

(No Model.)

T. S. McKINNIE.

DEVICE FOR BRIDGING OPEN JOINTS OF RAILWAY RAILS.

No. 561,602.

Patented June 9, 1896.

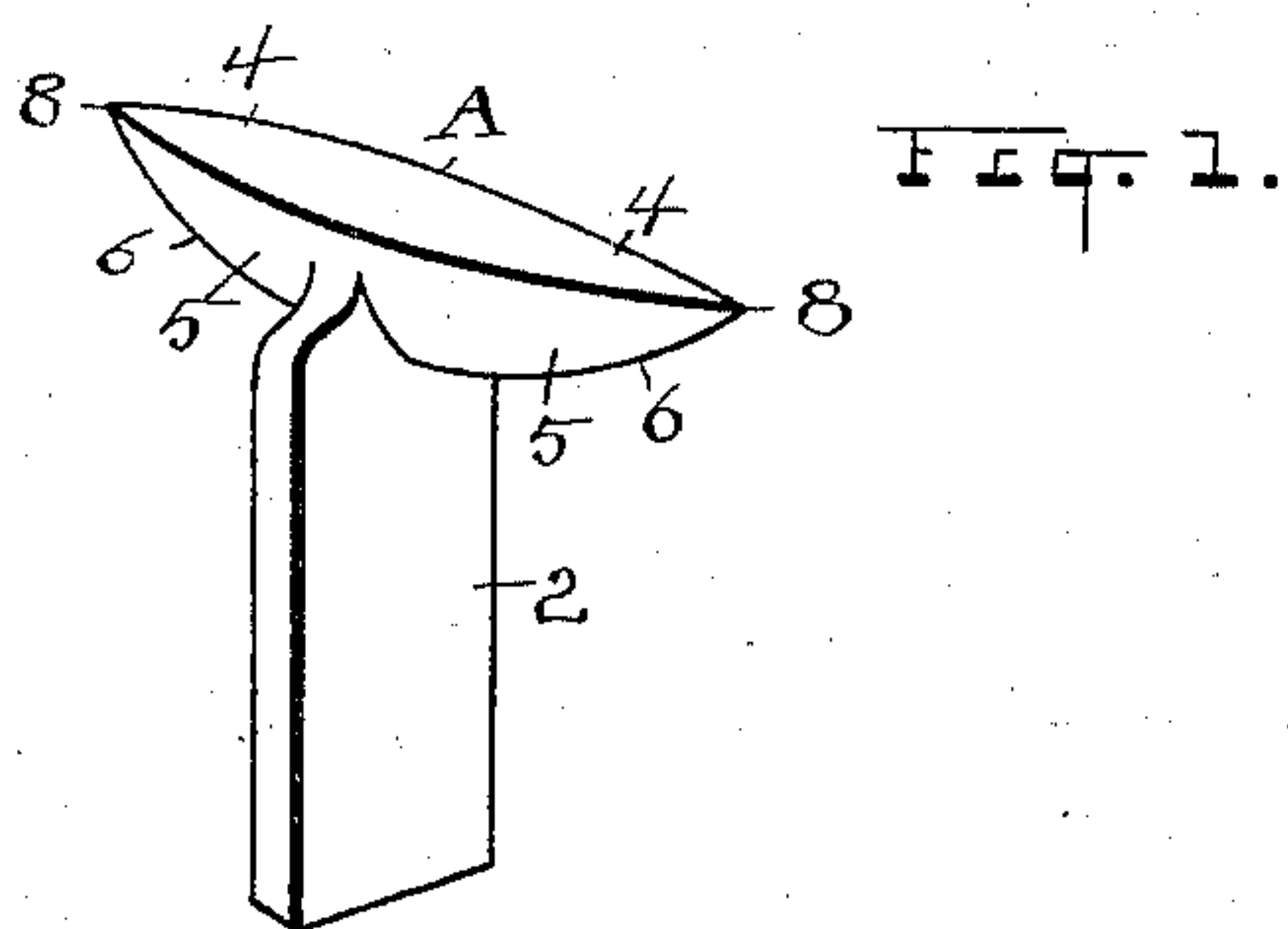


FIG. 1.

