J. W. McMANAMA.

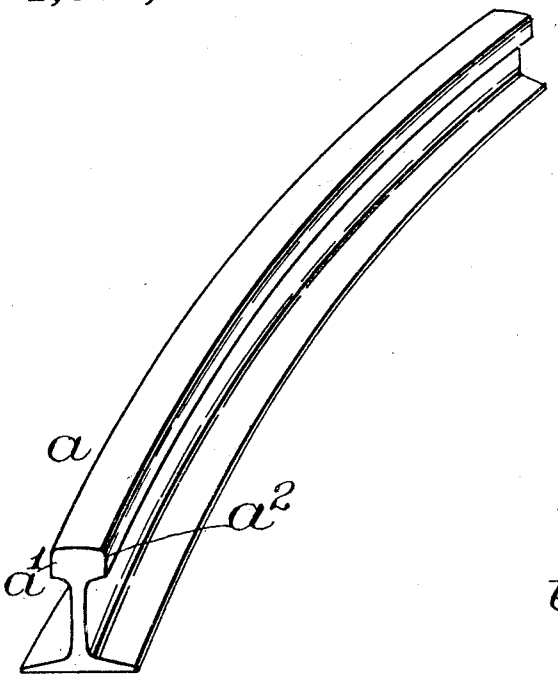
RAILROAD TRACK CURVE.

APPLICATION FILED FEB. 15, 1912.

1,039,430.

Patented Sept. 24, 1912.

Fig. 1.



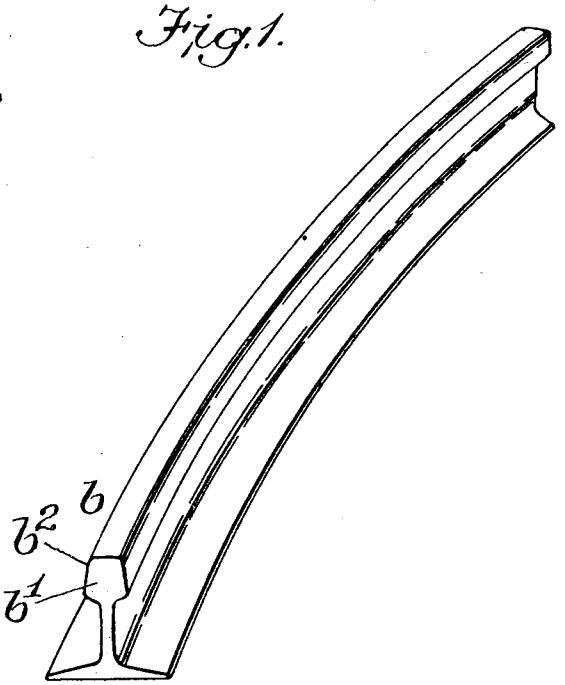


Fig. 6.

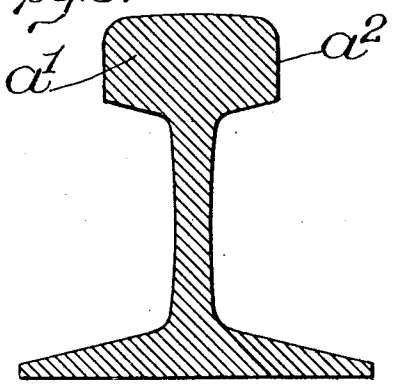


Fig. 5.

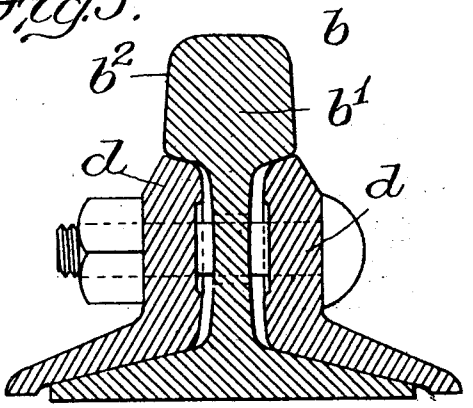


Fig. 2.

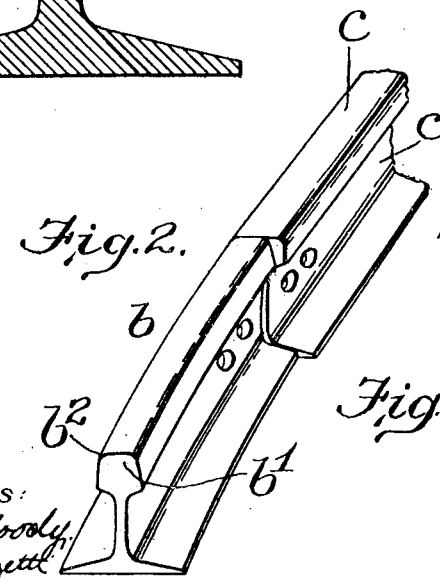


Fig. 3.

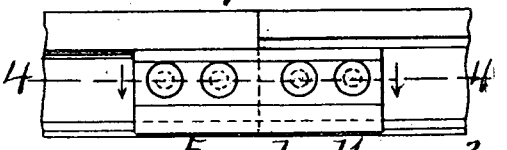
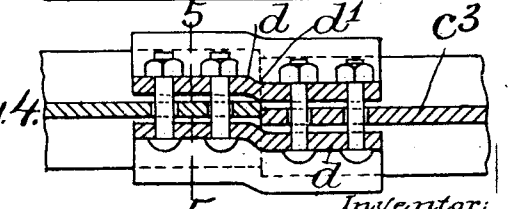


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

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RAILROAD-TRACK CURVE.

1,039,430. Specification of Letters Patent. Patented Sept. 24, 1912.

