H. C. FOX.

RAILWAY RAIL JOINT.

APPLICATION FILED SEPT. 15, 1913.

1,092,480. Patented Apr. 7, 1914.

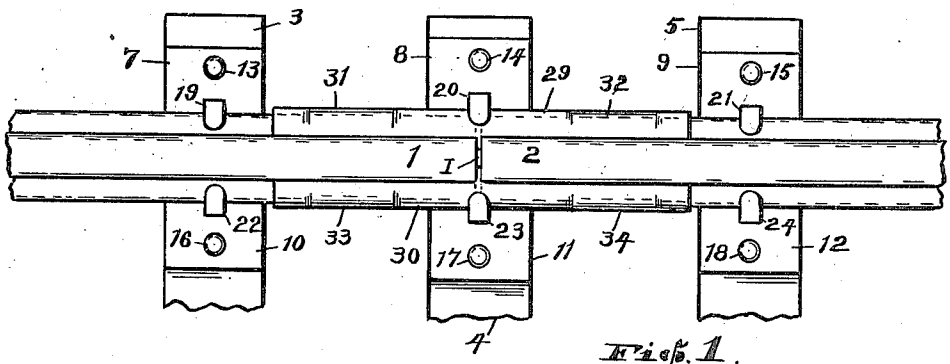


Fig. 1.

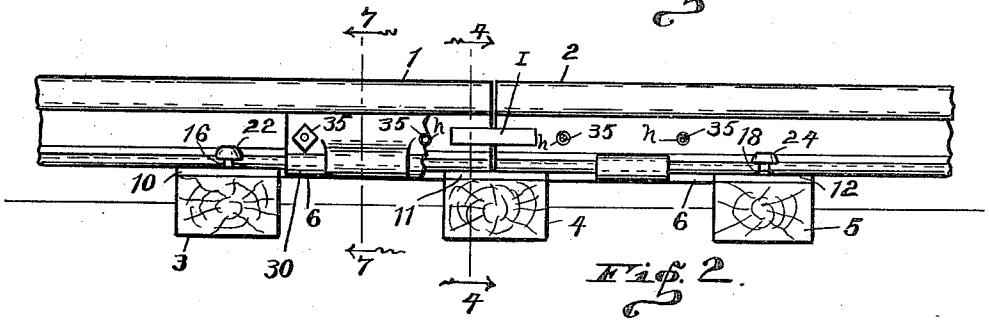


Fig. 2.

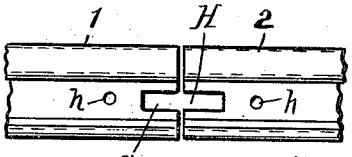


Fig. 3.



Fig. 5.

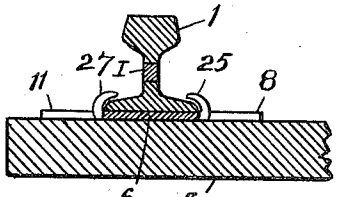


Fig. 4.

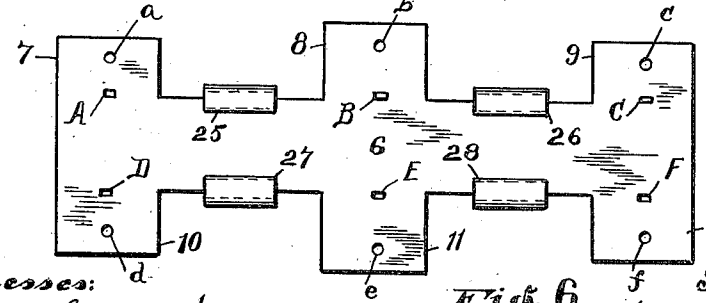


Fig. 6.

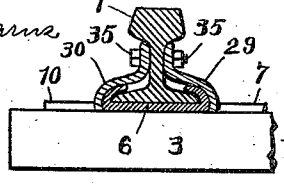


Fig. 7.

Witnesses:
Adelaide Hearn.
R. L. Hearn.

Inventor:
Henry C. Fox;
By Robert H. Lancelle
Attorney.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY C. FOX, OF RICHMOND, INDIANA.

RAILWAY-RAIL JOINT.

1,092,480. Specification of Letters Patent. Patented Apr. 7, 1914.

Application filed September 15, 1913. Serial No. 789,728.

To all whom it may concern:

Be it known that I, HENRY C. FOX, a citizen of the United States, residing at No. 219 National avenue, in the city of Richmond, Wayne county, and State of Indiana, have invented a new and useful Construction for Railway-Rail Joints, of which the following is a full, clear, and comprehensive specification and exposition, being such as will enable others to make and use the same with exactitude.

My present invention relates to improvements in means for connecting and supporting the adjoining portions of ordinary railway rails, and for preventing independent vertical movements of one rail with relation to the other.

The object of my invention, broadly speaking, is to provide a railway rail joint and support which will be strong and durable in construction, positive in action, neat and mechanical in appearance, and which can be manufactured, installed, and repaired at a comparatively low price.

Other objects and particular advantages of my invention will be made apparent from the following description, and that which is new and useful will be pointed out in the appended claims.

In carrying out my invention the several related parts are constructed and arranged in substantially the manner shown in the accompanying drawings, in which—

Figure 1 is a plan view of one of my rail joints, showing the adjoining portions of two rails, the upper faces of end portions of three ties, and the various other parts in their relative operative positions. Fig. 2 is an outside elevation of portions of two adjoining rails, the ends of three ties, with a portion of the outer fish-plate removed, and with the key in operative position. Fig. 3 shows a side elevation of the adjoining end portions of two rails alone. Fig. 4 is a cross-section of the assembled parts, the same being shown as taken on line 4—4 of Fig. 2. Fig. 5 is an isometrical detail view of the key alone. Fig. 6 is a plan view of the supporting plate and of the parts formed integral therewith, and Fig. 7 is a cross section, as taken on line 7—7 of Fig. 2.

