

J. W. FORD.

Improvement in Wheels for Vehicles.

No. 128,870.

Patented July 9, 1872.

Fig. 2.

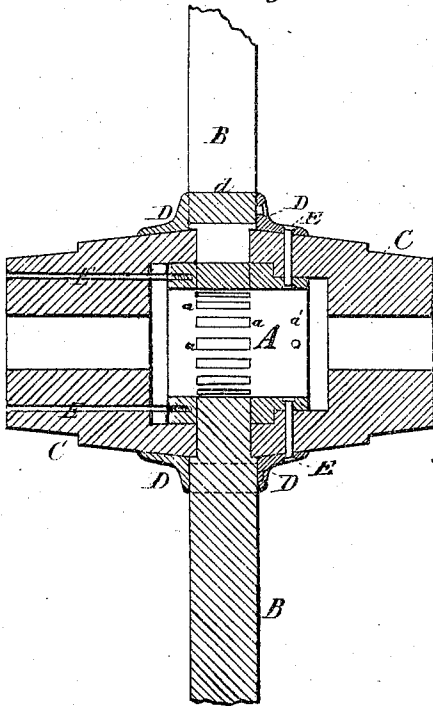


Fig. 1.

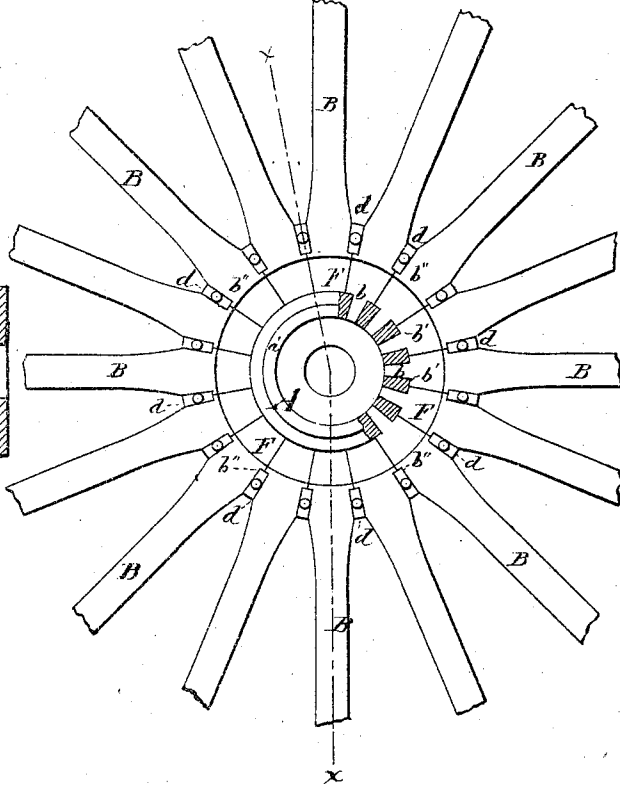


Fig. 3.

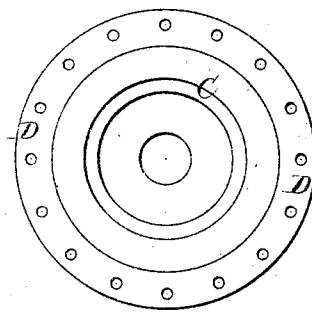
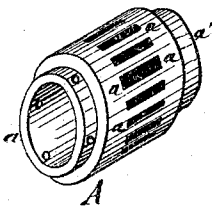


Fig. 4.



Witnesses.
Chas. C. Cook.
John R. Young

Inventor.
Jas. W. Ford, by
Orinole and Co. his Attys.

UNITED STATES PATENT OFFICE.

JOHN W. FORD, OF TIPPECANOE CITY, OHIO.

IMPROVEMENT IN WHEELS FOR VEHICLES.

Specification forming part of Letters Patent No. 128,870, dated July 9, 1872.

