

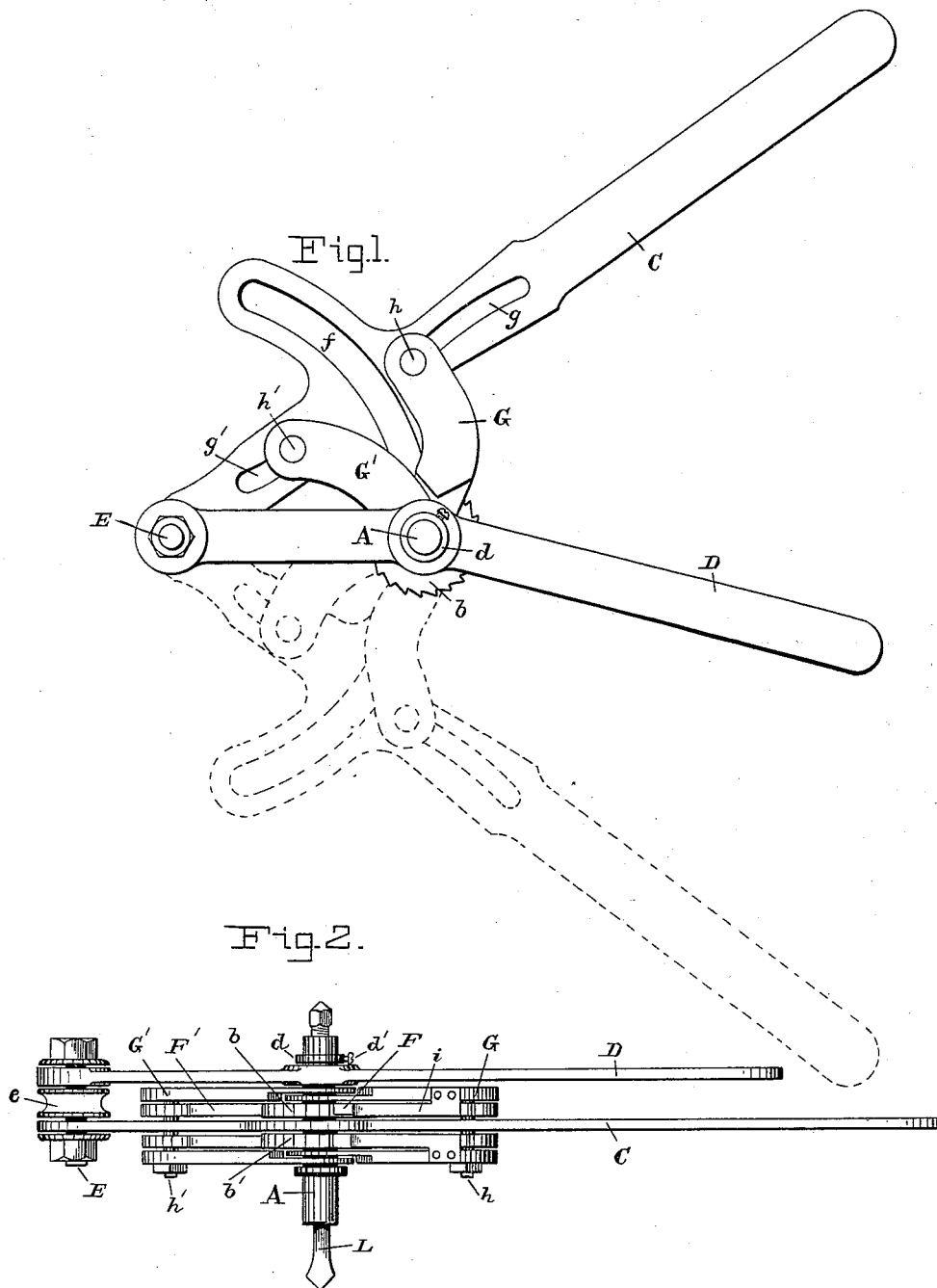
(No Model.)

3 Sheets—Sheet 1.

J. CONWAY.
MECHANICAL MOVEMENT.

No. 342,734.

Patented May 25, 1886.



