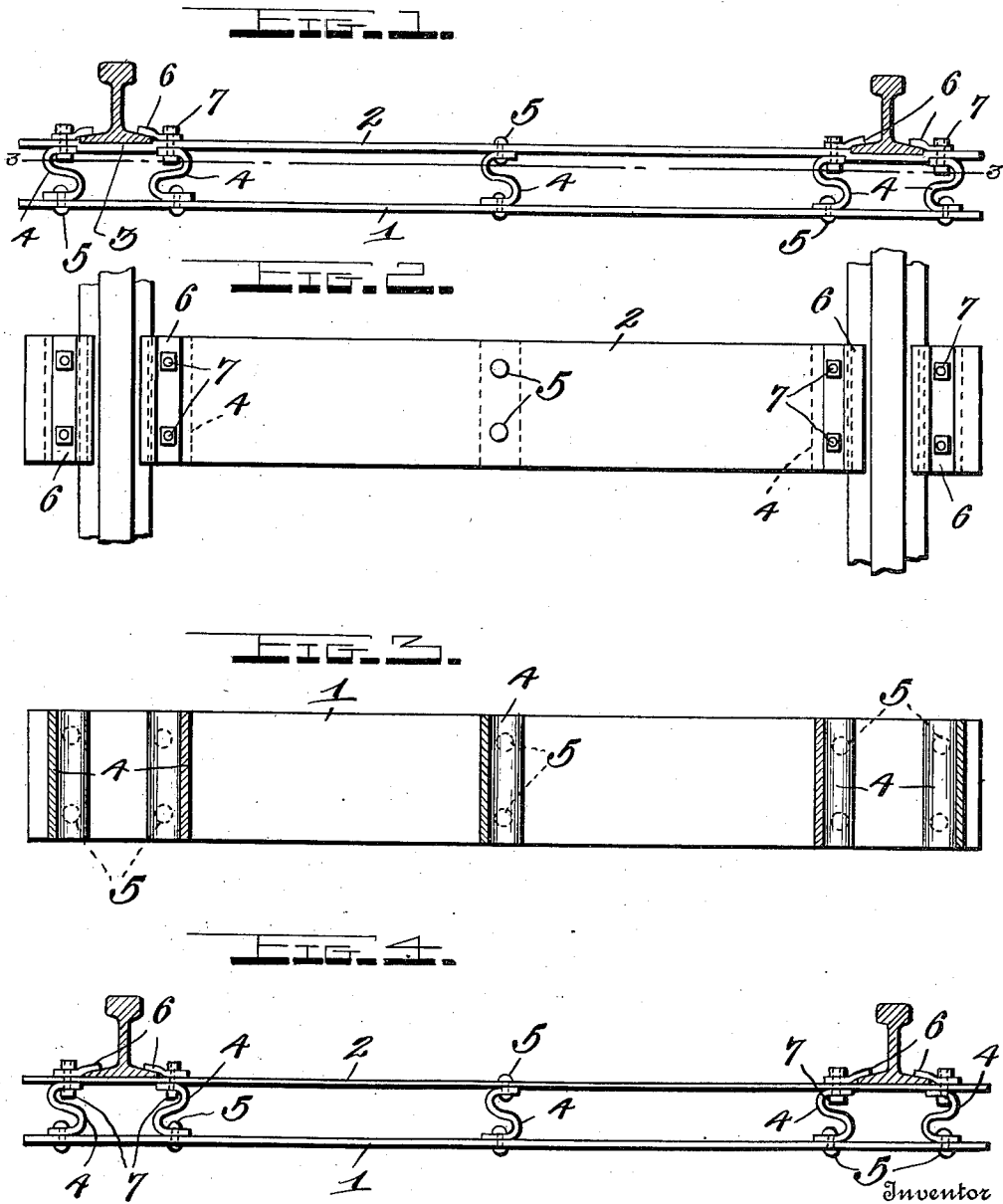


J. D. ELLIS.
METAL TIE.
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1,034,435.

Patented Aug. 6, 1912.



