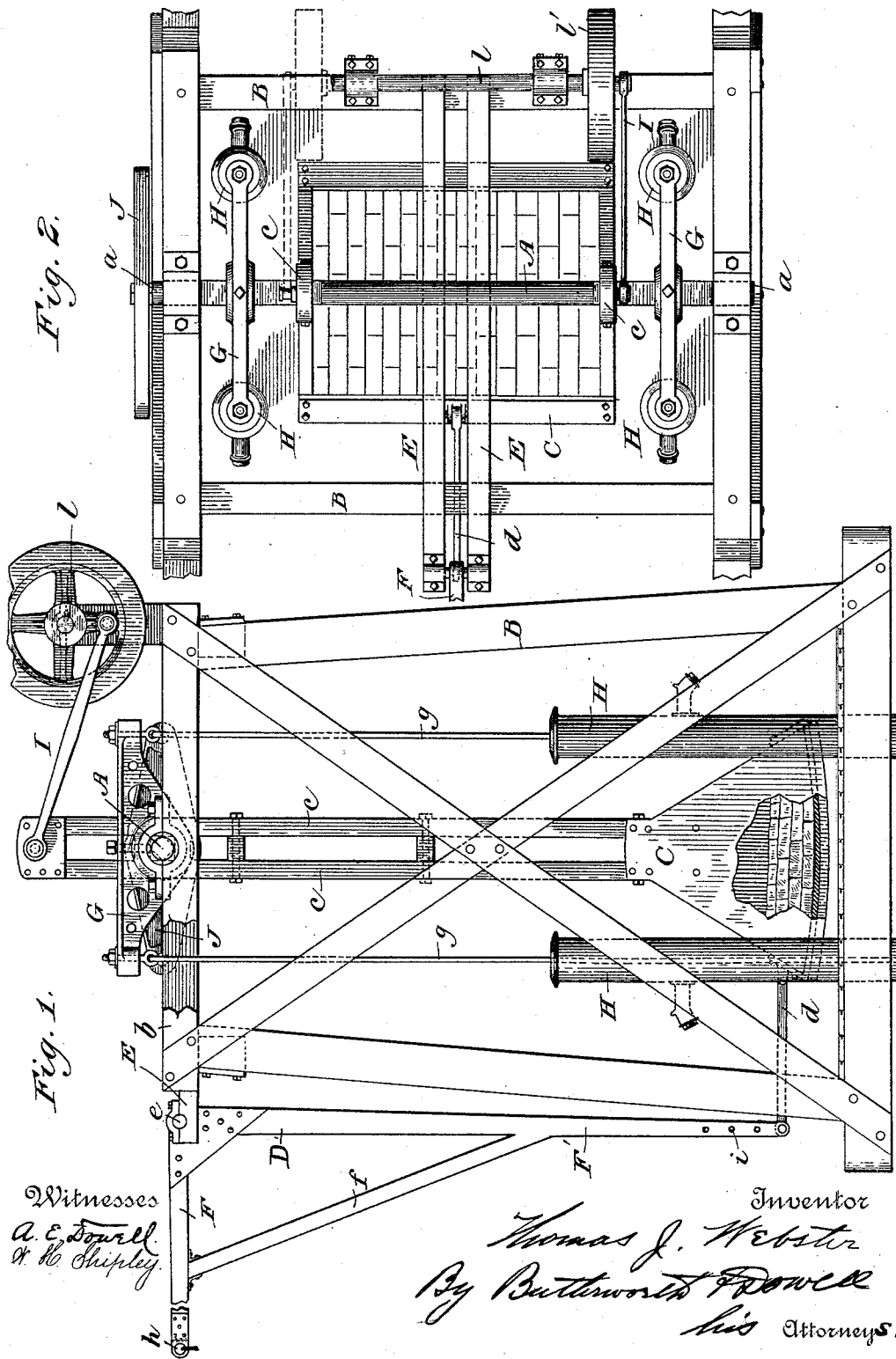


(No Model.)