Witnesses:

A. C. Eader
John E. Morris.

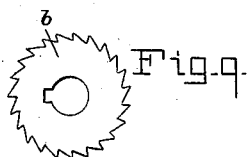
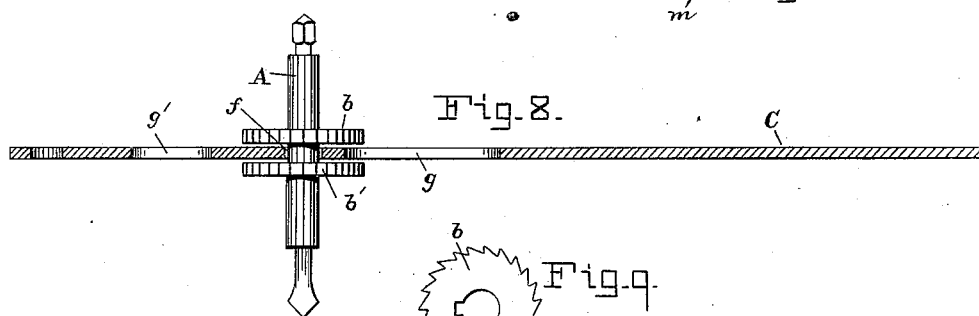
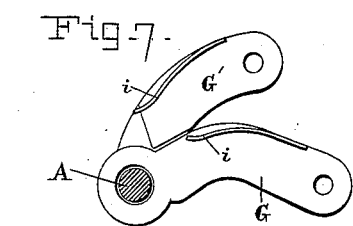
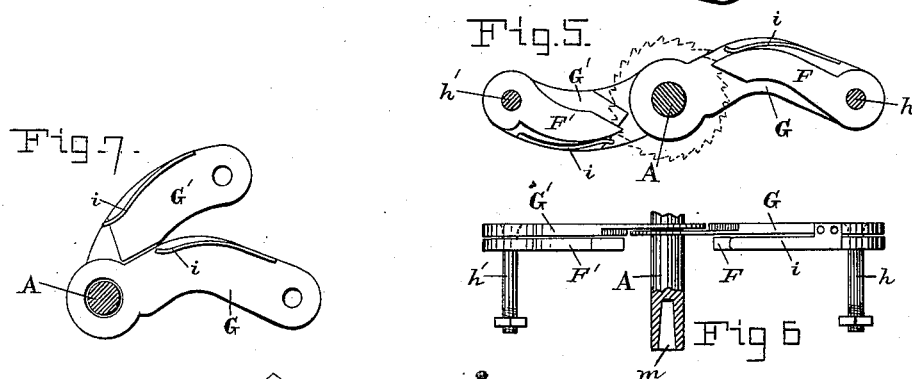
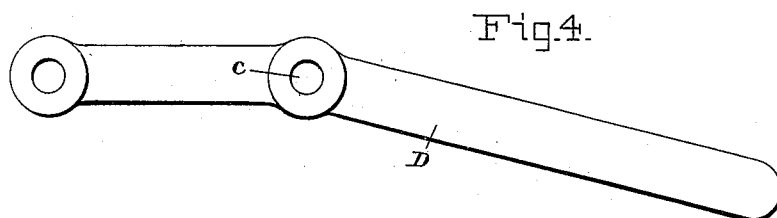
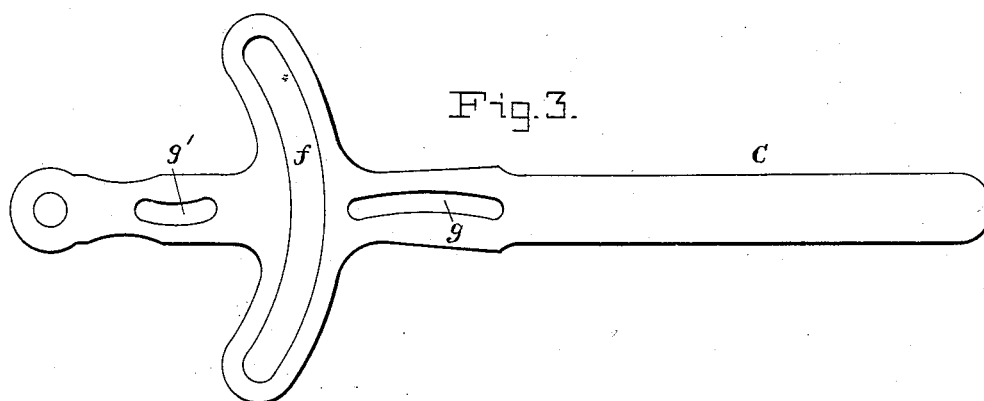
Inventor:

