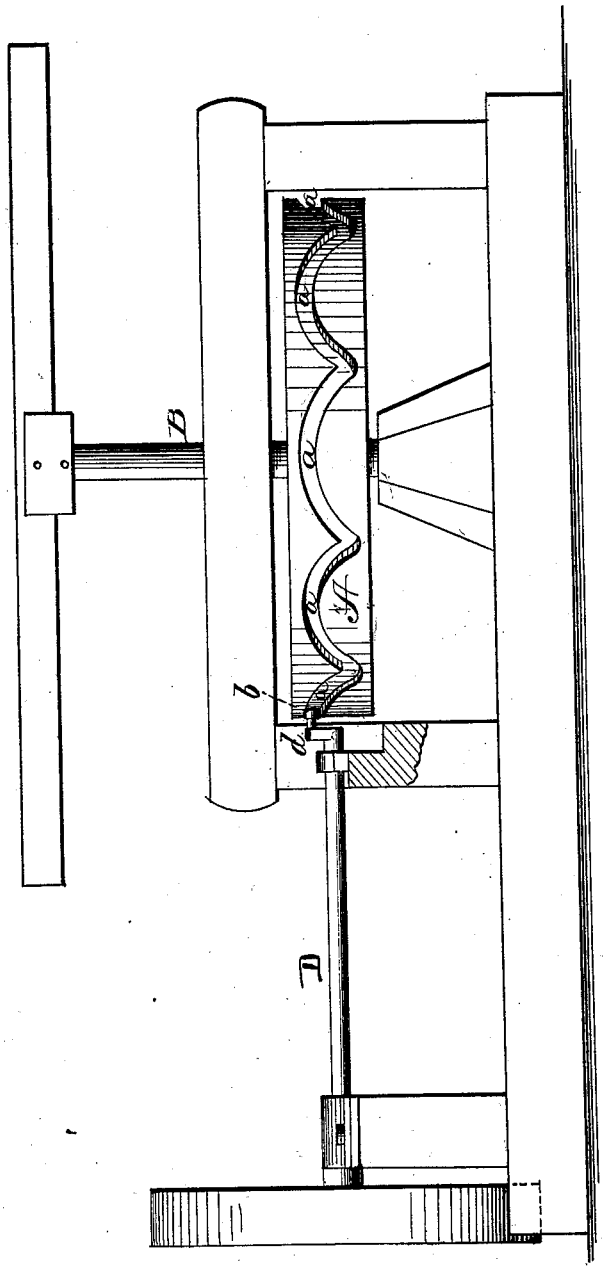
M. T. SINGLETON & J. S. WINGFIELD.

MACHINE GEARING.

No. 190,916. Patented May 15, 1877.



WITNESSES

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MICAJAH T. SINGLETON AND JOSEPH S. WINGFIELD, OF ATLANTA, GA.

IMPROVEMENT IN MACHINE-GEARING.

Specification forming part of Letters Patent No. **190,916**, dated May 15, 1877; application filed April 27, 1877.

To all whom it may concern:

Be it known that we, MICAJAH T. SINGLETON and JOSEPH S. WINGFIELD, of Atlanta, in the county of Fulton, and in the State of Georgia, have invented certain new and useful Improvements in Machine-Gearing; 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 object of our invention is to decrease friction in machine-gearing, and to gain mechanical advantages by the use of grooves or flanges arranged in cycloidal form in or upon the face or side of a wheel or wheels, in which works a friction-roller upon the wrist-pin of a crank, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawing, which represents a side elevation of our machine.

A represents a wheel of any suitable dimensions, mounted upon a shaft, B.

In the periphery of the wheel A is formed a groove, *a*, in the form of a cycloid, in which groove works a friction-roller, *b*, on the crank *d* of a shaft, D, as shown. As the wheel A revolves, the roller *b* is forced around the cycloidal groove *a*, making one complete revolution of the shaft D, and in like manner with each successive groove.

The face of the wheel A may be made convex, so that the path of the roller will be equidistant from the circumference at all points of its revolution.

The cycloidal groove can be cut on the side of a wheel, or on a beveled face, and is applicable to all kinds of gearing; or cycloidal flanges may be formed or arranged on the wheel between which the roller *b* is to work.

We are aware that wheels have been provided with irregular grooves cut in them for the purpose of producing lateral or reciprocal motion; but our invention is based upon the geometrical principle of the cycloid, which must be made mathematically correct to produce the desired effect—*i. e.*, rotary motion.

This invention is almost universal in its application, and by its use the use of cog-gearing may be entirely superseded.

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

The combination of the wheel A, provided with cycloidal grooves or flanges *a*, with the shaft D, provided with crank *d* on its end, having a friction-roller, *b*, operating in the grooves or flanges of the wheel, whereby the shaft is given a rotary motion, as set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 31st day of April, 1877.

M. T. SINGLETON.
JOS. S. WINGFIELD.

Witnesses:
WM. S. SCHLEY,
R. H. LOUGHRIDGE.