

(No Model.)

F. J. COOPER.
METAL WHEEL.

No. 554,055.

Patented Feb. 4, 1896.

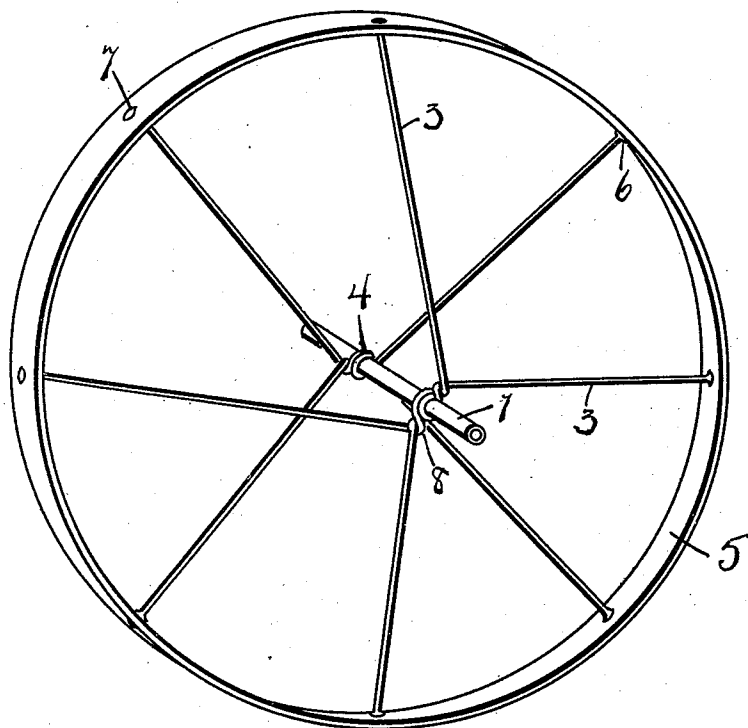
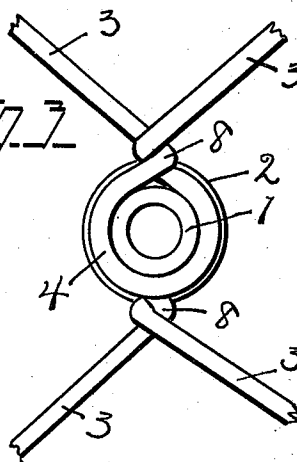
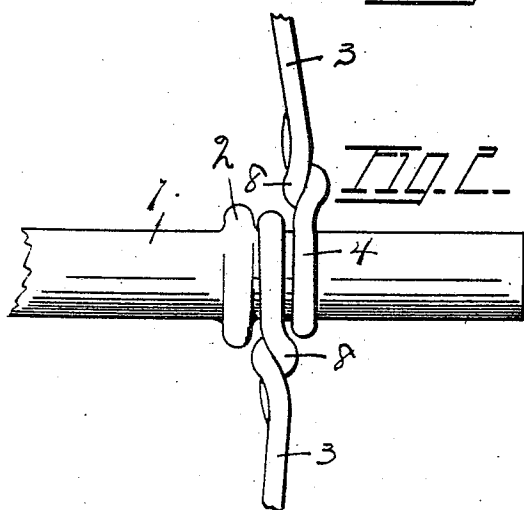


Fig. 1.



WITNESSES

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INVENTOR

Frank J. Cooper
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UNITED STATES PATENT OFFICE.

FRANK J. COOPER, OF TOLEDO, OHIO, ASSIGNOR TO AUGUSTA MESTER.

METAL WHEEL.

SPECIFICATION forming part of Letters Patent No. 554,055, dated February 4, 1896.

Application filed June 24, 1895. Serial No. 553,782. (No model.)

To all whom it may concern:

Be it known that I, FRANK J. COOPER, of Toledo, 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 figures of reference marked thereon, which form part of this specification.

My invention relates to a metal wheel, and has for its object to construct a wheel of great rigidity and simplicity of parts in which the expense of manufacture shall be materially reduced in comparison with those heretofore constructed in the same class.

A further object is to produce a wheel capable of being manufactured without the aid of expensive machinery or skilled labor.

I have illustrated and shall confine the description more particularly to a wheelbarrow-wheel, although it will be apparent, and I wish it distinctly understood, that the construction is alike adaptable to wheels for use in children's carriages, velocipedes, bicycles, and agricultural implements.

The invention consists broadly of a hub and a metal spoke of a length to be bent around the hub and then twisted around each other, the ends extending outwardly and secured to the rim.

In the drawings, Figure 1 is an elevation of a wheel constructed in accordance with a proper form of my invention. Fig. 2 is a sectional detail showing one end of the hub in side elevation with oppositely-disposed sections of spokes mounted thereon. Fig. 3 is an end elevation of the view shown in Fig. 2.

1 designates a hub preferably formed of a section of tubular piping of a desired length expanded at or near each end equidistant from the center to form a limiting-stop or collar 2.

3 designates what I shall term a "return-bend spoke," formed of a single piece of wire bent around the hub, the ends being twisted around each other, as at 8, forming a loop 4,

which embraces the hub 1 closely and in its angle radiating therefrom to the rim 5, to which it is secured by riveting, which operation draws the loop closely against the stop or collar 2.

As illustrated in an eight-spoke wheel, the spokes consist of four sections of wire 3, respectively, this number being increased to any desired number of spokes in even numbers.

It will be seen from the foregoing that in oppositely disposing the return-bend spokes I insure a perfect suspension from the hub when the spokes are properly riveted in the rim.

In adapting my invention to wheelbarrow-wheels I preferably upset the outer end of the spoke, as at 6, to form a shoulder which bears against the interior surface of the rim with a projecting end riveted, as at 7, in the outer periphery, although in some forms of wheels I prefer to dispense with the shoulder 6.

In the construction shown and described I am enabled by the twist 8 of the wire 3 to closely embrace the hub with such frictional bearing that revolution of the same is prevented to a degree to effect its utility, and again I construct the wheel without employment of expensive machinery or high-priced labor.

What I claim is—

1. In a metal wheel, a hub, spokes bent around the same, the ends being twisted around each other and radiating to and secured to the rim.

2. In a metal wheel, a tubular hub formed with annular stops or collars equidistant from the center thereof, and spokes bent around the hub outside of the stops, the ends thereof being twisted around each other and radiating to and secured to the rim.

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

FRANK J. COOPER.

Witnesses:

WILLIAM WEBSTER,
CARL H. KELLER.