

No. 676,042.

Patented June 11, 1901.

G. C. LEWIS.  
VEHICLE HUB.

(No Model.)

(Application filed Oct. 19, 1900.)

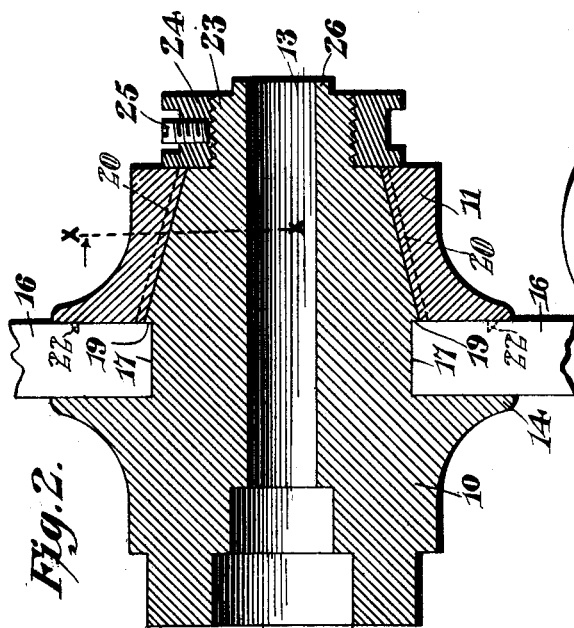


Fig. 2.

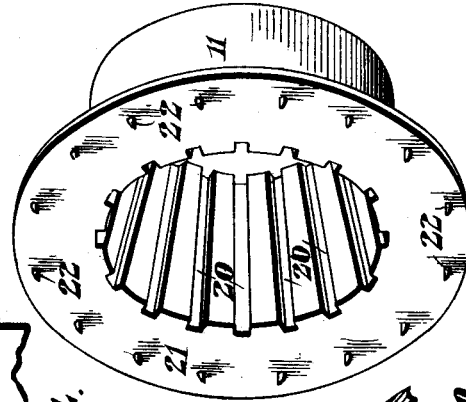


Fig. 4.

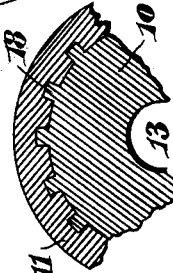


Fig. 5.

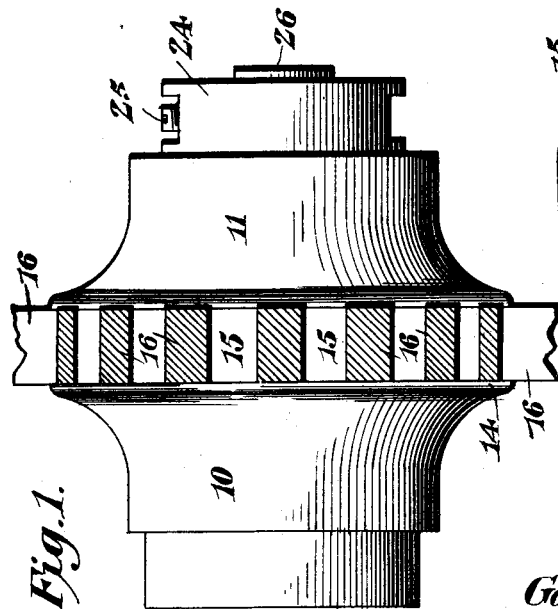


Fig. 1.

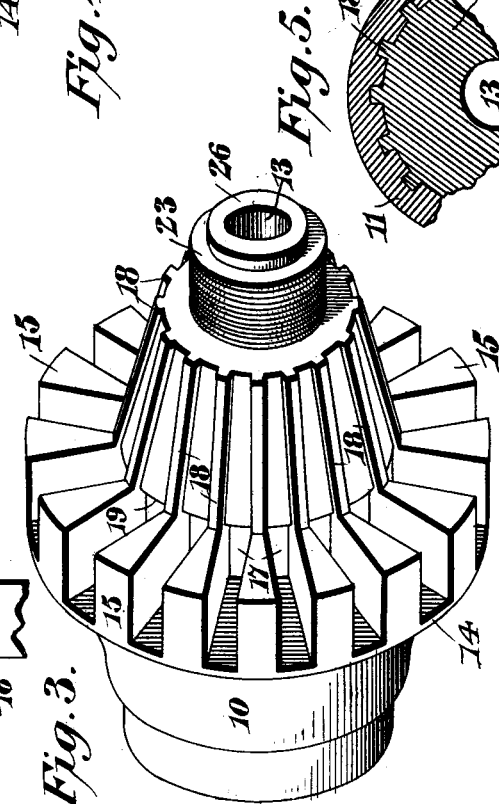


Fig. 3.

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# UNITED STATES PATENT OFFICE.

GASTON CORBETT LEWIS, OF BAYARD, FLORIDA.

## VEHICLE-HUB.

SPECIFICATION forming part of Letters Patent No. 676,042, dated June 11, 1901.

Application filed October 19, 1900. Serial No. 33,617. (No model.)

*To all whom it may concern:*

Be it known that I, GASTON CORBETT LEWIS, a citizen of the United States, residing at Bayard, in the county of Duval and State of Florida, have invented a new and useful Vehicle-Hub, of which the following is a specification.

This invention relates to vehicle-wheels, and particularly to the construction of hubs for the same; and the object thereof is to provide an improved hub made of separable sections to permit the ready insertion or removal of any or all of the spokes for the purposes of repair and renewal.

More especially, the invention aims to provide a sectional hub having inclined faces, over which the inner ends of the spokes are forced to expand them against the felly of the wheel, and seats for said spokes arranged at the inner ends of the inclined faces and so constructed that there will be no strain upon the section of the hub which clamps said spoke ends in place.

