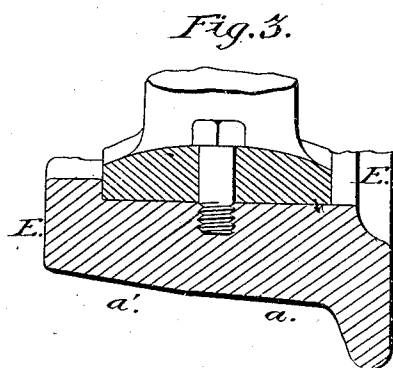
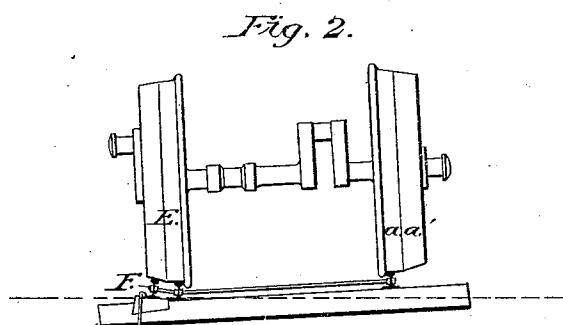
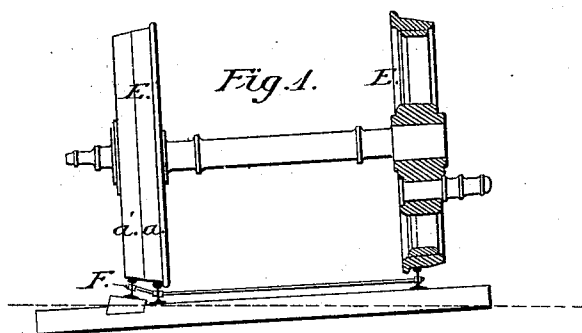


J. & N. TIRANOFF & A. KOUSAKOFF.

Car-Wheels.

No. 142,968.

Patented September 16, 1873.



Attest:
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UNITED STATES PATENT OFFICE.

JOHN TIRANOFF, NICHOLAS TIRANOFF, AND ALEXIS KOUSAKOFF,
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IMPROVEMENT IN CAR-WHEELS.

Specification forming part of Letters Patent No. **142,968**, dated September 16, 1873; application filed April 25, 1873.

To all whom it may concern:

Be it known that we, JOHN TIRANOFF, NICHOLAS TIRANOFF, and ALEXIS KOUSAKOFF, all of St. Petersburg, in the Empire of Russia, have invented certain Improvements in Railway Running-Stock, of which the following is a specification:

It is the object of this invention to prevent the twisting or torsional strain upon the axles of railway-car wheels caused by the unequal motion of the inner and outer wheels in passing around curves; and it consists in double inclines on the treading-face of the wheels, one incline being formed to run upon the ordinary traveling rails, and the other of smaller diameter for running upon an additional rail laid outside the inner rails of curves, so that the smaller or outer incline of the wheels on the inner part of a curve bears upon the additional rail, which is arranged at curves above the level of the ordinary rail, causing each wheel on the same axle to revolve equally, irrespective of the differences of radiuses of the outer and inner curves, thus preventing any injurious strain upon the axle, and more effectively than by the single inclined tread now in use.

In the drawings, Figures 1 and 2 represent end views, partly in section, of car-wheels constructed according to our invention; Fig. 3, a sectional view of a part of the wheel.

The treading-faces of the wheel-tires E E are formed with two inclines, *a a'*, one incline being formed to run upon the rails for ordinary traveling, and the other for taking upon a supplemental or additional rail, F, as shown,

which is laid outside the inner rail of curves so that the wheels on the inner part of a curve bear upon the additional rail which is above the level of the ordinary rail at the curve. Thus each wheel accommodates itself to the track and the speed at which the train may be passing over it without putting unnecessary strain upon the clip, if the axle be a divided one, or upon the axle should it be a complete one without clips, like an ordinary axle. The height of the additional rail F, and its distance from the usual rail are first adjusted or laid according to the radius of the curve. Thus curves of any radiuses can be traveled over at very high speed with perfect safety, the ordinary guard-rails which limit the speed at curves being dispensed with. The flanges on the wheels may also be much deeper than is usual. The ends of the rails are supported upon an iron plate, G, recessed into a longitudinal sleeper, as shown in Fig. 4.

Having thus fully described our invention, we claim—

A car-wheel the tread of which is formed with double-inclined surfaces *a a'*, in combination with the auxiliary rail F arranged on the inner side of curves and outside of the track, elevated to receive the smaller portion of the tread, substantially as described.

JOHN TIRANOFF.

NICHOLAS TIRANOFF.

ALEXIS KOUSAKOFF.

Witnesses:

NICOLAS GLADILIN, *Moscow*.

ALEXIS CEMENENKO, *Moscow*.