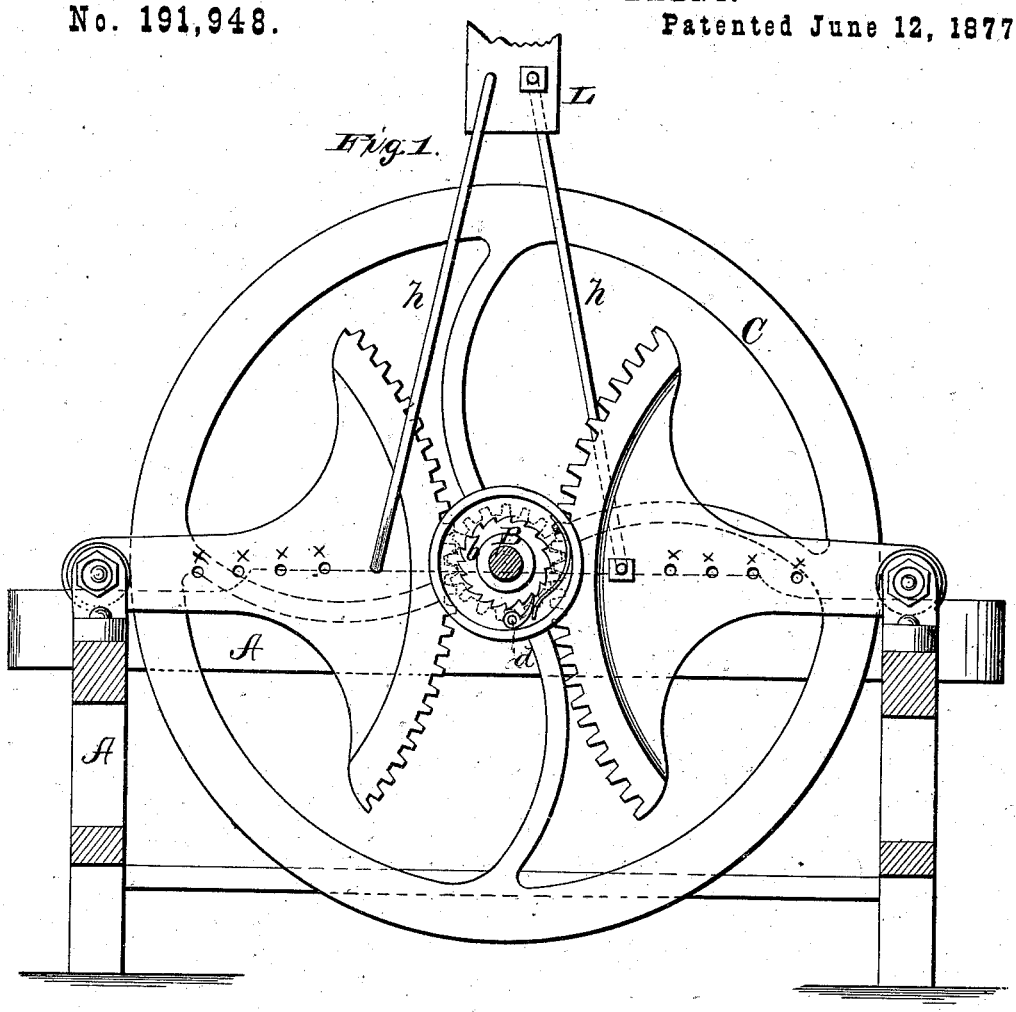
2 Sheets—Sheet 1.

J. I. ETHERIDGE.

MECHANICAL MOVEMENT.

No. 191,948. Patented June 12, 1877.

Fig. 1.



