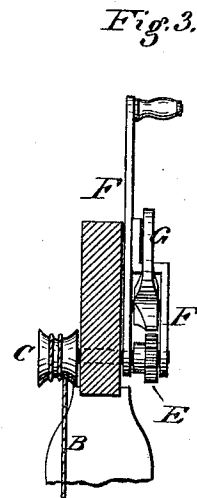
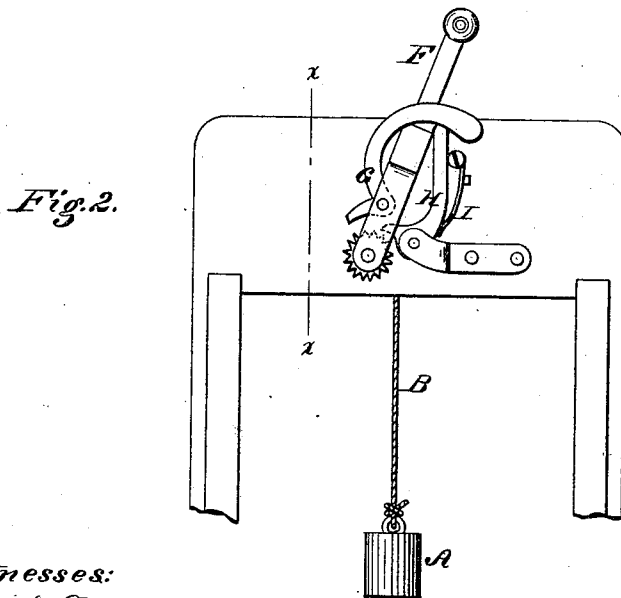
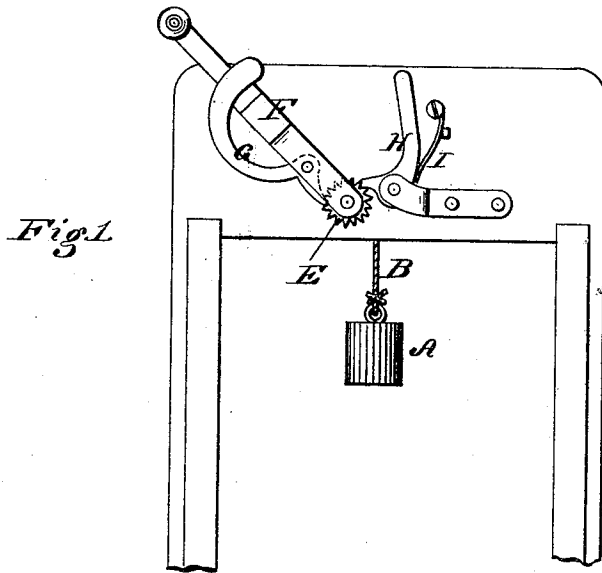


J. F. CRAWFORD.

MECHANISM FOR RAISING AND DROPPING WEIGHTS.

No. 178,600.

Patented June 13, 1876.



Witnesses:
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JOSEPH F. CRAWFORD, OF CAZENOVIA, NEW YORK.

IMPROVEMENT IN MECHANISMS FOR RAISING AND DROPPING WEIGHTS.

Specification forming part of Letters Patent No. **178,600**, dated June 13, 1876; application filed May 16, 1876.

To all whom it may concern:

Be it known that I, JOSEPH F. CRAWFORD, of Cazenovia, in the county of Madison and State of New York, have invented certain Improvements in Mechanism for Raising and Dropping Weights, of which the following is a specification:

The object of my invention is to provide means whereby a weight may be raised to any desired height and suddenly dropped; and to this end it consists in the combination of a vibrating lever with certain mechanical devices, through the instrumentality of which the lever operates and controls a drum, on which is wound a chain sustaining the weight.

Figure 1 represents a face view of my apparatus in the act of raising the weight; Fig. 2, a similar view of the apparatus during the descent of the weight; Fig. 3, a side or edge view of the apparatus.

A represents the weight, which is attached to the lower end of a chain or rope, B, which latter is attached at its upper end to a drum or windlass, C, as shown. E represents a ratchet-wheel, secured to the shaft or journal of the drum, and F a vibratory lever, having its lower end forked or split, and mounted loosely on the journal of the drum, astride the ratchet-wheel, as shown in Fig. 3. G represents a pawl, pivoted in the lower end of the lever, to engage with and turn the ratchet-wheel, and H represents a second pawl, mounted on the frame of the apparatus, and engaging with the ratchet-wheel, to hold it from turning backward as the lever and its pawl recede, a spring, I, being mounted on the frame to keep the pawl H in action.

The pawl G is extended upward beyond its pivot, and has its upper end made of such weight as to keep the lower end in contact with the ratchet-wheel, and, as shown in Figs. 1 and 2, this weighted upper end of the pawl is curved over to one side past the lever, so that, upon throwing the lever backward past a perpendicular, the weighted end of the pawl will fall and disengage the lower end from

the ratchet-wheel automatically, leaving the ratchet and drum free to turn backward when the ratchet G is disengaged.

As shown in Figs. 1 and 2, the pawl H has its end extended upward above its pivot, so that, when the lever is thrown backward to release the pawl G, it strikes against the pawl H and releases it also, thereby permitting the chain to unwind, and the weight to fall.

In operating the apparatus, the lever is moved up and down until the weight reaches the desired height, when the lever is thrown back past the perpendicular, and the weight thereby released and permitted to fall.

The apparatus, constructed as above, is cheap, simple, and reliable, and will be found of great service in many places, and for the various purposes which require the raising of weights and their fall from different heights.

It is obvious that the lever may be operated by hand, or by any suitable arrangement of mechanism.

Having thus described my invention, what I claim is—

1. The combination of the ratchet-wheel E, vibrating lever F, and the pawl G, pivoted to said lever, and provided with the weighted end, whereby it is caused to release automatically, as shown and described.

2. The combination of the ratchet-wheel E, lever F, and dog or pawl G, constructed as described, with the spring I and pawl H, the latter arranged to be disengaged by the lever, substantially as shown and described.

3. The herein-described apparatus for raising and dropping weights, consisting of the drum C, provided with the weight-sustaining rope B and ratchet-wheel E, the vibrating lever F, provided with the pawl G and the pawl H, combined and arranged to operate in the manner shown and described.

JOSEPH F. CRAWFORD.

Witnesses:

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