

No. 896,858.

PATENTED AUG. 25, 1908.

H. J. RICKARD.

RAIL JOINT.

APPLICATION FILED APR. 27, 1908.

Fig. 1.

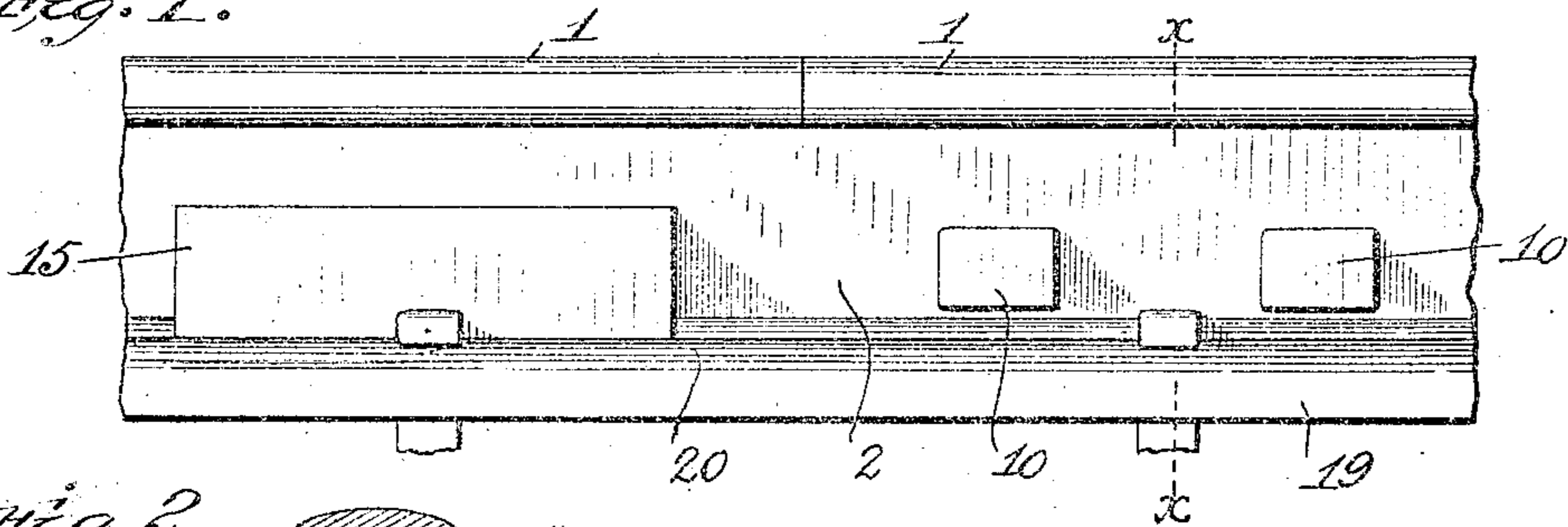


Fig. 2.