J.D. Ellis,

Witnesses

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UNITED STATES PATENT OFFICE.

JACOB D. ELLIS, OF CASTLE ROCK, COLORADO.

METAL TIE.

1,034,435.

Specification of Letters Patent.

Patented Aug. 6, 1912.

Application filed April 5, 1912. Serial No. 688,690.

To all whom it may concern:

Be it known that I, JACOB D. ELLIS, a citizen of the United States, residing at Castle Rock, in the county of Douglas and State of Colorado, have invented certain new and useful Improvements in Metal Ties, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to an improvement in metal railway ties and has for its object the provision of a tie which will be readily and cheaply formed by known processes of manufacture from stock material and which will embody in the highest degree the qualities of strength, elasticity and firmness.

Having these objects in view the invention consists of the features of construction and the combination and arrangement of parts hereinafter fully described and claimed and illustrated in the accompanying drawing, wherein:

Figure 1 is a side elevation of my improved tie; Fig. 2 is a top plan view; Fig. 3 is a horizontal section on the line 3—3 of Fig. 1; and Fig. 4 is a side elevation of a modification.

Referring to the drawing in detail, my improved tie consists of two superposed plates 1 and 2 formed preferably of three-eighth inch rolled sheet steel. The two plates are arranged in superposed relation at any desired distance apart to secure a tie of the proper height, preferably about six inches. These plates may be of any desired width, usually about twelve inches. The upper plate 2 is preferably provided near its ends with countersunk recesses 3 arranged at a distance apart corresponding to the gage of the track, said recesses having a depth of preferably three-sixteenths of an inch and a width corresponding to that of the rail base or flange. Arranged between the two plates are spacing springs 4 which are preferably disposed in pairs one member on each side of and immediately adjacent the rail recess as shown, while another spring or pair of springs is arranged in the intermediate portion between the two rails. These springs are preferably S-shaped, of a rigidity calculated to the stress which they will be called upon to sustain and of a width substantially co-

extensive with that of the tie. These springs are firmly secured to the bottom and top plates by rivets 5.

Upon the upper face of the top plate 2 and upon each side of the recesses 3 securing clips 6 are attached by means of bolts 7. The bolts 7 may also be used to secure the upper ends of the springs 4 but I preferably employ separate rivets for this purpose. These clips are arranged to overlie the rail base or flange and lock the same in relation to the tie.

In some cases on straight stretches of track I do away with the recesses 3 in the upper face of the plate 2 and form the plate 2 with a plane upper face as shown in Fig. 4, but in all cases I prefer to employ the recessed plates in ties to be used on curves where the lateral stresses are particularly severe.

While the accompanying drawing illustrates what I believe to be the preferred embodiment of my invention, it is to be understood that various changes may be made in the construction, arrangement and proportions of the parts without departing from the scope of the invention, as defined in the appended claims.

Having thus described the invention, I claim:

1. A metal railway tie comprising two superposed plates, a plurality of S-shaped springs mounted between said plates, two of the said springs being arranged in pairs beneath each of the rails, the other of said springs being mounted intermediate of the said plates, and means for securing the outer ends of said springs to said plates, substantially as described.

2. A metal railway tie comprising two superposed plates, S-shaped leaf springs mounted between the said plates, the said springs being of a width substantially co-extensive with that of the tie, and means for securing the outer ends of the said springs to the said plates, substantially as described.

3. A metal railway tie comprising two superposed plates, the upper of said plates being countersunk to provide transverse recesses to receive the rails, clips bolted to the top plate, overlying the said recesses and adapted to secure the rail flanges in place within the said recesses, S-shaped leaf

5 springs mounted between said plates and arranged in pairs beneath each of the rails, means for securing the lower ends of said springs to the lower plate, and bolts for securing the opposite ends of said springs and said clips upon the upper plate, substantially as described.

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

JACOB D. ELLIS.

Witnesses:

L. L. HUNTER,
F. A. CURTIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."