(No Model.)

F. W. CHOATE.

CAR WHEEL AND RAIL.

No. 457,703. Patented Aug. 11, 1891.

Fig. 1.

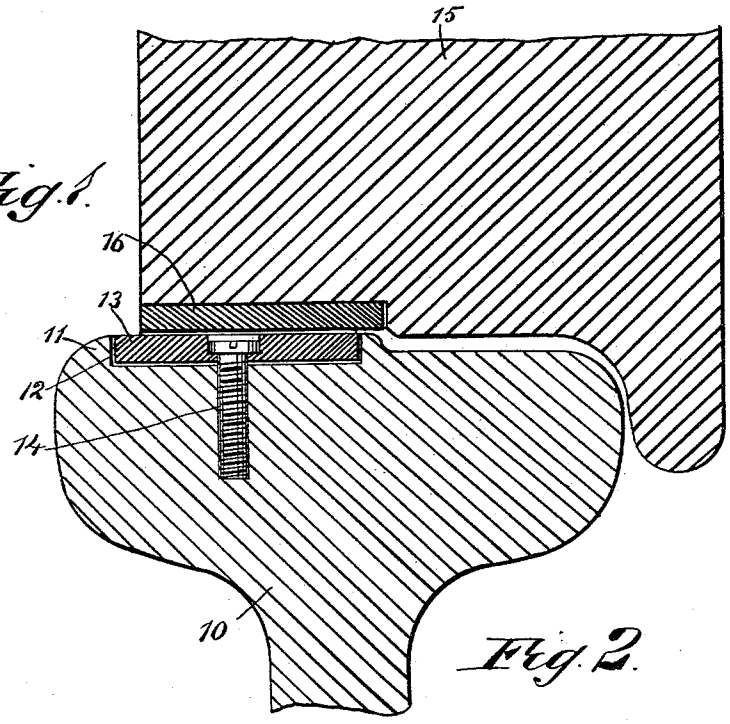
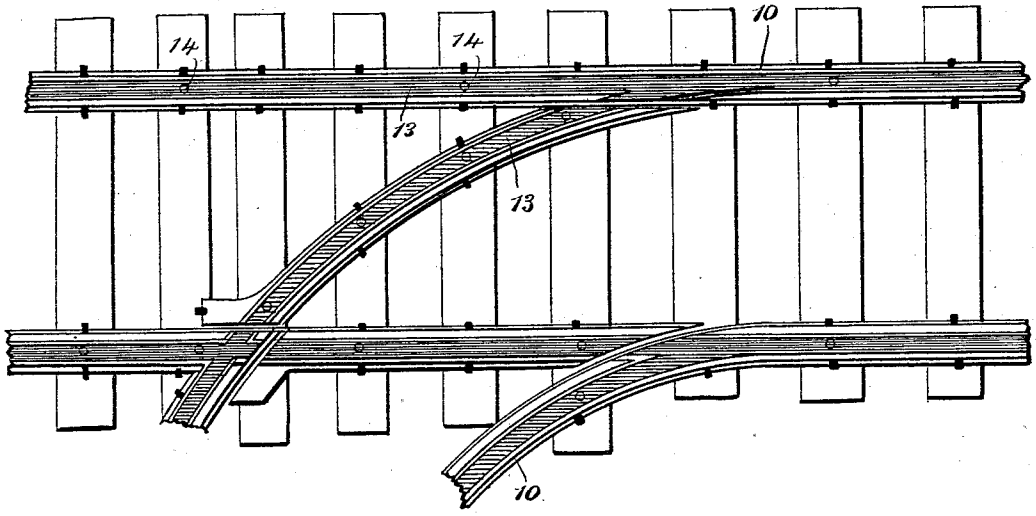


Fig. 2.



WITNESSES:

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FRANKLIN W. CHOATE, OF SAN DIEGO, CALIFORNIA.

CAR-WHEEL AND RAIL.

SPECIFICATION forming part of Letters Patent No. 457,703, dated August 11, 1891.

Application filed March 17, 1891. Serial No. 385,369. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN W. CHOATE, of San Diego, in the county of San Diego and State of California, have invented a new and Improved Car-Wheel and Rail, of which the following is a full, clear, and exact description.

My invention relates to improvements in railway car-wheels and rails; and the object of the invention is to provide means for increasing the traction effects, so that a locomotive or motor-car may be able to draw a much larger load than when the wheels and rails are constructed in the ordinary way.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in both views.

Figure 1 is a broken sectional view showing a wheel and rail embodying my invention, and Fig. 2 is a broken plan view of a track and switch provided with my improved rails.

The rail 10, which embodies my invention, is substantially like a common railway-rail, except that its upper surface is raised along the outer edge, as shown at 11, and in this raised portion a channel 12 is produced, which carries a metallic strip 13 of soft tough metal which fits closely in the channel and the strip is held securely to the rail by means of screws 14, which are countersunk in the strip and fit a corresponding threaded socket in the body of the rail, as best shown in Fig. 1. The rail is intended for use only on switches, curves, and grades, as on a straight level track the common rail may be used.

The car-wheel 15 is in its general shape substantially like the ordinary car-wheel, but its diameter near the outer edge is smaller than it is near the flange, so that when running on an ordinary rail only the inner portion of the tread of the wheel will come in contact with the rail. The smaller or outer portion of the wheel is provided with a metallic band 16, which is made of hard metal and is roughened on its outer surface, and this strip is inlaid in the wheel and may be secured in any convenient way. The band 16 is adapted to come in contact with the strip 13 of the rail, and it may be made narrower than the strip 13, so as to provide for the lateral movement of the wheel, and so that it will not come in contact with the hard portion of the rail.

The operation of the wheel and rail is as follows: In running on a straight-line track the inner portion of the wheel will bear upon the rails, which will be of the ordinary construction, and the band 16 will not be worn and will not wear the rail; but where the track is built at a grade or is curved or provided with a switch the rails 10, having the strip 13 therein, are used, and when the wheel reaches these rails the roughened surface of the band 16 will be embedded firmly in the softer metal of the strip 13, so that the driving-wheels will have great traction and the motor or locomotive provided with them will be able to haul a very large load.

The band 16 is intended for use on driving-wheels only, and the trailer-wheels should be made to bear on the inner surface of the rail, so as not to wear away the strip 13.

I have shown and described the hard roughened band attached to a wheel and the softer tough metal strip inlaid in a rail; but it is obvious that this arrangement may be reversed with the same effect. As fast as the strips 13 and bands 16 become worn they may be renewed.

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

1. The combination of a car-wheel and rail having their bearing-surfaces of different degrees of hardness and having the harder surface roughened, substantially as described.

2. The combination of a car-wheel and rail, the rail having a metallic bearing-strip inlaid therein and the wheel having a bearing-band, the band and strip being of different degrees of hardness and the harder metal being roughened, substantially as described.

3. The combination, with a railway-rail having a portion of its bearing-face raised and provided with a metallic strip, of a car-wheel

having a portion of its bearing-face reduced and provided with a roughened metallic band, substantially as described.

4. The combination of a railway-rail having a portion of its bearing-face raised and provided with a removable bearing-strip, and a car-wheel having a portion of its face reduced and provided with a roughened bearing-band, substantially as described.

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Witnesses:
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