W. H. MORGAN.

RAIL JOINT AND MEANS FOR SECURING RAILS TO METAL TIES.

APPLICATION FILED FEB. 7, 1911.

1,010,674.

Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

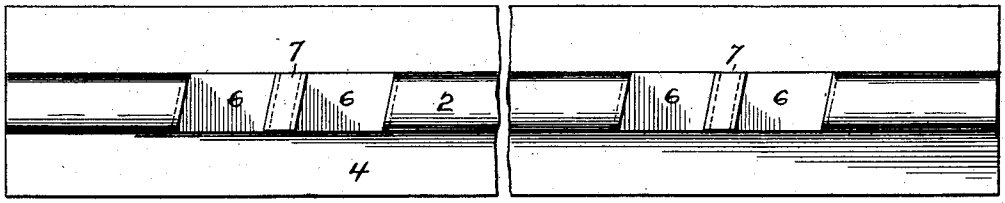


Fig. 2.

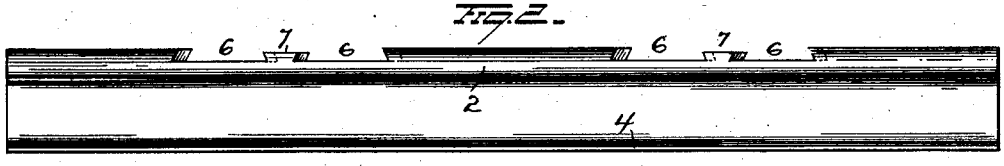


Fig. 3.

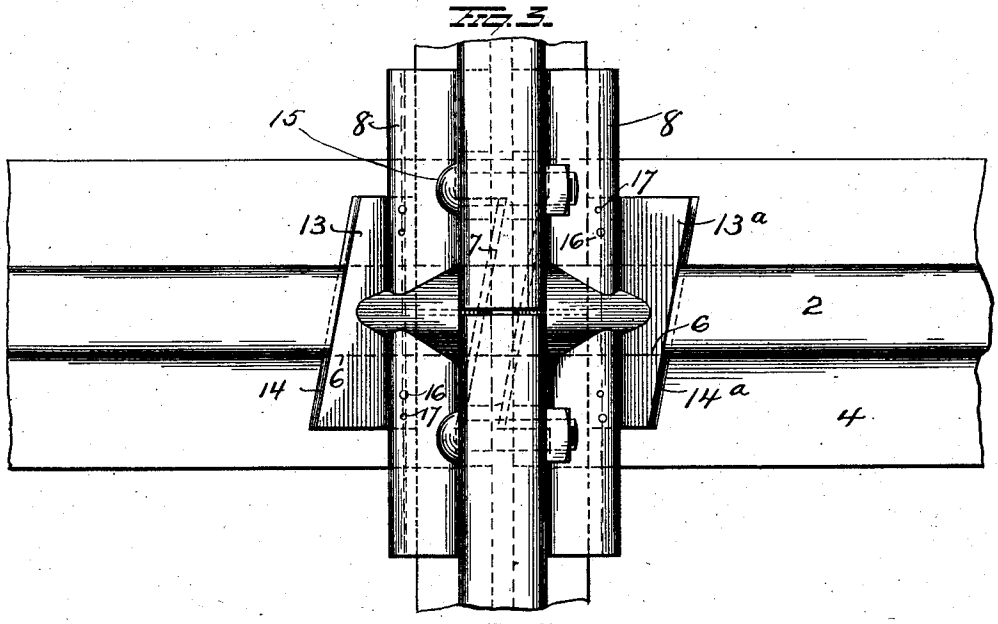
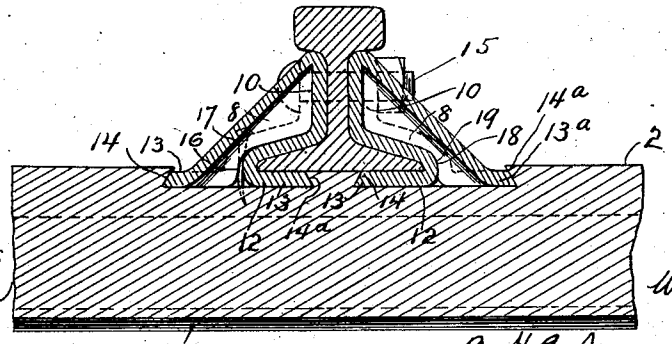


Fig. 4.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 5.

