

No. 864,137.

PATENTED AUG. 20, 1907.

W. McKEE.
TIE PLATE.

APPLICATION FILED MAY 3, 1907.

2 SHEETS—SHEET 1.

FIG. 1.

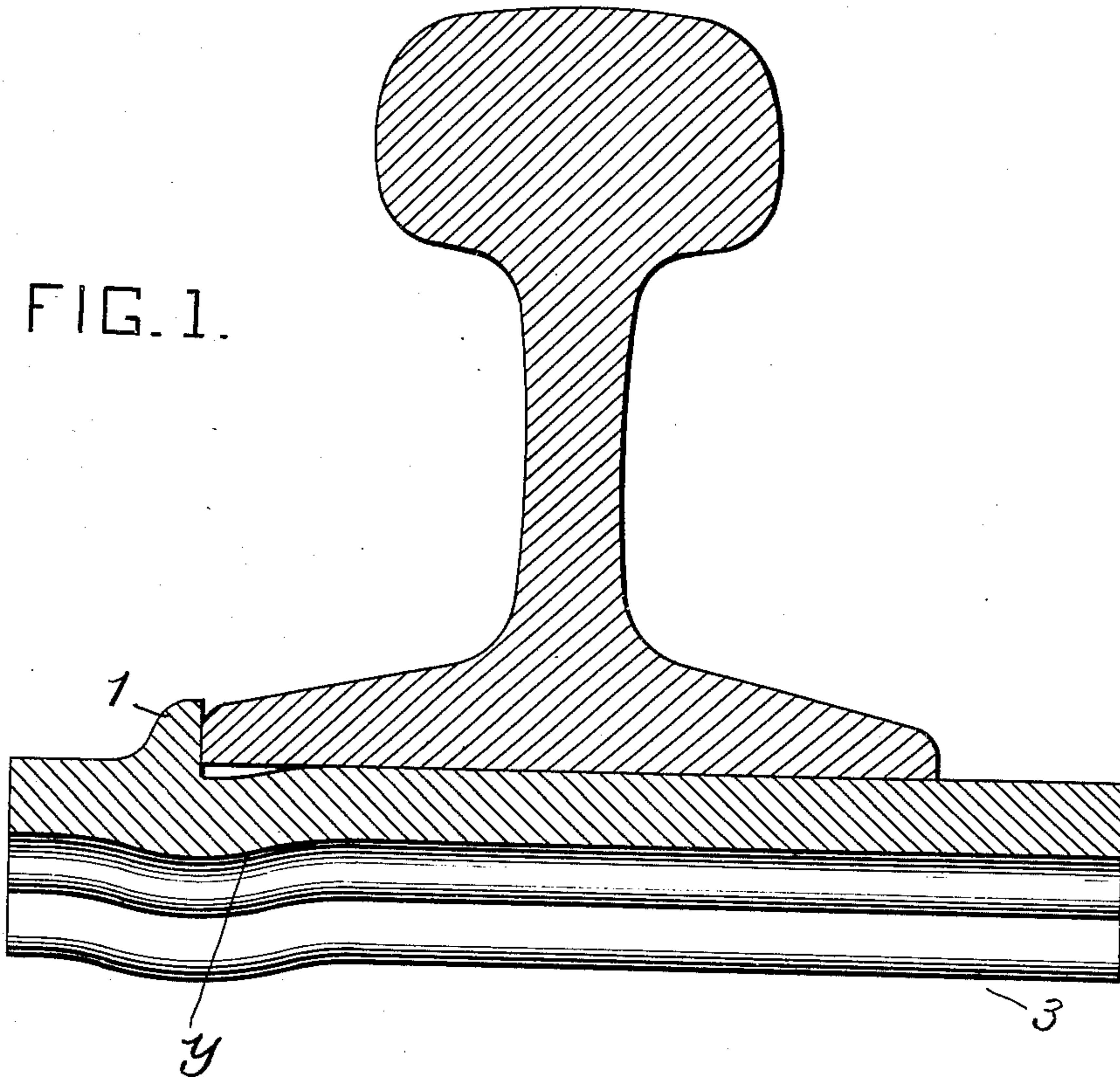
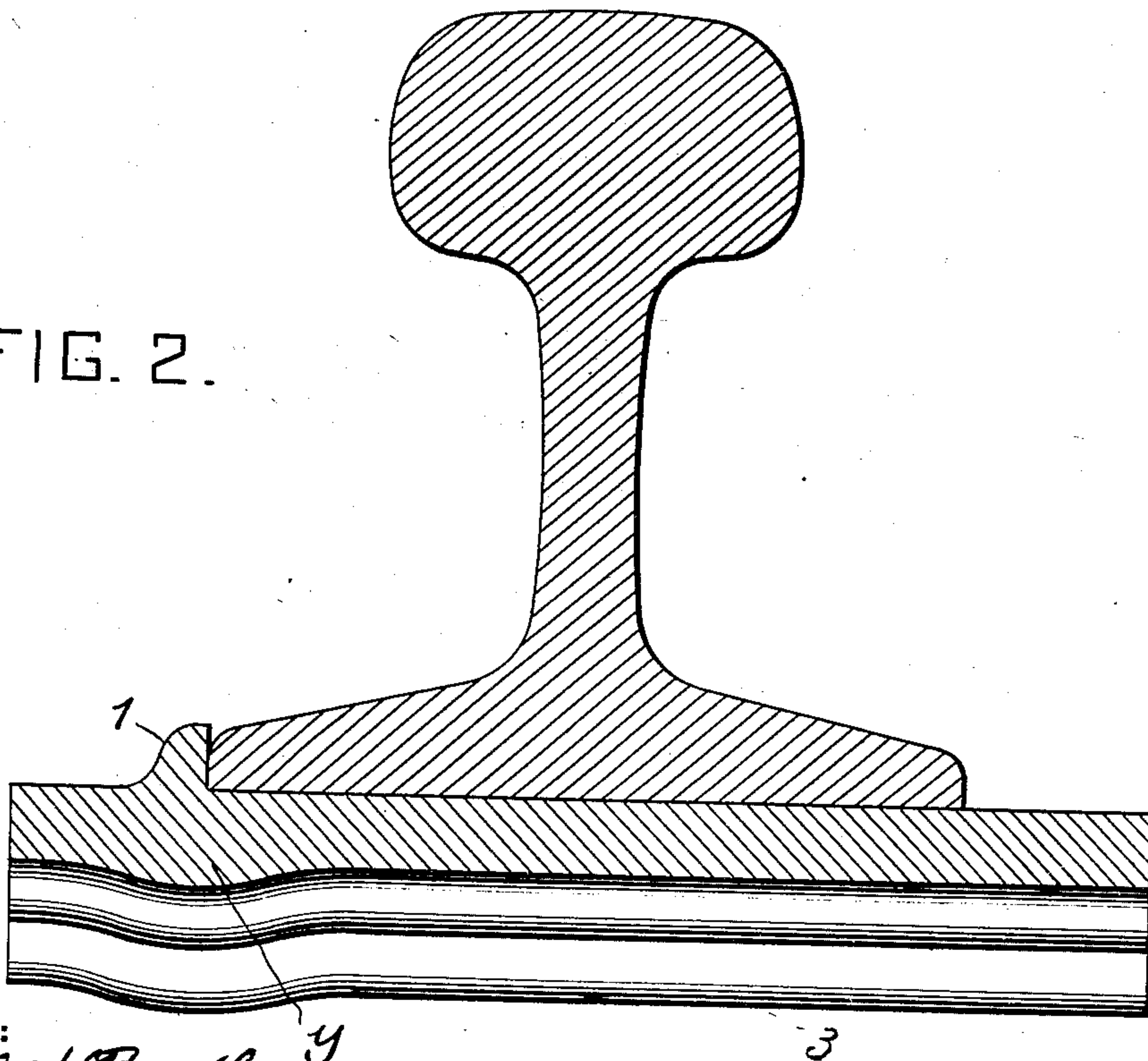


FIG. 2.



WITNESSES:

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INVENTOR

Willis McKee,
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2 SHEETS—SHEET 2.

