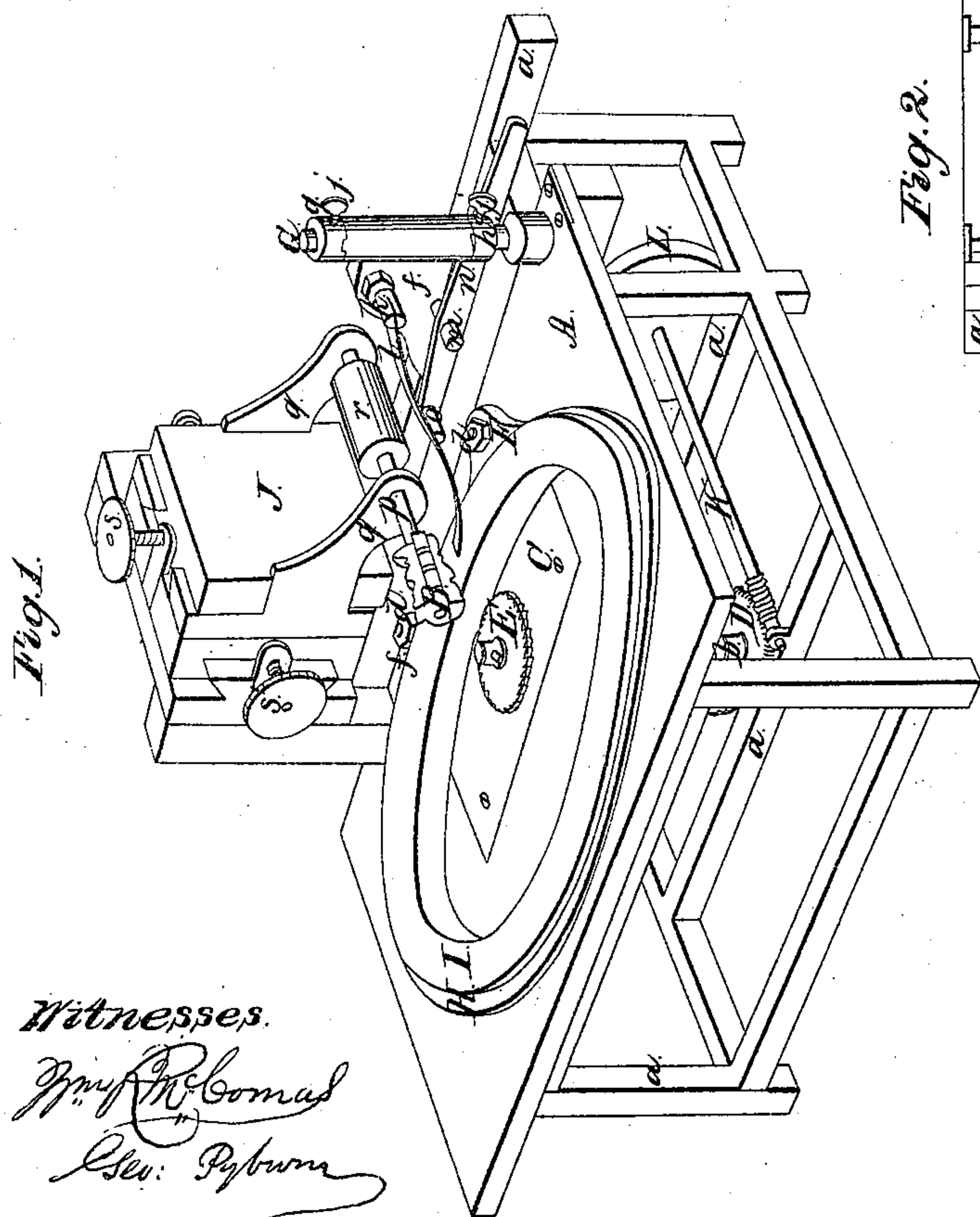
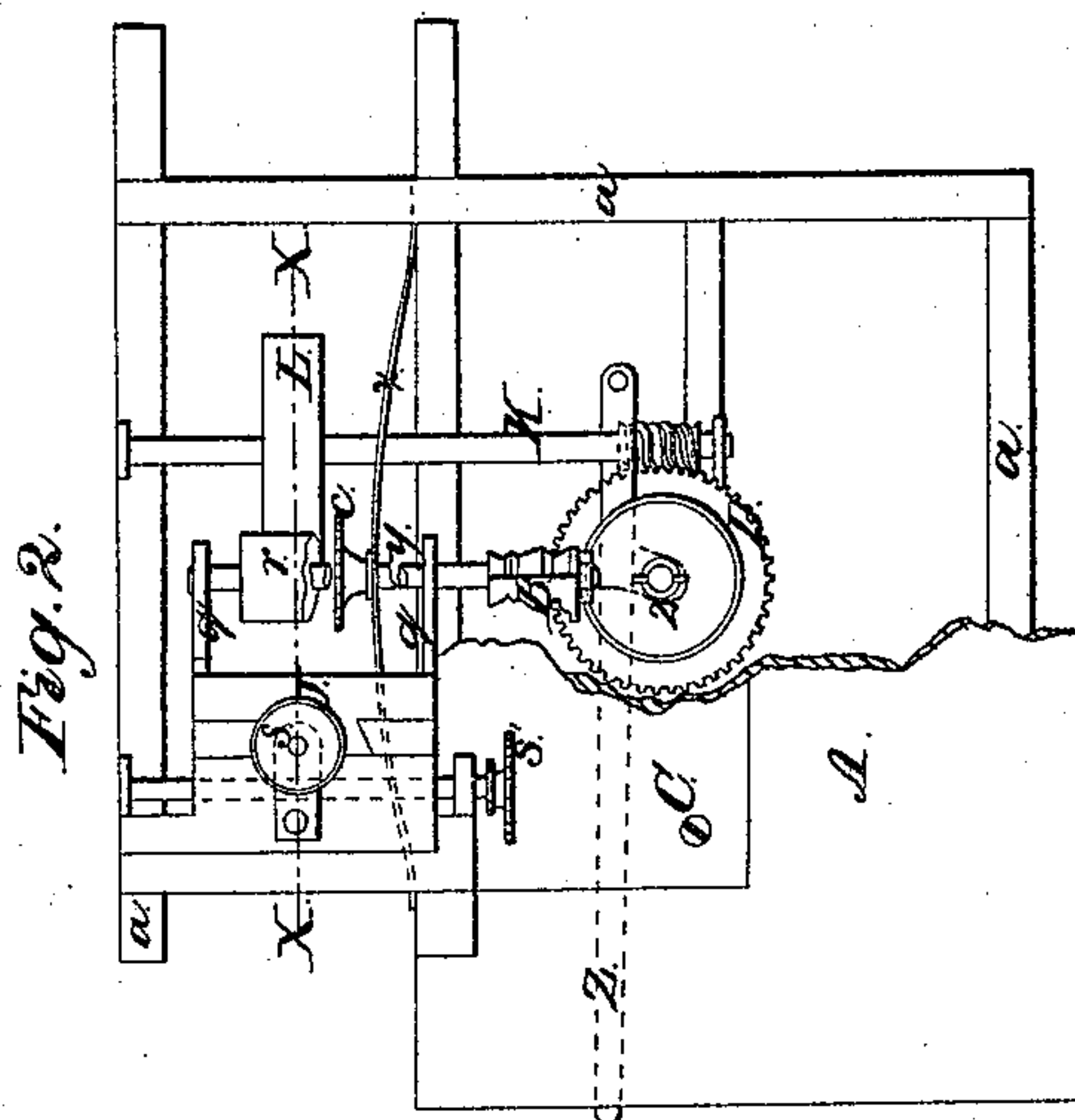
