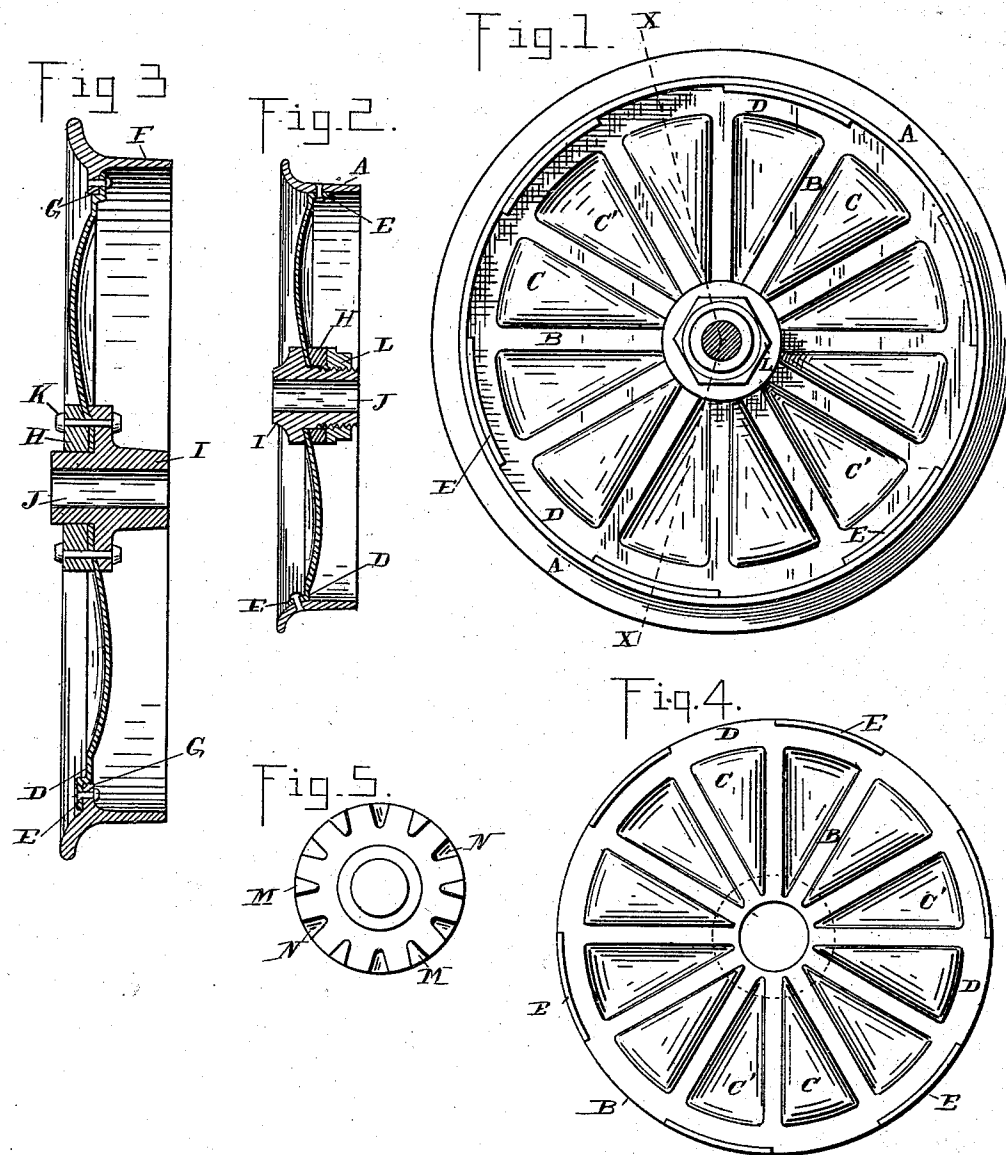


(No Model.)

T. MORRISSEY & J. DOYLE.
CAR WHEEL.

No. 416,637.

Patented Dec. 3, 1889.



Witnesses:

Geo. A. Gregg.
J. Paul Mayer

Inventors:

Timothy Morrissey
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By *Thos. S. Sprague & Son*
Att'y

UNITED STATES PATENT OFFICE.

TIMOTHY MORRISSEY AND JOHN DOYLE, OF IONIA, MICHIGAN, ASSIGNORS TO
THE IONIA STEAM HAND CAR COMPANY, OF SAME PLACE.

CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 416,637, dated December 3, 1889.

Application filed March 11, 1889. Serial No. 302,752. (No model.)

To all whom it may concern:

Be it known that we, TIMOTHY MORRISSEY and JOHN DOYLE, citizens of the United States, residing at Ionia, in the county of Ionia and State of Michigan, have invented certain new and useful Improvements in Car-Wheels, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to new and useful improvements in the construction of metal wheels, especially of that class designed to be used on hand-cars, railways, velocipedes, and trucks of various kinds, and in pulleys in
15 which lightness combined with requisite strength is the main consideration.