FIG. 3.

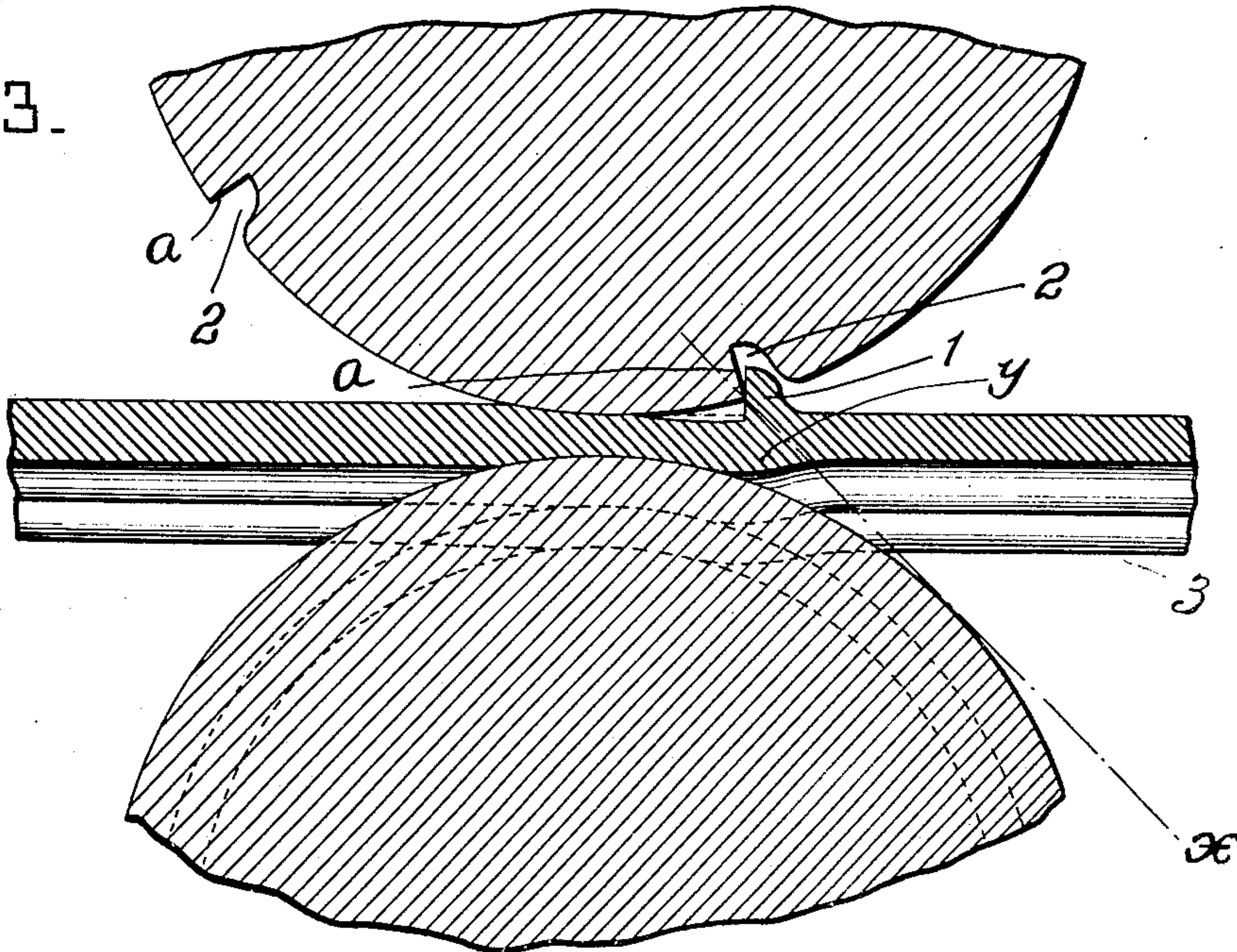
