

(No Model.)

W. K. CROFFORD.
MANUAL POWER MACHINE.

No. 480,452.

Patented Aug. 9, 1892.

Fig. 1.

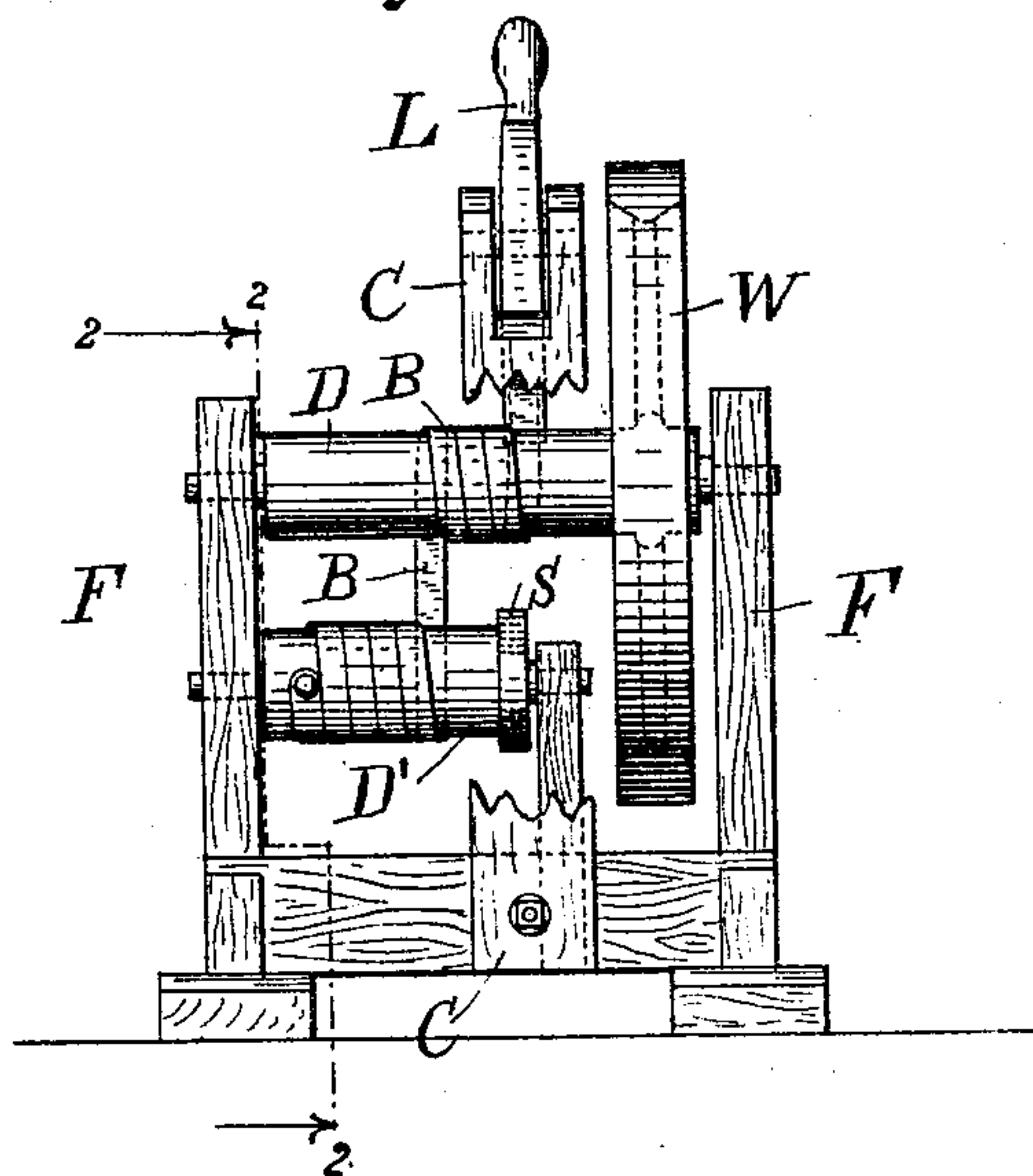


Fig. 2.

