(No Model.)

H. Q. MAURINO.

WHEEL.

No. 383,966. Patented June 5, 1888.

Fig. 1.

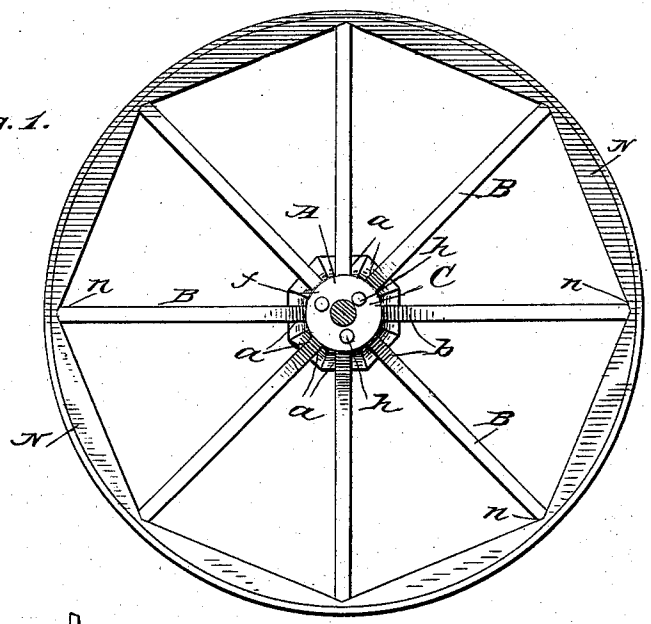


Fig. 2.

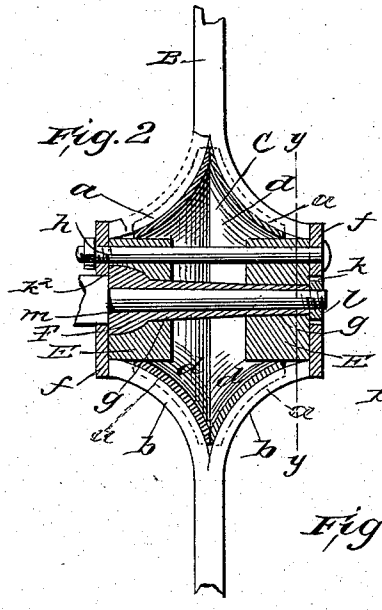


Fig. 3.

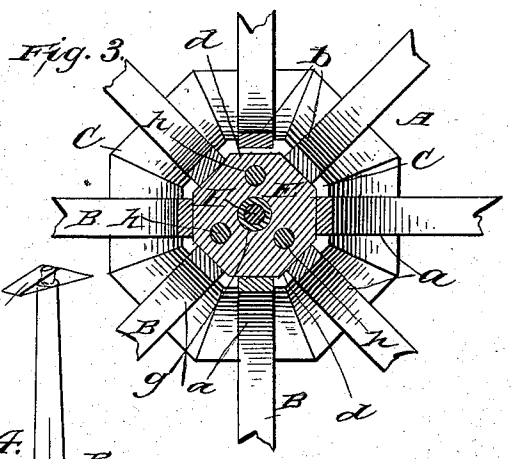
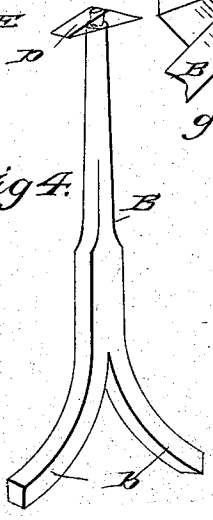


Fig. 4.



WITNESSES:

W. R. Davis.

C. Sedgwick.

INVENTOR:

H. Q. Maurino.

BY Munn & Co

ATTORNEYS.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

HENRY Q. MAURINO, OF ALBUQUERQUE, TERRITORY OF NEW MEXICO, ASSIGNOR TO HIMSELF, AUGUST TRORLICHT, AND MICHAEL MANDELL, ALL OF SAME PLACE.

WHEEL.

SPECIFICATION forming part of Letters Patent No. 383,966, dated June 5, 1888.

Application filed December 20, 1887. Serial No. 258,457. (No model.)

To all whom it may concern:

Be it known that I, HENRY Q. MAURINO, of Albuquerque, in the county of Bernalillo and Territory of New Mexico, have invented a new and Improved Wheel, of which the following is a full, clear, and exact description.

The object of the present invention is to improve the construction of wheels, securing thereby cheapness, lightness, durability, and increased efficiency; and the invention consists in the construction and combination of the various parts, all substantially as hereinafter more fully described, and set forth in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the wheel. Fig. 2 is an enlarged diametrical section taken at the hub portion of the wheel. Fig. 3 is a vertical section on line *y y* of Fig. 2, and Fig. 4 is a perspective view of one of the spokes employed in the construction of the wheel.

