C. D. RUSSELL.

RAIL JOINT.

APPLICATION FILED SEPT. 22, 1909.

956,828. Patented May 3, 1910.

Fig. 1.

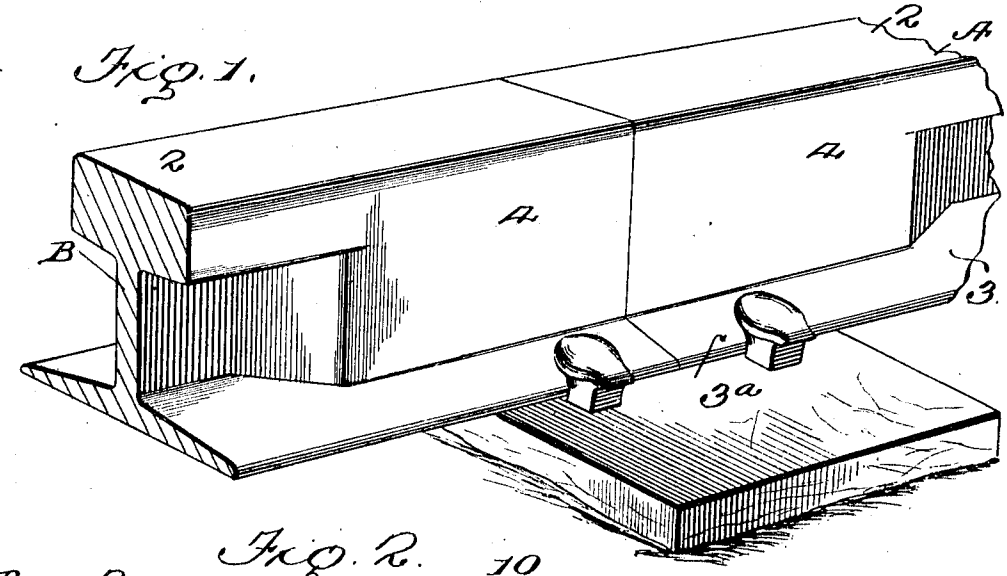


Fig. 2.

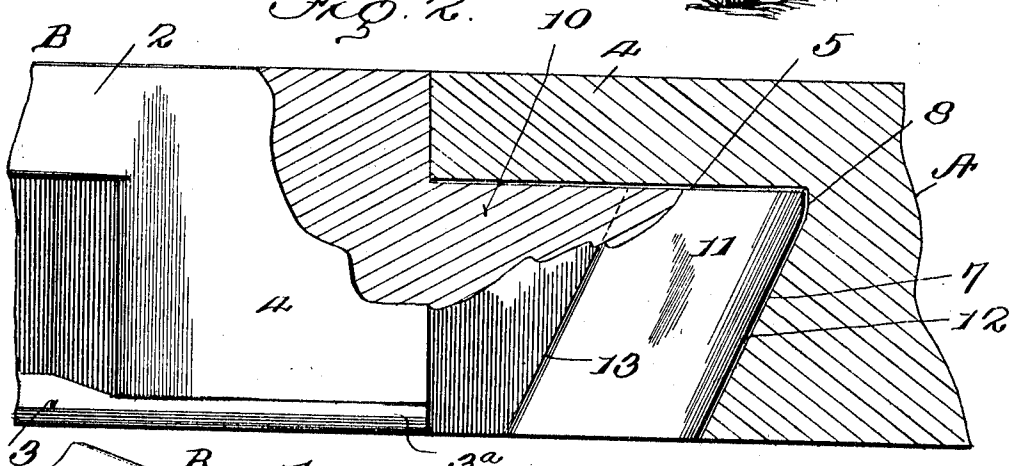


Fig. 3.

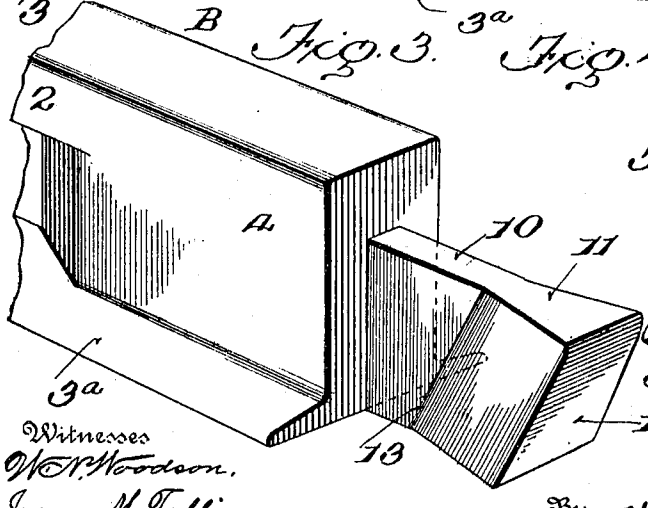
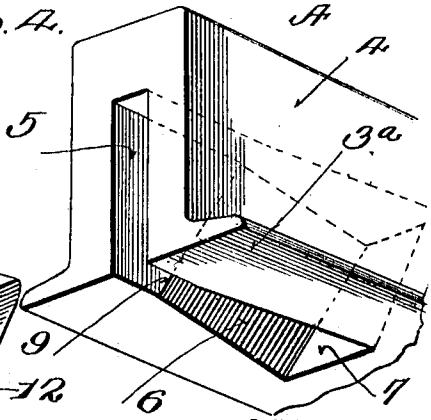


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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RAIL-JOINT.