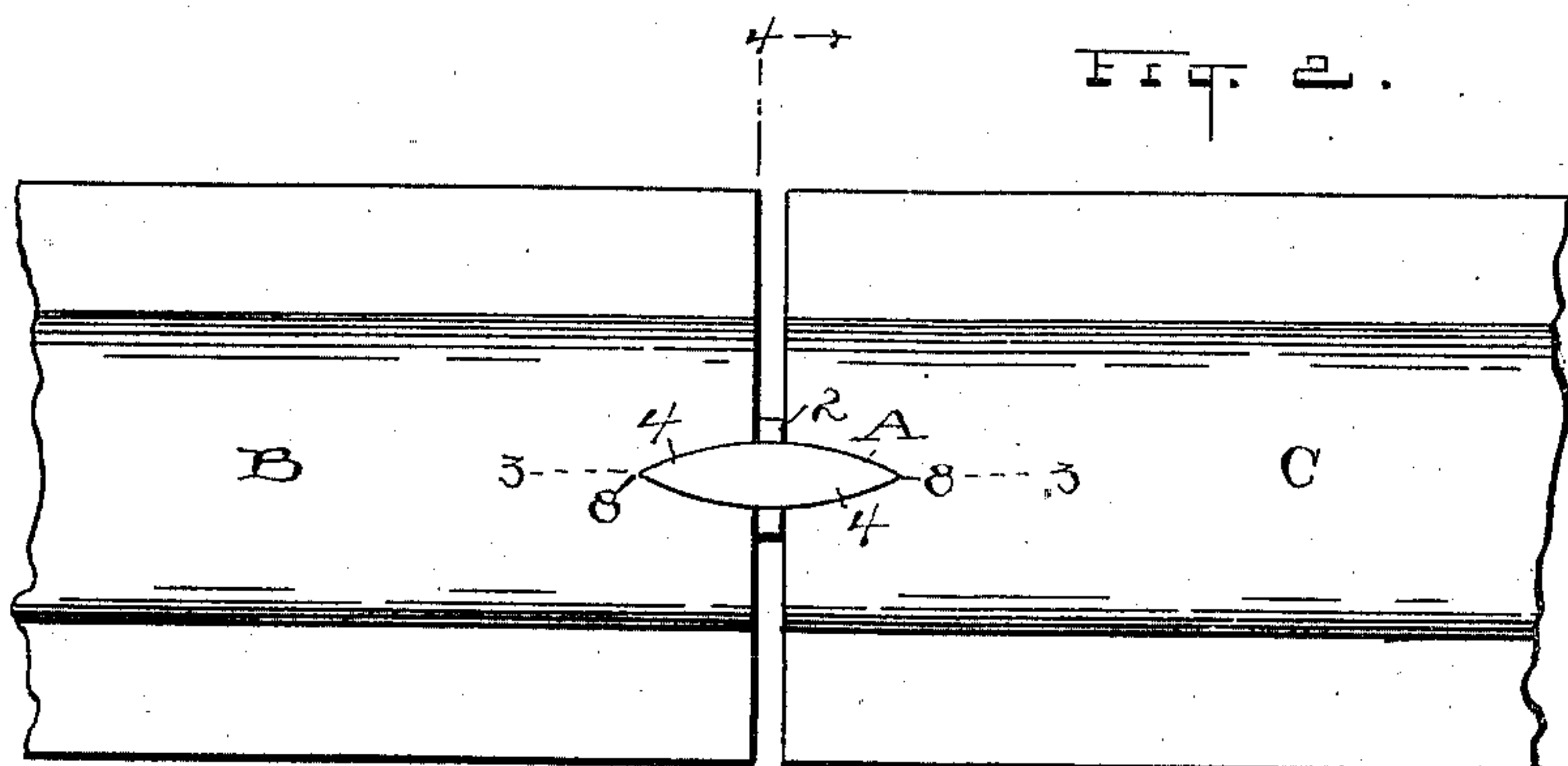


FIG. 2.

