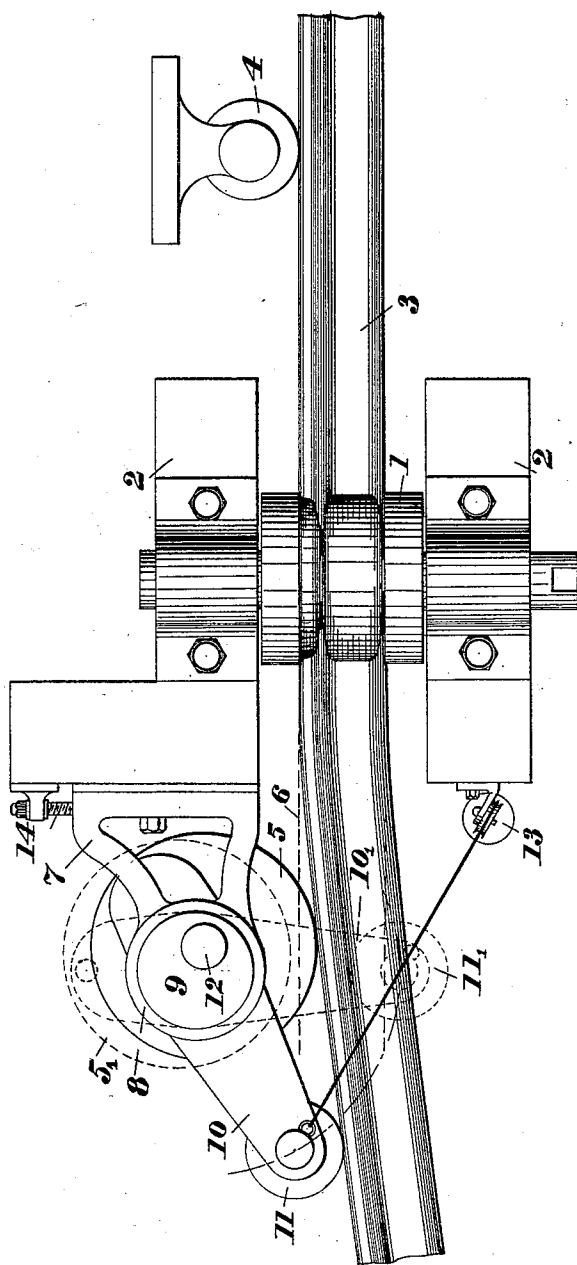


(No Model.)

H. C. RYDING.
APPARATUS FOR CAMBERING RAILS.

No. 520,865.

Patented June 5, 1894.



WITNESSES:
E. M. Bolsinger
Hamilton E. Ford

INVENTOR
H. C. Ryding
BY
Ward Raymond
ATTORNEY.

UNITED STATES PATENT OFFICE.

HERBERT CHAS. RYDING, OF JOHNSTOWN, PENNSYLVANIA.

APPARATUS FOR CAMBERING RAILS.

SPECIFICATION forming part of Letters Patent No. 520,865, dated June 5, 1894.

Application filed July 12, 1893. Serial No. 480,219. (No model.)

To all whom it may concern:

Be it known that I, HERBERT CHAS. RYDING, of Johnstown, county of Cambria, State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Cambering Rails and Metallic Bars, of which the following is a full and exact description, due reference being had to the accompanying drawing.

My invention specially relates to that class of cambering rolls in which the rail is passed through a pair of horizontal rolls and at the same time curved or cambered by the action of two vertical rolls, one on either side of the horizontal rolls, pressing against one side of the rail all as illustrated in the drawing and hereinafter described.

Referring to the drawing which illustrates a top view of a machine of the class described embodying my invention: 1 is the top one of a pair of horizontal rolls mounted in suitable housings 2, and having the proper pass between them for rail 3.

4 and 5 are the two side rolls which serve to curve the rail. It will be seen that the straight rail passes the roll 4 and entering the pass in rolls 1 continues on in the direction of the dotted line 6 until it strikes the roll 5. As the rolls 1 continue to force it along it bends and passes by the roll 5 as shown. Thus the rail is curved throughout its length.

I have discovered that when the end of the rail comes in contact with the roll 5, it being hot and soft, the roll instead of bending the rail tends to distort the shape for a short distance, that is, it crushes it so that if the head of the rail is against the roll it is forced into the web slightly. This is partly due to the impact of the rail in striking the roll and partly due to the fact that the extreme end of the rail being more easily distorted than the rest crushes before the section nearer the roll 1 will bend. This weakness belongs of course only to the extremity of the rail. To obviate this distortion is the object of my invention and to that end I so mount the roll 5 that it does not come in contact with the end of the rail at all, but is brought to bear upon the rail gradually and after the weak point has passed. My method of doing this I will now describe with the aid of the drawing, in

which, as before said, 5 is the roll which causes the distortion. Upon the housing 2 I secure the bracket having the bearing 8. In this bearing 8 is the pivot 9 to which is attached the arm 10 carrying upon its outer end the roller 11. In the pivot 9 and eccentrically to the center is mounted the roll 5 by its shaft 12 so that the movement of the pivot 9 changes the alignment of the roll 5 in respect to the rolls 1.

The operation of this device is as follows: Normally the arm 10 is in the dotted position of 10', and the roll 5 drawn back out of the way of the rail 3 where it is straight as 6. 5' represents 5 in such position. As the rail passes along it first comes in contact with the roller 11 in its dotted position 11'. As the rail continues, it pushes the roller ahead of it until it lies against the side of the rail as shown at 11: in the mean time the arm 10 has caused a partial revolution of pivot 9 and thus brought the roll 5 into engagement with the rail as shown. When the rail has all passed through, the counter weight 13 draws the arm 10 and roller 11 back into the path of the next rail. It will thus be seen that I prevent the end of the rail from striking the roll and after allowing the extremity of the rail to pass it, I bring it gradually into action and thereby obviate any tendency to distortion.

The screw 14 illustrates a device which may be used to vary the alignment of roll 5 and so vary the curvature of the rail but of course any suitable means may be used. Nor do I limit myself to the exact form of my device as shown here as it may be modified in many ways without departing from my invention.

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

1. In a machine for cambering rails or metallic bars a pivoted arm adapted to be moved by the rail as it passes through the machine and a cambering roll mounted in the pivot of said arm eccentrically to said pivot.

2. In a machine for cambering rails or metallic bars a cambering roll normally held out of the path of the rail, an arm extending in the path of the rail and connection between said roll and said arm whereby the action of

the rail in pushing the arm from its path causes the roll to be brought into action upon and camber the rail.

3. In a machine for cambering rails or metallic bars a cambering roll adapted to be by the rail brought into action after the end of the rail has passed the point of action of the roll.

4. In a machine for cambering rails or metallic bars in combination with a pair of horizontal rolls, a vertical fixed roll and a vertical roll adapted to be automatically, by the rail, moved into action against the rail.

5. In a machine for cambering rails or metallic bars in combination with a pair of horizontal rolls, a vertical fixed roll, a pivoted arm normally standing in the path of the rail and a roll so connected with said arm that the rail in swinging the arm out of its path causes the roll to be forced against said rail.

In testimony whereof I have affixed my signature in presence of two witnesses.

HERBERT CHAS. RYDING.

Witnesses:

E. H. CAVERT,

P. M. BOYD.