Jesse Conway
 By Chas B. Mann
 Attorney

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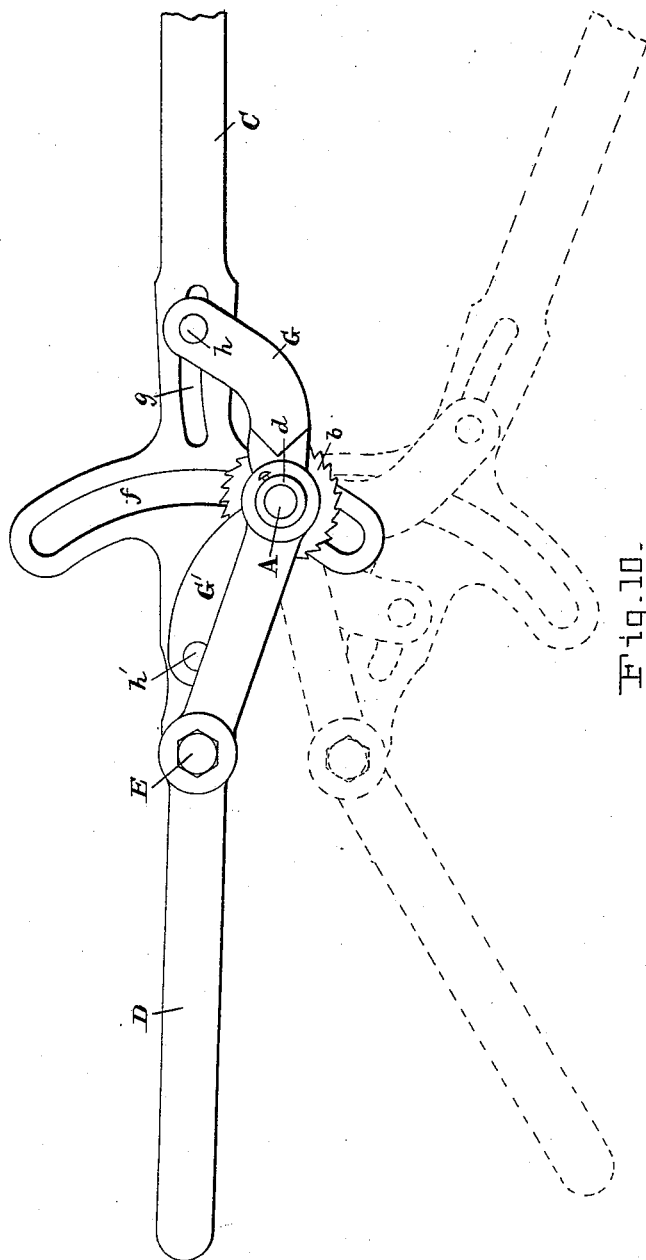
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MECHANICAL MOVEMENT.

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By Chas B. Mann
Attorney

Attorney

UNITED STATES PATENT OFFICE.

JESSE CONWAY, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO
JOHN N. CONWAY, OF SAME PLACE.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 342,734, dated May 25, 1886.

Application filed February 11, 1886. Serial No. 191,527. (No model.)

To all whom it may concern:

Be it known that I, JESSE CONWAY, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Mechanical Movements, of which the following is a specification.

My invention relates to an improved mechanical movement having for its object to convert reciprocating motion into a rotary motion, as hereinafter described and claimed.

The drawings herewith illustrate the invention, Figure 1 being a top view of the mechanical movement, in which the lever is shown as at the end of its throw in one direction, and its position when at the end of its throw in the other direction is indicated by broken lines. Fig. 2 is a side view of the mechanical movement. Fig. 3 is a view of the lever. Fig. 4 is a view of the holder of the rotary shaft. Fig. 5 is a view of two pawl-carriers, their pawls, and pawl-springs, showing the position they occupy when the lever is at a point midway of its throw. Fig. 6 is an edge view of the parts shown in Fig. 5. Fig. 7 is a view of the same parts seen in Fig. 5, showing their position when the lever is at the end of its throw in one direction. Fig. 8 is a side view of the rotary shaft and two ratchet-wheels, a longitudinal section of the lever, and a view of the pawl-pivots. Fig. 9 is a view of one ratchet-wheel. Fig. 10 is a view in which the holder-arm has a reversed position.

The letter A designates the rotary shaft; *b*, a ratchet-wheel keyed fast to the said shaft. In the present instance the shaft has two ratchet-wheels, *b* *b'*, and a space is between them for the lever C. An arm, D, has a bearing or hole, *e*, in which the shaft A may rotate freely, and a collar, *d*, is on the shaft just above the arm, where it is retained by a set-screw, *d'*. This arm serves to hold the rotary shaft. One end of the lever C and the arm D are connected by a pivot-bolt, E, and a washer, *e*, on the said bolt separates the lever and arm. In operation the arm or shaft-holder D is designed to remain stationary, while the lever C is vibrated on its pivot E. The lever C has an arc shaped slot, *f*, which is concentric with the pivot-bolt E. The rotary shaft A occu-

pies this slot. At each side of the arc-shaped slot *f* the lever has a slot, one designated by *g* and the other by *g'*, both of which preferably are slightly curved. The length of these two slots extends in the direction of the length of the lever, and each of said slots is occupied by one of the pawl-pivots *h* and *h'*. One pawl, F, is on the pivot *h* at the free side of the arc-shaped slot, and another pawl, F', is on the pivot *h'* at the pivoted side of the arc-shaped slot, and both of these pawls engage with the same ratchet-wheel, *b*. Each pawl-pivot *h* and *h'* is on the free end of a carrier, G G', the other end of which is pivoted loosely on the rotary shaft A at one side of the ratchet-wheel *b*. Two carriers, G and G', are used. A spring, *i*, is on each carrier, and bears against the pawl thereon, and serves to keep the pawl engaged with the teeth of the ratchet-wheel.