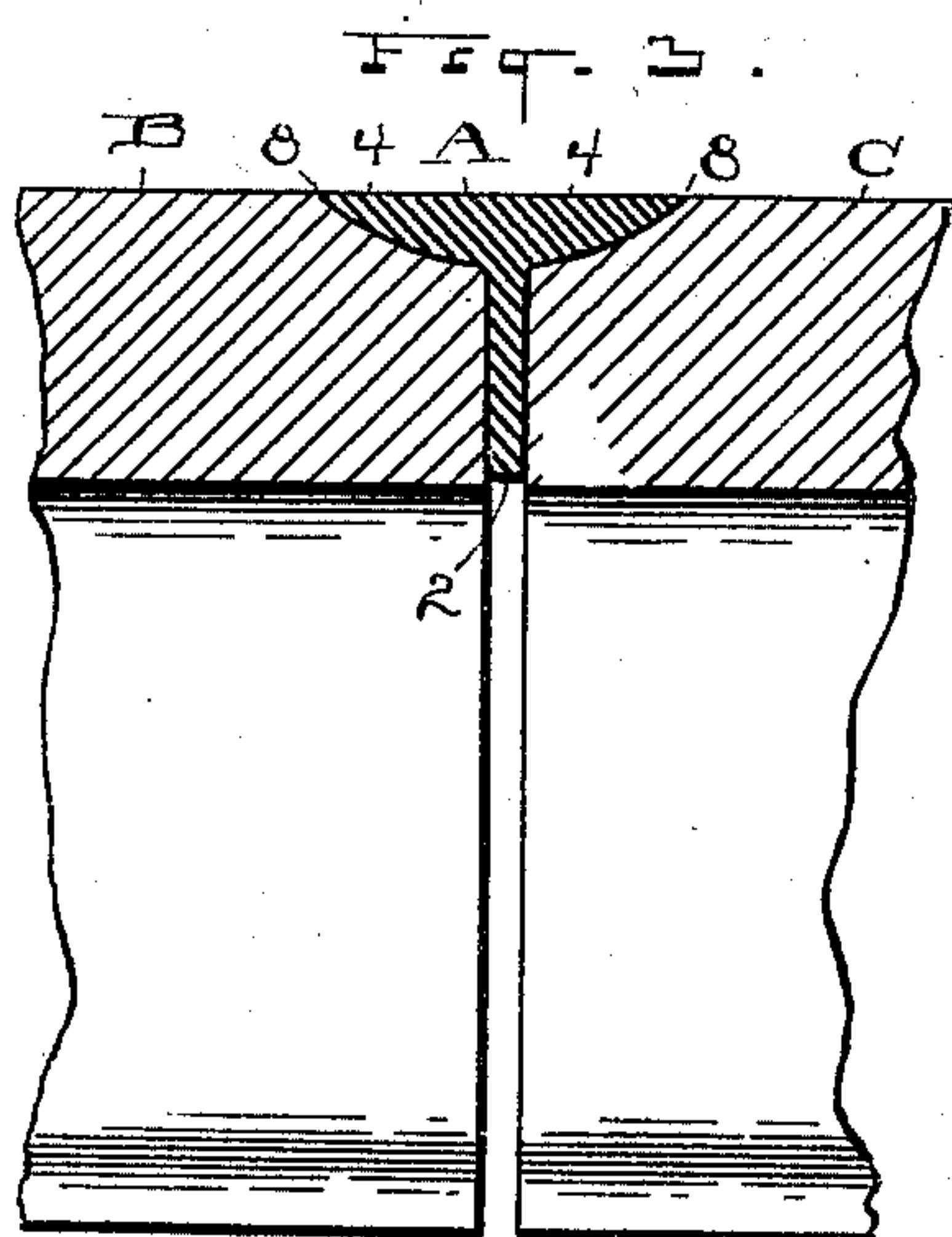


FIG. 3.

