

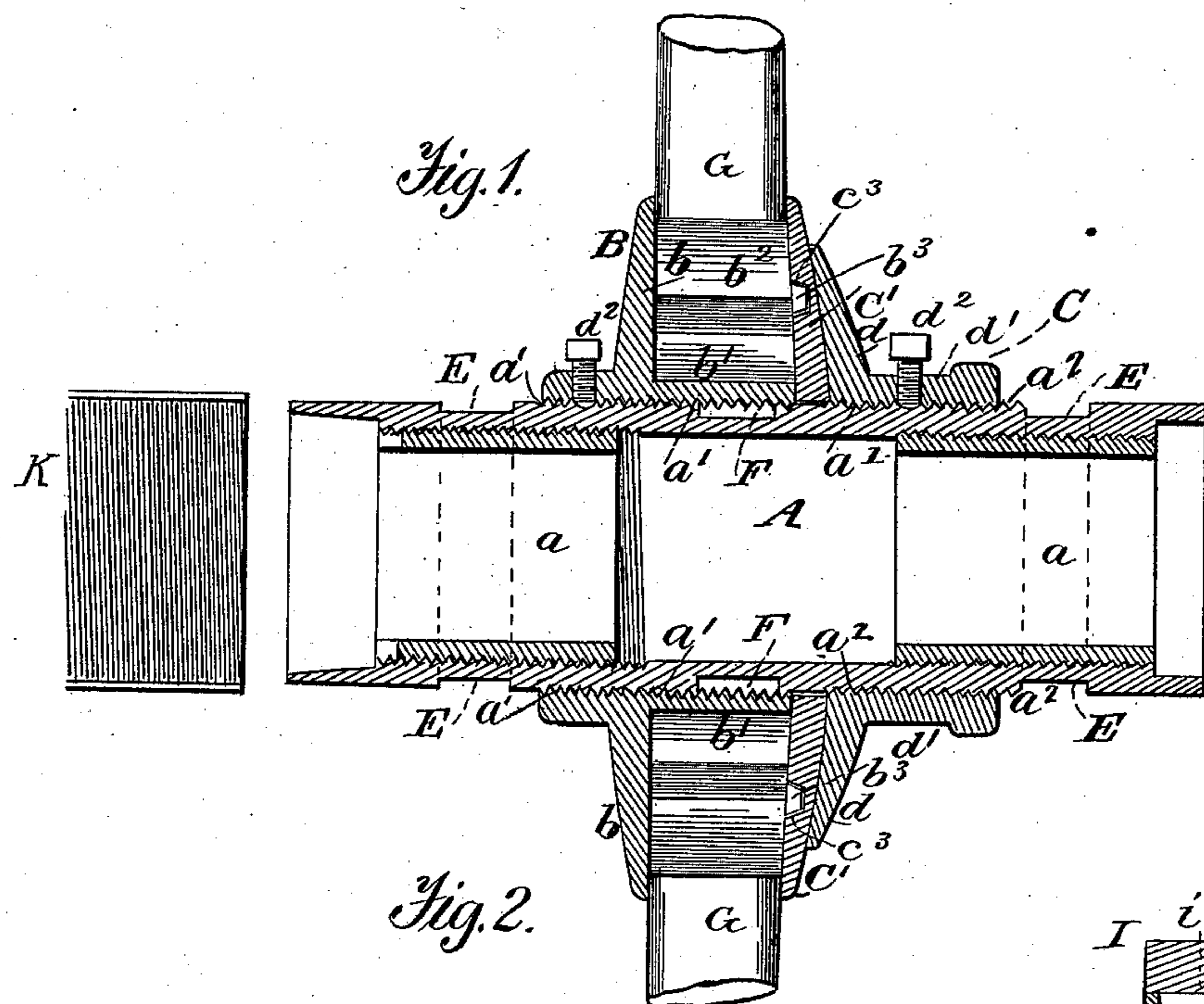
(No Model.)

