

N. WATERMAN & A. T. PERKINS.

Improvement in Machines for Dividing Plate-Metal Along Curved or Straight Lines.

No. 126,357.

Patented April 30, 1872.

Fig. 1.

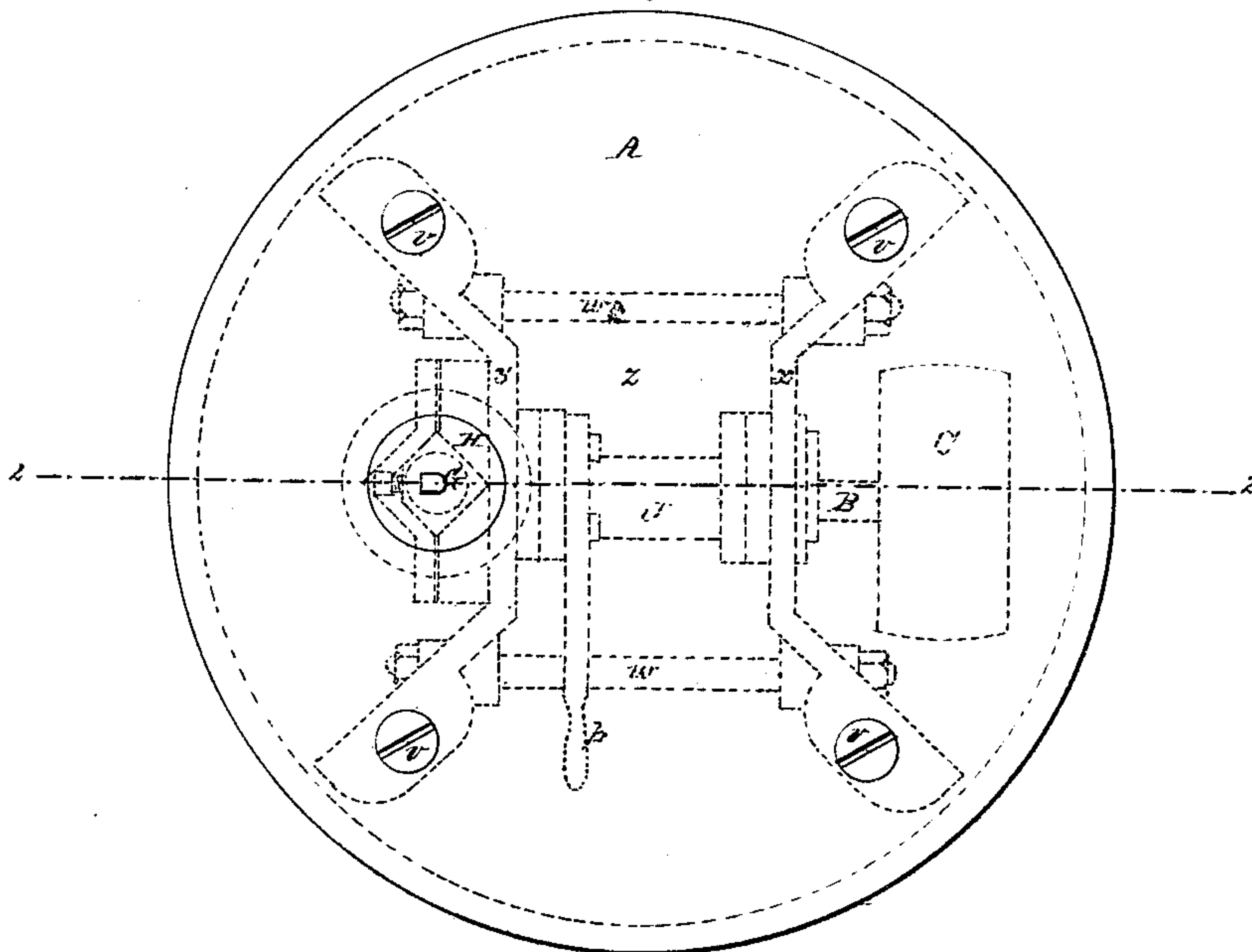
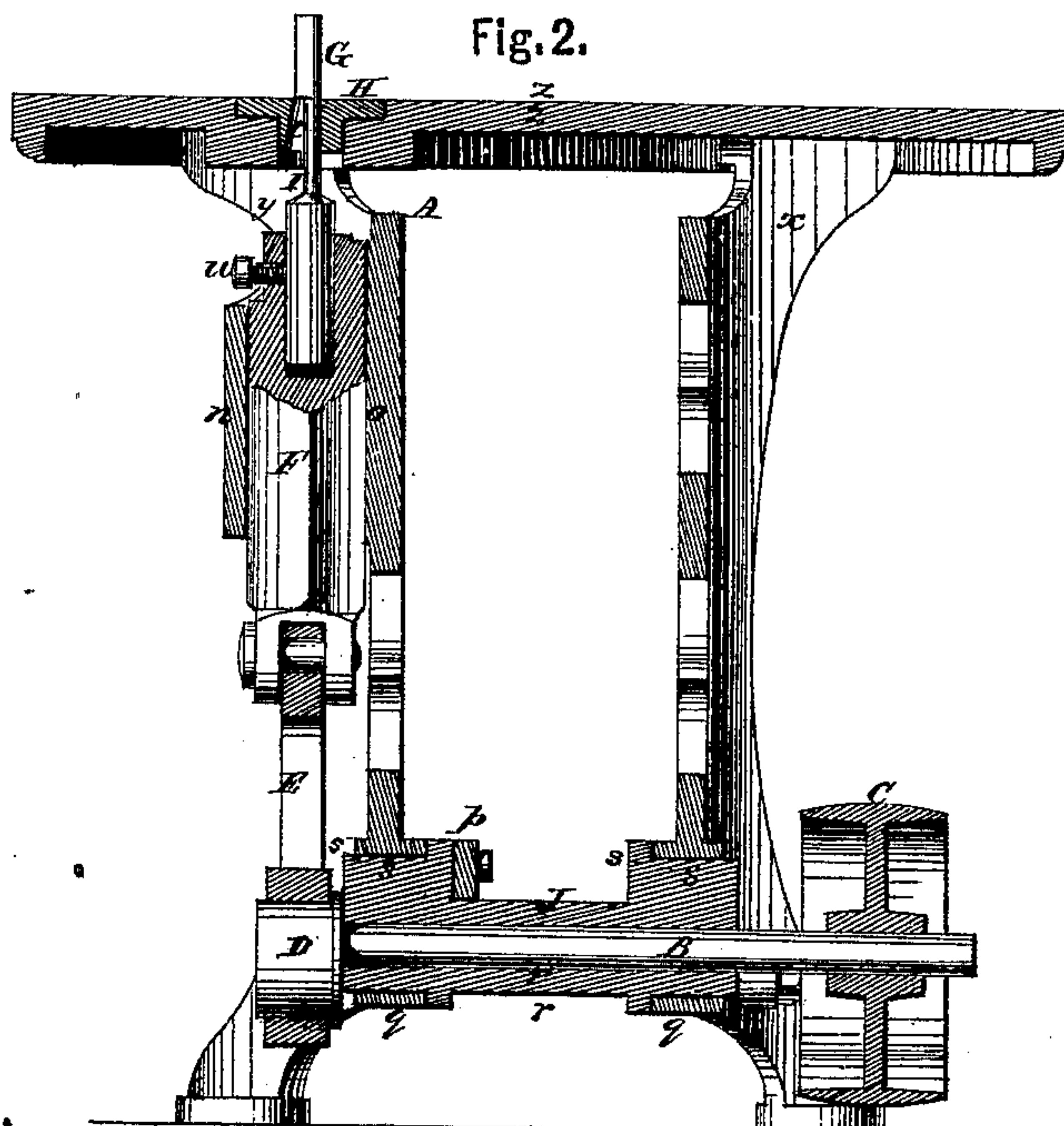


