

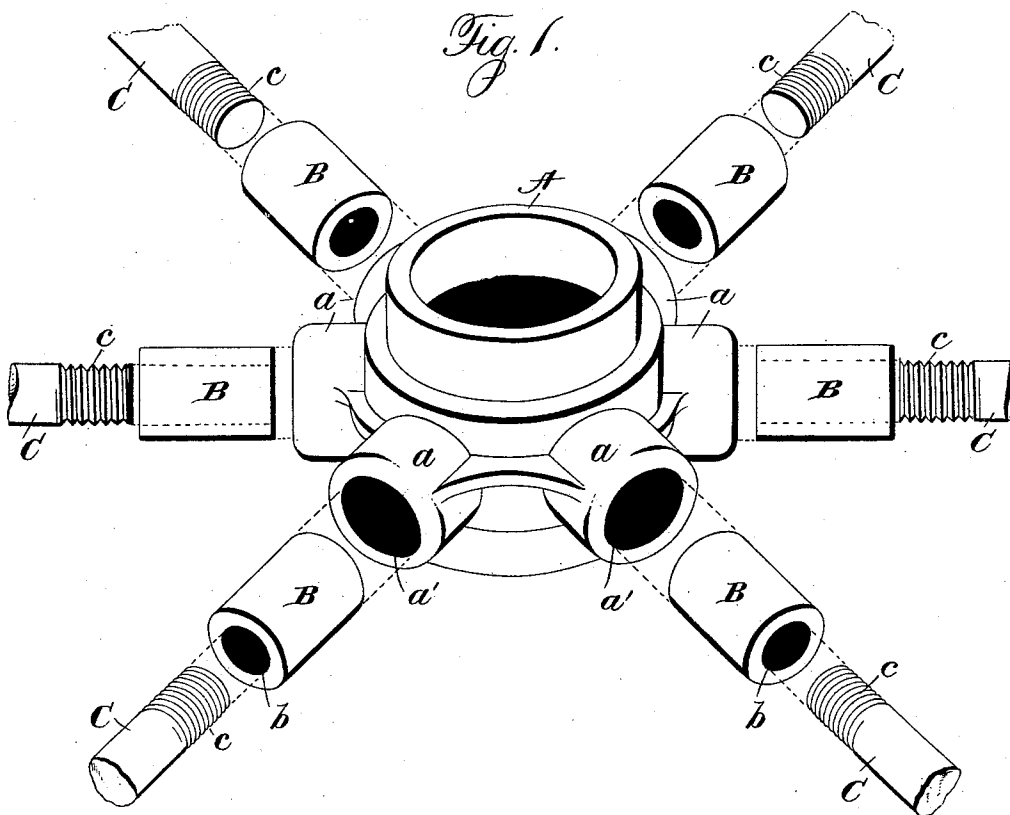
(No Model.)

2 Sheets—Sheet 1.

J. R. LITTLE.
METAL WHEEL.

No. 475,583.

Patented May 24, 1892.



Witnesses:
 Jas. C. Hutchinson.
 Henry C. Hazard.

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

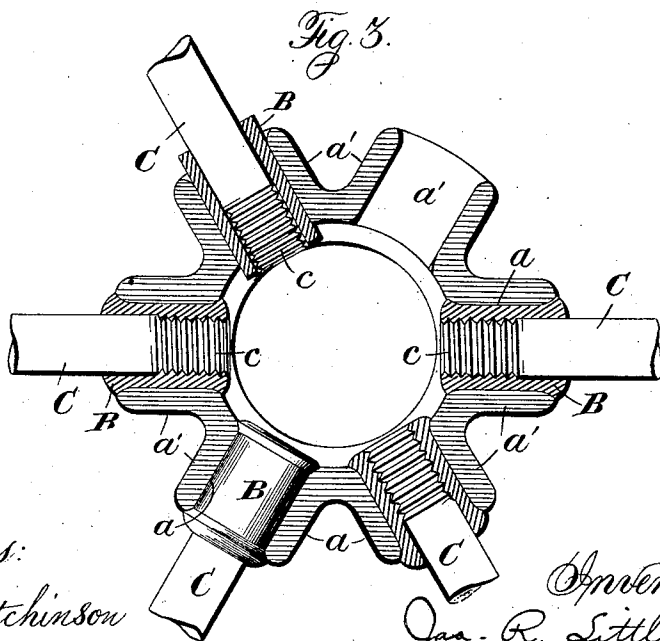
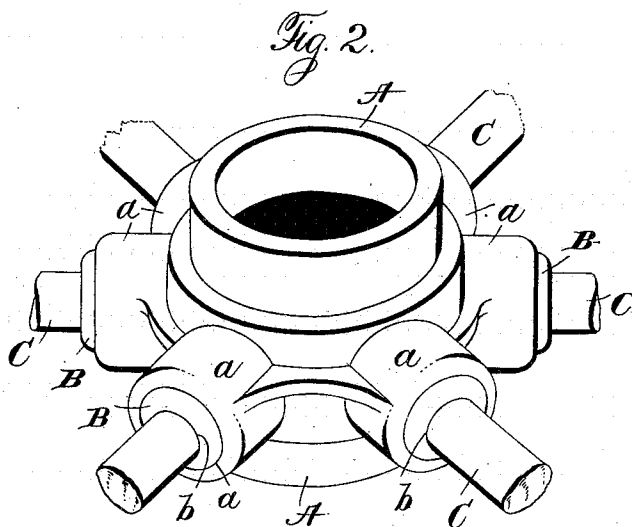
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UNITED STATES PATENT OFFICE.