T. A. DAVISON.

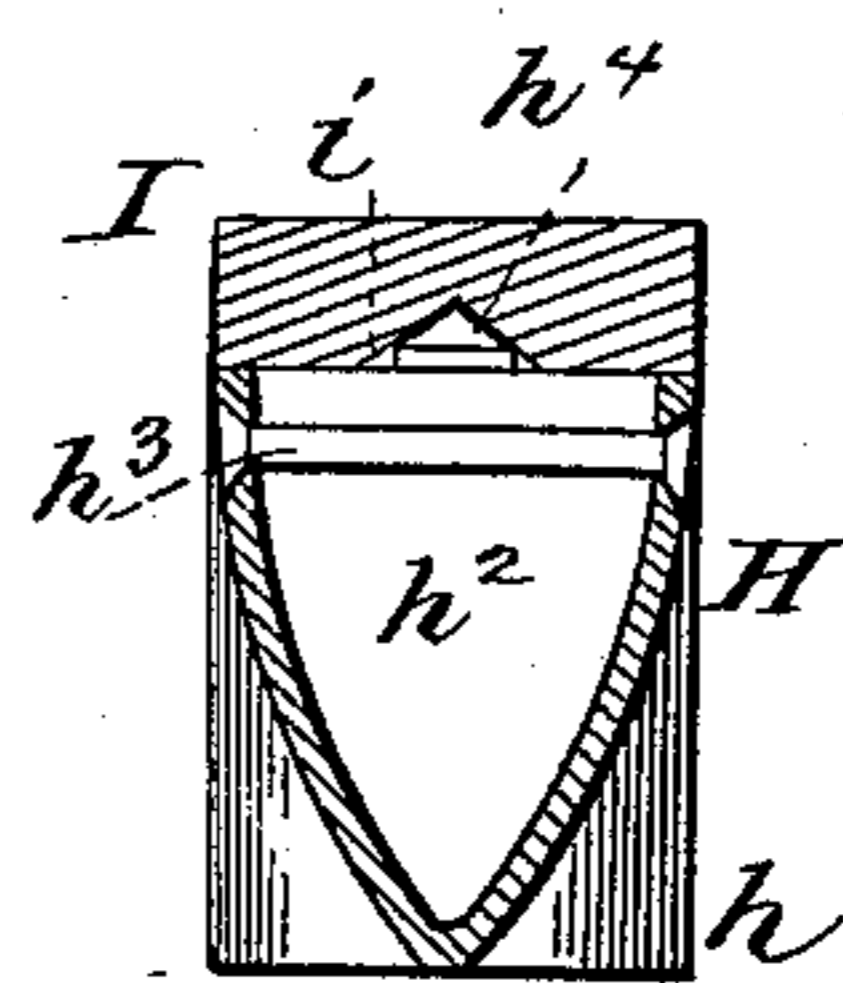
WHEEL.

No. 372,129.

Patented Oct. 25, 1887.