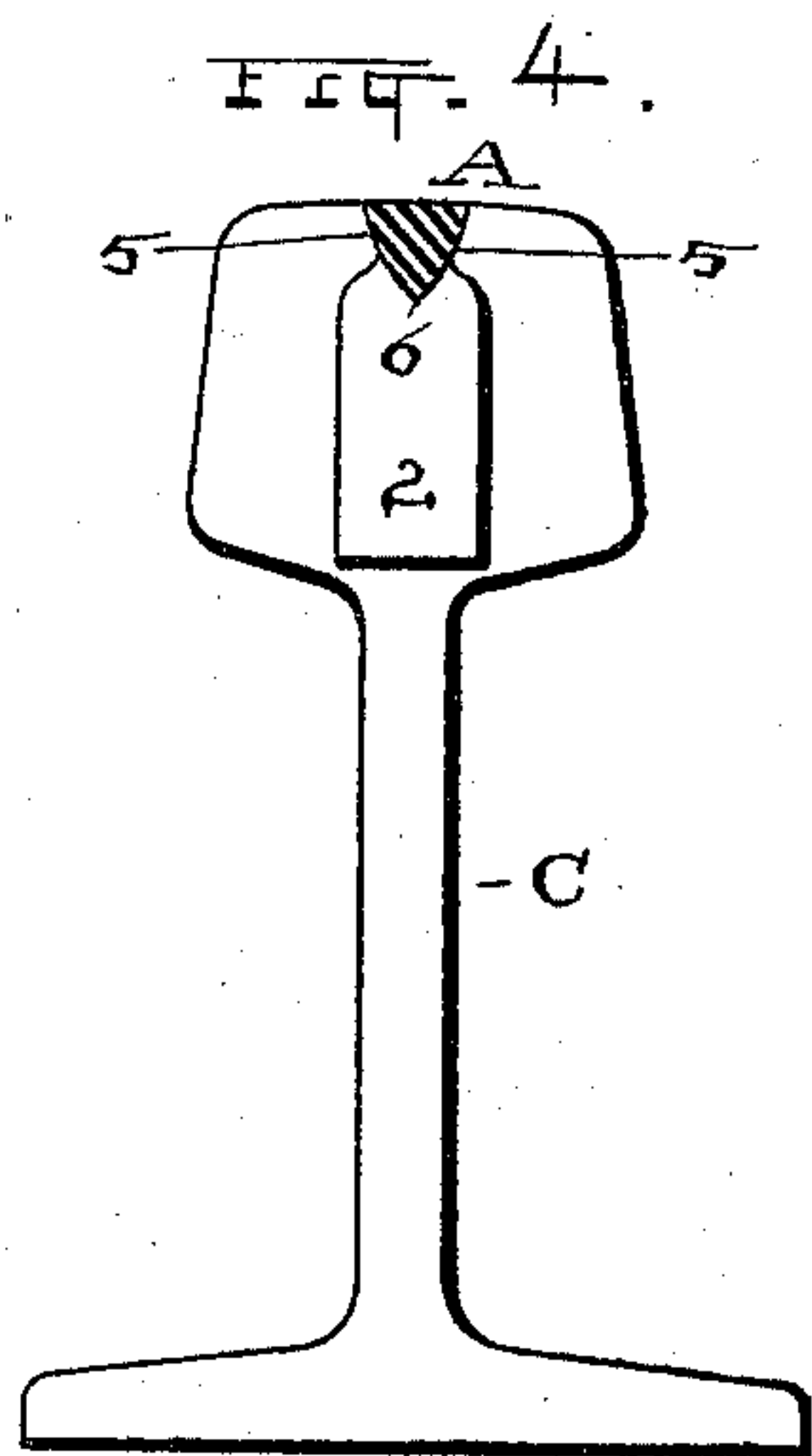


FIG. 4.

ATTEST

R. B. Moore
N. E. Mordra

INVENTOR

Thomas S. McKinnie

By H. J. Fisher

ATTY

UNITED STATES PATENT OFFICE.

THOMAS S. MCKINNIE, OF CLEVELAND, OHIO.

DEVICE FOR BRIDGING OPEN JOINTS OF RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 561,602, dated June 9, 1896.

Application filed September 20, 1895. Serial No. 563,126. (No model.)

To all whom it may concern:

Be it known that I, THOMAS S. MCKINNIE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Devices to Bridge the Open Joints of Railway-Rails; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention has reference to a device to bridge the open joints of railway-rails; and the object of the invention is to prevent what is known as "hammering" or "pounding" of the rails.

