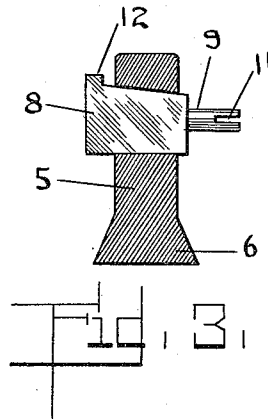
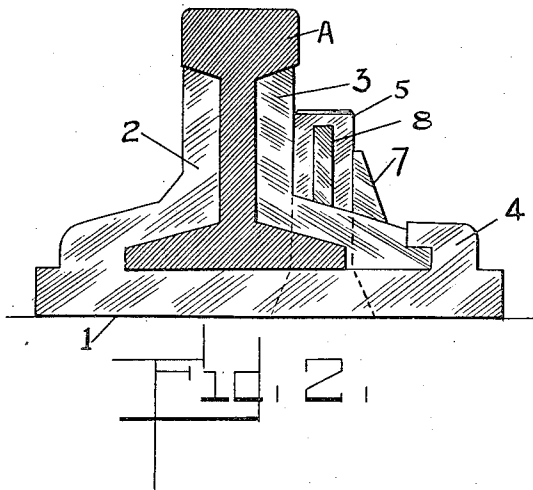
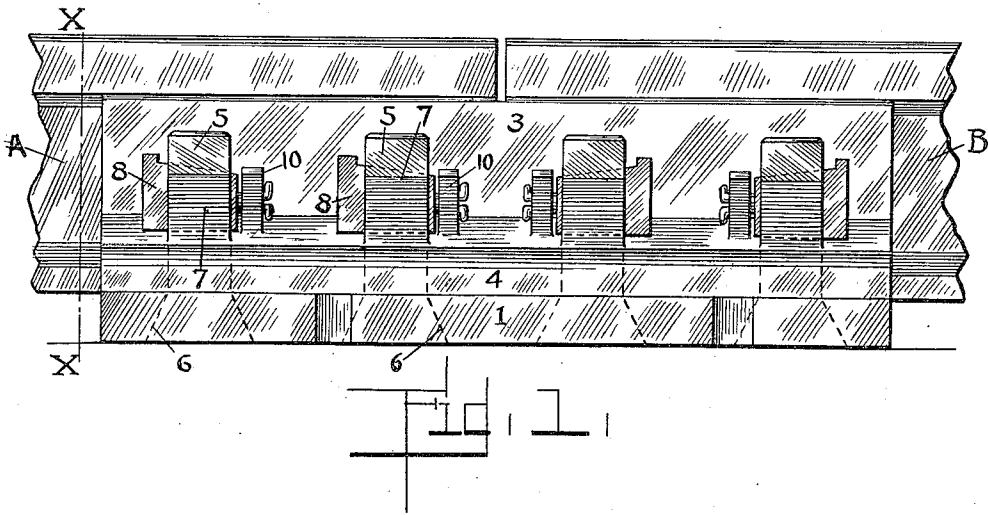


W. R. CRAWFORD.
BOLTLESS RAIL JOINT.
APPLICATION FILED APR. 24, 1912.

1,033,880.

Patented July 30, 1912.



WITNESSES:

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WILLIAM R. CRAWFORD, OF COOPER, TEXAS, ASSIGNOR OF ONE-HALF TO MURLIE E. BENTON, OF COOPER, TEXAS.

BOLTLESS RAIL-JOINT.

1,033,880.

Specification of Letters Patent.

Patented July 30, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM R. CRAWFORD, citizen of the United States, residing at Cooper, in the county of Delta and State of Texas, have invented certain new and useful Improvements in Boltless Rail-Joints, of which the following is a specification.

My invention relates to new and useful improvements in boltless rail joints, and relates more particularly to certain improvements upon the previously patented construction, for which Letters Patent #718,317 were issued Jan. 13, 1903 to the inventor of the herein-described device.

The rail joint now commonly used comprises a pair of fish plates held against the web surfaces of the jointed rail extremities by bolts passing through the web. The frequently recurring strain and vibration to which the joints are subjected by passing trains tends to loosen the bolts, making such a joint unsafe. Another undesirable feature of such a joint lies in the fact that bolt holes must be bored in the web portions of the rail extremities before the joint can be formed.

It is the object of the present invention to eliminate the use of bolts in a rail joint, and to substitute a stronger and more satisfactory means for holding the fish-plates in place, that will not require the boring of any holes in the rail ends.

Another object is to provide a form of rail joint that will offer no impediment to the slight variations in length to which the rails are subject, due to exposure to the sun's rays.

A further object is to provide a rail joint, which in case of emergency will be adapted to join the broken ends of rails, without the necessity of first boring said ends to receive bolts.

Finally, the object is to provide a device of the character described that will be strong, durable, simple and efficient, and one, the various parts of which will not be likely to get out of working order.