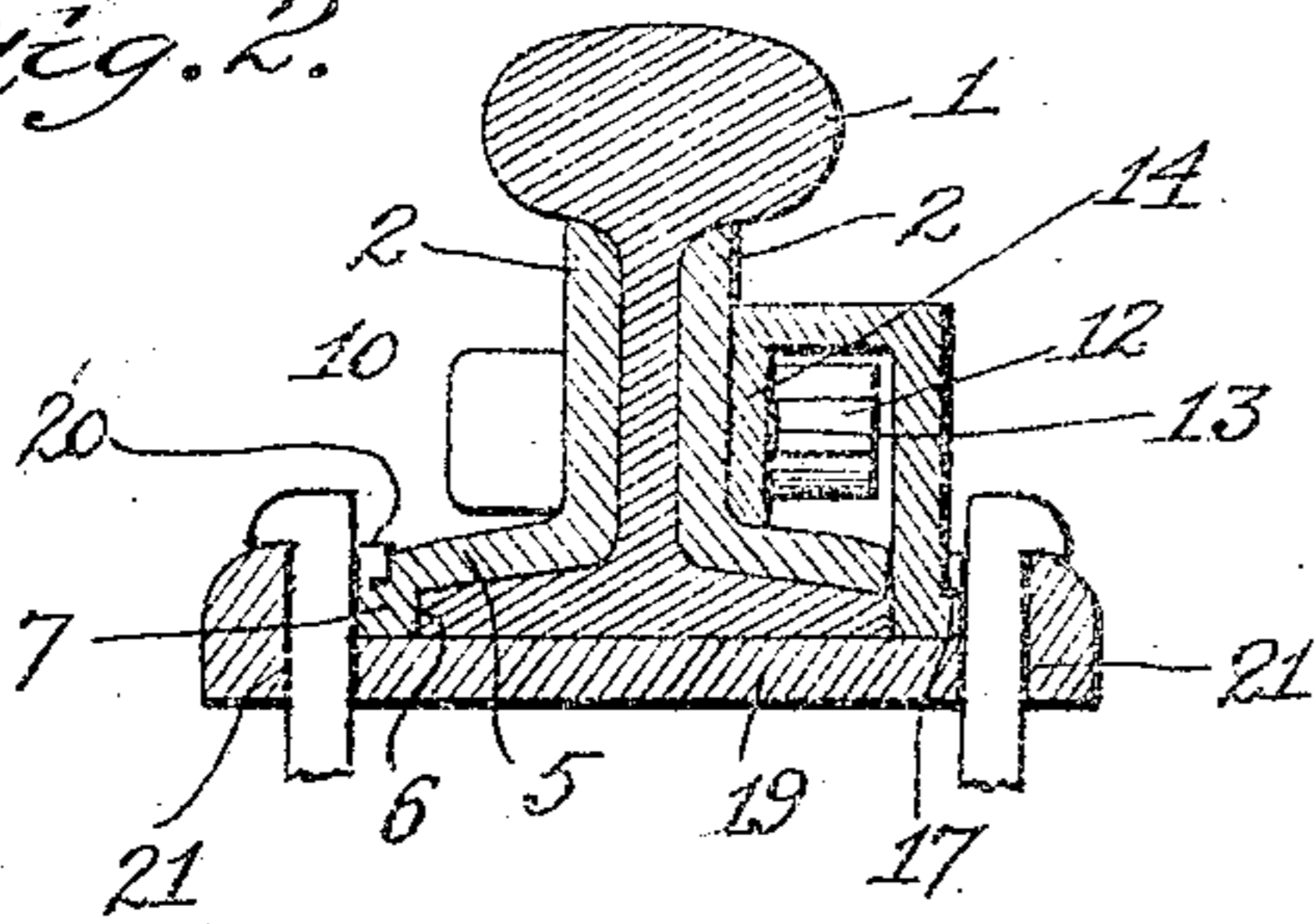


Fig. 4.