T. J. WEBSTER.
MECHANICAL POWER.

No. 460,297.

Patented Sept. 29, 1891.



UNITED STATES PATENT OFFICE.

THOMAS J. WEBSTER, OF DENVER, COLORADO.

MECHANICAL POWER.

SPECIFICATION forming part of Letters Patent No. 460,297, dated September 29, 1891.

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To all whom it may concern:

Be it known that I, THOMAS J. WEBSTER, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Mechanical Powers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in mechanical powers; and the object of the invention is to provide a device of this character which is particularly designed for the application of manual power in actuating pumps and other similar devices; but the invention is adapted to be used for various purposes, and the device may be actuated either by hand or machine power.

The invention consists, essentially, of a rocking shaft combined with a depending weighted lever or pendulum which controls and regulates the movement of the rock-shaft, which latter is suitably connected with the devices to be operated, the power being applied directly to the weighted lever or pendulum at the weighted depending portion thereof by means of a depending swinging angle-lever or bell-crank and suitable connections, all as hereinafter described, and particularly pointed out in the claims at the end of this description.

In the accompanying drawings, in which like letters of reference are used to indicate like parts of the machine, Figure 1 represents a side elevation of the invention, partly in section; and Fig. 2, a plan view thereof, with parts broken away.

A designates the rock-shaft, which is mounted in proper journal-bearings *a* upon the top pieces *b* of a frame B, of any suitable construction, and which is braced so as to prevent lateral movement or swaying of the beam in rocking.

C designates a hollow body or weight-receptacle suspended centrally from and below the shaft A by a bar or bars *c c*, which are rigidly attached to the body and to the shaft, so that when the shaft is rocked the body will be oscillated, and vice versa. The body and bars

together constitute a loaded swinging lever or pendulum designed to cause the rocking of the shaft by the oscillating movements of the swinging body, which is free to vibrate as desired.

The receptacle C may be weighted in any suitable manner for the purpose of increasing its momentum and thus augmenting the force of the rock-shaft in the transmission of power. It is preferably filled with stone or other suitable material, the quantity of which may be varied to adapt the same to the requirements of the use to which the device is to be put or the power by which it is actuated, it being desirable to increase the momentum of the body or receptacle C when four or more pumps, as shown, or other similar devices are operated upon and to diminish the momentum when the number of devices to be operated is decreased, this being also true of the machine when operated by manual or machine power, the greatest momentum being required when operating by machine-power for the purpose of actuating a number of pumps or the like simultaneously.

For the purpose of applying power to the pendulum I preferably connect the weighted body or receptacle C to the lower end of a vertically-swinging angle-lever or bell-crank D by means of a pitman or connecting-link *d*. The angle-lever D is pivoted at *e* to a projecting portion of the frame B, preferably by means of a rocking bolt having bearings in suitable bars E E, mounted on the frame B below the rock-shaft. The arms F F' of the angle-lever D are connected by a brace *f*. The arms F F' and brace *f* constitute a rigid triangular frame or bell-crank, which is suspended from the right-angled portion of the triangle, so that the horizontal arm F projects outwardly from the machine a suitable distance for the attachment of a cord or rope *h*, by which the angle-lever may be rocked upon its pivot, so as to impart motion to the swinging lever or pendulum C.

It will of course be understood that by means of suitable connections the horizontal arm F may be connected with any suitable source of power for the purpose of actuating the pendulum. When operated by simple manual power, the operator can, by al-

ternately pulling and releasing the rope *h*, cause the arm *F'* of the angle-lever, through its connections with the weight-receptacle, to impart motion to the rock-shaft and the devices operated thereby.

