

986,320.

The image contains the following technical drawings:

- Fig. 1**: A cross-sectional view of a component with a central diamond-shaped part (13, 15) and a central shaft (3). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 2**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 3**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 4**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 5**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 6**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 7**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 8**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 9**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 10**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 11**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 12**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 13**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 14**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 15**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.
- Fig. 16**: A cross-sectional view of a component with a central shaft (3) and a central block (8). It is labeled with 1, 16, 13, 15, and 2.

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UNITED STATES PATENT OFFICE.

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RAILWAY-RAIL JOINT.

986,320.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed July 11, 1910. Serial No. 571,366.

To all whom it may concern:

Be it known that I, SIMON P. SICARD, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Railway-Rail Joints; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in railway rail joints.

One object of the invention is to provide a rail joint of this character constructed in such manner that the joint of the rail will be practically as strong as the other parts of the rail.

Another object is to provide a rail joint in which the ends of the rail will not be depressed under heavy loads thereby forming shoulders or uneven surfaces which will cause the wheels to bump thus jarring and racking the car.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a side view of the meeting ends of two rails constructed to form my improved joint; Fig. 2 is a top plan view of the same; Fig. 3 is a central vertical longitudinal section of the same; Fig. 4 is a horizontal section taken on a line with the fastening bolt of the joint; Fig. 5 is a side view of the end of a rail showing one member of the joint; Fig. 6 is a vertical longitudinal section of the end of the adjoining rail showing the other member of the joint; Fig. 7 is a sectional view taken on line 7-7 of Fig. 1.

Referring more particularly to the drawings 1 and 2 denote the meeting ends of two railway rails. The end of the head or tread portion of the rail end 1 is cut away or reduced on opposite sides of the web of the rail as shown at 3, so that said cut away portion of the head is but slightly wider or thicker than the web of the rail. On the upper portion of the outer end of the reduced portion 3 of the rail head is formed a substantially cylindrical locking lug or head 4 the purpose of which will be hereinafter described.

The base flange of the rail end 1 is cut away for a distance corresponding with the length of the reduced portion of the tread of the rail and on the projecting end of the web of the rail formed by thus cutting away the base flange is arranged a downwardly projecting cylindrical locking stud 5. In the end of the web of the rail between the locking stud 5 and the locking head 4 is formed a bolt receiving notch 6.

In the end 2 of the rail the web is cut away between the base flange and tread of the rail to form a recess 7 corresponding in length to the length of the projecting end of the web of the adjoining end of the rail. In the cut away end of the web is formed a bolt receiving notch 8, which, when the ends of the rails are brought together aligns with the notch 6 and forms a rectangular bolt receiving passage.

In the projecting end of the tread of the rail formed by the cutting away of the web as at 7 is formed a longitudinally disposed notch 9 at the inner end of the upper portion of which is formed a substantially circular recess 10. In the base of the rail below the notch 9 in the tread thereof is formed a longitudinal groove or channel 11 which terminates at its inner end in a substantially circular hole 12 said hole being disposed below or in line with the circular recess 10 in the tread of the rail.

When the ends of the rail are brought together the reduced portion 3 of the tread of the rail end 1 and the circular head 4 of said reduced end will respectively engage the notch 9 and recess 10 in the tread of the rail end 2, while the lower edge of the projecting end of the web of the rail 1 and the stud 5 thereon will respectively engage the groove 11 and hole 12 in the base of the rail end 2, thereby forming an interlocking connection between the adjoining ends of the rails thus securely holding said ends together against lateral and longitudinal movement. It will be noted that the recess 10 and hole 12 of the rail end 2 are of somewhat greater diameter than the head 4 and stud 5 engaged therewith thus providing for the expansion and contraction of the rail.

With the rectangular aperture formed by the notches 6 and 8 in the ends of the webs is engaged a rectangular fastening bolt 13 having on one end a head 14 and having on its opposite end a reduced cylindrical extension which is threaded to receive a clamping nut

15. On the rectangular portion of the bolt 13 between the opposite sides of the web of the rail and head 14 and nut 15 of the bolt are arranged rectangular washer plates 16, which when the nut is screwed up on the bolt are firmly clamped into engagement with the opposite sides of the rail webs. The plates 16 are preferably of such width as to fit closely between the lower side of the tread of the rails and the base flanges thereof. By means of the bolt 13, the washer plates 16 and the interlocking connection between the rail ends, said ends are prevented from independent vertical movement at all times insuring a perfectly smooth joint over which the wheels of a train may pass without bumping.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus described my invention, what I claim is:

1. A rail way rail joint formed on the meeting ends of two rails, one of said rail ends having a reduced tread and having its base flanges cut away, a locking head on the reduced end of said tread, a locking stud formed on the projecting end of the web of said rail, said other rail end having its web cut away to form a recess adapted to receive the projecting end of the web of the adjoining rail, and having formed in its tread a

notch terminating in a recess adapted to receive the reduced end of the tread and the locking head on the adjoining rail, and having a groove terminating in a hole formed in its base to receive the lower edge and stud of the projecting end of the web of the adjoining rail whereby an interlocking connection is formed between said rail ends and means to hold said ends in interlocking engagement.

2. A rail way rail joint formed on the meeting ends of two rails, one of said rail ends having a reduced tread and having its base flange cut away, a locking head on the reduced end of said tread, a locking stud formed on the projecting end of the web of said rail, said other rail end having its web cut away to form a recess adapted to receive the projecting end of the web of the adjoining rail, and having formed in its tread a notch terminating in a recess adapted to receive the reduced end of the tread and the locking head on the adjoining rail, and having a groove terminating in a hole formed in its base to receive the lower edge and stud of the projecting end of the web of the adjoining rail, the adjoining ends of said webs having formed therein notches to provide a bolt hole, a fastening bolt adapted to be engaged with said hole and washer plates arranged on said bolt on opposite sides of said webs and in engagement with the tread and base flanges of said rail ends.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SIMON P. SICARD.

Witnesses:

E. HANSON,
JOHN L. DRINAN.