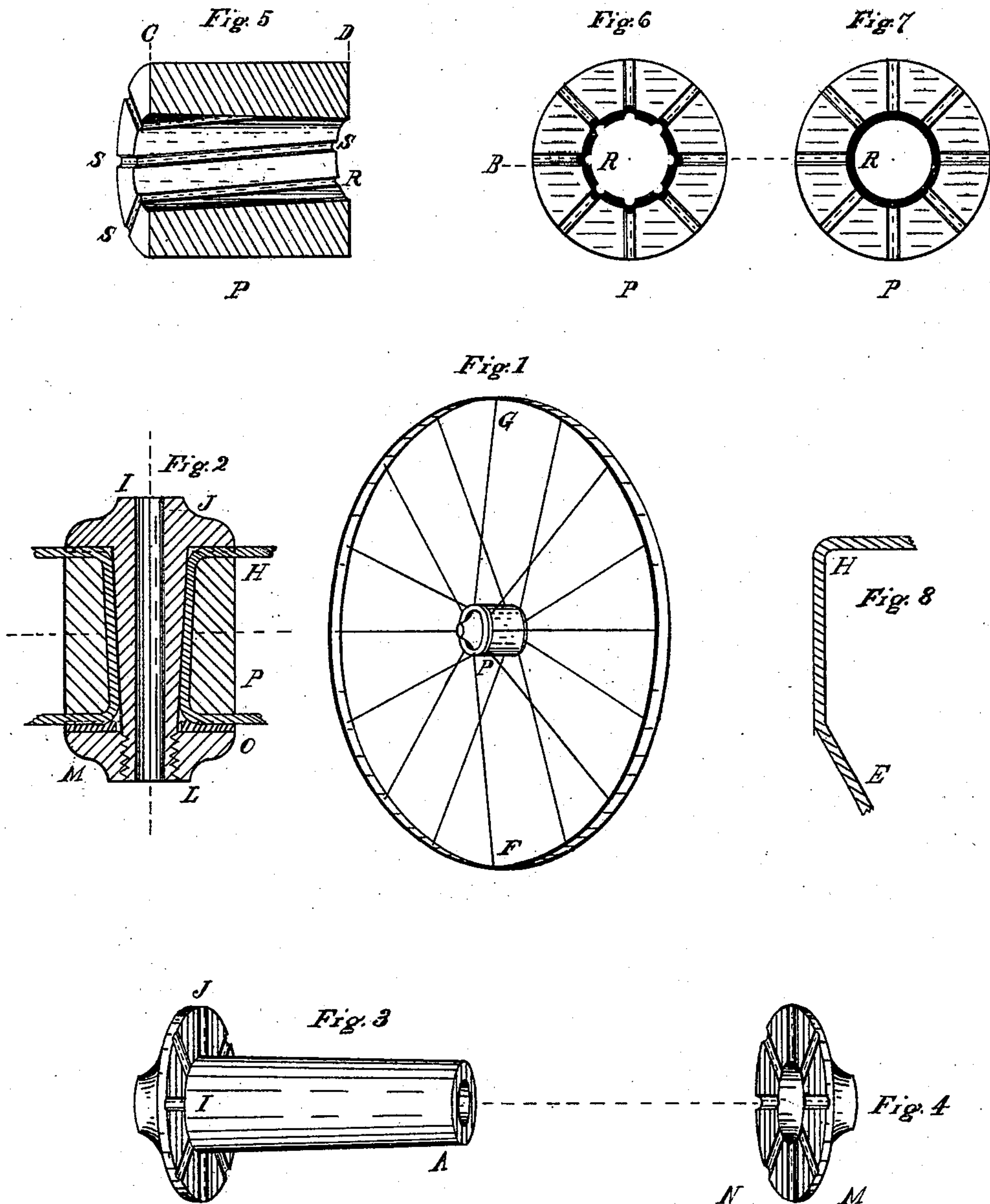


(No Model.)

A. L. H. MESSMER.
VEHICLE WHEEL.

No. 352,832.

Patented Nov. 16, 1886.



Witnesses

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VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 352,832, dated November 16, 1886.

Application filed March 19, 1886. Serial No. 195,855. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER LUDWIG HEINRICH MESSMER, a citizen of Germany, of the Province of Schleswig-Holstein, and city of Flensburg, and residing at Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Wheel-Hub, of which the following is a specification.

My invention relates to improvements in that class of wheels which have their spokes made of wire or small bars of metal, and their rims of metal; and the novelty consists in the construction, combination, and arrangement of the parts of the hub, substantially as hereinafter fully set forth, and pointed out in the claims.