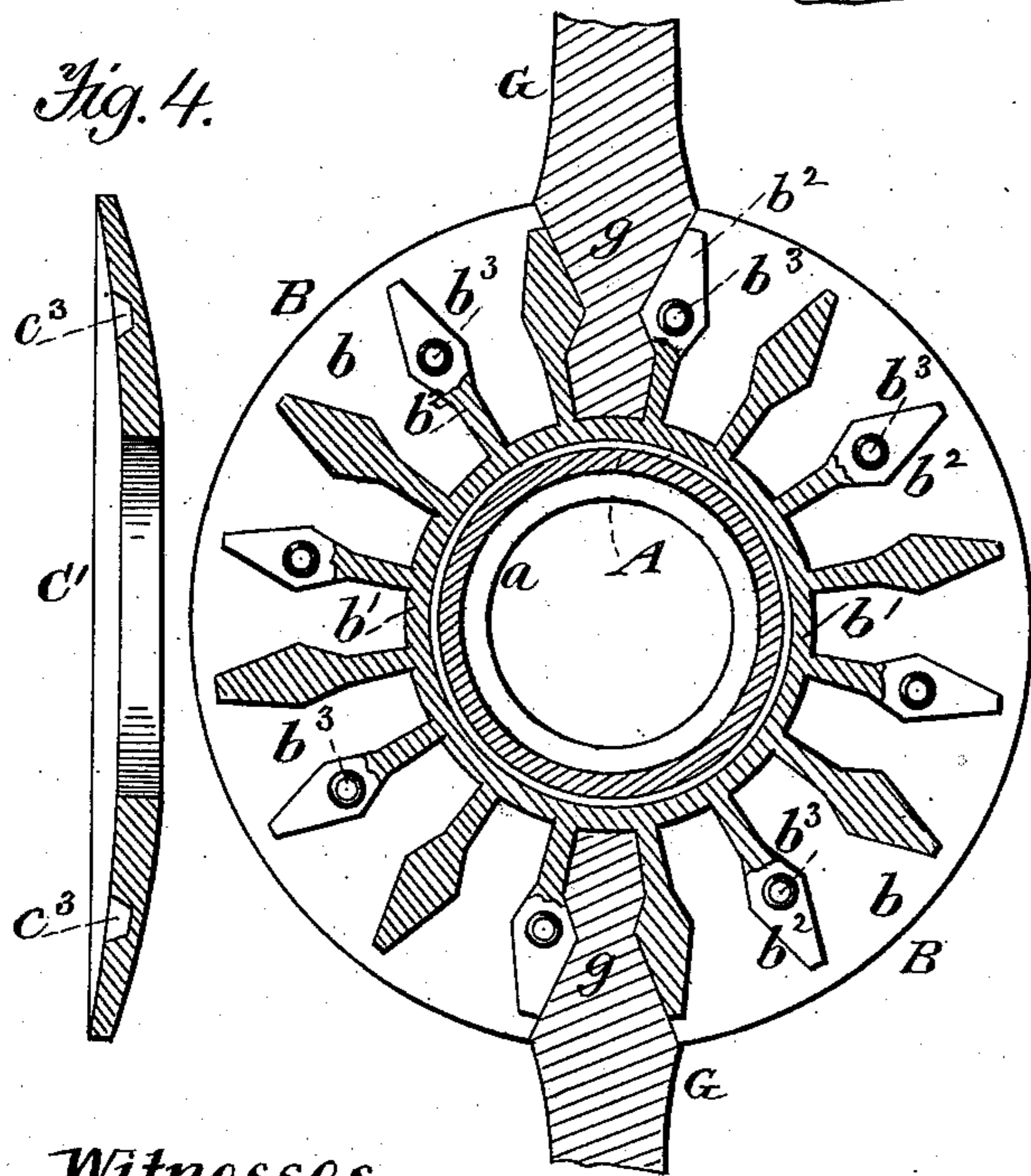


*Fig. 2.*

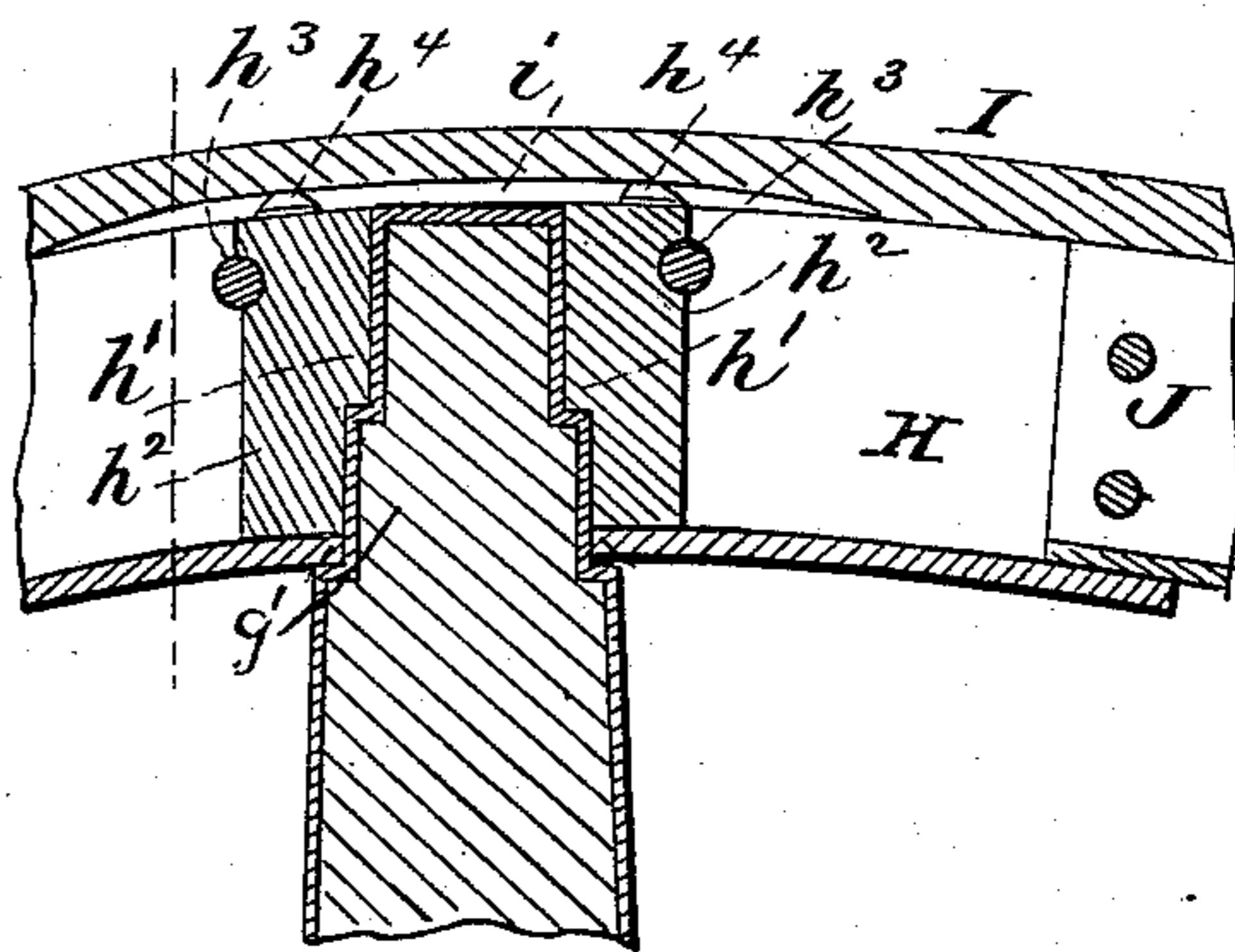


*Fig. 3.*

*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

THOMAS A. DAVISON, OF KELLERVILLE, ILLINOIS.

## WHEEL.

SPECIFICATION forming part of Letters Patent No. 372,129, dated October 25, 1887.

Application filed February 12, 1887. Serial No. 227,423. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS A. DAVISON, a citizen of the United States, residing at Kellerville, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Vehicle-Wheels; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

Figure 1 is a central longitudinal section of the hub of my improved wheel. Fig. 2 is a transverse vertical section of same. Figs. 3 and 4 are detail views, respectively, of felly-section and removable flange. Fig. 5 illustrates, in section, the tire, felly, and spoke.

In the drawings, A designates the main part of the hub, which has internal threads at each end, into which are screwed the tubular bearings *a*, leaving an annular space between said bearings for lubricating matter. On the outside of the hub A are formed right and left screw-threads *a'* and *a''*, on which are screwed, respectively, from opposite directions, the tubular threaded spoke socket holder B and the spoke-clamp C, a removable flange, C', intervening and being in position to be pressed by the clamp C to the socket-holder and spokes. The holder B and clamp C are secured from becoming unscrewed by burr or drill pointed set-screws *d''*, passed through the tubular parts of said holder and clamp, as shown.

E indicates wrench-grips, one being near each end of the hub.

F is an annular space on the hub where the screw-threads *a'* and *a''* are cut away or omitted, the purpose of this being to allow a limited adjustment in either direction of the parts B and C on the hub to change the tread or correct mistracking of the wheel. The partitions of the spoke-sockets are made integral with the flange *b* and ring *b'* of holder B, and each alternate partition *b''* is provided on its end with a circular tapering stud, *b'''*, which fits a corresponding socket, *c''*, in the movable

flange C'. The spoke-clamp C, having flange *d* and wrench-grip *d'*, is screwed against the movable flange C', closing it against the spoke-tenons and holding them firmly.

