P. BELLINGER.

Mechanical-Movement.

No. 167,213. Patented Aug. 31, 1875.

Fig: 1.

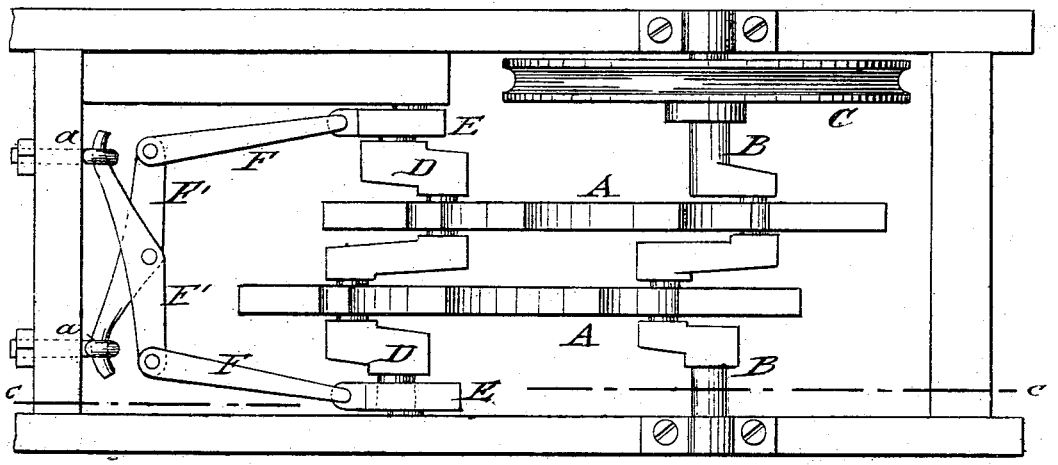
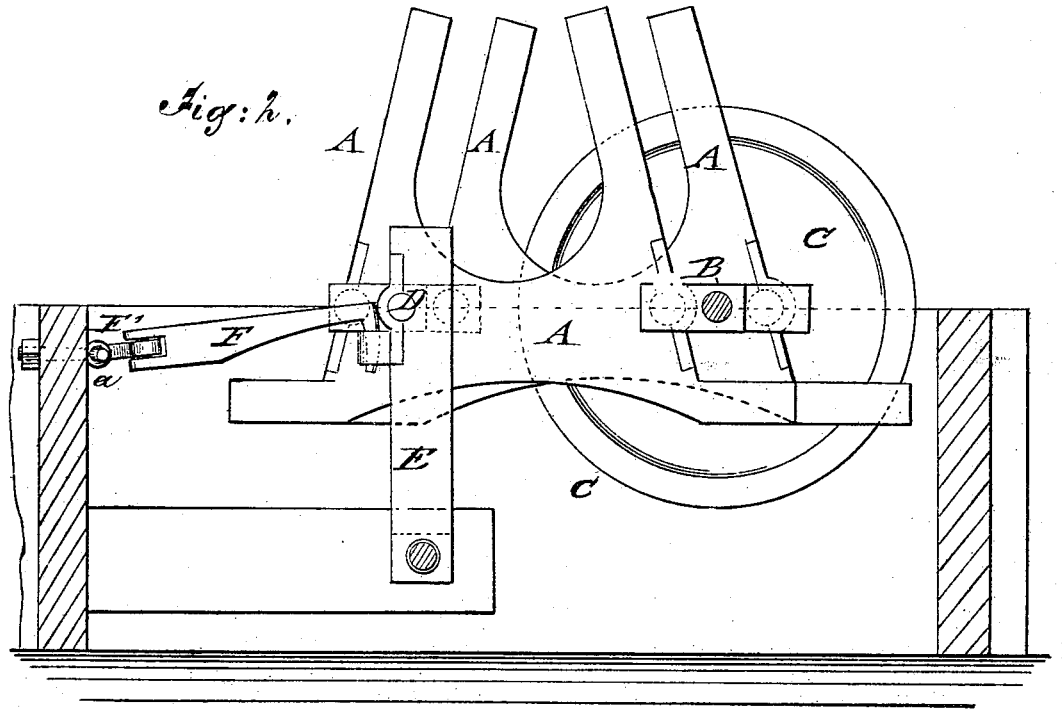


Fig: 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

PHILIP BELLINGER, OF PAOLI, INDIANA.

IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. **167,213**, dated August 31, 1875; application filed July 17, 1875.

To all whom it may concern:

Be it known that I, PHILIP BELLINGER, of Paoli, in the county of Orange and State of Indiana, have invented a new and Improved Mechanical Movement, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view, and Fig. 2 a vertical longitudinal section on the line *c c*, Fig. 1, of my improved mechanical movement.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved mechanical movement for changing rotary reciprocating into rotary motion, to be employed for working saws and other light machinery.

The invention consists of alternately-acting handle-levers and treadles, which are applied to a double crank-shaft with balance-wheel, and also to a second crank-shaft turning in pivoted bearings, with an equalizing attachment.

In the drawing, A A represent two handle-levers and treadles, which are arranged sidewise of each other in such a manner that they may be readily actuated by the hands and feet, whose power is alternately exerted thereon. The lever and treadles A are pivoted to a double crank-shaft, B, that turns in suitable bearings, and has a balance-wheel, C, to assist in overcoming the dead-points. Both levers and treadles A are also pivoted to a second revolving double crank-shaft, D, that turns jointly and uniformly with the main crank-shaft B, being journaled to bearings of swinging standards E. The standards E are pivoted at their lower ends to the supporting-frame, and connected at the upper ends by links F to centrally-pivoted cross-levers F′, whose rear ends are applied to stationary eyes or staples *a* of the supporting-frame.

The pivoted cross-levers and links retain the pivoted shaft-standards, while they admit a certain motion to the same, equalizing, by their action, the motion of the second crank-shaft, and assisting, by the slight play allowed thereto, the overcoming of the dead-points of the device.

The equalizing-lever attachment may be detached, and the movement operated without the same, if desired.

The main crank-shaft is, by belt, cog-wheels, or otherwise, connected with the saw, churn, or other article to be set in motion, transmitting the power of the body in very effective manner to the same.

The alternating action of the hands and feet on the levers and treadles, together with the weight of the body, overcomes fully the dead-points of the double cranks, and establishes regular rotary motion.

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

The combination, with pivoted standards E and link-connected cross-levers F F, of double crank-shafts B D and the levers A, whose fulcrums revolve around the crank-pins, as and for the purpose specified.

PHILIP BELLINGER.

Witnesses:
PAUL GOEPEL,
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