To this end the invention consists in a peculiarly-constructed wheel-body, and in the means for securing the same to the tire and
20 to the hub of the wheel, all as more fully described, and shown in the accompanying drawings, in which—

Figure 1 is an elevation of a car-wheel embodying our improvement. Fig. 2 is a vertical central section thereof on line *x x* in Fig. 1. Fig. 3 is a similar section with some modification in the manner of securing the wheel-body. Fig. 4 is an elevation of the wheel-body detached, and Fig. 5 is an elevation of the inner face of one of the parts of
30 the hub.

A is a rim of the wheel, made of cast-iron or steel, or of wrought-iron, as deemed most desirable for the purpose.

35 B is the body of the wheel, consisting of a single disk, preferably of steel-plate, formed with alternately raised and depressed segment-shaped panels C and C', radiating from the center to the circumference of the disk, with a plain margin D around the outer edge of the disk, and with the radial panels C
40 and C'.

E are circular segmental flanges, formed on the outer edge of the disk by bending a portion thereof alternately upon opposite
45 sides of the disk.

F is a rim of the wheel which, for the heavier kinds of wheels, is preferably formed with an inwardly-projecting flange G, integrally formed therewith, as shown in Fig. 3. For the lighter classes of wheels we prefer to

construct the rim without said flange, as shown in Fig. 2, and the disk is secured to the rim by riveting the flanges E directly to the rim of the wheel, or to the flange G formed
55 thereon. The hub is constructed in two parts, H and I, with the axle-box J preferably integrally formed with one of the parts, and these parts are shaped upon their meeting faces to represent an exact counterpart of that portion of the wheel-body extending into the
60 hub, so that when the parts are secured together, either by suitable bolts or rivets K, as in Fig. 2, or by means of a nut L, secured on the axle-box, a solid hub is formed.

65 The parts being constructed as shown and described, we consider it the best way of manufacturing to first cut the required size of the disk from boiler-plate, with the portions forming the securing-flanges *e* divided
70 by radial cuts, then heating the disk thus prepared in a suitable furnace, and then shaping it at one operation between suitable dies.

By extending the inner ends of the panels
75 into the hub of the wheel the parts of the hub, in order to fit the disk, will be provided with alternate wedge-shaped projections *m* and notches *n* upon one of the parts, and with corresponding notches and projections on the
80 other part, and thus when the hub is secured to the disk a stronger lock will be formed between the parts in the radial lines of the wheel. The paneling stiffens the disk against
85 compression in the radial lines of the wheel and against lateral deflection in the direction of the axle of the wheel, and, to get the greatest benefit therefrom, the number of panels ought to be correspondingly large.

90 While we have described our invention as particularly relating to the construction of car-wheels of the lighter description, it is obvious that our improvement is applicable to the construction of other classes of wheels, and to pulleys as well, in which case they
95 would preferably be made in two sections, the sheet metal being bolted together at the meeting edges.

What we claim as our invention is—

1. In a metal wheel, a wheel-body constructed of a sheet-metal disk pressed or indented with segmental panels in the radial

direction of the wheel and projecting alternately upon opposite sides of the same, with portions between said panels unindented and extending straight from the center to the rim, substantially as shown and described.

2. In a metal wheel, a wheel-body constructed of a single disk of sheet-metal plate, with segmental panels indented into said body in the radial direction of the wheel and projecting alternately upon opposite sides of the same, with portions between said panels unindented and extending straight from the center to the rim, said sheet terminating to project into the hub, substantially as shown and described.

3. In a metal wheel, a wheel-body constructed of a single disk of sheet-metal plate, with the segmental panels C and C' radially indented into the wheel, alternately upon opposite sides, and the segmental flanges E, integrally formed therewith and alternately projecting upon opposite sides, substantially as described.

4. In a metal wheel, the combination, with a wheel-body constructed of a single disk of sheet metal and radially indented to form segmental-shaped panels projecting on opposite sides of the wheel and extending into the hub of the wheel, of a hub constructed

in two parts and with their inner faces to form a counterpart of the corresponding part of the wheel-body, substantially as described.

5. As a new article of manufacture, a car-wheel consisting of the rim F, the body formed of a single disk of sheet metal, with the segmental-shaped panels C and C', and the plain marginal portions D, the segmental flanges E, alternately projecting upon opposite sides and riveted to the rim of the wheel, the hub constructed in two parts H and I, with the body of the wheel clamped between them and formed upon their meeting faces to fit the indentations of the body of the wheel extending into it, substantially as described.

6. In a metal wheel, a wheel-body constructed of radially-corrugated sheet metal, having the plain circumferential margin D and flanges E, alternately projecting upon opposite sides, substantially as described.

In testimony whereof we affix our signatures, in presence of two witnesses, this 4th day of February, 1889.

TIMOTHY MORRISSEY.
JOHN DOYLE.

Witnesses:

L. B. TOWNSEND,
JOSIAH E. JUST.