No. 863,626. PATENTED AUG. 20, 1907.

W. McKEE.

TIE PLATE.

APPLICATION FILED DEC. 26, 1906.

2 SHEETS—SHEET 1.

FIG. 1.

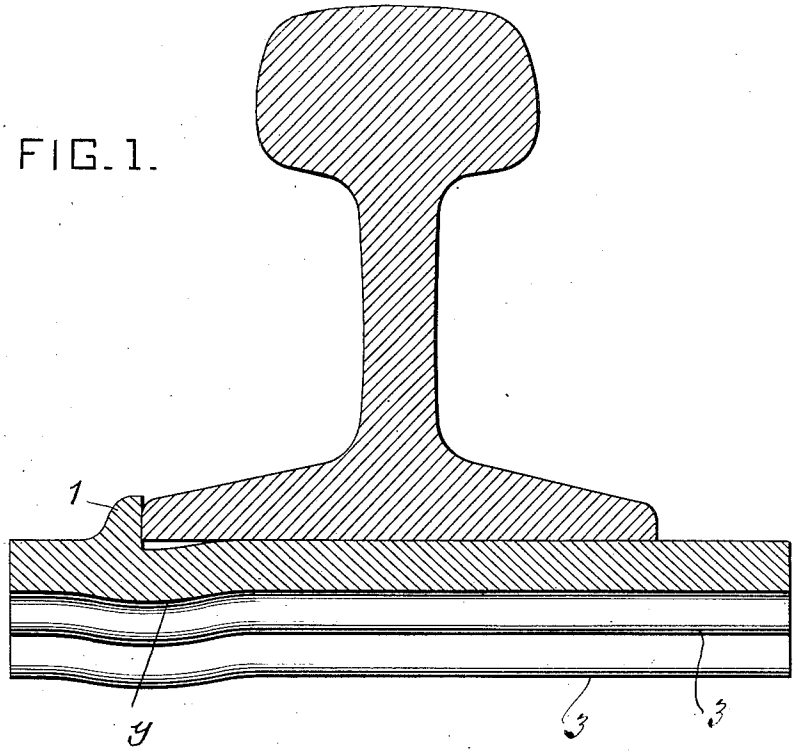
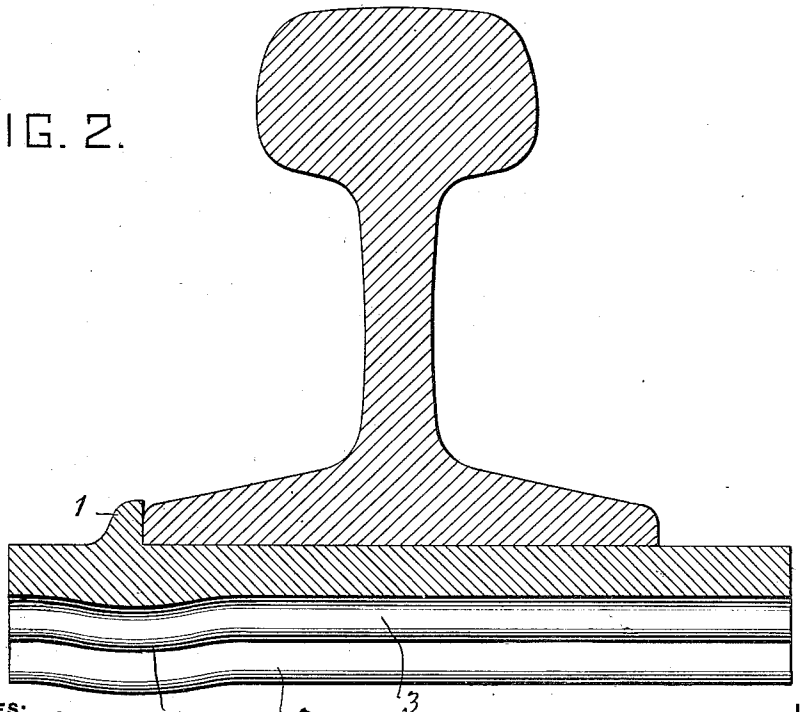


FIG. 2.



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2 SHEETS—SHEET 2.

FIG. 3.

