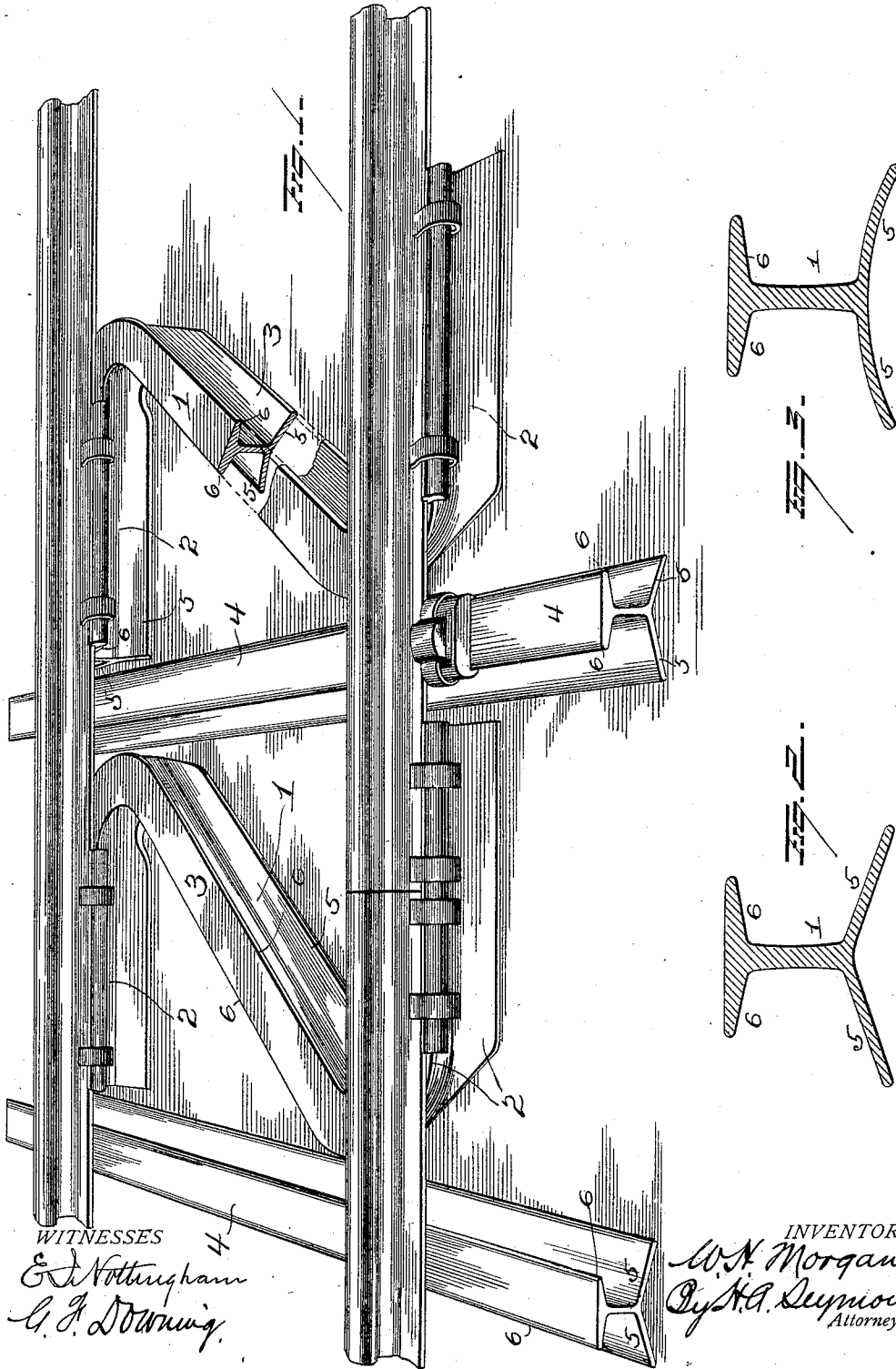


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METAL TIE FOR RAILROADS.

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1,047,432.

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METAL TIE FOR RAILROADS.

1,047,432.

Specification of Letters Patent.

Patented Dec. 17, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM H. MORGAN, a citizen of the United States, residing at Alliance, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Metal Ties for Railroads; and I do hereby 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.