Fig. 2.



WITNESSES.

Geo. L. Ewin
Walter Allen

INVENTORS.

Nehemiah Waterman
Alfred T. Perkins
By *Knights & Sons*
Attorneys.

N. WATERMAN & A. T. PERKINS.

Improvement in Machines for Dividing Plate-Metal Along Curved or Straight Lines.

No. 126,357.

Patented April 30, 1872.

Fig. 3.

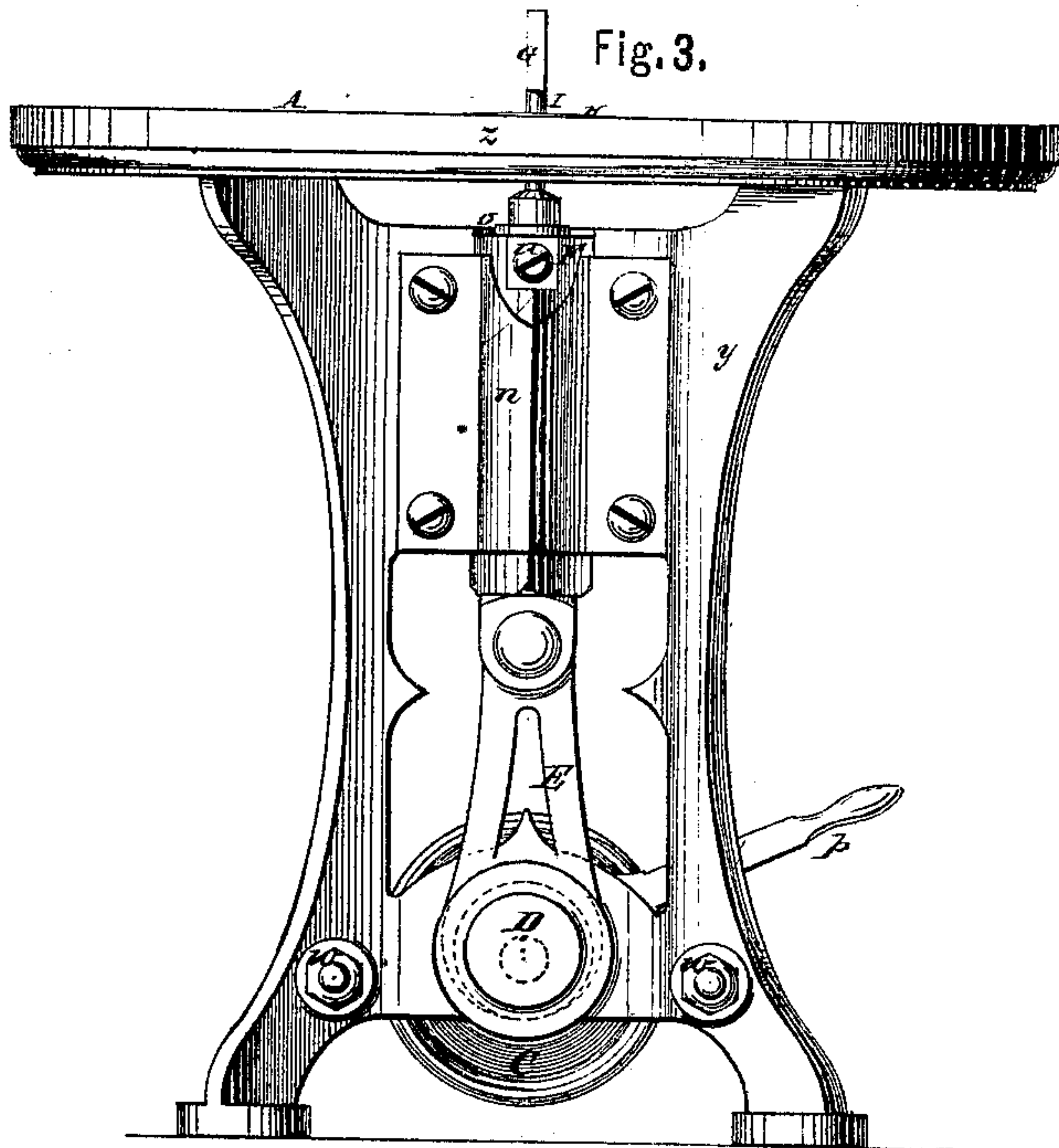


Fig. 4.

