

C. J. COCHRAN.
RAILWAY RAIL JOINT.

Patented Dec. 8, 1896.

Fig. 1.

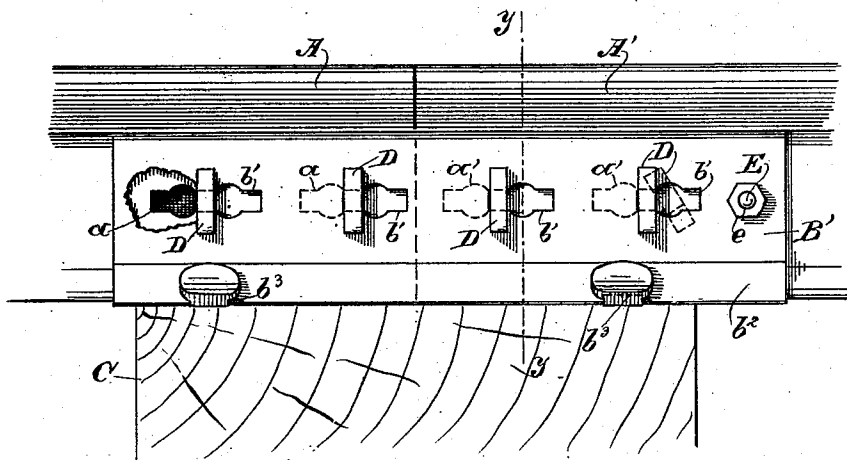


Fig. 2.

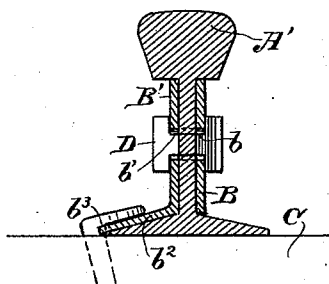


Fig. 3.



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attys

UNITED STATES PATENT OFFICE.

CHARLES JEFFERSON COCHRAN, OF SISSON, CALIFORNIA, ASSIGNOR OF
ONE-HALF TO GEORGE H. FLETT, OF SAME PLACE.

RAILWAY-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 572,694, dated December 8, 1896.

Application filed August 5, 1896. Serial No. 601,695. (No model.)

To all whom it may concern:

Be it known that I, CHARLES JEFFERSON COCHRAN, a citizen of the United States, residing at Sisson, county of Siskiyou, State of California, have invented an Improvement in Railway-Rail Joints; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of railway-rail joints in which fish-plates are employed; and my invention consists in the novel means hereinafter described for fastening the plates to the web of the rail.

The object of my invention is to provide a simple, effective, and readily-applicable fastening for the plates of railway-rail joints, dispensing with the use of nuts and thus avoiding the danger of their working loose and the consequent expense of more or less reliable nut-locks.

Referring to the accompanying drawings, Figure 1 is a side elevation of my railway-rail joint, the fish-plate being broken away in one place to show the hole *a* in the rail-web. Fig. 2 is a cross-section. Fig. 3 is a view of one of the bolts *D*.

A and *A'* are the meeting ends of two railway-rails. In the web of each rail are made horizontally-elongated holes *a a'*, respectively.

B B' are the fish-plates of usual general form, the plate *B* being a simple one and the plate *B'* having a foot *b³* overlapping the foot of the rail and adapted in usual manner to be spiked at *b³* to the ties *C*.

In plate *B* are made the holes *b*, and in plate *B'* are made the holes *b'*. These holes are each made with a communicating wide portion and a contracted extension or end portion, which latter may be on one or both sides of the wide portion. The wide portion has preferably a circular outline, while the extension has an angular or square outline. The length of each hole is approximately equal to that of the holes *a a'* in the rail-webs.

D are bolts having an *I* shape, that is, each is formed with a shank terminating at each end in heads at right angles. The shank is angular in cross-section, preferably a square, and has a width sufficient to snugly, yet easily, fit in the extensions of the holes *b b'*.

