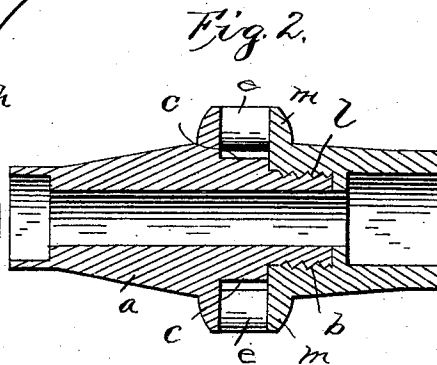
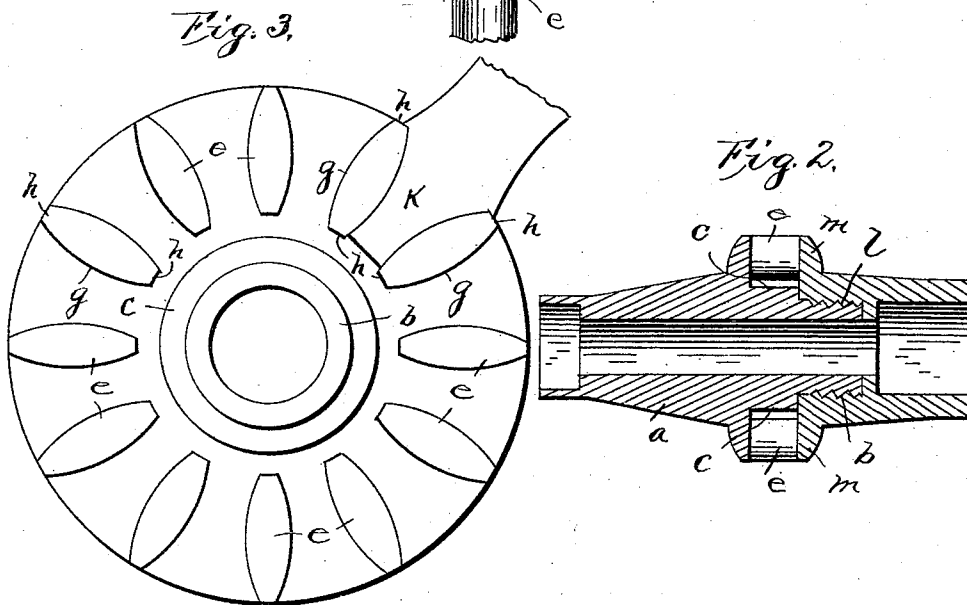
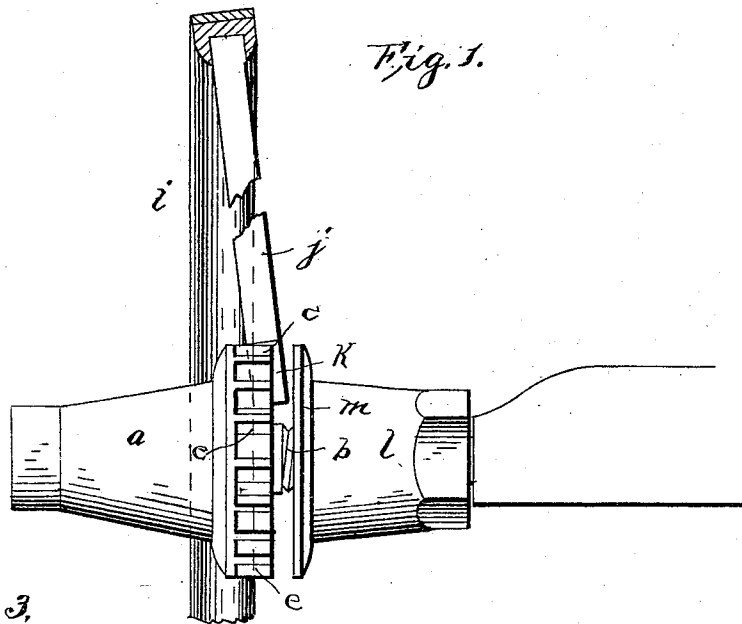


(No Model.)

C. WHITFORD.  
HUB FOR VEHICLE WHEELS.

No. 486,996.

Patented Nov. 29, 1892.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

CLARK WHITFORD, OF WATER VALLEY, MISSISSIPPI, ASSIGNOR TO HIMSELF  
AND WILLIAM L. HELLUMS, OF SAME PLACE.

