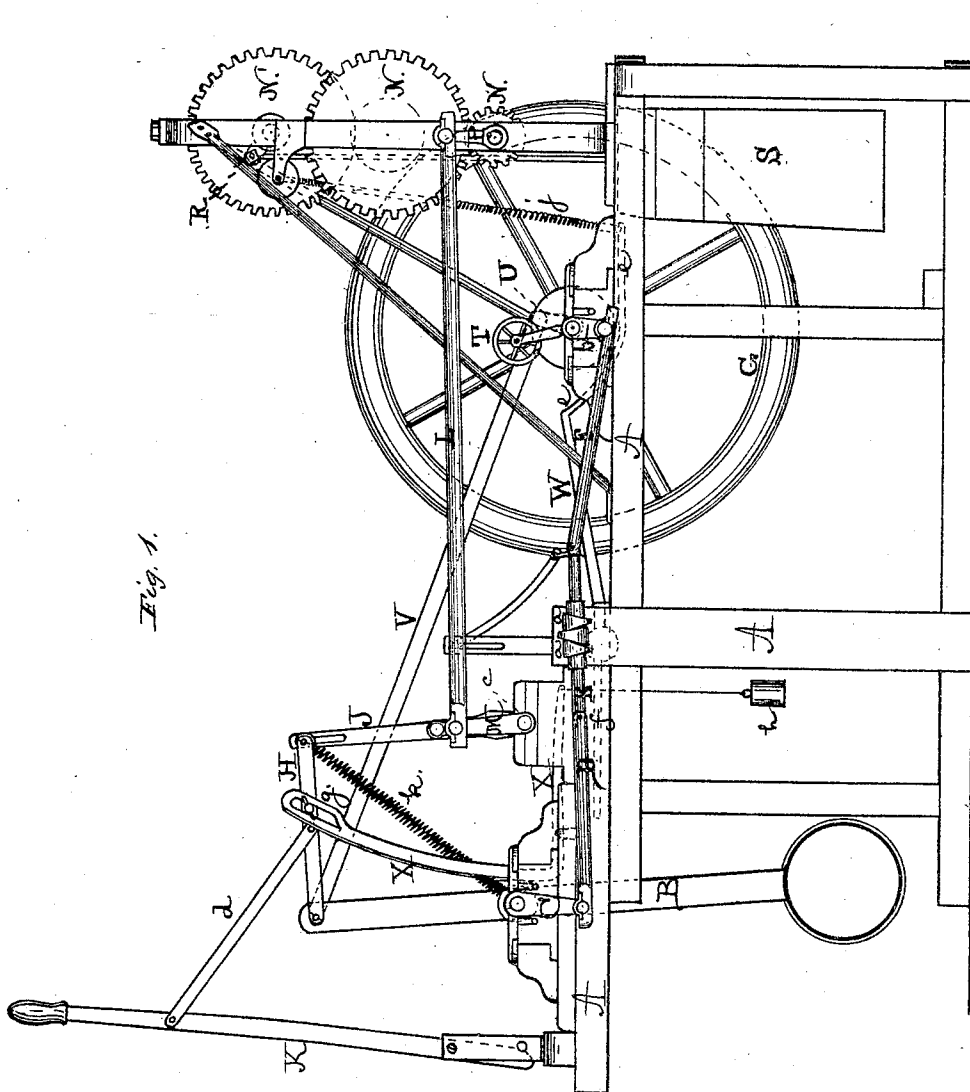


J. B. MARTEL.

Improvement in Motive-Power Apparatus.

No. 128,408.

Patented June 25, 1872.



Witnesses:
Jacob E. Schiedt.
Alfred C. Savidge.

