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PATENTED MAR. 13, 1906.

G. H. GROVE.
RAILWAY RAIL JOINT.
APPLICATION FILED NOV. 16, 1905.

Fig. 1.

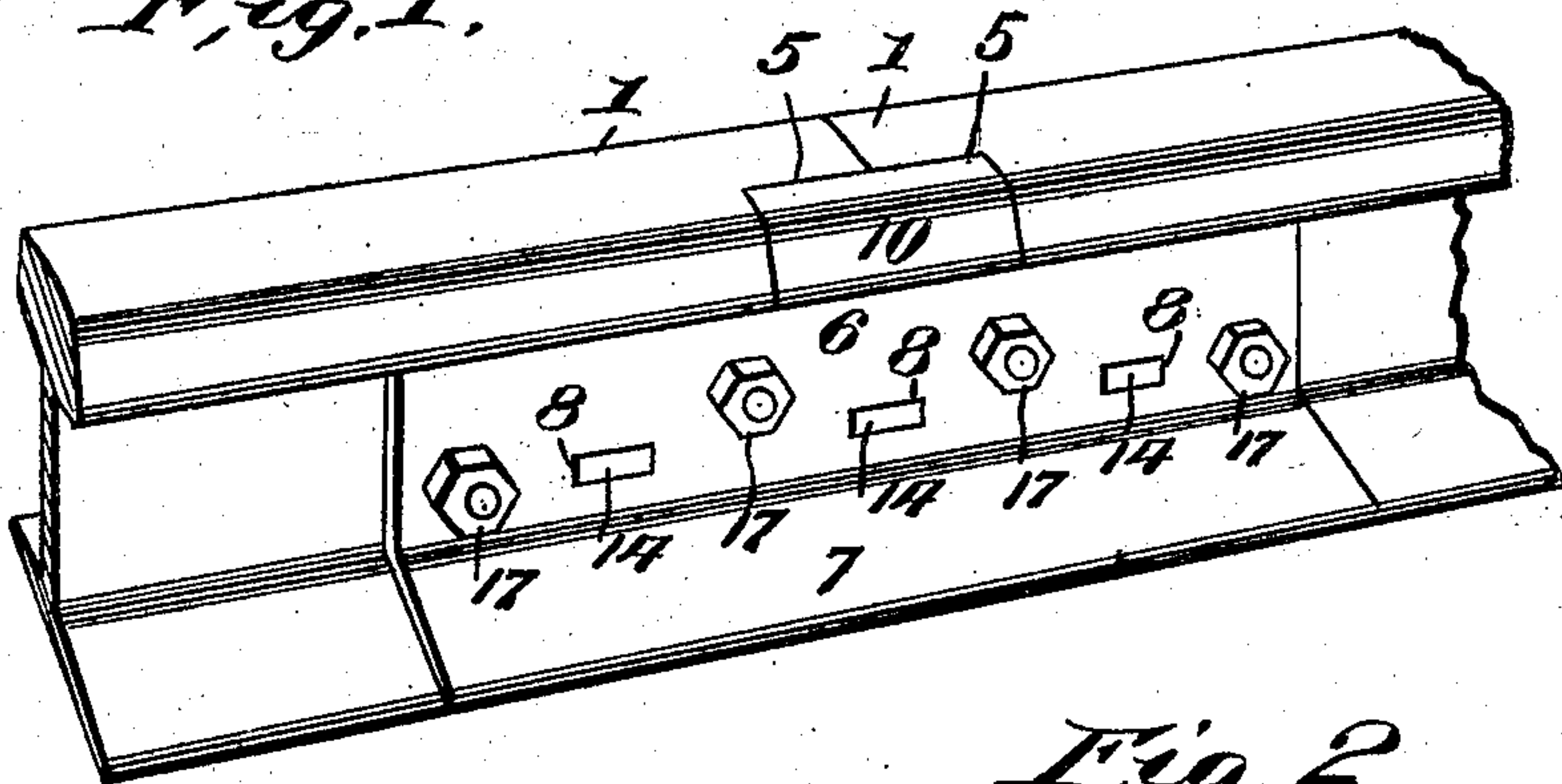


Fig. 2.