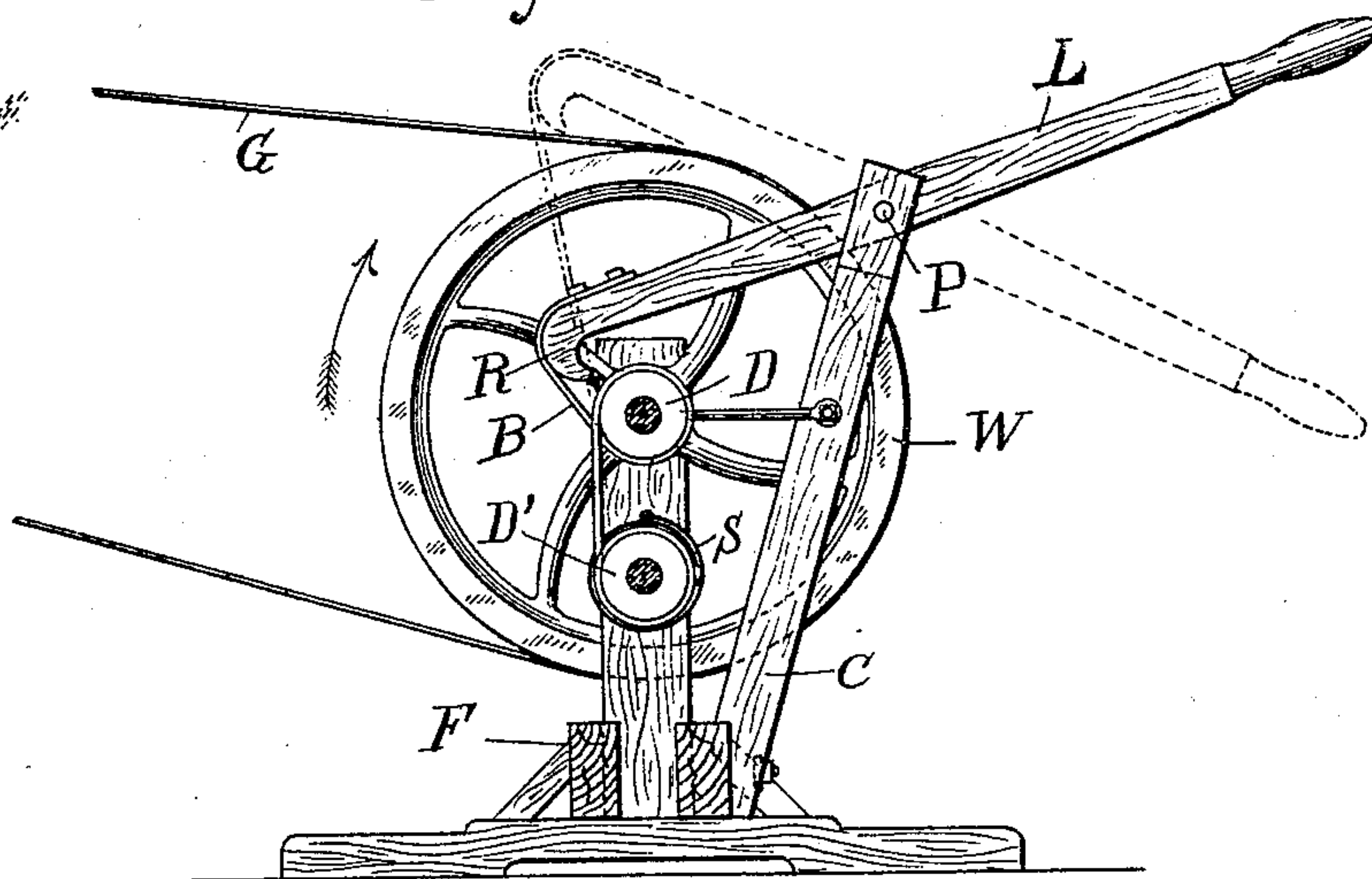
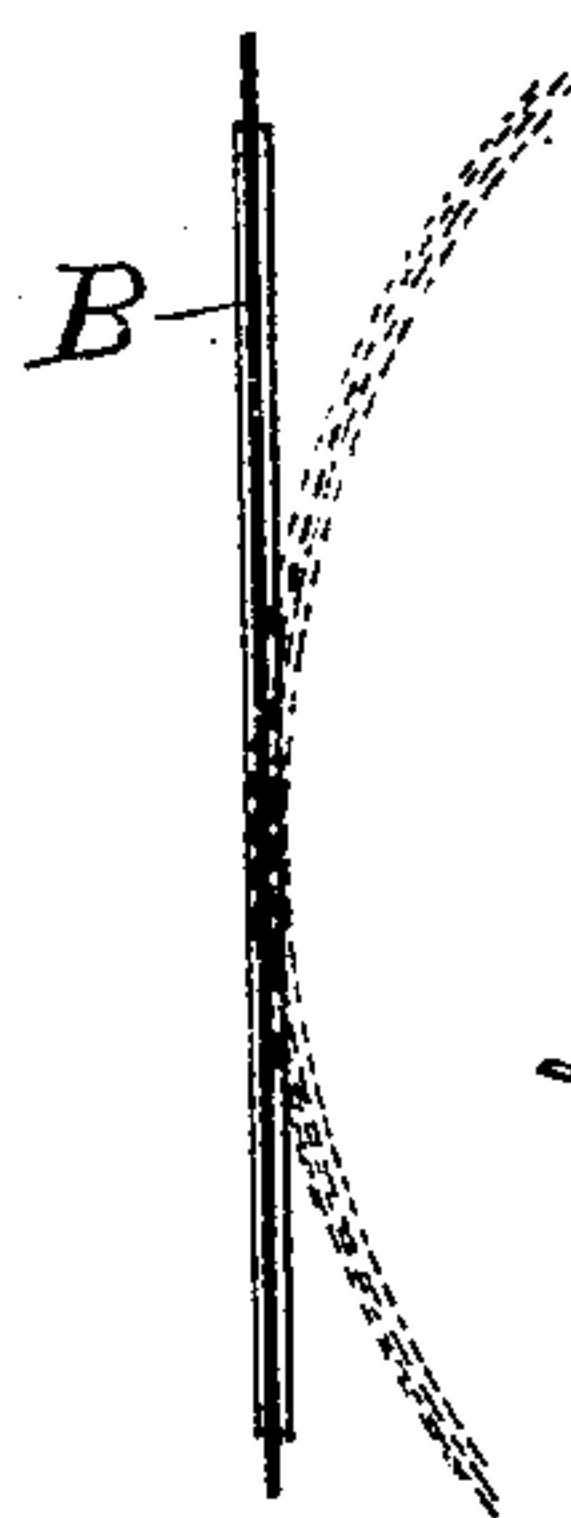


