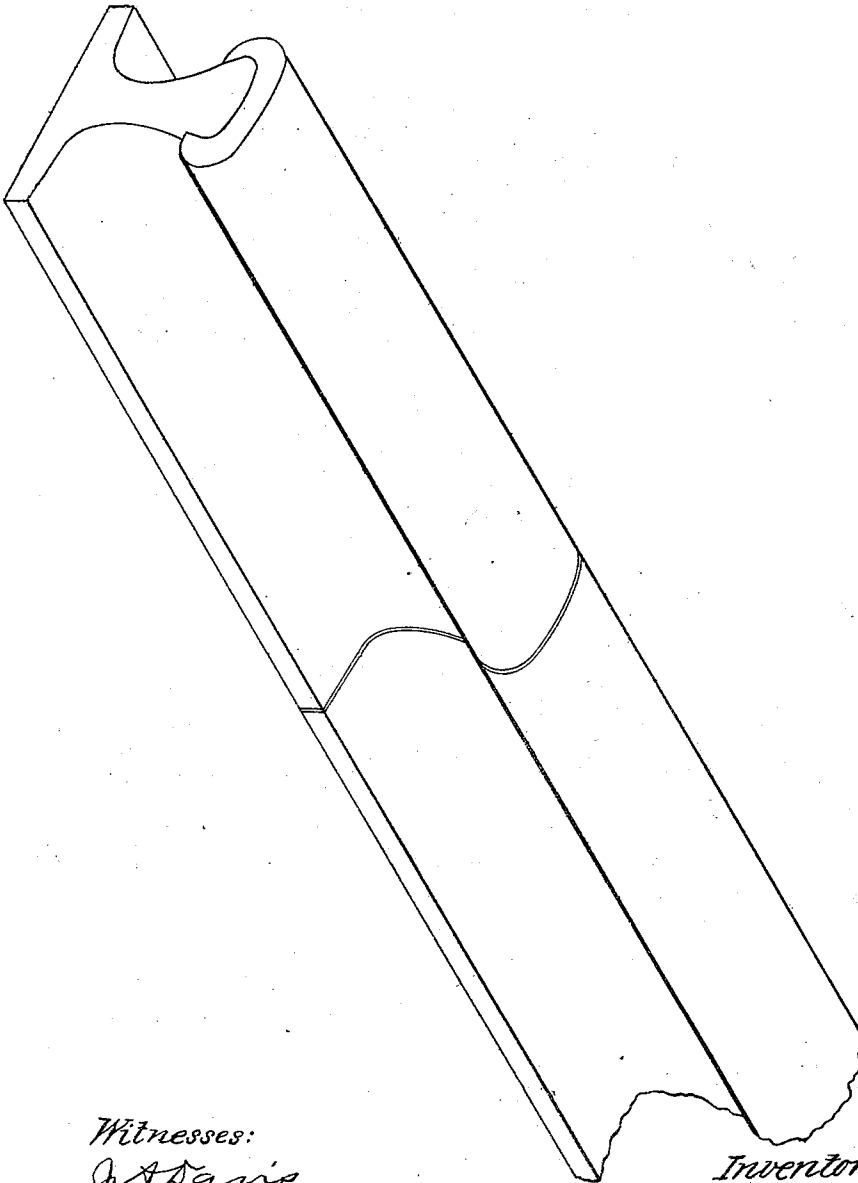


J. L. BOOTH.

Improvement in Railroad-Rails.

No. 126,175.

Patented April 30, 1872.



Witnesses:

J. A. Davis  
W. J. Greelman.

Inventor:

J. L. Booth  
By J. Massey & Co  
Attys

## UNITED STATES PATENT OFFICE.

JONATHAN L. BOOTH, OF ROCHESTER, NEW YORK.

## IMPROVEMENT IN RAILWAY RAILS.

Specification forming part of Letters Patent No. 126,175, dated April 30, 1872.

## SPECIFICATION.

*To all whom it may concern:*

Be it known that I, J. L. BOOTH, of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Railroad Rails; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which the figure represents the contiguous ends of two rails hardened as in my improvement.

My invention consists in hardening the ends of Bessemer steel or steel-capped rails, in such a manner and to such a degree that the joint will be preserved as much as possible from abrasion and wear, and for the purpose of equalizing the tread thereon.

I take the solid rail of Bessemer steel or the steel-capped rail, as shown in the drawing, and by the ordinary process, harden or temper the ends to such a degree compared with the central length as to compensate for the abrasion caused by the wheels in passing over, which, as is well known, are most severe upon the joints. In ordinary unhardened rails the joints soon wear out, rendering the rail useless, while the central portion is yet good; and, also, producing irregularity and jar to the trains passing over. By the use of my improvement, these difficulties are avoided, and the rails are made very enduring. Bessemer steel is now becoming very popular for making rails, as from its peculiar qualities it answers the purpose much better than iron or ordinary steel.

It possesses all the toughness and tenacity of iron without the brittleness of ordinary steel. Owing to its comparatively soft or yielding nature, however, the ends wear much faster than ordinary brittle steel, and hence the great value of my improvement in this connection. I have ascertained by experiment that there can be no danger from over-hardening, as the natural toughness and tenacity of the material cannot be impaired or destroyed by so doing. In this respect it is different both from iron and common steel, and hence my invention has particular relation to Bessemer steel. By graduating the degree of hardening or tempering from the end, which is easily done, the tread may be so adapted as that the wear may be equalized throughout the rails, which thus last till the whole length is so worn as to be useless.

I am aware that the whole length of the rail has been before hardened uniformly throughout. Such I do not claim, as it would not accomplish the purpose of my invention; but

What I claim as my invention, and desire to secure by Letters Patent, is—

Hardening the ends of Bessemer steel or steel-capped rails, as described, and for the purpose set forth.

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

J. L. BOOTH.

Witnesses:

J. A. DAVIS,  
H. F. OSGOOD.