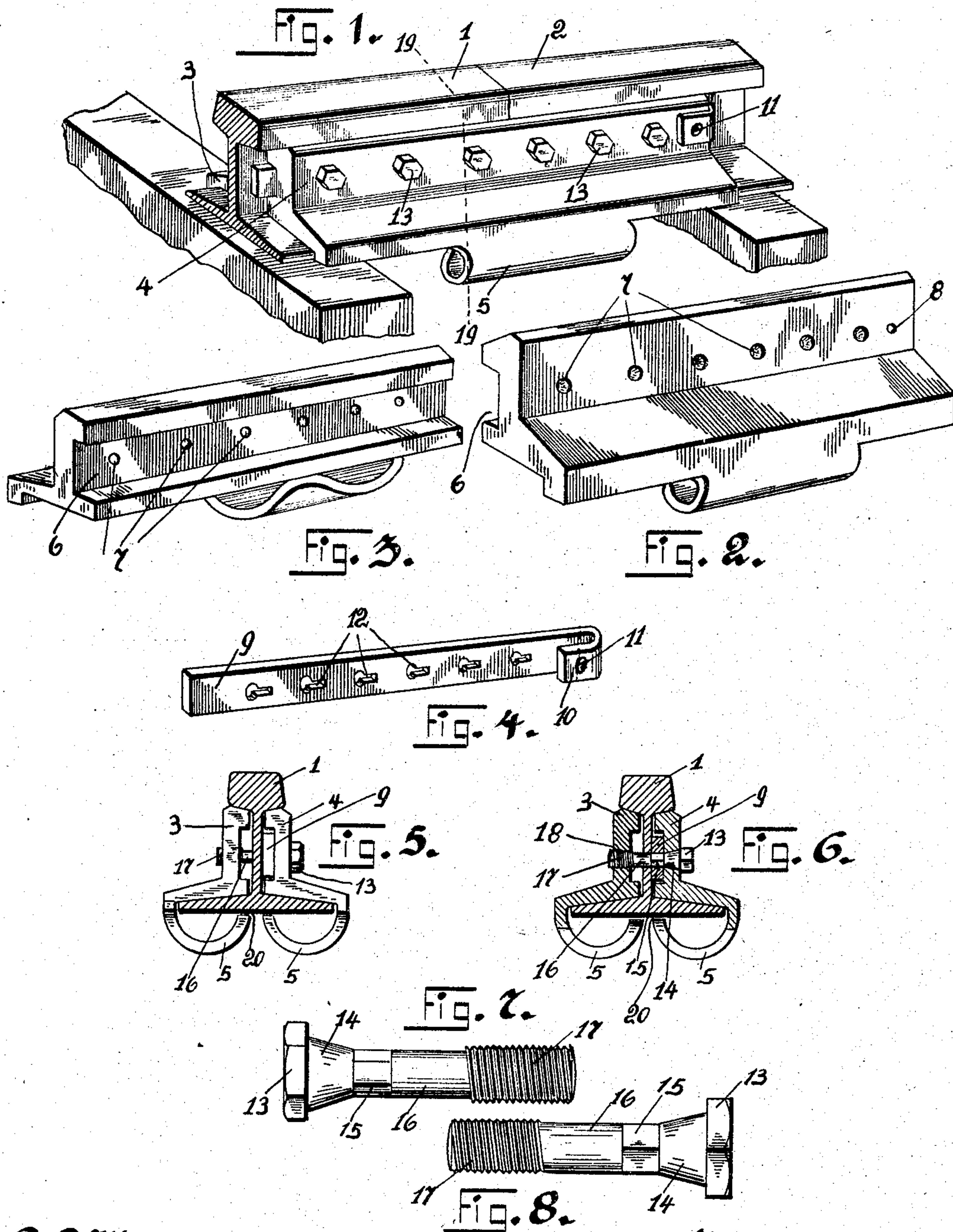


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SPLICE BAR LOCK FOR RAIL JOINTS.
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UNITED STATES PATENT OFFICE.

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SPLICE-BAR LOCK FOR RAIL-JOINTS.

SPECIFICATION forming part of Letters Patent No. 782,571, dated February 14, 1905.

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To all whom it may concern:

Be it known that I, RICHARD LANG, a citizen of the United States, residing at McKeesport, in the county of Allegheny, State of Pennsylvania, have invented certain new and useful Improvements in my Splice-Bars and Locking Device for Rail-Joints, patented April 5, 1904, Patent No. 756,380; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to splice-bar locks for rail-joints; and it consists of certain novel features of combination and construction of parts, as will be hereinafter clearly set forth, and pointed out in the claims.

