

(No Model.)

H. ST. LAWRENCE.
POWER HAMMER.

No. 335,394.

Patented Feb. 2, 1886.

Fig. 1.

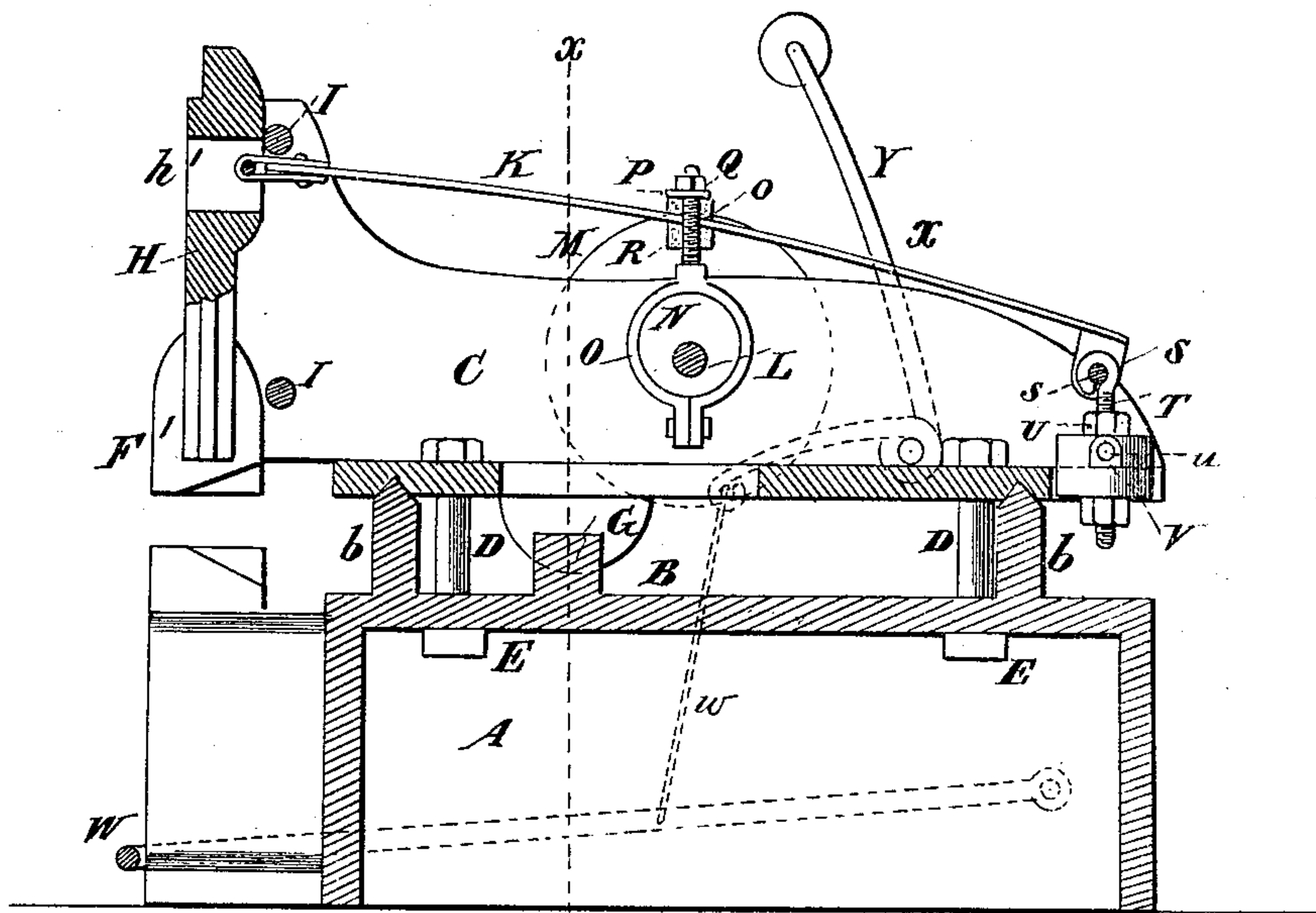


Fig. 2.