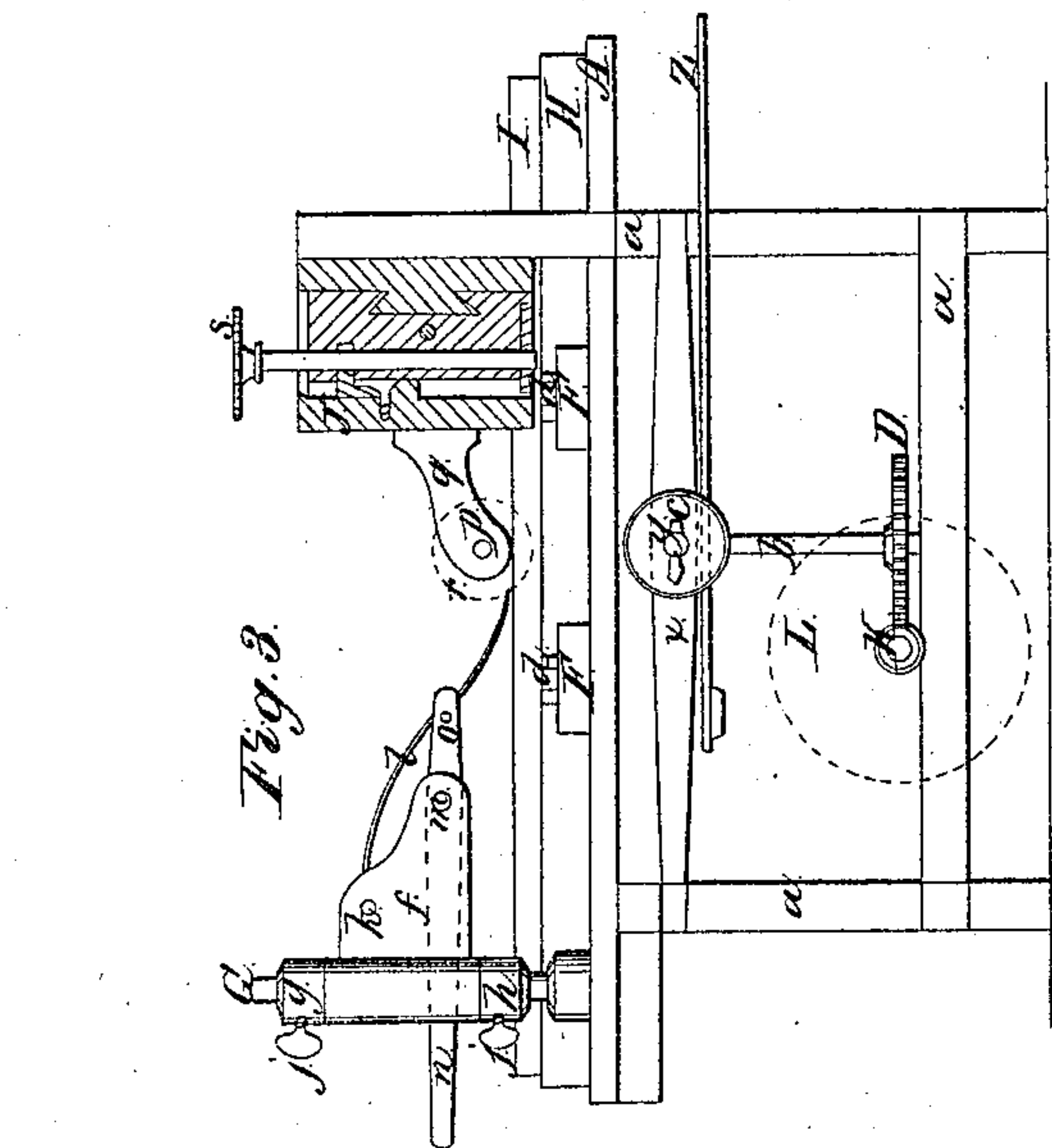