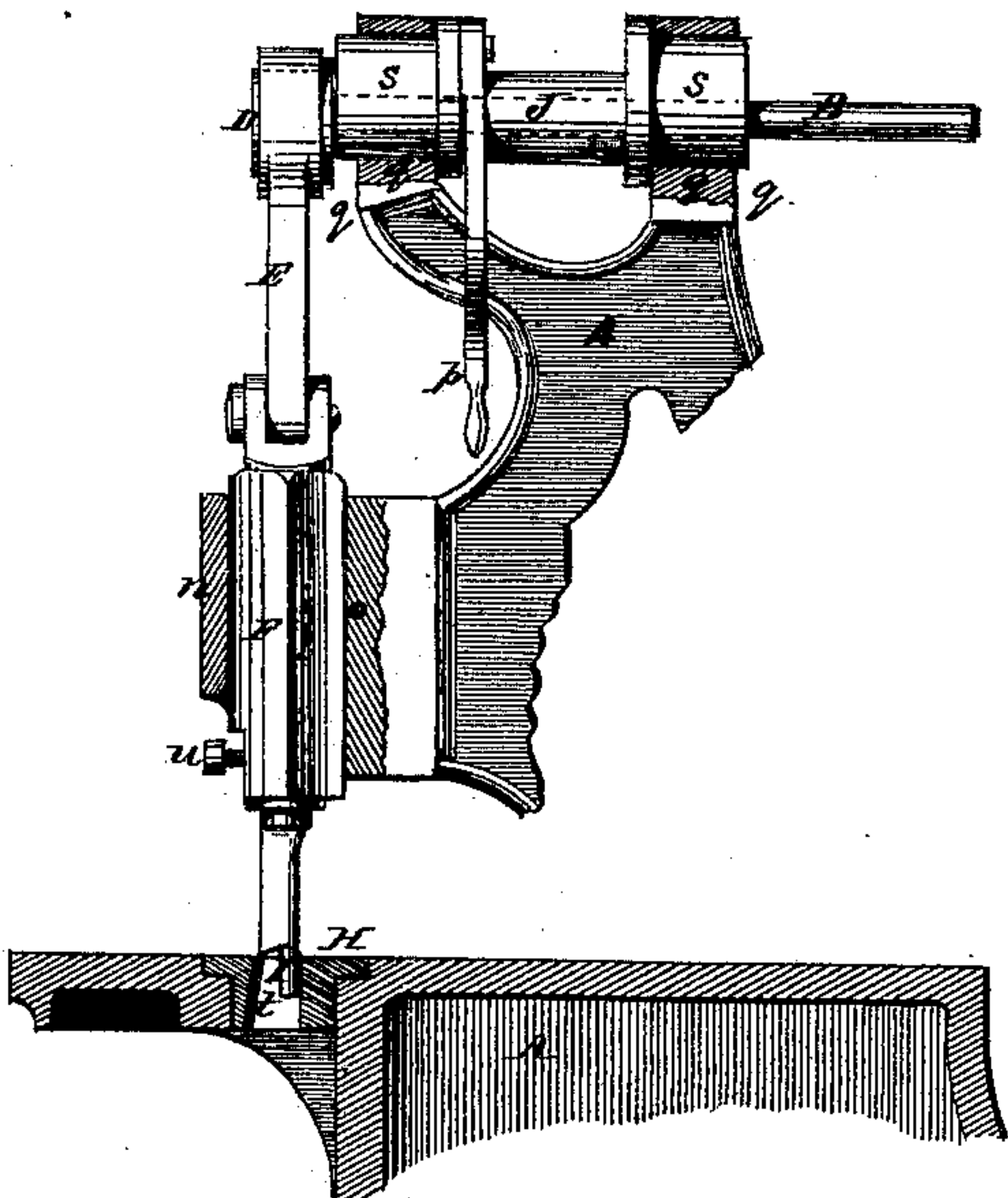
