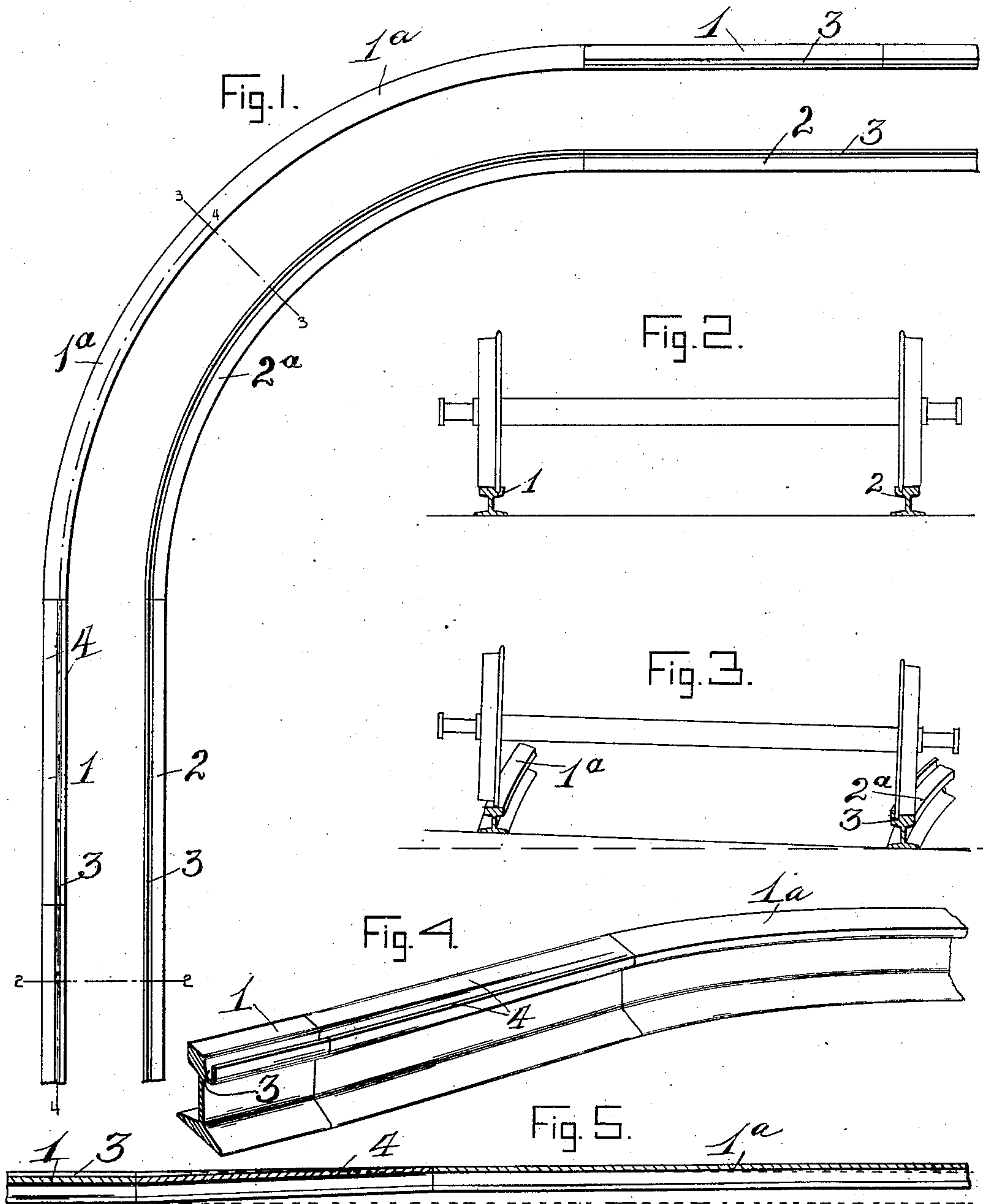


E. A. BARBER.  
RAILWAY TRACK.  
APPLICATION FILED NOV. 30, 1908.

934,265.

Patented Sept. 14, 1909.



Inventor

Edward A. Barber,  
Knight Bros

Attorneys

Witnesses  
J. M. Olynkorp  
Cora B. Mellon

By

# UNITED STATES PATENT OFFICE.

EDWARD A. BARBER, OF YORK, PENNSYLVANIA.

