No. 647,983. Patented Apr. 24, 1900.

H. J. PARK.

RAIL JOINT.

(Application filed June 5, 1899. Renewed Mar. 16, 1900.)

(No Model.)

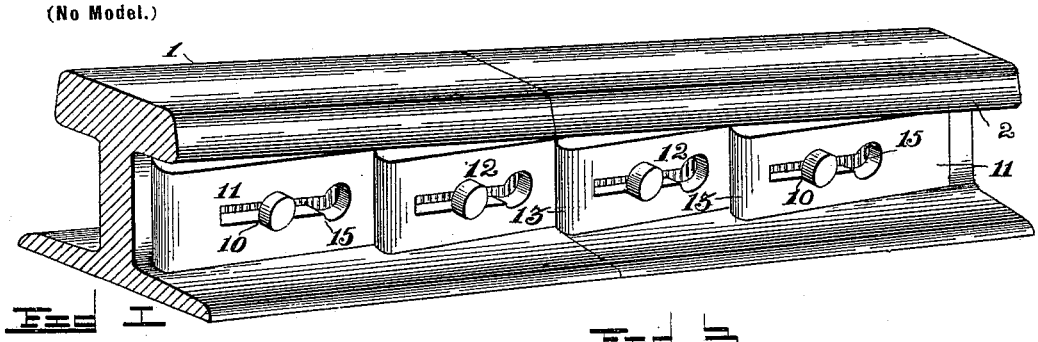


Fig. 1.

Fig. 3.

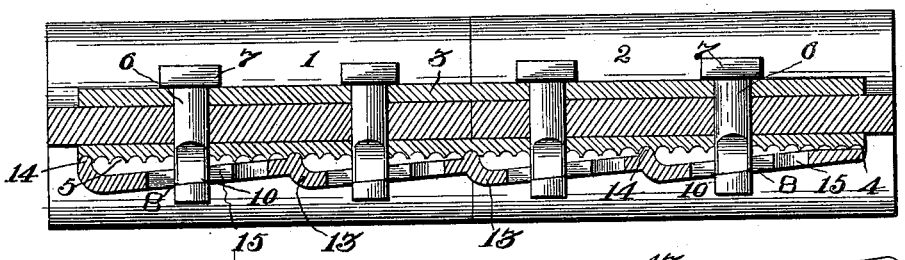
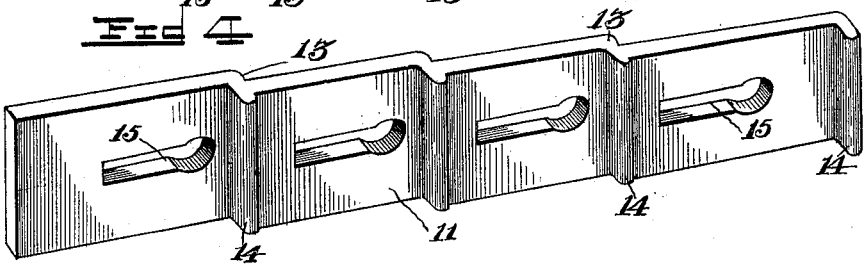


Fig. 4.



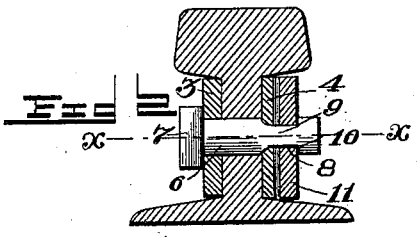


Fig. 2.

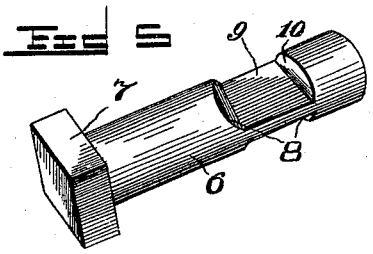


Fig. 5.

Witnesses

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By his Attorney

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UNITED STATES PATENT OFFICE.

HENRY J. PARK, OF NAVASOTA, TEXAS, ASSIGNOR OF ONE-HALF TO R. A. HORLOCK, OF SAME PLACE.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 647,983, dated April 24, 1900.

Application filed June 5, 1899. Renewed March 16, 1900. Serial No. 8,997. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. PARK, a citizen of the United States, residing at Navasota, in the county of Grimes and State of Texas, have invented a new and useful Rail-Joint, of which the following is a specification.

This invention relates to rail-joints of that class embodying headed bolts and a wedge locking-plate having keyhole-slots; and the object thereof is to provide a spring locking-plate having an interlocking engagement with the adjacent fish-plate.

With this object in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a rail-joint equipped with the improvements. Fig. 2 is a transverse sectional view taken vertically through one of the fastening bolts or pins. Fig. 3 is a horizontal sectional view taken on the line *x x*, Fig. 2. Fig. 4 is a detail perspective view of the locking spring-plate. Fig. 5 is a detail perspective view of one of the fastening-bolts.

Corresponding parts are designated by like reference characters in all the figures of the drawings.