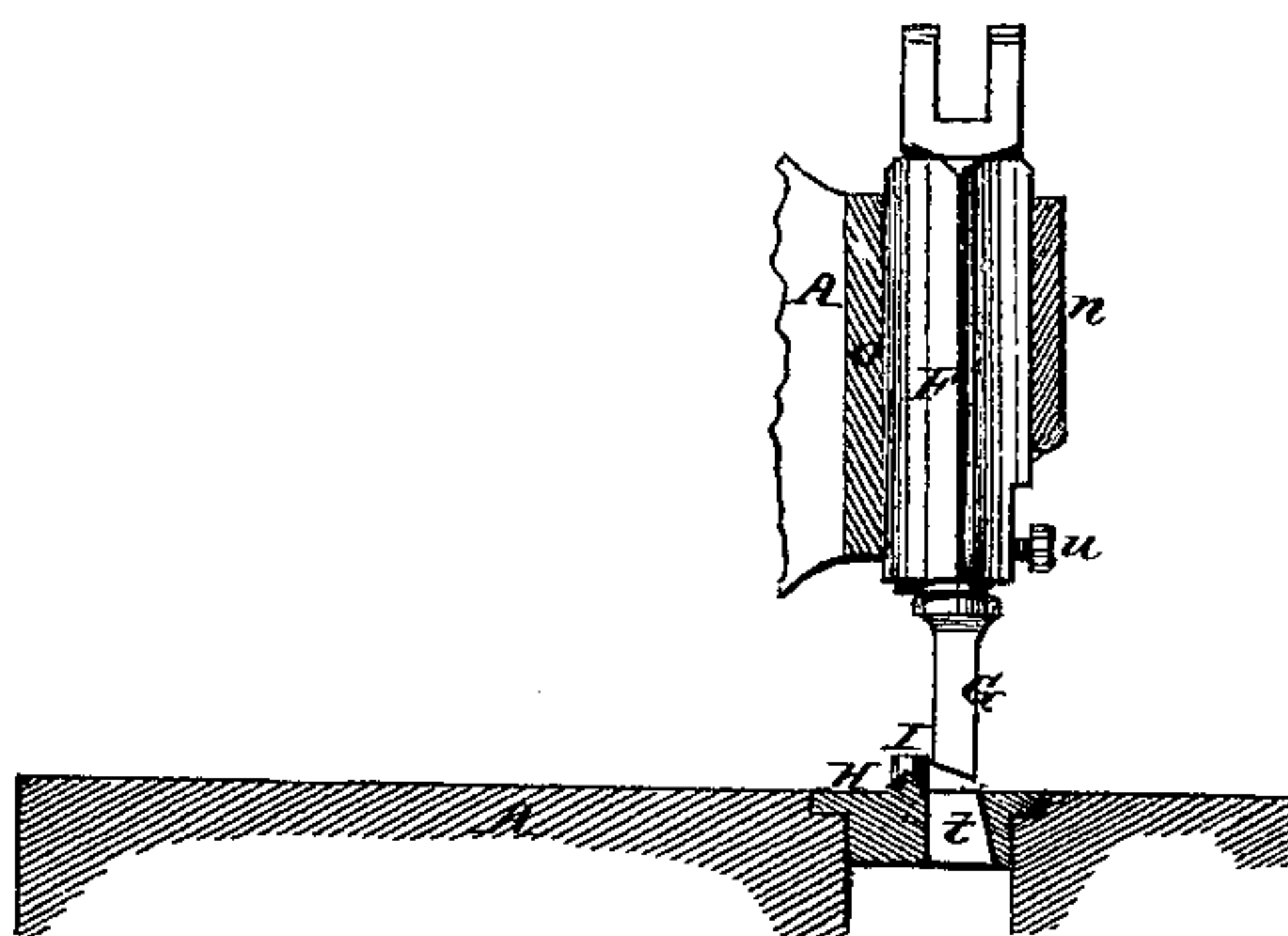


