(No Model.)

O. E. JONES.

HAND AND FOOT POWER.

No. 300,084. Patented June 10, 1884.

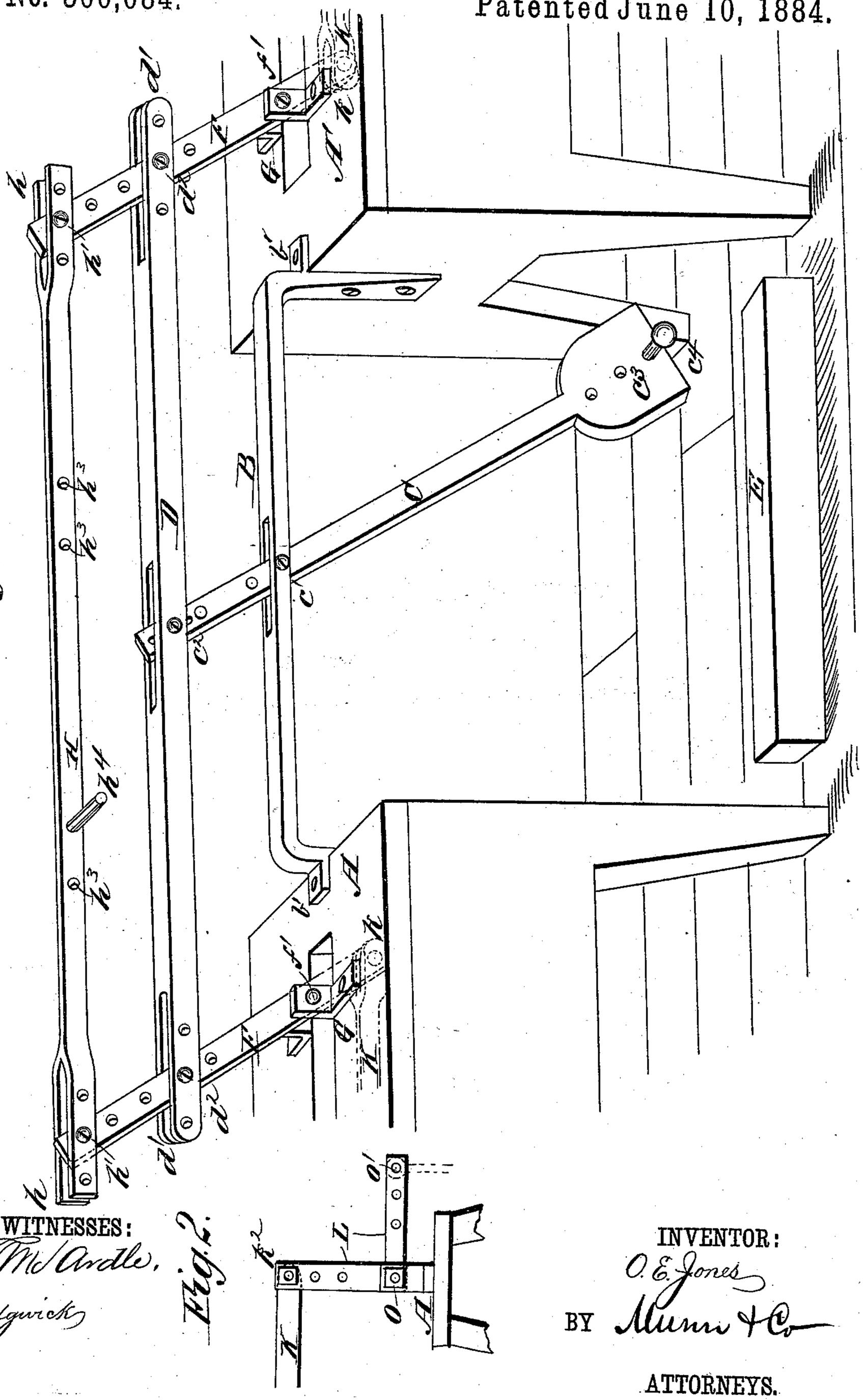

Fig. 1.

Fig. 2.

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OWEN E. JONES, OF WYMORE, NEBRASKA.

HAND AND FOOT POWER.

SPECIFICATION forming part of Letters Patent No. 300,084, dated June 10, 1884.

Application filed November 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, OWEN E. JONES, of Wymore, Gage county, Nebraska, have invented a new and Improved Hand and Foot Power, of which the following is a full, clear, and exact description.

This invention consists in the combination of a vertical lever fulcrumed near its middle part, and having at its lower end a rest for the foot, by which a pendulum-like motion is imparted to it, with a horizontal bar pivoted at its center to the upper end of the above-described lever, and at its ends to two upright levers fulcrumed below their centers to the frame, and with a second horizontal bar, the ends of which are pivoted to the upper ends of the two last-mentioned levers, and which bar is provided with a handle for the hand of the operator for the purpose of applying the combined power of the hand and foot to the operation and propulsion of any machine which is usually run by hand and foot power, as will be hereinafter more fully set forth.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both figures.

Figure 1 is a perspective view of the apparatus, represented as adapted to running two machines requiring horizontal motion. Fig. 2 is a side elevation of a connecting-bar and bell-crank lever, which are to be interposed between the apparatus represented in Fig. 1 and the machine to be operated, for the purpose of changing the horizontal into a vertical motion when required.