The object of my invention, among others, is to provide locked splice-bars for rail-joints which shall be reliably substantial in strength and efficient in character and which consist of a pair of splice-bars of a peculiar pattern locking the rail ends securely together with the locking-bolts, which are of a peculiar pattern, locked in position by the locking-slide, which rests in the groove between the splice-bar and the rail, as hereinafter described.

Other objects and advantages will be hereinafter made clearly apparent, reference being had to the accompanying drawings, which are made a part of this application, and in which—

Figure 1 shows a perspective view of two rail ends securely locked in position by my invention ready for use. Fig. 2 shows a perspective view of splice-bar 4, which possesses an unusually deep groove on the inner side its entire length. It also possesses a plurality of round beveled apertures for bolts and a socket on its outer side near the right end, also a half-circle lip or extension 5, as shown in Figs. 2 and 3. Both splice-bars possess this half-circle curved lip, as shown in Figs. 5 and 6, the edge of each half-circle resting on the under side of the base of the rail at the joint near the center, as shown in Figs. 5 and 6. Fig. 3 shows a perspective detail view of the inner side of splice-bar 4 and groove in same, also the half-circle lip curved inwardly. Fig. 4 shows a perspective view of the locking-slide. Fig. 5 shows a transverse sectional

view of the rail and splice-bars, with the splice-bars severed at the joint which shows the half-circle lip, curved in a half-circle under, with the edge of each circle resting on the under side of the base of the rail, the splice-bars being held in position by the locking-bolt with a hexagonal section and hexagonal head. Fig. 6 shows a transverse sectional view of the rail and splice-bars severed on dotted line 19 19, as shown in Fig. 1, and retained in position by the locking-bolt with a square section and square head. Fig. 7 shows a plan view of the locking-bolt with a hexagonal section and a hexagonal head and raised threaded terminal. Fig. 8 shows a plan view of the locking bolt with a square section and square head.

My reasons for showing the locking-bolts with a hexagonal as well as a square head and section, as shown in Figs. 7 and 8, are that it is impossible to turn a large bolt with a square head, as the corners of the square head strike the base-flange of the splice-bar, preventing the turning of the bolt into place. Also a hexagonal section cannot be used on a small bolt, as there is not sufficient space on a small bolt to make a hexagonal section of sufficient surface to prevent the reverse rotary movement of the locking-bolt in the keyhole-aperture of the locking-slide. Therefore to accomplish the purpose of this invention it is necessary to use a square head and section on a small bolt and a hexagonal head and section on a large bolt, as it is necessary that the head and section should correspond in shape.

For convenience of description the various details of my invention and cooperating accessories will be referred to by numerals, the same numeral applying to a similar part throughout the several views.

In order to reliably reinforce and strengthen the meeting ends of the track-rails (designated by the numerals 1 and 2) in their adjusted positions, I employ a pair of splice-bars, (indicated by the numerals 3 and 4,) each having an inwardly-extending half-circle lip 5, curved under to rest in close contact with a contiguous part of the rail-base 20, as clearly shown in Figs. 5 and 6. The inwardly-inclined lip or extension terminates in a half-circle curve,

the extreme edge of which is designed to bear directly against the central portion of the rail-base 20, at the point of juncture of the two rails, the said lip being designed for the purpose of reinforcing and strengthening the joint, making the joint as substantial as any part of the rail.

The splice-bar 3 is provided with a plurality of threaded apertures of the proper size to receive the threaded end 17 of the locking-bolt instead of using nuts. (These threaded apertures are a part of my Patent No. 756,380.) The splice-bar 4 differs from splice-bar 3, as it is provided with a plurality of round beveled apertures 7 of the proper size to receive and fit the round tapering neck or conical head 14 of the locking-bolts. It will also be observed that the splice-bar 4 is provided with a deep groove 6 on its inner side next to the rail its entire length, as shown in Fig. 3, adapted to afford a seat for the locking-slide 9 designed for the purpose, as hereinafter set forth. Also splice-bar 4 is provided with a small socket 8 on its outer side near the right end, as shown in Fig. 2, prepared for the purpose of receiving the lug 11 of the locking-slide. The locking-slide 9 consists of a suitable piece of metal turned up at one end to form the loop 10, which carries the lug 11, adapted to fit in the socket 8 in the splice-bar 4, thus securing the locking-slide reliably in place. The locking-slide is also provided with a plurality of keyhole-apertures 12, which fit over the hexagonal or square sections 15 of the locking-bolts when adjusted in its proper position, thereby preventing the reverse rotary movement of the locking-bolts when adjusted in their proper position.

