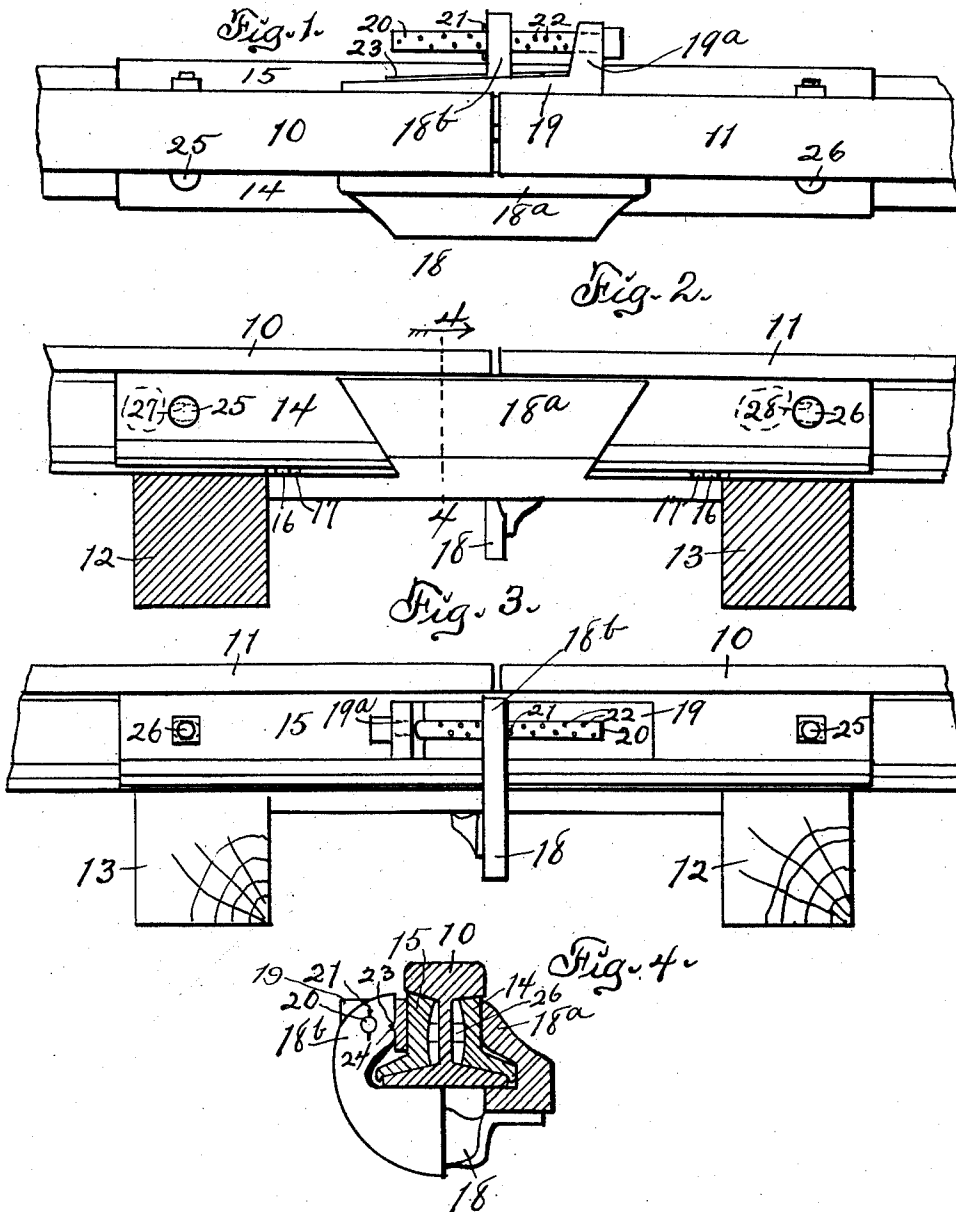


A. J. SHURTZ.
RAILWAY RAIL JOINT.
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UNITED STATES PATENT OFFICE.

ANDREW J. SHURTZ, OF DES MOINES, IOWA.

RAILWAY-RAIL JOINT.

1,044,273.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ANDREW J. SHURTZ, citizen of the United States of America, and resident of Des Moines, Polk county, Iowa, have invented a new and useful Railway-Rail Joint, of which the following is a specification.

The object of this invention is to provide improved means for connecting abutting end portions of railway rails.

A further object of this invention is to provide an improved construction for railway rail joints to permit longitudinal expansion and contraction of the rails without damage to the connecting means.

A further object of this invention is to provide improved means for locking fish plates or splice bars to abutting end portions of railway rails.

My invention consists in the construction, arrangement and combination of elements hereinafter set forth, pointed out in my claims and illustrated by the accompanying drawing, in which—

Figure 1 is a plan of a railway rail joint embodying my improvement. Fig. 2 is a side elevation and Fig. 3 an opposite side elevation of the same. Fig. 4 is a cross-section on the indicated line 4—4 of Fig. 2.