The object of my invention is the production of a cheap, durable, compact, and strong wheel, the parts of which are inexpensive, and can be made and put together mostly by inexperienced labor. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my wheel. Fig. 2 is a longitudinal section through the center of the hub, showing a portion of the spokes, but not the rim, of the wheel. Fig. 3 is a perspective view of the central shaft of the hub, having thereon, as a part of the same substance, one of the retaining-flanges. Fig. 4 is a perspective view of a loose flange, similar in form to the flange shown in Fig. 3, and is designed to slip over the end A of the shaft before named, and shown in Fig. 3. Fig. 5 is a perspective section of a clamping-sleeve, taken on line B, Fig. 6. Fig. 6 is an end view of a whole sleeve on line C, Fig. 5. Fig. 7 is an end view of a whole sleeve on line C, Fig. 5, but showing the tapered hole as not having the grooves, which are shown in Figs. 5 and 6. Fig. 8 is a sectional view of one of the spoke's wires, having one of its ends, E, bent open, for a purpose which will be hereinafter described.

Similar letters refer to similar parts throughout the several views.

In Fig. 1 is represented a wheel which embodies my invention, in which F is a metallic rim, having connected therewith the wire spokes G; which are secured to the said rim F by riveting or otherwise. Each of these

spokes G is made two in one piece, and bent in its center, as shown at H in Figs. 2 and 8, and is secured to the hub, as hereinafter shown.

Fig. 2 represents a longitudinal section of the hub, in which I is the central shaft, upon which the balance of the hub is secured. This shaft has the radially-grooved flange J formed upon and made a part of and of the same material as the said shaft. The said shaft I is preferably made tapering, as shown; but this is not essential to its success, as it would serve nearly as good a purpose if made in the form of a cylinder of uniform diameter.

In Fig. 4 is shown a loose separate flange, M, which is the same in size as the flange J, and is adapted to pass over the end A of the shaft I, Fig. 3, and be secured to the same by riveting or upsetting the end in a well-known manner, or by being threaded and screwed upon the shaft I, as shown at L in Fig. 2.

In Fig. 2 the flange M is minus the radial grooves N, (shown in Fig. 4,) and in Fig. 2 the radially-grooved washer O is substituted therefor. This becomes necessary in cases where the shaft I and the flange M are threaded for the purpose of being screwed together, instead of being riveted, as before described.

In Fig. 5 is shown a sleeve, P, having a tapered central hole. This hole may be longitudinally grooved, as shown at R in Figs. 5 and 6, or made without grooves, as shown at R in Fig. 7, without changing the nature of my invention; but I prefer the grooved construction shown in Figs. 5 and 6 as being somewhat firmer. This sleeve has also the end radial grooves shown at S S.

The shaft I, with its flange J, Fig. 3, and flange M, Fig. 4, and also the sleeve P, Figs. 2, 5, 6, and 7, may be made of cast metal, either hard or soft, or of any other suitable material and in keeping with the quality of the wheel to be made. The grooves R and S may be cast therein, or made by any mechanical process known in the arts of construction.

The several parts of this hub having been completed, as shown, the process of assembling them to form the wheel is as follows: The spokes having been made in pairs—that is, two in one piece, as before described—the end E, Fig. 8, is bent at an obtuse angle, and

passed through the central hole of the sleeve P, and when in like manner a sufficient number of spokes to complete the wheel are placed within the said sleeve P the said sleeve is
5 passed over the shaft I, and the ends E, Fig. 8, of the spokes are closed up to a right angle, as shown at H, Fig. 8. The flange M, Figs. 2 and 4, is then riveted upon the shaft I at A, Fig. 3, or secured upon the said shaft, as
10 shown at L in Fig. 2, by means of a screw-thread. The wheel is then completed by securing the spokes G to the rim F, by riveting or otherwise.

I am aware that prior to my invention metallic wheels of various constructions have
15 been made and used. Some of these have had their spokes made "two of one piece of metal," but were attached to their hubs in entirely different ways from mine. And, again,
20 most of such wheels have had metallic hubs, but differing very greatly from mine. I do not, therefore, claim such combinations, broadly; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In a metallic wheel having the rim F, spokes G, and shaft I, and its flanges J and M, the sleeve P, when used as a lock or fastening for the said spokes, when a continuation or a portion of the said spokes are bent to pass
30 longitudinally between the shaft I and the sleeve P, substantially as shown, and for the purpose described.

2. In a metallic wheel having the rim F, sleeve P, shaft I, and flanges J and M, the
35 spokes G, when clamped longitudinally between the shaft I and sleeve P, and vertically between the ends of the said sleeve and the flanges J and M, substantially as shown, and for the purpose described.

ALEXANDER LUDWIG HEINRICH MESSMER.

Witnesses:

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