

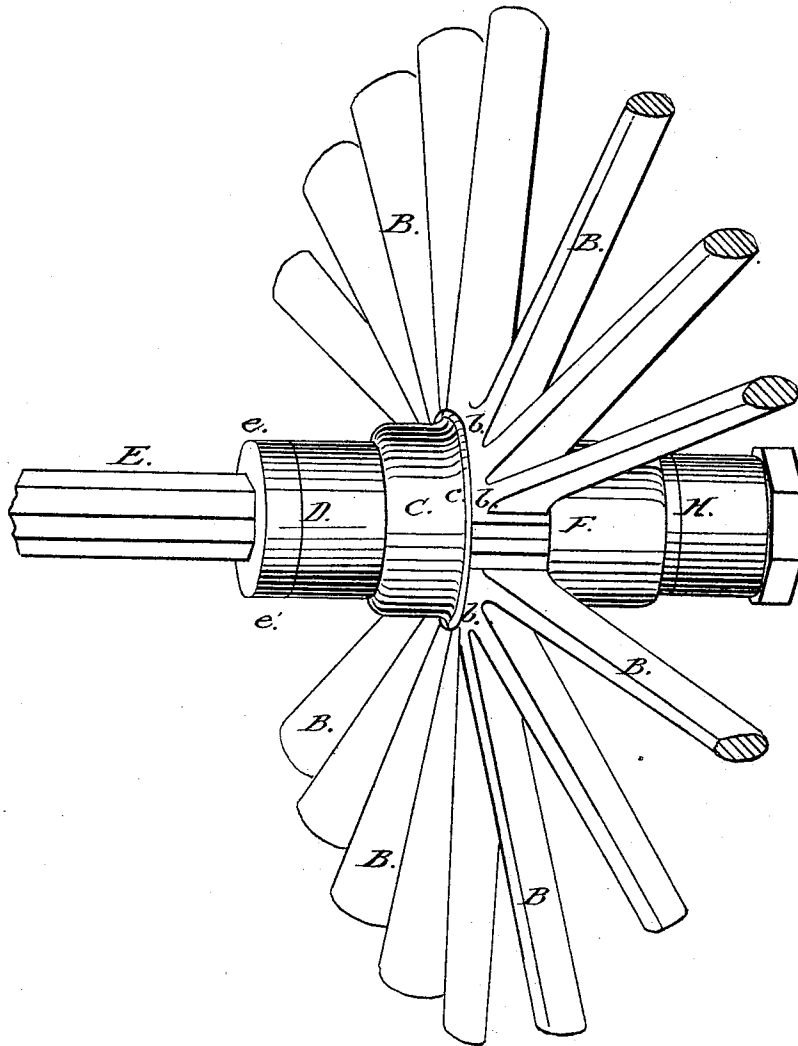
J. L. ROBERTS.

Improvement in Wheels for Vehicles.

No. 129,593.

Patented July 16, 1872.

Fig. 1.



Witnesses  
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*Anna S. Merrill*

Inventor  
*Jno. L. Roberts, by*  
*Grindle and Lee, his Attys*

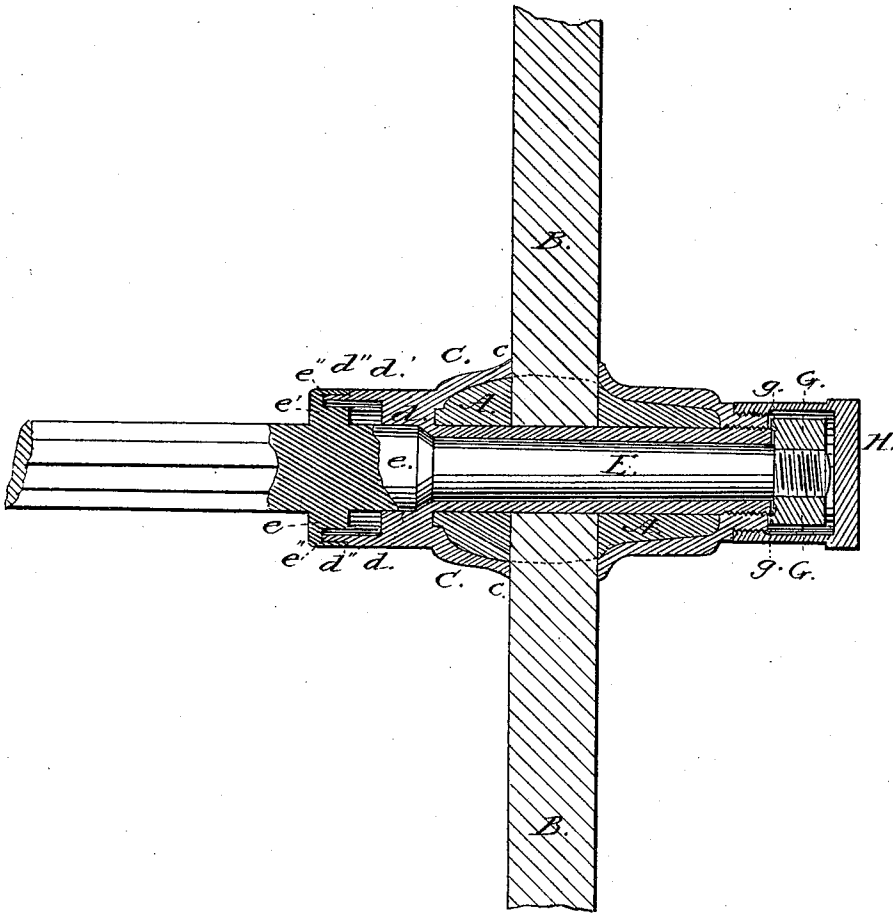
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Fig. 2.



