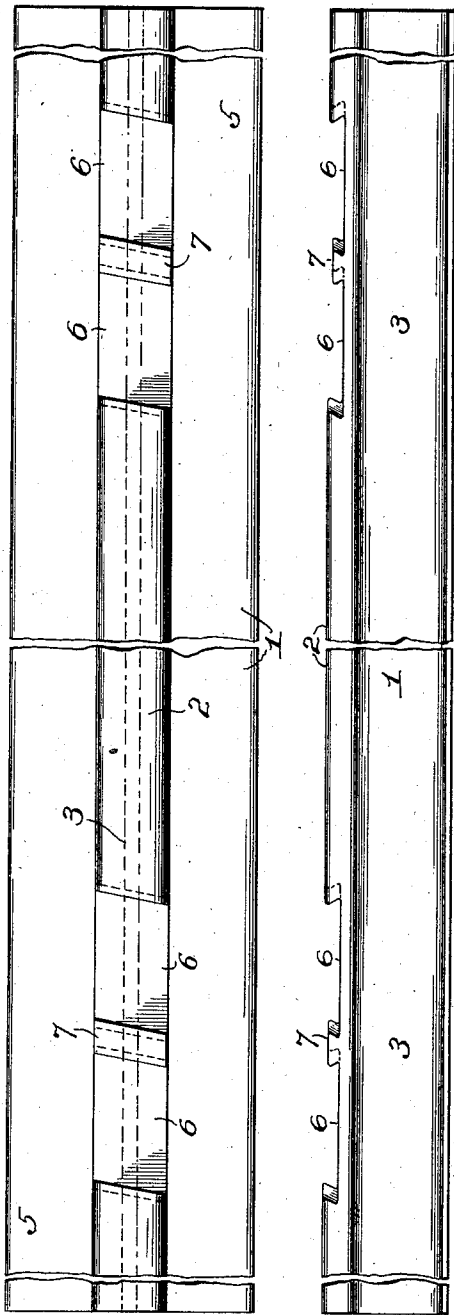


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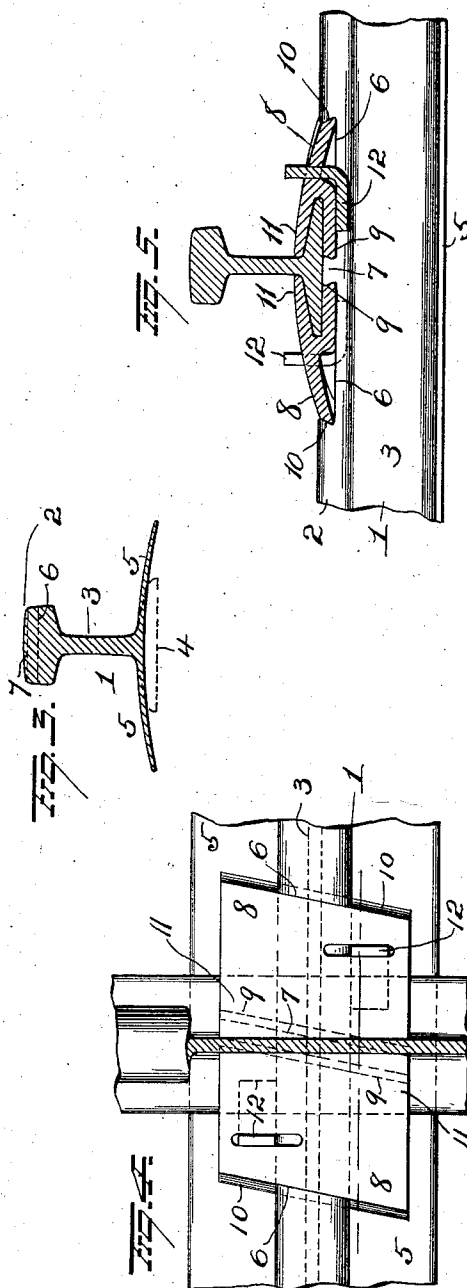
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Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.