## HUB FOR VEHICLE-WHEELS.

SPECIFICATION forming part of Letters Patent No. 486,996, dated November 29, 1892.

Application filed July 21, 1892. Serial No. 440,764. (No model.)

*To all whom it may concern:*

Be it known that I, CLARK WHITFORD, of Water Valley, in the county of Yalobusha and State of Mississippi, have invented certain new and useful Improvements in Hubs; 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 which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in hubs for vehicle-wheels.

The object of the invention is to provide an improved vehicle-wheel hub very cheap, simple, and durable in construction and composed of a minimum number of parts, and which will be capable of adjustment, so that the wheel can be adjusted or tightened to take up wear or shrinkage and prevent rattling, &c.

The invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claim.

Referring to the accompanying drawings, Figure 1 is an elevation of the improved hub. Fig. 2 is a longitudinal section thereof. Fig. 3 is an end view with the flanged threaded sleeve or section of the hub removed.

In the drawings, the reference-letter *a* indicates the main portion or body of the hub provided with the usual central longitudinal opening or box and with the reduced and externally-threaded inner end *b*, having the non-threaded portion *c* at its inner end. The peripheral annular flange extends from the body at the junction of the reduced portion with the main portion of the body. Plates or projections *e* extend inwardly and laterally from the inner face of the flange *d*, and radiate in planes from the axis of the hub. The lugs or projections *e* are about flush at their outer edges with the outer edge or periphery of the flange *d*, while the inner edges of said lugs do not quite extend to the non-threaded portion *c* at the inner side of the flange, leaving an annular space at the inner ends of said lugs. These lugs are located such a distance apart as to form radial mortises *f*, then to receive the

spoke ends. The mortises are open at the inner sides and ends and taper or flare from their centers outwardly, as shown in Fig. 3. This flaring of the mortises is accomplished by forming each lug or projection tapering or beveled from the center of its width, both outwardly and inwardly, so that each projection is thickest at *g*, and hence each mortise is narrower at *h* than at any other point.

*i* indicates the felly of the wheel provided with the tire and with spoke-sockets preferably extending but a portion of the distance through the felly.

*j* indicates the spokes, at their outer ends fitted in said sockets, preferably without fastenings. The inner ends of the spokes are formed into tenons of a shape and size to fit the mortises—that is, the tenon *k* of each spoke is formed concave on each side or is hollowed out at the center, so that the tenon can be slipped laterally into a mortise of the hub, and the central contraction of the mortise will fit the central depressions in the tenon and thereby firmly hold the spoke against longitudinal movement.

The projections forming the mortises in the hub are less in length than the thickness of the spokes, so that the spokes when fitted in the mortises project laterally inwardly beyond the projections forming the mortises. Hence when the internally-threaded sleeve *l* is screwed upon the threaded portion of the hub its flange *m* engages and bears directly against the sides of the spokes and holds them in the mortises. The flange *m* of the sleeve *l* has a preferably-flat face to engage the spokes and corresponds to the flange on the hub which carries the spoke sockets or mortises. By this construction the spoke can be quickly and easily tightened by merely screwing up the sleeve against the spokes.

The wheel when originally constructed is formed with a suitable dish by the spokes extending out from the plane of the axle at an angle greater than ninety degrees, and when the wheel becomes loose or rattles it can be quickly and easily tightened by screwing the sleeve in, thereby forcing the flange of the sleeve against the inner ends of the spokes and forcing them into the sockets and outwardly, so as to straighten them and reduce

the angle they form with the axle. The strain or tension on the spokes is thus entirely at the hub. Hence no fastening of the spoke at the felly is required and the spokes need only extend a short distance into the felly, thereby strengthening the felly and increasing the strength and durability of the entire wheel.

If the wheel becomes loose or rattles after the spokes have become entirely straight—*i. e.*, extend at ninety degrees from the axle—the wheel can be dished by unscrewing the sleeve and bending out the spokes and putting a bushing or liner under their ends around portion *c* of the hub.

The advantage and utility of this invention are obvious.

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

The herein-described hub, provided with the

annular flange and outwardly-extending reduced threaded portion, the radial lugs on said flange beveled toward their inner and outer edges, the spokes of greater width than and projecting beyond said lugs and fitted between and recessed on the sides to fit the lugs, and the nut screwed on said threaded portion and having the smooth annular flange arranged to engage the outer edges of the spokes, and thereby clamp them in position and determine the dish of the wheel and maintain the same tight, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

CLARK WHITFORD.

Witnesses:

L. W. MACKEY,  
R. F. KIMMOUS.