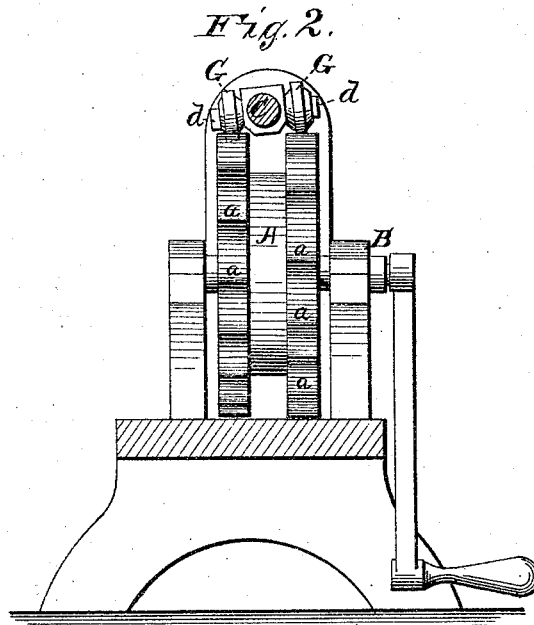
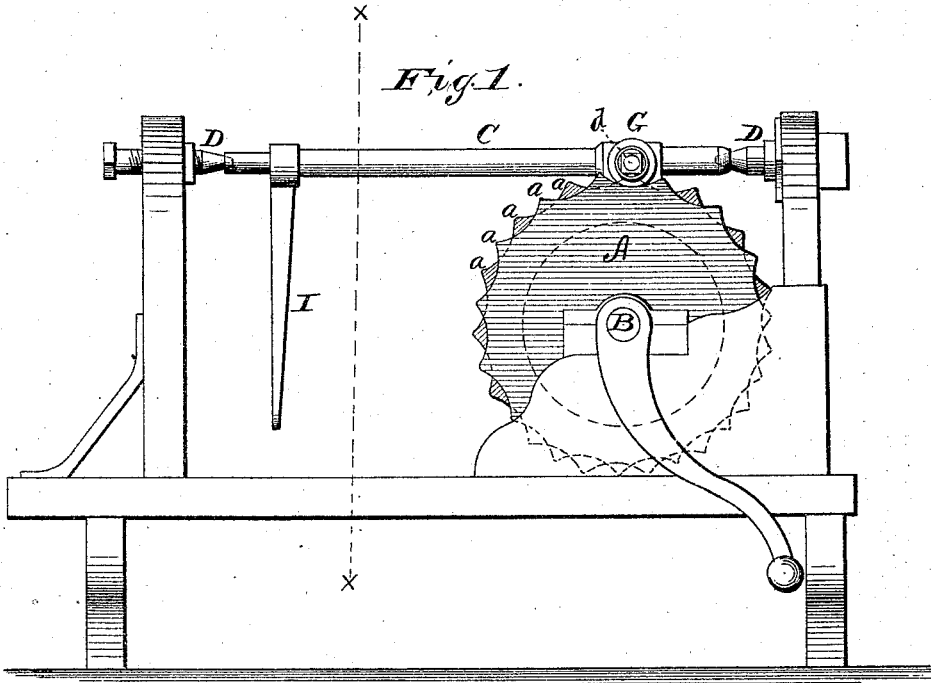


E. C. HOPPING.

MECHANICAL MOVEMENT.

No. 184,208.

Patented Nov. 7, 1876.



WITNESSES  
*Frank L. Curand*  
*Chas. L. Evert*

INVENTOR,  
*Eugene C. Hopping*  
*Alexander Mason*  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

EUGENE C. HOPPING, OF MADISON, NEW JERSEY, ASSIGNOR OF ONE-HALF HIS RIGHT TO EUGENE A. ELY, OF SAME PLACE.

## IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. 184,208, dated November 7, 1876; application filed October 11, 1876.

*To all whom it may concern:*

Be it known that I, EUGENE C. HOPPING, of Madison, in the county of Morris, and in the State of New Jersey, 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 rotary motion into reciprocating 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 drawing, in which—

Figure 1 is a side elevation of my mechanical movement. Fig. 2 is a vertical section through the lines *x x*, Fig. 1.

A A represent two disks or wheels of suitable diameter, having their periphery corrugated, as shown. These wheels are secured at a suitable distance apart, upon the same shaft B, which shaft is supposed to be the main driving-shaft of any machine where my mechanical movement is applicable. The wheels A A are set upon the shaft B in such a manner that their corrugations will alternate, or in other words the highest points *a* of one wheel will be directly opposite the lowest points *b* of the other wheel, as shown in the drawing.

C represents a rocking shaft hung upon centers D D, which are secured in any suitable frame-work. On opposite sides of the rocking shaft C are projecting studs *d d*, carrying rollers G G, which rest upon the peripheries of the corrugated wheels A A. To the shaft C is further attached a lever, I, as shown.

When the main shaft B and wheels A A are in motion, the rollers G G are caused alternately to rise and fall for each corrugation of said wheels A, thereby causing the shaft C to rock back and forth on the centers D D, and give the lever I a reciprocating motion back and forth, thus enabling the operator to get any amount of speed direct from the main shaft, without loss of motion or loss of power by friction.

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

The combination of the corrugated wheels A A mounted upon a cross-shaft, the studs *d d*, rollers G G, shaft C having projecting lever I, and the adjusting centers D D connected to uprights, all constructed substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 27th day of September, 1876.

EUGENE C. HOPPING.

Witnesses:

C. L. EVERT,  
AMOS C. RATHBUN.