G. Hammer,
Turning Orals,

N^o 34,663.

Patented Mar. 18 1862.



Witnesses.

Wm. McComas
Geo. Pyburn

Inventor.

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Per am Patent Co atty
W. Elliott

UNITED STATES PATENT OFFICE.

GUSTAVUS HAMMER, OF CINCINNATI, OHIO, ASSIGNOR TO HOLSTEIN & HAMMER, OF SAME PLACE.

IMPROVED MACHINE FOR PLANING OVAL MOLDINGS.

Specification forming part of Letters Patent No. 34,663, dated March 11, 1862.

To all whom it may concern:

Be it known that I, GUSTAVUS HAMMER, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Machines for Cutting Moldings on Oval Frames; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings and letters of reference marked thereon, which form part of this specification.

My invention relates especially to a device for maintaining the revolving oval frame or frame of other shape to be molded in continuous apposition with the fixed but rotating tool or cutter; and it consists in the use of an external frame in which the first-mentioned frame to be molded fits, but whose outer figure differs from its inner figure, so as to compensate for the irregularity of movement inevitable upon the revolution of a figure of varying curves against two fixed points which prescribe its orbit.

In order that others duly skilled may be enabled to understand and construct and use my invention, I shall proceed to describe it in detail.

In the accompanying drawings, Figure 1 is a perspective drawing of the complete machine, a frame to be molded being represented on the bench. Fig. 2 is a geometrical projection of the same on the horizontal plane, a portion of the bench being removed in order to enable the machinery thereunder to be seen. Fig. 3 is a vertical section through the back part of machine, the dotted line X X on Fig. 2 showing the plane of intersection.

Like letters of reference designate like parts in all the drawings.

