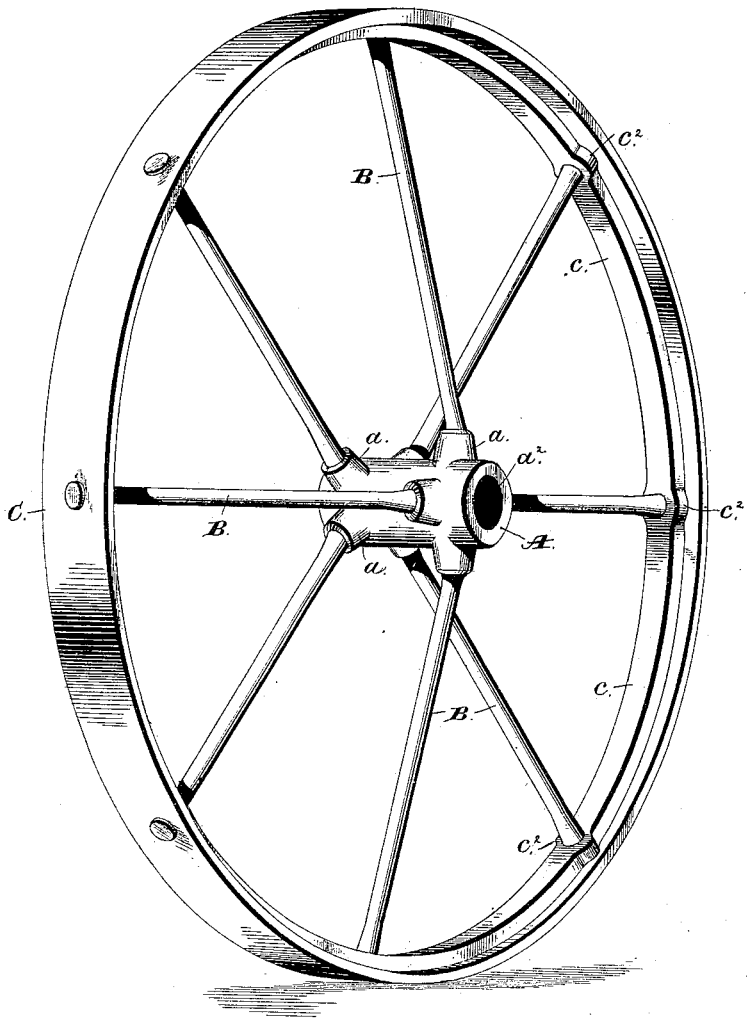
(No Model.) 2 Sheets—Sheet 1.

J. R. LITTLE.

WHEEL.

No. 386,326. Patented July 17, 1888.

Fig. 1.



Witnesses:
Jas. E. Hutchinson
Henry C. Hazard

Inventor.
Jas. R. Little, by
Brindle and Russell, his Attys

(No Model.) 2 Sheets—Sheet 2.

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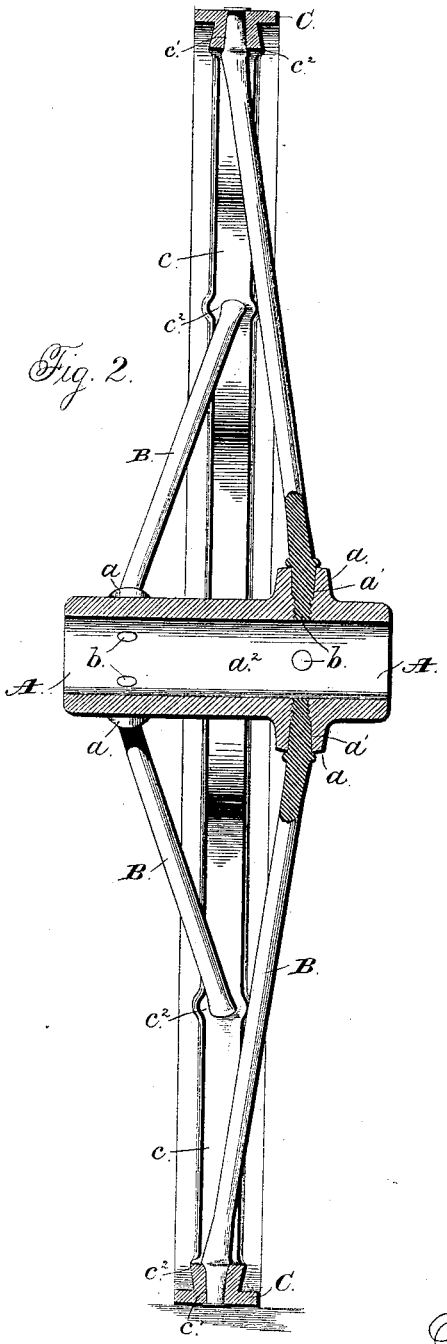
Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES R. LITTLE, OF QUINCY, ILLINOIS, ASSIGNOR TO THE QUINCY METAL WHEEL COMPANY, OF SAME PLACE.

