

(No Model.)

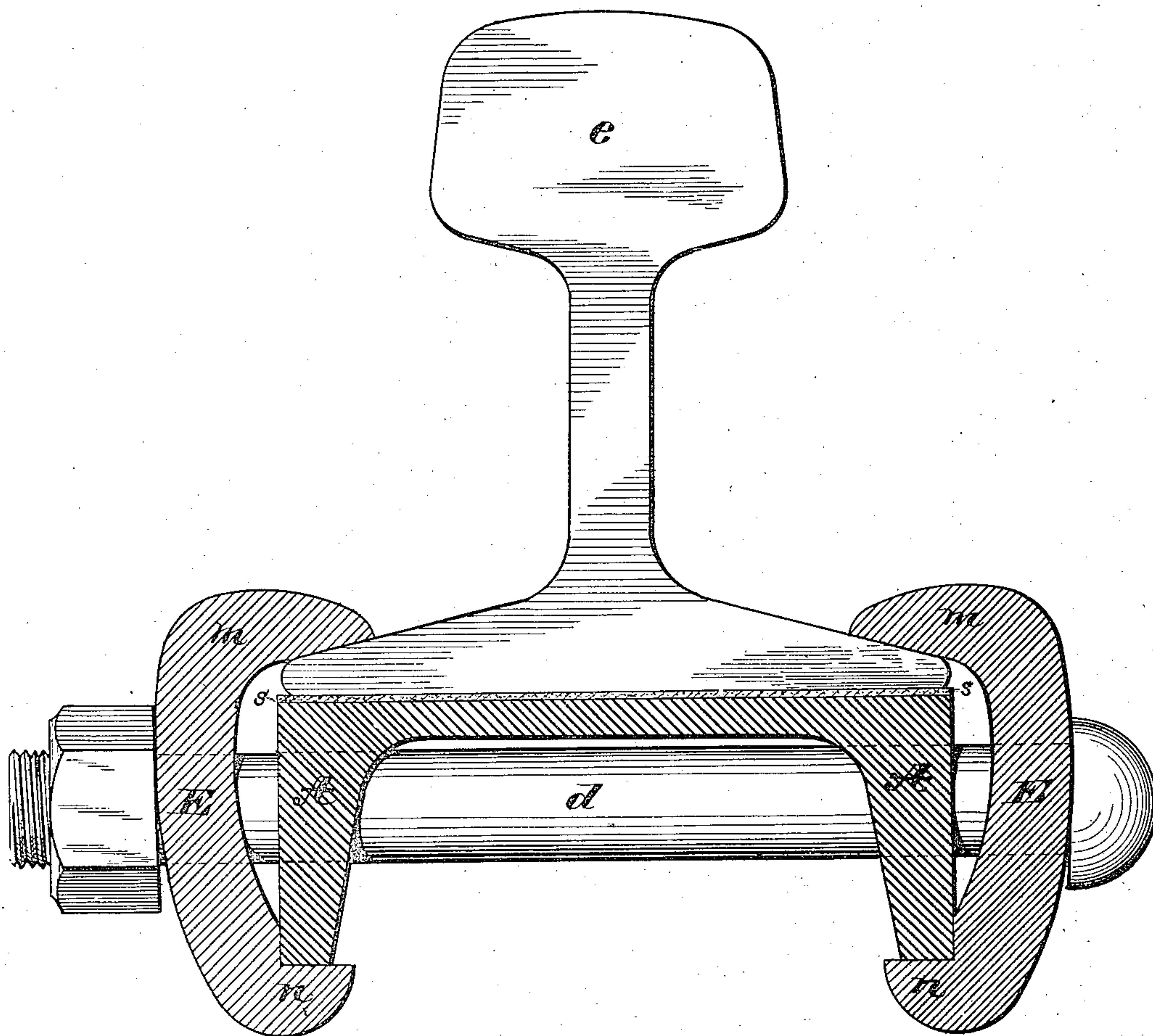
2 Sheets—Sheet 1.

I. S. MCGIEHAN.
RAILWAY RAIL JOINT.

No. 431,611.

Patented July 8, 1890.

Fig. 1.



Witnesses:

*Geo. E. Clark,
Chas. Rhodes.*

Inventor.

*Isaac S. McGiehan
by E. Walker
his Attorney*

(No Model.)