To all whom it may concern:

Be it known that I, JOHN W. FORD, of Tippecanoe City, in the county of Miami and in the State of Ohio, 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 side elevation of the central portion of my wheel, with the wooden section and metallic collar removed, and a portion of one end of the central metallic section broken away. Fig. 2 is a central section of the hub complete on line *x x* of Fig. 1. Fig. 3 is an elevation of the inner end of the wooden section of the hub, showing the metallic collar in place; and Fig. 4 is a perspective view of the central metallic section of the hub.

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

My invention has for its object the production of a wheel in which the hub possesses a maximum of strength and minimum of size and weight; and it consists principally in the employment of a central metallic section for receiving the tenoned ends of the spokes when said section is combined with wooden end sections and separate metallic collars, substantially as and for the purpose hereinafter specified. It consists, further, in combining the inner ends of the wooden sections of the hub with the contiguous portions of the spokes, substantially as and for the purpose hereinafter shown. It consists, finally, in insuring the longitudinal position of the spokes within the hub by means of suitable transverse metal lugs attached to and extending between the metallic collars and between the diverging sides of said spokes, and bearing against suitable shoulders formed within said sides, substantially as and for the purpose hereinafter shown and described.

In the annexed drawing, A represents the central section of the hub, constructed of metal in the form shown, its length being slightly greater than the width of the spokes, while its diameter is preferably about two-thirds the diameter of the external portions of the hub. Extending radially inward through the wall of the section A, and at equidistant points

around its periphery, is a series of mortises, *a*, which have parallel sides and ends, and receive the tenoned ends *b* of the spokes B, said tenons being somewhat smaller transversely than said spokes, so as to leave upon each side a shoulder, *b'*, which conforms to and rests upon the periphery of said section. The spokes B being fitted to or within the metal section A, with their contiguous faces formed upon radial lines so as to furnish a bearing and support for each other, the end sections C, constructed of wood in the form shown, are placed against the ends of said section A and the edges of said spokes, and the whole firmly united by means of two metal collars, D, which, having a slightly tapering interior, are pressed over said sections C until their inner vertical faces bear against the edges of said spokes, after which rivets or other suitable means are employed for connecting said collars together. Additional security is afforded by means of suitable pins or bolts E, which may either pass radially inward through the horizontal portion of the collars D, through the inner end of the wooden section C, and through a cylindrical projection, *a'*, formed upon and extending outward from the end of the metal section A; or said pins or bolts may pass horizontally and longitudinally inward through said wooden section and have their ends secured within the square end of said metallic section. In order that a greater bearing may be secured between the inner ends of the wooden sections and the spokes, the edges of the latter are provided with a recess, F, which receives and contains the end of said section, the shoulder of said recess bearing upon the periphery of the latter, and serving, also, to prevent the same from splitting. Another advantage obtained by this construction is, that it gives increased length to the inner end of the wooden section and enables the employment of radial bolts or pins E without as great liability to splitting, as would otherwise be the case. It being desirable that the spokes should be firmly held within the hub and prevented from accidental removal therefrom, a lug, *d*, having a rectangular form in transverse section, is secured to and extends between the collars D, at or near their outer edges, and fits into a corresponding recess which is formed partly in the con-

tiguous faces of two spokes, the lower portion of said recess forming a shoulder, *b''*, which bears against the lower side of said lug.

As thus constructed, it will be seen that as each spoke, by means of a shoulder upon each side, has a bearing upon two lugs, the accidental displacement of said spoke by the breakage of said lugs or by the splitting off of said shoulders is very improbable. The device shown possesses all the advantages of a metal hub in that the inner ends of the spokes are more firmly supported than would be possible if they were fitted into wood, while by the employment of the wooden end sections, which have bearings against the edges of the spokes, all the advantages obtained by the use of a wooden hub are secured.

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

1. A central mortised section, A, constructed of metal, and combined with the spokes B, wooden sections C, and metal collars D, substantially as and for the purpose specified.

2. In combination with the section C, the spokes B, provided upon their edges with a recess, F, which receives and contains the end of said section, substantially as and for the purpose shown.

3. In combination with the spokes B, provided with the shoulders *b''* and with the collars D, the lugs *d*, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 17th day of June, 1872.

JOHN W. FORD.

Witnesses:

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