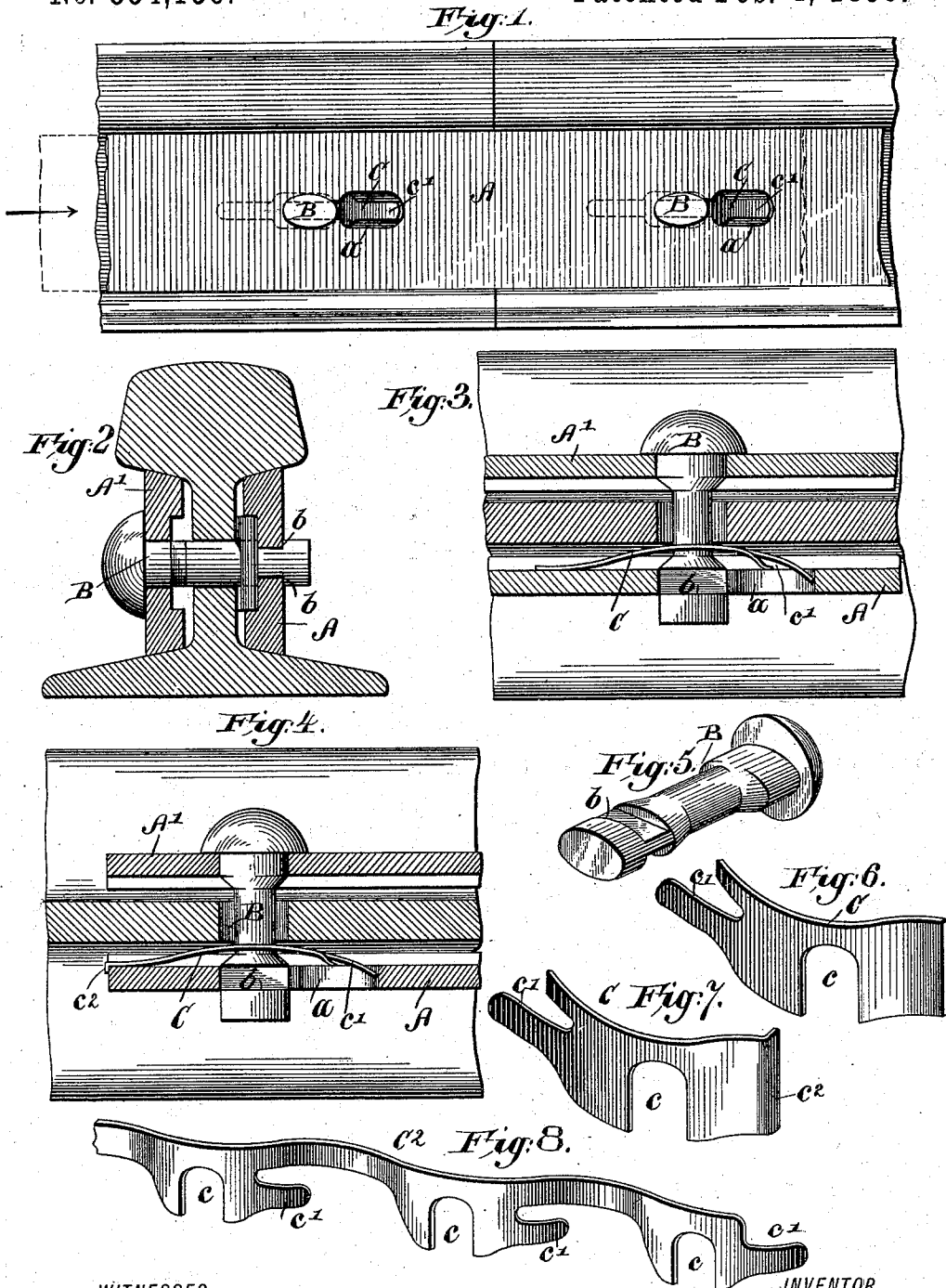


(No Model.)

A. E. TRENTOWSKY.
FISH PLATE LOCK.

No. 554,156.

Patented Feb. 4, 1896.



WITNESSES:

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ALBERT EDWIN TRENTOWSKY, OF ST. JOHN, CANADA.

FISH-PLATE LOCK.

SPECIFICATION forming part of Letters Patent No. 554,156, dated February 4, 1896.

Application filed June 19, 1895. Serial No. 553,363. (No model.)

To all whom it may concern:

Be it known that I, ALBERT EDWIN TRENTOWSKY, a citizen of the Dominion of Canada, residing at St. John, in the Province of New Brunswick, Dominion of Canada, have invented a new and useful Improved Fish-Plate Lock, of which the following is a specification.

My invention is an improvement in that class of fastenings for fish-plates or splices of railroad-rail joints in which one of a pair of such plates or splices is provided with lengthwise slots to receive the bolts that attach it to the rails, and is locked in position, when duly engaged with said bolts, by means of some removable device.

My invention is embodied in the construction of a locking-bolt and splices or fish-plates and running rails, as hereinafter described, and shown in accompanying drawings, in which—

Figure 1 is a side view of the meeting ends of two railroad-rails to which my improvement is shown applied. Fig. 2 is a vertical cross-section of the same. Fig. 3 is a horizontal section of the same. Fig. 4 is a horizontal section showing a modification of the locking-spring. Fig. 5 is a perspective view of the bolt. Fig. 6 is a perspective view of the locking-spring. Fig. 7 is a perspective view of the modified form of locking-spring. Fig. 8 is a perspective view of a form of locking-spring applicable to several bolts simultaneously.

