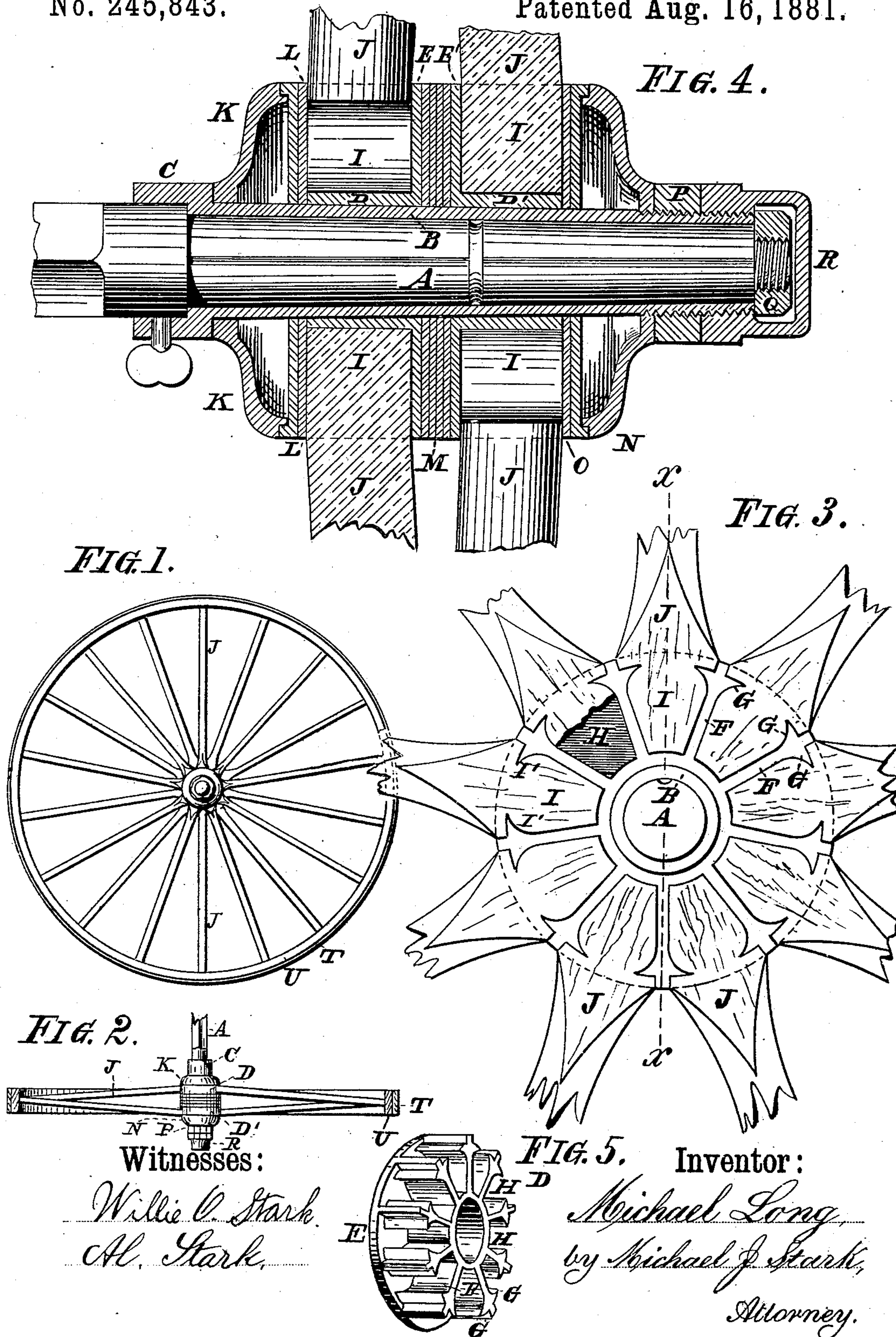


(No Model.)

M. LONG.
VEHICLE WHEEL.

No. 245,843.

Patented Aug. 16, 1881.



Witnesses:

Willie C. Stark.
Al. Stark.

FIG. 5.

Inventor:

Michael Long,
by Michael J. Stark,
Attorney.

UNITED STATES PATENT OFFICE.

MICHAEL LONG, OF LOCKPORT, NEW YORK, ASSIGNOR OF ONE-HALF TO
EDWIN A. DOTY, OF SAME PLACE.

VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 245,843, dated August 16, 1881.