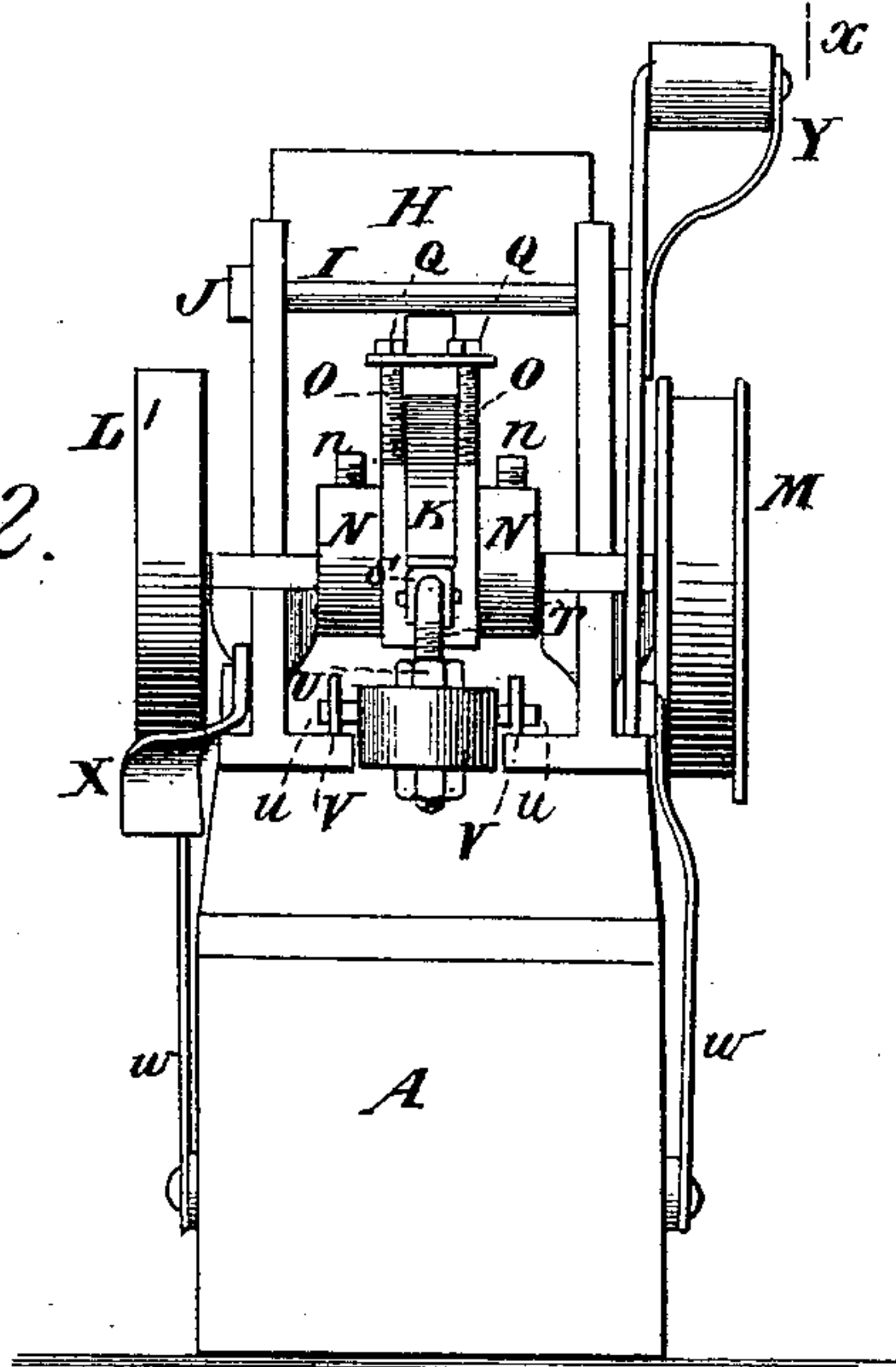
