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PATENTED MAY 7, 1907.

G. W. WHITEMAN.
RAIL JOINT.

APPLICATION FILED DEC. 12, 1906.

Fig. 1.

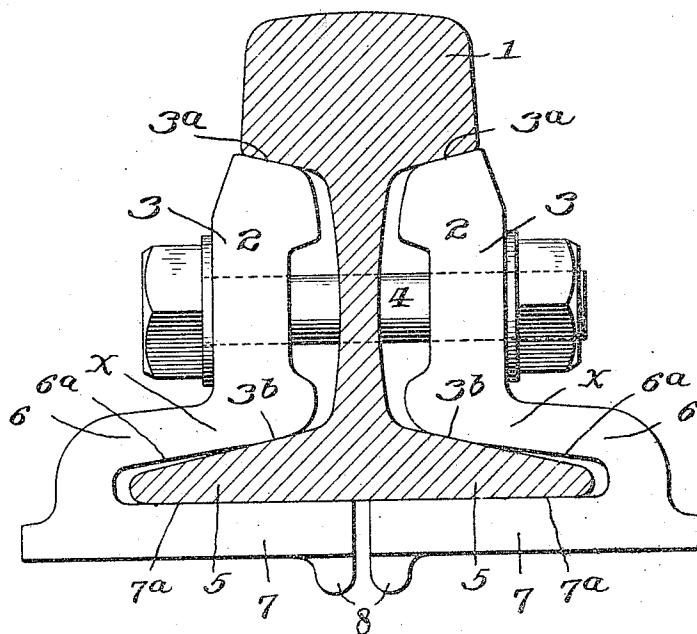
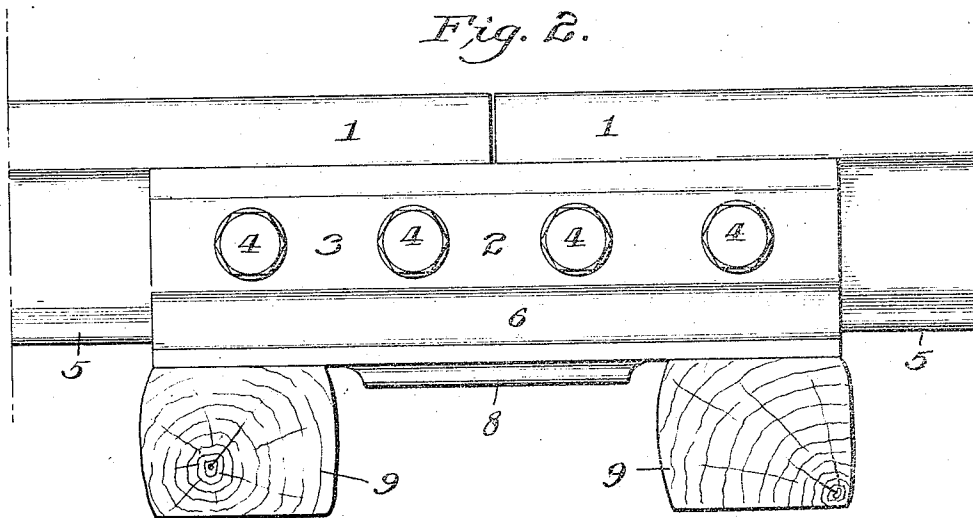


Fig. 2.



WITNESSES:

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GEORGE W. WHITEMAN, OF PHILADELPHIA, PENNSYLVANIA.

RAIL-JOINT.

No. 852,990.

Spec. cation of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE W. WHITEMAN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a vertical section of a rail showing a pair of my improved splice bars in connection therewith. Fig. 2 is a side elevation.

This invention relates to improvements in that class of rail splice bars or joints having a vertical limb bolted to the web of the rail, an outwardly extending limb contiguous the upper surface of the foot flange of the rail, and an inwardly extending limb therefrom underlying and contiguous the base of the rail. A splice bar of this general type is illustrated in U. S. Patent No. 427,017, to John Speicher. It has been found, in practice, very difficult to secure uniformity in the rolling of the rails and splice bars of this type to be used in connection therewith, so as to give a perfect fit of the splice bar to the foot flange of the rail; for the height of the rails between the under side of the head and the upper side of the foot flange will frequently vary considerably, so that when the splice bars are bolted to the rails, the foot flanges of the rails, engaging the under surfaces of the outwardly extending members thereof, and the upper surfaces of the inwardly extending members, will act as wedges, and frequently break the splice bars at about the plane of the meeting of said outwardly extending and inwardly extending members; that is, in approximately the plane of the base of the foot flange; the tendency of the wedge action of the foot flange being to force apart the said two members of the splice bar, thus forcing downwardly and outwardly the inwardly extending member. And if this splice bar is not broken, as hereinbefore mentioned, the inner edge of its inwardly extending member will be forced downwardly and outwardly to a considerable angle to the plane of the rail base. Also, as the under surface of the outwardly extending member of the splice bar is contiguous the upper surface of the foot flange throughout substantially its entire width, it frequently occurs, owing to the thinness of the foot flange near its outer edge,

that, under the strain, a portion of said foot flange is broken off.

The object of my present invention is to obviate the foregoing difficulties.