Application filed February 23, 1881. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL LONG, of Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements on Wheels for Vehicles; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention has general reference to wooden wheels for vehicles; and its object is the production of a cheap, strong, and durable wheel possessing within itself the means for tightening the rim, substantially as hereinafter first fully set forth and described, and then pointed out in the claim.

In the drawings, which serve to illustrate my said invention more fully, Figure 1 is an elevation of a vehicle-wheel constructed in accordance with my invention. Fig. 2 is a sectional plan. Fig. 3 is a face view of the hub, the front clamping-plate being removed to expose the construction of the hub and spokes. Fig. 4 is a sectional elevation in line *xx* of Fig. 3. Fig. 5 is a perspective view of one of the hub-sections.

Like parts are designated by corresponding letters of reference in all the figures.

A in said drawings designates the axle of any vehicle constructed in the usual manner, and provided with a hub-box, B, having an enlarged portion, C, as clearly shown in Fig. 4. Upon this box are placed two metallic hub-sections, D D', respectively, said sections consisting each of a disk, E, having radial ribs F and projections G, whereby mortises H are formed in said hub-sections to receive the tenons I of the spokes J, said tenons being provided with notches I', fitting the projections G in such manner that when said spokes are placed into the recesses formed by the radial ribs F they are locked in position by the projections G engaging the notches I' in said spoke-tenons I. By thus constructing the hub and tenons I have produced a wheel superior in strength to any wheel with which I am acquainted.

Upon the hub-box B, and nearest to the enlarged portion C, is placed a plate or washer,

K, and interposed between this and the hub-section D is an elastic or flexible washer, L, said hub-section being placed in such position upon said box that the spoke-tenons I are nearest to the said elastic washer L.

Between the two hub-sections D D' are interposed a series of elastic or flexible washers, M, the object of which will hereinafter be explained. On the outside of the hub-section D' is placed another washer, N, and an elastic or flexible disk, O, said hub-section being so placed upon said box B that the tenons I are covered by said disk O and washer N.

The two hub-sections D D' are retained upon the hub-box B by means of a lock-nut, P, engaging a screw-threaded portion on the end of said box, and the hub-box is held in position upon the axle A by the axle-nut Q, said axle-nut and the end of the hub-box being covered by a screw-cap, R, for protection and other obvious reasons.

The spokes J are convergingly arranged—that is to say, all the spokes of the two hub-sections D D' meet the center line of the felloes, thus producing a wheel having a double dish. In the drawings I have illustrated a wheel having eighteen spokes, nine of which are radiating from the hub-section D and the remainder from the hub-section D', said two sections being so placed upon the hub-box B that their respective spokes are staggered or braced. By thus constructing the spokes in two sections, placing one half in the hub-section D and the other in the hub-section D', I am enabled to reduce the diameter of the hub, and thereby to reduce the weight of the same to a considerable degree, without decreasing the dimensions of the spoke-tenons; on the contrary, even with my smaller hub, I am enabled to make the tenons larger than those of ordinary wheels having a like number of spokes.

It will now be readily observed that on account of the washers M introduced between the two hub-sections D D' these are set apart a distance equal to the thickness of said washers. It follows that if one or more of these washers are removed from between these sections (this may readily be done by cutting them out or by using split washers, which may be pulled out) they may be screwed closer together

by means of the lock-nut P. Such an operation has the effect of expanding the rim or felly U of the wheel in a manner readily understood, so that if, by shrinkage of the wood or other self-evident and obvious reasons, the tire T should become loose, it may be tightened by the operation of removing washers, &c., as hereinbefore explained.

It will be further observed that on account of the introduction of the washers L, M, and O, the whole wheel acquires a degree of elasticity and noiselessness not to be attained by any other method of construction.

Heretofore wheels have been made consisting of metallic bands having a disk provided with radial ribs forming mortises for the tenons of the spokes, said ribs having projections engaging notches in the tenons of said spokes.

I do therefore not claim, broadly, such a device; nor do I claim, broadly, a wheel having an elastic ring placed between the hub-sections; but,

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent of the United States—

In a vehicle-wheel, the combination, with the hub-box B, having the enlargement or shoulder C, of the washer K, two hub-sections, D D', the layers of flexible material M, washer N, and locking-nut P, substantially in the manner as and for the object specified.

MICHAEL LONG.

Witnesses:

CHAS. C. DELUDE,
THOMAS BOODGER.