

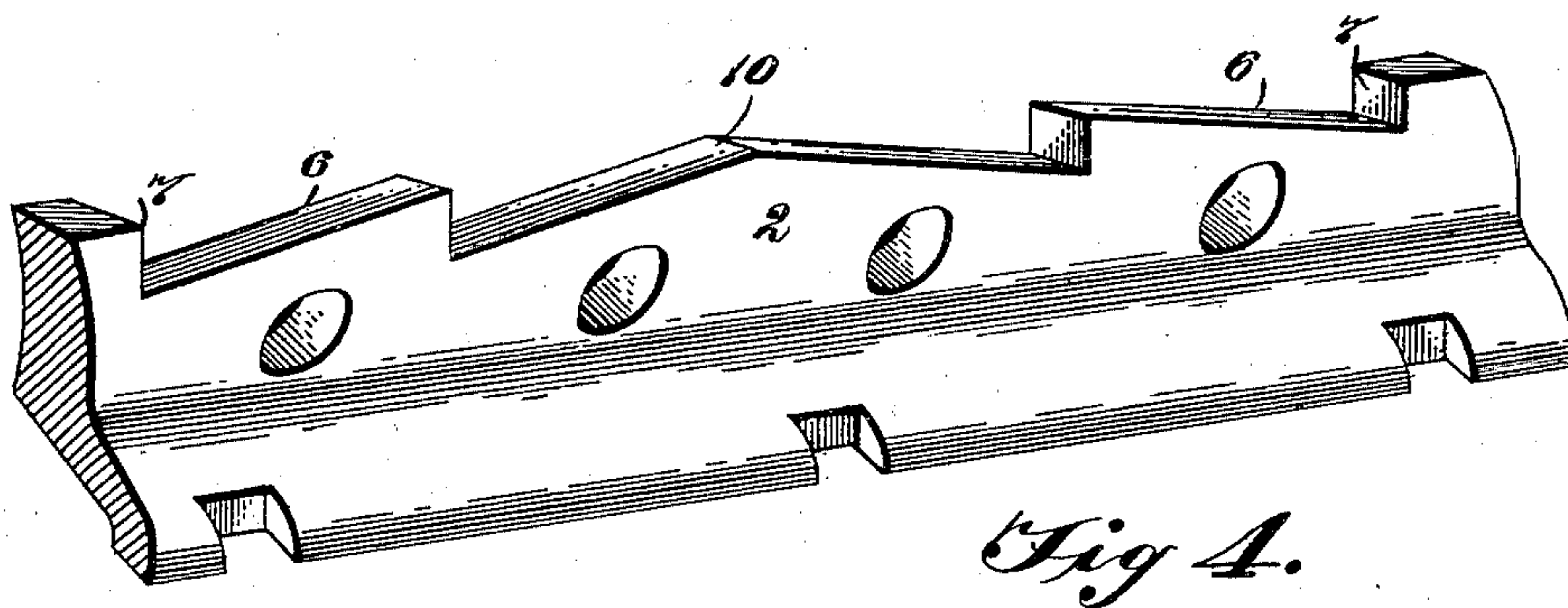
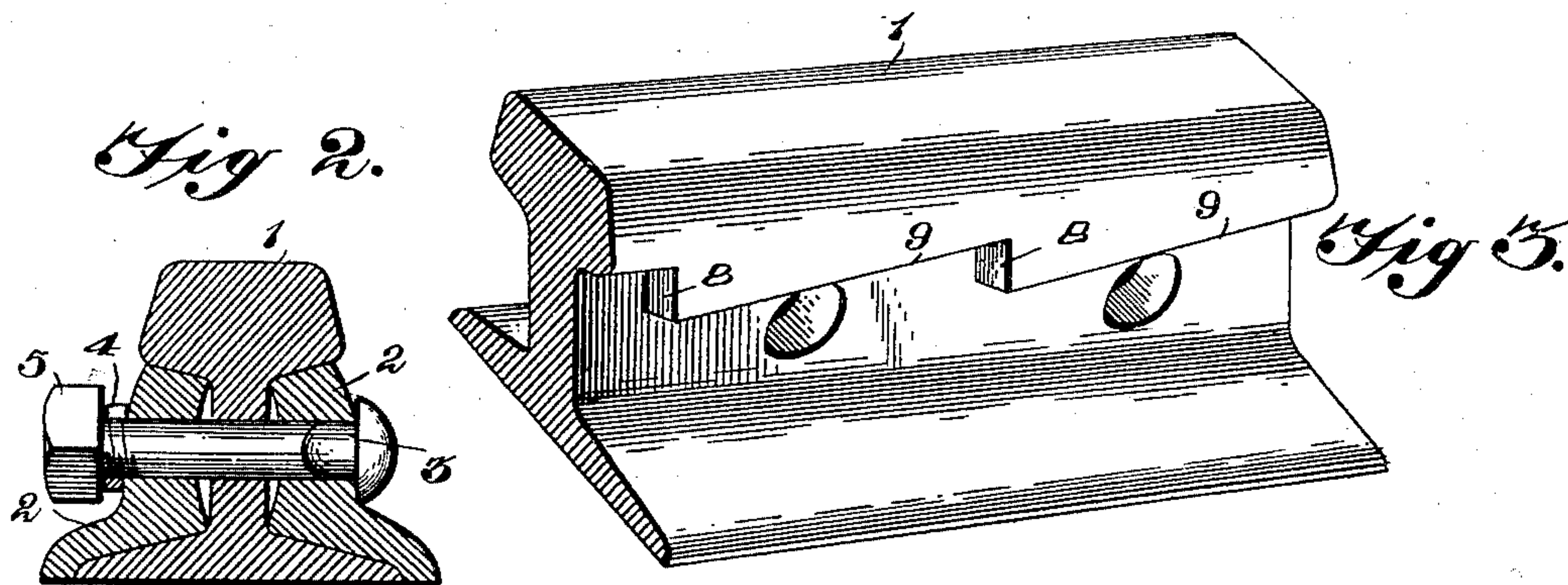
