W. M. WATSON.

RAILROAD-JOINT.

No. 192,101. Patented June 19, 1877.

Fig. 1.

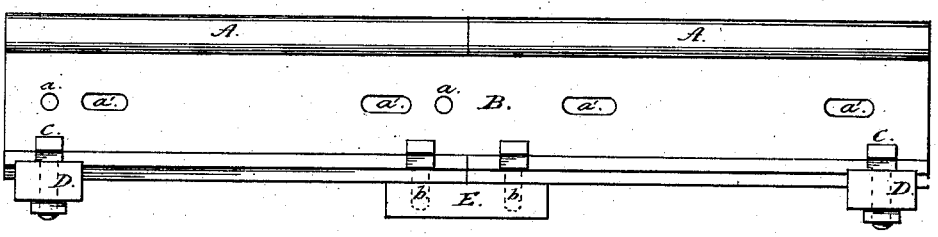

Fig. 2.

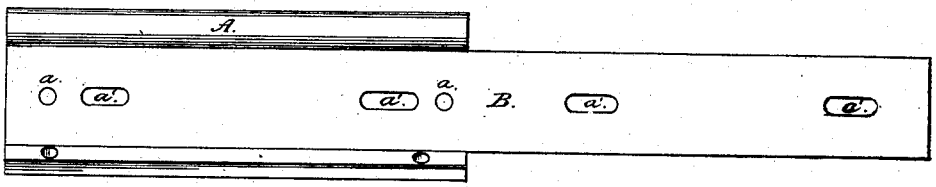

Fig. 3.

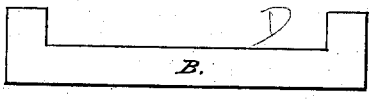

Fig. 4.

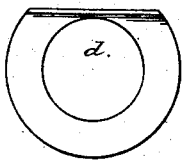

Fig. 5.

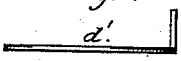

Fig. 6.

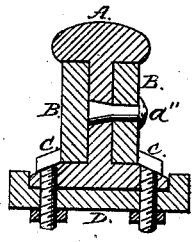

Fig. 7.

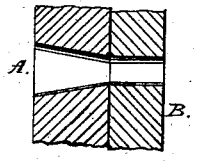

Fig. 8.

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UNITED STATES PATENT OFFICE.

WILLIAM M. WATSON, OF TONICA, ILLINOIS.

IMPROVEMENT IN RAILROAD-JOINTS.

Specification forming part of Letters Patent No. **192,101**, dated June 19, 1877; application filed April 2, 1877.

To all whom it may concern:

Be it known that I, WILLIAM MEDD WATSON, of Tonica, in the county of La Salle and State of Illinois, have invented a new and useful Improvement in Railroad-Rail Joint-Plates, which improvement is fully set forth in the following specification and accompanying drawing, in which—

Figure 1 is a side view of portions of two railroad-rails with my joint-plates attached as laid on the road. Fig. 2 is a side view of a portion of one rail with joint-plate attached. Fig. 3 is an end view of clamp-plate D. Figs. 4 and 5 represent elbow-washers. Fig. 6 is an end view of a railroad-rail and joint-plates with one joint-plate riveted to the rail, and clamp-bolts *c c* and clamp-plate D in their places. Figs. 7 and 8 is a representation of die and drop, in which the joint-plate can be welded to the rail.

The object of my invention is to make a more perfect and durable joint for railroad-rails than is now made with the common fish-plate, and to strengthen the head and stiffen the rail at the joint, and to make it more difficult for the joint to become loose, caused by the contraction and expansion of the rail, and by the jarring of the cars in passing over, by loosening the nuts.

In the drawing, Fig. 1, A A are end portions of two rails arranged in line with each other as laid down on the road. B is the joint-plate, one end of which is firmly attached to the rail either by welding, riveting, or bolting.

In the drawing, one end is shown as welded, with the holes punched for riveting or bolting, should that mode be preferred.

If riveted to the web of the rail, the rivet will be put through the holes *a a*, which are round and straight through the joint-plate, and made tapering through the web, so as to do away with the projecting-head of the rivet, and allow a flat seat for the joint-plate attached to the next rail. *a' a'* are oblong holes, as now used for fish-plate joint-bolts. *b b* are spikes driven through round or oblong holes punched in the flange of the rail, and into the tie E, the head of the spike pressing against the joint-plate to assist in holding the plates to their places. *c* is a clamp-bolt with an irregular four-sided head put through a hole in flange of the rail, and screwed tight, to clamp the end of the joint-plate to the rail, and assist in keeping it in place; and if, for any cause, the bolt should become loose in the hole, it can be taken out, and another side of the head placed against the joint-plate and screwed tight, or an elbow-washer, as seen at Figs. 4 and 5, can be used to tighten it by passing the bolt through it with the elbow against the joint-plate.

If the flange of the rail is too thin or too narrow to support the bolt, the clamp-plate D can be placed under the rail, and the bolt *c* pass through corresponding holes, and screwed tight, and in well-ballasted roads the fish-plate bolts through the oblong holes *a' a'* can be dispensed with.

If desired, instead of the rivet *a''* in Fig. 6, a screw-bolt, *g*, can be used, and after being screwed tight, the end can be battered up to prevent its unscrewing; but the strongest joint can be made by welding one end of the joint-plate to the web, flange, and head of the rail, and can be done by means of the die and drop, Figs. 7 and 8.

The die is made to fit the rail so that it will retain its proper shape after welding, and the length will be governed by the length of the weld.

The rail and plate are heated to the welding-heat, and the end of the rail laid in the die, and the end of the joint-plate laid on the rail in the proper place, and welded in the usual manner.

The rail is rolled with right angles at the head and web, and at the flange and web, to give a square seat for the edges of the joint-plate, and the joint-plates are rolled with square edges, and wide enough to fill the space between the flange and head exactly, and thick enough to be as near flush with the outside of the head of the rail as the flange of the wheel will allow.

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

1. In combination with a railroad-rail, a joint-plate, one end of which is attached firmly to the rail, substantially as described.

2. In combination with a railroad-rail and joint-plate, a clamp-bolt, *c*, substantially as described.

3. In combination with railroad-rail joint-plate and clamp-bolt, a clamp-plate, D, substantially as described.

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