

W. CRANDELL.  
Railroad Rail Joints.

No. 139,660.

Patented June 10, 1873.

Fig. I

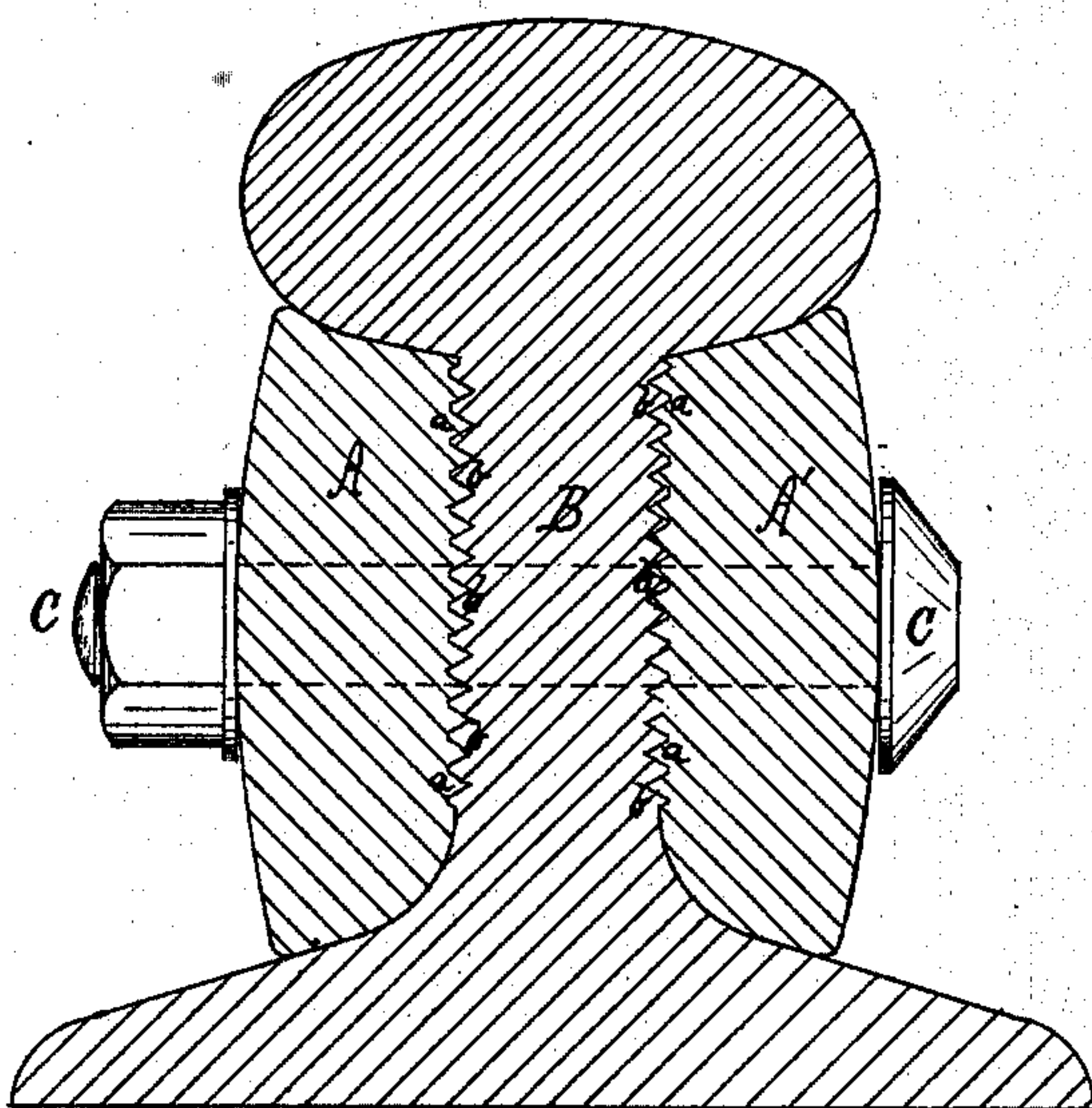
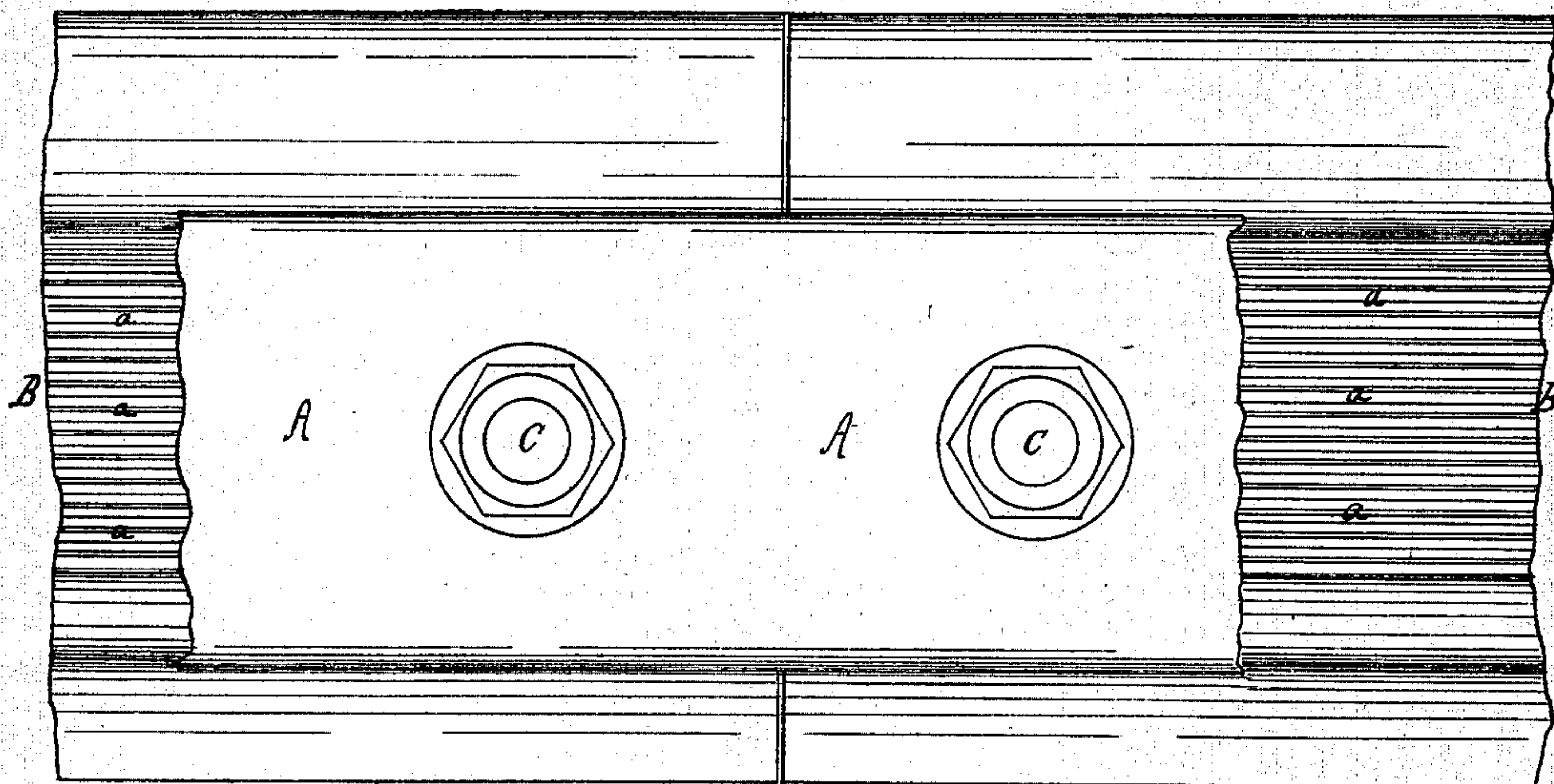


