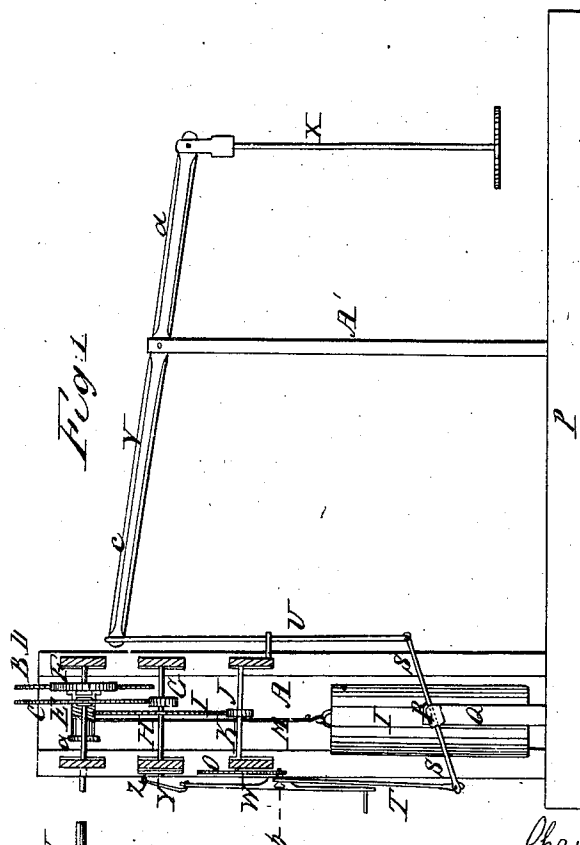
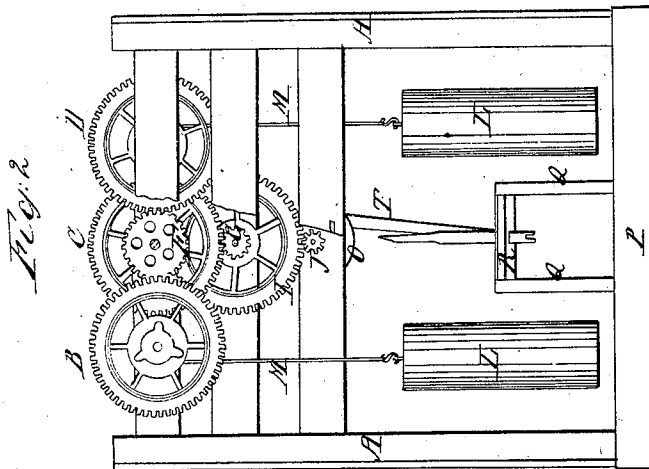


C. C. Welsh, Motor.

N^o 82,907.

Patented Oct. 6, 1868.



Witnesses:

Louis Prodhon

Jacob Perry



Inventor:

Christopher C. Welsh
by Diederichsen &
attys

United States Patent Office.

CHRISTOPHER C. WELSH, OF PLEASANT VALLEY, PENNSYLVANIA.

Letters Patent No. 82,907, dated October 6, 1868.

IMPROVED MACHINE FOR CONVERTING ROTARY INTO RECIPROCATING MOTION.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN :

Be it known that I, CHRISTOPHER C. WELSH, of Pleasant Valley, in the county of Washington, and State of Pennsylvania, have invented a new and useful Improvement in Power; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure I is a side view of the device, illustrating my invention.

Figure II is a front view thereof.

Similar letters of reference indicate corresponding parts in the two figures.

My invention is a novel means for obtaining power at a small expense; and consists of certain gearing of clockwork and weights, for communicating motion to a crank-wheel, whereby a suitable motion can be imparted to the churn-dasher, pump-rod, or other devices, through the medium of intermediate levers, in a simple and expeditious manner, as will be hereinafter more fully described.

In the drawings—

A represents an upright framing, on the upper end of which are mounted, in suitable bearings, the shafts of toothed wheel B C D.

The shafts of the wheels B D have likewise loose sleeves, E, fitted thereon, whose outer ends are formed into a flange, *a*.

Their inner ends bear against the body of the wheels, and are there provided with ratchets, against whose teeth bear pawls, which are pivoted to the wheels B D.

The teeth of these two wheels mesh with a pinion, F, secured on the shaft of the middle wheel, C.

The teeth of the wheel C mesh with a pinion, G, secured to a shaft, H, and also carry a toothed wheel, I, which, in return, meshes with a pinion, J, on a shaft, K, below the wheel I.

L are weights, attached to cords, M, which are adapted to wind around the sleeves E in the same direction.

The shafts of the wheels B D are extended beyond their bearings, and are formed into squares, which receive the key N, for the purpose of winding the cords M, around the sleeves B.

It will be perceived that, if the keys are applied and turned to the right, the wheels B D will rotate with their shafts, and, in consequence of the pawls bearing against the ratchets of the sleeves, the sleeves will rotate also, thereby wind the cords around the sleeves, and draw up the weights L.

When the weights are at their highest point, and the key N is withdrawn, they will cause the cords to unwind, and thereby rotate sleeves and the wheels B D, and cause a rotation of the shaft K through the intermediate wheels, shafts, and pinions.

This shaft K is extended beyond its bearings, and has secured to it, at one end, a crank-wheel, O, provided with a wrist-pin, *b*.

From the ground or platform, P, which supports the framework A, there arises vertical standard Q, which supports a rock-shaft, R, having its journals on said standard.

An arm, S, projects in line from each other, from opposite sides of the rock-shaft.

One end of this arm S has pivoted to it the lower end of an arm or shaft, T, whose upper end is connected to the wrist-pin *b* of the crank-wheel O of the shaft K.

The other end of the arm S is pivoted to the lower end of a connecting-rod, U, whose upper end is pivoted to a walking-beam or swinging lever, V.

This lever V is of suitable size, and is mounted on a standard, A', arising from the ground or platform P. It has its pivot at a point between the end and centre, so that greater leverage is obtained, and thus it is divided into a short and long arm, *c d*.

The connecting-rod U is pivoted to the long arm, *c*, of the lever V, as shown in fig. 1.

To the end of the short arm, *d*, I pivot, in any suitable manner, the upper end of the churn-dasher or pump-rod X, or the operating-rod of any device to which power is to be applied.

It will be perceived that, when the shaft K rotates the crank-wheel O, a vibratory motion is imparted to the arm T, and thereby causing a swinging up-and-down motion to the arms S of the rock shaft R.

The connecting-rod or shaft U also receives motion and causes a reciprocating motion to be imparted to the lever or beam V.

The churn-dash or rod X will then receive a rapid reciprocating motion in a steady and powerful manner.

The shaft H is also extended beyond its bearings, and has secured to it a crank, Z, to which is connected a rod or pitman, Y, pivoted to one end of a swinging lever, W, which is hinged to the framework A.

A wire, rod, or cord may be attached to the outer end of the lever W, and be connected to a cradle or other device, as desired.

By the above combination and arrangement of parts, I produce power which is simple, practical, and useful.

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

In combination with the single set of gearing, the arrangement of the swinging lever V, vertical connecting-rod U, rocking lever R S, vertical arm T, and crank O, when constructed and operating substantially as herein represented and described.

To the above I have signed my name, this 15th day of January, 1868.

CHRISTOPHER C. WELSH.

Witnesses:

JOHN A. WIEDERSHEIM,

ROBERT M. FIESTER.