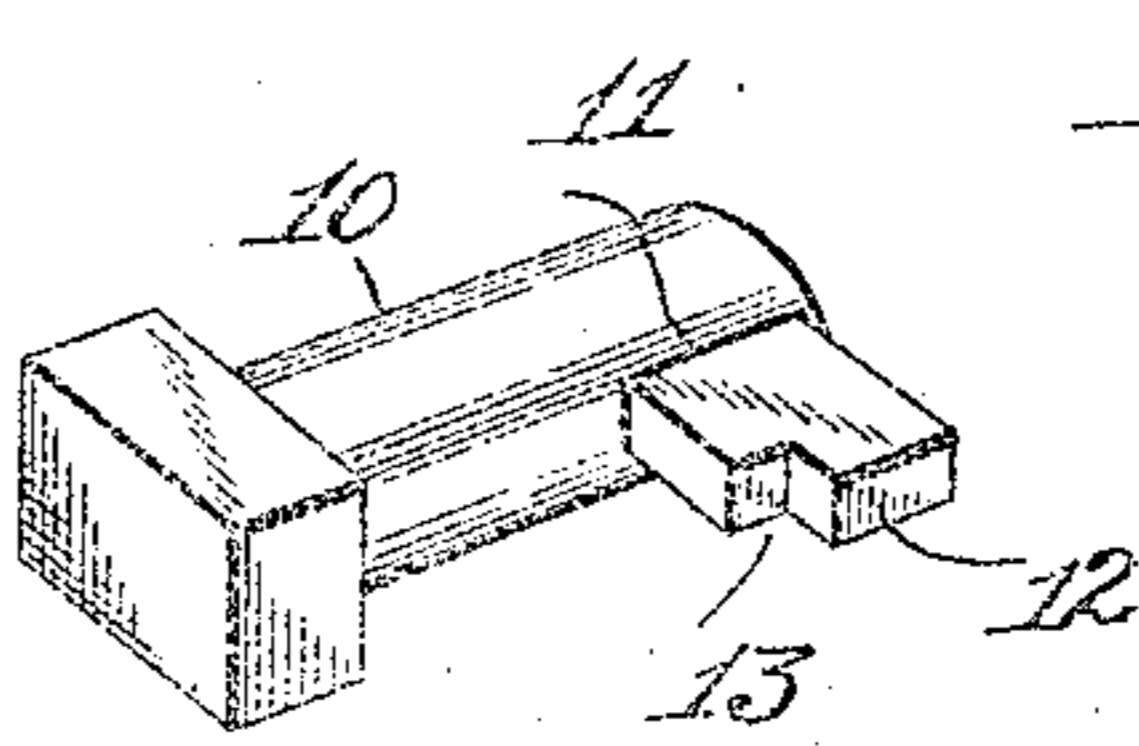


Fig. 3.

