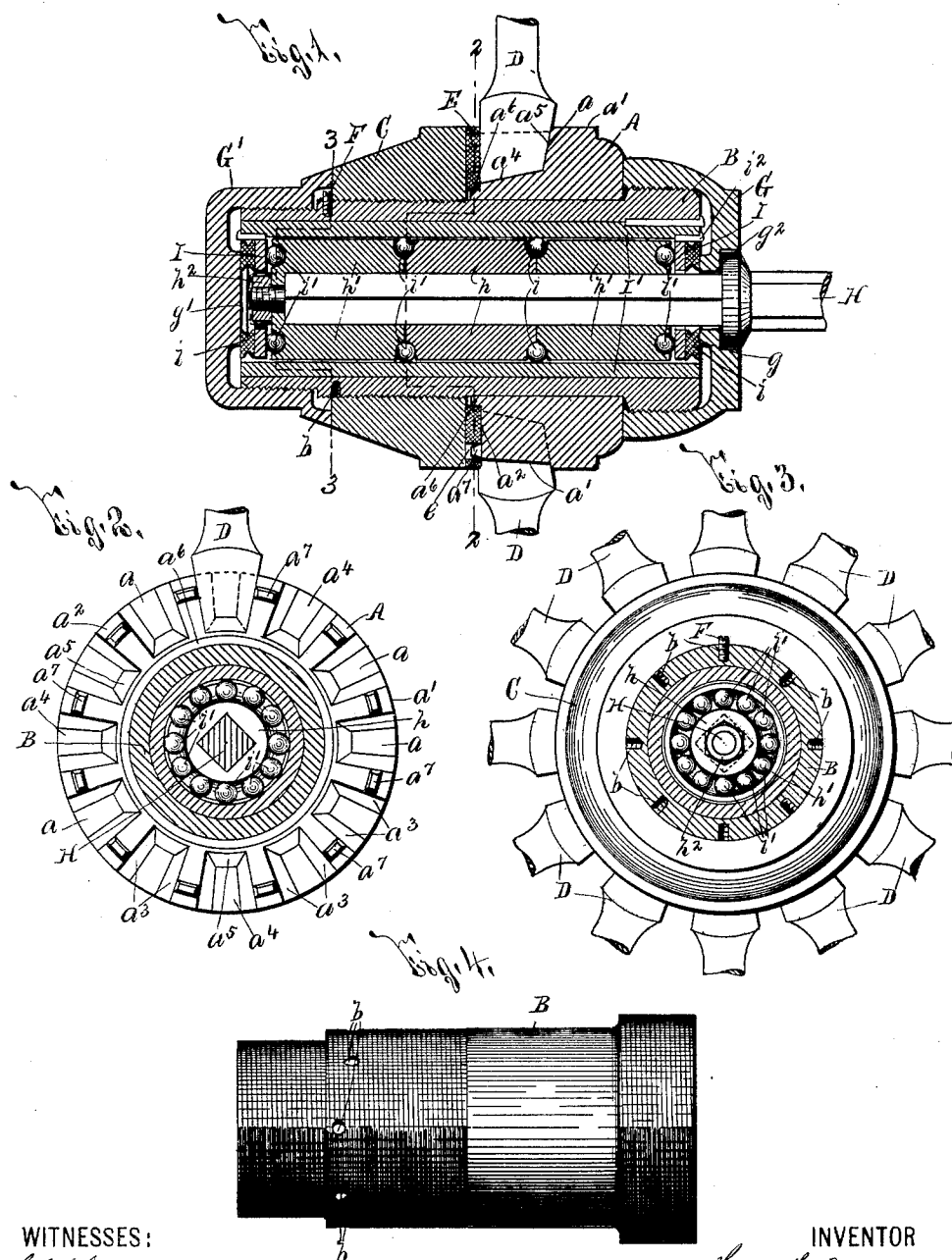


(No Model.)

H. L. EATON.
HUB FOR VEHICLE WHEELS.

No. 586,548.

Patented July 20, 1897.



WITNESSES:

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HARRY L. EATON, OF MANLIUS, NEW YORK.

HUB FOR VEHICLE-WHEELS.

SPECIFICATION forming part of Letters Patent No. 586,548, dated July 20, 1897.

Application filed November 20, 1895. Serial No. 569,523. (No model.)