Inventor:
Jean B. Martel.
by John A. Diederichsen
Att'y

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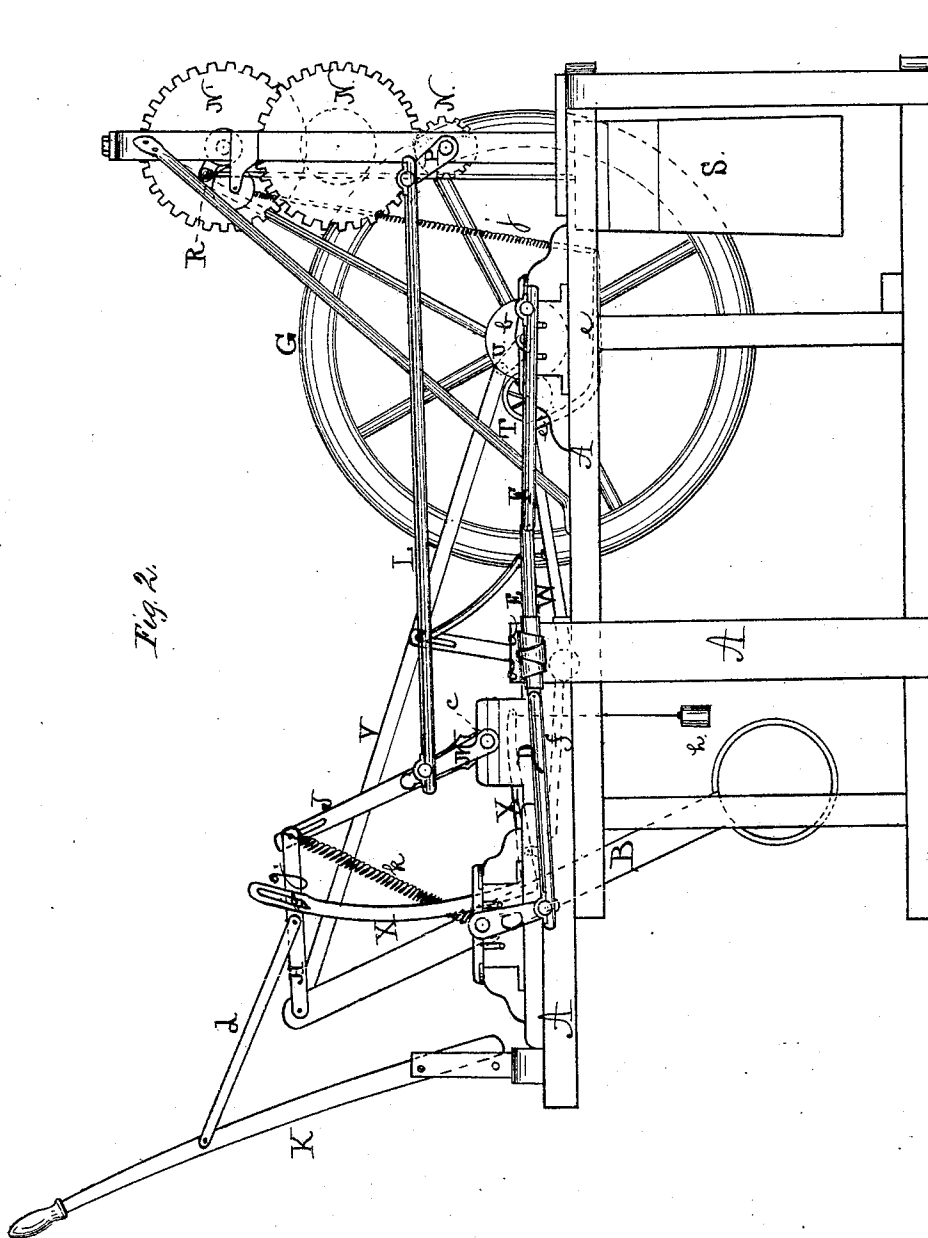


Fig. 2.

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UNITED STATES PATENT OFFICE.

JEAN B. MARTEL, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MOTIVE-POWER APPARATUS.

Specification forming part of Letters Patent No. 128,408, dated June 25, 1872.

To all whom it may concern:

Be it known that I, JEAN B. MARTEL, of city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Mechanical Movement or Motive Power; and I do hereby declare the following to be a clear and exact description of the nature thereof sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a side view of the device, in a state of rest, illustrating my invention. Fig. 2 is a similar view, the parts being represented in operation.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to a device for obtaining power. It consists of a weighted swinging arm and a rising and falling weight. It also consists in a rocking arm, operated at one end by the power-wheel, and operating at the other end an angular arm. It also consists in various combinations of parts.

Referring to the drawing, A represents a suitable frame-work for supporting the working parts of the device. B represents a weighted swinging arm, having its axis on the frame-work A, and to this axis is secured a crank, C, to which is connected one end of a pitman, D, whose other end is jointed to a slide, E, having its bearings *a* on the frame-work. To this slide is also jointed a pitman, F, which is attached to a crank, *b*, of a shaft mounted on the frame-work, and carrying a fly or power wheel, G. The upper end of the weighted arm B has jointed to it a bar, H, to which is jointed an arm, J, secured to a rock-shaft, *c*, whose bearings are on the frame-work A. A connecting-arm, *d*, is hinged to the bar H and to a lever, K, by which the device is started and operated. L represents a pitman, which is jointed to a crank shaft or arm, M, which is attached to the arm J or the rock-shaft *c*. At the end of the frame-work, opposite to the operating-lever, there are mounted toothed wheels N N', whose axes are arranged vertically, so that the wheels gear with each other, and are designed to have reciprocating motions. For this purpose the small pinion N or its axis has attached to it a crank, P, to which