Fig. II



WITNESSES.

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# UNITED STATES PATENT OFFICE.

WILLIAM CRANDELL, OF WESTFIELD, NEW YORK.

## IMPROVEMENT IN RAILROAD-RAIL JOINTS.

Specification forming part of Letters Patent No. **139,660**, dated June 10, 1873; application filed December 19, 1872.

*To all whom it may concern:*

Be it known that I, WILLIAM CRANDELL, of Westfield, in the county of Erie and State of New York, have invented certain new and useful Improvements in Fish-Joints for Railroad Rails, of which the following is a specification:

This invention relates to the connections between railroad rails, commonly known as the fish-joint; and the invention consists in forming V-shaped grooves or serrations in the inner face of one or both of the fish-plates, and also on the web of the rail, to hold the joint stiffly, and thus prevent any jar or concussion of the rail at the joint, as hereinafter set forth.

In the drawings, Figure 1 is a cross-section. Fig. 2 is an elevation.

In the fish-joint now used the plates are liable to become loose and worn; and when this happens the load in passing over it depresses the rail it is running on at the end, and thus causes a discrepancy between the heights of the rails, which, when the wheel leaves the first rail and strikes the second one, causes a concussion or jar as it passes from one rail to the other.

To overcome this objection, and to make an unyielding joint and a more durable rail, is the object of my invention, which consists, as before stated, in forming on the face or faces of one or both of the fish-plates A A' a series of V-shaped threads or serrations, *a a*, which fit into corresponding V-shaped threads or serrations on the webs B of the rails, as shown in Fig. 1, the whole held together by the usual bolts C C.

By this means it will be seen that the interlocking V-shaped threads or serrations will prevent any depression or elevation of one rail without the other, and thus prevent any jar or perceptible concussion when the cars, &c., are passing from one rail to the other.

The serrations *a a* may be formed on one or both sides of the web and fish-plates, as may be determined for the best.

Another great advantage obtained by this device is that it distributes the friction over

the whole surface of the plates A A, and thus removes the strain from the bolt C, and effectually prevents the liability of the breaking of the rail at that point where the holes come through, as steel and other rails frequently do with the present fish-joint. Also, in the common fish-joints the continual jar and concussion on the end of the rails injures and laminates them greatly, requiring frequent repair; but by my arrangement this is completely overcome. It also forms a self-supporting joint, and thus prevents any settling at the joints, as is the case in those now used. My device provides a perfect self-supporting joint.

I do not claim the combination of a fish-plate having square or rectangular recess for receiving square or rectangular projections on the web of the rail, for such is not my invention. In such cases, to produce such projections involves much labor, time, and expense, and requires the formation of such projections the entire length of the rail, especially if the same be rolled. By my invention the sides of the web for a short distance from the end of the rail only is serrated or threaded, which is easily accomplished upon old or new rails by the simple act of milling; the inner faces of the fish-plate, whether old or new, being likewise formed so that when the two are placed in position and screwed up an immense frictional surface is created, and liability to looseness of parts by wear avoided.

I claim—

The sides of a web of a railroad-rail provided at each end with the series of V-shaped threads or serrations *b b b*, in combination with fish-plates having corresponding threads or serrations *a a a*, as herein shown, for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM CRANDELL.

Witnesses:

J. R. DRAKE,  
C. N. WOODWARD.