## RAILWAY-TRACK.

934,265.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed November 30, 1908. Serial No. 465,189.

*To all whom it may concern:*

Be it known that I, EDWARD A. BARBER, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Tracks, of which the following is a specification.

My invention relates to the construction of railway-track curves, and it consists in certain novel features of construction and arrangement of the outer track-rails, at, and adjacent to a curve, whereby the wear and tear upon the rails and upon the wheels and other parts of the truck, incident to rounding the curve, is greatly reduced, the cost of construction and maintenance are reduced, superior surface conditions are produced in public highways, and a car-truck having its wheels fixed upon the axes is caused to roll around the curve with much less expenditure of energy.

The invention will be fully understood upon reference to the accompanying drawing, in which,

Figure 1 is a plan of a portion of a railway track, including a curve and the approaches thereto; Fig. 2 is a section on the line 2—2, Fig. 1, on an enlarged scale, and with a pair of standard railway car wheels shown in position thereon; Fig. 3 is a section on the line 3—3, Fig. 1, on an enlarged scale, and with the wheels in position on the rails; Fig. 4 is a perspective view showing, on an enlarged scale, the method of merging a grooved straight rail into a flat-tread curve rail; and Fig. 5 is a section on the line 4—4, Fig. 1.

1 and 2 represent standard types of grooved railway rails, such as are commonly used for street-car service. These rails are constructed with grooves 3, the inner walls of which provide paving edges and maintain the flange space in the track without producing obstruction to vehicle wheels.

1<sup>a</sup> and 2<sup>a</sup> represent the outer and inner rails of a curve. 2<sup>a</sup> is in all essentials a continuation of the rail 2, and the inner wall of the groove constitutes the guard rail to retain the wheels against outward displacement. The rail 1<sup>a</sup> is a flat-tread rail without a groove or other retaining means, and its breadth is such that it receives the flanges of the outer wheels while the car is rounding the curve. As will be seen from Fig. 4, the rail 1 merges into the rail 1<sup>a</sup> by planing or

beveling off the normal tread of the rail as well as the inner wall of the groove 3, so that the load on the wheel is gradually shifted from the tread of the wheel which runs on the tread of the groove rail to the flange of the wheel running in the groove. As the bottom of the groove is in the plane of the flat tread of the rail 1<sup>a</sup>, the wheel is transferred from one rail to the other while running on its flange and without jar. The height of the rail 1<sup>a</sup> is preferably made to equal the height of the bottom of the grooves 3 above the base of the rail. The rail 1<sup>a</sup> is elevated as a whole by inclining the ties or other portion of the bed upon which the track is laid, so as to give the inclination usually allowed in practice. The absence of a groove on the outer wheel avoids much wear and tear, and saves considerably in power required in rounding curves.

Inasmuch as friction through which traction is obtained is proportional to the load per unit of pressure surface, the driving effect, when running on the flange instead of the tread of the wheel is not seriously reduced.

Inasmuch as the guard rails must be spaced considerably from the main rail in curves, the use of the flat-tread rail greatly improves surface conditions at a curve, because the paving can be laid up to and in contact with the rail, thus producing a continuous surface for ordinary vehicles.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent is:—

1. In a railway track curve, the combination of an inner curve-rail, having means for engaging the flange of a wheel running thereon to prevent outward displacement, and a flat-tread outer curve rail constructed and arranged with relation to the inner curve rail to receive the flange of the wheel running thereon.

2. In a railway track, the combination of straight groove rails and curve rails connected therewith, of which the inner curve rail is also a groove rail, while the outer curve rail is a flat-tread rail constructed and located to receive the flange of the wheel running thereon.

3. In a railway track, the combination of a grooved rail, a curved flat-tread rail mounted in continuation of the grooved rail, with the surface of the flat-tread rail lying in



continuation of and connected in the same plane with the bottom of the groove of the grooved rail.

4. In a railway track, the combination of a  
5 grooved rail and a flat-tread rail having a height equal to the height of the bottom of the groove of the grooved rail.

The foregoing specification signed at York, Penna., this 24th day of November, 1908.

EDWARD A. BARBER.

In presence of—

W. P. MOSTELLER,

C. B. LIPPHART.