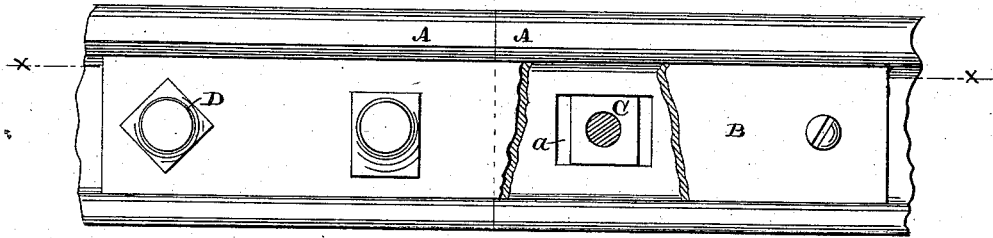


G. H. GRANT.  
RAILROAD RAIL-JOINT.

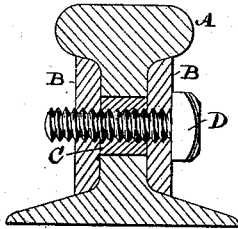
No. 190,136.

Patented May 1, 1877.

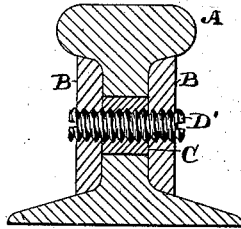
*Fig. 1.*



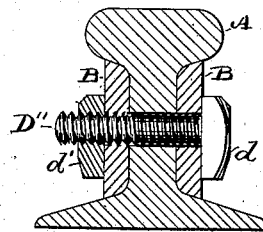
*Fig. 3.*



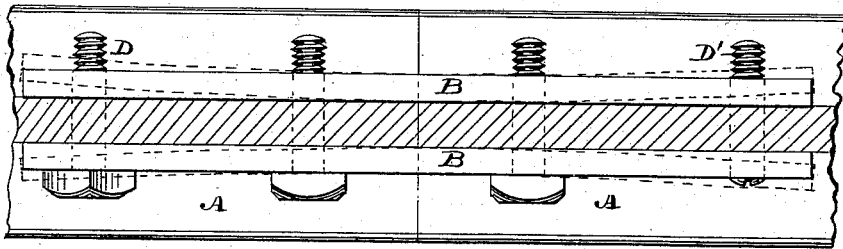
*Fig. 4.*



*Fig. 5.*



*Fig. 2.*



*Witnesses.*  
*L. Van Risswick.*  
*D. S. Stuart*

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*Att'y*

# UNITED STATES PATENT OFFICE.

GEORGE H. GRANT, OF RICHMOND, INDIANA.

## IMPROVEMENT IN RAILROAD-RAIL JOINTS.

Specification forming part of Letters Patent No. **190,136**, dated May 1, 1877; application filed October 21, 1876.

*To all whom it may concern:*

Be it known that I, GEORGE H. GRANT, of Richmond, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Joints for Railway-Rails; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to railway-rail joints; and consists in certain new and improved devices for connecting the adjacent ends of two rails by means of fish-bars and screws, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a side elevation of the ends of two rails, showing my improvement. Fig. 2 is a longitudinal sectional view taken on the line *x x*, Fig. 1. Figs. 3, 4, and 5 are vertical sectional views, showing different modifications of the joint.

Referring to the parts by letters, A A represent the adjacent ends of two railway-rails. B B are the fish-bars. These fish-bar plates are elongated rectangular plates of metal, and may be made perfectly straight; but I prefer to have them with the ends slightly bent or curved outwardly from the center, as shown by dotted lines in Fig. 2 of the drawings, for the reason hereinafter set forth.

C represents a plate or block of metal inserted within a slot, *a*, cut through the rail at the point where the uniting screw-bolt passes. This block C has a threaded bolt-hole formed through its center, corresponding in size with the bolt. The slot *a* in the rail is elongated, or made longer than the block C, so as to permit of end expansion and contraction of the rails without affecting the joint; and the slot may be elliptical in form, if preferred, in either case the block fitting its upper and lower edges closely, so as not to turn in the slot.

D is a headed bolt, threaded throughout its length, the head being provided merely for convenience in screwing the bolt into position through the fish-bars and block C. D' is a headless screw-bolt, having grooves on its ends for the purpose of screwing it into position. Either of these forms of bolts D D'

may be used, as found most desirable or convenient.

It putting the parts together to join the rails I first place the blocks C in the slots in the rails; then place the fish-bars in position, and when the bars are bent, as before described, I force their bent ends inward to the rails, and hold them with clamps until the bolts are screwed into position through the fish-bars and blocks C. When the clamps are removed the ends of the fish-bars through the spring of the metal will press outwardly, and in opposite directions on the screw-thread of the bolts, and thereby effectually prevent the bolt from turning or working loose. It is not, however, essential that the fish-bars should be bent in this way, as the binding contact of the bolt threaded throughout its length, and engaging with the correspondingly-threaded fish-bars and block C, will be found sufficient to prevent the bolt turning or working loose, for it will be obvious to those skilled in the art that the use of the threaded bolt, and correspondingly-threaded fish-bars and rail-blocks, affords a much greater binding-surface than a smooth bolt with a threaded end, like those heretofore in use.

With a rail-joint of this description I entirely dispense with the devices now in use for locking the nuts and preventing the bolts from turning, working loose, and dropping out.

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

1. A railway-rail joint consisting of the threaded blocks C, threaded fish-bars B, and screw-bolts D, threaded throughout their length, operating in combination with the rails A A, substantially as and for the purpose specified.

2. The combination of the rails A A and threaded bolts D with threaded fish-bars B B, having outwardly curved or bent ends, operating substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEORGE H. GRANT.

Witnesses:

W. C. SHOEMAKER,  
WM. F. SPENCER.