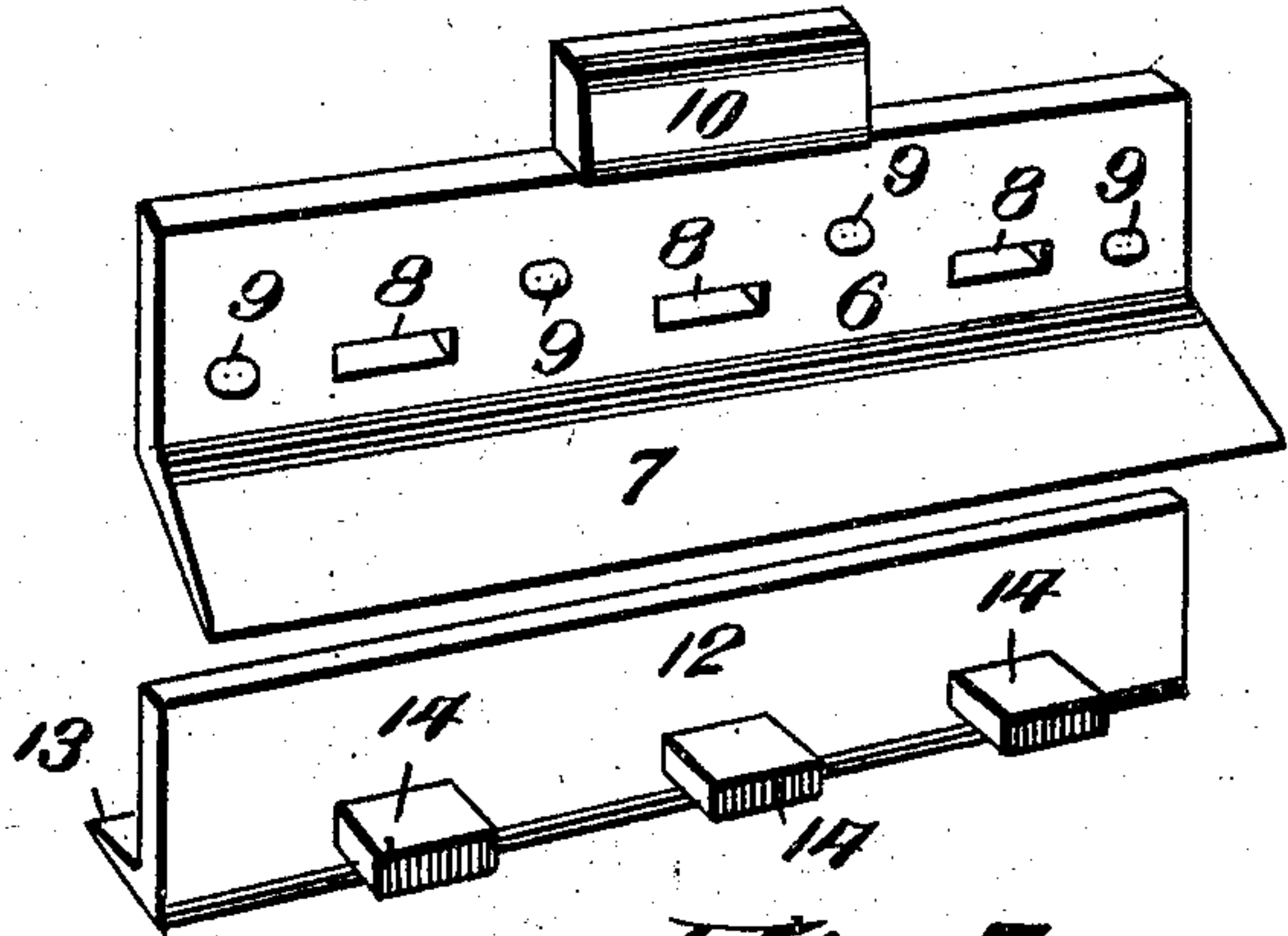
