(No Model.)

# W. E. BAKER.

## VEHICLE WHEEL.

No. 480,162. Patented Aug. 2, 1892.

Fig 1.

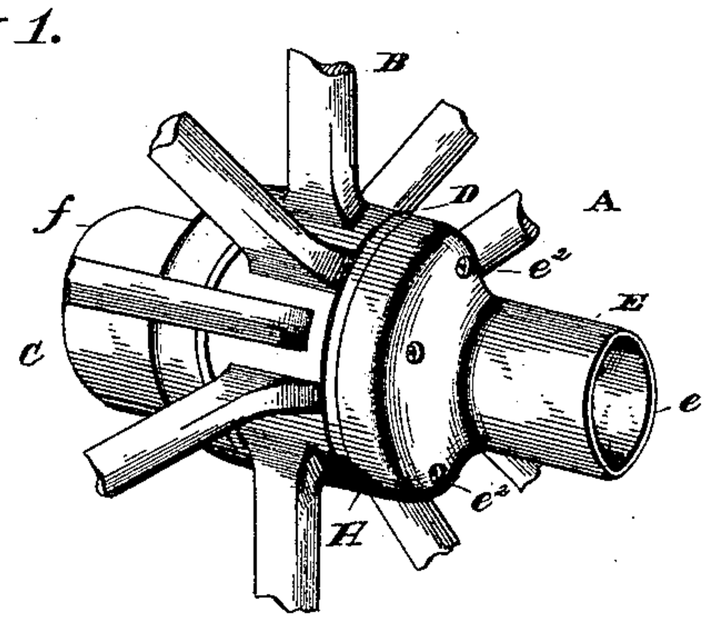



Fig 2.

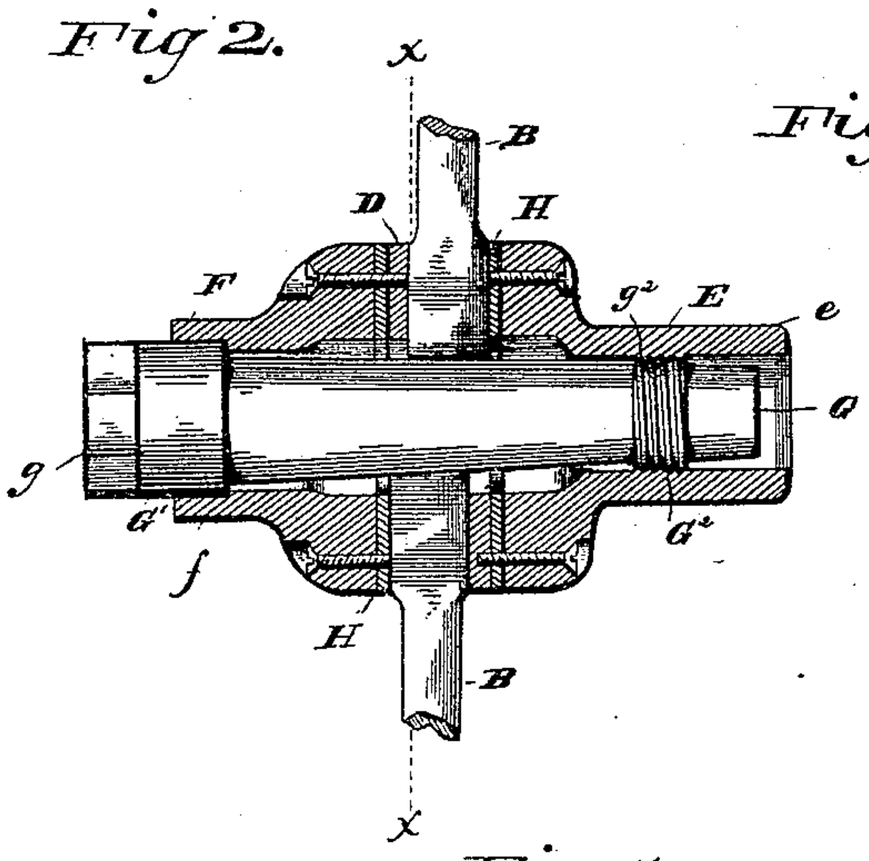



Fig 3.