In the construction of the present wheel I employ a peculiar-shaped hub, A, and a peculiarly-formed spoke, B. The hub consists of a block or casting, C, of polygonal or circular shape in cross-section, partaking longitudinally more or less of the form of duplicate frustums of a pyramid or cone, but preferably having its converging sides more or less concaved. This hub-block C, at suitable intervals of its periphery and at each side, is provided with grooves or slots *a a* of suitable depth for the inner bifurcated ends, *b*, of the spoke B.

The hub-block C is provided with an interior chamber having concave polygonal walls *d*, within which chamber, at the ends of the hub, head-blocks E are inserted, having their peripheries made to conform to the contour of the aforesaid chamber-walls, whereby the blocks are snugly held in the hub and prevented from turning.

A plate, *f*, is secured to the blocks E in any suitable manner, the said plates being adapted to project outward flush, or nearly so, with the reduced ends of the hub, constituting, substantially, a cap therefor. The cap may be of integral portion of the blocks, if found desirable, without departing from the spirit of the invention.

The head-blocks and cap-plates are provided with a central bore, *g*, for the reception of the axle-box F, and headed and screw-threaded bolts *h* are passed longitudinally through the casing, the head-blocks, and caps, each bolt being provided with a screw-nut at its threaded end. By means of the aforesaid bolts the hub is purposed to be tightened. The caps *f* are respectively rabbeted or recessed, as at *k k²*, for the reception of the axle-shoulder *m* and securing-nut *l*.

When the spokes B are inserted, their bifurcated ends *b* span the periphery of the casting or body of the hub and lie within the respective recesses *a*, the extremities of the members being in contact with the cap-plates *f*, as best shown in Fig. 2.

The inner surface of the felly N is polygonal in contour, the angles *n* therein corresponding in number to the number of spokes designed for use in the construction of the wheel, the periphery of the said felly being circular and provided with the usual tire, secured thereon in any approved manner.

In the further construction of the wheel the outer end of the spokes, which are usually beveled from the center in opposite directions, are made to lie within the angles *n* of the felly, as illustrated in Fig. 1. It will be readily observed that by turning or screwing up the bolts *h* the cap plates *f* will be drawn toward the center of the hub, effectually tying the inner ends of the spokes in their recesses, and at the same time lengthening the spokes to such a degree as that they will be forced to a firm contact with the felly at their outer ends.

In small and light wheels the outer ends of the spokes are provided with a metallic bushing-block, *p*, into a socket of which the tenoned end of the spoke is entered, as illustrated in Fig. 4, the purpose of the bushing being to afford greater bearing-surface at the outer end of the spokes, and also to strengthen the felly.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a hub having opposing and spaced peripheral recesses, of spokes

provided with bifurcated inner ends filling said recesses, a felly engaging the outer ends of the spokes, cap-plates clamping the bifurcated extremities of the spokes, and means, substantially as described, for drawing the cap-plates toward the center of the hub, whereby the spokes are clamped to the hub and felly, as set forth.

2. The combination, with a hub having opposing and spaced peripheral recesses, of spokes provided with bifurcated inner ends filling said recesses and angular outer ends, a felly having a polygonal inner face, the angles whereof correspond to the number of spokes and their angular outer ends, cap-plates engaging the bifurcated extremities of the spokes, and means, substantially as shown and described, for drawing the cap-plates toward the center of the hub and compressing the bifurcated ends of the spokes, as set forth.

3. The combination, with a hub provided with a series of opposing and spaced peripheral recesses, and an interior chamber having polygonal walls, and head-blocks inserted in said chamber, of a contour corresponding to the walls thereof and apertured to receive the axle-box, of spokes provided with bifurcated inner ends fitting said recesses and having angular outer ends, a felly having a polygonal inner face, the angles whereof correspond to the number of spokes, and cap-plates secured to said head-blocks and engaging the bifurcated extremities of the spokes, substantially as shown and described.

4. The combination, with a hub provided with a series of opposing and spaced peripheral recesses, and an interior chamber having pologonal walls, and head-blocks inserted in said chamber, of a contour corresponding to the walls thereof and apertured to receive an axle-box, of spokes provided with bifurcated inner ends fitting said recesses and having angular outer ends, a felly having a polygonal inner face, the angles whereof correspond to the number of spokes, cap-plates to said head-blocks, engaging the bifurcated extremities of the spoke, and bolts passing through the cap-plate, head-blocks, and hub, provided with a suitable head and nuts, all adapted to operate substantially as and for the purposes herein set forth.

HENRY Q. MAURINO.

Witnesses:
MICHAEL MANDELL,
AUGUST TRORLICHT.