L. KINSLEY.

Railway Car Wheel.

No. 7,170. Patented March 12, 1850.

Fig. 2.

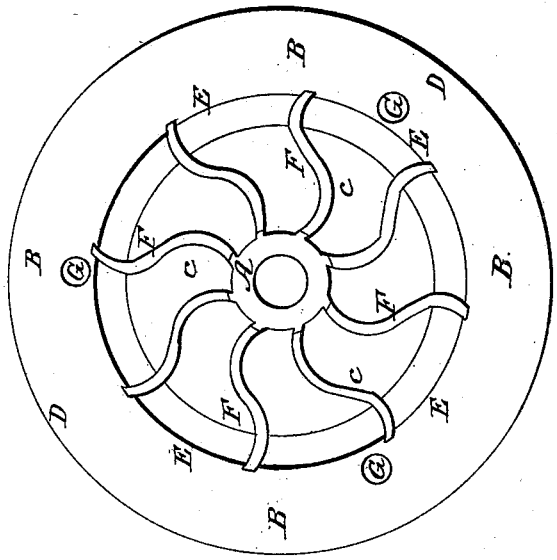


Fig. 3.

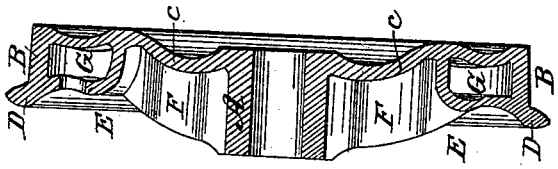
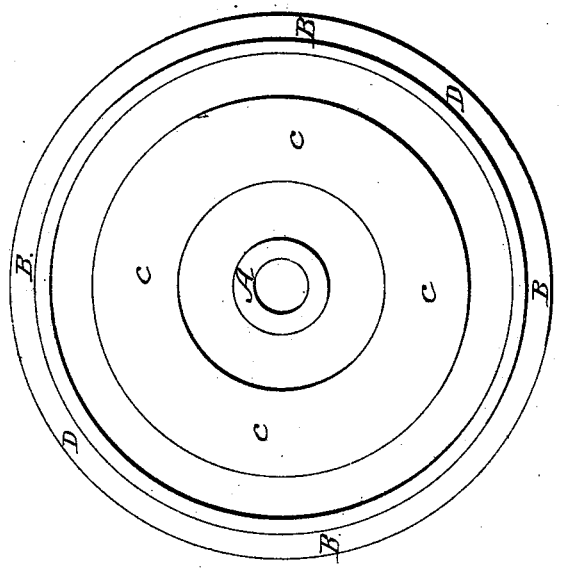


Fig. 1.



UNITED STATES PATENT OFFICE.

LYMAN KINSLEY, OF NORFOLK COUNTY, MASSACHUSETTS.

CAST-IRON CAR-WHEEL.

Specification of Letters Patent No. 7,170, 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, denotes a front elevation of my improved wheel. Fig. 2, is a rear elevation of the same. Fig. 3, is a transverse and central section of it.

It is well known that much difficulty has been experienced in producing by the operation of founding an entire cast iron railroad wheel, having a chilled rim, various forms or patterns having been devised for that purpose. It has been found, however, that most of what are termend the plate, or double plate, wheels, or those in which the rim and hub are connected together by one or more curved plates or disks, are liable to fracture at the rim or tread, when under very high velocities, and running upon the railway.

In my improved wheel, I have endeavored to produce a wheel which shall be able to bear what is usually considered an extraordinary degree of speed, without danger of fracture of its rim, and which having its rim supported, shall at the same time be strongly braced at the hub, and between it and the rim; whereby the usual lateral shocks and strains, may be successfully resisted, and without danger of fracture of the hub. Such a wheel I have represented in the drawings before mentioned, and have hereinafter described.

In the said drawings *t* denotes the hub, and B, B, the rim of the wheel, the said hub being what is usually termed a solid or undivided one. The two parts, viz the hub and rim, are connected at their front ends by a curved or undulating plate or disk C, which extends from one to the other, and is connected to them during and by the operation of casting. From the opposite end of the rim, and just within the flanch D, an arched or curved support plate E, is carried, from the rim to the plate C, it being made to extend for part of its distance, nearly or about perpendicularly from the rim, and, for the rest of the distance, nearly parallel to or concentric with it, a section of this support plate being given in Fig. 3. It extends entirely around the wheel, or within its rim, and between the same and the hub; there being a hollow space G, between it and the rim. From the said hub to the said support plate, a series of current arms E, E, E, are carried, as seen in Figs. 2, and 3, each of them being not only connected to the hub and the support plate, but at the same time to the plate C, and the whole by and during the process of casting. The wheel is to be cast at one operation, and in one piece, and with the periphery of its tread against an iron chill placed in the mold.

The concentric support plate applied to the rim, and sustained by the arms E, E, lends a powerful support to the rim B, and tends greatly to prevent its fracture not only in longitudinal, but in transverse directions. At the same time the arms and the plate C, support the hub, and in conjunction with the plate C, afford a great resistance to fracture from lateral strains or shocks against the flanch.

I am aware that a cast iron wheel with a hollow felly or made with two concentric rims connected at their sides, and having a space between them was invented and patented on about the fifteenth day of February A. D. 1838, by one Henry R. Dunham. This wheel, however, had a series of straight spokes, and a split or divided hub, the hub being connected to the felly by such spokes only. I do not claim as my invention such wheel or any part thereof. Although it was able to resist vertical blows or shocks, better than a wheel having a solid or single rim felly as usually made, it has not the requisite power or strength to resist the lateral strains against the flanch of its tread. Nor could it be cast in one piece, and with a solid or undivided hub, and chilled rim.

What I claim as my invention is—

The wheel made with the chilled rim, a

hollow felly or a support plate E, extending around and within the chilled rim, a curved plate C, uniting the rim and hub, a series of curved arms E, E, E, &c., and an undivided or unsplit hub, all cast, or founded, and combined together in one piece, substantially in manner as above specified.

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

LYMAN KINSLEY.

Witnesses:
R. H. EDDY,
JOHN B. GIBBS.