In order that a complete understanding of the invention may be obtained, the preferred form of construction is fully described in the following specification and illustrated in the drawings, which accompany and form a part of the same, and in which—

Figure 1 is a side elevation of the improved hub, showing portions of the spokes secured therein. Fig. 2 is a longitudinal section of the same. Fig. 3 is a detail perspective of the body element. Fig. 4 is a similar detail perspective of the clamping element. Fig. 5 is a detail cross-section on the line X X of Fig. 2.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

The improved hub, as shown, comprises, essentially, two elements, which for the purposes of distinction are designated, respectively, the "body" element (indicated by the numeral 10) and the "clamping" element, (indicated by 11.)

The body element 10 is preferably made of a single casting having a central longitudinal axle-receiving bore 13. Projecting from the outer face of the body is an annular retaining-flange 14, having a plurality of spaced partitions 15, which form a series of spoke-

mortises for the reception of the inner tenon ends of the spokes 16, said mortises having open sides arranged to be closed by the clamping element, as is hereinafter more fully described. These mortises are furthermore provided with flat bottoms 17, whereby the inward pressure upon the spokes will be directly against the supporting element, thus relieving the clamping element of the lateral strain. Extending from the open sides of the mortises is a frusto-conical section concentric to the hub-bore 13, thus forming an annular inclined face which is provided with a plurality of projecting ribs 18, that extend from and are equal in number to the partitions 15, thus providing a plurality of inclined grooves that extend to the open sides of the mortises, as clearly shown in Fig. 3. By referring to Fig. 2 it will be seen that the inner edges 19 of the inclined grooves are raised slightly above the flat bottom of the mortises, whereby seats are formed in which the ends of the spoke-tenons rest.

The clamping member 11 is in the form of a collar, having its interior face inclined to correspond with the frusto-conical portion of the supporting element, this interior face being provided with longitudinal grooves 20, into which the ribs 18 fit. The inner side face 21 of the collar is flat and is arranged to abut against the outer sides of the partitions 15, and this face is provided with a plurality of inwardly-projecting spurs 22, equal in number to and arranged to project into the spoke-mortises. In order to hold this collar in place upon the supporting element, the body 10 is provided with a screw-threaded extension 23, that projects from the outer end of the frusto-conical portion, and a retaining-nut 24 is screwed upon this extension and engages against the outer end of the collar when in place. A set-screw 25 passes through the nut 24 and is seated against the screw-threaded extension to hold the nut against accidental displacement. To prevent the axle-nut working against the retaining-nut 24, the screw-threaded extension has an annular projecting flange 26, against which said nut is arranged to abut.

In assembling the parts the outer ends of the spokes are first inserted in the felly and the inner end tenons are then forced up the

inclined grooves and into the seats. In this position the inward pressure will be directly against the flat bottoms 17, as these bottoms are arranged at an angle to the inclined grooves, and the edge 19 will prevent their displacement. The clamping element is then placed over the frusto-conical portion with the ribs 18 of the latter fitting in the grooves of the former, as shown in Fig. 5. The face 21 will therefore rest against the sides of the spokes, as shown in Fig. 2, and the spurs 22 will be forced into engagement with the same. The retaining-nut 24 is then applied, the set-screw seated, and the elements of the hub are thus securely held together and the spokes rigidly fastened in place. To remove and replace or repair a spoke, it is only necessary to reverse the operation above described. After a spoke has been in a wheel for some time it often shrinks and becomes loose. The usual method of remedying this is to drive a wedge at the side of the same, and the special advantage of the inturned spurs 22 shown and described, will be apparent when this operation is necessary, as it will be evident that a wedge driven in between the spoke and the retaining-collar will be securely held by these spurs against dropping out.

From the above description it will be observed that a hub is provided of simple construction and which a person of ordinary intelligence can take apart and assemble for the purposes of repair, thus obviating the necessity for the services of a blacksmith and the attendant expense and delay of removing the tire and felly, as is necessary with the ordinary vehicle-wheel.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. A hub-body having a plurality of spoke-

mortises, and guideways for the inner spoke-tenons leading to the mortises, the bottom of each of said guideways adjacent to the corresponding mortises being in a different plane from the bottom of said mortises, whereby a retaining-shoulder is formed and the bottom of the mortise is disposed below the bottom of the guideway.

2. A hub-body having a plurality of open-sided spoke-mortises, and an inclined portion leading to the open sides of said mortises, the inner edge of said inclined portion being disposed outside of the plane of the bottom of the mortises, whereby a retaining-shoulder is formed over which the spoke-tenon is adapted to pass and a depressed seat is provided for the same.

3. In a vehicle-hub, the combination with the hub-body having a plurality of open-sided mortises and inclined guideways leading to the open sides of the mortises, the inner bottom edges of said inclined guideways being in a different plane from the bottoms of said mortises whereby depressed seats are formed in the latter below the inner bottom edges of the guideways for the reception of the spoke-tenons, and a clamping element arranged to cover the inclined guideways and close the open sides of the mortises.

4. In a vehicle-wheel, the hub-body provided with an annular series of spoke-mortises open at one side, a frusto-conical portion at one side of the plane of the mortises and provided with a peripheral series of longitudinal flat guideways leading to the open sides of the mortises and longitudinal ribs alternating with the guideways, the inner end of the said frusto-conical portion projecting beyond the bottom of mortises forming a retaining-shoulder at the open side of the same, the bottoms of said mortises being below the inner edge of the frusto-conical portion, and a clamping element interlocking with the ribs and fitting over the open sides of the mortises.

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

GASTON CORBETT LEWIS.

Witnesses:

C. H. GUNTER,  
S. E. SMITH.