The heads of the bolts are longer than the width of said holes, but enough shorter than their length to easily pass through them and through the holes *a a'* in the rails.

Now in order to make the fastening the plates are first adjusted to the rails in such manner that the holes *a a'* and *b b'* coincide. Then the *I*-bolts are passed through with their heads horizontal. They are then turned a quarter, so that their heads are now vertical. In this movement the shanks of the bolts turn freely in the enlarged portions of holes *b b'* and in the holes *a a'*. Now the plates *B B'* are driven or caused to slide to one side, thereby causing the extensions of their holes *b b'* to pass up to and fit the bolt-shanks and to carry the bolts along bodily into the opposite ends of holes *a a'*. The holes *b b'* and *a a'* being now only in partial coincidence or alinement, the bolt-shanks are confined and cannot turn in the extensions of holes *b b'*, nor can they move sidewise, nor, because of their heads traversing the holes, can they move endwise. They are thus held and in turn hold the plates.

Plate *B'* being spiked to the ties cannot slide, and thus all the parts are held; but, if desired, an additional security can be had by means of an ordinary bolt *E* and nut *e*, passing through the plates and rail-web, though this is optional in its use.

To remove the plates, they have only to be driven back again to cause the holes to aline, whereupon the bolts may be turned and withdrawn.

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

1. In railway-rail joints employing fish-plates, the fastening therefor comprising holes in the rail-webs and in the fish-plates, and *I*-bolts adapted to pass through and to turn in said holes when alined, and to be confined therein when turned and the holes thrown out of full alinement by the sliding of the plates.

2. In railway-rail joints employing fish-plates, the fastening therefor comprising the holes in the rail-webs, the holes in the fish-plates having an enlarged portion and a contracted extension, and the *I*-bolts, the shanks

of which are adapted to turn in the holes of the rail-webs and in the enlarged portion of the plate-holes, but not in the extensions of the latter and whose heads are adapted to pass horizontally through the holes in the rail-webs and plates when alined, but when turned vertically, to traverse said holes and extend beyond, whereby when the bolts are turned and the plates are moved sidewise to throw the holes out of alinement, the bolts are locked.

3. In railway-rail joints employing fish-plates, the fastening therefor comprising holes in the rail-webs and in the fish-plates, and I-bolts adapted to pass through and to turn in said holes when alined and to be confined therein when turned and the holes thrown out of full alinement by the sliding of the plates, and means for holding said plates from sliding.

4. In railway-rail joints employing fish-plates, the fastening therefor comprising the holes in the rail-webs, the holes in the fish-plates having an enlarged portion and a contracted extension, and the I-bolts, the shanks of which are adapted to turn in the holes of the rail-webs and in the enlarged portion of the plate-holes, but not in the extensions of the latter and whose heads are adapted to pass horizontally through the holes in the rail-webs and plates when alined, but when turned

vertically, to traverse said holes and extend beyond, whereby when the bolts are turned and the plates are moved sidewise to throw the holes out of alinement the bolts are locked, and means for holding said plates from sliding.

5. A railway-rail joint comprising the fish-plates, one of which is spiked to the ties, said plates having the holes with enlarged portions and contracted extensions, said holes being adapted to aline or coincide with holes in the rail-webs and to be thrown out of alinement or coincidence therewith by the sliding of the plates, and the I-bolts, the shanks of which are adapted to turn in the holes of the rail-webs and in the enlarged portion of the plate-holes, but not in the extensions of the latter and whose heads are adapted to pass horizontally through the holes in the rail-webs and plates when alined, but when turned vertically, to traverse said holes and extend beyond, whereby when the bolts are turned and the plates are moved sidewise to throw the holes out of alinement, the bolts are locked.

In witness whereof I have hereunto set my hand.

CHARLES JEFFERSON COCHRAN.

Witnesses:

G. H. FLETT,
JOHN NEY.