I preferably construct the arms *F F'* of the lever *D* of equal length; but the length of these arms may be varied so as to increase or decrease the leverage, and, as will be readily understood, the power required to oscillate the pendulum-lever will be increased or diminished accordingly as the arms of the lever are lengthened or shortened. This effect may be produced by simply providing the arms of the lever with a series of perforations, as shown at *i* in Fig. 1, to any one of which the link *D* may be connected.

G G designate walking-beams mounted upon the rock-shaft *A*, and *g g* are pitmen depending therefrom, which may be connected to the plungers or pistons of the pumps *H H* for the purpose of operating the same.

Four pumps are shown connected with the rocking beams; but of course the number of pumps or other devices to which power is applied may be varied according to requirements.

For the purpose of steadying the motion of the machine and still further increasing its efficiency, the ends of bars *c* may be extended so as to project above the shaft *A*, and their upper ends may be connected by pitmen *I* to wrist-pins upon suitable fly-wheels *I'*, fixed upon a horizontal shaft *l*, journaled in suitable bearings upon the frame *B*, one pitman and fly-wheel being represented in full lines and another pitman and fly-wheel being represented in dotted lines; but of course a single fly-wheel and pitman may be used, if desired, or this auxiliary device may be removed from the machine altogether, although I preferably use the same for the purpose of giving steadiness of motion to the machine.

J is an auxiliary walking-beam secured to the shaft *A* outside of the frame-work, and is designed to be connected to a pump or churn or any suitable device for operating the same.

The operation of the invention will be readily understood from the foregoing description. When the pendulum-lever is suitably loaded and the machine is once set in motion, the momentum of the lever will cause it to oscillate repeatedly before coming to rest, so that after the initial movement has been given very little additional force will be necessary to cause the same to vibrate continuously, and the amplitude of its vibrations may be readily controlled by varying the application of power to the angle-crank.

Without desiring to be limited to the exact construction herein shown and described, which may be varied in a number of ways without departing from the principle of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A mechanical power comprising a suitable frame, a rock-shaft journaled thereon, a swinging pendulum-lever suspended from said rock-shaft, a swinging angle-lever suspended from said frame, suitable connections between the depending portions of said angle-lever and said pendulum-lever for imparting motion to the latter, and means for transmitting power from said rock-shaft, substantially as described.

2. In a mechanical power, the combination of the rock-shaft, the swinging triangular lever, the weight-receptacle suspended from said shaft by rigid connections and adapted to be variably weighted, and connections between said triangular lever and weight-receptacle for imparting motion to the latter, substantially as described.

3. In combination with the rock-shaft and devices for transmitting power therefrom, the weight-receptacle, the bars suspending said receptacle from said shaft rigidly connected to both shaft and receptacle and extending above the shaft, the balance-wheel connected to said extension, and the swinging angle-lever having its depending arm connected to said weight-receptacle for oscillating the same, substantially as set forth.

4. The combination of the frame, the rock-shaft journaled thereon, the weighted pendulum-lever suspended from said shaft, the swinging angle-lever or bell-crank pivoted to said frame and having the horizontal and vertically-depending arms, and the link adjustably connecting the lower end of the depending arm of said crank with the said receptacle, substantially as described.

5. The combination of the frame, the rock-shaft mounted thereon, the bars rigidly connected to said shaft and suspended therefrom, the weight-receptacle attached to the lower end of said bars, the swinging angle-lever or bell-crank having its depending arm linked at its lower end to said receptacle, the operating-cord attached to the free end of the horizontal arm of said angle-lever, and devices for transmitting power from said rock-shaft, substantially as described.

6. The herein-described power device, comprising a frame, a rock-shaft mounted thereon, the walking-beams on said shaft, the pitmen connected to said beams, the weighted pendulum-lever suspended from said rock-shaft, the angle-bar or bell-crank having its vertically-depending arm linked to said receptacle, and means for imparting motion to the horizontal arm of said angle-bar so as to oscillate the pendulum-lever, substantially as described.

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

THOMAS J. WEBSTER.

Witnesses:

A. M. DANIELS,
B. E. GARDNER.