In the construction of the device as shown the numerals 10, 11 designate abutting end portions of railway rails, which rails are supported in a common manner by cross-ties such as 12, 13, and said rails preferably are spaced apart slightly as shown. Angle fish-plates or splice bars 14, 15 are mounted on opposite sides of and fitted to the rails 10, 11 and overlap the joint thereof. The splice bars 14, 15 are formed with a plurality of downwardly extending lugs 16 on the lower surfaces of their base flanges and said lugs are received within outwardly opening notches 17 in the base flanges of the rails 10, 11 on either side. The notches 17 are of greater length longitudinally of the trend of the rails than are the lugs 16, and said lugs normally are centered relative to said notches. This construction provides means for holding the splice bars relative to the rails and does not interfere with longitudinal expansion and contraction of the rails under the influence of changes of temperature. A clamp 18 is mounted beneath and embraces the lower portions of the rails 10, 11 adjacent the joint thereof and said clamp is formed with an elongated jaw 18^a

on one side which is fitted to and bears against the outer surface of the splice bar 14. The clamp 18 is formed with a jaw 18^b on its opposite side which in use is in spaced relations to the splice bar 15.

The clamp 18 preferably is formed in one piece by molding and the base portion of the jaw 18^a is of sufficient length to span the space between the ties 12 and 13 and is firmly held between said ties. This tends to prevent displacement of the clamp and creeping of the rails. A wedge 19 is adapted to be driven between the splice bar 15 and jaw 18^b of the clamp and to hold said clamp firmly in place and in binding relations to the splice bars and rails. The wedge 19 is formed with a head 19^a projecting laterally from one side of its thicker end and said head is apertured in registration with an aperture in the jaw 18^b. A bolt 20 is adapted to be mounted through the registering apertures of the head 19^a and jaw 18^b and is held in place by a key 21 adapted to be mounted through one or another of a series of holes 22 in the bolt and in proximity to the face of the jaw 18^b opposite to the head 19^a of the wedge. Thus the wedge is held against longitudinal movement relative to the clamp and splice bar. The wedge 19 is formed with a longitudinal spline 23 on its outer face. The spline 23 is angular in cross-section and is adapted to be received within an angular, inwardly opening notch 24 in the jaw 18^b. Thus the wedge 19 is guided in movement to its seat between the jaw and splice bar, and is held against vertical movement relative thereto.

In practical use the rails 10, 11 are placed in position on the ties 12, 13. The clamp 18 is placed in embracing relations beneath the joint of the rails by movement through an arc from one side. The clamp is moved laterally to bring the jaw 18^a into spaced relations with the sides of the rails and the angle splice bar 14 is inserted between said jaw and the rails by movement through an arc around the top of the jaw. The clamp 18 is then moved laterally to bring the jaw 18^a into contact with the splice bar 14 and the splice bar 15 is inserted between the jaw 18^b and the rails by movement through an arc around the top of the jaw, the lugs in both cases being received within the notches 17. The wedge 19 is then inserted between the jaw 18^b and splice bar 15 and is driven in tightly to hold the clamp and splice bars

in place relative to the rails, and by this means sufficient force is applied to prevent any movement of the rails or splice bars relative to each other, except such as may occur through expansion or contraction. The bolt 20 is inserted through the registering apertures of the head 19^a and jaw 18^b and the key 21 inserted in one or another of the holes 22 therein. Thus the rails 10, 11 may be connected without the use of bolts through them. However, when my improved device is employed with old rails already in place and provided with holes or slots as 27, 28 to receive bolts for connection to splice bars, I prefer to mount bolts such as 25, 26 through end portions of the splice bars 14, 15 and pass them loosely through said holes or slots 27, 28 in the webs of the rails. Longitudinal expansion and contraction of the rails is permitted by the construction above described without damage to the connecting means, and such construction provides a durable and efficient means for uniting the rails.

I claim as my invention—

1. A railway rail joint, comprising in combination with abutting ends of rails suitably supported, splice bars mounted on opposite sides of and overlapping the joint between said rails, a clamp beneath and in embracing relations with said rails and splice bars, said clamp being formed with a base portion adapted to engage spaced railway ties, one end of said clamp engaging one splice bar, the opposite end of said clamp being spaced from the opposite splice

bar and being formed with a notch opening toward said bar, and a wedge adapted to be driven into the space between said clamp and the latter splice bar to tighten said clamp in place, said wedge being formed with a spline traversing the notch in the clamp.

2. A railway rail joint, comprising in combination with abutting ends of rails and spaced cross ties supporting the same, splice bars mounted on opposite sides of and overlapping the joint between said rails, a clamp beneath and in embracing relations with said splice bars and rails, said clamp being formed with a base portion adapted to be located between said cross ties and engaging said ties at its ends, one end of said clamp engaging one splice bar, the opposite end of said clamp being spaced from the opposite splice bar, and formed with a notch opening toward said bar, a wedge adapted to be driven into the space between said clamp and the latter splice bar to tighten said clamp in place, said wedge being formed with a spline traversing the notch in the clamp and also formed with a lateral head, said head and clamp being formed with registering apertures, and a bolt removably and replaceably mounted in said apertures and adapted to hold said wedge to its seat.

Signed by me at Elkhart, Iowa, this 22nd day of April, 1911.

ANDREW J. SHURTZ.

Witnesses:

RAYD A. CLARK,
J. H. BURGESS.