

No. 652,892.

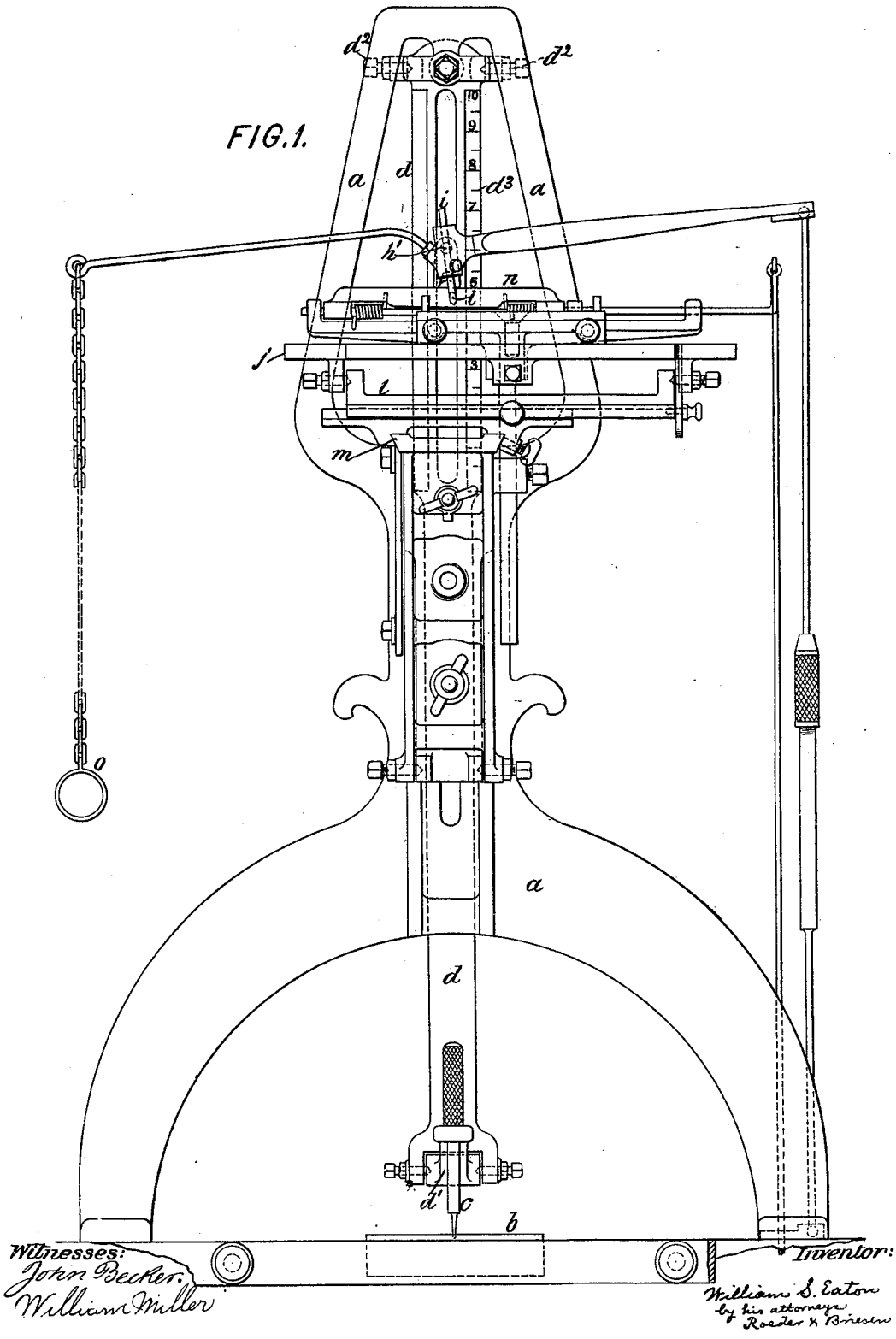
Patented July 3, 1900.

W. S. EATON.
ENGRAVING MACHINE.

(Application filed Mar. 1, 1900.)

(No Model.)