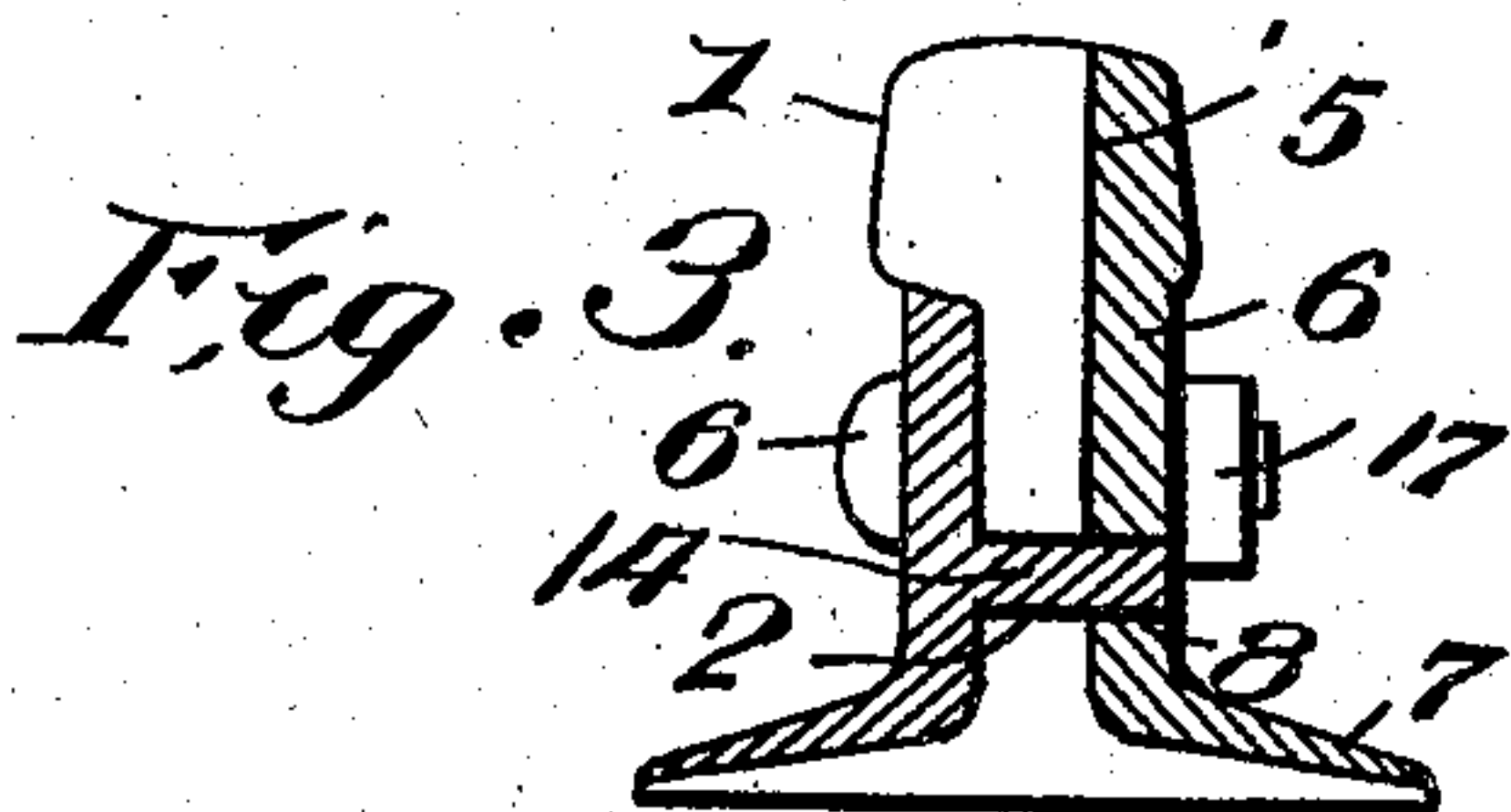
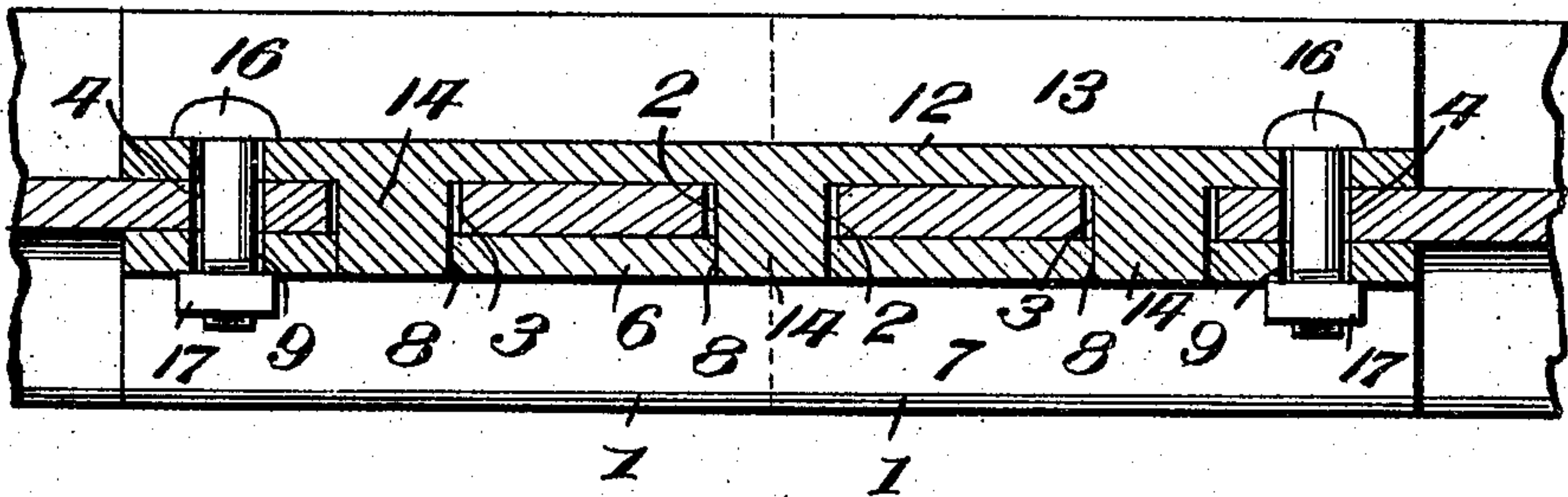
