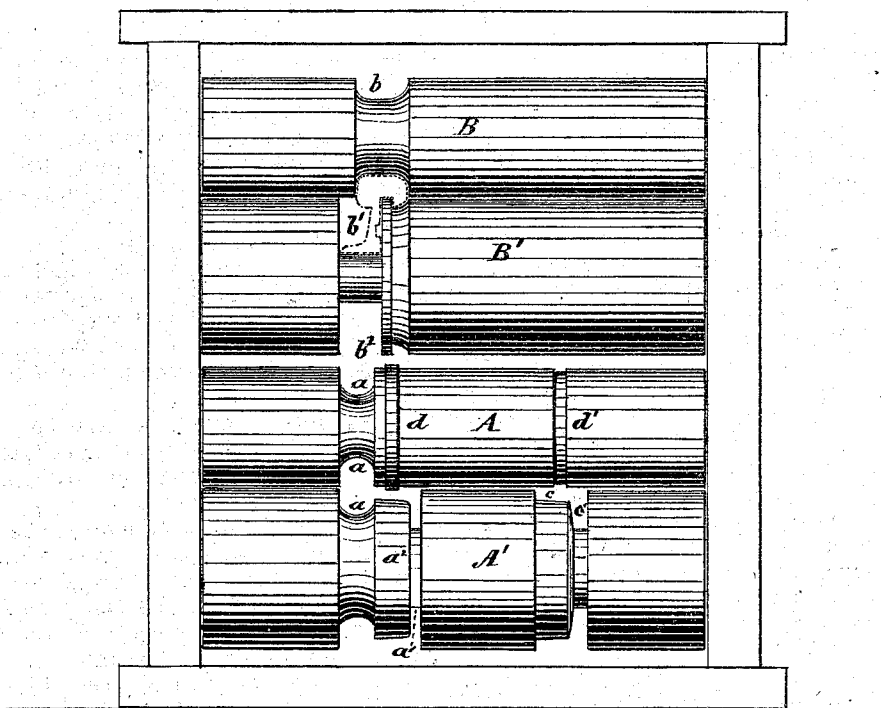


J. W. COOPER.

Rolls for Rolling Railway-Rails.

No. 136,816.

Patented March 18, 1873.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN W. COOPER, OF HUBBARD, OHIO, ASSIGNOR TO AMOS E. ROGERS, OF LA GRANDE, OREGON, AND CYRUS ROOSE, OF NEWCASTLE, PENNSYLVANIA, TRUSTEES.

IMPROVEMENT IN ROLLS FOR ROLLING RAILWAY RAILS.

Specification forming part of Letters Patent No. 136,816, dated March 18, 1873.

To all whom it may concern:

Be it known that I, JOHN W. COOPER, of Hubbard, in the county of Trumbull and State of Ohio, have invented a new and useful Improvement in Rolls for Rolling Railway Rails; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification.

The invention relates particularly to a mode of constructing rolls so as to shape a compound rail which is made of two sections locked together by a groove on one in the under part of head, into which the upper edge of the other fits. The invention consists in constructing a pair of rolls with grooves by which the larger section is brought into preliminary shape; and also in constructing a pair of rolls with differently-formed grooves, by which it is subsequently recessed on the under side of head to receive the upper edge of the lesser section.

In the drawing, the figure is a front elevation.

A A' in the drawing, represent the first, and B B' the second, pair of rolls. In the rolls A A' two corresponding grooves $a a$ are formed, to shape the head of rail, and a deep groove, a^1 , in the lower roll to receive and shape the metal that makes the base. The annular rib a^2 , located between the grooves $a a^1$ of lower roll, is not on a level with the face of roll, but is reduced to allow for the formation of the intermediate riser, neck, or support, on which the head rests. $c c$ are grooves in roll A', which, in conjunction with the smooth face of roll A, serve to form the lesser section of the compound rail. In the roll B is a groove, b , which receives the whole of rail-head, and in roll B', a large groove, b^1 , which receives the

base and riser, while b^2 is an annular projecting rib which forces its way into the under part of head and makes the required recess for the reception of the smaller section of rail.

The rolls A A' may be perpendicular, and the rolls B B' horizontal; or they may be arranged in any convenient manner without departing from the principle of my invention. The metal bar or blank from which the larger section of rail is to be manufactured is passed through grooves $a a^1$ and over rib a^2 , to form a preliminary blank, and then through grooves $b b^1$ and over rib b^2 to complete the larger section.

The groove c' in roll A', and the rib b^2 in roll B', may be made of any preferred shape without departing from the principle of my invention.

In order to form a lock-joint to the two sections of rail I make the corresponding rib d and recess d^1 so that a projection will be formed on one side of the small part of rail, and a corresponding aperture in the opposite side of the larger part of rail. It also then becomes necessary to make the side rib d^2 in roll B' on the inside of groove b^1 .

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

1. The rolls A A', constructed with grooves $a a^1$ and reduced rib a^2 , as and for the purpose described.
2. The rolls B B', constructed with grooves $b b^1$ and projecting rib b^2 , as and for the purpose set forth.

J. W. COOPER.

Witnesses:

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