(No Model.)

E. M. BENSTER.

WHEEL.

No. 399,475. Patented Mar. 12, 1889.

FIG. 1.

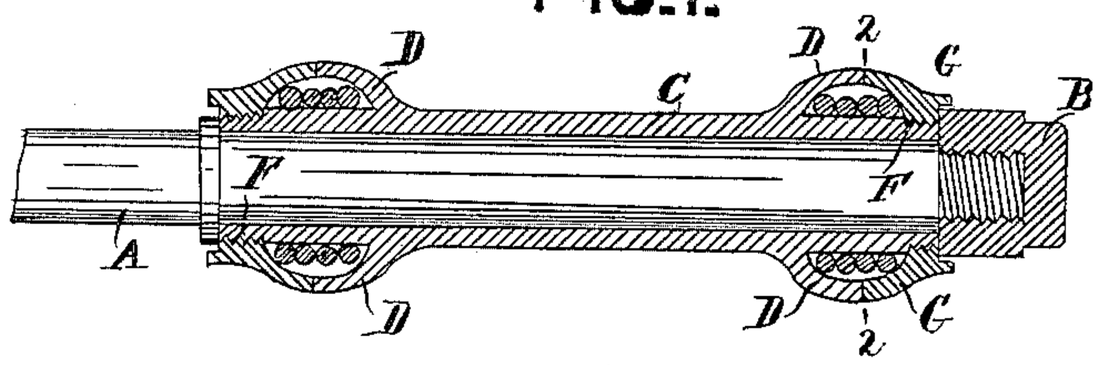


FIG. 2.

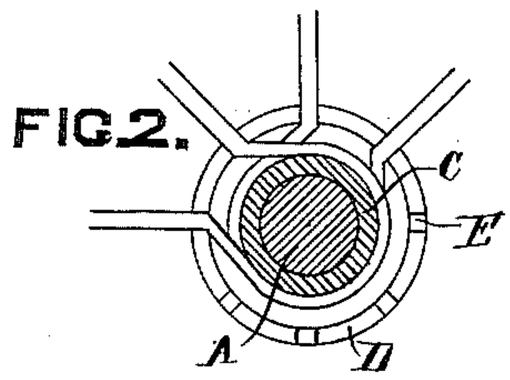


FIG. 3.

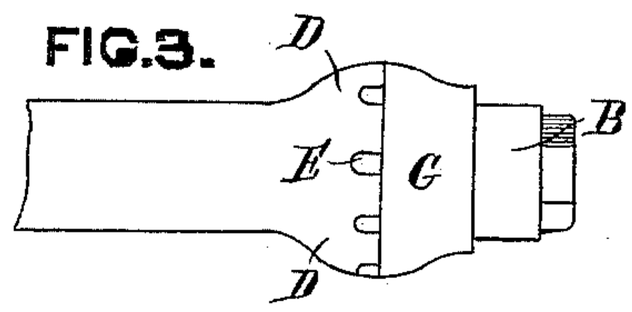
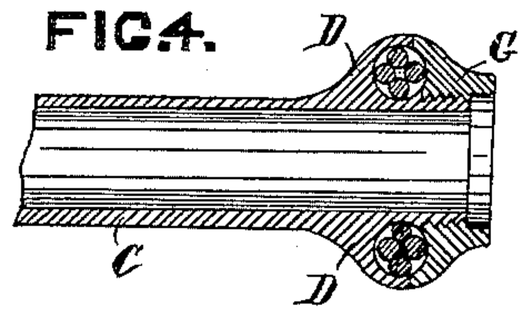


FIG. 4.



WITNESSES_

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WHEEL.

SPECIFICATION forming part of Letters Patent No. 399,475, dated March 12, 1889.

Application filed September 10, 1888. Serial No. 285,043. (No model.)

To all whom it may concern:

Be it known that I, EMORY M. BENSTER, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Metal Wheels; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 of reference marked thereon, which form part of this specification.

My invention relates to metal wheels for bicycles, tricycles, children's carriages, and has particular reference to the construction of the hub and to the means for securing the spokes therein.

My invention consists in the peculiar and novel features of construction and in arrangement of parts, hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a central longitudinal section of a vehicle-hub constructed in accordance with my invention. Fig. 2 is a transverse section of the same on the lines 2 2 of Figs. 1 and 3. Fig. 3 is a side elevation of one end of the hub. Fig. 4 is a central longitudinal section of one end of the hub adapted to a modified arrangement of the spokes.

In the said drawings, A in Fig. 1 designates one end of the axle of a child's carriage or other similar vehicle, and B designates the nut, which is screwed upon the outer end of the axle either in the manner shown or in any other suitable or preferred manner to retain the hub in proper position upon the spindle of the axle.

C designates the hub, which is preferably of elongated cylindrical form, as shown in Fig. 1. Near each end this hub is formed with an integral portion, D, which extends laterally from the body of the hub for a short distance, and is then curved so as to lie parallel with the outer surface of the hub, this outer parallel part of extension D being concentric with the outer surface of the hub. The outer extremities of extension D are formed with a number of recesses, E, corresponding to the number of spokes with which the wheel is provided.

The ends of the hub C are exteriorly screw-threaded, as shown at F, to receive caps G, which retain the spokes in position upon the hub, as hereinafter explained. Each of these caps is similar in general contour to the corresponding extension, D, and its inner portion, which surrounds the end of the hub, is screw-threaded to work upon the threaded end of the hub, as shown in Figs. 1 and 4. It will thus be seen that the extensions D and caps G form annular chambers to receive the inner portions of the spokes and permit them to be wrapped around the ends of the hub, thus greatly increasing the strength of the wheel.

As shown in Fig. 2, a single strand of wire is passed into one of the recesses E, then carried partially around the end of the hub, and passed out through the next recess E, so that each strand forms two spokes, as in suspension-wheels. After the spokes have thus been placed in position the caps G are screwed into position and retain the spokes in place.

In Fig. 4 the outer portions of extension D and caps G are shown as of less length than in Fig. 1, so as to permit the strands which form the spokes to be twisted upon each other around the ends of the hub, and thus render the wheel stronger and more compact than in the form previously described.

From the above description it will be seen that I have produced a strong and durable form of hub, which is suitable for the wheels of bicycles, tricycles, children's carriages, or other similar vehicles, and which facilitates the construction of the wheel, as above explained.

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

In a metal wheel, a hub having an annular chamber upon each end thereof, formed of an integral concentric portion having re-

cesses upon the outer edge, and correspondingly formed caps having coincident recesses, in combination with return-spokes partially embracing the body portion of the hub and passed through the recesses, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

EMORY M. BENSTER.

Witnesses:
WILLIAM WEBSTER.
CARROLL J. WEBSTER.