To all whom it may concern:

Be it known that I, HARRY L. EATON, of Manlius, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Hubs, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in hubs particularly applicable for use in vehicle-wheels, and has for its object the production of a simple device which is easily manufactured, is durable in use, and is so constructed that the spokes are prevented from rattling and the worn parts are readily replaced; and to this end it consists, essentially, in the general construction and arrangement of the component parts of the hub, all as hereinafter fully described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 is a longitudinal vertical section, partly in elevation, of my improved hub. Figs. 2 and 3 are transverse sections taken, respectively, on lines 2 2 and 3 3, Fig. 1; and Fig. 4 is an elevation of the detached outer sleeve of the hub.

A represents the main shell, B an outer supporting-sleeve, and C a follower movable lengthwise of the sleeve B. The shell A is formed with sockets *a*, which extend inwardly from its outer peripheral and side faces *a'* *a''* and receive the inner ends of the spokes D. The opposite sides or walls *a'''* of the sockets taper toward each other from the peripheral face *a'*. The bottom and end sides or walls *a'''* of said sockets incline toward the side face *a''*, and the inner ends of the spokes D are correspondingly tapered and inclined for closely fitting the sockets *a*. The side face *a'''* of the shell A is provided with a substantially circular shoulder *a⁴*, surrounding the sleeve B, and separated tapering shoulders *a⁵*, encircling the shoulder *a⁴* and interposed between the sockets *a*.

A washer or ring E encircles the shoulder *a⁴* and is provided with apertures *e* for receiving the shoulders *a⁵*. The washer or ring E

is firmly forced against the spokes D by the follower C for effectively holding the spokes D and preventing all rattling thereof, and the follower is held in its adjusted position by any suitable means, as a pin or screw F, adapted to enter a series of spirally-arranged sockets *b* in the sleeve B.

Arranged at the outer sides of the shell A and the follower C are inner and outer caps G G', which encircle the sleeve C and are formed with internal screw-threads for engaging exterior threads on the opposite ends of the sleeve B and permitting adjustment of said caps lengthwise of the sleeve. The caps G G' are formed with internal substantially flat bearing-faces *g g'*, and their adjacent ends engage the shell A and the follower C for preventing the entrance of dust, &c., to the interior of the hub. A suitable axle H may be used in connection with my invention, and to facilitate its entrance the cap G is formed with a central aperture *g²*.

The outer ends of the axle H are preferably formed of angular cross-section and are encircled by an inner sleeve *h*, having its inner peripheral face formed angular in cross-section. The sleeve *h* preferably consists of separate sections *h'*, arranged end to end, and interposed between the end sections of the sleeve *h* and the bearing-faces *g g'* are wearing-disks I and yielding washers *i*. The section of the sleeve *h* encircling the outer end of the axle H is preferably held in position by a suitable clamp, as a nut *h²*, adjustably mounted on said axle, and the sections *h'* are formed with suitable grooves for receiving antifriction-balls *i'*, interposed between the adjacent faces of the sections *h'* and the opposite ends of the sleeve *h* and the wearing-disks I. Suitable means, as keys *i²*, are utilized to fix the wearing-disks I to an intermediate sleeve I', which encircles the sleeve *h*, is fixed to the sleeve B, and is engaged by the antifriction-balls *i'*.

My improved hub will be readily understood upon reference to the foregoing description and the accompanying drawings, and it will be readily apparent that rattling of the spokes and the entrance of dust, &c., are prevented and that the inner and intermediate sleeves may be readily replaced when worn. Having thus fully described my invention,

what I claim as new, and desire to secure by Letters Patent, is—

1. A hub comprising a main shell provided with sockets extending inwardly from its outer peripheral face and one of its side faces, said sockets being formed with inclined side, end, and bottom walls, shoulders projecting from said side face of the main shell between the sockets, spokes having their inner ends tapered and arranged within the sockets, a washer or ring at one side of the main shell for holding the spokes in position, said washer or ring having apertures for receiving the shoulders, and a follower for holding the washer or ring in operative position, substantially as described.

2. A hub comprising a sleeve, a main shell encircling the sleeve and provided with sockets extending inwardly from its outer peripheral face and one of its side faces, said side face being provided with an annular projecting shoulder a^6 encircling the sleeve, and separated shoulders a^7 encircling the former shoulder and interposed between the sockets, spokes having their inner ends arranged within the sockets, a washer or ring encircling the shoulder a^6 for holding the spokes in position and having apertures for receiving the shoulders a^7 , and a follower encircling the sleeve and adjustable lengthwise thereof for holding the washer or ring in operative position, substantially as specified.

3. A hub comprising a main shell for supporting the spokes, a sleeve arranged within the shell and having its inner peripheral face formed angular in cross-section, caps at the opposite ends of said sleeve provided with inner bearing-faces, and yielding washers interposed between the opposite ends of said sleeve and the bearing-faces of the caps, substantially as and for the purpose described.