Application filed February 15, 1912. Serial No. 677,748.

To all whom it may concern:

Be it known that I, JOHN W. McMANAMA, a citizen of the United States, and a resident of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Railroad-Track Curves, of which the following is a specification.

This invention is an improvement on that for which Letters Patent of the United States, No. 1,006,579 were granted October 24, 1911. Said patented invention is embodied in a railroad track curve, the rails of which have heads and tread faces of different widths, the head of the inner rail being narrower than the head of the outer rail, so that the frictional resistance to the movement of wheels over the curve and the loss of power due thereto are greatly reduced, the wear of the flange bearing of the outer rail is correspondingly reduced, and the life of said rail is correspondingly increased, as fully described in said patent.

In practice, the flange bearing of the inner rail of a track curve is not worn appreciably by the wheel flanges, this wear being sustained wholly by the flange bearing of the outer rail. The wear of the inner rail is sustained wholly by the tread face, which is reduced thereby in height so that the depth or vertical thickness of the head of the inner rail is gradually reduced by wear to the limit of safety. The rapidity of the tread wear of the inner rail is increased by the reduction of the width of the tread in accordance with the patented invention. The inner rail of a track curve sustains a greater proportion of the weight of the rolling stock than the outer rail and the wear of the tread face of the inner rail is correspondingly increased.

The present invention has for its object to increase the extent of safe wear of an inner rail, the tread face of which is narrower than the standard width, and it consists in a curved inner rail having its tread face narrower than the standard width, and its head deeper than a rail head of standard depth, so that the extent or period of safe wear of the tread face of the rail is increased and the reduction of the width of the tread face is compensated for.

Of the accompanying drawings:—Figure 1 represents a perspective view of a track curve embodying my invention. Fig. 2 represents a perspective view, showing one end portion of the inner curved track rail abutted against a straight track rail of standard form. Fig. 3 represents a side elevation, showing the end portions represented by Fig. 2, connected by fish-plates. Fig. 4 represents a section on line 4—4 of Fig. 3. Fig. 5 represents a section on line 5—5 of Fig. 4. Fig. 6 represents a transverse section of the outer curved track rail on a larger scale than in Fig. 1.

The same reference characters indicate the same parts in all the figures.

In the drawings,—a represents the outer curved rail of a railroad track curve, and b represents the inner curved rail of the same. The outer rail a is, or may be of the usual standard form, the tread surface of its head a' being of substantial width, the cross-section of the rail preferably according with that approved by the American Society of Civil Engineers.

The width of the head b' of the inner rail b is materially reduced so that its tread surface is much narrower than that of the outer rail a, the width of the tread surface of the inner rail being preferably approximately one-half the width of the tread surface of the outer rail. The section of the inner rail is of such form that when it is laid in the proper relation with an adjacent straight track rail c of standard form, its flange-bearing b^2 will be flush with the flange-bearing of the straight rail c, the gage of the rails a and b, or, in other words, the distance between the flange-bearing b^2 of the inner rail and the flange-bearing a^2 of the outer rail being the same as the predetermined gage of the entire track. The outer side of the head of the rail b is therefore offset inwardly from the outer side of the head of the straight rail c, as shown by Fig. 2.

The relatively narrow tread face of the inner rail b causes decreased traction of the wheels running on it, so that the wheels have sufficient freedom to slip laterally in the direction required to relieve the pressure of the flanges of the wheels running on the rail a against the flange-bearing a^2, and thus prevent excessive pressure of said wheel flange on the flange-bearing of the outer

curved rail, the loss of power due to such pressure, and the rapid wearing away of the flange-bearing of the outer rail.

The loss of traction at the inner rail *b* is compensated for by the increased pressure of the peripheries of the wheels on the relatively wide tread face of the outer rail, said increased pressure being due to centrifugal force, so that the reduction of the width of the head of the inner rail *b* does not involve loss of power in the movement of wheels on the track curve. The fish-plates *d* connecting the rails *b* and *c* are preferably offset at *d'*, as shown by Fig. 4.

The foregoing description is taken from the specification of the above-mentioned patent. In carrying out my present invention, the head *b'* of the inner rail is made deeper than the head of the outer rail and deeper than the head of any standard rail, to provide more than the usual thickness of metal between the tread and the shoulders at the bottom of the head. There is more wear on the tread of the inner rail than on the tread of the outer rail so that the tread of the inner rail is the more rapidly reduced. The increased depth of the head of the inner rail prevents it from being worn down to the limit of safety before the tread of the outer rail has been worn to the same limit.

The depth of the head *b'* or the vertical distance between the tread face and the shoulders forming the bottom of the head, as here shown, is about one third greater than the depth of a rail head of standard form as will appear by comparing Fig. 5 with Fig. 6, the latter showing the standard depth of an ordinary rail head. The increase may differ, however, according to circumstances.

I claim:

1. A railroad track curve the rails of which have tread faces of different widths, the tread face of the inner rail being narrower than the tread face of the outer rail to minimize the frictional resistance to side slip of wheels running on the inner rail, the depth of the head of the inner rail being greater than that of a rail head of standard depth, to increase the extent of safe wear of the inner rail, and compensate for the reduction of the width of the tread face of the inner rail, and for the increased weight of the rolling stock sustained by the inner rail.

2. In a railroad track curve, a curved inner rail having its tread face narrower than the standard width to minimize frictional resistance to side slip of wheels running thereon, and having its head deeper than a rail head of standard depth to increase the extent of safe wear of the tread face, and compensate for the reduction of the width of the tread face.

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

JOHN WILLIAM McMANAMA.

Witnesses:
C. F. Brown,
P. W. Pezzetti.