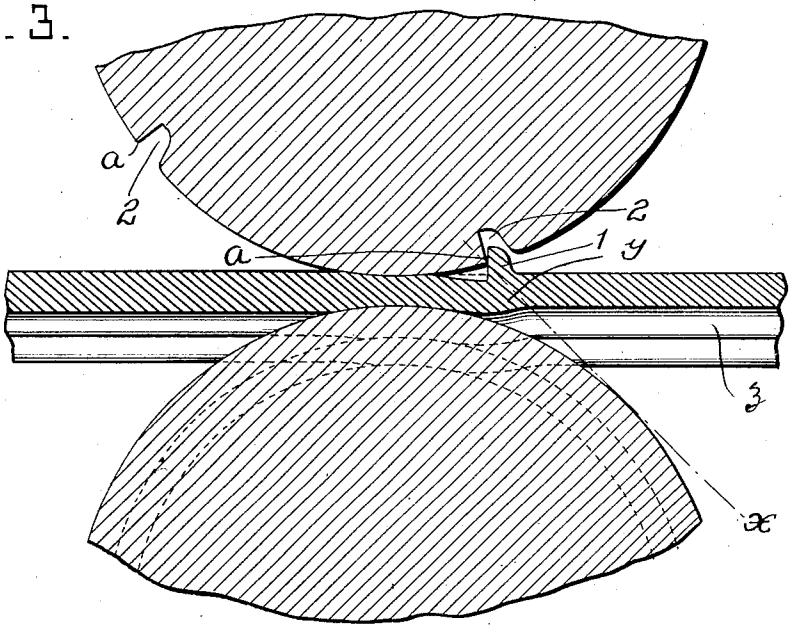
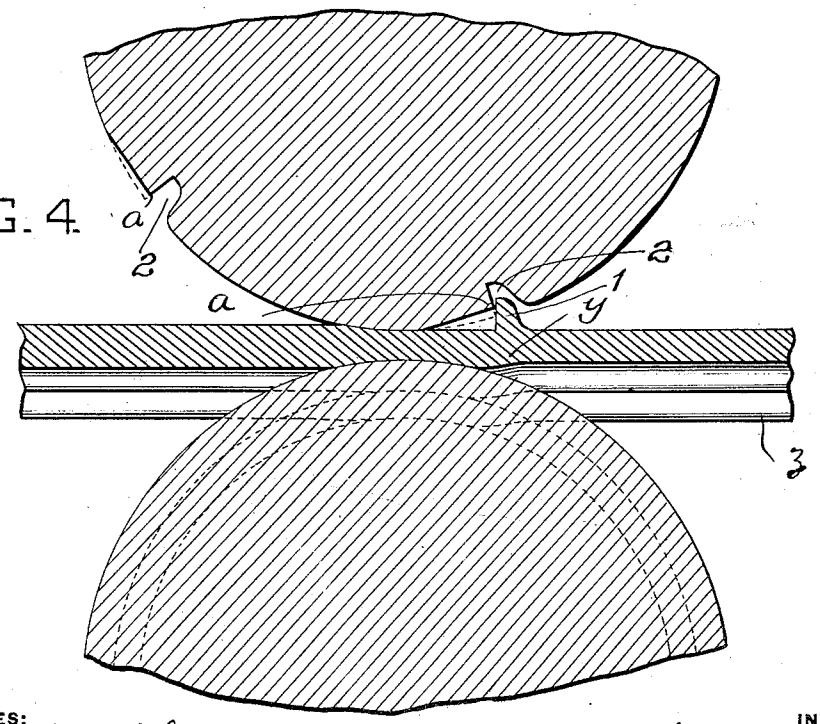


FIG. 4.



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UNITED STATES PATENT OFFICE.

WILLIS McKEE, OF ELYRIA, OHIO.

TIE-PLATE.

No. 863,626. Specification of Letters Patent. Patented Aug. 20, 1907.

Application filed December 26, 1906. Serial No. 349,414.

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 improvement 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 however 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 tc 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.

In the construction of rolls heretofore used, the plate is rolled to a uniform thickness except where the abutments 1 are formed, the rolls being of full diameter except where the longitudinal grooves 2 are cut. 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 the swell has been properly proportioned and located, the bending will result in 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 its 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.

It is preferred that the plates should be formed with one or more ribs 3 on the underside of the plate, said ribs being produced in the rolling operation by peripheral grooves extending around the roll opposing that one in which the transverse abutment is formed.

While I have shown and described with some particularity the form and construction of tie bar and plate produced by my improved method, no claim is made herein for such article, as the same forms the subject matter of an application filed May 3rd, 1907, Serial No. 371,650.

I claim herein as my invention:

As an improvement in the art of manufacturing tie plate bars, which consists in forming during the rolling of the plate, a rib or abutment at an angle to the direction of movement of the plate, forming a swell or enlargement on the plate in front of the rib and then bending the plate.

In testimony whereof, I have hereunto set my hand.

WILLIS McKEE.

Witnesses:
A. E. ADAMS,
I. L. BARNARD.