

J. W. McMANAMA.
RAILROAD TRACK CURVE.
APPLICATION FILED FEB. 18, 1911.

1,006,579.

Patented Oct. 24, 1911.

Fig. 3.

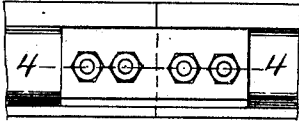


Fig. 1.

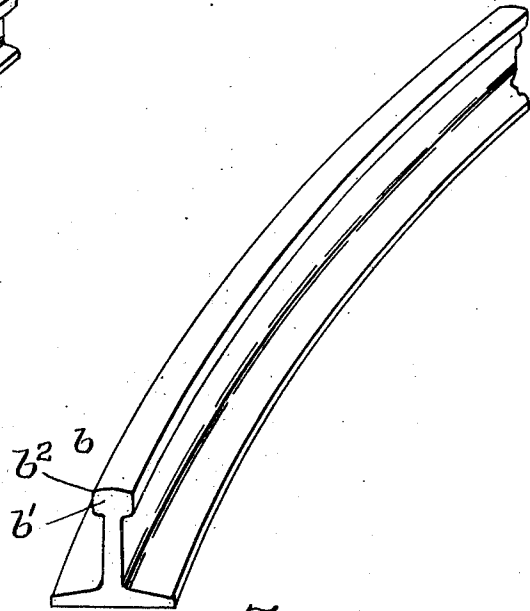


Fig. 6.

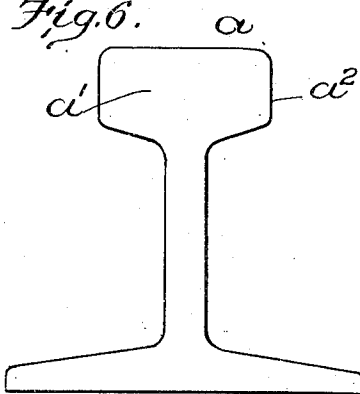


Fig. 5.

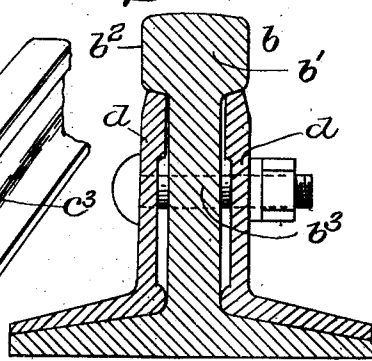


Fig. 2.

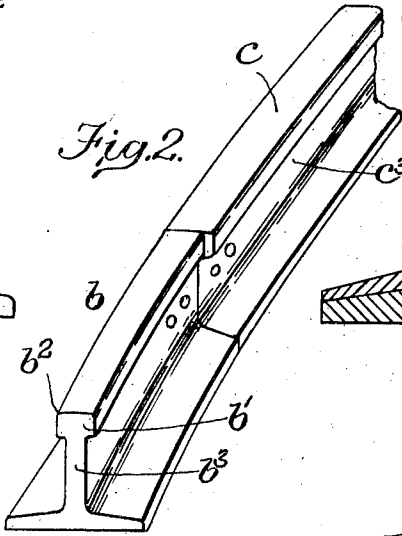
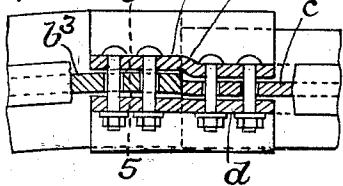


Fig. 4.



Witnesses:
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Inventor:
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by Myself from 2nd May

Attys.

UNITED STATES PATENT OFFICE.

JOHN W. McMANAMA, OF WALTHAM, MASSACHUSETTS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-THIRD TO SAMUEL W. SIMONDS, OF SOMERVILLE, MASSACHUSETTS, AND ONE-THIRD TO FRANCIS A. BARBEY, OF CAMBRIDGE, MASSACHUSETTS.

RAILROAD-TRACK CURVE.

1,006,579.

Specification of Letters Patent.

Patented Oct. 24, 1911.

Application filed February 18, 1911. Serial No. 609,388.

To all whom it may concern:

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

This invention has for its object to obviate loss of power in moving wheels of railroad trains over curved portions of the track, and excessive wear of the flange-bearings or gage sides of curved track rails, and particularly that of the outer rail. This rail is subjected to greater strain and wear by the side thrust exerted on its flange-bearing by the outward lateral movement of engine and car wheels, due to centrifugal force, causing the wheel flanges to grind said bearings, and by the slipping of the wheels made necessary by the greater radius of the outer rail. This rail must, therefore, have a head, the tread surface of which is of substantial width, not only to enable the rail to reasonably resist wear, but also to provide sufficient traction. It is a fact, however, that when the head of the inner rail has a tread surface of substantially the same width as the tread surface of the outer rail, in accordance with the usual practice, the wheel flanges are so pressed against the flange-bearing of the outer curved rail that not only is considerable power lost, but also the flange-bearing of the outer rail is worn or ground away at an objectionably rapid rate, such wear rendering the outer rail useless in a relatively short period.

I have discovered that by reducing the width of the tread face of the inner rail without altering the gage, or the distance between the flange-bearings of the two rails, the frictional resistance to the movement of the 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. These results I believe to be due to the decreased traction of the wheels on the inner rail and the correspondingly increased freedom of the wheels to slip laterally on the tread face of the inner rail in the direction required

to greatly diminish or prevent grinding contact of the wheel flanges with the flange-bearing of the outer rail.

My invention is based on this discovery and 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.

Of the accompanying drawings, forming a part of this specification,—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.

Similar reference characters indicate the same or similar 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.

In carrying out my invention, I materially reduce the width of the head *b'* of the inner rail *b*, 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. I prefer to make the tread surface of the inner rail somewhat more crowning than that of the outer rail, as may be seen by comparison of Fig. 5 with Fig. 6. 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 *b²* 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.

5 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 web b^3 of the rail b is preferably thicker than the web c^3 of the straight rail c and is offset from the inner side thereof, as shown by Fig. 4, the inside fish-plate d connecting the rails b and c being correspondingly offset at d' .

10 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 the

25 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.

35 In practice, I consider it desirable to make the inner rail b of the same weight as the outer rail a , the metal being distributed so that the web of the inner rail is thicker than the web of the outer rail, the base flanges of the inner rail being preferably wider than those of the outer rail, thus reducing the tendency of the inner rail to indent or cut into the wooden ties which support it.

I claim:

1. In a railroad track curve a curved inner rail, having its tread face reduced in width from the standard size to minimize frictional resistance to side slip of wheels thereon.

2. 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, whereby the traction of wheels running on the inner rail is reduced.

3. A railroad track curve, the outer rail of which has a tread face of standard width, while the inner rail has a tread face of approximately half the width of the tread face of the outer rail.

4. A railroad track comprising inner and outer curved rails, and adjoining straight rails, the outer curved rail and the straight rails having tread faces of standard width, while the inner curved rail has a narrower tread face, the flange-bearing of the inner curved rail being flush with the flange-bearings of the adjoining straight rails, and the web of the inner curved rail being offset from the web of the adjoining straight rails, and correspondingly formed fish plates connecting the meeting ends of the inner curved rail and the adjoining straight rails.

5. In a railroad track curve a curved inner rail, having its tread face reduced in width from the standard size to minimize frictional resistance to side slip of wheels thereon, the web of the rail being correspondingly increased in thickness and the base flanges increased in width.

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

JOHN W. McMANAMA.

Witnesses:

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