(No Model.)

R. M. CORCORAN.

SHEET METAL SPROCKET WHEEL.

No. 567,294. Patented Sept. 8, 1896.

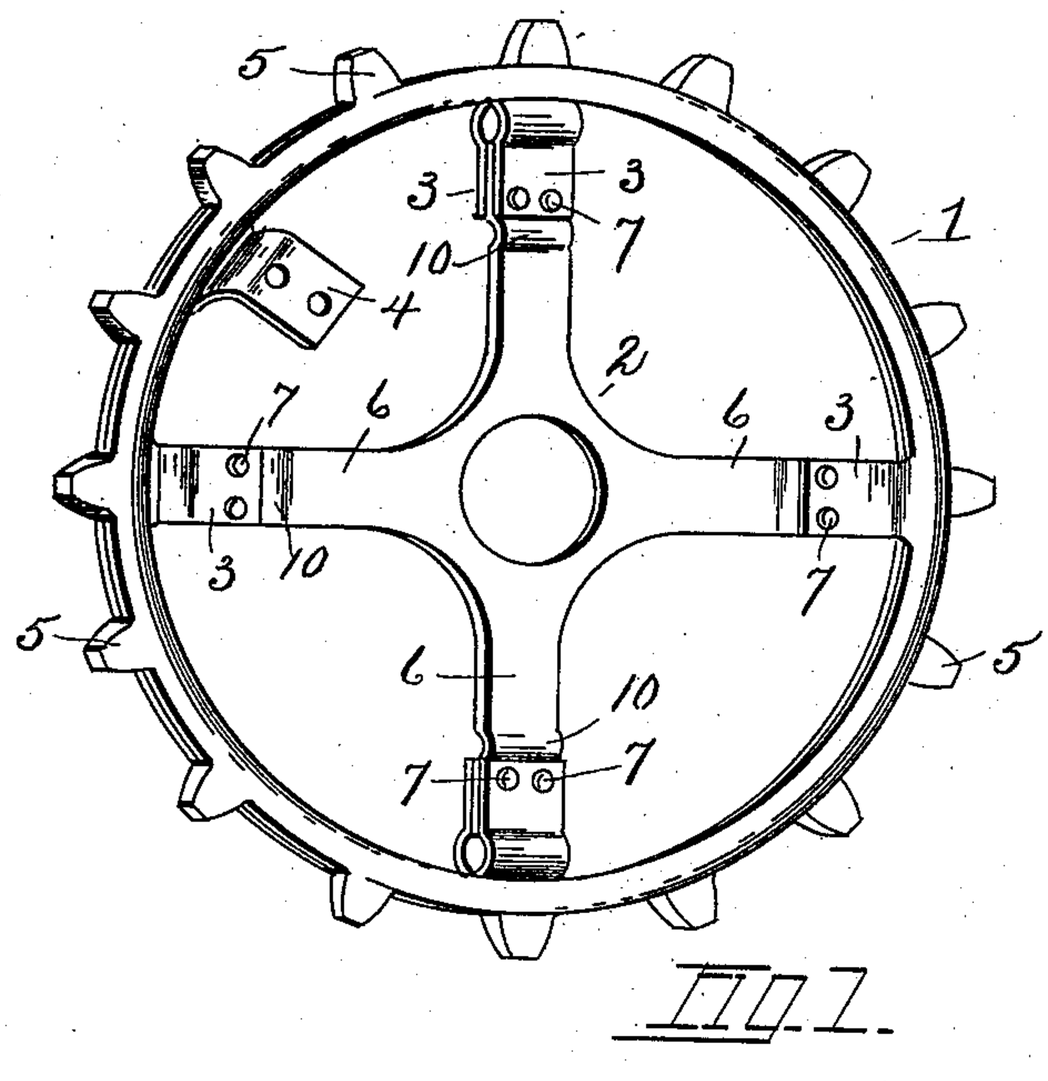

FIG. 1.

