No. 677,575. Patented July 2, 1901.

# Z. T. KALE.

## VEHICLE HUB.

(Application filed Mar. 30, 1901.)

(No Model.)

Fig. 1.

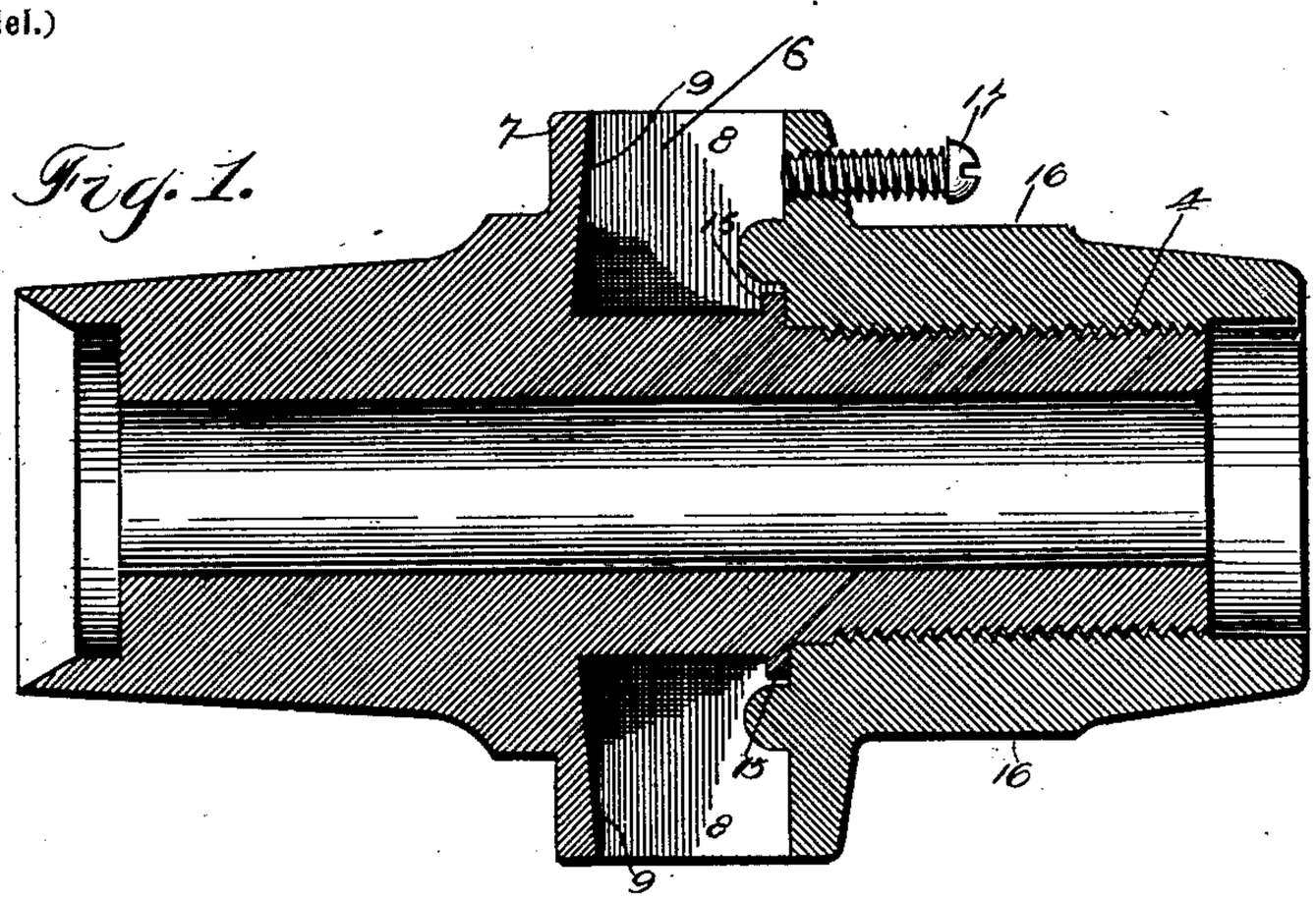



Fig. 3

