L. KINSLEY.

Railway Car Wheel.

No. 7,169. Patented March 12, 1850.

Fig. 3.

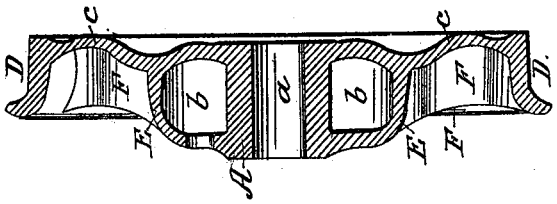


Fig. 2.

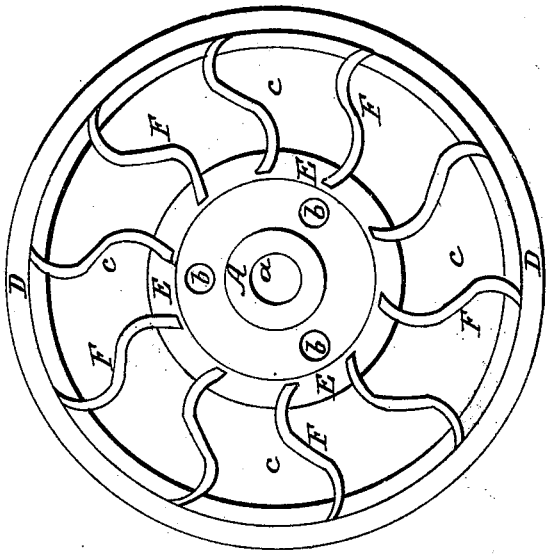
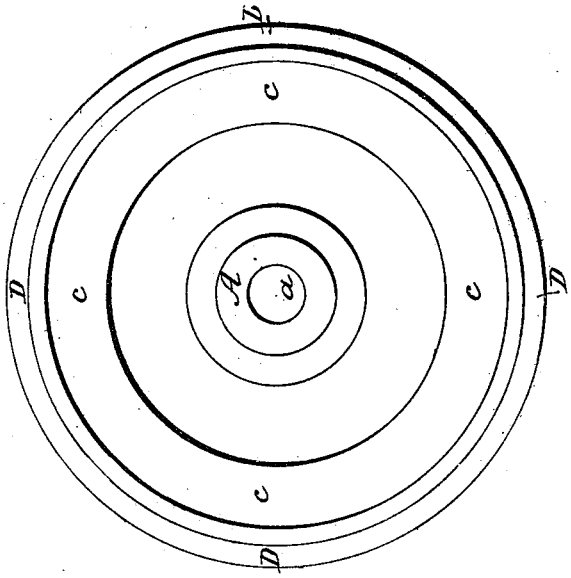


Fig. 1.



UNITED STATES PATENT OFFICE.

LYMAN KINSLEY, OF NORFOLK COUNTY, MASSACHUSETTS.

CAST-IRON CAR-WHEEL.

Specification of Letters Patent No. 7,169, dated March 12, 1850.

To all whom it may concern:

Be it known that I, LYMAN KINSLEY, of the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in the Manner of Constructing a Cast-Iron Chilled Rim-Wheel for Railway-Carriages; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1, represents an external elevation of my improved wheel. Fig. 2, is an internal elevation of it. Fig. 3, is a transverse, and vertical section of it.

The difficulties attendant upon founding an entire metallic wheel in a mold, and against a chill extending around the tread or periphery of the wheel, and so as to have the hub an undivided or solid one, are too well known to require enumeration by me. The successful accomplishment of this has occupied the minds of many ingenious persons. In consequence thereof, wheels constructed in various ways, have been produced and patented, the most of them being designed with the important object of combining strength, lightness, and form of parts in such manner as to counteract the effect of contraction in the mold and produce a whole or entire wheel, solid or undivided in its hub.

The new or improved construction invented by me, and hereinafter described, possesses such qualities in an eminent degree, the relations of the parts to one another and particularly the manner in which they are arranged, render it almost impossible to cast a wheel, without serious liability of fracture, or undue strain of any portion of it.

In the said drawings A, represents the hub of the wheel, it being solid or undivided, and made with an axle hole *a*, which may be partially formed during the process of founding, or it may be afterward bored or made, as occasion may require. The hub is connected to the rim D, D, by a serpentine or undulating plate C, C, which extends from one end of the hub to the rim, and is formed in cross section as seen in Fig. 3.

From the other end of the hub, an arched support plate E, E, is made to extend to the plate C, and to unite at its base with it, at about half the distance between the hub and rim, as seen in Figs. 2, and 3, a hollow space *b*, *b*, being thus formed entirely around the hub A, and between it and the said arched plate. From the external part of the said arched plate, a series of curved arms E, E, E, are made to extend to the rim D, D, and be joined at their ends to both the arched plate, and the rim. Besides such joinings, each arm is joined at one edge, and throughout the same to the plate C, the whole being effected by the process of founding.

The arched plate applied to the hub, in connection with the spokes applied to it, the plate C, C, and the rim D, D, tend not only to afford great support to the hub, in order to enable it to resist lateral strains, but at the same time they protect the rim and plate C, from vertical crushing strains. Besides this they offer great resistance to the lateral strains against the flanch of the rim. The combination of parts is far superior to the double plate wheel which is in extensive use.

What I claim as my improvement is—

The wheel, or combination of the arched support plate E, E, the curved spokes or arms E, E, and the curved plate C, C, with the solid or undivided hub, and the chilled rim, all cast together, and in one piece, substantially as above specified.

In testimony whereof I have hereto set my signature this sixteenth day of January A. D. 1850.

LYMAN KINSLEY.

Witnesses:

R. H. EDDY,

JOHN B. GIBBS.