It is well known among all practical railroad-men that after all has been done that can be with fish-bars and other appliances to make a secure and durable joint the fact remains that the joint is neither secure nor durable for more than a comparatively short space of time, much depending, of course, on the amount of traffic and frequency of trains; but on a road where traffic is heavy and constant no scheme or system of supporting and fastening the ends of rails has yet been devised which will hold them permanently and give the effect of a practically continuous rail. Failure to accomplish this end results, first, in a slight weakening and then a gradual loosening of the abutting ends, one or both, and then follows the inevitable pounding of the wheels on the loose end or ends. If the road be double track, and the trains always run in one direction on each track, the loose end will be the one onto which the wheel pounds and not the one it leaves. It will be found that the end of the rail that is left to enter upon the next rail is not disturbed by protracted use, but it is the initial end that suffers loosening and pounding and becomes the weak and offending member in the joint. Knocking or hammering occurs because this member is loose, so that it yields and depresses the instant the wheel strikes it, and then there occurs what might be termed a "jump" of the wheel forward on the rail several inches before the depressed end recovers itself, and there and then we have the hammering effect. Referring now again to the origin of this trouble, I may say that it

starts in the "surprise" of the initial end of the rail as the wheels strike it with quick stroke and ponderous weight. The demand is at once so instant and tremendous that, true to physical law, it works itself out in weakening effects, and comparatively soon loosens the strained end of the joint and makes a visible and objectionable break in the otherwise continuous rail. Now my object is to bridge the joint so that in effect and fact there will be no joint so far as the tread and action of the wheel is concerned—that is, the joint between the rails will disappear on their surface by reason of my bridge, which spans the intervening space and makes the exposed running-surface continuous from rail to rail. Immediately at or over the joint the weight is sustained by both rails, and part of the weight is still supported by the rail that is left after the wheel enters upon the new rail. Thus the sudden impact or shock of transit from one rail to the other is prevented, and having prevented this I have met the difficulty at its very threshold and preserved the integrity and security of the fish-bars or like fastenings in all their original efficiency.

It is the initial weakening that hurts, and if this can be avoided there is no reason why the present otherwise perfect means for connecting rails should not serve to hold them rigidly together for an indefinite period.

Having reference to the drawings, Figure 1 is a perspective view of my improved bridging device. Fig. 2 is a plan view of end sections of railway-rails in working relation with my improved bridge in position as used. Fig. 3 is a longitudinal section on line 3 3, Fig. 2; and Fig. 4 is an elevation on line 4 4, Fig. 2, looking to the right and showing the bridge in section.

The outlines and appearance of my improved bridging device or bridge A are clearly shown in Fig. 1. Here it will be seen that it is substantially T shape, having a stem or standard 2 and arms 4 of uniform outline at its top. The stem 2 is flat and thin, so as to be adapted to enter and remain between rails which are comparatively close at their abutting ends, but may be of varying thicknesses, and thus better serve the purpose, as the spaces between rails usually vary more or less.

The arms 4 and 4 have a perfectly flush or

flat top surface, which is intended to come flush with the surface of the rails B and C, in the ends of which they are embedded, substantially as seen in Figs. 2 and 3. The sides 5 of the said arms converge inwardly and downwardly to the central bottom meeting-point 6, and the inward taper is uniform on the said sides, so as to form a symmetrical finish throughout and exactly the same at both 10 ends. This makes the said arms substantially V shape in cross-section at any and all points, but I slightly round the sides, as shown, which gives the arms more strength and serves altogether a better purpose than 15 plain straight sides would. Both arms taper also to points 8, and the proportions of the device to the rails are to be about as shown, and in these proportions are found sufficient to do the work.

20 I have here shown the device with T-rails, but it may as well be used with street-car rails or others of still different construction. If there be danger of the device jumping out of place, it can be provided with a suitable 25 catch or lock, but I have not been troubled on this account. Steel or any durable metal may be used for this purpose.

The rails are prepared for use with the bridge by producing notches or depressions

in their ends and top corresponding exactly to 30 the construction and shape of the said arms. This may be done by means of a cold-chisel and hammer or in any other available way. If with a chisel, the material will be displaced at that point, but will not be lost, because it 35 will pack at the sides of the depression and remain for service and solidify and strengthen the seat for the device.

What I claim is—

1. A device to bridge the joints of railway- 40 rails, having a central stem and substantially sharp-pointed arms with a flat top and tapering sides, substantially as described.

2. A bridging device for rail-joints having a central stem and opposite arms substan- 45 tially V shape in cross-section and flat over its top; in combination with the rails having notches in their ends corresponding to the said arms, whereby when the device is in work- 50 ing position the top surface thereof is made flush with the top of the rails, substantially as described.

Witness my hand to the foregoing specification this 18th day of September, 1895.

THOMAS S. MCKINNIE.

Witnesses:

H. T. FISHER,
H. E. MUDRA.