The two pawl F and F' and their carriers G and G' are all at one side of the lever C, and are necessary to effect the rotation of the ratchet-wheel *b* and shaft A. The position of these parts is shown in Fig. 1, where the lever is at the end of its throw in one direction. When the lever is at a point midway of its throw, the pawls and carriers have the position shown in Fig. 5, and when the lever is at the other end of its throw the pawls and carriers have the position indicated by broken lines in Fig. 1.

Thus far this description embrace two pawls, F F', each having a carrier, G G', and arranged at one and the same side (which in the drawings is the top side) of the lever C. These parts will produce an operative device, and the back-and-forth movement of the lever C will impart a rotary motion to the shaft A.

As thus constructed the mechanical movement is adapted for certain purposes—for instance, in hoisting machinery or windlasses, where the shaft A would be set in stationary bearings in a suitable frame; but to adapt it to certain other purposes—for instance, as a borer for tapping gas or water pipes, where the tool is to be held entirely by the hand of the operator—I find it necessary to have a duplicate set of pawls and carriers and to arrange these latter at the opposite side of the

lever C. (See Fig. 2.) In the drawings this is the bottom or lower side of the lever. By thus having two sets of pawls and carriers and two ratchet-wheels on the shaft, and the lever C working between the two sets, the parts are so balanced that a workman with one hand on the holder-arm D and the other on the lever-C may bore with great rapidity.

While this device is applicable to many uses, the drawings illustrate it rigged to work a boring-bit, L, which is set in a socket, m, in the end of the rotary shaft A.

One forward and back movement of the lever C will make an entire revolution of the rotary shaft A.

The mechanical movement may be worked with the lever moving either in a horizontal plane or a vertical plane.

In such an application or use of the movement as would require more power than one man could ordinarily exert on the lever the arm D may be detached from the pivot E and shaft A in the position seen in Figs. 1 and 2, and said arm reversed to the position seen in Fig. 10. When thus used, the arm D becomes a lever, and is as effective in imparting power as the lever C. Two men can work at the device when rigged as seen in Fig. 10.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of a pivoted lever having an arc-shaped slot concentric with the pivot, a rotatable shaft occupying the arc-shaped slot and provided with a ratchet-wheel, two pawl-carriers, each having one end pivoted loosely on the rotatable shaft and the other ends projecting in opposite directions, and each attached to separate pivots, *h h'*, which slide on the lever, a pawl on each pawl-carrier, and a spring pressing each pawl to the said ratchet-wheel, as set forth.

2. The combination of a pivoted lever having an arc-shaped slot concentric with the pivot, and at each side thereof a slot whose

length extends in the direction of the length of the lever, a rotatable shaft occupying the arc-shaped slot and provided with a ratchet-wheel, two pawl-carriers, each having one end pivoted loosely on the rotatable shaft and the other ends projecting in opposite directions, and each attached to separate pivots, *h h'*, which occupy the last-named slots, a pawl on each of the same pivots as the carriers, and a spring on each carrier bearing on the pawl thereof, as set forth.

3. The combination of a pivoted lever having an arc-shaped slot concentric with the pivot, an arm, D, having one end connected with the lever by a pivot-bolt, a rotatable shaft held by the arm and occupying the arc-shaped slot and provided with a ratchet-wheel, two pawl-carriers, each having one end pivoted loosely on the rotatable shaft, and the other ends projecting in opposite directions, and each attached to separate pivots *h h'*, which slide on the lever, a pawl on each pawl-carrier, and a spring pressing each pawl to the said ratchet-wheel, as set forth.

4. The combination of a rotatable shaft having two ratchet-wheels with a space between them, a pivoted lever working between the said two ratchet-wheels, and having an arc-shaped slot concentric with the pivot, and which is occupied by the said rotatable shaft, each side of the lever provided with two pawl-carriers, each having one end pivoted loosely on the rotatable shaft and the other ends projecting in opposite directions, and each attached to separate pivots, *h h'*, which slide on the lever, a pawl on each pawl-carrier, and a spring pressing each pawl to the said ratchet-wheel, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JESSE CONWAY.

Witnesses:

JOHN E. MORRIS,
JNO. T. MADDOX.