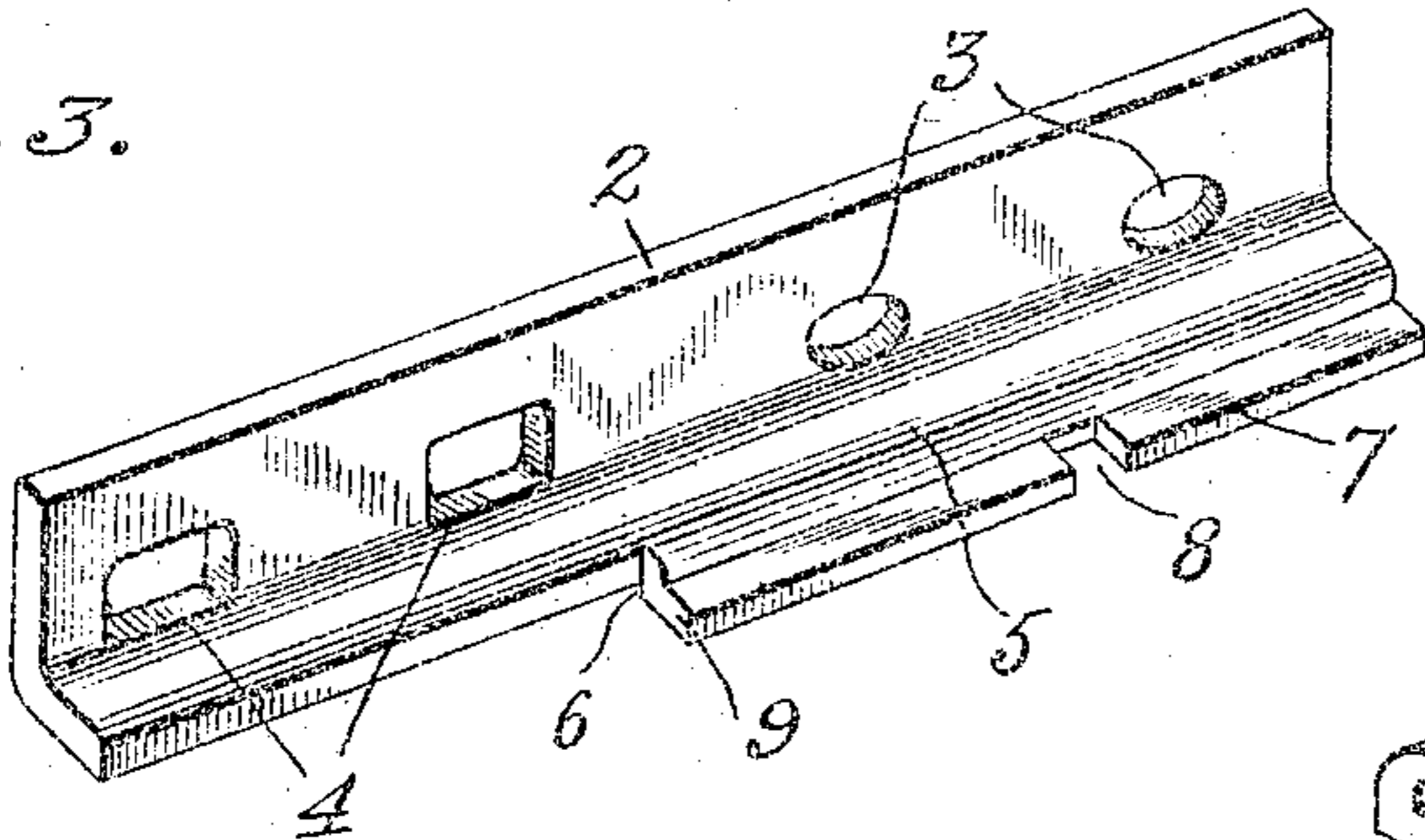


Fig. 6.

