

J. R. DUBOIS.
 Improvement in Apparatus for Multiplying Power.
 No. 131,215. Patented Sep. 10, 1872.

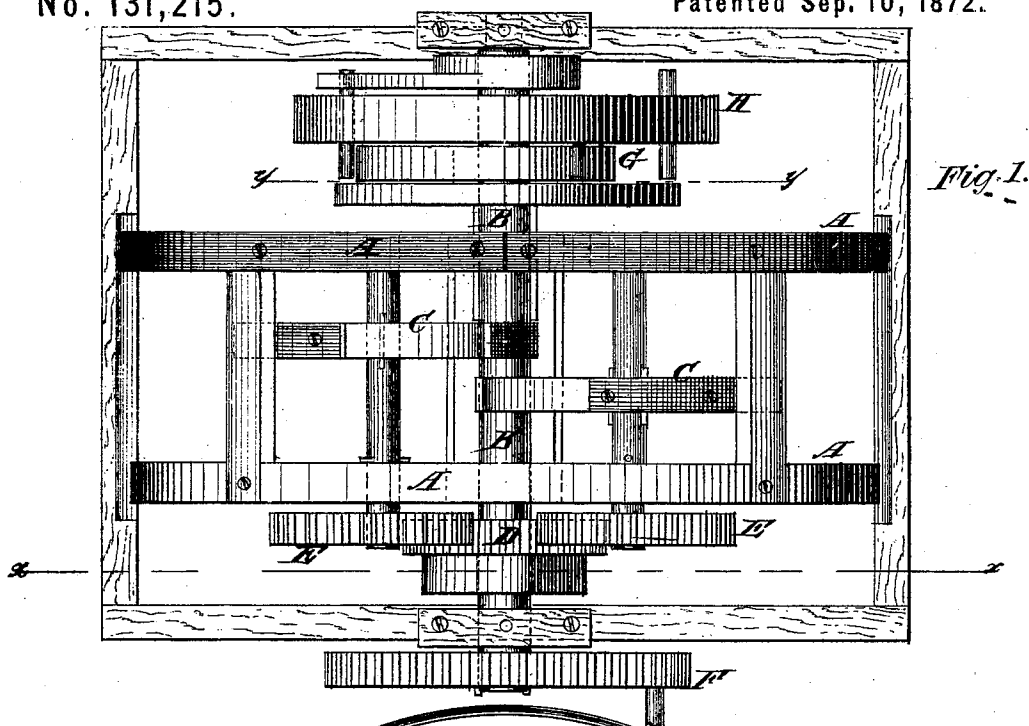


Fig. 1.

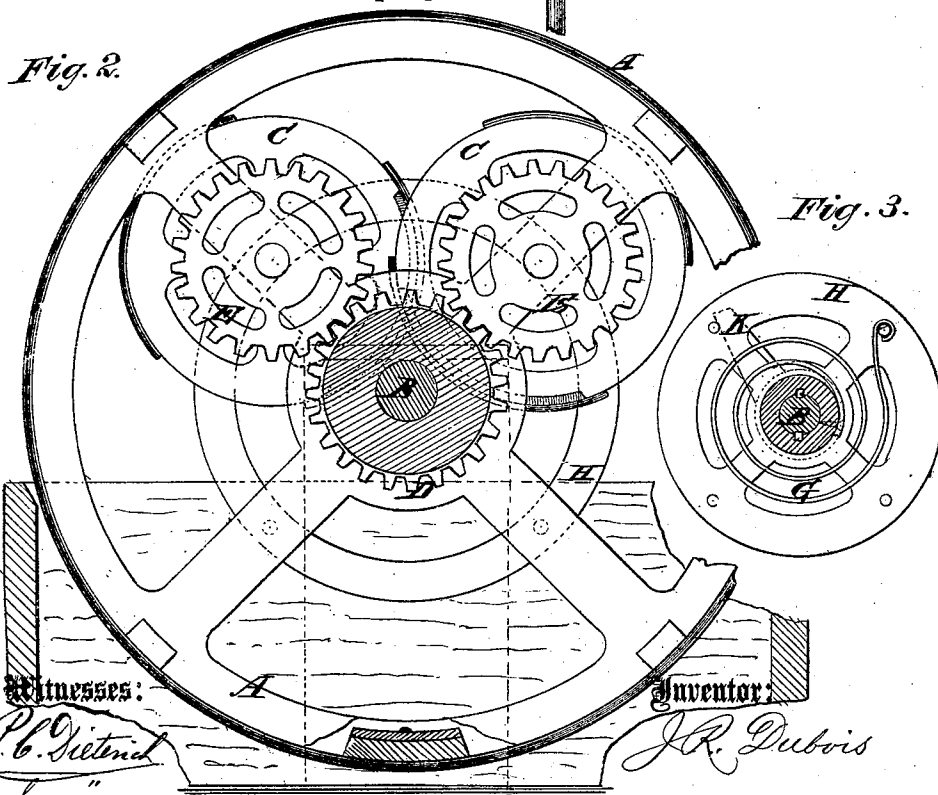


Fig. 2.

