H. FELTON, P. D. CUMMINGS & H. HINCKLY.

CAR WHEEL.

No. 6,041. PATENTED JAN. 23, 1849

Fig. 3.

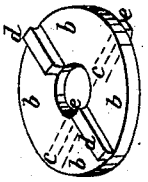


Fig. 2.

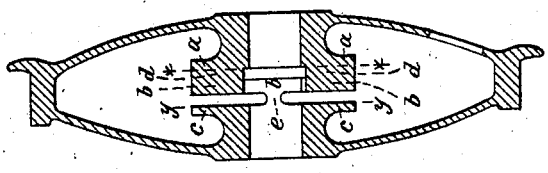
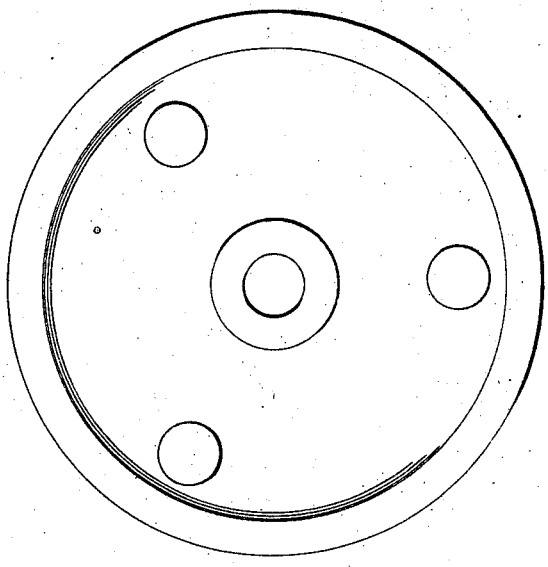


Fig. 1.



UNITED STATES PATENT OFFICE.

H. FELTON, P. D. CUMMINGS, AND H. HINCKLY, OF PORTLAND, MAINE.

CAST-IRON PLATE CAR-WHEEL.

Specification of Letters Patent No. 6,041, dated January 23, 1849.

To all whom it may concern:

Be it known that we, HORACE FELTON, PERLEY D. CUMMINGS, and HARINGTON HINCKLY, of Portland, in the county of Cumberland and State of Maine, have invented a new and useful Plate Car-Wheel, and that we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The principle of our invention is to preserve great strength and compactness in a plate wheel, while allowing for shrinkage of the chilled rim. Aware that strength is sacrificed when plates either plane or convex are cast connecting the rim with a hub solid throughout, and that a due degree of compactness is wanting when plates unite only the parts of a divided hub,—we have taken care to avoid both of these evils by the manner in which we form our hub. This we form in three portions, tied together by four cross stays, of which two are in a direction from the axle, at right angles to that of the other two. The part of the hub comprised between the two side plates, is enlarged to about one third of the diameter of the wheel, more or less, into three flat circular rings, the middle one of which is connected to that on one side of it, by one pair of the cross stays above described; and with the ring on the opposite side by stays which run at right angles to the directions of the other pair though lying in different planes.

In the drawing Figure 1 is a face view of the wheel. Fig. 2, presents a section by a plane through the axis. The cross stays *d*, *d*, are in the direction of the cutting plane, and the cross stay *e* is at right angles to that plane. *a*, *b* and *c* are the disks. Fig. 3 is a view of the middle plate with the cross stays between the dotted lines *x x* and *y y* (Fig. 2.) The cross stays *d*, *d* are represented as above the plate and the stays *e e* shown by dotted lines are below it.

The tread or rim of our wheel is chilled in casting; and in order to enable the side plates of the wheel to conform in cooling to the size of the already hardened rim it is necessary, to afford them an opportunity of yielding slightly in a lateral direction near their centers, that is, about the hub. This power is given by the manner of arranging the rings *a b* and *c* and stays *d*, *e* within the space, from one bearing to another of the wheel. Though we deem one central expansion ring *b* with two radial cross stays on each side of it, uniting it to the two side disks sufficient for the purpose, yet we do not limit ourselves either in the number of intermediate plates or in the number or form of stays between each pair of plates. The stays between the middle and one outside plate do not in any case stand directly opposite to those between the middle and the other outside plate. We cast our wheels in a single piece.

What we claim as our invention and desire to secure by Letters Patent, is—

The arrangement of cross ties and stays in the interior part of the hub of a plate car wheel, in combination with the expansion disks or rings herein described, whereby those ties which unite two contiguous plates or disks shall alternate with those ties which connect one of said two disks to a third by which means the elasticity both of the disks and stays is made available to meet the shrinkage of the wheel,—not intending in these claims to confine ourselves to the precise arrangement described but to vary the same at pleasure while attaining the same ends by means substantially the same.

HORACE FELTON.
PERLEY D. CUMMINGS.
HARINGTON HINCKLY.

Witnesses:
JOHN A. POOR,
W. STORER.