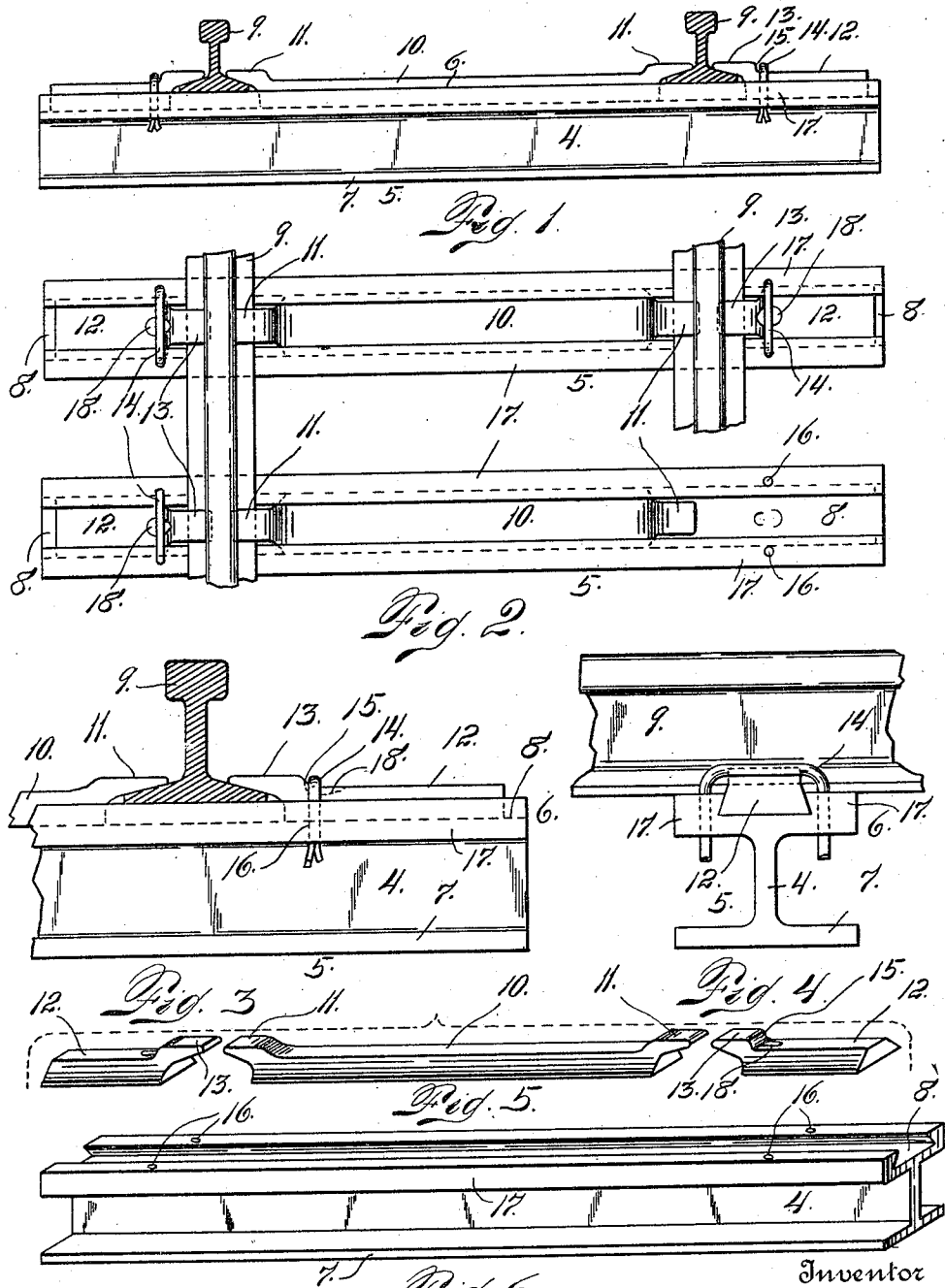


V. E. DAVIS:
METAL RAILWAY TIE AND RAIL FASTENER.
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1,046,276.

Patented Dec. 3, 1912.



Witnesses

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Fig. 6.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, VICTOR E. DAVIS, citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Metal Railway-Ties and Rail-Fasteners; 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 characters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in railway ties and rail fastenings therefor.

My improved tie is constructed of metal and is of such shape that it may be rolled or manufactured in a manner similar to that of railway rails.

In the upper surface or T-head of the tie is a groove of a dove-tail shape adapted to receive rail fastening devices which are of counterpart shape. These devices are three in number, one of them being interposed between the two rails and spacing the latter, the opposite extremities of this member overlapping the base of the two rails on the inside; while the other fastening members are located on the outside of the respective rails and overlap the outer flanges of the rails. These outside fastening members are held in place by any suitable means. As illustrated in the drawing, U-shaped keys are employed, which straddle the said fastening members just outside of shoulders formed thereon, whereby the fastening members are securely held in place against the rails. These fastening devices are also of such character that they may be formed in rolling mills which is an important feature in their manufacture from a commercial standpoint.