Similar indices denote like parts throughout the several views.

In order that the construction, the arrangement, and the operation of my invention may be more fully understood, and the advantages thereof be properly appreciated, I will now take up a detail description thereof in which I will set forth the invention as briefly and as comprehensively as I may.

Referring now to the drawings in detail: Numerals 1 and 2 denote the abutting end portions of two rails; and numerals 3, 4 and 5 denote the cross ties by which the rails are carried in the usual manner. Resting across on top of the three ties, underneath the base of the rails 1 and 2, and extending parallel with the rails, is the body of the supporting-plate 6. Said plate is formed (preferably) of sheet metal, and from each side thereof projects three wings which rest upon the respective ties. Said wings are formed integral with the body 6, and they are denoted by numerals 7, 8, 9 on one side, and 10, 11 and 12 on the other side. The wings 7 and 10 are in alinement with each other and they both rest on the tie 3. The wings 8 and 11 are in alinement with each other and they both rest on tie 4. The wings 9 and 12 are in alinement with each other and they both rest on tie 5. An aperture is formed through the end portion of each of said wings 7, 8, 9, 10, 11 and 12, and they are denoted by the respective letters *a*, *b*, *c*, *d*, *e* and *f*, as shown in Fig. 6, through which the respective headed nails 13, 14, 15, 16, 17 and 18 may be inserted and driven into the ties, to retain the supporting plate and the ties in proper position, as shown in Fig. 1. At the juncture of each wing 7, 8, 9, 10, 11 and 12 with the body 6 the square apertures A, B, C, D, E and F, respectively, are formed, to receive the respective spikes 19, 20, 21, 22, 23 and 24, the latter to be driven into the ties with their heads engaging the base of the rails in the usual manner, as shown in Fig. 1. Also formed integral with the body 6 of the supporting plate are the four jaws 25, 26, 27, and 28, there being one of said jaws located between each two of said wings, the same being curved upward and inward to snugly engage around the edges of the base of the rails 1 and 2, as shown in Fig. 4, in order to prevent lateral displacement of the rails.

Numerals 29 and 30 denote the two fish-plates, each being formed to engage its side of the rails 1 and 2 and to extend from the under side of the head of the rails downward to the lower edge of the base of the

rails, there being incisions cut into the lower edge of each fish-plate to form tongues which are bent upward and rest on the respective jaws above mentioned, the tongues in fish-plate 29 being denoted by numerals 31 and 32, and those in fish-plate 30 by numerals 33 and 34. Said fish-plates extend from near the tie 3 to near the tie 5, contacting with the sides of the rails and overlapping and breaking the joint between the two rails. A plurality of apertures *h* are formed through the central portion of the stem of each rail and registering therewith are corresponding apertures formed through the two fish-plates. Through each aperture *h* and through corresponding apertures in the fish-plates is disposed a bolt 35, by which the fish-plates are clamped tightly against their respective sides of the rail. Formed horizontally in the center of the web or stem of each rail and extending from the ends of the rails inward are the respective rectangular notches G and H, which combined form an oblong slot, when the ends of the rails are placed adjacent each other, as shown in Fig. 3.

Letter I denotes a key, shown in Fig. 5, whose dimensions are such as to neatly fill said slot formed by the notches G and H, as shown in Fig. 2. Said key is retained in place in said slot by means of the fish-plates 29 and 30 which are located on each side thereof.

From the above it is manifest that the adjoining ends of the two rails are reinforced and supported by a combination of instrumentalities: by the ties, particularly by tie 4; by the fish-plates 29 and 30; by the plate 6; and by the key I. And the adjoining ends of the rails are prevented from lateral movement by the ties above mentioned; by the plate 6 and its wings; by the nails and the spikes; by the jaws of plate 6; by the fish-plates; and by the tongues of the fish-plates which overlap said jaws. However with all of the above mentioned supporting and securing means no obstruction is imposed for the usual expansion and contraction of the rails, as they are free to move endwise a limited distance.

I desire that it be understood that various changes may be made in the details of construction without departing from the spirit of my invention and without sacrificing any of the advantages thereof.

Having now fully shown and described my invention, and the best means known to me at this time for constructing the same in a practical and a mechanical manner, what I claim and desire to secure by Letters Patent of the United States, is—

1. A railway rail joint comprising in combination with the adjoining portions of two rails, and cross ties supporting the rails, a plate disposed between the rails and the cross-ties, wings extending out from said plate and secured to the cross-ties, jaws formed integral with said plate and located between said wings and adapted to engage the base of the rails, fish-plates connecting the ends of the rails together, and tongues formed by the lower portion of the fish-plates and adapted to overlap said jaws.

2. A railway rail joint comprising in combination with the adjoining ends of two rails each having a slot formed midway of their meeting edges, a key located in the slot, fish-plates attached to the sides of the rails and retaining said key in its slot, cross ties supporting the rails, a plate disposed between the rails and the cross-ties, wings extending out from said plate and secured to the cross-ties, jaws formed integral with said plate and located between said wings and adapted to engage the base of the rails, and tongues formed by the lower portions of the fish-plates and adapted to overlap said jaws, all substantially as shown and described.

In testimony whereof I have hereunto subscribed my name to this specification in the presence of two subscribing witnesses.

HENRY C. FOX.

Witnesses:
JOHN A. MARKLEY,
CORNELIUS R. RICHARDSON.

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