No. 660,790. Patented Oct. 30, 1900.

W. S. EATON.

ENGRAVING MACHINE.

(Application filed Aug. 8, 1900.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1

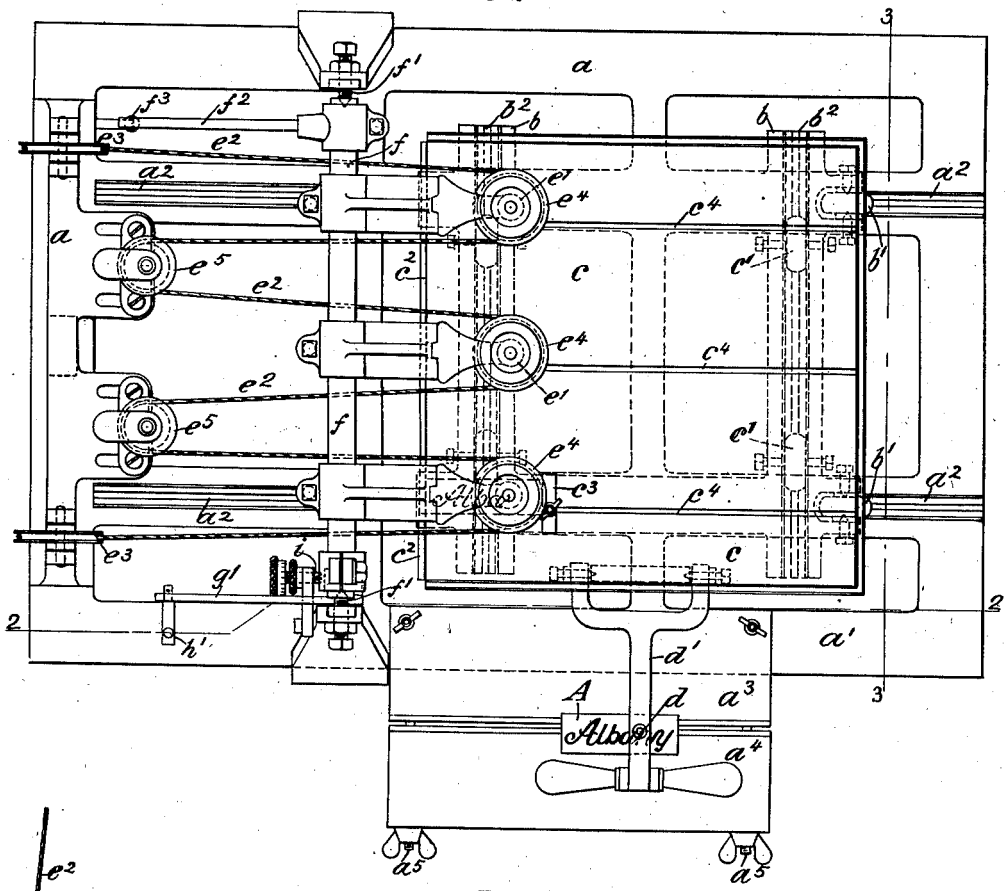
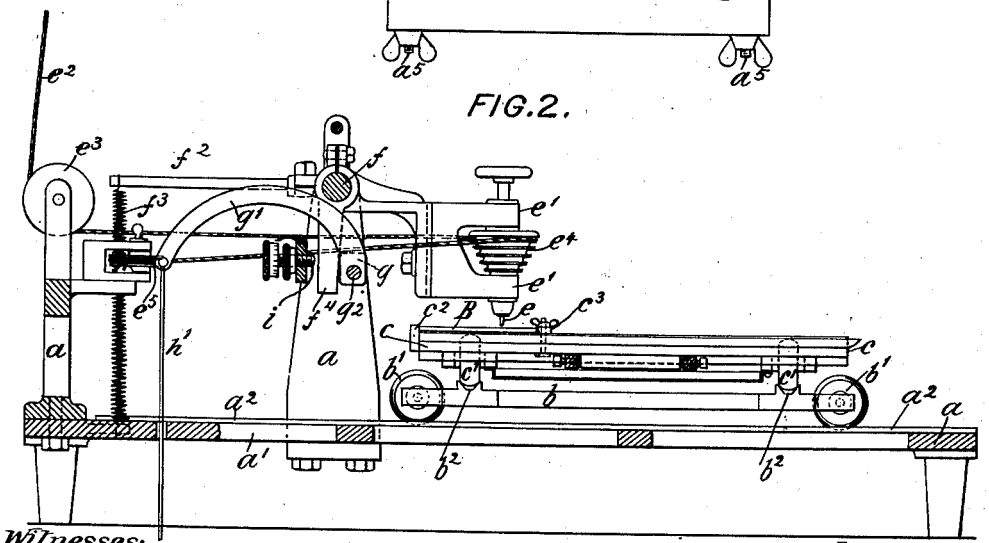


FIG. 2.



