S. SHULLER.

RAIL JOINT.

APPLICATION FILED DEC. 20, 1909.

956,440. **Patented Apr. 26, 1910.**

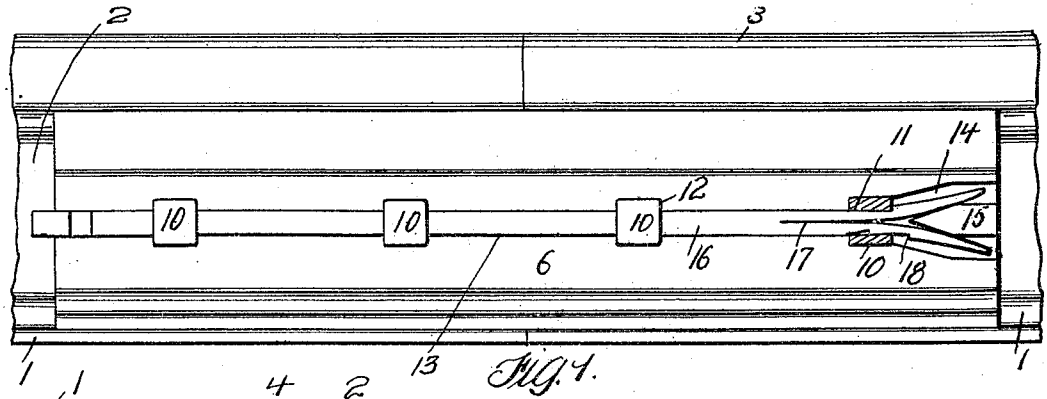

Fig. 1.

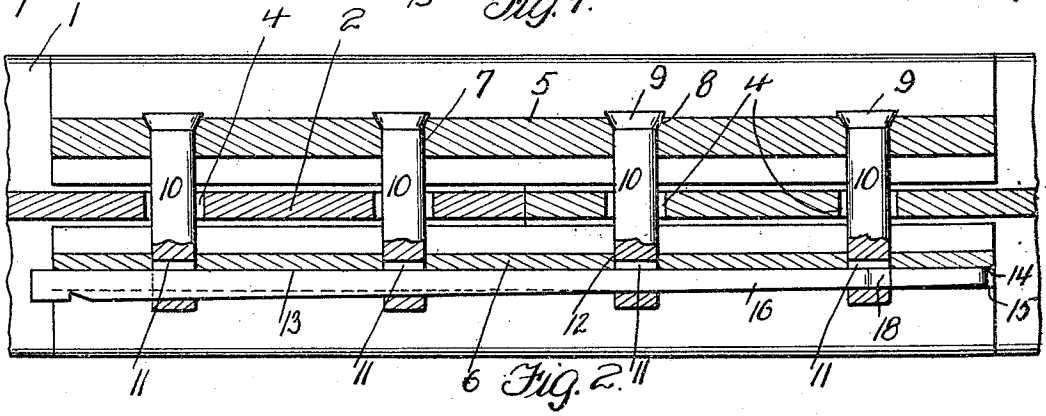

Fig. 2.

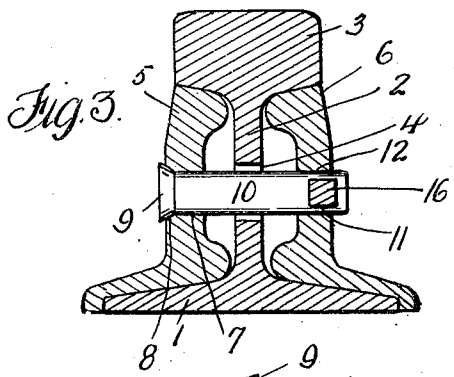

Fig. 3.

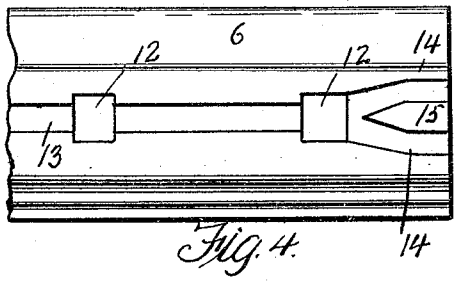

Fig. 4.

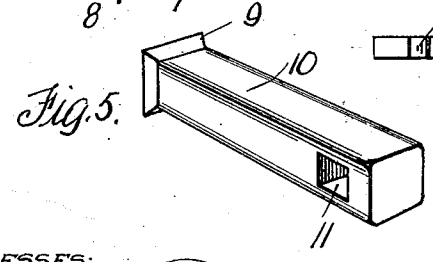

Fig. 5.

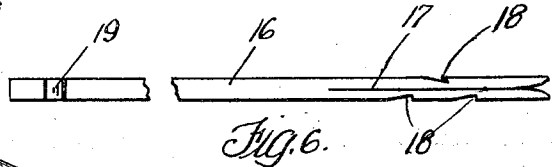

Fig. 6.

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UNITED STATES PATENT OFFICE.

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RAIL-JOINT.

956,440. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed December 20, 1909. Serial No. 534,230.