4. A hub comprising a main shell for supporting the spokes, an axle, a sleeve arranged within the shell and fixed to the axle, caps at the opposite ends of said sleeve provided with inner bearing-faces, yielding washers engaged with said bearing-faces, and wearing-disks interposed between the yielding washers and the opposite ends of said sleeve, substantially as and for the purpose set forth.

5. A hub comprising a main shell for supporting the spokes, an axle, a sleeve arranged within the shell and fixed to the axle, said sleeve having grooves in its peripheral and end faces for receiving antifriction-balls, caps at the opposite ends of the sleeve provided with inner bearing-faces, and antifriction-balls interposed between the bearing-faces and said sleeves, substantially as and for the purpose specified.

6. A hub comprising a sleeve having one end formed with spirally-arranged sockets, a main shell encircling the sleeve and provided with peripheral sockets, spokes having their inner ends arranged within the sockets of the main shell, a follower encircling the sleeve and movable lengthwise thereof at one side

of the main shell for holding the spokes in operative position, a screw for entering the sockets of the sleeve and engaging the follower, and inner and outer caps arranged at the outer sides of the main shell and follower, said caps encircling the sleeve and being adjustable lengthwise thereof, substantially as specified.

7. A hub comprising a sleeve having one end formed with spirally-arranged sockets, a main shell encircling the sleeve and provided with peripheral sockets, spokes having their inner ends arranged within the sockets of the main shell, a follower encircling the sleeve and movable lengthwise thereof at one side of the main shell for holding the spokes in operative position, a screw for entering the sockets of the sleeve and engaging the follower, inner and outer caps arranged at the outer sides of the main shell and follower, said caps encircling the sleeve and being movable lengthwise thereof and provided with inner bearing-faces, an inner sleeve within the former sleeve, and wearing-disks interposed between the bearing-faces and the opposite ends of the inner sleeve, substantially as and for the purpose described.

8. A hub comprising a sleeve having one end formed with spirally-arranged sockets, a main shell encircling the sleeve and provided with peripheral sockets, spokes having their inner ends arranged within the sockets of the main shell, a follower encircling the sleeve and movable lengthwise thereof at one side of the main shell for holding the spokes in operative position, a screw for entering the sockets of the sleeve and engaging the follower, inner and outer caps arranged at the outer sides of the main shell and follower, said caps encircling the sleeve and being movable lengthwise thereof and provided with inner bearing-faces, a second sleeve within the former sleeve consisting of sections arranged end to end and having its opposite ends supported adjacent to said bearing-faces, antifriction-balls interposed between the sections of the inner sleeve and between the ends of said sleeve and the bearing-faces, and an intermediary sleeve interposed between the outer and inner sleeves, substantially as and for the purpose described.

9. A hub comprising a sleeve, a main shell encircling the sleeve and provided with peripheral sockets, spokes having their inner ends arranged within the sockets of the main shell, a follower encircling the sleeve and movable lengthwise thereof at one side of the main shell for holding the spokes in operative position, inner and outer caps arranged at the outer sides of the main shell and follower, said caps encircling the sleeve and being movable lengthwise thereof and provided with inner bearing-faces, a second sleeve within the former sleeve consisting of sections arranged end to end, wearing-disks interposed between the bearing-faces of the inner and outer caps and the ends of the second sleeve,

and antifriction-balls interposed between the sections of the second sleeve, and between the wearing-disks and the ends of said sleeve, substantially as and for the purposes specified.

5 10. A hub comprising a sleeve having one end formed with spirally-arranged sockets, a main shell encircling the sleeve and provided with peripheral sockets, spokes having their inner ends arranged within the sockets, a follower encircling the sleeve and movable lengthwise thereof at one side of the main shell for holding the spokes in operative position, a screw for entering the sockets of the sleeve and engaging the follower, inner and 5 outer caps arranged at the outer sides of the main shell and follower, said caps encircling the sleeve and being movable lengthwise thereof and provided with inner bearing-faces, an innersleeve within the former sleeve consisting of sections arranged end to end,

wearing-disks interposed between the bearing-faces and the opposite ends of the inner sleeve, antifriction-balls interposed between the sections of the inner sleeve and between the ends of said sleeve and the wearing-disks, 25 an intermediate sleeve interposed between the outer and inner sleeves and having its opposite ends fixed to the wearing-disks, and yielding washers interposed between said bearing-faces and wearing-disks, substantially as specified. 30

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 35 25th day of October, 1895.

HARRY L. EATON.

Witnesses:

E. A. WEISBURG,
K. H. THEOBALD.