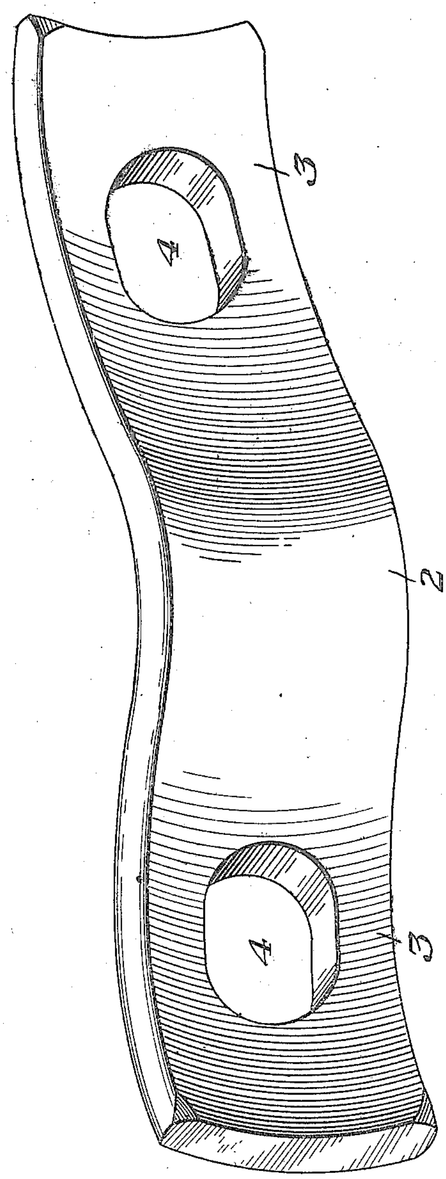
Jan. 23, 1923. 1,443,160.

E. WOODINGS.

METHOD OF MAKING RAIL SPRINGS.

FILED JAN. 10, 1922.



INVENTOR

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by Byrnes Stebbins Burgess & Bowulee

his attys

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METHOD OF MAKING RAIL SPRINGS.

Application filed January 10, 1922. Serial No. 528,320.

To all whom it may concern:

Be it known that I, EMANUEL WOODINGS, a citizen of the United States, residing at Verona, county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in Methods of Making Rail Springs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which the figure is a perspective view of a rail spring made in accordance with my invention.

My invention relates to the making of rail springs which are held in place by the bolts being preferably arranged one on each side of the rail joints.

In the preferred form of spring shown in the figure, the spring, which is of leaf type, is curved both longitudinally and transversely. The longitudinal curvature is of a compound character, there being a bulge 2 in the center of the spring, from which the side portions 3, 3, extend outwardly and then inwardly in a reverse curve. The spring is also preferably curved transversely, so that its inner surface next to the splice bar is slightly concave, while its outer surface is correspondingly convexed.

The spring in the preferred form has two elongated enclosed holes 4, 4, through which the bolts extend. The bolts now used in railroad tracks are usually wing bolts, the bolt being elongated horizontally on both sides immediately under the head to prevent it from turning when the nut is screwed on. Consequently, the holes, as shown, are elongated horizontally, being preferably arranged so that there is about $\frac{1}{16}''$ clearance between the top and bottom of the hole and the diameter of the bolt, while there is a clearance of $\frac{1}{8}''$ overall between the ends of the wings and of the bolt and the ends of the hole. These holes must be carefully formed, in order to leave sufficient stock in the metal of the spring, and at the same time provide for the sidewise clearance above referred to, and preferably, for slight clearance between the top and bottom of the hole and the diameter of the nut.

In the making of these springs, I have found that there is a great advantage in punching the holes after the spring blank has been given its curved shape. Therefore, in the method which I employ in making this spring, the spring blank is first pressed hot into the curved shape, and thereafter, the holes are punched, preferably through the crown portions 3, 3 of the spring. In this manner, the sides of the hole extend straight and inwardly in the desired direction, whereas, if the holes were punched before shaping, the metal would be stretched and deformed at the sides of the hole, so as to reduce the amount of metal between the sides of the hole and the sides of the spring, and render the holes liable to cut into the bolt. Consequently, it is far better to cut the holes after the spring has been given its desired curvature.

It will be understood that while the spring is preferably curved both longitudinally and transversely, it may be only curved in one direction within the scope of my method. The particular type of curving may be varied, and other changes may be made without departing from my invention.

I claim:

1. In the manufacture of rail springs, the steps consisting of pressing the spring blank into a curved form, and thereafter punching enclosed holes in its end portions, substantially as described.

2. In the manufacture of rail springs, the steps consisting of pressing the spring blank while hot to give it a compound longitudinal curvature, and then punching elongated holes in the crowned end portions thereof, substantially as described.

3. In the manufacture of rail springs, the steps consisting of hot-pressing the blank to give it both a longitudinal and transverse curvature, and then punching holes in the end portion thereof, substantially as described.

In testimony whereof I have hereunto set my hand.

EMANUEL WOODINGS.