(No Model.)

# F. D. TORRE.

## CAR WHEEL.

No. 261,183. Patented July 18, 1882.

*Fig. 1*

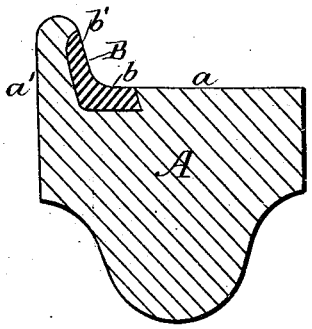



*Fig. 2.*

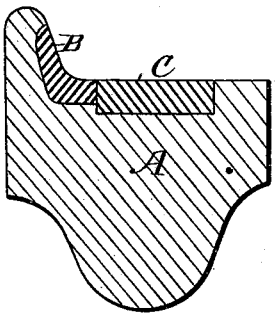
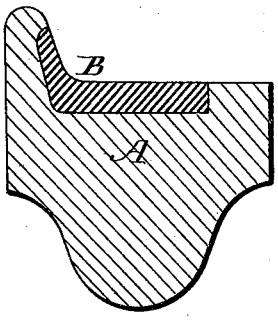



*Fig. 3.*




Witnesses:
C. C. Shepherd
W. B. Masson

Inventor:
Frank Della Torre
by E. E. Masson
atty.

# UNITED STATES PATENT OFFICE.

FRANK DELLA TORRE, OF BALTIMORE, MARYLAND.

## CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 261,183, dated July 18, 1882.

Application filed March 11, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK DELLA TORRE, a citizen of the United States, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Railroad-Car Wheels, of which the following is a specification.

My invention relates mainly to improvements in wheels for cars or engines used on elevated railroads, but is also applicable to ordinary railroad-car wheels; and the objects of my improvements are, first, to prevent these wheels from making a disagreeable noise when bearing against the sides of the rails of the track while going around curves; and, second, to provide the rim of said wheels with a ring of phosphor-bronze possessing great resistance against abrading friction, as well as tenacity and hardness. I attain these objects in the manner illustrated in the accompanying drawings, in which—

Figures 1, 2, and 3 represent in section the rim of car-wheels embodying my invention.

Heretofore the metal alloy commonly called "phosphor-bronze" has been used for journal-bearings and various parts of machinery, and I do not claim the use of this alloy for these purposes. My object, being twofold, and not heretofore contemplated by previous inventors, will now be described in connection with the drawings.

The proportion of copper, tin, and phosphorus used in the alloy of which the rim of the car-wheel is formed is ninety per cent. of copper, ten per cent. of tin, and about two per cent. of phosphorus, the proportions of phosphorus varying from one and a half per cent. in the alloy of the rings applied to the light wheels used on elevated railroads to two and two and a half per cent. in the alloy of the rings applied to ordinary car-wheels and engines.

In the drawings, A represents the rim of a car-wheel, of cast-iron, made of the usual form. Said wheel may be either provided with spokes or made with continuous sides. In the angle formed by the tread *a* and the flange *a'* is cast the ring B, of phosphor-bronze. This ring has its faces *b* and *b'* at an angle corresponding with the angle found between the tread and the flange of ordinary car-wheels.

When new wheels are to be provided with my improvement a groove is formed in the pattern at the angle of the flange and tread of the wheel and extending over a suitable portion of the tread, as hereinafter stated; and in the bottom of said groove are left a series of indentations for the bronze to run into and anchor the bronze ring to the rim of the cast-iron wheel.

When my improvement is to be applied to ordinary railroad-wheels already in use the groove is turned out of the wheel in a lathe, and a few indentations are chiseled out of the bottom of the groove thus formed. After obtaining a grooved wheel, as above stated, it is placed in a mold and the melted bronze is poured therein to fill the groove. The alloy being thus chilled in contact with the wheel, it is found that its homogeneity, tenacity, and elasticity are improved.

Fig. 1 fully illustrates the nature of my invention, its main object being to present means to obviate the disagreeable screeching noise and wear to the rail produced by railroad-wheels when thrown against and rubbing upon the sides of the rails while the cars are passing over curves. In Fig. 3 the bronze ring extends upon that part of the tread which usually rides upon the rail. In Fig. 2 the central portion of the cast-iron wheel-rim is provided with a steel band, C, and one of the edges of the bronze ring B is made to abut against one of the edges of said steel band.

I am aware that cast-iron railroad-wheels have been provided with a steel band covering the whole or a portion of the tread and flange of the wheel, and that wheel-bands have been made of hardened brass or of ordinary gun-metal without the addition of phosphorus; but the component parts of said band and its properties vary from mine in many respects.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a railroad-car wheel, the combination of the body A, of cast-iron, a steel band, C, forming the main part of the tread of the wheel, and a ring, B, of phosphor-bronze, whereof the wearing-face of the flange and a portion of the tread of the wheel are formed, substantially as and for the purposes described.

FRANK DELLA TORRE.

Witnesses:

WM. D. ELDRIDGE,

FRANK SULLIVAN.