustable to clamp the rails in place, one member having a bolt protruding beyond its cooperating member, a block ap-

plied to said bolt, and a securing nut also applied to the bolt, substantially as described.

6. A metal railway tie composed of two
5 cooperating members, one having a wedge-shaped groove, formed therein, while the other is the counter-part of the said groove, and adapted to enter the latter, when the parts are arranged in assembled relation,
10 the two members having rail-base-receiving recesses formed in their upper edges, the

walls of the said recesses being shaped to clamp the opposite sides of the bases of the rails, and suitable means for locking the two members in the rail-clamping relation, substantially as described. 15

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

GEORGE E. HALL.

Witnesses:

A. J. O'BRIEN,
JESSE F. HOBART.