M. R. BROWN.

Improvement in Wheels for Vehicles.

No. 116,148. Patented June 20, 1871.

fig: 1

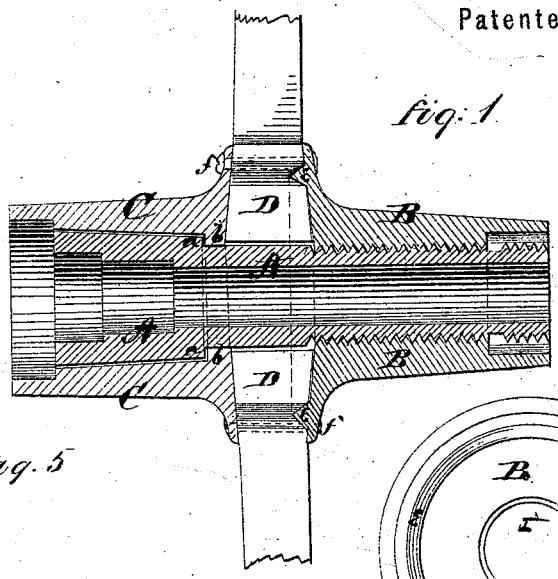


fig: 4

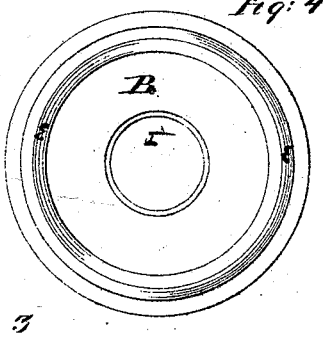


fig: 5

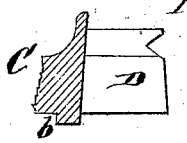


fig: 2

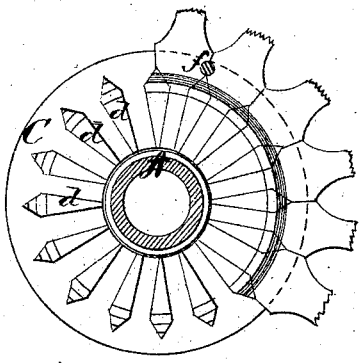


fig: 3

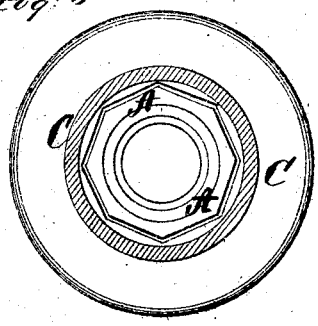
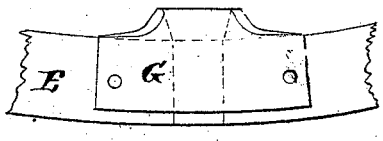


fig: 6



Witnesses.

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Jas. E. Hutchinson

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UNITED STATES PATENT OFFICE.

MARSHALL R. BROWN, OF MINGO, OHIO.

IMPROVEMENT IN WHEELS FOR VEHICLES.

Specification forming part of Letters Patent No. 116,148, dated June 20, 1871.

To all whom it may concern:

Be it known that I, MARSHALL R. BROWN, of Mingo, in the county of Champaign and in the State of Ohio, have invented certain new and useful Improvements in Wheels for Vehicles; and 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 wheel for vehicles, 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, in which—

Figure 1 is a longitudinal vertical section of the hub. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a view of the inner end of the hub. Fig. 4 is an inside view of the outer flange of the hub. Fig. 5 is a section of the inner flange and spoke. Fig. 6 is a section of the rim of the wheel.

The hub of my wheel is composed of a box, A, an outer sleeve, B, and an inner sleeve, C, the sleeves having flanges at their inner ends, between which the spokes D D are firmly held. The inner end of the box A is octagonal, as shown in Fig. 3, and has at a suitable point a shoulder, *a*, running around the box, and against which a shoulder, *b*, on the sleeve C bears. This shoulder *b* is formed all around the inside at the outer edge of the sleeve C, so that, when this sleeve is put on the box from the front end, this shoulder will come against the shoulder *a* on the box and be kept there in position. The outer end of this sleeve is enlarged or spread outward so as to form a circular flange all around the same, the outer surface of said flange being beveled from the outer edge toward the center so as to make the edge extend or project beyond the center, as shown in Fig. 1. On the outer surface of this flange is arranged a number of V-shaped lugs, *d d*, radiating from the center at equal distances apart, leaving perfectly straight spaces between them. The outer ends of the V-shaped lugs *d d*, from the broadest portions, are also V-shaped, making said lugs what I call double V-shaped. The spokes D D are shaped as shown more fully in Fig. 2—that is, their tenons are perfectly straight to fit between the lugs *d d*, and their edges swelled or inclined, as shown in Fig. 1, to correspond with the inclined flanges of the sleeves. The thickest portions of the spokes are also inclined to fit the outer V-shaped portions of the lugs *d d*, and immediately outside thereof the spokes will come close up against each other. By this construction of the lugs and spokes all danger or breaking any portion of the spokes is obviated. The outer sleeve B is also enlarged or spread out at its inner end so as to form a circular flange, which is inclined, as shown in Fig. 1, and provided with a circular V-shaped bead, *e*. The sleeve B is screwed onto the outer end of the box A, the bead *e* entering a V-shaped groove, or rather V-shaped notches, made in the spokes, as well as in the thickest portions of the lugs *d*. By these means the spokes are held firmly and securely in place, and can still be removed with ease by merely unscrewing the sleeve B. The outer ends of the spokes are provided with round tenons to be inserted in holes made for that purpose in the rim E, the tenons passing through spoke-seats G attached to the rim. These spoke-seats have a round box with flanges fitting on the under side of the rim, and other flanges extending up the sides of the rim, as shown in Fig. 6. These side flanges are let into the rim and fastened by bolts or screws.

It should have been remarked that bolts *f* are passed through the flanges on the sleeves B C, connecting the two together.

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

1. The sleeve C, provided with the shoulder *b* and a circular flange around its outer end, having its face surface beveled and provided with double V-shaped lugs *d d*, substantially as and for the purposes herein set forth.

2. The combination of the box A with shoulder *a*, sleeve C with shoulder *b*, and double V-shaped lugs *d d*, spokes D D, and screw-sleeve B with circular V-shaped bead *e*, all

constructed and arranged substantially as and for the purposes herein set forth.

3. The combination of the sleeves C B with inclined flanges, flared spokes D D, flanged spoke-seat G, and felly E, all substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of April, 1871.

MARSHALL R. BROWN.

Witnesses:

GEO. W. HUTCHINSON,

S. S. CARRELL.