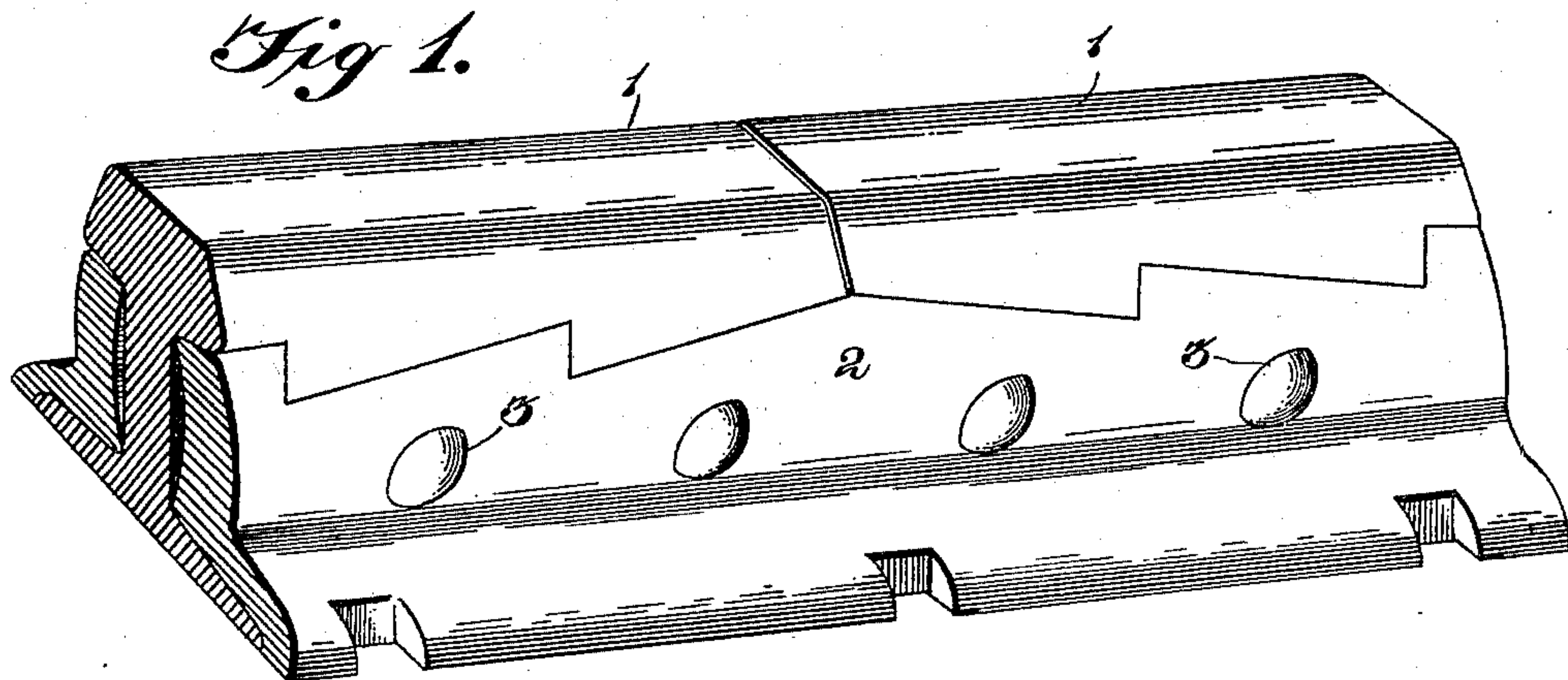
No. 652,282.