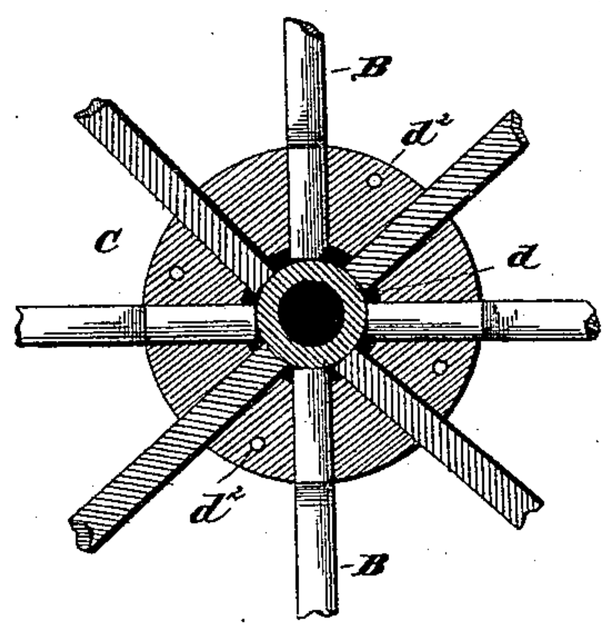
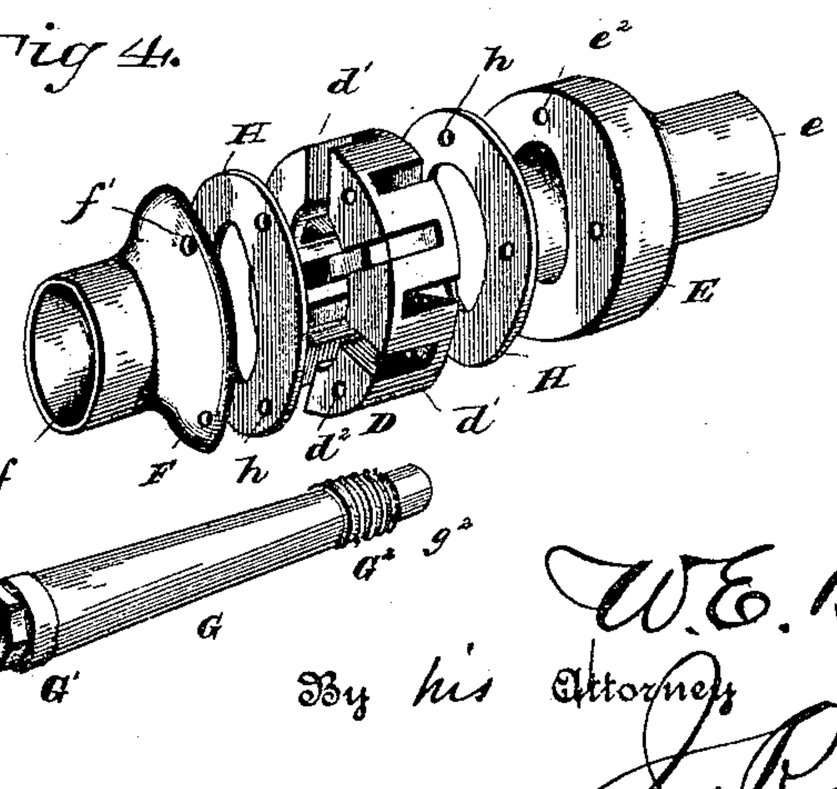



Fig 4.




Witnesses
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# UNITED STATES PATENT OFFICE.

WILLIAM EDWYN BAKER, OF NEWPORT NEWS, VIRGINIA.

## VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 480,162, dated August 2, 1892.

Application filed October 20, 1891. Serial No. 409,247. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM EDWYN BAKER, a subject of the Queen of Great Britain, at present residing at Newport News, in the county of Warwick and State of Virginia, have invented certain new and useful Improvements in Vehicle-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to vehicle-wheels and has particular relation to the hubs therefor.

The object of the invention is to provide a simple and improved wheel of such construction whereby one or more spokes can be readily removed for purpose of substitution or repair and without interference with the remaining spokes.

A further object of the invention is to provide a wheel of this character in which the spokes are adapted to be conveniently tightened when necessary and which will, furthermore, possess advantages in point of inexpensiveness, durability, and general efficiency.

In the drawings, Figure 1 is a perspective view illustrating the parts of a vehicle-wheel embodying my invention. Fig. 2 is a sectional view thereof taken longitudinally and centrally through the hub. Fig. 3 is a sectional view taken on line *x x*, Fig. 2. Fig. 4 is a detail perspective view of the parts constituting the hub detached.

