

(No Model.)

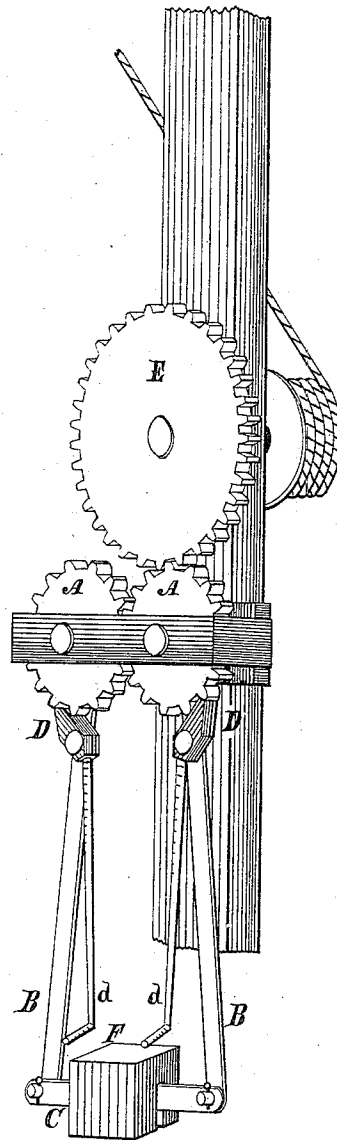
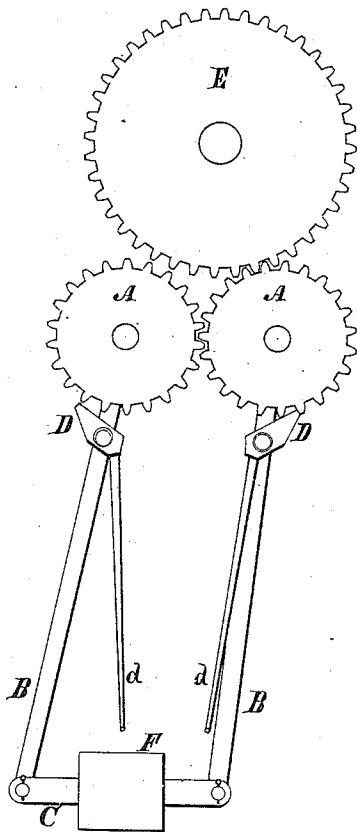
P. G. OLDS.  
POWER MACHINE.

No. 309,159.

Patented Dec. 9, 1884.

Fig. 2.

Fig. 1.



WITNESS.

*O. L. Fimo.*  
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# UNITED STATES PATENT OFFICE.

PHILO G. OLDS, OF ELYRIA, OHIO, ASSIGNOR OF ONE-HALF TO THOMAS C. BOWEN, OF SAME PLACE.

## POWER-MACHINE.

SPECIFICATION forming part of Letters Patent No. 309,159, dated December 9, 1884.

Application filed March 24, 1884. (No model.)

*To all whom it may concern.*

Be it known that I, PHILO G. OLDS, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented a new and useful Power-Machine, of which the following is a specification.

My invention relates to an improvement in power-machines by a combination of levers, a coupling-bar, coupling-levers, gearing, and weight; and the object of my improvement is to increase power and to simplify, economize, and facilitate its exercise, transmission, and application. These objects are attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical view of the front of the machine. Fig. 2 is an oblique view.

Similar letters refer to similar parts throughout the views.

The cog-wheels A A, geared to each other; the levers B B, swinging one on the axle of each cog-wheel A A with a regular pendulum motion; the coupling-bar C, uniting by being pivoted one end to each lever B B at its lower and opposite end from A A; the coupling-levers D d D d, bent and so constructed and pivoted at the angle, one to each lever B B, that their short arms engage one with each cog-wheel A A, and their long arms extended downward and of such length as by gravity or by hand to control the working of the short arm; the cog-wheel E, with its shaft, in gear with one of the cog-wheels A A; the weight F on the coupling-bar C, and any suitable framework, with bearings adapted to the use to be made of it, constitute the machine. The levers B B move the machine by power being applied at the lower ends to swing them to and fro with a regular pendulum motion. As these levers B B are thus swung from a vertical position, being the position of rest, to one side, their movement in the other direction is aided by the weight F and the levers B B themselves, both acting with the power being applied. As the point of rest is passed the momentum acquired aids the power in moving the levers until the returning-point is reached, when the levers B B are swung back again, and so on to and fro with a regular pendulum movement.

The above-described movement of the le-

vers B B is made to drive the cog-wheel E with its shaft continuously in one direction by means of the coupling-levers D d D d, the cog-wheels A A, geared as shown, and the coupling-bar C, as follows, viz: As the levers B B are swung to one side—let us say to your right hand as you look at the drawings—the short arm of the coupling-lever D d, which is pivoted to the right-hand lever B, engages with and communicates motion to the right-hand cog-wheel A, which in turn drives the wheel E and its shaft, and also turns the left-hand wheel A. Now, as the levers B B reach the returning-point and start back, the short arm of the coupling-lever, which has been engaged with its cog-wheel A by action of gravity on its long arm, is disengaged, and by like means and at the same instant the other coupling-lever is at once engaged with its wheel A, so that the driving of the cog-wheel E through A A is taken up and carried on without intermission by one coupling-lever just at the instant the other coupling-lever ceases to act. To secure this action of the coupling-levers D d D d, the levers B B must always retain the same relative position with respect to each other—that is, must always be the same distance apart and always maintain the same angle of divergence or convergence. I accomplish this by means of the coupling-bar C.

The continuous motion of the cog-wheel E and its shaft I secure by the manner of gearing A A to each other, and one of them to E, as shown, and by means of the levers B B, the coupling-levers D d D d, and coupling-bar C, all constructed and connected as shown.

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

1. The combination, in a power-machine, of levers, coupling-levers, a coupling-bar, gearing, and weight, substantially as set forth, constructed, connected, and for the purposes specified.
2. The levers B B, swinging one on the axle of each cog-wheel A A, connected at their lower and opposite ends from A A by the pivoted coupling-bar C, and each carrying, by having pivoted to it, one of the bent coupling-levers D d D d, substantially as shown and described, for the purposes specified.

3. The bent coupling-levers D *d* D *d*, with long and short arms pivoted at the angle one to each of levers B B, the short arms to engage one with each of the cog-wheels A A, and the long arms to extend downward to be operated by gravity or by hand, as may be desired, substantially as shown and described, for the purposes specified.

4. The coupling-bar C, pivoted at its ends to each of the levers B B at their lower extremities, retaining them always in the same relative position with respect to each other as they swing to and fro, substantially as shown and described, for the purposes specified.

5. The combination of the cog-wheels A A and E with the manner of gearing, the cog-wheels A A to be geared with each other, and one of them to be geared with cog-wheel E, and A A to be acted on by the levers B B through and by means of the coupling-bar C and the coupling-levers D *d* D *d*, alternately when continuous motion of E is desired, and jointly when a state of rest or a lock is desired.

PHILO G. OLDS.

Witnesses:

H. M. ANDRESS,  
R. H. SHUTE.