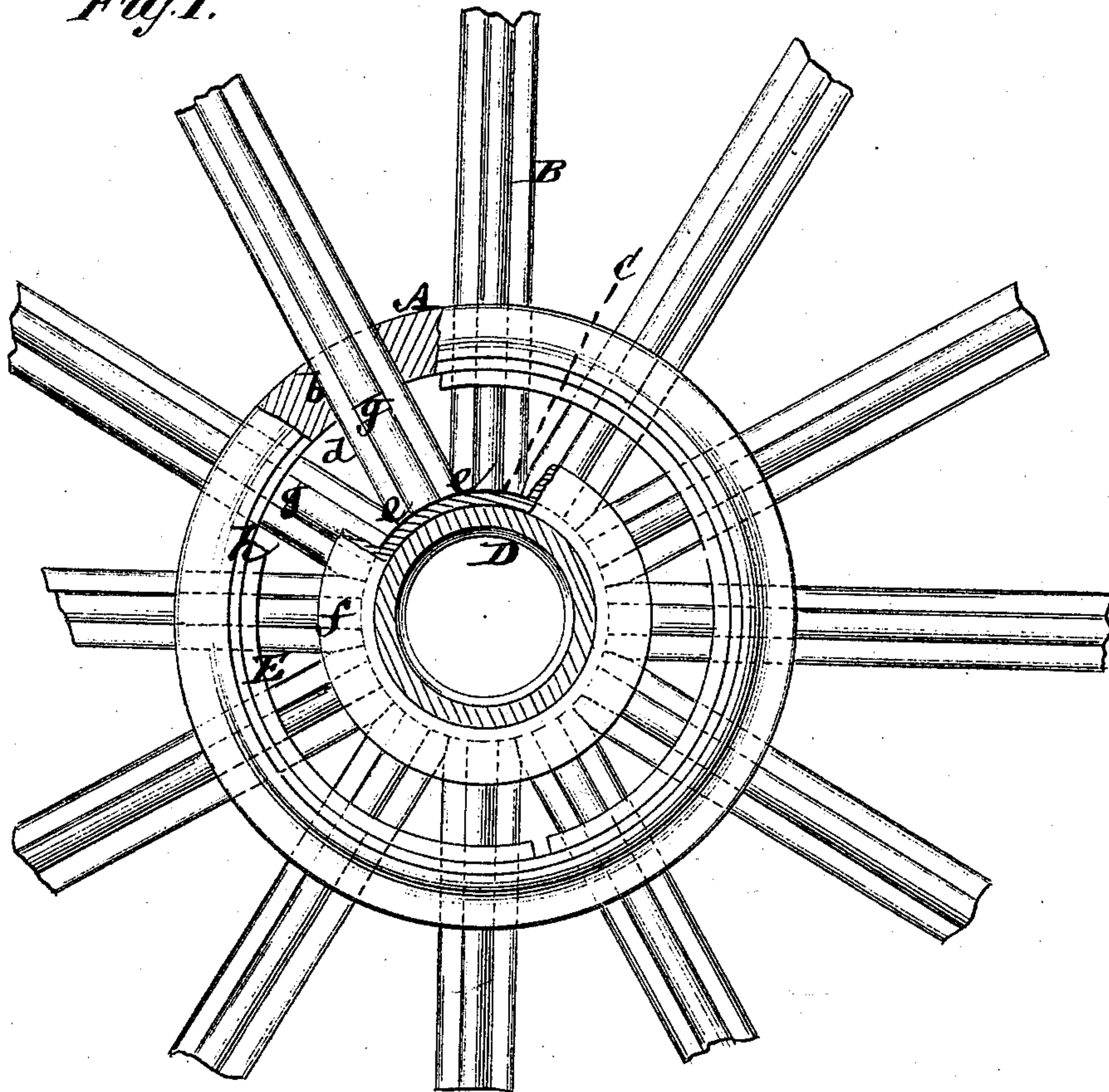


R. W. DAVIS.  
WHEEL-HUB.

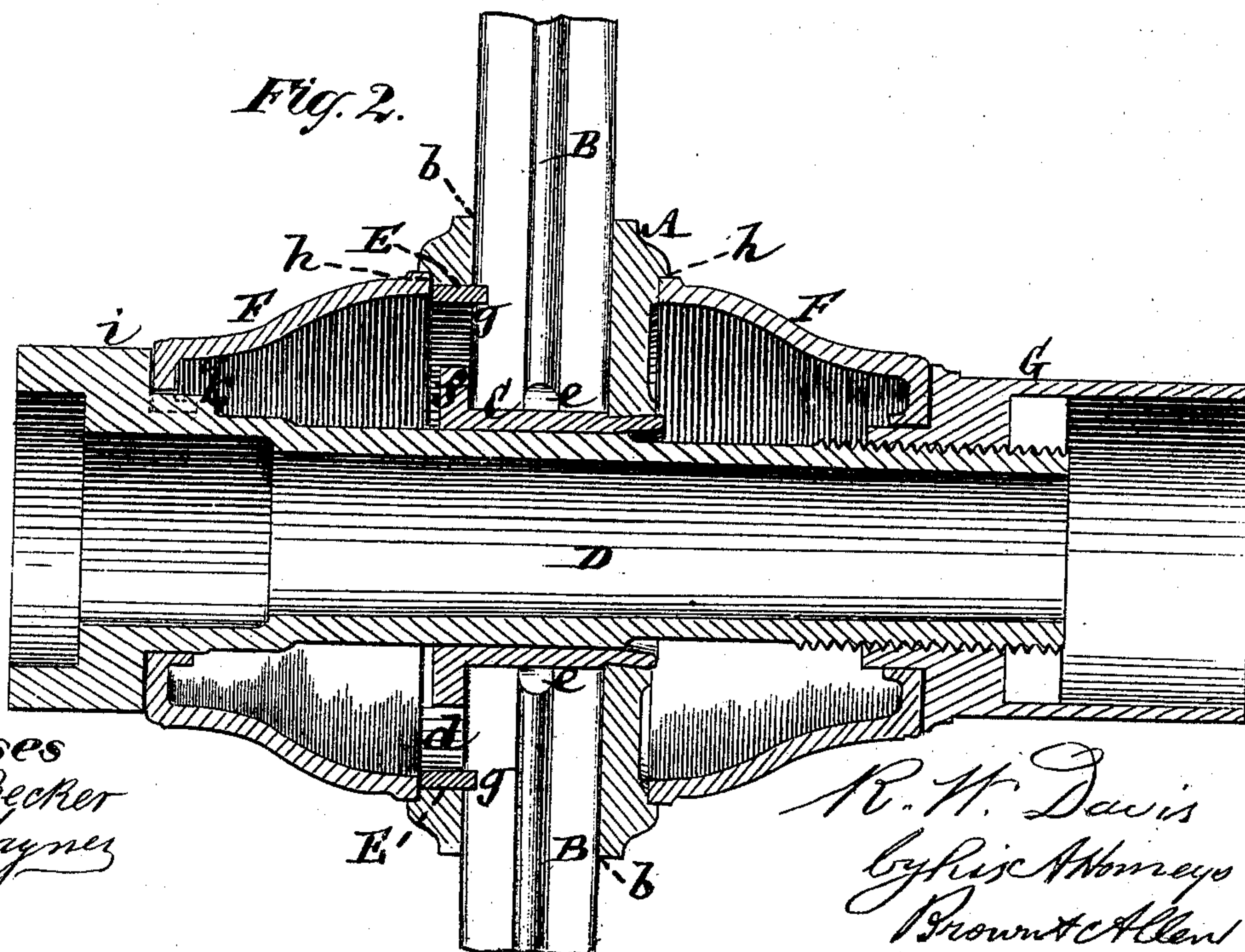
No. 170,996.

Patented Dec. 14. 1875.

*Fig. 1.*



*Fig. 2.*



Witnesses  
John Becker  
Fred Hayner

R. W. Davis  
Cyprus Monroes  
Brown & Allen



# UNITED STATES PATENT OFFICE.

ROBERT W. DAVIS, OF FLUSHING, NEW YORK, ASSIGNOR TO THE DAVIS  
METALLIC-WHEEL-MANUFACTURING COMPANY, OF NEW YORK CITY.

## IMPROVEMENT IN WHEEL-HUBS.

Specification forming part of Letters Patent No. **170,996**, dated December 14, 1875; application filed  
April 26, 1875.