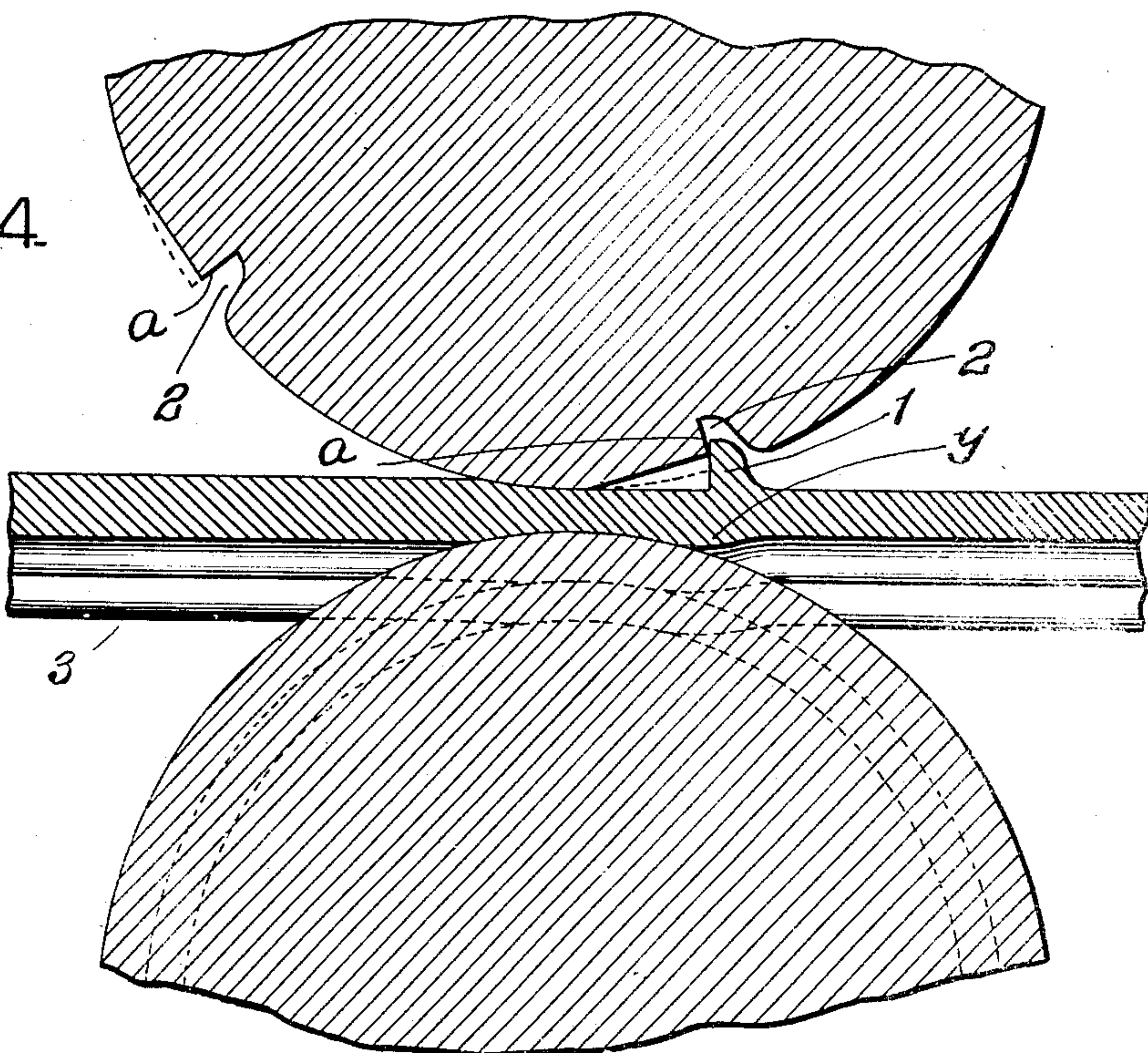