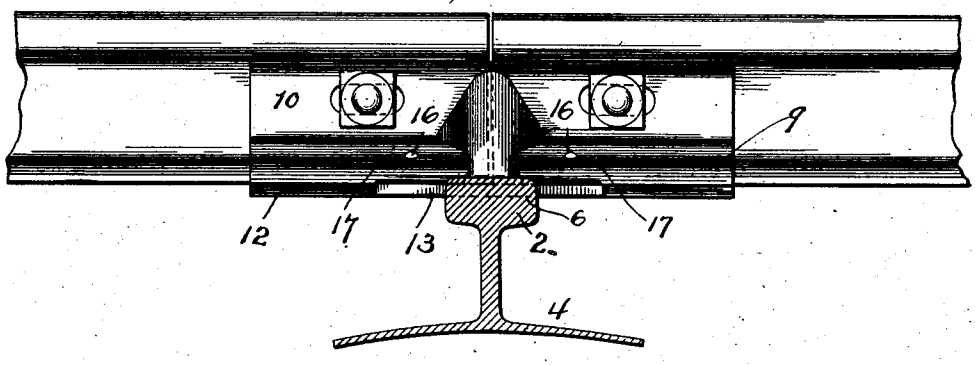
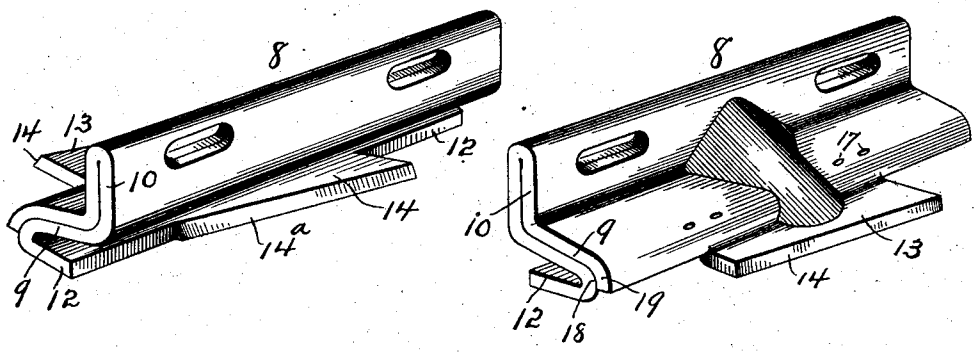


Fig. 6.



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UNITED STATES PATENT OFFICE.

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RAIL-JOINT AND MEANS FOR SECURING RAILS TO METAL TIES.

1,010,674. Specification of Letters Patent. Patented Dec. 5, 1911.

Application filed February 7, 1911. Serial No. 607,182.

To all whom it may concern:

Be it known that I, WILLIAM H. 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 Rail-Joints and Means for Securing Rails to 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 rail joints and means for securing rails to metal ties, the main object being to provide improved means for supporting the abutting ends of rails, and for securing said supported ends directly to a metal tie, whereby the joint comes directly over the tie, thereby locking the two ends of the rails against any independent movement and preventing the pounding action which quickly wears away the ends of the rails, where there is any movement at the abutting ends of rails. With this and other objects in view my invention consists in the parts and combinations of parts, and in details of construction as will be more fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in plan of a railroad tie specially adapted for use with my improved rail joint and securing means. Fig. 2 is a view in side elevation of the same. Fig. 3 is a view in plan showing two rails secured to a tie. Fig. 4 is a view in section through the rail, securing means and tie. Fig. 5 is a view in side elevation of Fig. 3 and Fig. 6 is a view of the rail supporting and locking plates.

The tie shown in the drawings, forms the subject matter of my application No. 593,286 filed November 19th, 1910, and as explained in said application, is preferably made from old and discarded rail road rails. Except for the recessed seats, the head 2 and web of the rail are left intact. The base flange 4 is expanded laterally to produce a wide and comparatively thin base, which latter may be concave or flat as desired.

Each tie is provided in its upper member or head, at the proper distances apart, with depressed seats 6, which, in this instance receive the base members of the combined splice or fish plates, rail chairs and rail securing clamps. These depressed seats 6 have parallel ends, but are arranged obliquely to the long axis of the tie, so that when the rails are placed on the tie, a wedge shaped space will be left between the base flange of the rails, at each side, and the adjacent end walls of the seat.

Located centrally within the depressed seat 6, and extending across the tie parallel with the end walls of the latter is a rib 7 integral with the tie. The upper surface of the rib is preferably in a plane below the top surface of the tie, and the sides thereof and the end walls of the recess, are beveled or undercut to form lips which overlap the correspondingly beveled edges of the combined fish plate, rail chairs and clamping plates 8.

