I. H. CONGDON.
Car-Wheel.

No. 210,671. Patented Dec. 10, 1878.

Fig. 1.

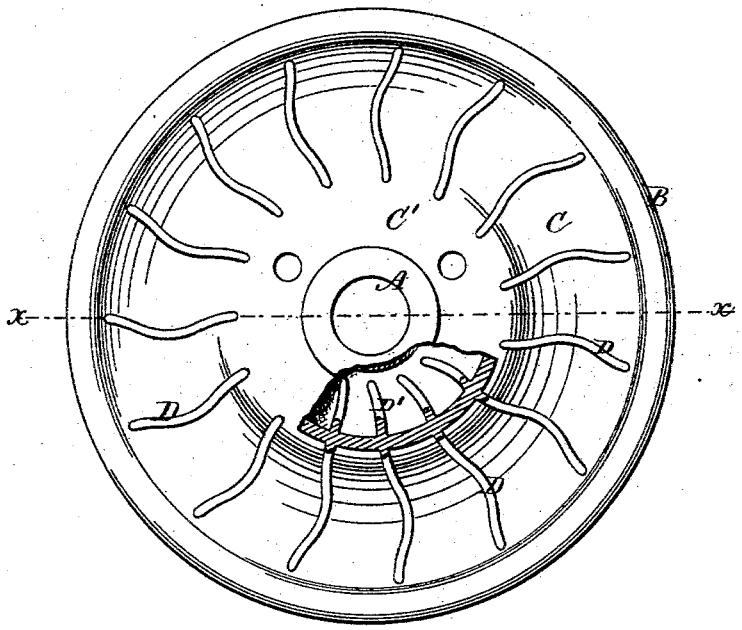
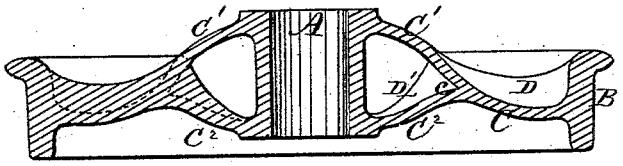


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

ISAAC H. CONGDON, OF OMAHA, NEBRASKA.

IMPROVEMENT IN CAR-WHEELS.

Specification forming part of Letters Patent No. **210,671,** dated December 10, 1878; application filed November 26, 1878.

To all whom it may concern:

Be it known that I, ISAAC H. CONGDON, of Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Car-Wheels; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents the improved car-wheel in side view, with the central portion broken open to show the interior. Fig. 2 represents the same in vertical section on line *x x* of Fig. 1, the line passing through the ribs on one side and between them on the other.

My invention relates to that class of car-wheels known as the "Washburn pattern," formed of the combination of a single and double plate wheel. The weak place in this style of wheel, as generally constructed, is on the front side, at the point where the double plates join together as one plate, the shorter plate always giving way to the longer. When wheels of this pattern are taken hot out of the sand after being cast, and left exposed to the atmosphere in cooling, they will very often crack at the point of junction. Annealing them will partly overcome this defect; but still they are weak at this point.

Long down-grades, found on many roads, are very trying on car-wheels. By long application of brakes friction heats up the tread of the wheel, while nearer the hub the wheel is cooler. Thus severe strains are brought on car-wheels, and they are cracked at the point of junction of the single and double plates.

The object of my invention is to construct a wheel to resist the strains caused by unequal expansion and contraction, and also the wear of every-day work.

My invention consists in a car-wheel formed of a single plate at its rim and a double plate at its hub, with sinuous ribs extending from the rim through the inner plate, and connecting with the outer plate, to strengthen the point of junction, in the manner hereinafter described.

In the drawings, A represents the hub, and B the tread, of the wheel. These parts are united by a single plate, C, at the rim, diverging into plates C^1 and C^2, connected to the hub.

In wheels of this style a series of outside ribs, D, are applied to the plate C, which makes it very stiff and strong; but it increases the weakness at the point of junction *c*. I remedy this defect by carrying the outside ribs, D, through the inner plate, C^1, and connecting them to the outer plate, C^2, by ribs D^1, extending well down toward the hub, and thus forming a brace for the plate C^2 at the otherwise weak point of junction *c*.

Having now fully described my invention, I claim—

A car-wheel formed of a single plate at its rim and a double plate at its hub, with sinuous ribs extending from the rim through the inner plate, and connecting to the outer plate, substantially as shown and described.

ISAAC H. CONGDON.

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