Fig. 3.

Witnesses:
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JOHN R. DUBOIS, OF VIRGINIA CITY, NEVADA.

IMPROVEMENT IN APPARATUS FOR MULTIPLYING POWER.

Specification forming part of Letters Patent No. 131,215, dated September 10, 1872.

Specification describing a new and Improved Power-Multiplier, invented by JOHN ROSWELL DUBOIS, of Virginia City, in the county of Storey and State of Nevada.

My invention consists of one or more fly-wheels, preferably two, weighted on one side, combined with a rotary frame and a stationary gear-wheel in such manner that being carried around the horizontal axis of said rotary frame the weighted sides will be next to the shaft of the rotary frame on the ascending side and furthest from it on the descending side, and thus aid in the rotation of the said frame by the difference in leverage thus gained; and to this may be added a considerable advantage obtained by the momentum of these weighted parts by the rotation imparted to the said wheels by the fixed wheels with which they gear; thus I propose to multiply and increase a small initial force applied to the shaft of the rotary frame for turning it. My invention also comprises a connection of the shaft of a rotary frame with the machinery, to be driven by a spring in such manner that a light power will be capable of starting both the multiplying apparatus and the machinery driven thereby, by starting the one first while the spring is relaxed, and afterward the other when the first has obtained momentum to aid it in starting the next by the time the spring has come into tension equal to the resistance of the machine to be driven.

Figure 1 is a plan view of my improved machine. Fig. 2 is a longitudinal sectional elevation taken on the line *x x* of Fig. 1; and Fig. 3 is a sectional elevation taken on the line *y y*.

Similar letters of reference indicate corresponding parts.

A is a large wheel or rotary frame on a horizontal axis, B, for carrying one or more smaller balance-wheels, C, to be mounted in the arms of said frame parallel with the shaft B, and geared with the fixed wheel D in the axis of shaft B, but not turning with it, the wheels E, by which said balance-wheels are geared with D, being of the same size and having the same number of teeth as D, so that the balance-wheels have two revolutions

to one of the wheel A, one being on their own axis and the other on the axis of said wheel A. These wheels, which are preferably arranged on arms at right angles to each other—that is to say, a quarter of a circle from each other—are weighted on one side, and they are so adjusted that when they are ascending on the wheel A the weighted sides will be next to the shaft B; but when descending said weighted sides will be at the greatest distance from said shaft, so that I get a material difference of leverage for the weights to act upon wheel A in the direction in which it is turned—say, by the wheel F—so that a small force applied thereto will be increased or multiplied by the said weights; but as this force is only operative when the machine is in motion, so that it is of no service in starting up the machine, and as the little force needed on the wheel F, to turn the wheel A, sufficiently to make this auxiliary force available, would not be sufficient to start wheel A and the machinery to be driven by said wheel A or its shaft, I propose to connect this power with the machinery to be driven by a coiled spring, G, so connected to shaft B at its inner end and to the transmitting-pulley H, fixed loosely on the shaft at the outer end, that it will have to be wound up a half a turn, or thereabout, before its tension will be sufficient to set the machine to be driven in motion, whereby the frame or wheel A will be started alone, and the balance-wheels will obtain sufficient momentum to aid the power in starting the other machine by the time the spring is taut enough to act; or, instead of depending on the spring alone, I may have an arm, K, on shaft B, to come up to a pin on the transmitting-wheel and form a positive connection.

The wheel A will, preferably, be about five times as great in diameter as the cog-wheels for gearing the balance-wheels are, but this proportion may be varied, and it will have a balancing-rim also.

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

1. The combination with the revolving-wheel or frame A, of one or more weighted balance-wheels, C, arranged and mounted in

it, as described, and geared with a fixed wheel, D, in the axis of said wheel A, all substantially as specified.

2. The combination, with the elements of the foregoing claim, of a transmitting-wheel, H, fixed loosely on the shaft B, and connected by a spring, G, only, or by the same,

an arm, K, and a stop-pin, all substantially as specified.

JOHN ROSWELL DUBOIS.

Witnesses:

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