To all whom it may concern:

Be it known that I, SIMON SHULLER, a subject of the King of Hungary, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to rail joints and the invention has for its objects, first, to provide simple and effective means for holding the confronting ends of two rails; second, to provide a rail joint having practically a continuous tread thereby obviating vibrations of rolling stock when passing over a joint; third, to provide positive and reliable means for fastening splice bars to confronting ends of rails without the use of nuts and bolts; fourth, to provide a strong and durable rail joint that can be installed without the use of skilled labor, and fifth, to provide a fastening means for splice bars that will remain in a locked position and cannot be displaced by the jarring or vibrating to which it may be subjected by rolling stock.

These and such other objects as may hereinafter appear are attained by a novel construction, combination, and arrangement of parts that will be hereinafter described in detail and then claimed, and reference will now be had to the drawing forming a part of this specification, wherein there is illustrated what I believe to be a practical embodiment of my invention; but it is to be understood that the structural elements thereof can be changed without departing from the spirit of the invention.

Reference will now be had to the drawing wherein like numerals of reference designate corresponding parts throughout the several views, in which:—

Figure 1 is a side elevation of the rail joint. Fig. 2 is a horizontal sectional view of the same. Fig. 3 is a cross sectional view. Fig. 4 is a side elevation of a portion of a detached splice-bar. Fig. 5 is a perspective view of a pin adapted to form part of the joint, and Fig. 6 is a side elevation of a key forming part of the joint.

The rails shown in the drawings comprise base flanges 1, webs 2 and heads 3, said webs being provided with a plurality of transverse openings 4, which are rectangular for a purpose that will hereinafter appear.

Embracing the webs 2 of the rails and supporting the heads 3 thereof are splice-bars 5 and 6, the bar 5 being provided with rectangular transverse openings 7 adapted to aline with the openings 4 of the webs 2. The outer side of the splice-bar 5 bordering upon the opening 7 is cut away to provide seats 8 for the heads 9 of pins 10 adapted to extend through the openings 7 and 4. These pins are rectangular in cross section and have the outer ends thereof provided with longitudinal openings 11, which are also rectangular. The splice-bar 6 is provided with transverse rectangular openings 12 adapted to receive the ends of the pins 10. The outer side of the bar 6 is provided with a longitudinal groove 13 extending from one end of the splice-bar to the opposite end thereof, said groove intersecting the openings 12 and alining longitudinally with the openings 11. One end of the groove 13 is branched, as at 14, providing a V shaped member 15, which is formed integral with the splice-bar 6 at one end thereof.

Mounted in the groove 13 and extending through the openings 11 of the pins 10 is a tapering key 16 having a split end 17 provided with notches 18 upon the upper and lower sides thereof, the notches upon the upper side being staggered with relation to the notch or notches upon the lower side. The large end of the key 16 has the outer side thereof provided with a notch 19, the purpose of which will presently appear.

After the pins 10 have been positioned in the splice-bars 5 and 6, the key 16 is driven into the groove 13 and the openings 11 to lock and bind the pins 10 in engagement with said splice-bar. When the split end of the key 16 encounters the spreading member 15, the ends of said key are deflected into the branched portions of the groove 13 and one of the notches 18 is adapted to engage the pin 10 adjacent to said member and prevent the key 16 from becoming accidentally displaced. The taper of the key 16 is sufficient to bind each and every pin in the splice-bars, and by removing the spreading member 15 with a suitable instrument, the key 16 can be removed by using a suitable instrument to engage the key at the notch 19, said notch providing a shoulder for the grip of a suitable instrument. Should it be desired to again use the splice bar from which the spreader 15 has been removed, the

split end of the key can be spread apart by a suitable tool after the key has been driven into position. In making the pins 10 and the openings through which said pins pass rectangular, the pins are prevented from rotating, but it is obvious that the pins can be made cylindrical in so much that the key prevents said pins from rotating.

It is thought that the utility and manner of assembling the various parts of the joint will be apparent without further description.

Having now described my invention, what I claim as new is:—

1. In a rail joint, the combination with rails having the webs thereof provided with rectangular openings, and splice-bars adapted to brace the web portions of said rails, said splice-bars having rectangular openings formed therein alined with the openings of said rails, of rectangular pins mounted in said openings and having the outer ends thereof provided with longitudinal alining rectangular openings, one of said splice-bars having a longitudinal groove formed therein intersecting the openings of said splice-bar and registering with the openings of the pins, said splice-bar having the groove thereof branched at one end to provide a spreading member, and a tapering key mounted in said groove and adapted to extend through the openings of said pins, said key having the end thereof split and adapted to be spread by said spreading member, and the upper and lower sides of said key at the split end thereof provided with notches adapted to engage one of the said pins and lock said key in engagement with the splice-bar, substantially as described.

2. In a rail joint, the combination of rails having the webs thereof provided with openings, and splice-bars adapted to brace the web portions of said rails, said splice-bars being provided with openings adapted to aline with the openings of said rails, of pins mounted in said openings and having the outer ends thereof provided with longitudinal alining openings, one of said splice-bars having a groove formed therein adapted to intersect the openings of said splice-bar and registering with the openings of said pins, the said splice-bar having the groove thereof branched at one end to provide a spreading member, and a split tapering key adapted to be driven into said groove and through the openings of said pins to impinge upon said spreading member and spread the split ends of said key to lock said key in engagement with said splice-bar.

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

SIMON SHULLER.

Witnesses:
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Max H. Srolovitz.