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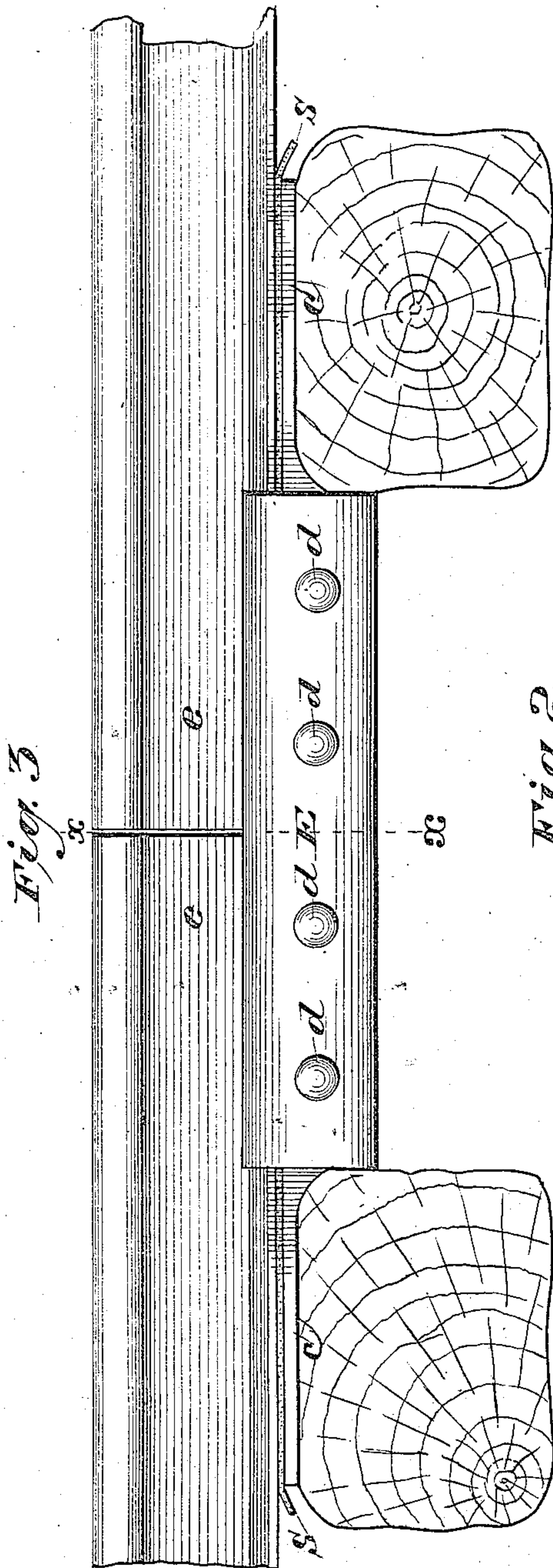
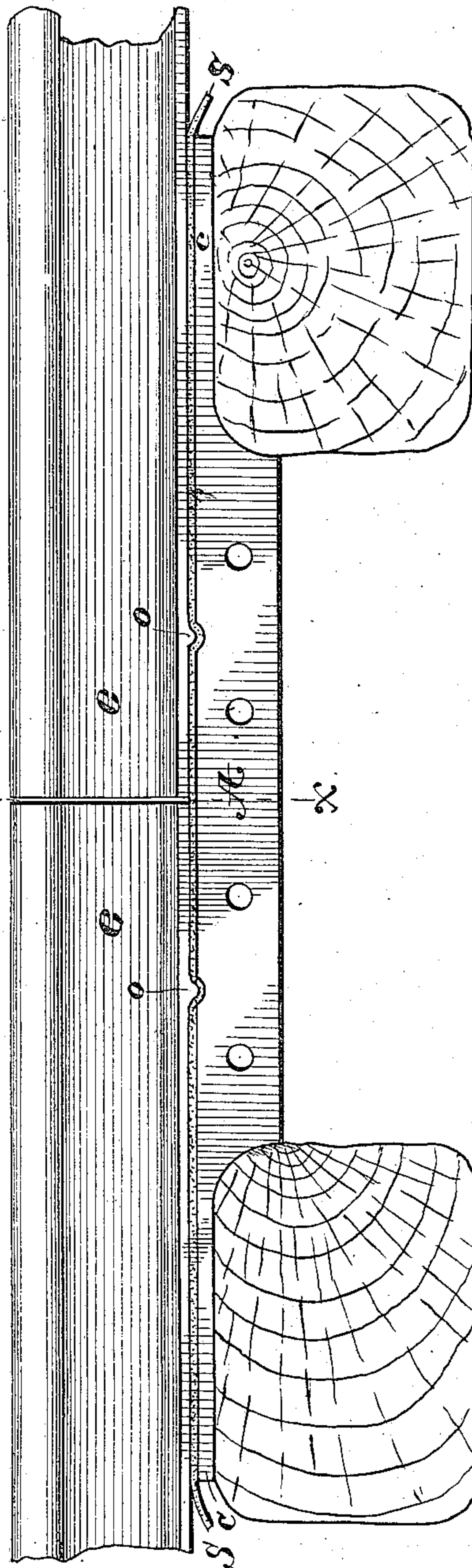


Fig. 3.



Witnesses:

H. W. Elmore,
Chas. Rhodes.

Inventor.

Isaac S. McGiehan
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UNITED STATES PATENT OFFICE.

ISAAC S. MCGIEHAN, OF NEW YORK, N. Y.

RAILWAY-RAIL JOINT.

SPECIFICATION forming part of Letters Patent No. 431,611, dated July 8, 1890.

Application filed February 24, 1890. Serial No. 341,607. (No model.)

To all whom it may concern:

Be it known that I, ISAAC S. MCGIEHAN, of the city, county, and State of New York, have invented a new and useful Improvement in Railway-Rail Joints, of which the following is a specification.