JAMES R. LITTLE, OF QUINCY, ILLINOIS.

METAL WHEEL.

SPECIFICATION forming part of Letters Patent No. 475,583, dated May 24, 1892.

Application filed August 28, 1891. Serial No. 404,006. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. LITTLE, a citizen of the United States, residing at Quincy, in the county of Adams, and in the State of Illinois, have invented certain new and useful Improvements in Metal 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 the hub, spoke, and thimble of my wheel, separated from each other. Fig. 2 is a like view of the same when combined; and Fig. 3 is a section of said hub in a plane which coincides with the axes of the spoke-mortises and shows one mortise without a spoke, a second mortise containing a spoke and thimble in position to be secured in place, and other mortises in which spokes have been secured.

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

The design of my invention is to increase the strength and efficiency of metal wheels; and to such end said invention consists in the method employed and in the wheel constructed substantially as and for the purpose herein-after specified.

In the carrying of my invention into practice there is constructed from steel or malleable iron a hub A, which is preferably provided around its center with a series of equidistant radial bosses *a* and *a*, that each contain a round straight axial opening or mortise *a'*, which extends to and opens into the axle-opening *a''* of said hub. The mortises *a'* and *a''* are each constructed with outwardly-flaring ends, and into each is loosely placed a thimble B, that has a slightly-less diameter and is somewhat longer than its mortise. The axial opening *b* of such thimble is round and straight, and into the same is inserted the tenon *c* of a spoke C, which tenon has nearly the size of such thimble-opening and has about one-half in length of its periphery threaded or grooved, as shown. A thimble and spoke being thus in position within a mortise, by means of suitable mechanism the thimble is compressed longitudinally until it closely fills the mortise and as closely embraces the plain and threaded tenon end of said spoke and operates to so firmly unite said parts as to render impracticable their separation by any usage to which a wheel can be properly subjected. If desired, the mortises may have a part or the whole of their

interiors threaded, but such is not deemed essential.

Having thus described my invention, what I claim is—

1. The method employed for combining the spokes and hub of a metal wheel, which consists in inserting a metal thimble between each of the spoke-mortises of a hub and the tenon of its spoke and compressing such thimble until it closely fills its mortise and embraces the tenon, substantially as and for the purpose specified.

2. The method employed for combining the spokes and hub of a metal wheel, which consists in providing within a hub a series of straight radial mortises, inserting within each mortise a correspondingly-shaped thimble that contains the threaded tenon of a spoke, and finally compressing longitudinally such thimble to cause it to closely fill said mortise and to embrace said spoke-tenon, substantially as and for the purpose shown.

3. The method employed for combining the spokes and hub of a metal wheel, which consists in providing a hub with a number of radial mortises for receiving and containing spokes which throughout their length are of greater diameter than the portion of spoke to be placed therein, inserting in each mortise a portion of a spoke entirely inclosed by a thimble, and finally subjecting said thimble to compression to cause it to closely fit the mortise and tightly embrace the spoke, substantially as and for the purpose specified.

4. A metal wheel in which each spoke is secured within the hub by means of a thimble that is interposed between and closely embraces the spoke mortise and tenon, the latter being in contact only with the thimble, substantially as and for the purpose set forth.

5. A metal wheel in which the inner ends of the spokes are threaded or grooved and are each secured within the hub by means of a thimble that is interposed between and caused to closely embrace said grooved tenon and its mortise, the tenon being in contact only with the thimble, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of August, A. D. 1891.

JAMES R. LITTLE.

Witnesses:

GUS. A. BAUMAN,
S. DEIDESHEIMER.