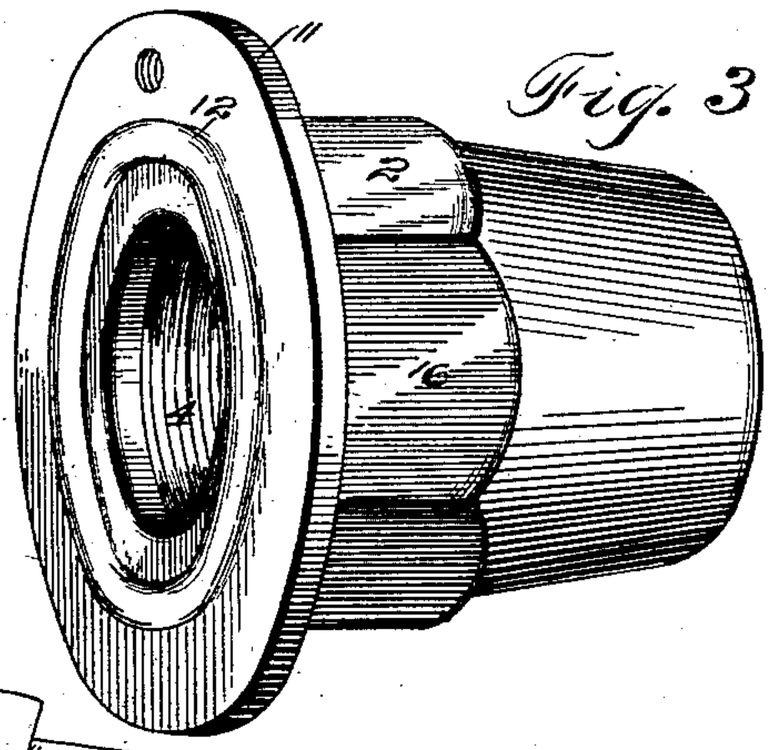
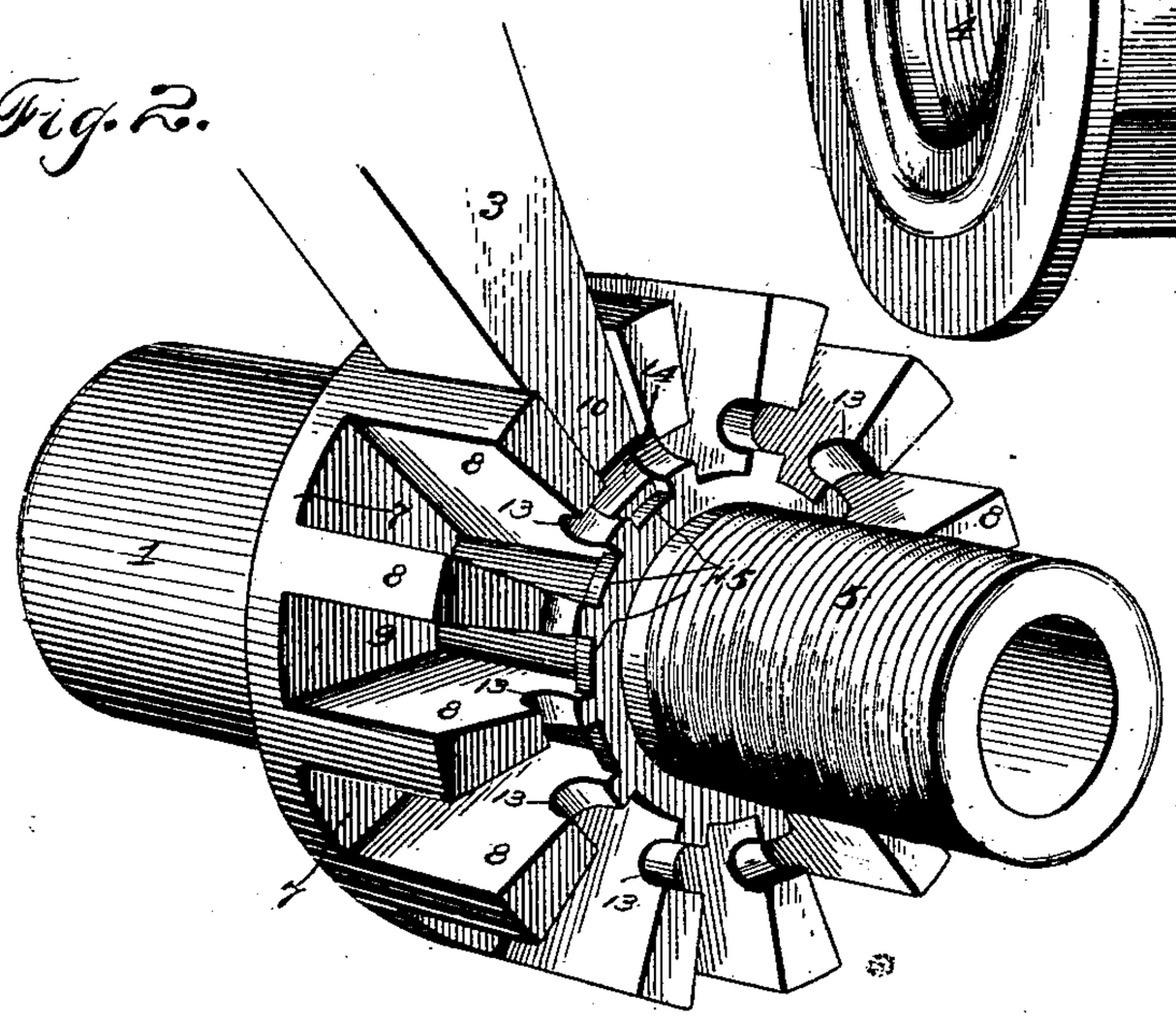



Fig. 2.




Witnesses
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# UNITED STATES PATENT OFFICE.