G indicates the spokes, each having the hub-end tenon *g*, conforming to the floor of the socket on which it rests and slightly tapered at the end, and thence provided with the opposite angular concavities to fit a correspondingly-shaped socket, into which the tenon *g* is driven edgewise. The sockets which receive tenons *g* are narrowed and become somewhat shallower from their open to their closed ends, the tenons corresponding in form. On the edge of the tenon, which is pressed by the movable flange C', is a projection or half-dovetail, which serves to secure the tenon in the socket.

On the outer end of the spoke G is formed a double tenon, *g'*, cylindrical in section, the outward part being less in diameter than the other part. On this end of the spoke is placed a flexible or elastic cap-ferrule, in order to make a tight joint, or a metallic ferrule may be used, which will serve to strengthen the end of the spoke.

The felly-sections H of the wheel are constructed of metal, being hollow, angular at the bottom, and open at the top, where they are covered by the tire I. The sides of the felly, extending at right angles from the tire, are parallel about one-third of the depth of the felly, so that the sides will not be liable to be spread apart by pressure against their outer edges. In the angular trough of each felly-section are formed the tubular parts *h*, to receive and hold the larger part of the tenon *g'*, the outer end of the spoke being further secured by a box, *h'*. The said box is placed within the felly to receive the tenon *g'*, fitting about the tenon and extending therefrom a suitable distance in each direction, as shown. It is usually secured in place by means of counter-sunk cross rivets *h''*, setting in grooves in the ends *h''* of the box; but it may be secured by welding it in the felly. The box *h'* conforms to the angular shape of the felly-section fitting therein, and is provided with the angular studs *h'''*, which fit in an angular groove, *i*, in the under side of the tire I. Thus, as will be seen, the spoke is firmly secured at its outer end by the tubular formations *h* on the felly, fitting

the larger part of the double tenon  $g'$ , and the box  $h'$ , fitting about the tenon and secured within the felly by cross-rivets or by welding, as above stated. The angular studs  $h^4$ , extending into groove  $i$ , also assist in securing the tire.

The felly-sections have their adjoining ends fastened together by means of splices J, placed within the fellies and having their angular form, being constructed to fit therein and fastened by cross-rivets to the ends of the fellies.

The ends of the hub are formed to receive, respectively, the shoulder of the spindle and the axle-nut, and for the purpose of adapting the hub to shoulders and nuts of different sizes extension-bands K are provided, such bands being threaded a suitable distance on the inside to be screwed on the ends of the hub.

The wheel constructed as described combines strength, durability, facility of repair, and economy in cost, the parts being well secured and protected. A broken spoke may be readily removed and a new one substituted without drawing a bolt or breaking a joint, and the wheel may be taken apart and put together without difficulty by an ordinary laborer. The tire will scarcely ever need resetting, and the tread of the wheel may be changed and any mistracking readily corrected. The fellies, being of metal and angular in form, readily shed the mud and dirt, and the fellies and tire may be made much narrower than those in general use, and will not bind in ordinary wheel ruts or tracks. The tire, being shrunk on the fellies, is very durable, and no bolt-fastenings are used about the wheel.

I claim—

1. In a vehicle-wheel, in combination with the main part A of the hub, provided with right and left screw-threads  $a'$   $a^2$  and central annular space, F, a tubular threaded spoke-socket holder, a removable flange, and threaded spoke clamp C, substantially as and for the purposes described.

2. In combination with the hub A, the socket-holder B, constructed with partitions forming angular sockets which are gradually narrowed from their open to their closed ends, some of said partitions being provided with the studs  $b^3$ , removable flange C', provided with sockets  $c^3$ , and spoke clamp C, substantially as set forth and described.

3. The hollow felly-sections open at the top and having the angular inward form, provided with the tubular parts  $h$ , in combination with the spokes, each having the double tenon  $g'$ , the larger part of which fits in the part  $h$  of the felly, the box  $h'$ , fitting within the felly and about the said tenon, and a tire covering the open fellies, substantially as set forth and described.

4. In combination with the fellies H, boxes fitting therein and receiving the outer ends of the spokes, said boxes being provided with studs projecting from their outer surfaces, and a tire grooved in its underside to receive said studs, substantially as set forth, for the purpose specified.

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

THOMAS A. DAVISON.

Witnesses:

A. G. McCRAY,  
CLARK REAUGH.