This invention relates to railway-rail joints, its object being to provide a foundation under the bottom of the rail ends where they are joined together and to hold the rail ends rigidly upon the foundation without drilling or cutting the rail and so that there is no possibility of the rail ends moving independent of the foundation which they rest upon, as will be hereinafter explained.

In the accompanying drawings, which form a part of this specification, my invention is fully illustrated, with similar letters of reference to indicate corresponding parts, as follows:

Figure 1 represents a transverse vertical section through the line *xx*, Figs. 2 and 3. Fig. 2 is a side elevation showing the channel-beam bridge A, with its ends *cc* extending over the cross-ties B B, and upon which the rail ends *ee* rest; and Fig. 3 represents a side elevation showing one of the clamps E in position and the joint complete and ready for use.

To construct my improved bridge-joint, I take a piece of channel-beam iron, as shown in cross-section at A, Fig. 1, the requisite size and cut the ends of its sides out, as shown at *cc*, Figs. 2 and 3, so that it will rest upon two cross-ties, one end on each tie, as shown in Figs. 2 and 3, with the sides of the channel extending downward between the ties to form a truss and at the same time providing a flat upper surface for the rail ends to rest upon. I then provide two clamps, as E E, Figs. 1 and 3, formed, as shown in cross-section in Fig. 1, with two jaws, one running along its top edge and the other running along its lower edge, as shown at *m* and *n*, Fig. 1. The jaw *n* fits under and engages with the lower side of the channel-bridge A, and the jaw *m* passes over the rail-base. After these are in place, I pass the bolts *d* through the clamps and sides of the channel-beam bridge, and when these are drawn together the jaws *m* slide up on the rail-base until the rail is finally seated upon the channel-beam bridge, and by utilizing the

bevel of the rail-base as a wedge for the jaws *m* to slide over, together with the bolts *d*, sufficient clamping force is obtained to practically convert the whole into a solid structure, so that the joint is quite as strong as any other part of the rail. Before putting my joint together, however, I place on top of the channel-beam bridge a piece of chemically-prepared or tar paper, as *s*, Figs. 2 and 3, which acts as a cushion for the rail to rest upon and destroys the metal contact between the rails and the bridge, and it also prevents the parts from rusting together.

When a locomotive is approaching a joint in the track, the rail always deflects on the opposite side of the tie from the joint on the approaching side. Thus the rail ends are thrown upward, which is proven from the fact that fish-plates or splice-bars always crack and begin to break on the top side first. Thus it is just as important to hold the rail ends down and keep them from going up as it is to hold them from going down under the weight of the locomotive, and this is the particular feature which I claim for my invention. The method of fastening the parts together is such and so powerful that each and every part combines to form one very rigid structure, which holds the rail in perfect line and prevents either an upward or downward movement of the rail ends.

I desire more particularly to call attention to the fact that the lower jaws *n* of the clamps E do not slide under the bridge when the bolt is tightened, as is usual with such joints. The lower jaw *n* is provided with a shoulder, which strikes the outside of the bridge and prevents it from sliding farther under, thus throwing the entire movement to the upper jaw, which is shaped so as to utilize the bevel of the rail-base to slide over, and thereby produce a more substantial and rigid grip than could be otherwise obtained.

In order to prevent the rails from creeping, I provide, when necessary, four depressions in the corners or edges of the channel-beam bridge A, as shown at *oo*, Fig. 2, and bend the edge of the flange of the rail down to fit into these depressions, so that when the clamps E are in position it would be impossible for the ends of the rail to draw out.

The form of the channel-beam bridge may

be changed and made solid or of different sizes, and the form of the clamps E may be changed, without altering my invention, provided the lower jaw *n* is fulcrumed against the bridge at the lower edge and the upper jaw *m* is formed to utilize the angle of the rail-base to slide over when the two clamps are being drawn together to create a clamping-power to combine the bridge and rails together.

10 Having thus described my invention, what I claim therefor, and desire to secure by Letters Patent of the United States, is—

1. A railway-rail joint consisting of the bridge or foundation piece A, of any desirable form, the clamps E E, provided with the jaw *n*, fulcrumed against the bridge or foundation piece A at the lower edge, and the jaws *m*, formed to slide over the rail-base when the two are drawn together as described, in combination with suitable bolts *d*, substantially as set forth.

2. In a rail-joint, the combination of the bridge or foundation piece A, provided with the extending ends *c c*, which rest upon the ties

B, the clamps E, provided with the jaws *m* and *n*, the jaw *n* of which is fulcrumed against the lower edge of the bridge or foundation piece A, and the jaw *m* formed to slide over the rail-base, as described, in combination with the intermediate chemically-treated paper, and the clamping-bolts *d*, substantially as specified.

3. A bridge or foundation piece, as A, provided with the depressions *o*, the rail *e*, having its base-flange bent down to engage with the said depressions, in combination with suitable clamps and bolts for holding the rail and foundation-piece together, substantially as described.

In testimony that I claim the foregoing improvement in railway-rail joints, as above described, I have hereunto set my hand this 21st day of February, 1890.

ISAAC S. MCGIEHAN.

Witnesses:

W. H. SPENCER,
NATHAN BARNEY.