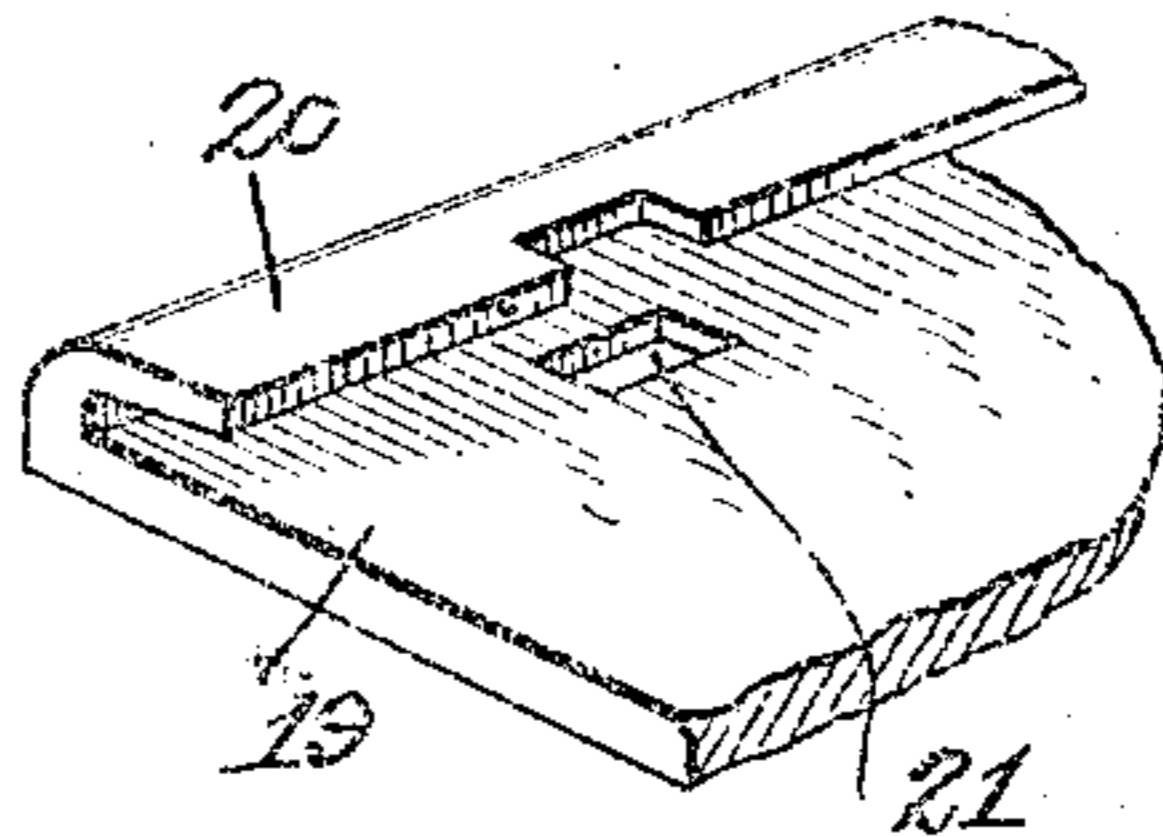
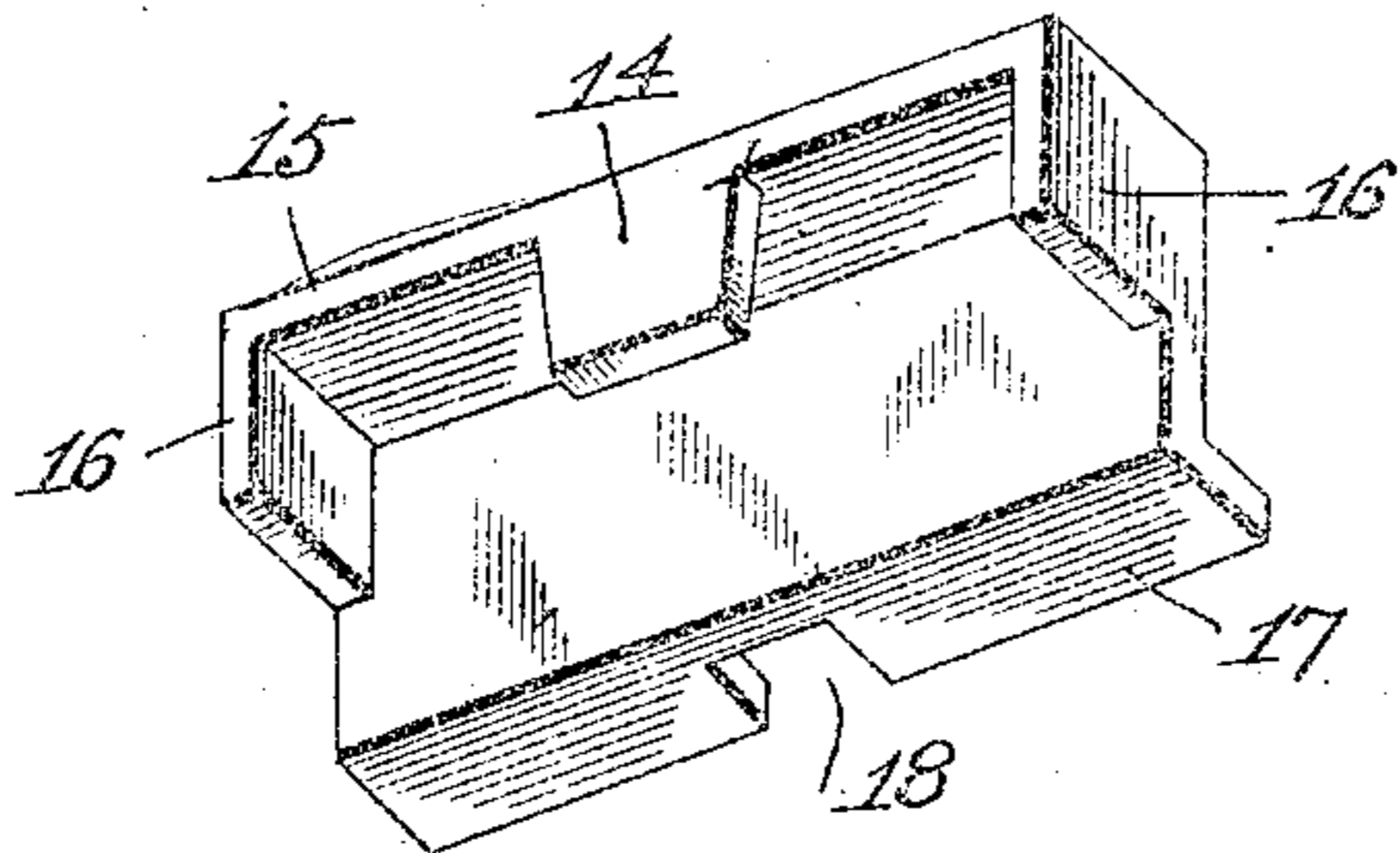