My invention relates to an improvement in metal ties for railroads, and is designed particularly as an improvement on the construction disclosed in application United States Patent Number 1,026,106, granted May 14, 1912 to Walter V. Hartzell and myself.

The above patent discloses a series of metal ties, the ends of each of which are bent into parallel planes to form carrying members for the rails, and straight ties alternating with the bent ties, the said bent and straight ties having bottom flanges, flat or plain on the underside.

With ties having bottom flanges flat on the underside, there is a tendency when tamping the ballast from either side of the tie, to drive or force it from under the other side, and the object of the present invention is to so construct the base flanges of the ties, that, the tendency will be for the ballast to pack under the ties, and my invention therefore consists of a series of metal ties, the ends of each of which are bent into parallel planes to form carrying members for the rails, and a series of straight ties alternating with said bent ties, the said bent and straight ties having base flanges the sides of which are inclined downwardly.

In the accompanying drawings, Figure 1 is a view in perspective of a section of a track embodying my invention; Fig. 2 is a view in cross section of a tie and Fig. 3 is a similar view of a modification.

1 represents a series of Z-shaped ties, each comprising parallel rail supporting members 2, and a body portion 3 connecting the rail supporting members, all of said parts being integral, and 4 are straight ties arranged alternately between the Z-shaped ties, and projecting as shown, beyond the rail supporting members of the latter. Both the straight and Z-shaped ties are I-shape

in cross section, with the base flanges 5 wider than the top flanges 6. These base flanges of the straight ties, and also of the parallel rail supporting members, and the body of the Z-shaped ties, are inclined downwardly from the web or center of the tie, as shown in Fig. 2, or they may be curved or concave, as shown in Fig. 3, and are partly cut away or of reduced width at the bends of the Z-shaped ties, so as to facilitate the bending. These ties are preferably made from old rail road rails, the base flange of the rail section, forming the top flange 6 of the tie, and the head of the rail section flattened out and bent or curved downwardly as shown, to form the wider base flange of the tie, but they can of course be made direct from new material.

In the construction disclosed in the patent above referred to the base flanges of the straight and Z-shaped ties are flat, and as they are comparatively smooth, it has been found, that, in tamping, particularly in loose ballast, the tendency is for the tamping tool to drive or force the ballast from under the tie, and also for the weight of the train to work the broken stone or gravel out at the sides from under the base flange. By bending or curving the sides of the base flange downwardly, a housing is formed under the ties, into which the ballast packs, both in tamping and also under the weight of the load borne by the rails. In tamping, it will be seen that the ballast will be driven up to the highest point under the base flange of the rails, and under the weight on the rails it will be moved toward the center by the inclined planes, hence there is no tendency whatsoever for the ballast, after it has been properly tamped, to shift or move from under the rails. Again, by providing both the Z-shaped and straight ties with downwardly inclined base flanges, the track will be held against the possibility of any endwise, lateral, or angular creeping. The straight ties will prevent endwise creeping, the parallel members of the Z-shaped ties will prevent any movement in the direction of the length of the straight ties, while the bodies of the Z-shaped ties prevent any oblique or angular movement.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without

departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. The combination of a series of metal ties, the ends of each of which are bent into parallel planes to form carrying members for the rails, and straight ties alternating with the Z-shaped ties, the said bent and straight ties having downwardly inclined base flanges.

2. The combination of a series of metal ties the ends of each of which are bent into parallel planes to form carrying members for the rails and straight ties alternating with the Z-shaped ties and projecting at both sides beyond the carrying members of the bent ties, the said bent and straight ties having base flanges which incline down-

wardly so as to form a housing under same for the ballast.

3. The combination of a series of Z-shaped metal ties, the parallel ends of which form the rail supports and straight ties alternating with the Z-shaped ties, the said straight and Z-shaped ties having downwardly inclined base flanges.

4. The combination of a series of Z-shaped metal ties, the parallel ends of which form the rail supports, and straight ties alternating with the Z-shaped ties and projecting at the sides of the rails beyond said Z-shaped ties, the base flanges of the Z-shape and straight ties being downwardly inclined.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

WILLIAM HENRY MORGAN.

Witnesses:

J. H. LLOYD,

N. C. FETTERS.

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