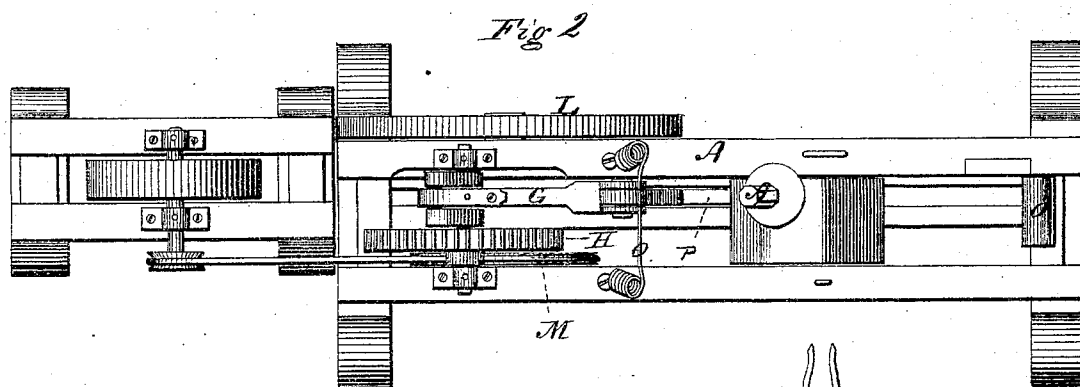
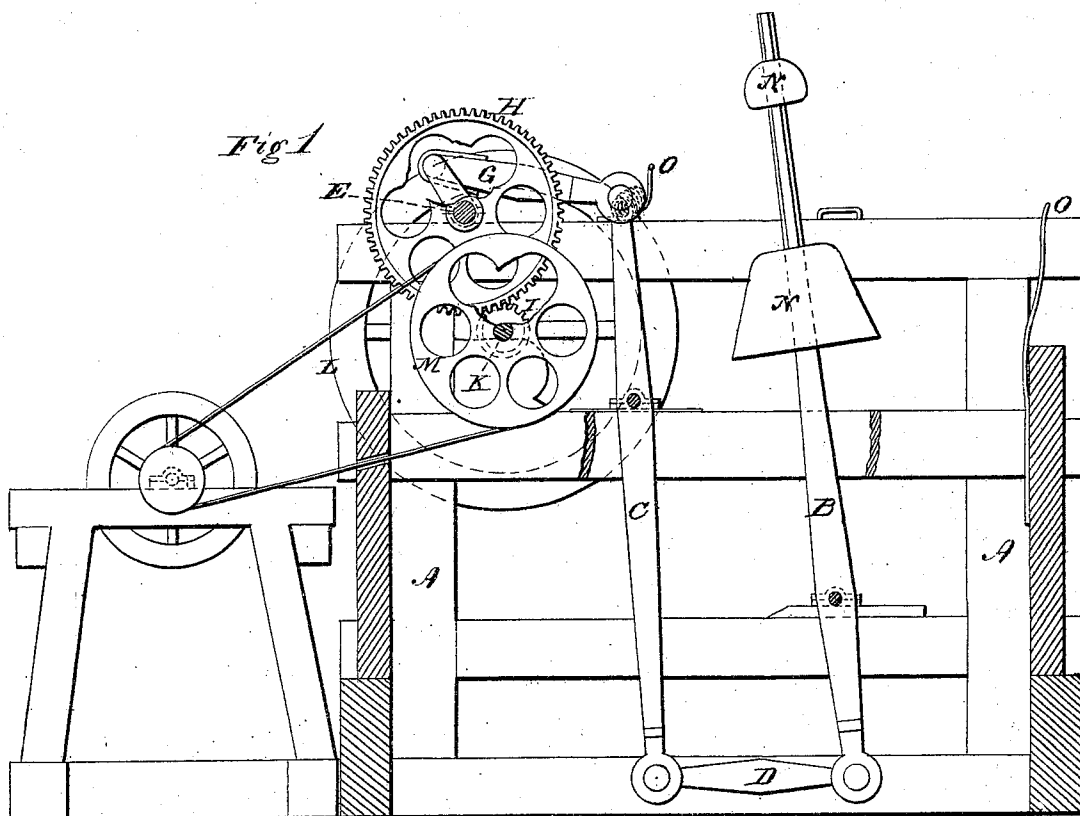


ALEXANDER CLARK.

Improvement in Mechanical Movement.

No. 119,821.

Patented Oct. 10, 1871.



Witnesses:

*Harry King*  
*Phil. T. Dodge*

Inventor:

*Alexander Clark*  
*by Dodge & Munn*  
*Attys.*

# UNITED STATES PATENT OFFICE.

ALEXANDER CLARK, OF ALBANY, ILLINOIS, ASSIGNOR TO STEPHEN G. PERKINS,  
OF SAME PLACE.

## IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. 119,821, dated October 10, 1871.

*To all whom it may concern:*

Be it known that I, ALEXANDER CLARK, of Albany, in the county of Whitesides and State of Illinois, have invented certain Improvements in Mechanical Power, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to a novel arrangement of mechanism, through or by means of which manual power can be advantageously applied to driving machinery, the construction and operation of the apparatus being hereinafter fully explained.

Figure 1 is a side elevation of my machine, a portion of the frame-work being broken away to expose other parts; and Fig. 2 is a top plan view of the machine.

In the drawing, A represents a strong upright frame, and B an upright hand-lever mounted in one end of the same, the shaft or pivot of the lever being near its lower end. C is another upright lever mounted in the frame near lever B, the fulcrum of this second lever being near its upper end. D is a link, connecting the lower ends of the two levers B C, as shown in Fig. 1, the short arm of the hand-lever being thus connected to the long arm of the other. E is a horizontal crank-shaft, mounted in the upper corner of the frame A, and connected by a pitman, G, with the upper end of lever C. On this crank-shaft is mounted a large gear-wheel, H, which gears into a small pinion, I, which latter is secured on a horizontal shaft, K, mounted in frame A, as shown in Fig. 1. The shaft K is also provided with a fly-wheel, L, and a band-wheel or pulley, M. Two weights, N N, are secured upon the upper end of the hand-lever B, and two springs, O O, are secured on the frame A on opposite sides of the hand-lever, as shown, so that when the lever is vibrated it will strike them alternately.

In using the apparatus, the saw or other machine to be driven is connected by a belt with the pulley M and then the hand-lever grasped by the operator and urged back and forth. The hand-lever operates the second lever C, which, through the pitman G, operates the crank-shaft E and its gear-wheel H, which latter in turn operates the shaft K, with its fly-wheel and pulley. The combination of levers enables the operator to exert great power on the crank-shaft, while the gearing communicates a very rapid motion to the pulley and fly-wheel. The weights N on the hand-lever serve to steady and equalize the motion of the various parts, inasmuch as their momentum tends to carry the hand-lever onward toward the latter part of its stroke or movement when the pitman has the least leverage on the crank. The springs serve to check the motion of the hand-lever gradually at the end of its stroke, and thus to prevent strain on the parts.

My machine thus constructed is simple and cheap, and it enables a man to exert his strength to a great advantage and for a long time without becoming fatigued, and it will therefore be found of great service for driving-saws, grinding-mills, feed-cutters, and all other light machinery.

Having described my invention, what I claim is—

1. The weighted hand-lever B, in combination with the buffer or recoil-springs O, arranged to operate as herein described.

2. In combination with the above the lever C, link D, pitman G, and crank-shaft E, provided with suitable gear-wheels, when arranged to operate as set forth.

ALEXANDER CLARK.

Witnesses:

W. W. DURANT,  
I. R. WITHROW.