2 Sheets—Sheet 1.

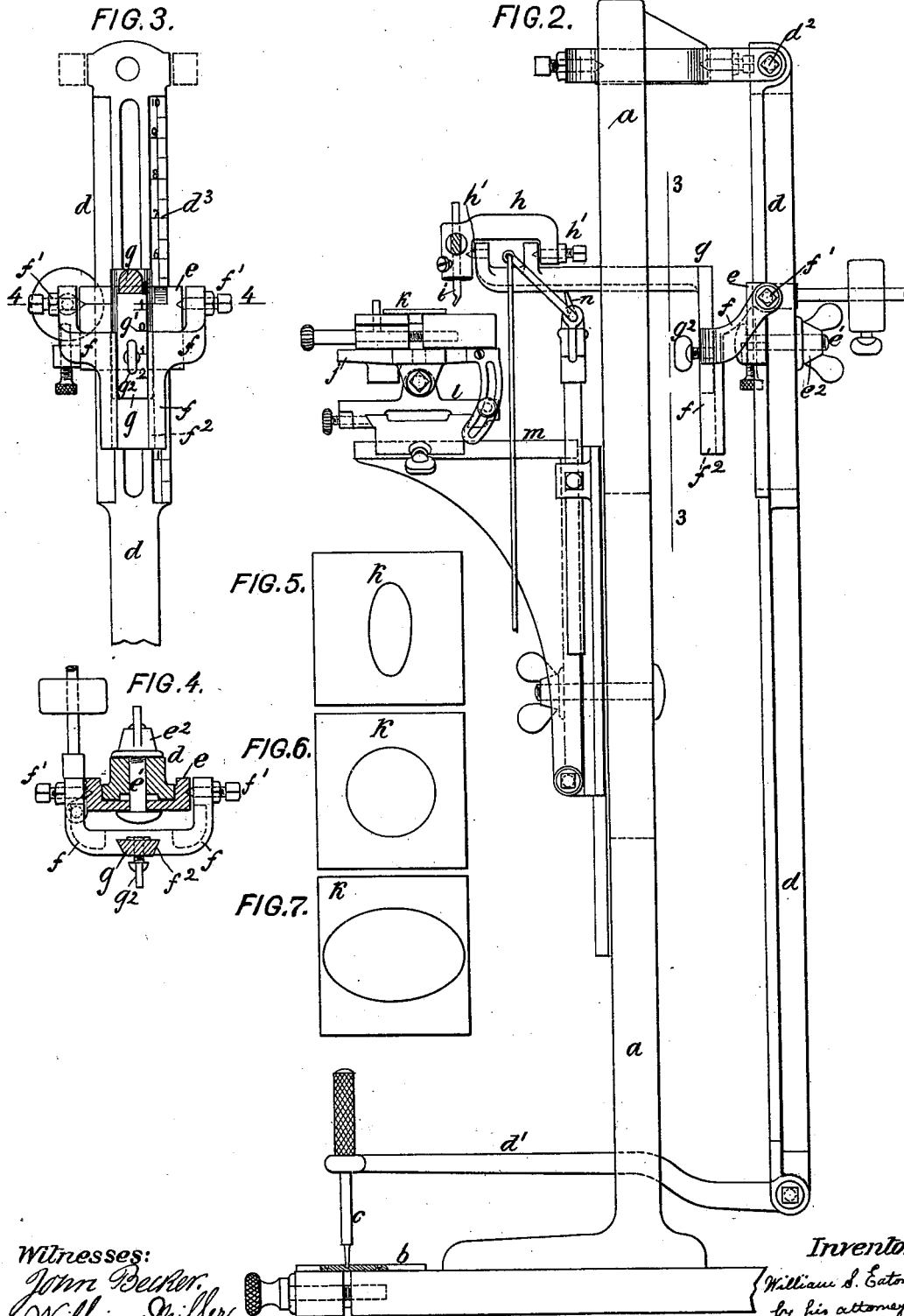


W. S. EATON.
ENGRAVING MACHINE.

(Application filed Mar. 1, 1900.)

2 Sheets—Sheet 2.

(No Model.)



Witnesses:
John Becker.
William Miller.

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UNITED STATES PATENT OFFICE.

WILLIAM S. EATON, OF SAG HARBOR, NEW YORK, ASSIGNOR TO THE
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ENGRAVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 652,892, dated July 3, 1900.

Application filed March 1, 1900. Serial No. 6,903. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. EATON, a citizen of the United States, and a resident of Sag Harbor, Suffolk county, State of New York, have invented certain new and useful Improvements in Engraving-Machines, of which the following is a specification.