WITNESSES

Franck L. Ourand

Frank Galt

INVENTOR

Jos. I. Etheridge

Alexander Mason

ATTORNEYS

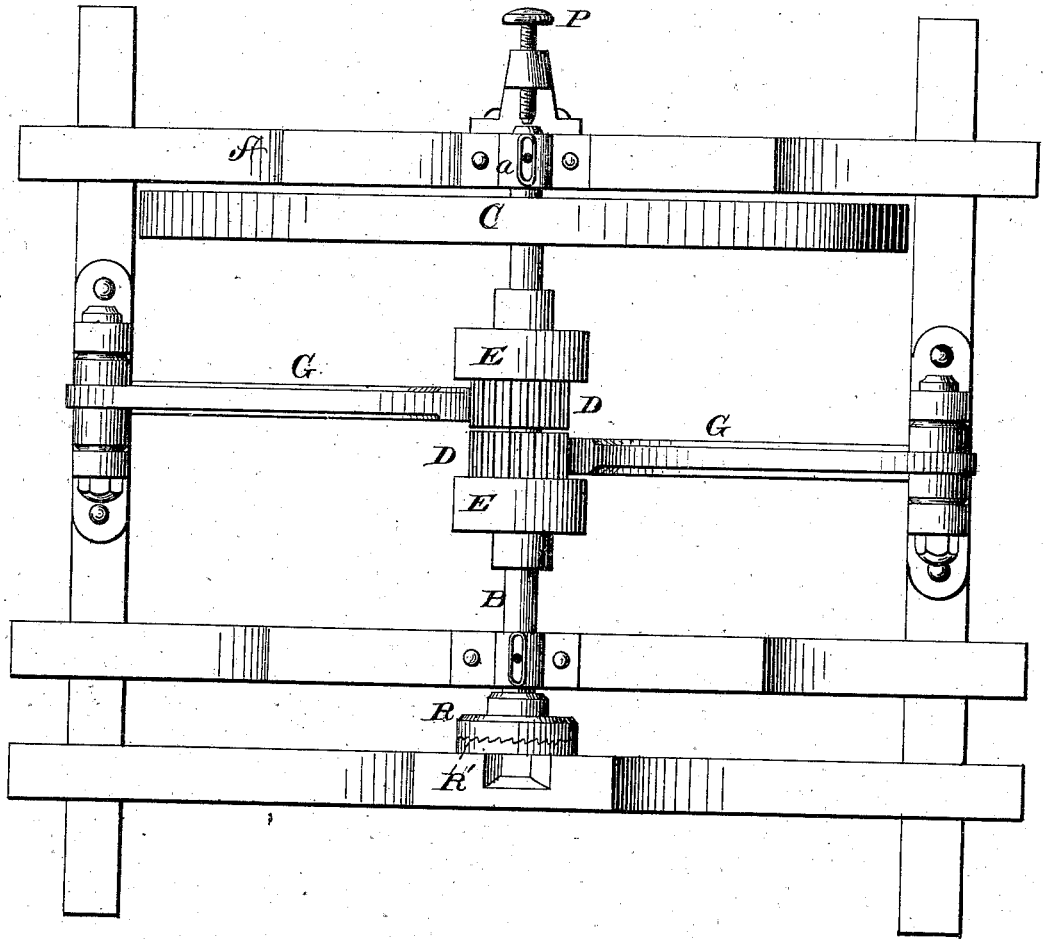
2 Sheets—Sheet 2.

J. I. ETHERIDGE.

MECHANICAL MOVEMENT.

No. 191,948. Patented June 12, 1877.

Fig. 2.



WITNESSES

Franck L. Durand

Frank Galt

INVENTOR

Jos. I. Etheridge

Alexander Mason

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOSEPH I. ETHERIDGE, OF MISHAWAKA, INDIANA.

IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. **191,948**, dated June 12, 1877; application filed April 28, 1877.

To all whom it may concern:

Be it known that I, JOSEPH I. ETHERIDGE, of Mishawaka, in the county of St. Joseph, and in the State of Indiana, have invented certain new and useful Improvements in Mechanical Movements; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, 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 mechanism for converting vertically-reciprocating motion into continuous rotary motion, 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 drawings, in which—

Figure 1 is a longitudinal vertical section of my invention, and Fig. 2 is a plan view of the same.

A represents a suitable frame-work in boxes *a a*, upon which is mounted a horizontal shaft, B, provided with a fly-wheel, C.

On this shaft B are placed two loose pinions, *d d*, which are connected, by ratchets *b* and pawls *d*, with two casings or disks, E E, secured on said shaft. These pawl-and-ratchet devices are, however, arranged to operate in opposite directions—that is to say, when both pinions are turned at the same time in opposite directions one ratchet will slide under its pawl, while the other rachet will take hold of its pawl and rotate the shaft.

The two pinions D D are operated by two cogged segments, G G, extending in opposite directions from the shaft B, and pivoted at their outer ends to the frame A, as shown.

These segments are, by means of rods *h h*, connected with a vertically-reciprocating pitman, L, whereby they obtain an up-and-down rocking motion, and such motion is, by means of the pinions and ratchets, as described, transmitted to the shaft B, and converted into a continuous rotary motion of said shaft.

The two segments G are each provided with a series of holes, *x*, as shown, whereby the points of attachment of the rods *h h* may be changed closer to or farther from the center, as required, for regulating the stroke of said segments.

This movement is particularly designed to be used, in connection with a windmill, for grinding grain; but it may, of course, be used for any other purpose where it may be applied.

The shaft B is movable slightly longitudinally in its boxes *a*, and upon one end of the shaft is attached a ratchet or clutch, R, directly opposite a similar stationary ratchet or clutch, R′, attached to the frame, and on the other end of the shaft is a set-screw, P, made to bear, whereby the movable clutch or ratchet R is regulated or adjusted with relation to the stationary clutch, so as to prevent any backward movement of the shaft, and to stop it entirely when desired.

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

1. The combination, with the shaft B and its pinions, ratchets, and casings, as described, of the pivoted cogged segments G G, having radial series of holes *x*, the adjustable connecting-rods *h h*, and the vertically-reciprocating pitman L, substantially as and for the purposes herein set forth.

2. The combination of the stationary clutch R′, the revolving shaft B with clutch R, and the adjusting-screw P, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of April, 1877.

JOSEPH I. ETHERIDGE.

Witnesses:

GEORGE MASTERMAN,

ALENS YOUNGS.