A A′ are supports for the apparatus.

B is a cross-bar, attached at its ends *b′ b′* to the standard-frames A A′ and supported by them.

C is a lever, which is pivoted above its center to the cross-bar B at *c′*.

To the lower end of the lever C a weight, c^3, is attached, to add impetus to the force by which the downward or return motion of the lower end of the lever is accomplished. As shown in the drawings, the lever C and weight c^3 are made in one piece, and are preferably so constructed. A foot-rest, c^4, is attached to the lower end of the lever C, on which to place the foot by which the lever is operated. Additional sockets are provided in the lever for the adjustment of the foot-rest. A block or platform, E, is placed in a convenient position on which to rest the other foot of the operator, who is thus enabled to stand in a level and easy position. The lever C is provided with additional holes for the connecting-pins, so that the leverage may be increased or diminished, as may be required. D is a connecting-bar placed above the supporting-bar B and in a horizontal position, and is connected at its center to the slotted upper end, c^2, of the lever C. It is slotted in the middle to receive the end of the lever C, and is also slotted with open slots at both ends, to receive the levers F F. It is provided with additional pin-holes, so that the points of connection with the levers F F may be changed as required. The function of the bar D is to transmit motion from the upper end of the lever C to the levers F F.

The levers F F are placed in a position parallel to the lever C. They are fulcrumed at a point, *f′*, below their centers to the fulcrums G G, which are secured to the top of the standard-frame A A′. The levers F F are actuated by the bars D and H, and are pivoted to the bar D at d^2 d^2, and to the bar H at *h′ h′*. The connecting-bar H is placed in a horizontal position above the bar D, and is slotted at both ends with open slots to receive the upper ends of the levers F F, to which it is pivoted at *h′ h′*. Additional pin-holes are provided, so that the positions of the connecting-points may be changed, as required.

To the middle portion of the bar H a handle, h^4, is attached, by which the operator, with his hand, imparts a reciprocating horizontal motion to bar. h^3 h^3 h^3 are additional sockets for the reception of the handle h^4, so that it may be placed to suit the convenience of the operator.

To the lower ends, *k k*, of the levers F F are pivoted the machines to be operated; or, when it is more convenient so to do, connecting-rods K K or bell-crank levers L, or both of them combined, as shown in Fig. 2, are interposed between the levers F F and the machines to be operated. If the motion required in the said machines be a vertical one, as in pumping, the bell-crank lever L is used; but if the motion

required is a horizontal one the lever L is not used. The right-angled or bell-crank lever D is fulcrumed at O to a part of the standard-frame A, and is connected at o' to the machine to be driven.

The connecting-rods K may be lengthened, so that connections will be provided for several machines, which may thus be operated together.

The operation is as follows: The operator is stationed between the standard-frames A A′, and, placing one foot on the foot-rest c^4 in the lower end of the lever C, and grasping with the hand the handle h^4 of the connecting-bar H, throws the lower end of the lever C from him with his foot, and at the same time draws the handle h^4 of the bar H toward him with his hand. Thus the connecting-bars D and H are simultaneously propelled in the same direction, and act together on the levers F F. The motions of the hand and foot are then reversed, and the lever C and bar H thereby thrown in the opposite direction, and thus a continued reciprocating motion is imparted to the connecting-bars D and H, and through them and the levers F F, and, if used, the connecting-rods K K and crank-lever L, to the machine or machines to be operated.

The advantages to be obtained by my invention are economy in the application of the power, as by its use a man is enabled to drive two or more machines in the same time in which he would drive only one without it; also ease and convenience to the operator, as in its use he stands in an easy, upright posture, and is thus enabled to exert his full strength in a natural manner without stooping or bending his back. He can also change his position at will by facing the other way, thus bringing into use the hand and foot previously at rest. Power may thus be applied to washing-machines, pumps, circular or cross-cut saws, churns, grindstones, and numerous other machines which are usually run by hand or foot power.

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

1. The pendulous operating-lever C, constructed, substantially as described, with a weight and adjustable foot-rest at its lower extremity, and slot and adjustable-pivot apertures at the upper end, and adapted for connections with the bars B and D, as set forth.

2. The cross-bar B, constructed, as described, with a central slot and pivot to receive and support the pendulous lever C, as set forth.

3. The connecting-bar D, constructed with a central slot and pivot for connection with the upper end of the lever C, and slots and perforations for adjustable pivots at either end, and adapted for connections with the levers F F, substantially as set forth.

4. The oscillating levers F F, constructed with perforations for adjustable pivots, and adapted for connections with the bars D and H and with the machine to be operated, substantially as set forth.

5. The hand-bar H, constructed with slots at either extremity and apertures for adjustable pivots, and adapted for connections with the levers F F, substantially as set forth.

6. The combination of the pendulous lever C, the cross-bar B, connecting-bar D, connecting-bar H, and levers F F, substantially as set forth.

7. The combination, with the lever C, cross-bar B, connecting-bar D, levers F F, and connecting-bar H, of the connecting-bar K and bell-crank lever L, substantially as set forth.

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Witnesses:
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