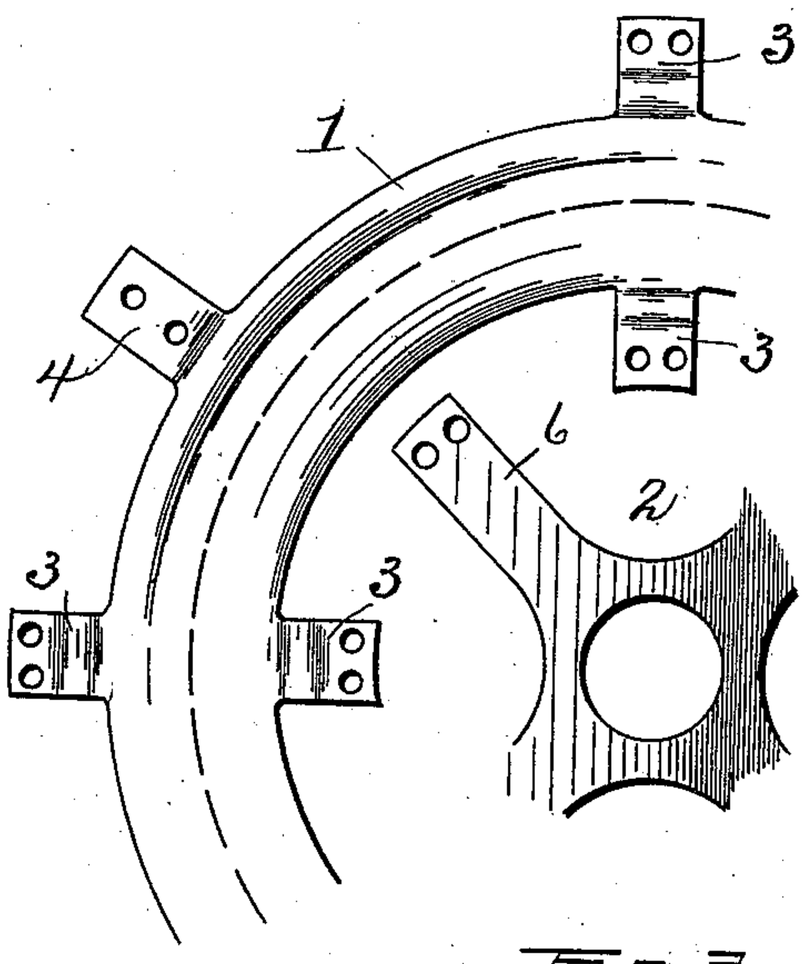

FIG. 2.

FIG. 3.

WITNESSES
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RICHARD M. CORCORAN, OF TOLEDO, OHIO.

SHEET-METAL SPROCKET-WHEEL.

SPECIFICATION forming part of Letters Patent No. 567,294, dated September 8, 1896.

Application filed February 24, 1896. Serial No. 580,352. (No model.)

To all whom it may concern:

Be it known that I, RICHARD M. CORCORAN, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Sheet-Metal Sprocket-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 sheet-metal sprocket-wheels, gear-wheels, and the like, and has for its object to first stamp out of a single sheet of metal separate blanks for the rim and the web, the web being formed from the metal within the rim, in drawing the inner half of the rim into the desired shape and the outer half to a plane parallel therewith, respectively, securing the web thereto and milling or punching the periphery of the rim to form the teeth.

With these objects in view the invention consists in forming a blank from sheet metal, the blank comprising a circular rim having projecting ears upon each side oppositely arranged, then clamping the outer half of the rim and drawing the inner half to its finished shape. The outer half is now drawn to a position parallel with the inner half, which operation brings the ears together, between which the outer ends of the arms of the webs pass and are secured by riveting. I then place between the recess formed by the two halves of the rim after being drawn parallel a former to hold the rim in shape, and form the teeth by stamping out the metal between the same, or, if desired, this method may be accomplished by milling.

The invention further consists in the parts as shown, described, and claimed.

In the drawings, Figure 1 illustrates a sprocket-wheel constructed according to my invention. Fig. 2 shows a portion of the blank of the rim and web, and Fig. 3 is a sectional view of a portion of the sprocket-wheel with a crank-arm attached thereto.

In carrying out my invention I take a blank of sheet metal, preferably steel, and stamp out the rim 1 and the web 2, as shown in Fig. 2. These two separable sections, being formed by one operation, are substantially in the same position after being stamped as shown in Fig. 2, that is, the web is formed of the material inside of the rim. The rim has integral ears 3 projecting upon opposite sides of the same in radial alinement and an ear 4 extending outwardly from the same, which ear serves for attachment to the crank-arm if the gear is used as a sprocket-wheel for bicycles, by which to give rigidity to the attachment to the arm. I now take the blank for the rim, placing the outer half between dies which firmly hold the same and prevent wrinkling, and draw the inner half into its finished shape, this operation being accomplished by the well-known means, and then, firmly holding the inner half, draw the outer half down and to a position parallel with the inner half. By this operation the ears 3 are brought together, and the ear 4 extends inwardly, as shown in Figs. 1 and 3. I now place a sectional former in the space between the two halves of the rim, place the rim upon a punch, and punch out the metal between the teeth 5, the former holding the rim in shape during this operation, or, if desired, I may place the rim in a milling-machine and mill out the metal between the teeth. I now place the arms 6 of the web between the ears 3 and secure the web and rim together by means of the rivets 7. The ear 4 is bent outwardly to be attached to the crank 8, as shown in Fig. 3, by means of the screws 9.

The arms 6 of the web are preferably formed with a crimp 10, which bears against the inner end of the ears 3 and serves to strengthen the rim.

It will thus be seen that I have provided a gear or sprocket wheel which is cheap of manufacture, and being formed of sheet metal, the rim of which is bent upon itself, is of great strength and lightness, therefore making it especially adaptable for bicycles.

What I claim is—

1. A sheet-metal sprocket or gear wheel provided with a rim of sheet metal having integral ears projecting therefrom in radial alinement, one portion of the rim being drawn to a plane parallel with the other por-

tion whereby the rim is substantially U shape in cross-section, and a web, the arms of which are secured between the ears.

2. A sheet-metal sprocket or gear wheel provided with a rim of sheet metal having ears 3 projecting therefrom in radial alinement and an ear 4 projecting between two of the aforementioned ears, one portion of the rim being drawn to a plane parallel with the other portion, whereby the rim is substantially U shape in cross-section, and a web, the arms of which are secured between ears 3, the ear 4 being bent upwardly from the rim to be attached to the crank-arm.

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

RICHARD M. CORCORAN.

Witnesses:
WILLIAM WEBSTER,
CARROLL J. WEBSTER.