The locking-bolts have an angular head 13, preferably a square or hexagonal formation, as shown in Figs. 7 and 8. The locking-bolts also have a round tapering neck, a conical head-section 14, an angular section 15, made to correspond with the form of head employed, a round body-section 16, and a raised threaded terminal 17. It is intended to use these locking-bolts in connection with threaded apertures 18 in the splice-bar 3 in order to dispense with the use of nuts. However, these locking-bolts can be used with a nut or as a stud-bolt, preferably the latter.

It will be observed that the rail ends are secured in position as follows: Place splice-bar 3 on one side of the rails at the joint and splice-bar 4 on the opposite side, the half-circle curved lip of each extending under the rails. Then place the locking-slide in groove 6 in splice-bar 4, loop out. Then pass the threaded end of the locking-bolts through the beveled apertures 7 in splice-bar 4, then on through the larger part of the keyhole-apertures 12 in the locking-slide, then through the holes in the web of the rails and turn into the threaded apertures in splice-bar 3 as tightly as the bolts can be turned, leaving a flat side

of the head of each bolt up, thereby placing the section of each bolt in position. Then strike on the end of the locking-slide possessing the loop, forcing the slide to the left until loop 10 passes over the end of splice-bar 4 and lug 11 springs into position in socket 8 in splice-bar 4, when the bolts are all locked in position. When the splice-bars are locked in position as above described, the curved lip extends under the base of the rail from both sides at the joint, the edge of each resting on the base 20 near the center of the base of the rail, as shown in Figs. 5 and 6, thereby greatly strengthening the joint.

The object of the round beveled apertures 7 in splice-bar 4 is to receive the round tapering neck or conical head 14 of the locking-bolts, thus forming a strong reliable head for the locking-bolts, which will securely hold the splice-bars locked in position, although the main head 13 may be severed from the bolt, as by a car jumping the track, yet not destroy the security and reliability of the joint.

My invention when constructed as above described forms, I verily believe, the strongest most reliable locked rail-joint ever invented.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The herein-described splice-bar lock, consisting of bars 3 and 4, each of which possesses a curved lip 5, one of said bars being provided with a plurality of beveled apertures 7 and socket 8, and a groove 6 on its inner side, and locking-bolts for said bars, one of said locking-bolts having a hexagonal head and a hexagonal section, both possessing a conical head-section and a raised threaded terminal, said bolts being locked in position by the herein-described locking-slide, consisting of a piece of metal turned up at one end to form loop 10 and inwardly-directed lug 11, the said locking-slide being provided with a plurality of keyhole-apertures 12, substantially as and for the purpose set forth.

2. A splice-bar lock for rail-joints, comprising a pair of bars 3 and 4, each having a curved extension adapted to be directed under the meeting ends of the track-rails, a locking-slide having a plurality of keyhole-apertures and a plurality of locking-bolts fitting said apertures, each bolt having an angular head and a corresponding angular section, said section being adapted to fit the narrow part of the keyhole-slot when the locking-slide is moved into a locked position, as and for the purpose set forth.

3. A splice-bar lock for rail-joints comprising coöperating bars 3 and 4, each having bolt-receiving apertures adapted to register with the apertures in the web of the rail, bolts designed to fit said registering apertures and having angular heads and corresponding angular sections, and a locking-slide designed to rest on the inner side of one of the bars and

having openings to receive and closely fit upon the angular section on said bolts whereby when the locking-slide is moved longitudinally all of the bolts are locked against rotation and means to lock said locking-slide, as set forth.

4. In a splice-bar lock for rail-joints, a locking-slide adapted to fit an opening between the splice-bar and web of track-rail and having at one end a loop-section carrying a lug 11, said lug being designed to fit a recess in the contiguous part of the splice-bar, as and for the purpose set forth.

5. In a splice-bar lock for rail-joints, a pair of bars 3 and 4, each having an inwardly-directed, curved extension, the free edge of each extension being directed against a contiguous part of the base of the rail whereby the latter is reinforced and supported, as and for the purpose set forth.

6. In a splice-bar lock for rail-joints, the combination with the bars 3 and 4, each having a plurality of registering apertures, of a plurality of locking-bolts, each bolt being provided with a tapered, conical neck designed to fit a seat in one of said bars and also having an angular head and a corresponding angular section whereby when the bolt is seated in its operative place the position of the angular section may be determined by the position of the angular head, as and for the purpose set forth.

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

RICHARD LANG.

Witnesses:

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FRED. BURKERT.