FIG. 4.



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UNITED STATES PATENT OFFICE.

WILLIS MCKEE, OF ELYRIA, OHIO, ASSIGNOR TO ELYRIA IRON & STEEL COMPANY,
OF ELYRIA, OHIO, A CORPORATION.

TIE-PLATE.

No. 864,137.

Specification of Letters Patent.

Patented Aug. 20, 1907.

Original application filed June 2, 1905, Serial No. 263,488. Divided and this application filed May 3, 1907. Serial No. 371,650.

To all whom it may concern:

Be it known that I, WILLIS MCKEE, residing at Elyria, in the county of Lorain and State of Ohio, a citizen of the United States, have invented or discovered certain new and useful Improvements in Tie-Plates, of which improvements the following is a specification.

In rolling tie plates having a transverse rib or abutment formed on its upper face by a groove in the roll parallel with its axis, as described and claimed in an application for Letters Patent filed by me June 2nd, 1905, Ser. No. 263,488, a bend is formed in the body of the plate adjacent to and parallel with the transverse abutment. This bend is believed to be due to the hanging of the abutment in the groove formed longitudinal of the roll, for the formation of said rib during the rolling of the plate. By reason of this bend howsoever formed, the flanges of the rails are unsupported along their outer edges, and when the head of the rail is subjected to an outward thrust, the rail will tend to rock on the plate and thereby tend to draw the spikes along the inner edges of the rails.

The invention described herein has for its object the production of a tie plate of the type described with flat upper surface, so as to afford a uniform bearing for the rail flange.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings forming a part of this specification, Figure 1 is a sectional elevation of a rail and tie plate, the latter being bent as stated adjacent to the abutment, Fig. 2 is a similar view showing my improvement in tie plates; Fig. 3 is a sectional view of rolls heretofore used showing the formation of the bend in the tie-plate; and Fig. 4 is a similar view showing a construction of rolls, whereby the tie plate can be formed with a straight upper or bearing surface.

One of the rolls, preferably the upper roll A, is formed with one or more grooves 2 parallel with the axis of the roll for the formation of abutments 1 extending across one side of the bar-plate. When it is desired to make plates having a longitudinal rib or ribs 3 on the underside, the other roll B is formed with one or more peripheral grooves, as indicated by dotted lines.

It will be observed by reference to Fig. 3, that the roll A has heretofore been constructed of full diameter except where the grooves 2 are cut so that the plates produced were of uniform thickness except for the abutments.

In rolling the rear wall *a* of the groove seems to exert a pressure on the rib in a direction nearly tangential (indicated by the line *x*) to the other roll, and the plate being unsupported by the lower roll where the plane of pressure intersects the plate, a bend *y* is produced, thus causing a depression in the upper surface of the plate. In order to overcome this defect, a portion of the roll immediately in the rear of the groove 2 is cut away as shown, so that a swell or enlargement will be formed on the upper face of the plate corresponding in location to the depression heretofore produced. As the formation of the plate progresses, it is bent or distorted as heretofore, but if cut away portion has been properly treated and proportioned a swell or enlargement will be formed on the plate and the bending will result in the production of a plate having a straight upper surface. This bending of the reinforced plate will cause the swell to appear on the opposite or under side of the plate. As this swell or enlargement is slight, it will not prevent the plate embedding itself firmly on the cross-ties, the swell being forced into the same.

It has been found in practice that wear of the plate is most rapid adjacent to the abutment, and hence the reinforcing of the plate as described is desirable not only as it results in producing a plate which will afford a uniform support for the rail, but for the reason that it strengthens the plate where the greatest wear occurs.

I claim herein as my invention:

1. A rolled tie plate bar having a transverse abutment and longitudinal ribs and having a straight flat upper surface.
2. A rolled tie plate bar having a transverse abutment and reinforced adjacent to the abutment.
3. A rolled tie-plate bar having a transverse abutment and a straight flat bearing face for the rail, and reinforced adjacent to the abutment.
4. A rolled tie plate having on one side a continuous abutment extending transversely of the plate and a longitudinal rib on the opposite side, said plate having a straight flat upper surface.
5. A rolled tie plate having a transverse abutment on one side and ribs extending longitudinally of the plate on the side opposite the abutment, said plate being reinforced adjacent to the abutment.

In testimony whereof, I have hereunto set my hand.

WILLIS MCKEE.

Witnesses:

P. J. MITCHELL,
L. J. BOOTHROYD.