WITNESSES  
E. Nottingham  
G. F. Downing



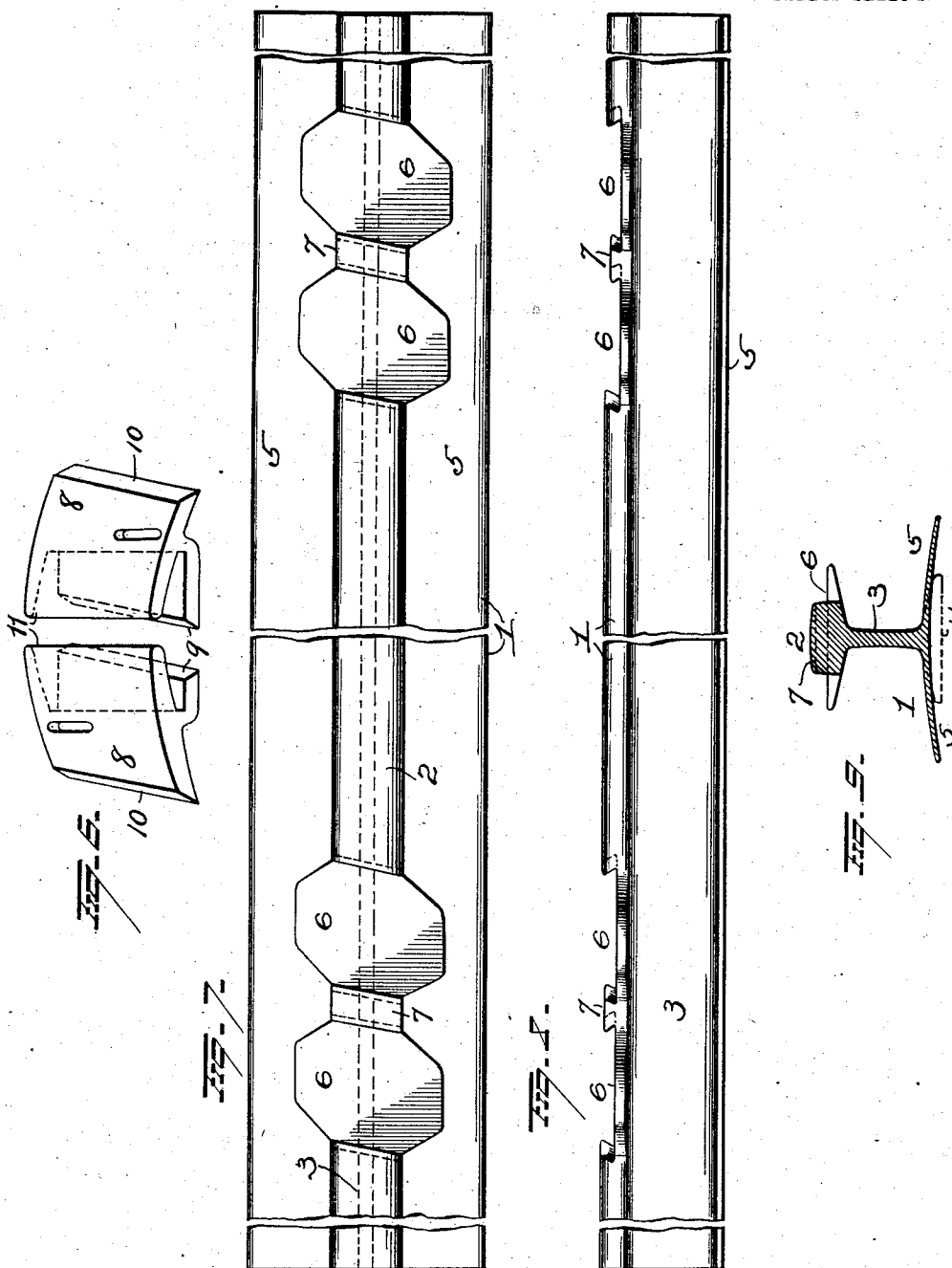
INVENTOR  
W. H. Morgan  
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# UNITED STATES PATENT OFFICE.

WILLIAM HENRY MORGAN, OF ALLIANCE, OHIO.

METAL TIE AND CLAMP FOR SECURING RAILS TO THE SAME.

1,010,673.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed November 19, 1910. Serial No. 593,286.

*To all whom it may concern:*

Be it known that I, WILLIAM HENRY MORGAN, a citizen of the United States, and a resident of Alliance, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Metal Ties and Clamps for Securing Rails to the Same; 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 and clamps for securing rails to the same, and it consists in the parts and combinations of parts as will be more fully explained and pointed out in the claims.

In the accompanying drawings Figure 1 is a plan view of my improved tie. Fig. 2 is a view in side elevation of same. Fig. 3 is a view in end elevation of the tie showing the original shape of the rail in dotted lines. Figs. 4 and 5 are views similar to Figs. 1 and 2 showing rails secured to the ties by clamping plates. Fig. 6 is a view of the clamping plates, and Figs. 7, 8, and 9, are views respectively in plan, side and end elevation of a modified form of tie.

1 represents the tie preferably made from old and discarded rail road rails. Except for the recessed seats, the head 2 and web 3 of the rail, are left intact. The base flange 4 of the tie shown in dotted lines in Fig. 3, is expanded laterally, as shown at 5 in Fig. 3 to produce a wide and comparatively thin base, which latter may be concave or flat as desired. I prefer however to concave it transversely as shown, so as to cause, or tend to cause the dirt, gravel or broken stone of which the road bed may be constructed, to travel toward the longitudinal center of the tie and thus form a solid bed for the latter.