Corresponding parts in the figures are denoted by the same letters of reference.

Referring to the drawings, A designates a vehicle-wheel, which may be in the main of any suitable or approved pattern and comprises a felly and tire, spokes B, and hub C. The latter consists of three sections, a central ring or sleeve D, and a front and rear collar E F, respectively.

The ring or sleeve D is constructed of any suitable metal or composition of metals and is provided with a central circular bore *d*. The ring or sleeve is also provided with a series of radially-arranged rectangular openings *d'*, extending from the bore *d* to the periphery of the ring or sleeve, said openings corresponding in number to the spokes, and constitute sockets for the inner ends thereof. The openings *d'* are arranged in two alternate series out of alignment, as shown. In practice the spokes are designed to project slightly within the bore *d*, the purpose of which will hereinafter appear. A series of tranverse-threaded apertures $d^2$ is provided in the ring or sleeve at each side and preferably at equidistant points thereon.

The front section E of the hub is cylindrical in form and has its inner end corresponding in diameter to the ring or sleeve D. The outer portion of said section is contracted and constitutes a hub-nose *e*. Upon the inner flat face of the section E is provided a series of apertures $e^2$, coinciding with the threaded apertures $d^2$ and designed for the reception of securing-screws S. The rear section F is of similar construction, the contracted rearwardly-projecting portion *f* being of less length than the hub-nose *e*, and said section is also provided upon its inner face with apertures *f'* for the securing-screws S, said apertures coninciding with the apertures $d^2$ upon the opposing side of the ring or sleeve D. Both the sections E and F are preferably constructed of the same material as the ring or sleeve D. In lieu of the apertures $e^2$ and *f'* and securing-screws S, the sections E and F may be provided with integral studs at their inner faces, said studs engaging the apertures $d^2$.

For effecting the tightening of the spokes I provide a metallic hollow bushing G, having a conical exterior and tapering toward its outer end, said bushing being designed to fit within the bore of the hub and contact directly with the ends of the spokes. A head G' is provided at the rear end of the bushing, which fits partially within a socket formed in the extension *f* of the section F, the rear portion of said head being formed angular, as shown at *g*, for the engagement of a wrench. Near the forward end of the bushing is provided an exterior circumferential enlargement $G^2$, having screw-threads $g^2$ provided within the bore of the front section E. Thus as the bushing is screwed forwardly the parts are drawn tightly together, further adjustment of the bushing serving to force the spokes outwardly and tightening the latter. To this end a packing-ring H is interposed between the opposing faces of the ring or sleeve D and the sections E and F, said packing-rings being provided with apertures *h*, through which

the studs $e^2$ and $f'$ pass. When further tightening of the spokes is desired after the bushing has been adjusted to its full limit, one or both of the packing-rings may be removed to effect this end.

The operation and advantages of my invention will be readily understood by those skilled in the art to which appertains. By thus forming the hub in three sections, with the spokes secured in the center one, when it is desired to remove one or more of the spokes for purpose of substitution or repair the bushing is unscrewed to release the front section and the damaged spokes detached without interfering with the others.

I claim as my invention—

1. A hub for vehicle-wheels, comprising a central ring or sleeve provided with a series of spoke-sockets arranged in two alternate series and opening at the respective faces of said ring or sleeve, a front and rear section, and a bushing disposed in the bore of said parts and adapted to bind the same together, substantially as set forth.

2. A hub for vehicle-wheels, comprising a central ring or sleeve provided with radially-arranged spoke-sockets, a front section provided with internal screw-threads, a rear section, and a bushing passing through the rear sections and central ring or sleeve and provided with external screw-threads meshing with the threads in the front section, whereby said bushing is secured directly to the latter, substantially as set forth.

3. In a vehicle-wheel, the combination of a hub consisting of a central ring or sleeve carrying the spokes, front and rear sections, and packing-rings interposed between the opposing faces of the ring or sleeve and the front and rear sections, and a bushing disposed in the bore of the hub and binding the parts thereof together, substantially as set forth.

4. In a vehicle-wheel, the combination of a hub consisting of a central ring or sleeve carrying the spokes and provided with transverse screw-threaded apertures at each side, front and rear sections provided with coincident apertures, securing-screws engaging said apertures, and packing-rings interposed between the ring or sleeve and the front and rear sections and provided with apertures for the passage of said screws, and a bushing disposed in the bore of the hub and binding the parts thereof together, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM EDWYN BAKER.

Witnesses:
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