The fish-plates or splices A A' are applied to the rails in the usual way and channeled in the inner side. The inner plate or splice, A', is provided with oval bolt-holes, which register with similar holes in the web of the rails. The bolts B have an oval shape contiguous to their heads, to adapt them to fit the holes in the fish-plate A' and prevent them turning on their axes. The shank or middle section of the bolts is round, and its diameter being less than the diameter of the hole in the rail longitudinal expansion and contraction of the rail relative to the splices are duly provided for.

The reduced end of the bolt B, Fig. 5, is oval shape, corresponding to the head portion, and the same is flattened at opposite points transversely. The head thus formed

on the reduced end of the bolts is provided with inner shoulders, b, which are square or at right angles to the axis of the bolts.

The round shank of the bolts B has the same amount of metal in cross-section as the oval portions, so that the bolts have substantially the same tensile strength throughout their length.

The outer fish-plate or splice, A, has key-hole-slots a to receive the ends of the bolts B. The enlarged oval portions of these slots correspond to the holes in the other splice, A', and their narrower portions, which have straight parallel sides, are adapted to receive the grooved ends of the bolts B and engage the shoulders b thereon, as shown. The edges of such narrower portions of the slots have square edges or shoulders, so that they bear evenly on the shoulders b of the bolts when in locking engagement therewith, as shown in Figs. 1 and 2. The device for holding the splice thus engaged with the bolts B is shown in two forms—namely, single, as in Figs. 6 and 7, and double or multiplex, as in Fig. 8. As represented in Fig. 6, it is a thin spring-plate C, slightly curved or convex longitudinally and having a notch c in its lower edge and a finger or prong c' at one end. Such device is applied as follows: When the splices A A' are applied to the rails, they are arranged with their oval openings coincident with those in the rails, and the locking device C is placed in the channel in the inner side of the outer splice, A, as shown by dotted lines, Fig. 1. The convex side of the device C is placed against the rail and it is slightly compressed. While the parts are held or clamped in this position the splice A is driven by the blows of a hammer or is otherwise forced to slide endwise to the left in Fig. 1, until the grooved portion b of the bolt B enters the contracted portion of the keyhole-slot a, as shown by full lines, Fig. 1. In this movement the device C remains stationary with the bolt B, being held by its notch c, and its prong or finger c' enters the oval enlargement of the keyhole-slot a, as shown in Fig. 3. The free end of said finger c' abuts one end of the slot a, and it is hence obvious this engagement prevents the splice A from accidentally slipping back from its normal position. It can be released by

pressing the finger c' inward, which will allow the splice to slide endwise in the direction reverse to that of its former engaging movement.

The modified form C' of the locking device shown in Fig. 7 differs from that above described, only in that one end is bent to form a lip c^2 , which may engage the end of a fish-plate or splice, as shown in Fig. 4.

The device C^2 (shown in Fig. 8) is an adaptation of the lock to several bolts, the same consisting of a body having as many notches and spring-fingers as there are bolts. The manner of applying and the engagement of this device are obvious.

In order to facilitate the entrance of the bolts B into the narrowed portions of the keyhole-slots a in splice A, I bevel the corners of the parallel sides of such slots, as shown in Figs. 3 and 4.

The locking device is preferably made of mild steel. It is obvious that it is subjected to but very slight strain and is protected from injury by its position behind the splice A. It forms a cheap, easily-applied, and very efficient device for its purpose.

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

1. In a railroad-rail joint, the combination with a rail and fish-plates, or splices, one of which is provided with one or more keyhole-slots, and one or more bolts having their smaller ends constructed with shoulders, of a locking device composed of a curved spring having a portion which engages the bolts and another portion which engages the wall of the keyhole-slot, substantially as shown and described.

2. In a railroad-rail joint, the combination with the rail and fish-plates, or splices, having bolt-holes and one of said splices being slidable and having keyhole-slots, of one or

more bolts having their smaller ends flattened and provided with shoulders, and an automatic locking device, consisting of a curved or convex spring having a notch to receive the bolt, and a prong or finger that enters the keyhole-slot and thus engages the slidable splice, as shown and described.

3. In a rail-joint, the combination, with a splice, or fish-plate, having an oval bolt-hole, a rail having an elongated bolt-hole, and a second splice having a keyhole-slot with square, or right-angular, edges, of the bolt having an oval head, a round shank or central portion, a flattened end portion, and an adjacent head provided with shoulders which are square, or at right angles to the axis of the bolt, and an automatic lock for holding the slotted splice in the required relation to the bolt and rail, as shown and described.

4. In a railroad-rail joint, the combination, with the rail and channeled splices, and the bolt arranged as specified and having a flattened end provided with shoulders, of the locking device, composed of a convex spring having a notch in its lower edge and a prong or finger at one end, said device being arranged between the rail and that one of the splices having a keyhole-slot, and engaged with it, as shown and described.

5. In a railroad-rail joint, the combination, with the rail and splices having holes and slots as specified, and bolts having flattened, shouldered ends, of an automatic locking device composed of a convex spring-plate having a notch in one edge, a finger at one end, and a lip at the other end, for engaging the end of the keyhole-splice, as shown and described.

ALBERT EDWIN TRENTOWSKY.

Witnesses:

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