Each tie is provided in its upper member or head, at the proper distances apart, with depressed seats 6 for the rail securing clamps. These depressed seats may be formed by milling as in Figs. 1 and 2, or by rolling down the metal of the head as in Figs. 7, 8, and 9. When the seats are formed by rolling, the metal displaced flows to the sides, thus producing seats wider than the head of the tie as clearly shown in Figs. 7 and 9. The depressed seats have parallel ends, but are arranged obliquely to the long axis of the tie, so that when the rail is placed

on the tie, a wedge shaped space will be left between the base flange of the rail, at each side, and the adjacent end walls of the seat. Located centrally within the depressed seat 6 and extending obliquely across the tie parallel with the end walls of the seat, is a rib 7 integral with the tie. The upper surface of this rib, is preferably in a plane below the top surface of the tie, so that when the rail is seated thereon, the lower face of the base flange of the rail, will be in a plane below the top surface of the head of the tie, thus transmitting all side strains and shearing action directly to the end walls of the seats. The sides of the ribs 7, and end walls 8 of the recessed seats are beveled or undercut as shown to form lips which overlap the correspondingly beveled edges of the rail clamping plates 8. Each plate 8 is beveled on its inner edge 9 to conform to the bevel of the rib 7, and is also beveled on its outer edge 10 to conform to the bevel of the end wall of its recessed seat. The edges 9 and 10 of the plate 8 are parallel, and the plate is of a size to slide freely between one end wall of the seat and the central rib, but is retained against vertical displacement by the beveled lips previously referred to. Each plate therefore becomes locked in its seat against vertical displacement, hence after the rail has been locked to the clamping plates it can only be released by the endwise withdrawal of the plates. That portion of the plate 8 which rests on the floor of the seat adjacent the rib 7, and on which the base flange of the rail rests, is as thick as the rib is high, so that when the parts are assembled, the rail rests on the rib and on the adjacent members of the two securing plates, thus assisting in holding the latter in place. The rib 7 being centrally located within the recess comes under the web of the rail, and hence directly supports the rail and holds the latter elevated so as to permit of the ready assembling of the securing plates or clamps without the necessity of elevating the rail.

Each clamping plate is provided with an inwardly projecting lip 11, which engages the top surface of the base flange of the rail and locks the latter in place. The free edges of these lips 11 rest parallel with the rail and at right angles to the tie, and as the edges 10 of the clamping plates conform to, and are parallel with the end walls of the seat 6, it will be seen that the plate between

the outer edge 10 and the outer edge of the lip 11 forms a wedge, which not only clamps the rail and locks it in place, but provides for the lateral adjustment of the rails so as to properly gage them at the start, and permit of their subsequent adjustment to take up, or compensate for wear. The outer edge of each plate is bent downwardly as shown, thus forming an arch shaped cavity on the underside extending throughout the length of the clamp or plate. This arched section imparts to the clamp a slight elasticity transversely which materially assists in holding the clamping plate in place after it has been forced home. After the rails have been properly spaced and the clamping plates assembled, the latter are then locked against endwise displacement by bendable wedges 12 passed through slots in the narrower ends of the clamping plates and secured by bending them below the plate.

With this construction the clamping plates can only be placed in position and removed endwise, and as the rail rests on the plates, there is no possibility of the rail tilting, or dislodging the clamps by buckling, and as there are no strains whatever on the bendable wedges 12 which lock the clamps in place, there is no chance for the accidental endwise displacement of the clamps after the parts have been assembled.

By making the ties from old rails, I use scrap which is comparatively inexpensive, but at the same time, I secure a known and better quality of metal than could be secured if the tie were rolled direct from a billet, as high carbon steel could not possibly be rolled into this shape, in one operation, owing to the width of the base flange.

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. A rail road tie made from a section of rail and provided in its head with an obliquely arranged recessed seat and a rib within the recess parallel with the end walls of the latter, and having undercut side edges, the base flange of the rail being laterally expanded to form a widened base flange for the tie.

2. A rail road tie made from a section of rail and provided in its head or tread with an obliquely arranged recessed seat having a centrally located rib the latter being parallel with the end walls of the recess and having undercut side edges, and also provided with a widened or laterally expanded base flange.

3. The combination with a rail road tie made from a section of a rail and provided in its head or tread with an obliquely arranged recessed seat, having overhanging end walls and a rib within the recessed seat, the said rib being parallel with the end walls of the recess the said tie being also provided with a widened or laterally expanded base flange, of rail clamping plates each adapted to engage one end wall of the recessed seat and the rib, and also the top and bottom surfaces of the base flange of the rail.

4. A rail road tie made from a section of rail and provided in its head with an obliquely arranged recessed seat having a centrally located rib, the latter being parallel with the end walls of the recess, the said end walls of the recess and the side walls of the rib being undercut, the base flange of said section of rail forming the tie being widened or laterally expanded.

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.