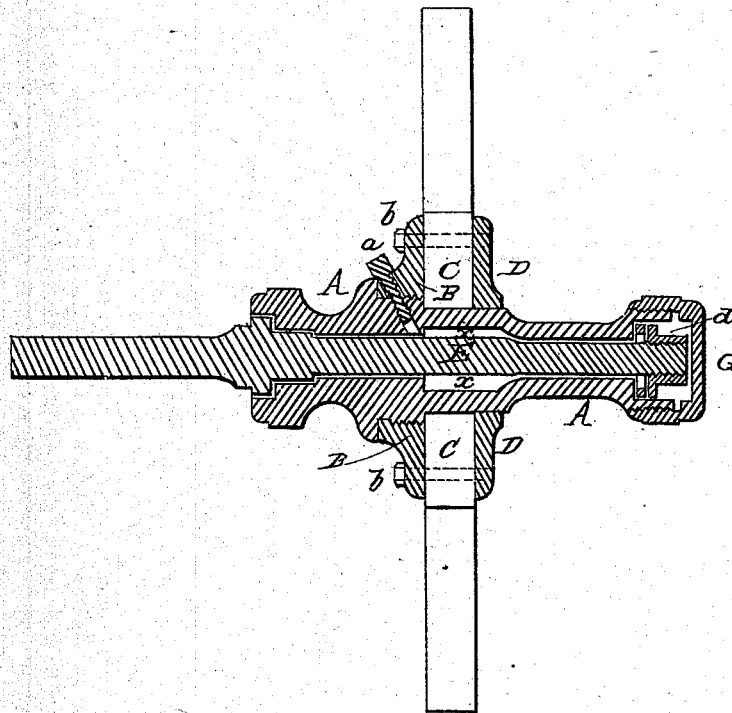


J. H. HARPER.  
Metallic Hub.

No 112,452.

Patented March 7, 1871.



Witnesses  
Jas. O. Hutchinson  
C. L. Everb

Inventor  
John H. Harper  
per Alexander Mason  
attys

# UNITED STATES PATENT OFFICE.

JOHN H. HARPER, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN METALLIC HUBS.

Specification forming part of Letters Patent No. **112,452**, dated March 7, 1871.

*To all whom it may concern:*

Be it known that I, JOHN H. HARPER, of Pittsburg, in the county of Allegheny, and in the State of Pennsylvania, have invented certain new and useful Improvements in Metallic Hubs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a metallic hub, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which represents a longitudinal vertical section of my improved metallic hub.

A represents the box, which is screwed into the back flange, B, and, if necessary or desired, the said flange and box are connected or secured together by a set-screw, *a*. The spokes C C are held between the back flange, B, and the front flange, D, and are secured firmly by bolts or rivets *b b*, which pass through said flanges between the spokes, or, rather, one-half of the bolt is in each of the two adjoining spokes. The spindle E passes through the box A, and is at its outer end provided with a nut, *d*, which is partially within an enlargement at the outer end of the box. This outer end of the box is closed by a cap, G, as shown.

Within the box A, immediately under the spokes and outer flange, is formed an oil-chamber, *f*, as shown.

The main difficulty with iron hubs has been in the box cutting or wearing out, when the wheel was rendered worthless, as there was no way of getting in a new box. My box is screwed into the back flange, so that if it cuts out it can be taken out and another put in without injury to the wheel. These boxes are made to screw right and left, so that in running they will tighten.

For safety I may use the set-screw *a*, although this is not absolutely necessary. The hole through which this screw is inserted passes clear through into the bore of the box, so that the wheel may be greased without removing the wheel from the spindle. The cap on the end prevents the escape of the grease.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In combination with the spindle E, the box A, with oil-chamber *f*, screw-flange B, with oil-passage and screw *a*, the spokes C C, flange D, and bolts *b b*, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of January, 1871.

JOHN H. HARPER.

Witnesses:

JOHN G. BRYANT,  
J. R. DOUGLASS.