is jointed a pitman, L, which, as has been stated, is connected to the arm J or the rock-shaft *c*. An arm, R, is fixed to the axis of the upper large wheel N', and from said arm is suspended a weight, S, which, in the present case, hangs between the side pieces of the frame. To the axis of the power-wheel G I secure an arm, which carries a roller, T, and rotates with the axis, and to said axis is also fixed an eccentric or crank, U, shown in dotted lines, to which is jointed one end of a connecting-arm, V, which extends to the weighted swinging arm B, and has its other end jointed to said arm. A rocking lever, W, is mounted on the frame-work A, and arranged between the weight S and weighted arm B, so that one side or end, *e*, which is curved, will come under the roller F and be depressed, whereby the other end, *f*, will be elevated. An angular or elbow lever, X, is mounted on the frame-work near the weighted arm B, and has one arm attached to the bar H by a slotted connection, *g*. The other arm is weighted at *h*, and arranged in line with the end *f* of the rocking lever W. A spring, *j*, will be suitably located and connected to the end of the rocking lever W so as to elevate said end or cause it to return to its normal position. A spring, *k*, is connected to the arm J and a portion of the frame-work or fixture to assist the parts in their movements.

The operation is as follows: The operating-lever K will be reciprocated by hand or some light power, either steam, water, or air, and may be started in either direction. In Fig. 2 the lever is represented as having been drawn to the left, and the device commenced its operation. The bar H will move with the lever, and thus draw with it the upper end of the swinging lever B. This throws the crank C to the right, pushes the pitmen D F and slide E, and causes the power-wheel G to rotate. The crank M is simultaneously turned to the right, and, by means of pitman L, causes the weight S to lower. On the return of the lever, as in Fig. 2, the roller T is brought against the rocking lever W and depresses the curved end thereof. This elevates the lower arm of angular lever X and forces the slotted end of said lever against the connecting-pin of bar H. The gearing is now so operated that the weight S is about being raised, and this would

retard the operation of the device; but this is more than overcome by the following characteristics, viz.: the action of the angular lever against the bar H; the power exerted by hand or otherwise on the operating-lever; the power of the power-wheel on the crank C through the medium of the pitmen D F; the tendency of the weighted swinging arm B to assume a vertical position; and the pressure of the connecting-rod V against the arm B, owing to the attachment of said rod and the eccentric or crank on the fly-wheel shaft, so that, while the lowering of the weight causes the parts to move easily and powerfully, the raising thereof produces no perceptible resistance; on the contrary, increases in power and assists in the forcible propulsion of the parts.

This motive power may be utilized in various ways and for various purposes. It may be taken from the shaft of the fly-wheel, or, by suitable connections, from the axes of the gearing N. The axes of the swinging weighted arm and the fly or power wheel should have their bearings on friction-wheels hung in suitable boxes, so as to give ease of movement to said axes. As an auxiliary, I may apply to suitable working parts of the device a drum, cord, and weight, to be wound and unwound, so that after the weight is elevated or wound up its unwinding or lowering will provide power and increase the effectiveness of the movement.

The invention will be found useful and practical. Although it may be kept in motion by easy operation of hand, or by the attachment of a small water-wheel, steam or air engine, or otherwise, the power derived from the parts or leverage, and their relative co-operation, will be great and uniform.

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

1. The weighted arm B and rising-and-falling weight or weights S, with intermediate mechanism, operating together, substantially as described.

2. The rocking arm W, operated at one end by the shaft of the power-wheel, in connection with the angular arm X, which is operated by the other end of the rocking arm, substantially as described.

3. The slide E, having pitmen at both ends, in combination with the crank of the power-wheel G and the crank of the weighted swinging arm B, substantially as and for the purpose described.

4. The operating-lever K with the bar H, arm J, arm B, and angular arm X, in combination with weight S, gearing N N', pitman L, and rocking lever W, as described.

5. The gearing N N' and the rising-and-falling arm R with weight S, in combination with the crank P, rod L, and weighted arm B, substantially as and for the purpose set forth.

6. The power-wheel G, crank or eccentric U, connecting-rod V, rocking arm W, weight S, gearing N N', pitman L, angular arm X, and weighted swinging arm B, combined and operating as described.

The above signed by me this 28th day of February, 1872.

JEAN BAPTISTES MARTEL.

Witnesses:

JOHN A. WIEDERSHEIM,
ALFRED C. SAVIDGE.