This invention relates to an engraving-machine so constructed that an infinite variety of engravings may be reproduced from the same pattern, which though possessing the same characteristics as the pattern differ therefrom by being expanded or contracted laterally more or less to any desired extent. Thus the same pattern may be utilized to produce different styles of engravings all similar to the original and bearing either the same or different relative proportions.

In the accompanying drawings, Figure 1 is a front elevation of my improved engraving-machine; Fig. 2, a side elevation thereof; Fig. 3, a section on line 3 3, Fig. 2; Fig. 4, a cross-section on line 4 4, Fig. 3. Figs. 5, 6, and 7 represent engravings produced from the same pattern-plate under different adjustments of the machine.

The letter *a* represents the frame of the machine, and *b* the pattern-plate the design of which is to be reproduced.

c is the tracer, secured by an arm *d* to a lever *d*, which is so suspended at *d*² from frame *a* that it may swing freely in any direction, all as usual in this class of machines. To the lever *d* is clamped a vertically-adjustable slide *e*, which is held in position by means of a bolt *e*¹, that extends through a slot of lever *d* and is engaged by a nut *e*². To the slide *e* is pivoted at *f*¹ a counterbalanced yoke *f*, provided with a dovetail groove *f*², that engages the vertical shank of an elbow *g*, having scale *g*¹ and serving as the support for the tool-holder. This support is vertically adjustable within the yoke and is clamped at any desired elevation by a set-screw *g*². The horizontal shank of support *g* forms at its forward end the bearing for a tool-holder *h*, pivoted to the bar at *h*¹, the pivots *h*¹ extending at right angles to the pivots *f*¹. The engraving-tool *i*, secured to the tool-holder *h*, is arranged above a table *j*, upon which the work-piece *k* to be engraved is secured.

The table *j* may be set at different inclinations and is pivoted to a slide-rest *l*, which is supported upon a vertically-adjustable bracket *m*.

The tool-holder may be raised off the work by a pivoted cross-bar *n* and may be pressed upon the work by a finger-ring *o*.

The operation is as follows: The slide *e* is set at such a height along a scale *d*³ of lever *d* that the design on the seal or other work-piece *k* will bear the desired proportion to the design on the pattern-plate *b*. If now the support *g* is so set in yoke *f* that the pivots *h*¹ of tool-holder *h* are in the same horizontal plane as the pivots *f*¹ of yoke *f*, the figure engraved on the work-piece *k* will be similar to that on the pattern-plate *b*, differing therefrom only in magnitude. Thus a circle on plate *b* will form a circle on plate *k*, Fig. 6. If the support *g* is so set in yoke *f* that the pivots *h*¹ are placed in a higher horizontal plane than the pivots *f*¹, the figure engraved will be laterally contracted at a ratio corresponding to the elevation of the pivots *h*¹ above pivots *f*¹. This results from the fact that the lateral swing of the tool-holder is diminished, while its backward-and-forward motion remains the same. Thus a circle on the plate *b* will form a narrow ellipse on plate *k*, as shown in Fig. 5. If the support *g* is so set in yoke *f* that the pivots *h*¹ are placed lower than the pivots *f*¹, the figure engraved will be laterally expanded, because the lateral swing of the tool-holder is increased. Thus a circle on plate *b* will form a wide ellipse on plate *k*, as shown in Fig. 7.

It will be seen that by my invention I may thus contract or expand laterally any design formed on the pattern-plate, so that with the same plate an infinite variety of different engravings may be produced which are all founded upon but differ in relative proportions from the original plate.

Among one of the many uses to which the invention may be put may be mentioned that of forming different styles of lettering from the same parent type, though the invention is of course equally applicable to all other kinds of engravings.

What I claim is—

In an engraving-machine, the combination

of a tracer with a vertical freely-swinging lever, a yoke pivoted thereto, a support vertically adjustable in said yoke, and a tool-holder pivoted to the support, the pivots of the
5 tool-holder extending at right angles to the pivots of the yoke, substantially as specified.

Signed by me at New York city, county

and State of New York, this 28th day of February, 1900.

WILLIAM S. EATON.

Witnesses:

TOM SELLORS,

FRANK B. GLOVER.