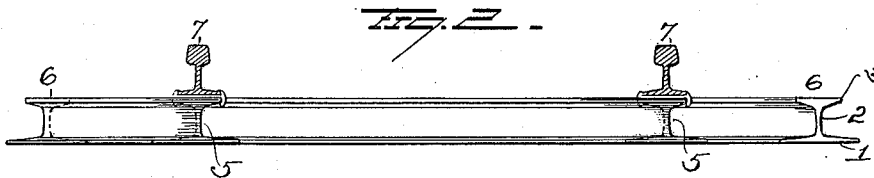
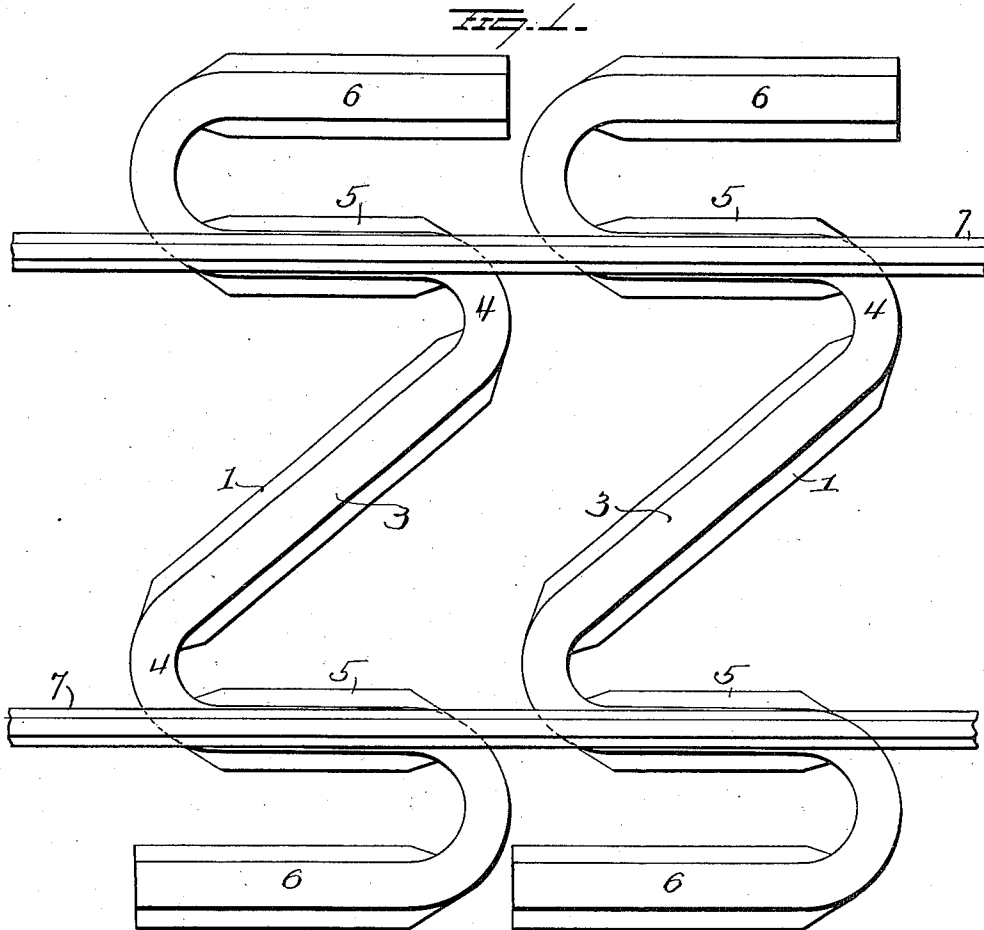


W. H. MORGAN.  
METAL TIE.  
APPLICATION FILED OCT. 11, 1911.

1,028,250.

Patented June 4, 1912.



WITNESSES  
*E. Nottingham*  
*G. F. Downing*

INVENTOR  
*W. H. Morgan*  
*Cy. H. A. Seymour*  
Attorney

# UNITED STATES PATENT OFFICE.

WILLIAM HENRY MORGAN, OF ALLIANCE, OHIO.

## METAL TIE.

1,028,250.

Specification of Letters Patent.

Patented June 4, 1912.

Application filed October 11, 1911. Serial No. 654,180.

*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; 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, the object being to provide the Z-shaped tie disclosed in Patent 1,003,637 granted to me September 19th, 1911 with ends so constructed as to prevent the possibility of the ties tipping endwise, and it consists in a Z-shaped tie having U-shaped ends the inner member of said ends constituting the rail supporting members of the tie and the outer members being removed from but approximately parallel with said rail supporting member, and forming outboard or end bearings for the tie.

In the accompanying drawing, Figure 1 is a view in plan of my improved tie, and Fig. 2 is a view in side elevation of the tie.

The ties are preferably made from a section of discarded rail road rail but may be made of new material, and comprises a base flange 1, a web 2 and a top flange 3, the base flange being wider than the top flange. When made from discarded rails, the head of the rail is swaged or otherwise flattened and laterally expanded to form the base flange of the tie, the base flange of the rail forming the top flange of the tie.

When the tie is made from a section of rail, I prefer to expand the whole head laterally at both sides of the web until it is as wide as the base flange of the rail section, throughout the length of the section, and then further expand the base flange at points intermediate the bends 4, and at the extreme ends, so as to secure increased bearing surface between the bends and at the extreme ends.

The blank from which the tie is made is substantially I-shape, and this blank is bent into Z-shape and the ends of the latter bent into U-shape. The inner parallel members 5 of the U-shaped ends of the ties, are located

the proper distance apart to carry the rails, and are the rail carrying members of the tie, while the outer members 6 of the U-shaped ends are considerably removed from the rails so as to form outboard or end bearings or supports for the tie, and are so located with relation to the rails and the weights and stresses to which the ties are subjected, to prevent any endwise tipping of the ties. These outer members 6 of the tie have wide base flanges, and are preferably parallel with the inner rail supporting members 5 of the tie, and preferably of the same length as said members, but this is not material, as they may be longer or shorter than said rail supporting members, the only essential being that they be in planes to the outside of said rail supporting members and extend in the general direction of length of said members so as to form end supports for said members.

The rails 7 are secured by clamps or other substantial fastening devices to the parallel members 5 of the tie, and as the ties may be placed with their bends or elbows abutting or nearly so, it will be seen that the rails are supported throughout approximately their entire lengths.

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

1. A metal tie for railroads having its ends bent into U shape, the inner members of said U-shape sections being parallel and forming the rail supports for the tie, and the outer members forming outboard or end bearings to support the tie against endwise tipping.

2. A metal tie of approximately Z-shape, the end of said tie being U-shape in plan, the inner members of said U-shaped sections being parallel and forming the supports for the rails, and the outer members forming outboard or end bearings to support the tie against endwise tipping.

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

WILLIAM HENRY MORGAN.

Witnesses:

C. R. RICHARDS,  
N. C. FETTERS.