With these and various other objects in view, my invention has relation to certain novel features of the construction and operation, an example of which is described in the following specification, and illustrated in the accompanying drawing, wherein:

Figure 1 is a view in side elevation of a

rail joint, in which are embodied the novel features constituting the present invention. Fig. 2 is a view of the same in cross-section, the section being taken upon the line $x-x$ of Fig. 1. Fig. 3 is a detail, sectional view of a dog, which serves in the rail joint to connect one of the fish-plates to the bed-plate, a wedge member being shown mounted in said dog, for a purpose hereinafter made clear.

Referring now more particularly to the drawing, wherein like reference characters designate similar parts in all the figures, the numeral 1 denotes a bed-plate, rectangular in shape, which is adapted to be longitudinally disposed beneath the joint established between two rails A and B. Adjacent to one of the longitudinal edges of the bed-plate 1, a fish-plate 2 is made integral with said bed-plate, and is made to conform in shape to the contour of the adjacent rail surfaces. A similarly shaped fish-plate 3 is adapted to be placed against the other side of the two rail extremities, and is restricted from displacement outward from the rail ends by means of an elongated keeper member 4 integral with the bed-plate 1, and overhanging the lower edge of the fish-plate 3. A plurality of dogs 5, of square cross-section, are passed vertically through the members 1 and 3, their lower ends being provided with heads 6, adapted to be counter-sunk in the bed-plate 1, their projecting upper portions being contiguous with the outer surface of the member 3. The outer surface of each dog 5 is adapted to contact with a brace member 7 projecting integrally upward from the fish-plate 3. The projecting upper portion of each dog is vertically slotted to receive a wedge member 8 which member is beveled upon its upper edge only, its lower edge being adapted to contact with the fish-plate 3. The upper and lower edges of the slots 8^a, which receive the wedges, are made to conform to the corresponding edges of said wedges. From the smaller end of each wedge there projects a pin 9, which when the parts of the rail joint are assembled, is adapted to project through a lug 10, one of which is made integral with the fish-plate 3, adjacent to each of the apertures therein which receive the dogs 5. The extremities of the pins 9 are slit, as indicated at 11, forming furcations which may be oppositely bent at

right angles to prevent the wedges from working out of the correlated dogs 5. The furcations formed upon the pins 9 may be readily spread apart by inserting the end of a chisel or some similar wedge-pointed tool in the slit 11. In order to make possible the removal of the wedges for the purpose of disassembling the joint, each wedge is provided upon its larger end with a shoulder 12. By driving the end of a wedge-pointed tool between the shoulder 12 of the wedge and the correlated dog 5, the wedge will be forced out of the dogs.

In assembling the parts comprising the above-described rail joint, the member comprising the plates 1 and 2 is first adjusted in a proper relation to the two rail extremities, as shown in the drawing. The fish plate 3 is then brought into its place by first placing the same against one of the rails at one side of the joint and then sliding said plate end-wise or parallel with the rails. The dogs 5 are then driven into place from beneath the plate 1, passing through the apertures provided for that purpose in the members 1 and 3 and in the base portions of the rails. The wedges 8 are then driven through the slots 8^a and their accidental removal is prevented by bending the bifurcated ends of the pins 9 as has been already made clear.

The above-described joint is one that may be assembled more readily than the common type of joint, since, there are no nuts and bolts to be threaded together.

The invention is presented as including all such changes and modifications as come within the scope of the following claims.

What I claim is:

1. A rail joint comprising a pair of fish-plates and a bed-plate, one of the fish-plates being integral with the bed-plate, a

keeper member integral with the bed-plate engaging the lower edge of the detachable fish-plate, a plurality of dogs passing vertically through the bed-plate and detachable fish-plate, and the base portions of the rail extremities, said dogs being provided with heads counter sunk in the bed-plate from the under side and being provided with slots in their projecting upper portions, a wedge member passing through each of said slots, contacting with the upper face of the detachable fish-plate, and means adapted to prevent the removal of the wedges from the correlated dogs.

2. A rail joint comprising a pair of fish-plates and a bed-plate, one of said fish-plates being integral with the bed-plate, a keeper member integral with the bed-plate upon the upper surface thereof and engaging the lower edge of the detachable fish-plate, a plurality of dogs passing through the bed-plate, the detachable fish-plate and the base portions of the rail extremities, said dogs having their upper portions vertically slotted and projecting above the detachable fish-plate, a wedge passing through the slot of each dog, and contacting with the top surface of the detachable fish-plate, a pin rigidly projecting from the small end of each wedge and having its extremity bifurcated, and an apertured lug integrally mounted upon the upper surface of the detachable fish-plate adjacent to the correlated pin.

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

WILLIAM R. CRAWFORD.

Witnesses:

J. P. MORRILL,
JOHN T. MORGAN.