*To all whom it may concern:*

Be it known that I, ROBERT WINSLOW DAVIS, of Flushing, in the county of Queens and State of New York, have invented certain new and useful Improvements in Wheel-Hubs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to the hubs of wheels for wagons and carriages of various descriptions, for the transportation both of persons and merchandise, including gun-carriages. The objects of the invention are neatness, lightness, and strength, together with a secure retention of the spokes and facility of putting together and taking apart the hub.

To these ends the invention consists in certain combinations of parts making up a metallic hub, including a metal bushing entered through the one side of the center-piece or spoke-receiving portion of the hub, and serving to support the spokes, which are made of metal and enter mortises in the center-piece, said bushing also receiving the axle-box through it. The one side of said center-piece, through which said bushing is introduced, is made open or cut away, and a ring which operates as an annular key introduced within such cut-away portion outside of or around and beyond the bushing, and made to enter notches in the spokes for the purpose of locking the latter in place. This spoke-locking ring or key it is preferred to divide and make elastic. The outer portions of the hub are composed of two independent shells or hollow metal sections on opposite sides of the center-piece of the hub, and which serve to hold the axle-box in position and to give shape to the hub, likewise to retain the ring which locks the spokes in position. These shells or sections are held up to their places by the axle-box and a screw cap or nut thereon.

Figure 1 represents a partly-broken end view of a wheel-hub, with the back or inner shell portion of the latter removed, the axle-box in section, and the spokes as inserted and secured in the hub. Fig. 2 is a longitudinal section of the hub and axle-box, together with the spokes in position within the hub.

A in the accompanying drawing represents the center-piece or spoke-receiving portion of the hub, which is of metal, and has radial mortises *b* in it for reception of the spokes B. Said spokes it is preferred to make of steel rolled to form ribs at right angles to each other throughout the length of the spokes, giving to the latter a cross-shape in their transverse section, and the mortises *b* in the center-piece A which the spokes fit are of corresponding configuration. These spokes butt at their inner ends against a flanged metal bushing, C, which is introduced through an enlarged opening or cut-away portion, *d*, in the inner side of the center-piece A, the entering end of said bushing being formed with a shoulder, which rests against the inner face of the opposite side of the center-piece A, and being expanded or spread outward within or on the outside of said side of the center-piece to hold the bushing in place. The outer side of the center-piece A, through which the bushing C projects, serves to support the spokes laterally on their one side, while the flange or head *f* of the bushing supports them on their opposite side. Furthermore, the spokes B are chamfered or beveled at their meeting edges around the bushing, as at *e*, for the purpose of making them support or steady one another. This bushing C receives the axle-box D in a tightly-fitting manner through it. E is a ring or annular key, which may be either in one or several pieces, and is made to snugly fit or spring within the inner circumferential portion of the enlarged opening *d* in the inner side of the center-piece A, outside of the flanged bushing C. This key or ring enters notches *g* in the adjacent edges of the spokes, to lock or hold the latter in position longitudinally. F F are the shells or hollow metal sections which form the outer or end portions of the hub or body thereof. These sections are arranged to enter annular recesses *h h* in the sides of the center-piece A, and so that the back, or inner one of them, bears against the outer edge of the ring E, to hold said ring or key in place. Said back or inner one of these hollow metal sections F is supported at its outer end by a flange, *i*, on the inner-end portion of the axle-box, and fits

a spline, *k*, which prevents the axle-box from turning except in common with the hub and wheel. The other or front hollow metal section or shell *F* rests against and is carried by a screw cap or nut, *G*, which screws onto the outer end of the axle-box, and is extended to form also a shield for the axle-nut, the same serving, by screwing it up, to tighten up the shells which hold the axle-box in position and give shape to the hub.

I claim—

1. The combination of an axle-box, *D*, the bushing *C* applied thereto, the spoke-receiving

or center-piece portion *A*, having an enlarged opening, *d*, in one of its sides, and a ring, *E*, adapted to said opening, for holding the spokes in place, substantially as described.

2. The combination of the metallic shells *F*, the center-piece *A*, having an enlarged opening, *d*, the ring *E*, spokes *B*, having notches *g*, and the screw-cap *G*, all substantially as and for the purpose described.

R. W. DAVIS.

Witnesses:

BENJAMIN W. HOFFMAN,  
FRED. HAYNES.