To this end, the invention consists in constructing the splice bar so that the under surface of a considerable portion of its outwardly extending member shall not engage the foot flange of the rail.

The invention also consists in making the weakest portion of said splice bar at a line within the vertical plane of the outer edge of said foot flange.

The invention further consists in certain details hereinafter specifically pointed out.

In the drawings, 1, 1 are the rails, connected by the splice bars or joints, 2, provided with the usual vertical members, 3, through which the usual securing bolts 4, pass; said vertical limbs having the upper inclined surface, 3^a, conforming to the under side of the rail head, and having also the inclined lower surface, 3^b, conforming to and engaging the upper surface of the foot flange, 5. Extending outwardly from the lower portion of said vertical member, 3, is a member, 6, whose under surface, 6^a, as seen in Fig. 1, is out of contact with the upper surface of the foot flange, 5, of the rail; said surface, 6^a, extending from the surface, 3^b, at a smaller angle to the horizontal, thereby affording a clearance between it and the upper surface of the foot flange, 5. Said outwardly extending member, 6, is bent downwardly and inwardly in the usual manner, to form the inwardly extending member, 7; beneath the foot flange of the rail, and whose upper plane surface, 7^a, conforms to and engages the under surface of said foot flange. The outwardly extending member, 6, is made weakest at a vertical plane within the plane of the outer edge of the foot flange, 5, preferably at the portion marked *x* in Fig. 1, approximately where said member 6 joins the vertical member, 3, of the splice bar.

In fitting the splice bars to the rails, as shown in the drawings, should the distance between the head and foot flanges of the rail be slightly greater than the height of the vertical member, 3, of the splice bar, thus necessitating that the letter be drawn by the bolts, 4, closer to the web of the rail, instead of the inwardly extending member, 7, being forced downwardly and outwardly by the

wedge action of the foot flange of the rail, thereby frequently breaking the splice bar at about the junction of the members 6 and 7; owing to the clearance between the surface, 6^a, of the member 6, and the upper surface of the foot flange, and also on account of the weakest portion of the splice bar being at the point *x*, as hereinbefore referred to, said outwardly extending member, 6, will flex downwardly from the said weakest point, and instead of there being any tendency of the member 7 to move away from the under surface of the foot flange, 5, of the rail, said member, 7, will tend to cling closer thereto.

In rolling splice bars, I would usually make the same so that the distance between the surfaces 3^b and 7^a is slightly less than the thickness of the rail foot flange, so that if the splice bar is to be fitted to a rail having a thinner foot flange than the normal, the surface, 7^a, will always contact with the under surface of said foot flange; and when the foot flange is of the normal thickness, by reason of the weakest portion of the splice bar being in member 6, as hereinbefore mentioned, the member, 7, will yield slightly to permit the insertion of the foot flange between the surfaces 3^b and 7^a, the latter surface closely contacting with the under surface of said foot flange; it being desired that the under surface of the foot flange and the surface 7^a of the splice bar shall always be in close contact. I also usually provide the inner edge of the member, 7, with a reinforcing rib, 8, extending between the ties, 9, which stiffens the inner edge of said member, and assists in preventing its downward displacement. By having the contact of the upper surface of the foot flange, 5, with the corresponding surface of the splice bar, 2, only for a distance considerably within the plane of the outer edge of said foot flange, 5, I also prevent any tendency, under strain, to break off the outer portion of said foot flange.

I remark that, although I do not wish to limit myself thereto, I would preferably have the contact of the splice bar with the upper surface of the foot flange, 5, equal to the contact of the under side of the head of the rail with the top of the splice bar; that is, I would prefer that the contacting surfaces, 3^a and 3^b, be of substantially equal width, so that there would be no tendency of the splice bar to tilt, on account of unequal bearing surfaces.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent:—

1. A rail joint comprising a vertical member having upper and lower surfaces adapted to bear respectively against the under side of the head and the upper side of the foot of a rail, the outwardly extending member whose lower surface extends from the lower surface of said vertical member at a smaller angle to the horizontal than said surface, together with the member extending downwardly and inwardly from said outwardly extending member, and whose upper surface is substantially plane and horizontal; the weakest portion of said joint being in said outwardly extending member, within the plane of the meeting point of said outwardly and inwardly extending members.

2. A rail joint comprising a vertical member having upper and lower surfaces adapted to bear respectively against the under side of the head and the upper side of the foot of a rail, the outwardly extending member whose lower surface extends from the lower surface of said vertical member at a smaller angle to the horizontal than said surface, together with the member extending downwardly and inwardly from said outwardly extending member, and whose upper surface is substantially plane and horizontal; the weakest portion of said joint being in said outwardly extending member, adjacent its junction to said vertical member.

3. A rail joint comprising a vertical member having upper and lower surfaces adapted to bear respectively against the under side of the head and the upper side of the foot of a rail, the outwardly extending member whose lower surface extends from the lower surface of said vertical member at a smaller angle to the horizontal than said surface, together with the member extending downwardly and inwardly from said outwardly extending member, and whose upper surface is substantially plane and horizontal; the thinnest section of said outwardly and inwardly extending members being in the outwardly extending member, adjacent its junction to said vertical member.

In testimony whereof, I have hereunto affixed my signature.

GEORGE W. WHITEMAN.

Witnesses:

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