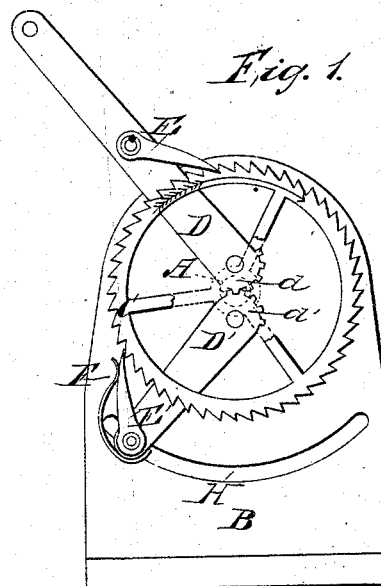
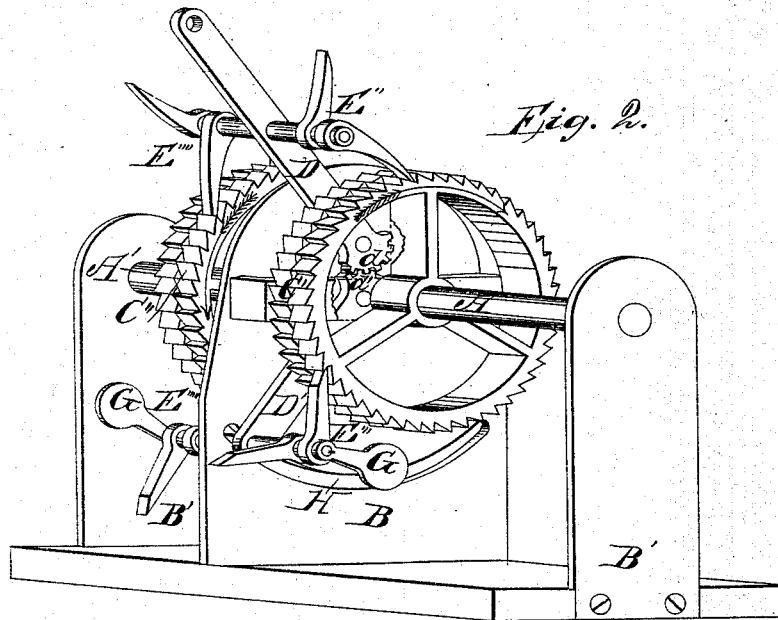


W. C. MCGILL.  
MECHANICAL MOVEMENT.

No. 47,315.

Patented Apr. 18, 1865.



Witnesses:

James H. Bayman  
George Knight

Inventor:

W. C. McGill

# UNITED STATES PATENT OFFICE.

WILLIAM C. MCGILL, OF CINCINNATI, OHIO.

## IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. 47,315, dated April 18, 1865.

*To all whom it may concern:*

Be it known that I, WILLIAM C. MCGILL, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Mechanical Movement; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to a mechanical device for, first, the conversion of a reciprocating motion into a continuous rotary one; secondly, an elaboration of the above, in which a reciprocating motion is converted optionally into a continuous rotation, either forward or backward, with capacity for self-locking when required; thirdly, a duplication of the last named, by which two or more shafts are made capable of being rotated either in the same or in reverse directions, or of being placed on lock.

Figure 1 represents by side elevation the first and simplest form of my invention. Fig. 2 represents by perspective view the second and third forms of my invention.

Corresponding parts in the several figures are indicated by the same letters.

My invention in its first and simplest form is constructed as follows: A is a shaft journaled horizontally in suitable housings, B, and bearing a ratchet-wheel, C. Pivoted to the housing B are two levers, D D', whose segmental racks *d d'* mesh together, so that a motion of the lever D is accompanied by a simultaneous but opposite movement of the counter-lever D'. Each lever carries a pawl, E and E', of which the upper pawl engages in the ratchet by its weight simply, while the lower pawl, E', is made effective by the provision of a spring, F, or of a counter-weight.

In the second form of my invention the shaft A is provided with a duplex reversed ratchet-wheel, C'. Each lever D and D' carries a reversible duplex pawl, E'' and E'''. The above pawls in the illustration (see Fig. 2) are shown so set as to impart a forward or right-hand rotation to the shaft. In order to reverse the direction of rotation it is only necessary to throw the pawls over to their other positions, or by the act of simply re-

versing one of the pawls the apparatus is instantly locked and rendered to all intents and purposes immovable.

In the third form of my invention I provide another shaft, A', journaled in the housings B and B'' in line with the shaft A. The shaft A' carries a duplex reversed ratchet-wheel, C'', for the engagement of two reversible duplex pawls, E'''' and E''''', which are a precise duplication of the pawls E'' and E'''', and are pivoted to the rear sides of the levers D and D' in the same manner in which the pawls E'' and E''' are pivoted to the front sides of said levers. The lower pawls may be held up by counter-weights G.

H shows a slot in the housing B to permit of the play of the duplicate pawl.

In the illustration the pawls are shown so set as to effect a continuous rotation of the shafts in opposite directions—the front shaft to the right and the rear shaft to the left. An instant reversal of both motions, so as to cause the front shaft to rotate backward and the rear shaft to rotate forward, is accomplished by simply reversing all the pawls, or by reversing the rear pawls only both shafts will be caused to rotate forward, or by reversing the front pawls both shafts will instantly rotate backward, or by merely reversing one of the duplex pawls the entire apparatus becomes securely locked and immovable.

In applying the invention to vertical shafts, springs will take the place of counter-weights.

I claim herein as new and of my invention and desire to secure by Letters Patent—

1. The arrangement of shaft A, ratchet-wheel C, geared levers D and D', and pawls E and E', combined and operating in the manner set forth.

2. The arrangement of shaft A, duplex reversed ratchet-wheel C', geared levers D and D', and reversible duplex pawls E'' and E'''', combined and operating as represented.

In testimony of which invention I hereunto set my hand.

W. C. MCGILL.

Witnesses:

GEO. H. KNIGHT,  
JAMES H. LAYMAN.