Patented June 26, 1900.

J. O. MAYHALL.
RAIL JOINT.

(Application filed Oct. 21, 1899.)

(No Model.)



Witnesses

John Mankin.

J. J. Riley

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UNITED STATES PATENT OFFICE.

JOHN O. MAYHALL, OF ROXIE, MISSISSIPPI.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 652,282, dated June 26, 1900.

Application filed October 21, 1899. Serial No. 734,379. (No model.)

To all whom it may concern:

Be it known that I, JOHN O. MAYHALL, a citizen of the United States, residing at Roxie, in the county of Franklin and State of Mississippi, have invented a new and useful Rail-Joint, of which the following is a specification.

The invention relates to improvements in rail-joints.

The objects of the present invention are to improve the construction of rail-joints and to provide a simple, strong, and inexpensive one adapted to permit a limited movement of the rails incident to contraction and expansion by cold and heat and capable of effectually preventing the extreme movement or creeping of the rails and the expense and accidents incident to the same.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a rail-joint constructed in accordance with this invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a detail perspective view of a portion of one of the rails. Fig. 4 is a similar view of one of the fish-plates.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 1 designate rails connected at their adjacent ends by continuous unbroken angle fish-plates 2 and transverse bolts 3, which pass through registering perforations or openings of the upper portions of the fish-plates and the webs of the rails, and the said bolts are preferably provided with spring-washers 4, which are interposed between the nuts 5 and the adjacent fish-plates to prevent the former from accidentally unscrewing. The fish-plates, which are arranged in the usual manner at opposite sides of the ways, engage under the heads of the same and are arranged upon the bottom flanges, as clearly illustrated in Figs. 1 and 2 of the accompanying drawings. The rails are designed to have a limited longitudinal movement to permit them to expand in warm weather and contract in cold weather, and this may be accomplished by

enlarging the bolt-openings and spacing the rails; but in order to prevent the extreme movement or creeping of the rails and at the same time prevent the accidents resulting from such separation and displacement and the expense for repairing the track the fish-plates are provided at their upper edges with recesses or cut-away portions 6, located at opposite sides of their centers and forming vertical shoulders 7 at their outer ends to engage corresponding shoulders 8 of the rails. The recesses or cut-away portions 6 of the fish-plates are tapering, as clearly illustrated in Fig. 4 of the accompanying drawings, and the lower faces of the heads of the rails are provided at opposite sides of the latter with corresponding tapering recesses 9, which form the said vertical shoulders 8. The head of the rail is enlarged to provide the projecting shoulders of the recesses in order to avoid weakening the rail by reducing its top portion.

The upper edges of the fish-plates conform to the configuration of the lower faces of the heads of the rails, and the recesses of each part are filled by the projecting portions of the contiguous part, so that the rail-joint presents a solid structure and possesses the strength and durability of an ordinary rail-joint. The recesses of the fish-plate form a central oppositely-tapered or triangular portion 10, which increases the thickness of the fish-plate at that point where it is subjected to the greatest strain, and when the shoulders of the fish-plates and the rails are interlocked, as illustrated in Fig. 1 of the accompanying drawings, it is absolutely impossible for the rails to creep beyond the predetermined amount without breaking or tearing the fish-plates asunder, and as the fish-plates are subjected only to a tensile strain in resisting this force it will be apparent that there is no liability of such breakage and that the rails cannot become displaced through longitudinal separation.

The upper portions of the fish-plates are preferably provided with concave inner faces; but they may be arranged to conform closely to the configuration of the rails, and the horizontal flanges or portions of the fish-plates are provided with suitable slots or apertures for the reception of the spikes for securing the rail-joint to the cross-ties.

It will be seen that the fish-plates and the ends of the rails are provided with interlocking portions having shoulders arranged to prevent a longitudinal separation of the rails 5 and that the rail-joint is adapted to permit a limited longitudinal movement of the rails incident to contraction and expansion from cold and heat. It will also be apparent that the interlocking parts form practically a solid 10 structure and are not weakened by the interlocking connection between the fish-plates and the rails.

Changes in the form, proportion, size, and the minor details of construction within the 15 scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

20 1. In a device of the class described, the combination with the rails, of the continuous unbroken fish-plates located at opposite sides of the rails and having their upper edges interlocked with the lower faces of the heads of 25 the same, whereby the rails are locked against

longitudinal separation, substantially as described.

2. A rail-joint having a continuous unbroken fish-plate interlocked at its upper edge with the lower face of the head of the rails, 30 whereby the latter are locked against longitudinal separation, substantially as described.

3. In a device of the class described, the combination with the rails provided at the lower faces of their heads with tapering recesses forming shoulders at their outer ends, 35 of the fish-plates provided at their upper edges with corresponding tapering recesses forming outer shoulders engaging the shoulders of the rails, the recessed portions of the 40 fish-plates and the rails fitting together and forming a solid structure, substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 45 the presence of two witnesses.

JOHN O. MAYHALL.

Witnesses:

B. W. PORTER,

JNO. Q. GRAVES, Jr.