Fig. 5.



Witnesses

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RAIL-JOINT.

No. 896,858.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed April 27, 1908. Serial No. 429,373.

To all whom it may concern:

Be it known that I, HENRY J. RICKARD, a citizen of the United States of America, residing at Frugality, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints, of which the following is a full, clear, and exact description.

In the development of this invention, the object attained is the provision of a rail-joint of inexpensive construction which will permit ample expansion under a rise in temperature without any loosening of the joint and which will effectually resist the jarring due to the passing of trains over the rails.

The invention consists in certain novel features hereinafter first fully described and then particularly pointed out in the claims.

In the drawings annexed, which fully illustrate the invention, Figure 1 is a side elevation of a rail-joint embodying my present improvements; Fig. 2 is a transverse vertical section taken on the line $x-x$ of Fig. 1; Fig. 3 is a detail perspective view of one of the fish-plates; Fig. 4 is a detail perspective view of one of the threadless bolts and the key employed in connection therewith; Fig. 5 is a detail perspective view of one of the locking plates, looking at the under side of the same, and Fig. 6 is a detail perspective view of a portion of the chair.

The rails, 1, 1, are of the usual form and size and are provided with the usual bolt holes through their webs near their ends.

In carrying out my invention, I apply to the ends of the rails a pair of fish-plates, 2, each of which is provided near one end with a pair of openings, 3, to receive the bolts and of such a size as to fit snugly around the bolts and thereby hold the same firmly. Near its opposite end each fish-plate is provided with a pair of longitudinal slots, 4, through which the ends of the bolts project, and the fish-plates are so arranged against the rails that the openings 3 of one plate will register with the slots 4 of the other plate, the slots and openings both registering with the bolt-holes through the rails. By this arrangement, the fish-plates are held rigidly and tightly against the track rails while at the same time the expansion of the parts due to high temperature is accommodated without in any way causing a loosening of the joint.

The fish-plates are formed with flanges, 5, at their lower edges which extend outward

over the base flanges of the track rails and are stepped, as indicated at 6, to drop and fit against the edges of the said base flanges. The flanges 5 terminate in horizontal ribs, 7, having notches, 8, to accommodate securing spikes, and cut away at one end, as shown at 9, to receive the locking plates. The cut-away portion 9 extends slightly into the body of the flange 5 so as to receive the locking plate and provide a large bearing surface for the engagement of the same. Threadless bolts, 10, are inserted through the registering holes and slots in the rails and the fish-plates, the bolts at the opposite ends of the fish-plates being disposed in opposite directions so that their ends will project through the slots. The ends of the bolts are formed with seats or sockets, 11, which receive and hold keys, 12, the said keys having notches, 13, in their opposing edges at their inner corners in order that they may engage a lug or lip, 14, on the locking plate. This locking plate is shaped to fit over the ends of the bolts and the keys with the central lip or lug fitting between the keys and engaging the notches 13 therein, the plate being further provided with end lugs or keepers, 16, to fit against the outer edges of the bolts and having a horizontal flange, 17, at its lower edge of the same form and size as the rib 7 of the fish-plate provided with a notch, 18, through which a spike may be driven into the tie. When the parts are in their proper positions, the locking plate fits within the cut-away portion of the fish-plate and its vertical portion rests squarely against the vertical bearing face provided by the said cut-away portion while its horizontal top portion fits over the ends of the bolts. The joint is completed by the addition of a chair or rebounding plate, 19, having inturned lips, 20, along its edges on its upper side adapted to engage the edges of the ribs of the fish-plates and the locking-plates, openings, 21, being formed through the said lips and the bottom of the chair in position to register with the notches in the said ribs and permit securing spikes to be driven therethrough into the ties to secure the joint in position.

