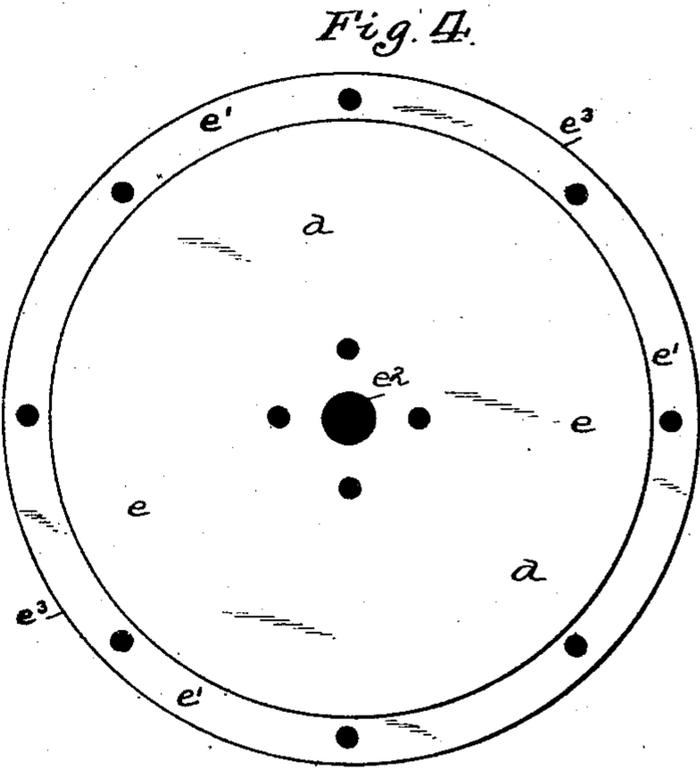
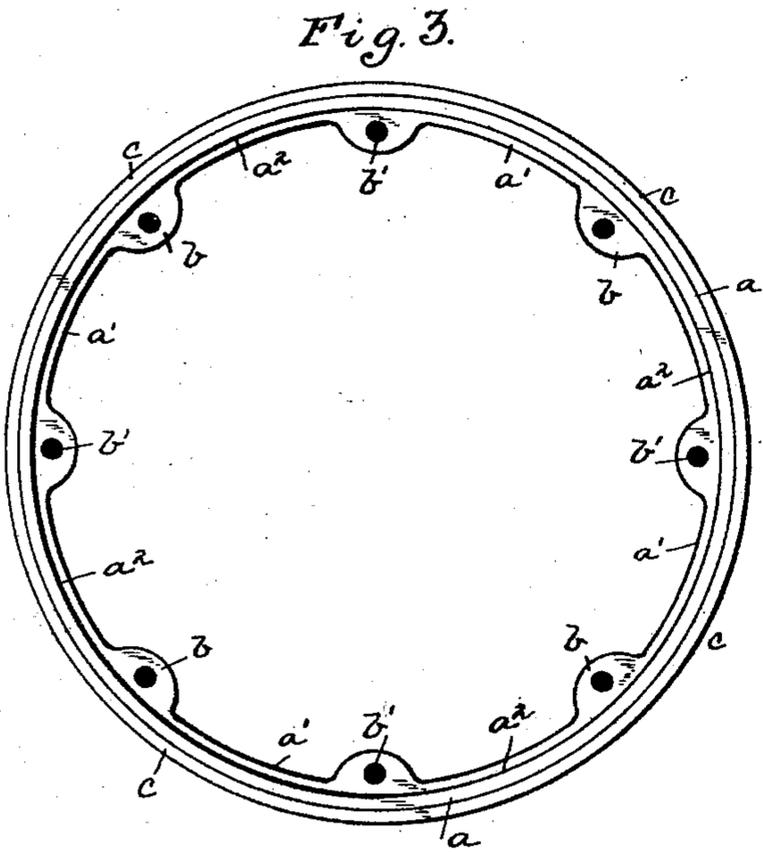