Each plate 8 is folded longitudinally intermediate the side edges of the plate, onto itself, or nearly so, and the folded portion is then bent to overlap the base flange of the rail, as at 9, and bent upwardly as at 10 to form the splice or fish plates, the upper edge of the latter resting under, and preferably in contact with the underside of the heads of the rails so as to brace the latter. The inner horizontal base member 12 of each plate 8 so bent, rests under the base flange of the rail and forms a chair for the abutting ends of both rails; and each plate is provided centrally at its opposite edges with wedge shaped extensions 13 and 13^a which constitute the members by which the plates are locked to the tie. There are two of these plates, constructed as above described, to each rail joint, and the two wedge shaped extensions of each are designed to fit between the central rib 7 of the recessed seat and the adjacent end wall of the seat, the side edges of said wedge shaped extension being beveled so as to be overlapped by the undercut sides of the rib and end walls of the seat.

With the construction above described, the clamping jaws 9 fish plates 10 and chairs are oblique to the side edges of the extensions 13 and 13^a and are parallel with the rail, hence when the horizontal extensions or base members 13 and 13^a are placed in position within the recessed seats, the clamping jaws 9 and fish plates 10 will be parallel with the rails, and by moving one plate 8 longitudinally in one direction and the other plate longitudinally in the other direction, the rails may be adjusted to compensate for wear, or in new work, be set to the proper and required gage.

The edges 14 and 14ª of the extensions 13 and 13ª of each plate are parallel, and each is of a size to slide freely between one end wall of the seat and the central rib, but is positively retained from vertical displacement by the beveled lips previously referred to. Each plate therefore is normally locked against vertical displacement, hence after the ends of two rails have been clamped, they can only be released by the endwise withdrawal of the plates.

That portion 12 of the base member of the plate 8, which constitutes the chair on which the rails rest, and which rests on the floor of the seat adjacent the rib 7, is as thick as the rib is high, so that when the parts are assembled the rails will rest on the rib and on the chairs 12 of the two plates 8, thus assisting in holding the latter in place. The rib 7 being centrally located within the seat, comes under the webs of the two rails; directly supports the rails, and holds the latter elevated so as to permit of the ready assembling of the plates without the necessity of elevating the rails. Each plate 8 therefore comprises a chair 12, a clamping jaw 9 and a fish plate 10 and the whole constitutes a trussed support which with its mate, which is similarly constructed, forms a support for the two ends of the rail which will absolutely prevent any independent vertical movement of either rail. With this construction the two ends of the rails rest on the rib 7 of the recessed seat and are supported thereby, and as the rib is as high as the base members of the plates 8, the rails may be first placed in position, and afterward secured to the tie by introducing the plates endwise in their seats. This throws the joint in the rail over the tie but in addition, the ends of the two rails are firmly supported and sustained by the chairs 12 which project at both sides beyond the tie, and by the clamping jaws 9 and fish plates 10. The fish plates are each provided with one or more elongated holes for the passage of the bolts 15 which tie the two plates to the rails.

After the rails have been properly spaced, and the plates assembled, the latter are locked in place against endwise displacement, by driving a nail or other device 16 through one of the holes 17 found in each jaw adjacent to the smaller end of the wedge. These holes are located in line with the fold on the underside of the plate, so that a nail or other device driven through a hole 17 will bear against the adjacent surfaces 18 and 19 of the two parts of the fold, and cause sufficient spreading or lateral expanding of the base members of the plate to positively lock the latter to the tie. I also prefer to provide each jaw 9 with holes in planes on both sides of the tie as shown, so that each plate may be locked at both ends and thus prevent endwise creeping of either plate in either direction.

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 with a tie having a recessed seat in its upper face, the end walls of said seat being undercut, of two clamping plates each forming a chair clamping jaw and fish plate for the rails, each plate having a beveled side edge to engage one end wall of the seat, and each plate bent or folded upon itself at the edge adjacent the head of the rail, and bolts passing through the fish plates and rails.

2. The combination with a tie having a recessed seat in its upper face, and an integral rib centrally within the seat, the said seat and rib having undercut side edges and the seat having undercut end walls, of two clamping plates forming chairs for the rails, each plate having beveled side edges to engage one side edge of the rib and one end wall of the seat, and each bent or folded upon itself at the edge engaging the rail head and extending to the tie to form a clamping jaw and a fish plate, and bolts passing through both fish plates and the rails.

3. The combination with a tie having an obliquely arranged recessed seat and a centrally located rib within said seat, the side edges of said rib and outer walls of the seat being undercut, of two rail securing plates forming chairs for the rails, each plate having beveled side edges to engage one side edge of the rib and an end wall of the seat, and each bent and folded upon itself at the edge engaging the rail head and extending to the tie to form the clamping jaw and fish plate, and bolts passing through both fish plates and the rails.

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

WILLIAM HENRY MORGAN.

Witnesses:
A. W. BRIGHT,
N. C. FETTERS.