(No Model.)

L. BRIGHAM.

RAIL FOR RAILROAD CURVES, &c.

No. 352,113. Patented Nov. 9, 1886.

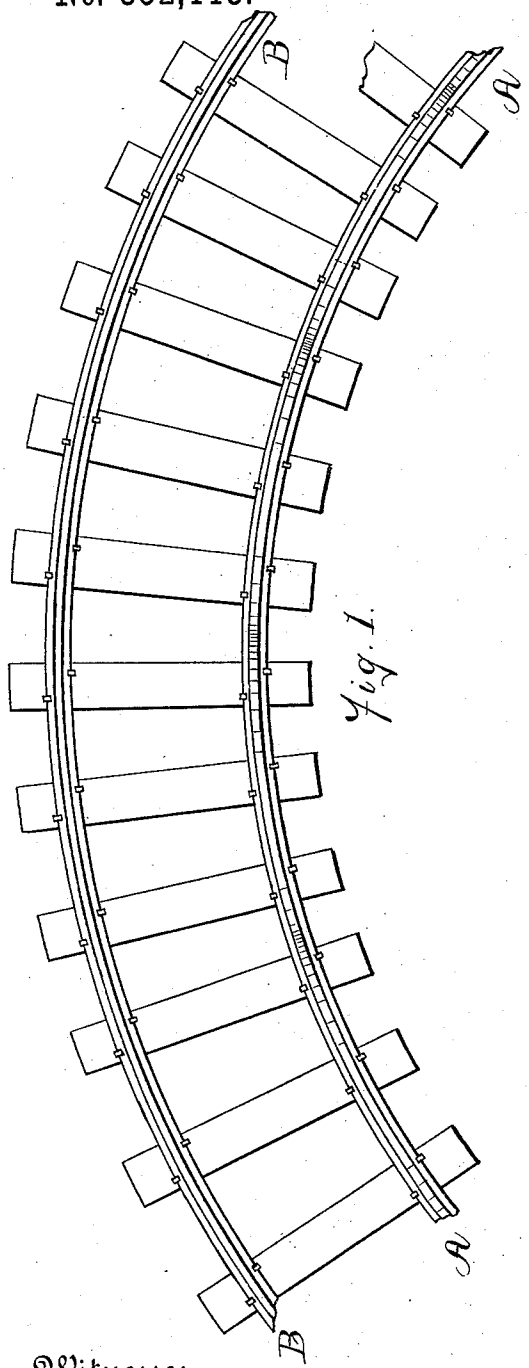

Fig. 1.

Fig. 2.

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

LEVI BRIGHAM, OF OSSEO, MINNESOTA.

RAIL FOR RAILROAD-CURVES, &c.

SPECIFICATION forming part of Letters Patent No. 352,113, dated November 9, 1886.

Application filed August 12, 1886. Serial No. 210,689. (No model.)

To all whom it may concern:

Be it known that I, LEVI BRIGHAM, a citizen of the United States, residing in Osseo, in the county of Hennepin and State of Minnesota, have invented an Improved Rail for Railway-Curves; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention consists in a rail for the inside of railway-curves formed with a longitudinally undulating or sinuous surface or tread, the degree or extent of the undulations being proportioned to the radius of each curve, and such as to compensate for the shortening of the inner rail compared with the outer rail of the curve, so that the length of the traveling-surface shall be substantially the same on both rails, whereby both wheels on each car axle will be allowed to freely turn at equal speeds, and no strain will be brought upon the axles, nor sliding friction upon the rails and wheels, nor cramping of the trucks to increase the resistance to the draft, nor tendency to leave the track in running upon the curves of the railroad. Each curve, having the degree of undulation adapted to its radius, has its own proper compensation for the centrifugal tendency of the cars thereon irrespective of the rate of motion at which the cars travel, and without any special construction of the car-wheels, which cannot of themselves be adapted to all degrees of curves or rates of speed.

The height or degree of the undulation required for steam-railways, which have only long curves, is so little that only slight up-and-down motion will be communicated to the cars thereby, even when they are traveling at high speed over the curves—very little, if any more, it is believed, than is ordinarily felt from the irregularities of the rail-surfaces, and much less irregular and violent. On street-railways, where much shorter curves are required and employed, the motion is so slow that the greater degree of undulation to be given to the rail-surface will be of slight consequence.

In the accompanying drawings, Figure 1 represents a plan of a portion of curved railway-track constructed with my undulating or scalloped surface inner rail; Fig. 2, a side view of a portion of one of the undulating surface rails employed for street-railways, and Fig. 3 a side view of a portion of one of the undulating surface rails employed for steam-railways.

The inner rail, A, has undulations or sinuosities *a a* on its upper surface or tread sufficient to give a length of such traveling-surface to the rail as great as there is on the outer rail, B, which is of ordinary construction.

Fig. 2 indicates the shorter or comparatively high undulations required for the short curves of street-railways, and Fig. 3 indicates the long and slight undulations required for the long curves of steam-railways.

Since the curves of different radii on both classes of railways may be very few for all roads, provision for rolling the different degrees may be readily made, and thus, with little or no additional expense in rolling after the proper sets of rolls are provided in the rolling-mills, rails exactly adapted to the radius of each curve may be furnished.

I claim as my invention—

1. A rail for the inside of railway-curves, formed with an undulating or sinuous upper surface, substantially as and for the purpose herein specified.

2. In a railway curved track, the combination of an inner rail, A, formed with an undulating upper surface and a straight-surface outer rail, B, substantially as and for the purpose herein specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

LEVI BRIGHAM.

Witnesses:
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