Fig. 5.



WITNESSES.

Geo. L. Ewin
Walter Allen

INVENTORS.

Nehemiah Waterman
Alfred T. Perkins
By *Knights & Pines*
Attorneys

UNITED STATES PATENT OFFICE.

NEHEMIAH WATERMAN AND ALFRED T. PERKINS, OF TOLEDO, OHIO.

IMPROVEMENT IN MACHINES FOR DIVIDING PLATE METAL ALONG CURVED OR STRAIGHT LINES.

Specification forming part of Letters Patent No. 126,357, dated April 30, 1872.

Specification describing an Improved Machine for Cutting Sheet and Plate Metal, invented by NEHEMIAH WATERMAN and ALFRED T. PERKINS, both of Toledo, in the county of Lucas, State of Ohio.

The machine is designed to operate like a "gig-saw" for readily and rapidly cutting sheet and plate metal in any required shapes. The cutting device consists of a reciprocating punching-cutter, to be driven at high speed, in connection with a suitable die, table, and operating mechanism. The sheet or plate is guided by aid of a pivot-guide in line with the cutter, or nearly so. The cutter is raised or lowered out of action by means of a rotary eccentric box for its driving-shaft.

Figure 1 is a plan of a working machine illustrating the invention. Fig. 2 is a vertical longitudinal section of the same on the line 2 2, Fig. 1. Fig. 3 is a front elevation thereof. Figs. 4 and 5 are sectional side elevations illustrating modifications in the arrangement of the operating mechanism and guide.

A in Figs. 1, 2, and 3 represents a metallic table, composed of circular horizontal top *z*, standards *y* *x*, and stay-bolts *w*, and screws *v* bracing and clamping the whole. Instead of this a table or frame of any suitable construction, as indicated by Figs. 4 and 5, may be employed. B represents a horizontal rotary shaft furnished with driving-pulley C and an eccentric D. E represents the link of the eccentric D; F, a sliding head; and G, a cutter of peculiar form secured in said head by set-screw *u*. H represents a die coincident with the cutter G, and constructed with an aperture, *t*, to receive the same. The cutter G is of the punch type, is slightly oblong in cross-section, with flat face, rounded back, and parallel sides; and its end surface recedes back slightly from its cutting-edge. It is designed to receive a rapid reciprocating motion through the described means or their equivalent, and to operate, in conjunction with its die, to remove small portions of the sheet or plate successively until the required length of cut is accomplished. Its operating mechanism may be located below the die, as illustrated in Figs. 1, 2, and 3, or above the same, as indicated by Figs. 4 and 5. I represents a pivot-guide, adapted to facilitate the guiding of a plate which it is designed to cut along a curved or

irregular line by occupying constantly the kerf made; and to this end the largest diameter of the guide should not be greater than the breadth of the cutter across its cutting face, and also should be placed close to and behind the cutter. This may be constituted of the stem of the cutter, as represented in Figs. 1, 2, and 3; or may be an extension thereof, as represented in Fig. 4; or a projection from the die or table, as indicated in Fig. 5. In the latter case it would be arranged close behind the cutter, as indicated, but might be attached to the die or table instead of formed therewith, as indicated, and might be more or less high. The relations above specified of the pivot-guide with the cutter will be seen to be essential to permit the cutting of scrolls and circles, which the machine is designed to effect. J represents a journal-box, constructed with cylindrical ends *s*, and an eccentric bearing, *r*, for the driving-shaft B, being mounted by said cylindrical ends in bearings *q* in the table or frame, and furnished with a hand-lever, *p*, by which to rotate it. By shifting said box, the cutter (through the shaft B, eccentric D, link E, and head F) is raised or lowered out of action, as for introducing the sheet or plate, and returned to work again, as required. The cutter is represented as in action in Figs. 1, 2, 4, and 5, and out of action in Fig. 3. *o* represents the vertical way or guide of the head E, and *n* the cap of the same.

Claims.

What we claim as new herein is—

1. In combination with a punching-cutter, a pivot-guide adapted to occupy the kerf produced by the cutter, and thus to form a guide for the sheet or plate, substantially as herein described.

2. In combination with the said cutter G and its die H and table or frame A, the pulley C, shaft B, eccentric D, link E, and sliding head F, and the rotary eccentric journal-box J, as means for operating the said cutter and throwing the same out of action.

NEHEMIAH WATERMAN.
ALFRED T. PERKINS.

Witnesses:

RALPH OSBORNE,
C. F. ADAMS.