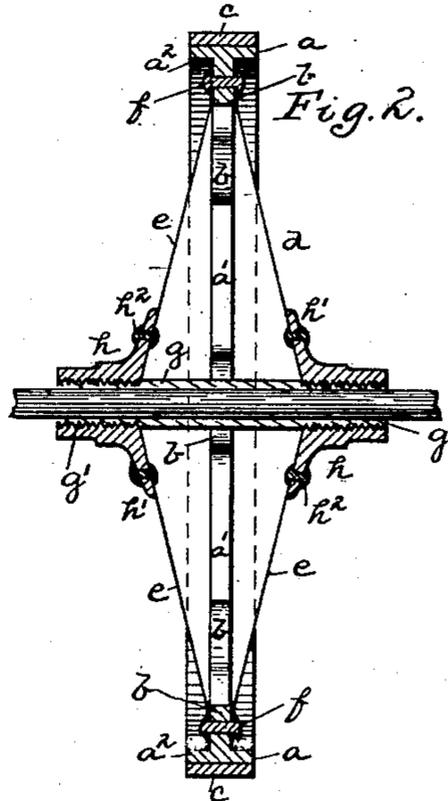
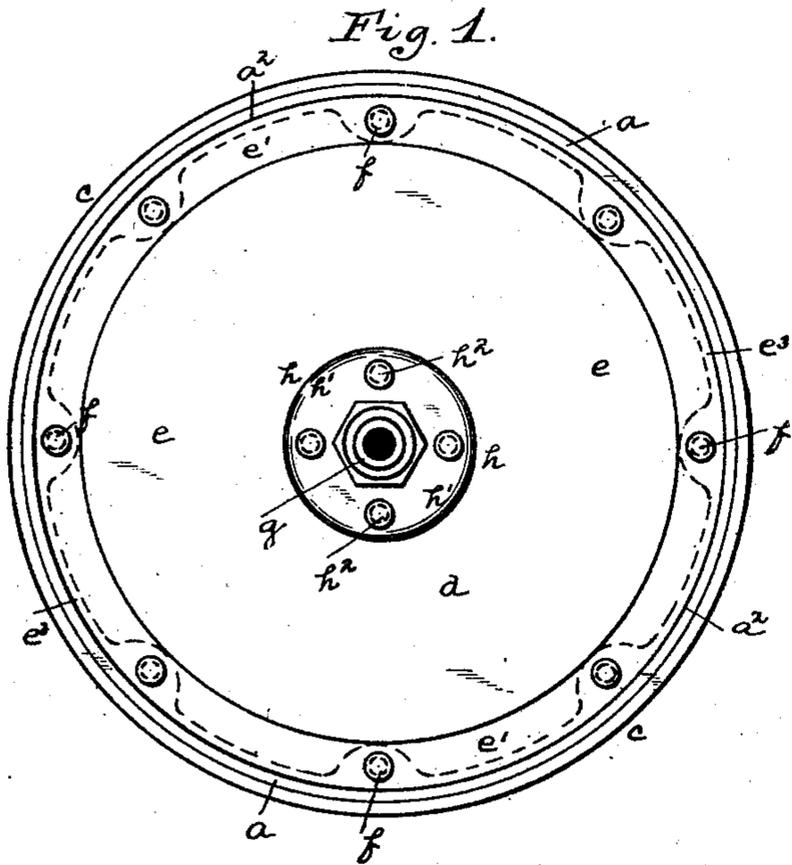