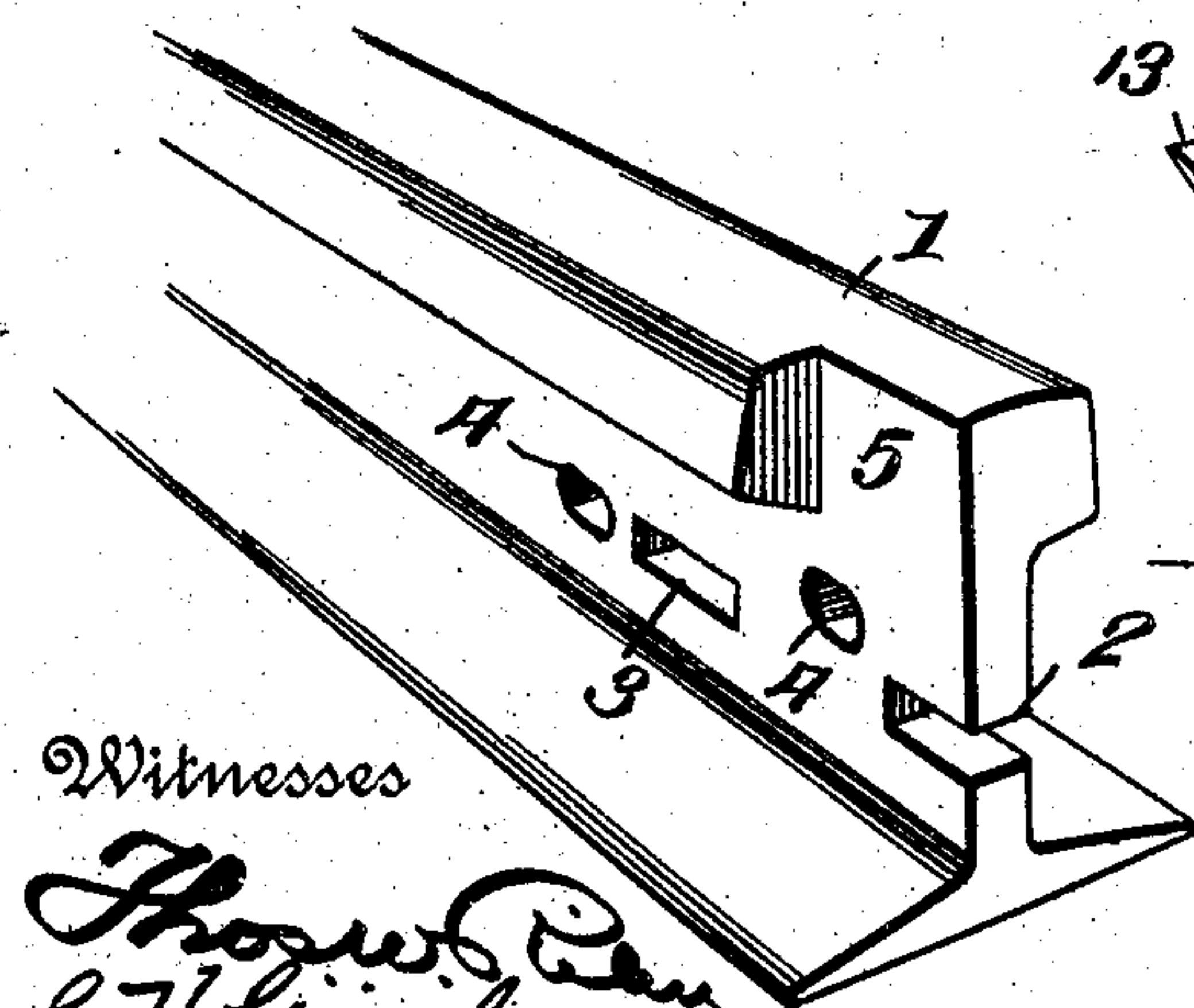