In assembling the parts, the fish-plates are first fitted to the ends of one rail and a locking plate engaged over the keys inserted into the ends of the bolts which hold the fish-plates to the rail. The chair is then en-

gaged on the ribs at the bottoms of the fish-plates and the locking plate and is pushed along the same beyond the end so that its entire length is under the rail. The end of the meeting rail is then brought into position between the fish-plates, bolts inserted through the same, and the keys and locking plate fitted over the ends of the bolts, after which the chair is pushed in the direction opposite to its former movement so as to be brought into engagement with the rib of the last-fitted locking plate and extend under the ends of both rails so as to bridge the joint or space between the same. Spikes are then driven through the openings in the chair and the ribs engaged thereby into the ties so as to firmly secure the device in position.

It will be readily seen that I have provided a joint having ample accommodation for expansion and contraction without any liability of the parts working loose. The bolts are entirely without threads and there are no nuts thereon to work loose under the jarring of passing trains. The locking plates fit snugly over the ends of the bolts and engage the keys inserted laterally into the bolts in such manner that movement thereof is prevented. Furthermore, the locking plates are disposed at opposite ends of the fish-plates and have an angular engagement therewith so as to resist any tendency of the same to work away from their proper positions while the chair effectually resists the tendency of the rails to drop at their ends because of the pounding thereon by the wheels of passing cars.

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

1. The combination of rails, fish-plates resting against the same, bolts inserted through the rails and the fish-plates and provided with sockets in their ends, keys fitted in said sockets, and locking plates fitted over the ends of the bolts and engaging the said keys.

2. The combination of rails, fish-plates resting against the same, bolts inserted

through the rails and the fish-plates, keys fitted laterally in the ends of the bolts, locking plates covering the ends of the bolts and engaging said keys, and means for securing the locking plates against movement.

3. The combination of rails, fish-plates resting against the same, bolts inserted through the rails and the fish-plates, lateral keys fitted in the ends of the bolts and projecting toward each other, locking plates fitting over the ends of the bolts and having lips engaging the keys, and means for preventing movement of the locking plates.

4. The combination of rails, fish-plates resting against the same, the fish-plates having flanges extending over and beyond the base flanges of the rails and the said flanges of the fish-plates having cut-away portions, bolts inserted through the rails and fish-plates, locking plates fitting in the cut-away portions of the fish-plate flanges and securing the bolts, and means for securing the fish-plates and the locking plates.

5. The combination of rails, fish-plates fitted against the rails, and having flanges fitting over and extending beyond the base flanges of the rails, the flanges of the fish-plates having cut-away portions, and being provided with horizontal ribs at their edges, bolts inserted through the rails and the fish-plates, locking plates fitted over the ends of the bolts and securing the same and fitting in the cut-away portions of the fish-plate flanges, the locking plates being further provided with ribs on their outer sides at their lower ends, and a chair extending under the ends of the rails and the fish-plates and having inturned lips on its upper side engaging the ribs of the fish-plates and the locking plates.

In testimony whereof I have signed this specification in the presence of two attesting witnesses.

HENRY J. RICKARD.

Witnesses:

RODGER HARRINGTON,
ARTHUR CONRAD.