J. PATRICK.

RAILWAY RAIL AND RAIL JOINT.

APPLICATION FILED MAY 6, 1916.

1,196,806. Patented Sept. 5, 1916.

Fig. 1.

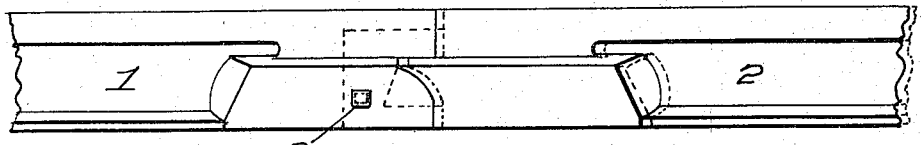


Fig. 2.

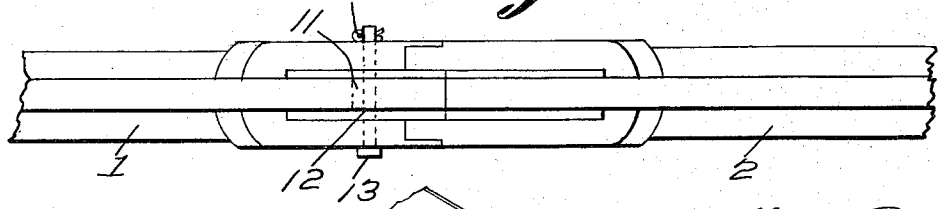


Fig. 3.

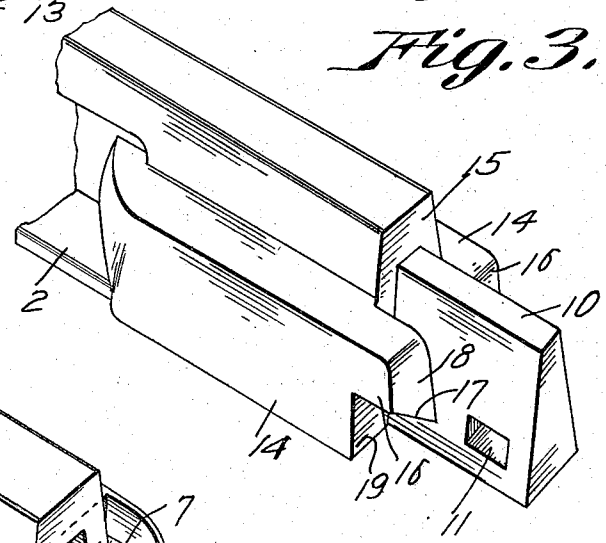
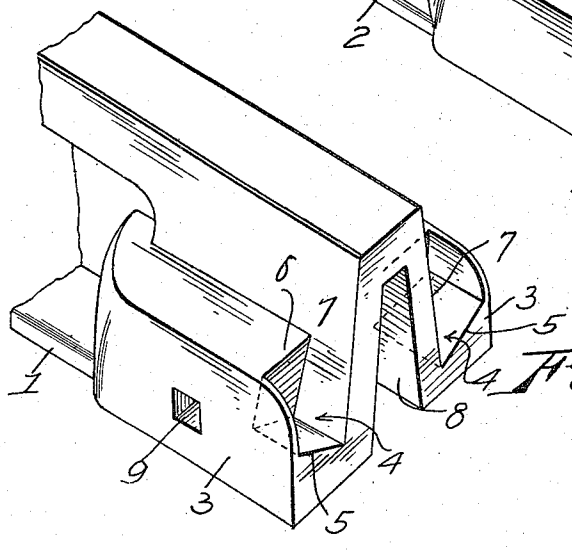


Fig. 4.



Inventor

Jodie Patrick,

By E. A. Bond

Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JODIE PATRICK, OF NEW CAMBRIA, MISSOURI, ASSIGNOR OF ONE-THIRD TO F. L. SUMMERS AND N. A. BALDING, OF ETHEL, MISSOURI.

RAILWAY-RAIL AND RAIL-JOINT.

1,196,806. Specification of Letters Patent. Patented Sept. 5, 1916.

Application filed May 6, 1916. Serial No. 96,267.

To all whom it may concern:

Be it known that I, JODIE PATRICK, a citizen of the United States, residing at New Cambria, in the county of Macon and State of Missouri, have invented certain new and useful Improvements in Railway-Rails and Rail-Joints, of which the following is a specification.

This invention relates to certain new and useful improvements in railway rails and more particularly to the joints thereof, and while in the present instance the invention will be described as applied to a railway rail it will be evident as the description proceeds that the same is applicable to joints between members adapted for other uses, such, for instance, as in bridgework and the like.

The present invention has for its objects among others to provide a simple, strong and durable rail and joint which, while permitting of the ready uniting of the two members, will most effectually prevent separation thereof, and so constructed that the greater the weight the more effectual will be the holding of the joint. I provide for the expansion and contraction which, as is well-known, always takes place in devices of this character, but the construction is such that should the pin employed as a union between the two members become broken or displaced it will be impossible for the rails to become separated. There is no strain upon this connecting pin except in the direction of the length of the members. I dispense with the necessity of employment of splice plates, railway chairs and the like, and the heretofore necessary bolts and nuts for securing them in place. I thus not only save expense and time in the laying of the rails, but I save the cost of the fish-plates, chairs, bolts and nuts, etc., and yet provide a much stronger joint than heretofore.

