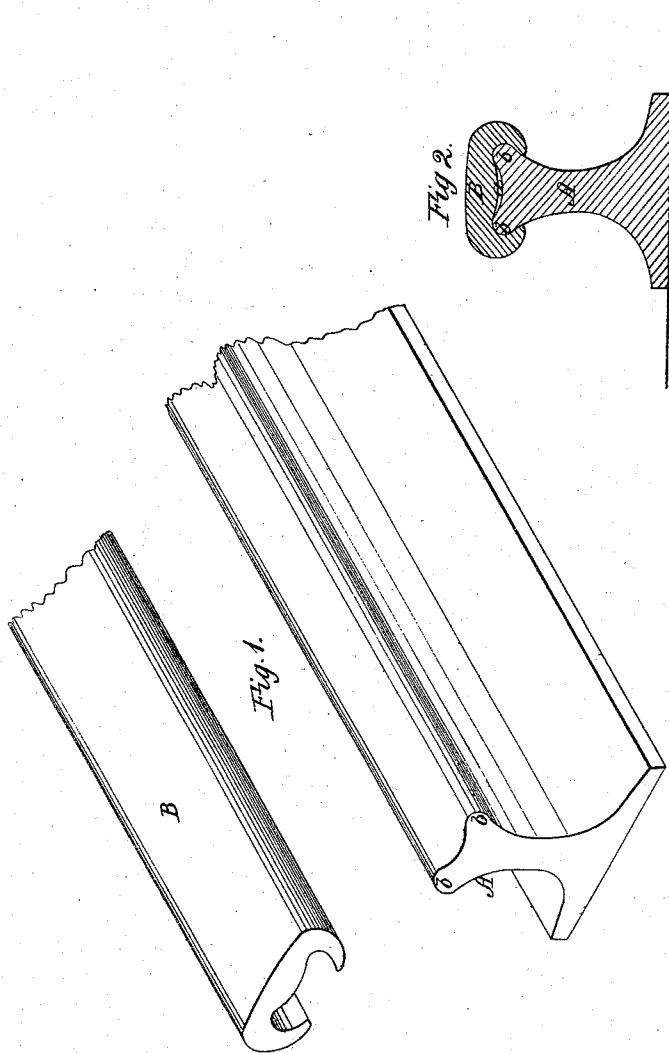


*J. L. Booth.*

*Railroad Rail.*

*N<sup>o</sup> 40,400.*

*Patented Nov. 5, 1867.*



Witnesses  
*J. L. Davis*  
*Chas. F. Spencer*

Inventor:  
*J. L. Booth*  
By *J. Fraser & Co.,*  
*Atty*

# United States Patent Office.

JONATHAN L. BOOTH, OF ROCHESTER, NEW YORK.

*Letters Patent No. 70,400, dated November 5, 1867.*

DIVISION B.

## IMPROVEMENT IN THE MANUFACTURE OF RAILS FOR RAILWAYS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JONATHAN L. BOOTH, of Rochester, in the county of Monroe, and State of New York, have invented a certain new and useful Improvement in Rails for Railroads; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a perspective view of one end of the rail with the base and cap disconnected.

Figure 2 an end elevation of the rail complete.

Like letters of reference indicate corresponding parts in both figures.

I obtained a patent, dated August 28, 1866, for a method of connecting the cap with the body by rolling the same on. In that case the rail formed a solid and unyielding body from top to bottom. My present invention consists in employing, in combination with the cap and body, a space between, which will allow a certain degree of elasticity or yieldingness of the cap as the trains pass over, the parts being so formed as, at the same time, to insure the necessary degree of strength.

As represented in the drawings, A is the body or base of the rail, and B the cap or tread-piece, which is applied to the base by having its lips turned under the edges. Between these parts is left a longitudinal space, *a*, as clearly indicated in fig. 2. This space is most conveniently formed by rolling the top of the body or base with a corrugation, as shown in fig. 1. I prefer to leave the cheeks *b b*, over which the lips of the cap clasp; of the rounded form shown; but if desired they may be square or of other form. I also prefer to make the under side of the cap convex or bagging, but it may be of other form. The space *a* under the cap has a tendency to give a certain degree of elasticity to the cap by leaving it open at the bottom, and to obviate that rigidity and unyieldingness that are produced where the whole rail is made solid from top to bottom. This elasticity prevents, in a great degree, abrasion and wear, and renders the rail much more enduring than would otherwise be the case. In addition to this, the space has a tendency to counterbalance the lateral-expanding action of the cap, by allowing a central downward action to the same. It is obvious, and has been found by experiment, that the hammering of the wheels has a tendency to expand the surface of the cap laterally when subjected to long usage, thereby claspings closer the cheeks *b b*; but the same weight of the wheels has also a tendency to draw the cap inward by pressing down in the central space, and therefore keeps the bearings tight on the cheeks. At the same time the pressure has also a tendency to expand the cheeks outward to meet the clasp of the cap. This threefold action will always keep the cap tight to the rail.

I am aware that a hollow rail, made in a single piece, for the purpose of lessening the amount of material, has before been known; such I do not claim.

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

The cap B, in combination with a base, A, having a longitudinal depression in its upper surface, substantially as and for the purpose specified.

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

Witnesses:

R. F. OSGOOD,  
J. A. DAVIS.

JONATHAN L. BOOTH.