956,828. Specification of Letters Patent. Patented May 3, 1910.

Application filed September 22, 1909. Serial No. 519,053.

To all whom it may concern:

Be it known that I, CHARLES D. RUSSELL, citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Rail-Joints, of which the following in a specification.

My invention relates to joints for railway rails, and particularly to that class of joints in which the end of one rail is provided with a slot or mortise and the end of the other rail is provided with a tenon adapted to project into the mortise, whereby the rails are held in alinement with each other.

The object of my invention is to provide a rail joint in which the tenon and mortise are so constructed that the rails will not only be held in alinement, but will be prevented from being forced away from each other beyond the amount necessary for expansion, and in which the peculiar shape of the tenon and mortise causes the rails to be drawn toward each other and into proper alinement when the rails are placed together, the object of my invention being to do away with the necessity of fish plates, supporting shoes, or any other exterior devices for holding the rails in engagement with each other.

For a full understanding of the invention and the merits thereof, and to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a perspective view of my improved rail joint; Fig. 2 is a side elevation, partly sectional, of said joint; Fig. 3 is a fragmentary perspective view of the end of one rail, showing the tenon projecting therefrom; and, Fig. 4 is a perspective view of the head of the complementary rail, showing the socket or mortise therein.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

Referring to these figures, A and B designate opposed rails of ordinary I form. The rail A, at its end, is formed into a head 4, the sides of the head 4 extending vertically from the edges of the tread portion 2 of the rail, down to the base flanges 3^a which form a continuation of the usual base flanges 3^a. This solid head 4 is formed with a centrally located mortise 5 or slot which extends into the rail the depth of the head 4. The inner end of the slot is enlarged, as at 6, the walls of this enlarged portion being outwardly inclined so as to form a dovetail slot. The end wall 7 of the mortise is curved at its upper portion, as at 8, for about half an inch, and is then downwardly and outwardly extended to the face of the base of the rail. The outer margin of the enlarged triangular end of the slot is inclined downwardly and forwardly on a line 9 which is parallel to the end wall 7. There is thus formed within the head of the rail a recess or mortise which is expanded at its end and in which the side walls narrow toward the end of the rail and narrow from the base of the rail upward. The rail B is formed with a complementary tenon 10 which is in alinement with and an extension of the web of the rail below the tread 2. This tenon is triangularly enlarged at its end, as at 11, and has the downwardly and inwardly curved or inclined end 12 adapted to fit the curve 8 and the downwardly and outwardly inclined wall 7 of the recess or mortise 6. The inner margin 13 of the triangular head 11 extends downward and inward parallel to the end 12 of the head, so as to fit the peculiar shape of the mortise in the rail A.

The construction described, it will be seen, provides a rail which is locked against lateral movement by the tenon projecting into the mortise; which is locked against longitudinal movement by the enlarged head of the tenon, and in which one end of the rail is drawn toward the other by the fact that the tenon narrows toward its upper face, at its enlarged end, and thus, as the tenon is placed within the mortise, and the rails are forced together, the rails will be drawn toward each other until they are in alinement.

Of course the usual means will be used for attaching the rails to the ties or other supporting sub-structure, and shoes or other means may be used for mutually holding the engaging ends with the rails A and B, if thought necessary. The tongue and mortise engagement, however, between the two rails is such that it renders the fish plates or shoes unnecessary, as far as they are provided for connecting the ends of the rails together.

It will be seen that my invention is very simple of construction, that it provides a joint which cannot become opened unless the

rails are entirely removed from the ties, and that no bolts or other fastening devices which are liable to become detached are used.

Having thus described the invention, what I claim is:—

1. In a rail joint, two contacting rails, the base portion of one rail being formed with a mortise and the base portion of the other rail being provided with a projecting tenon adapted to be received within the mortise, the mortise having a dovetail enlargement at its end and being formed with an end wall inclined upwardly and away from the end of the rail, the sides of said enlarged portion of the mortise being upwardly and inwardly inclined, the tenon on the other rail having an enlarged dovetail head, the end of the tenon being inclined upwardly and outwardly, said enlarged dovetailed end of the tenon gradually narrowing from its lower edge to its upper, in conformity to the shape of the said tenon.

2. In a rail joint, two contacting rails, the head of one rail being formed with a tenon projecting from the base portion of the rail and less in height than the rail, said tenon having a dove-tail head, the sides of said head diverging downward and the end face of said head being inclined downwardly and inwardly, the inner margin of the dovetail head being parallel to the outer end face thereof, the other of said rails having therein a mortise to receive said tenon.

3. In a rail joint, two contacting rails, the ends of both rails being solid and having sides extending directly downward from the head of the rail to the face thereof, the end of one rail being formed with a tenon projecting from the base portion of the rail and less in height than the rail, said tenon having a dove-tailed head, the sides of which diverge downward and outward, the end face of said head being inclined downwardly and inwardly, the inner margin of the dove-tailed head being parallel to the outer end face thereof, the end of the other of said rails having therein a mortise of the same shape as said tenon, said mortise opening on the bottom of the rail.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES D. RUSSELL. [L. S.]

Witnesses:
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