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 side elevation of one of my improved ties with the rail-fastening means in place, the rails being shown in cross-section. Fig. 2 is a top-plan view showing two of the ties with the rails in place. On the right of this view one of the rail members is partly broken away and

the outside fastening device removed. Fig. 3 is a fragmentary section of a tie with the rail and fastening device in position, the parts being shown on a larger scale than in Figs. 1 and 2. Fig. 4 is an end elevation of the construction shown in Fig. 3. Fig. 5 is a perspective view of the three rail-fastening members employed in connection with my improved tie. Fig. 6 is a similar view of the tie.

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

Let the numeral 5 designate my improved tie considered in its entirety. This tie has the general shape of an I-beam, the top and bottom members 6 and 7 being connected by a web 4. The top member 6 of the tie is relatively thick or heavy and in it is formed a dove-tailed groove 8 of uniform size, extending lengthwise of the tie. When the tie is in use the rails 9 rest on top thereof, being suitably spaced by a fastening member 10, which is formed to fit the dove-tailed groove 8 in the top of the tie, and extend above the same, its opposite extremities engaging the base flanges of the two rails on the inside. Also fitted into the groove 8 on the outside of the respective rails are fastening members 12, whose inner extremities 13 overlap the flanges of the rails on the outside. These fastening members 12 are held in place by U-shaped keys 14, the transverse members of the keys engaging shoulders 15 formed on the fastening members 12 just outside of the overlapping extremities 13. The U-shaped keys straddle the fastening members 12, and the parallel arms of each key pass through openings 16 formed in the outer portions 17 of the head of the tie, these openings being so arranged that the extremities of each key extend into the spaces between the top and base of the tie, and on opposite sides of the web 4 thereof. The extremities of these keys are split after the manner of cotter pins, and when slightly spread apart are prevented from leaving their position under the vibration to which the ties and their attachments are subjected during the passage of trains. When, however, it may be necessary to remove a key, a suitable instrument may be inserted between the transverse top member thereof and the fastening device 12, in such a manner as to permit a leverage. In this event, sufficient force may be applied to the key to remove it by causing its separate extremities to close.

The opposite ends of the spacing member 10, which overlap the base flanges of the rails on the inside, may be designated by the numeral 11. No fastening device is required for these spacing members since they are interposed between the two rails and no opportunity is given them for getting out of place, as long as both rails are in position, and this position is maintained by virtue of the members 12, located outside of the rails as heretofore described.

In order to facilitate the introduction of a suitable tool or instrument for removing the U-shaped keys 14, each of the fastening devices 12 is provided just outside of, or beyond its shoulder 15 and extending beyond the key when the latter is in place, with a recess 18. As this recess extends underneath the key, it affords a good opportunity for the introduction of the point of a key-removing tool.

From the foregoing description, the use of my improved tie and rail fastening means will be readily understood. The length of the fastening members 10 is determined by the gage of the track or the distance between the rails. Hence these members are of such length as to properly space the rails, their opposite extremities 11 overlapping the flanges on the inside, as heretofore explained. When the rails are in place and spaced by the fastening member 10, the fastening devices 12 are applied to the top of the tie from the opposite ends of the latter, their inner extremities 13 being caused to overlap the base flange of the tie on the outside. The U-shaped securing keys 14 are then introduced and their extremities slightly separated or spread to prevent possible removal through vibration or other causes incident to the use of the track, as heretofore explained.

Having thus described my invention what I claim is:

1. A metal railway tie having the general shape of an I-beam and whose head is provided with a longitudinally-disposed groove adapted to receive rail-fastening devices, the head of the tie on opposite sides being equipped with openings and U-shaped clips adapted to straddle said rail fastening devices and project into said openings.

2. The combination with a railway tie whose upper surface is provided with a longitudinal groove, of rail-securing devices adapted to enter said groove and overlap the opposite flanges at the base of the rails,

shoulders on said rail securing devices, the head of the tie on opposite sides being equipped with vertical openings and U-shaped clips adapted to engage said shoulders and extending into said openings, substantially as described.

3. The combination of a metal railway tie having the general shape of an I-beam, the head or top of the tie having a longitudinally-disposed groove of dove-tail shape, and rail-fastening members, comprising a member interposed between the two rails and overlapping the base flanges on the inside, and other fastening members engaging the groove of the tie and overlapping the flanges of the rails on the outside, the rail fastening devices being formed the counterpart in shape of the groove in the tie, and U-shaped keys straddling the outer fastening members and passed through openings formed in the head of the tie, the extremities of the key occupying positions on opposite sides of the web of the tie, the extremities of the fastening keys being split, each outside fastening member having a shoulder which engages the transverse member of the key, substantially as described.

4. The combination of a metal railway tie having a longitudinally disposed dove-tailed groove formed in its upper surface, the said tie being of the general shape of an I-beam in cross-section, and fastening devices adapted to fit into the said groove, one of said devices being interposed between the two rails and whose extremities overlap the flanges on the inside, while the other devices also engage the said groove, the inner extremities of both the latter devices overlapping the flanges of the rails on the outside, the last named devices having shoulders outside of their overlapping portion, and U-shaped fastening keys arranged to straddle the last named fastening devices, being located just outside of the shoulders of the latter, the said shoulders engaging said keys, the arms of the keys being passed through openings formed in the opposite sides of the head of the tie, the extremities of the U-shaped keys being split for fastening purposes, substantially as described.

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

VICTOR E. DAVIS.

Witnesses:

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