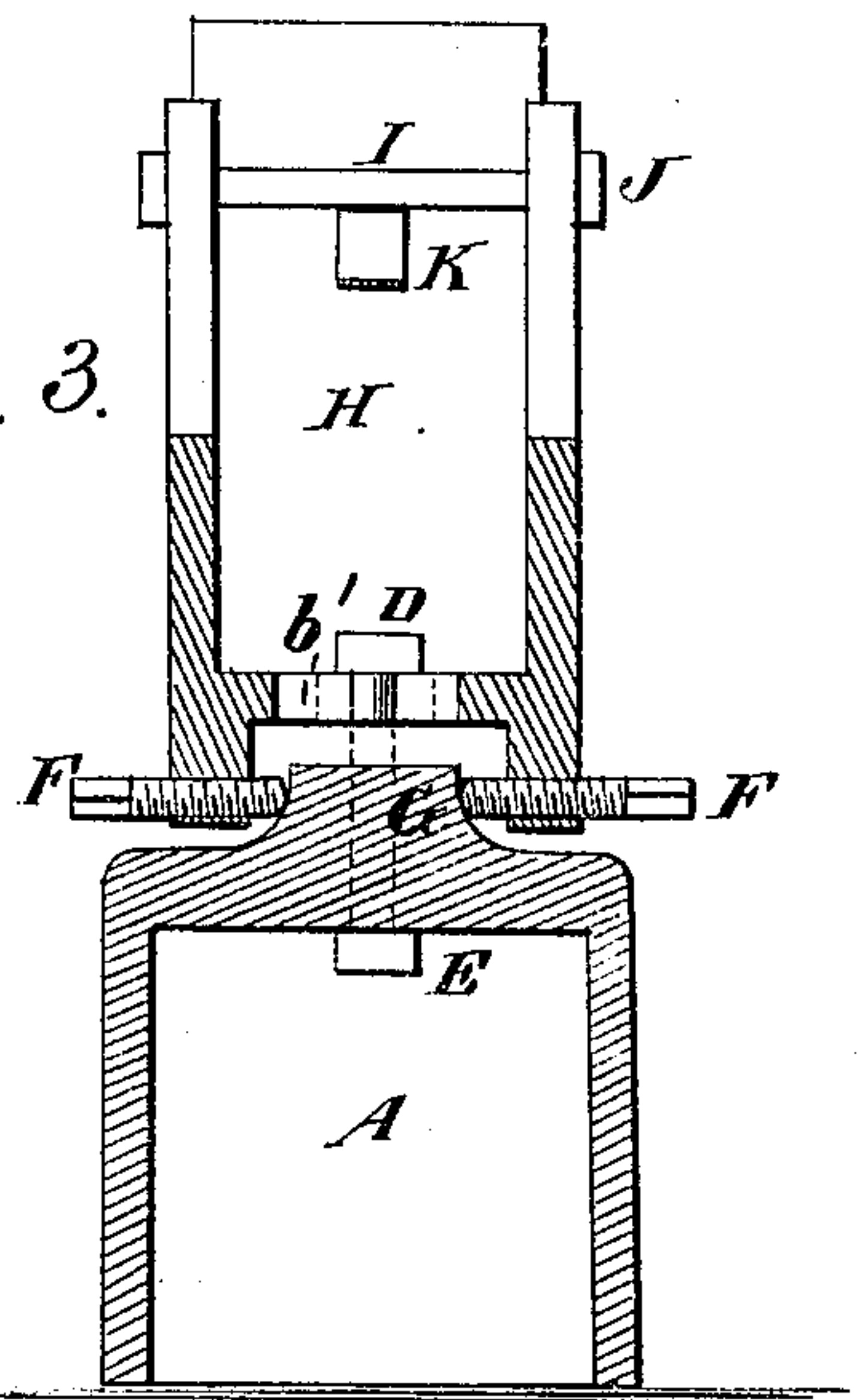