I so construct the parts that the abutting ends of the rails are interlocked and are made wedge-shaped so that the greater the weight the more effectually the parts are forced together, and all liability of breakage at the joint is avoided. When once in place, the rails cannot by any possible means become separated as they cannot move relative to each other vertically, nor can they become separated by endwise movement. Furthermore, I strengthen the ends of the rails at the joint and avoid low-joint breaking of the rail.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention, in its preferred form, is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of the abutting ends of two rail sections united by my improved joint. Fig. 2 is a top plan of Fig. 1. Fig. 3 is an enlarged perspective detail of the male member of the joint. Fig. 4 is a similar view of the female member.

Like numerals of reference indicate like parts throughout the several views.

Referring to the drawings, 1 designates the end of one rail and 2 the abutting end of the adjoining rail. The rail 1 is provided at its end with the lateral enlargements or reinforcements 3, 3, to add strength at this point and also to provide the recesses 4, 4 open at the end, the bottom walls 5 of which are inclined or tapered from the outer faces inward, as seen clearly in Fig. 4. The rear wall 6 of each recess 4 is also slightly tapered or inclined inwardly, as seen in Fig. 4. At this point the outer wall 7 of the web of the rail is tapered or inclined outwardly, as will be clearly understood upon reference to Fig. 4, and between the tapered walls 7 there is a recess 8, the walls of which converge from the bottom up. 9 is an opening, which may be of any desired configuration in cross section, the said opening extending through the rail 1 from side to side and traversing the recess 8. This constitutes the female member of the coupling or joint.

The rail 2 has projecting centrally from its web at one end the projection 10 which is provided with tapered or inclined sides, as seen clearly in Fig. 3, thus making the projection wedge-shaped and of a size and contour conforming to the recess 8 into which it is designed to fit. This projection 10 is provided with a longitudinally elongated opening 11, and when the parts are assembled a pin 12 having a head 13 is passed through the opening 9 in the rail 1 and through the opening 11 in the projection 10, as seen in Fig. 2, thus serving to hold the parts in

position and permitting expansion and contraction within certain limits, governed by the length of the opening 11 in the projection 10. This pin 12 may be of any desired shape in cross section and in some cases it may be held against displacement by suitable means, as a cotter pin 13′, passed through the end of said pin after it has been passed through the two rail sections. The rail 2 is provided with lateral enlargements or reinforcements 14 to provide additional strength at this point, and these enlargements are projected at the end beyond the face 15 of the rail from which the member 10 projects, to constitute lugs 16, the under faces of which are inclined downwardly and inwardly from their outer walls, as seen at 17, to conform to the inclined walls 5 of the recesses 4 in the end of the other rail, and the front faces or ends of these projections 16 may be slightly inclined toward the end of the projection 10 to correspond to the inclined wall 6 of the recess 4. It will be noted that these projections 16 extend from the upper faces of the enlargements 14, being cut away on their under sides, as at 19 as seen in Fig. 3.

The adjacent ends of the two rail members are united by placing the end of the rail 1 so that the recess 8 will receive the projection 10 of the rail 2 and then as the rails are forced together endwise the projections 16 will be automatically guided into the recesses 4, the inclined walls 17 of the projections 16 riding upon the inwardly and downwardly inclined walls 5 of the recesses 4 so that the parts are drawn snugly together and the greater the weight upon the rail the more firmly are the parts forced and held together. When in position, the pin 12 is passed through the opening 9 and through the opening 11, the latter permitting of sufficient endwise movement of the rails relatively to each other to compensate for the usual expansion and contraction. The length of the projection 10, however, is such that should the pin 12 break or become disengaged or should be removed by maliciously inclined persons, the rails cannot be separated as the projection 10 will be of greater length than any possible contraction of the rail and the rails cannot possibly become separated nor is there any danger of breakage at the joint.

It will thus be seen that I have provided a joint which has many advantages and by means of which rails may be laid with greater rapidity, with less labor and avoiding all necessity of use of any extraneous means other than the rails themselves.

In practice the joint is designed to be located between ties, and the spikes for the rails engaged in the ties and with the flanges of the rails adjacent the ends of the enlargements 3 and 14.

It will be noted that the joint is so constructed as to resist all lateral strain, the lugs 16 coöperating with the projection 10 to prevent breaking of either.

Modifications in detal may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is:—

1. A rail having its web provided with a projection and lateral reinforcements with lugs with inclined walls, and a coöperating rail having its web provided with a recess and with lateral reinforcements having recesses with inclined walls to receive said lugs.

2. A rail having its web provided with a projection and lateral reinforcements with lugs with inclined walls, a coöperating rail having its web provided with a recess and with lateral reinforcements having recesses with inclined walls to receive said lugs, and means providing for expansion and contraction of the rails.

3. Abutting rails having interengaging tapered portions and interengaging wedge-shaped portions upon opposite sides thereof and lugs the under faces of which are tapered downwardly and inwardly to assist in resisting lateral strain.

In testimony whereof I affix my signature.

JODIE PATRICK.

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