(No Model.)

C. A. CUBBAGE.  
BARROW WHEEL.

No. 472,570.

Patented Apr. 12, 1892.



Witnesses:  
J. H. Cooke  
Robt. D. Totten

Inventor:  
Charles A. Cubbage  
By James D. Kay  
Attorney

# UNITED STATES PATENT OFFICE.

CHARLES A. CUBBAGE, OF PITTSBURG, PENNSYLVANIA.

## BARROW-WHEEL.

SPECIFICATION forming part of Letters Patent No. 472,570, dated April 12, 1892.

Application filed May 13, 1891. Serial No. 392,548. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. CUBBAGE, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Barrow-Wheels; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to barrow-wheels, its object being to provide a stout durable wheel adapted to withstand the severe jolts and strains and rough handling to which such wheels are subjected in their use about mills and factories.

The particular points of invention desired to be covered will be hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a side view of a finished wheel. Fig. 2 is a section thereof on the line 2-2, Fig. 1. Fig. 3 is a view of the outer rim. Fig. 4 is a view of one of the disks removed.

Like letters indicate like parts in each.

In the drawings,  $a$  represents an outer rim of metal with the inwardly-extending flange  $a'$ , having the shoulders  $a^2$  in said outer rim  $a$  on both sides of the flange  $a'$ . Cast integral with the inwardly-extending flange  $a'$  and at suitable intervals therein are the inwardly-extending tongues  $b$ , said tongues having the rivet-holes  $b'$  therein. The tire  $c$ , of wrought-iron, is shrunk around the rim  $a$ .

In order to dispense with the employment of spokes, disks  $d$  are secured to the outer rim  $a$ . These disks  $d$  are preferably formed of sheet-steel of suitable thickness and are dished throughout the greater portion of their surface, as at  $e$ , the outer rim  $e'$  thereof being set back on a vertical line. The disks  $d$  are provided with the central openings  $e^2$ , through which the hub passes. The disks  $d$  fit snugly within the space inclosed by the outer rim  $a$ , the edges  $e^3$  of said disks resting on the shoulders  $a^2$  of said outer rim  $a$ , while the outer rims  $e'$  of the said disks press against the flange  $a'$  and tongues  $b$  on both sides thereof. The disks  $d$  are riveted to the tongues  $b$  by means of rivets  $f$ , thus securing said disks rigidly to said outer rim  $a$ , while the fact that the edges of said disks rest upon the shoulders  $a^2$  lends additional strength to

support the vertical strain brought to bear on the wheel. Since the edges  $e^3$  of the disks  $d$  are in contact with the shoulders  $a^2$  at every point on the circumference of the rim  $a$ , each point on the circumference of said rim is equally well supported and capable of sustaining an equally heavy vertical strain.

A tubular hub  $g$  is inserted in the central and corresponding openings  $e^2$  of the disks  $d$ , said tubular hub having the threaded ends  $g'$ . Interiorly-threaded collars  $h$  engage with the threaded ends  $g'$  of the tubular hub  $g$ , said collars  $h$  having flanges  $h'$  formed integral therewith at such an angle that when said collars  $h$  are secured in place the said flanges will press closely against and coincide with the external surface of said disks around their central openings. The flanges  $h$  are rigidly secured to the disks  $d$  by means of the rivets  $h^2$ . This manner of securing the collars  $h$  upon the tubular hub  $g$  and of riveting the collars to the disks  $d$  prevents all liability of said disks bulging out when subjected to a heavy vertical strain.

In securing the parts of the wheel together the disks are riveted to the collars  $h$  and the collars screwed upon the tubular hub until the ends of the disks press against the annular shoulders  $a^2$  and are firmly braced thereby, and the disks are then riveted to the rim  $a$  by the rivets extending through the tongues  $b$  of said rim, so insuring the firm bracing from the hub and collars to the rim before the parts are riveted together.

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

In a barrow-wheel, the combination of the outer rim  $a$ , having the inner annular shoulders  $a^2$  and tongues  $b$ , the tubular hub  $g$ , the collars  $h$ , screwing thereon, and the disks secured to the collars and fitting against said annular shoulders and riveted to the rim through the tongues  $b$ , substantially as and for the purposes set forth.

In testimony whereof I, the said CHARLES A. CUBBAGE, have hereunto set my hand.

CHARLES A. CUBBAGE.

Witnesses:

ROBT. D. TOTTEN,  
J. N. COOKE.