Fig. 3.



Witnesses
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HENRY ST. LAWRENCE, OF NORTHAMPTON, MASSACHUSETTS.

POWER-HAMMER.

SPECIFICATION forming part of Letters Patent No. 335,394, dated February 2, 1886.

Application filed August 6, 1885. Serial No. 173,719. (No model.)

To all whom it may concern:

Be it known that I, HENRY ST. LAWRENCE, a subject of the Queen of Great Britain, residing at Northampton, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Power-Hammers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The invention relates to power-hammers intended to be used for forging purposes; and it consists in certain improvements, which will first be described in connection with the drawings, and then pointed out in the claims.

Figure 1 of the drawings is a longitudinal vertical section showing the mechanism by which the ram is operated. Fig. 2 is a rear view in elevation showing the device for regulating the stroke of the ram and allowing the proper play of the lever. Fig. 3 is a vertical cross-section on the dotted lines *xx*, Fig. 1, showing the gage-screws and stop for the lateral adjustment of the hammer-frame.

In the drawings, A represents a support, to which is attached the fixed die or anvil and its holder. On the upper side of A and integral therewith is a base-plate, B, carrying the transverse ways *b b*, on which the hammer-frame C is made laterally adjustable, being clamped to the parts A B by bolts D D, which pass through cross-slots *b' b'*, and by nuts E E. When the frame C has been adjusted by set-screws F F against the intermediate stop, G, of base-plate, the hammer is brought into the desired local relation to the anvil, and the bolts D are clamped by their nuts E.

H is the hammer-head, which carries the movable die or hammer *H'*, and is tongued to work up and down in grooves *cc* of the frame C, which is transversely held together by the bolts I and nuts J. The hammer-head has a vertical slot, *h'*, which receives the front end of a helve, K, which is thus allowed play in the hammer-head as the latter moves up and down.

L represents the drive-shaft, carrying on one end the balance-wheel L' and on the other the pulley M, which may be operated by any suitable mechanism.

N is an eccentric fastened to the shaft by four screws, *n*, so that its eccentricity may be graduated to suit the blow which is wanted.

O is a circular yoke, which surrounds the eccentric, and is by it given an up-and-down reciprocation. This yoke has screw-arms *oo*, a pressure plate, P, with holes, through which the screws pass, and also nuts Q Q, which force the plate down on the blocks of rubber R R, between which passes the helve K. Beneath the rear end of this helve is secured the two straps S, carrying the cross-pivot *s*, on which turns the eye screw-bolt T. The latter works vertically in a nut, U, having trunnions *u u*, supported in bearings V on the hammer-frame C. Thus I provide a movable fulcrum for the helve K, so as to allow for a slightly forward and back movement to the lever as it rises and falls. By this means the hammer-head moves freely in a vertical plane, and is never cramped or jammed in the grooves of frame C. By screwing up or down the eye screw-bolt T the throw of the ram is regulated.

W is a treadle connected by pivoted rods *ww* with the brake X and belt-tightener Y, so that when the operator has finished his work he can, by pressing the treadle with his foot, loosen the belt, disconnect the drive-pulley from the power, and apply a break to the balance-wheel.

Having thus described all that is necessary to a full understanding of the invention, what I claim as new and of my invention is—

1. In power-hammers, the helve K, working freely in a vertical slot at its front end and having a movable fulcrum at its rear end, in combination with intermediate mechanism adapted to vertically reciprocate, as and for the purpose set forth.

2. The helve K, provided at its rear end with straps and gudgeon, an eye screw-bolt pivoted on said gudgeon, and a nut having trunnions arranged in bearings on frame C, as and for the purpose described.

3. The helve K, drive-shaft, and fast eccentric, in combination with a yoke having screw-

arms, two intermediate rubbers, pressure-plate, and compressing-screws provided with nuts, substantially as shown and described.

4. The hammer-frame C, made laterally adjustable on ways, in combination with set-screws F F, stop G, and the clamp-screws D, carrying nuts E, for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY ST. LAWRENCE.

Witnesses:

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