Referring to the accompanying drawings, 1 and 2 designate, respectively, opposite abutting rail-sections of common or ordinary form, which are joined by the present invention. At opposite sides of the rails, flush against the webs and overlapping the joint, are the respective fish-plates 3 and 4, of suitable length and fitting snugly between the treads and flanges of the rails. The outer face of one of the fish-plates, as 4, is roughened, as at 5, and preferably corrugated vertically, as clearly indicated in Fig. 3. The fish-plates and the webs of the respective rails are provided with transversely-alined bolt-openings adapted to receive the fastening-bolts 6. As illustrated in Fig. 5, each of these bolts has an integral head 7, as usual, and near the opposite end and at diametrically-opposite sides thereof the bolt is provided with notches 8, whereby a flat neck 9 is formed between the body of the bolt and the transverse stop-shoulders 10. By reference to Fig. 3 it will be noted that the shoulders 10 do not extend diametrically across the bolt, but are inclined toward the opposite ends thereof.

The fish-plates being assembled upon opposite sides of the rails, the bolts are inserted through the bolt-openings from the smooth fish-plate side of the rails, whereby the heads 7 engage the outer face of the latter fish-plate, and the necks 9 and shouldered ends 10 of the bolts project outward beyond the corrugated outer face of the opposite fish-plate 4. In order that the bolts may be locked, a locking-plate 11 is provided, as shown in detail in Fig. 4. This plate is preferably of the same length as the corrugated fish-plate, being of zigzag formation and providing a plurality of outer inclined wedge-shaped faces 12, all of which incline in the same relative direction from one end of the plate and in parallel planes. The adjacent opposite ends of the respective wedge portions of the plate are connected together by an inclined transverse shoulder 13. At the vertex of the outer angle formed between the wedges and the transverse shoulders and upon the inner side only of the plate there are provided transverse ribs 14, extending entirely across the plate and rounded in cross-section. It will be understood by reference to Fig. 3 that the ribs are all located in the same plane. Each inclined or wedge portion is provided with a keyhole-slot 15, having the enlarged portion thereof located adjacent to the rib end of the wedge and the straight slot extending longitudinally therefrom.

In applying the locking-plate the ribbed inner face thereof is placed against the outer corrugated face of the fish-plate 4, the shouldered ends of the bolts being received through the enlarged portions of the keyhole-slots and the flat necks 9 being located therein and alined with the straight portions thereof. The locking-plate is then struck at one end to force the same longitudinally across the face of the corrugated fish-plate, whereby the flat neck portion of each bolt is received within the straight portion of the respective keyhole-slots. The shoulders 10, which are inclined at the same relative angle as the outer faces

of the wedges, engage the same, and thereby force the ribs 14 into frictional engagement with the corrugated or roughened face of the adjacent fish-plate. It will be understood that the locking-plate is formed of spring metal, so that a positive frictional engagement is had between the spring locking-plate and the corrugated face of the adjacent fish-plate, whereby an accidental loosening or displacement of the locking-plate is prevented. The flat neck portions of the bolts being snugly received within the straight portions of the respective keyhole-slots, the bolts are prevented from turning, and the shoulders 10 engaging the outer face of the locking-plate prevent a longitudinal displacement of the bolts. The locking-plate may be released by forcibly moving the same in a direction opposite to that employed in positioning the plate.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the present invention.

Having thus described the invention, what is claimed is—

1. In a rail-joint, the combination with the adjacent rail-sections and the opposite fish-plates, of headed bolts having flat neck portions and opposite stop-shoulders at the outer ends of the respective necks, and a spring locking-plate having wedge portions provided with keyhole-slots, the neck portions of the bolts being received within the respective keyhole-slots, and the spring locking-plate having a frictional engagement with the adjacent fish-plate, substantially as and for the purpose set forth.

2. In a rail-joint, the combination with the adjacent rail-sections and the opposite fish-plates, of headed bolts having flat neck portions and stop-shoulders at the outer ends of the respective necks, and a zigzagged spring locking-plate having keyhole-slots formed therein and adapted to receive the necks of the respective bolts, the shoulders of the latter being adapted to engage the outer face of the locking-plate and the angled projections at one side of the locking-plate being adapted to frictionally engage the adjacent fish-plate, substantially as and for the purpose set forth.

3. In a rail-joint, the combination with the adjacent rail-sections and the opposite fish-plates, one of the latter having its outer face corrugated vertically, of headed bolts having reduced flattened neck portions, and stop-shoulders at the outer ends of the necks, of a zigzagged spring locking-plate having keyhole-slots formed therein and provided with transverse ribs located at each of the projections or raised portions upon one side only of the plate, substantially as and for the purpose set forth.

4. In a rail-joint, the combination with the adjacent rail-sections and the opposite fish-plates, one of the latter having its outer face corrugated vertically, of headed bolts, having reduced flattened neck portions, and stop-shoulders at the outer ends of the respective necks, and a zigzagged spring locking-plate, having long inclined portions forming wedges and provided with keyhole-slots, connecting-shoulders between the adjacent opposite ends of the wedge portions, and transverse ribs located at the vertex of the outer angles between the wedges and the connecting-shoulders upon one side only of the locking-plate, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY J. PARK.

Witnesses:
W. J. TERRELL,
HAYNES SHANNON.