WHEEL.

SPECIFICATION forming part of Letters Patent No. 386,326, dated July 17, 1888.

Application filed November 2, 1887. Serial No. 254,117. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. LITTLE, of Quincy, in the county of Adams, and in the State of Illinois, have invented certain new and useful Improvements in Wheels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved wheel completed for use, and Fig. 2 is a vertical section of the same upon a line with its axis.

Letters of like name and kind refer to like parts in both of the figures.

The object of my invention is to increase the strength and durability of metal wheels; and to such end said invention consists in the construction of the wheel-rim and in the means employed for securing the spokes in place, substantially as and for the purpose hereinafter specified.

In the carrying of my invention into practice I employ a metal hub, A, which preferably is made from cast metal, and is provided with two rows of radial bosses, *a* and *a*, that are relatively arranged in the order known as "staggered"—that is, with each boss of one row opposite to a space between two bosses of the other row. Passing radially through each boss *a* is a round mortise, *a'*, which extends into the axial opening a^2 of the hub, and has a decreasing diameter from its outer end to its inner end. From its inner end outward about one-third its length, said mortise is threaded, as shown in Fig. 2.

Into each mortise *a'* is placed one end *b* of a spoke, B, which spoke is constructed from a straight bar of iron with a diameter substantially equal to the smallest portion of such mortise, and when in place has its lower portion compressed longitudinally and expanded laterally until said mortise is closely fitted and an enlargement of the spoke immediately outside the hub is secured. While by the operation described said spoke end *b* may be caused to closely fill the threaded portion of said mortise, I preferably thread the end of the former before its insertion into the latter.

The wheel-rim C may have any desired transverse form of its periphery, but upon its inner side is provided with a centrally-located strengthening-rib, *c*, which at each mortise *c'* has a lateral enlargement, c^2, as shown, that operates to secure at such point an amount of metal in said rib which is equal to the amount at any point between the mortises. The mortises *c'* and *c'*, like those in the hub, have tapering interiors, and within the same the outer ends of the spokes B and B are secured by longitudinal compression and lateral expansion, as before described in case of the hub ends of said spokes.

In the wheel thus constructed each spoke, in consequence of the taper of its mortises, is certain to entirely fill such mortises and to be securely connected with the hub and rim, while in case of said rim its strengthening-rib possesses equal strength at all points, and is nowise weakened or otherwise affected by the passage through it of the spokes.

Having thus described my invention, what I claim is—

1. As a new article of manufacture, a metal wheel which is provided with tapering hub-mortises that are threaded at their inner ends, in combination with spokes that have their inner ends fitted into and caused to fill such mortises, substantially as and for the purpose specified.

2. As a new article of manufacture, a metal wheel which is provided with inwardly-tapering hub-mortises that are threaded at their inner ends, and a rim which has outwardly-tapering mortises and a centrally-located strengthening-rib that is expanded laterally at and around each mortise, in combination with spokes which are fitted into and by lateral expansion caused to fill said mortises, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of October, 1887.

JAMES R. LITTLE.

Witnesses:
GUS. A. BAUMAN,
THEODORE C. POLING.