Fig. 5.

Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE H. GROVE, OF HUMMELSTOWN, PENNSYLVANIA.

RAILWAY-RAIL JOINT.

No. 815,159.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed November 16, 1905. Serial No. 287,662.

To all whom it may concern:

Be it known that I, GEORGE H. GROVE, a citizen of the United States, residing at Hummelstown, in the county of Dauphin and State of Pennsylvania, 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.

The object of the invention is to provide a joint by means of which the meeting ends of two rails may be securely connected together and supported as firmly and rigidly as the central portions of the rail.

Another object is to provide means in connection with the joint whereby the ends of the rails are prevented from becoming worn before the remainder of the rail, thereby preventing the usual "pounding" of the car-wheels in passing over the joints.

A further object is to provide a rail-joint so arranged that the parts may be quickly and easily separated to permit the removal of the rails.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of the meeting ends of two rails, showing the construction and application of the improved joint. Fig. 2 is a horizontal sectional view taken on a line with the locking lugs or projections. Fig. 3 is a vertical sectional view through the fish-plates or splice-bars, taken on a line between the meeting ends of the rails and showing the end of one rail in full lines. Fig. 4 is a perspective view of the end of one of the rails, and Fig. 5 is a similar view of the two fish-plates or splice-bars removed from the rails.

Referring more particularly to the drawings, 1 1 denotes the meeting ends of two rails. In the end of the web portion of each of said rail ends is formed a rectangular recess 2, which recesses when the ends of the rail are brought together will coincide and form a transversely-disposed slot. In the web of each of the rail-sections adjacent to and in line with said recesses 2 is formed a transversely-disposed rectangular slot 3. In the

webs of the rail ends are also formed transversely-disposed elongated bolt-holes 4. On one side of each of said rail ends the head or tread portion of the same is cut away or recessed, as shown at 5. Said recessed or cut-away portions coincide when the ends of the rails are joined.

On one side of the ends of the rails is adapted to be placed a fish-plate or splice-bar 6, said bar being adapted to engage the side of the web portion of the rail and is provided on its lower edge with an obliquely-disposed flange 7, adapted to engage the flanges on said rail ends. In the plate 6 is formed a series of rectangular slots 8, which are adapted to coincide or aline with the recesses 2 and slots 3, formed in the web of the rail end. The plate 6 is also provided with bolt-holes 9, which are adapted to aline with the bolt-holes 4, formed in the webs of the rail. On the upper edge of the plate 6 is formed an upwardly-projecting centrally-disposed lug 10, adapted to enter the coincident recesses 5 in the head or tread portions of said rail ends and forming a solid continuation across the joint between the rail ends.

On the opposite sides of the rail ends and in engagement with the web portions thereof is arranged a fish-plate or splice-bar 12. Said bar is provided with an obliquely-disposed flange 13, which projects from the lower edge thereof and is adapted to engage the flanges of the rails. On the inner side of the plate 13 is formed a series of laterally-projecting rectangular lugs 14, adapted to project through the alined recesses and slots in the webs of the rail ends and through the slots in the fish-plate 6 on the opposite side of the rails, thereby securely holding or locking the rails against vertical or longitudinal movement. In the fish-plate 12 are formed bolt-holes 15, which are adapted to aline with the bolt-holes 4 and 9 in the rail ends and in the opposite fish-plate, and through said alining bolt-holes are adapted to be passed headed bolts 16. On the opposite ends of the bolts 16 are adapted to be screwed clamping-nuts 17, whereby the fish-plates are securely held in place on the sides of the rail ends. It will be observed that the slots 3 formed in the web of the rails are of slightly greater length than the lugs 14 on the fish-plate 12, also that the bolt-holes 4 in said webs are slightly elongated. This construction of the slots and bolt-holes allows for the expansion and contraction of the rails.

A rail-joint constructed as herein shown and described is strong, durable, and inexpensive in construction, reliable and efficient in use, and may be employed in connection with both electric and steam railway rails to prevent the sagging thereof and to securely lock the same together.

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.

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

A rail-joint comprising two rail ends, the

heads of which are provided with coincident recesses and the webs of which are provided with recesses 2 in their meeting ends and with openings 3, in combination with fish-plates on the sides of the rail ends, one of said fish-plates having an upwardly-extending lug to fill the coincident recesses in the heads of the rails, and further provided with openings to register with the recesses 2 and openings 3, the other fish-plate being provided with lugs to extend through said openings and recesses in the rail-webs and in the first-mentioned fish-plate, and bolts securing said fish-plates to said rails.

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

GEORGE H. GROVE.

Witnesses:

S. A. RAMSAY,
J. S. ARNOLD.