ZACHARY T. KALE, OF NEWCASTLE, VIRGINIA.

## VEHICLE-HUB.

SPECIFICATION forming part of Letters Patent No. 677,575, dated July 2, 1901.

Application filed March 30, 1901. Serial No. 53,697. (No model.)

*To all whom it may concern:*

Be it known that I, ZACHARY TAYLOR KALE, a citizen of the United States, residing at Newcastle, in the county of Craig and State of Virginia, have invented a new and useful Vehicle-Hub, of which the following is a specification.

The invention relates to improvements in vehicle-hubs.

One object of the present invention is to improve the construction of vehicle-hubs and to provide a simple, inexpensive, and efficient one which will be light, strong, and durable and in which the inner ends of the spokes will be securely interlocked with it and firmly held in position.

A further object of the invention is to provide a hub of this character designed to be employed on all kinds of vehicles, implements, and the like and capable of enabling a spoke to be readily removed and replaced without removing the tire or rim of the wheel.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

In the drawings, Figure 1 is a longitudinal sectional view of a vehicle-hub constructed in accordance with this invention. Fig. 2 is a perspective view of one of the sections and the inner portion of a spoke. Fig. 3 is a similar view of the other section.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 and 2 designate separable hub-sections receiving and interlocked with the inner ends of the spokes 3 and adapted to be separated, as hereinafter explained, to permit one or more of the spokes to be removed and replaced by new ones should they become broken or otherwise injured. The sections may be constructed of any suitable metal, and the section 2 is provided with interior screw-threads 4 and is adapted to receive a threaded cylindrical extension or sleeve 5 of the other section 1. The other section is provided with an annular series of spoke-receiving recesses 6, formed by an annular flange 7 and radial webs or flanges 8, arranged at regular intervals and tapering inwardly, as clearly illustrated in Fig. 2 of the accompanying drawings. The annular flange 7, which forms the outer wall of the spoke-receiving recesses, has an inclined inner face 9, forming dovetailed sockets or recesses and receiving tapered or dovetailed portions 10 of the spokes, whereby when the sections are arranged as illustrated in Fig. 1 of the drawings the spokes will be firmly and securely held in the hub. The inner sides or ends of the recesses are open, and the spokes, which conform to the configuration of the recesses or sockets, are introduced into the same by moving them longitudinally of the hub when the section 2 is removed. The open sides or ends of the spoke-receiving recesses or sockets are covered or closed when the parts are assembled by an annular flange 11 and the inner end of the section 2, the inner end of the latter and the flange 11 being arranged in the same plane. The spokes are further locked in the sockets or recesses by an annular rib 12, arranged at the inner end of the section 2 and fitting in notches 13 of the radial webs and in grooves 14 of the spokes. The grooves 14 register with the notches 13 to form an annular channel for the reception of the annular rib 12, and when the latter engages the grooves and the notches the spokes are absolutely locked in the sockets or recesses.

In order to afford a further support for the spokes, the section 1 of the hub is provided at the inner open ends or sides of the spoke-receiving recesses or sockets with a narrow annular wall 15, which holds the spokes against accidental displacement when the section 2 is removed from the threaded sleeve or extension of the section 1. The inner ends of the spokes are provided with recesses to receive the narrow wall 15, which is arranged at the bottoms of the sockets. The section 2 of the hub is provided with a polygonal face 16, adapted to receive a wrench or other suitable tool for screwing it on and off the threaded cylindrical extension of the section 1, and the section 2 is held against accidental rotation by means of a screw 17, mounted in a threaded perforation of the annular flange 11 and adapted to engage a spoke or a web of the other section.

The cylindrical extension or sleeve is formed

integral with the section 1 and is provided with a longitudinal bore forming a continuation of the bore of the body portion of the section, and this longitudinal opening is adapted to receive or be provided with an axle-box or a bearing-face of any desired construction.

The hub is designed for use on all kinds of vehicles, implements, and the like and may be advantageously employed on light road-vehicles or on heavy wheels for harvesting machinery, cannons, and the like. It is simple and comparatively inexpensive in construction, and the sections are readily assembled and separated and will enable access to be readily had to the spokes when it is necessary to remove the same for any purpose. Furthermore, it will be clear that the inclined end walls 9 form dovetailed sockets and enable the adjacent portions of the spokes to be securely interlocked with the hub without recessing or grooving them.

What I claim is—

A hub of the class described comprising the inner section 1 having a threaded extension and provided with an annular series of spoke-sockets open at one end and provided at the other end with dovetailed walls, said sockets being provided at their open ends with notches and having the short annular wall 15, located at the bottom of the sockets, the dovetailed spokes provided with grooves to register with the notches and having recesses at their lower ends to receive the bottom wall 15, said spokes abutting against the inner face of the bottom wall 15, whereby they are held against outward movement through the open ends of the sockets, and the section 2 engaging the threaded extension of the section 1 and closing the ends of the sockets and provided with an annular rib engaging the grooves and notches, substantially as described.

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

ZACHARY T. KALE.

Witnesses:

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J. ROSS COLHOUN.