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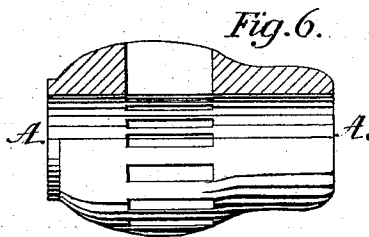
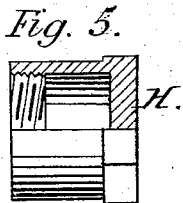
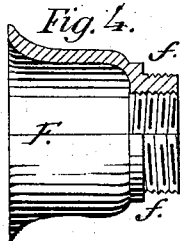
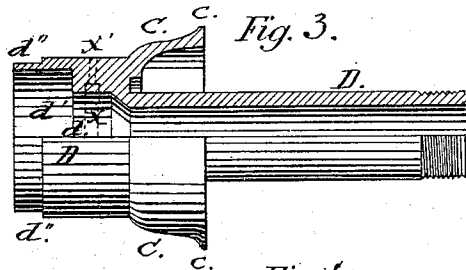
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# UNITED STATES PATENT OFFICE.

JOHN L. ROBERTS, OF WAVERLY, IOWA.

## IMPROVEMENT IN WHEELS FOR VEHICLES.

Specification forming part of Letters Patent No. 129,593, dated July 16, 1872.

*To all whom it may concern:*

Be it known that I, JOHN L. ROBERTS, of Waverly, in the county of Bremer and in the State of Iowa, have invented certain new and useful Improvements in Carriage-Wheels; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a perspective view of the central portion of a wheel with one of the spokes removed. Fig. 2 is a central longitudinal section of the hub. Fig. 3 is a side elevation and a partial section of the box and rear flange combined. Figs. 4 and 5 are, respectively, like views of the outer flange or collar and of the cap; and Fig. 6 is a similar view of the wooden center.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention is to produce a wheel-hub in which metal and wood are so combined as to produce a minimum of size and weight and a maximum of strength; and it consists, principally, in the employment of a wooden central portion for receiving and containing the tenoned ends of the spokes, and suitable metal collars for inclosing said wooden center and supporting the edges of said spokes, substantially as and for the purpose hereinafter specified. It consists, further, in the construction and combination of the collars, axle-box, axle-arm, and cap, substantially as and for the purpose hereinafter set forth.

In the annexed drawing, A represents the central portion of the hub, constructed of wood in the form shown and containing the tenoned ends of the spokes B, which spokes, outside of said part A, are provided with shoulders *b* that meet and form a continuous bearing. Fitted over the inner rounded end of the central part A is a collar, C, which conforms interiorly to the shape of said end, and is provided with a flange, *c*, that extends vertically upward from its inner end and embraces the edges of the spokes B. Attached to and forming a part of the collar C is an axle-box, D, which, at its inner end, is provided with two recesses, *d* and *d'*, that conform to and receive corresponding enlargements *e* and *e'* of the axle-arm E, while from

the rear end of the collar proper to the outer end of said box its walls are nearly parallel. At its inner end said box is reduced in thickness by cutting a groove, *d''*, within its periphery, and the portion thus reduced fits into a corresponding concentric groove, *e''*, which is formed within the enlargement *e'* of the axle-arm, the object sought by such construction being the exclusion of dirt or dust from the bearing-surfaces. A screw-thread cut upon the exterior surface of the cylindrical portion of the box completes the same, which is then screwed through a suitable opening in the wooden part A, until the collar C has a firm bearing upon the exterior portion and inner end of the latter. Upon the outer end of the wooden part A is placed a second collar, F, which, in exterior size and shape, conforms to the like features of the collar C, and is provided with a neck, *f*, that interiorly conforms to the size of the exterior of the box E, and is provided with a screw-thread that engages with the thread cut upon said box, so that by turning said collar in the right direction it will be caused to embrace said part A and the edges of the spokes B, and closely confine said parts between itself and the collar C. The end of the box D extends slightly beyond the neck *f* of the collar F, and over the projection thus formed is fitted an annular flange, *g*, which forms a part of and extends inward from the nut G that screws upon the threaded end of the axle-arm, and holds the latter in position within said box, such arrangement of parts forming a joint that is practically dust-tight. A cap, H, fitted over the nut G and screwing upon the threaded exterior of the neck *f* of the collar F, completes the device, which, as a whole, embodies all of the better features of both wooden and metallic hubs, and produces an article that for strength, durability, and appearance, fully equals any similar device constructed wholly of or from one of the materials named.

It is designed to cut a groove, *x*, within the recess *d* of the box, and by means of a suitable opening, *x'*, introduce oil into said groove for the purpose of lubricating the wheel.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In combination with the wooden center

A and spokes B, the collars C and F, when said parts are constructed substantially as and for the purpose specified.

2. The collars C and F, axle-box D, axle-arm E, nut G, and cap H, when said parts are constructed and combined substantially as and for the purpose shown.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of June, 1872.

J. L. ROBERTS.

Witnesses:

GEO. S. PRINDLE,  
EDM. F. BROWN.