Fig. 3.



Witnesses
Chas Hanemann
R L Greten

W. K. Crofford Inventor

UNITED STATES PATENT OFFICE.

WARREN K. CROFFORD, OF NEW YORK, N. Y.

MANUAL-POWER MACHINE.

SPECIFICATION forming part of Letters Patent No. 480,452, dated August 9, 1892.

Application filed August 31, 1891. Serial No. 404,362. (No model.)

To all whom it may concern:

Be it known that I, WARREN K. CROFFORD, a citizen of the United States, and a resident of the city, county, and State of New York, have invented a new and useful Improvement in Manual-Power Machines, of which the following is a specification.

This invention consists of means for driving rotary hand or foot power machines—such as lathes, saws, emery-wheels, blast for forges, &c.—without having dead-center or the use of ratchet device.

Figure 1 is a side view; Fig. 2, a sectional view on line 2 2 of Fig. 1; Fig. 3, a piece of spring friction-belt B.

The driving-shaft is mounted in suitable journal-bearings in the framework of machine and carries a balance-wheel W with an elongated hub or drum D. This hub or drum may be of wood or metal. The take-up drum D' may be made of wood or metal, is mounted in suitable journal-bearings, and has a spring S, like a clock-spring, located at one end to cause this drum to rotate and take up slack in the driving-belt. One end of the spring S just mentioned is fastened to the end of take-up drum D', and the other end is fastened to the framework of the machine in such a manner that when the driving-belt is fed from take-up drum onto driving-drum this spring will be tightened.

The driving-belt G is made of a thin narrow strip of spring metal covered with or attached to some material more flexible than the spring itself, preferably leather or rubber. There are other forms of spring and device for covering the same that may be used for this purpose; but for the present I prefer the form above stated. The fulcrumed lever L, which may be made suitable for the hand or foot, is made with the forward end rounded, so that the spring driving-belt B will not be given

too short a turn where the lever is pressed down. The driving-belt is fastened to the forward end of lever, wound two or more times spirally around the hub or drum on the driving-shaft and as many or preferably more times around the take-up drum, and is fastened to the latter. When pressure is put on the lever, the friction-belt tightens around the hub of the driving-shaft, causing that shaft to revolve without any lost motion. So soon as pressure is taken off the lever the spring in driving-belt instantly causes the belt to release its grip on the drum on driving-shaft and the take-up drum takes up the slack of the belt at the same moment.

What I claim, then, as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a manual-power machine, of a lever, a continuous driving-belt fastened to said lever and wound spirally one or more times around a drum on the driving-shaft and one or more times around a take-up drum and fastened to the latter, and said drums, substantially as set forth.

2. The combination, in a manual-power machine, of a lever, the driving flexible connection, the drum and balance-wheel rigid with each other and with the shaft, and an automatic take-up for said flexible connection, said flexible connection being spirally wound around said drum and being thence directly connected at one end with said lever and at the other end to said automatic take-up, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 27th day of August, 1891.

WARREN K. CROFFORD.

Witnesses:

JOHN H. SMITH,
R. C. GRETEN.