A is the bench upon which the frame to be molded is laid.

a a a a are the supports and frame-work of bench, extending somewhat behind the same, so as to form also a support for the rotating cutter-tool B and auxiliary machinery. On the side of the bench near the cutter a metal plate C is set in, having its surface level with the surface of bench. Through the bench and this plate C an oblong through-mortise is cut to permit the passage of the vertical shaft *b*, which is journaled at its lower end in a journal-box secured on cross-

rail of bench-framing. To the lower part of this shaft *b* a large toothed wheel D is keyed, and to the upper end of the same above the bench the ratchet feed wheel E is keyed. *x* is a spring of steel or other elastic material abutting against the two extreme uprights of bench-frame and permitting the rod *y* to pass through a perforation in its center. The rod *y* has a screw-thread formed on the end, passing through the spring *x*, and a strong hook *z* on the opposite end. The hook *z* is passed round the shaft *b*, and a nut *c* is screwed onto end of rod *y* outside of spring *x*.

F F are two stops of a somewhat triangular shape pivoted to the bench by screw-bolts *d d*, so as to have a certain amount of horizontal motion around their pivots, in order that they may adjust themselves to the varying curve of the oval frame as the various parts come round against the stops and under the revolving tool or cutter.

G is a standard firmly secured to bench A near one corner thereof, and on this standard the bracket *f*, formed with a sleeve-shoulder, is slipped, the small sleeves *g* and *h* being also slipped on beneath and above, so as to sustain the bracket at any desirable height. *j j* are clamping-screws for fixing the sleeves and bracket in any position decided upon. The bracket sustains a projecting arm *k*, which arm holds the spring *l*. A second projecting arm *m*, near the end of bracket, forms a fulcrum to the lever *n*, which is designed to raise the spring *l* when required, a projecting pin *o* passing under the spring for that purpose. The upper sleeve *g* has a groove formed on its under side, into which a tongue in the upper edge of shoulder of bracket fits. By this means the bracket *f* is prevented from turning round horizontally unless pressed down out of gear with said groove in sleeve. This is done by lever *n*, which also at the same time raises the spring *l*.

H is an oval outer frame, which may be constructed either of wood or of metal and of any size required. I is the frame to be molded. It fits exactly inside of this outer frame; or the outer frame may be a part of inner frame, answering the purpose of the same when constructed separate, and being cut or dressed off when the frame has been molded. The outside guide-frame H, to which I desire to

draw attention particularly, is constructed in form as follows, and as shown on drawings, viz: The outside curve is more prolate than the inner curve, which is the exact curve of the frame to be molded, and the consequence of this extra prolateness in the outer curve is to compensate for the greater entrance which the ends of the oval make between the stops F F over that made by the sides, and the result is that the frame to be molded is always in its revolution kept under the revolving cutter-tool B.

My invention may be applied to the molding of frames of other shapes besides ovals—for instance, square with curved corners—by adapting the outer frame in shape to the particular curve.

B is the rotating cutter-tool slipped and keyed on the end of the mandrel *p*. This mandrel runs in journals in brackets *q q*, supported by adjustable block J, and is fitted with a sheave or pulley *r* for receiving motion from a belt. The block J is adjustable both vertically and horizontally by means of adjusting-screws *s s'*, as shown on drawings.

K is a horizontal shaft journaled in boxes affixed to lower cross-rails of bench-frame. Near one end of shaft an endless screw is formed, which screw gears into toothed wheel D, and near the other end of shaft the drum L is keyed for receiving motion by a belt from some contiguous motive power.

The two oval frames previously mentioned are laid on the bench A, the outer edge being laid against stops F F, and the ratchet-wheel E being held against the inner edge by the spring *x* and rod *y*. The lever *z* is merely

for the purpose of loosening the feed ratchet-wheel E from the frame when requiring to remove it or to place a new frame on the bench. The spring *l* holds the frame down to the bench when being molded.

The operation of the machine requires little explanation after the detailed description of the various parts given above. The frames H and I being placed on the bench between the feed-wheel E and stops F F, and the proper cutter-tool B having been placed on the mandrel *p* and the whole adjusted by the screws *s s'*, and the spring *l* made to press on frame I, motion is given to cutter-tool B and simultaneously to feed-wheel E through shaft K. The molding progresses as the oval frame is fed to the tool until it has completed its revolution. The machinery is then thrown out of running-gear, the molded frame removed, and a new one placed in position to be molded, as before.

I claim—

1. In combination with stops F F and feed-wheel E, the outer frame H or its equivalent surrounding frame I, and having a contour differing from the same when so adapted to stops F F and the form of frame I as to cause the latter to be fed under cutter-head B, appropriately thereto, substantially as described.
2. The arrangement of standard G, brackets *f*, small sleeves *g h*, spring *l*, and lever *n*, substantially as and for the purpose set forth.

GUSTAVUS HAMMER.

Witnesses:

GEO. RYBURN,
WM. R. MCCOMAS.