Witnesses:
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John Hickman.

Inventor:
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FIG. 3.

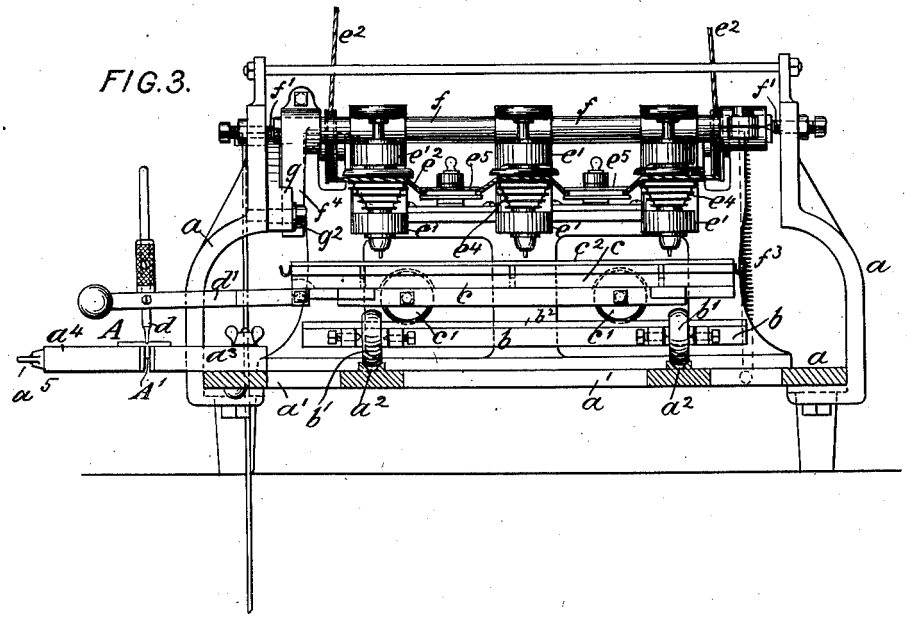
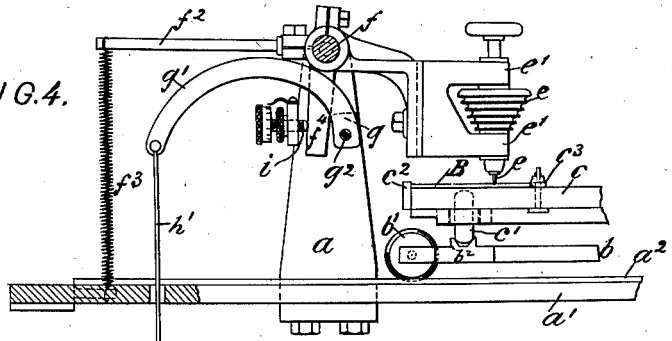


FIG. 4.



Witnesses:
John Becker.
John Hickman

Inventor:
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by his attorneys
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UNITED STATES PATENT OFFICE.

WILLIAM S. EATON, OF SAG HARBOR, NEW YORK.

ENGRAVING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 660,790, dated October 30, 1900.

Application filed August 8, 1900. Serial No. 26,232. (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 of the class called "routing-machines" and in which the engraving-tool is rotated so as to mill a groove into the work-piece. The machine is so constructed that the work-piece is movable in unison with the tracer, that power may be readily applied to the routing-tool, and that the depth of the groove cut into the work-piece is under the constant control of the operator.

In the accompanying drawings, Figure 1 is a plan of a gang-machine constructed according to my invention; Fig. 2, a vertical section on line 2 2, Fig. 1; Fig. 3, a sectional elevation taken on line 3 3, Fig. 1; and Fig. 4 a sectional elevation similar to Fig. 2, showing the parts in a different position.

The letter a represents the frame of the machine, having a horizontal bed-plate a', which is provided with a pair of parallel grooves or rails a^2. These rails are engaged by the wheels or rollers b' of a lower carriage b, which on its upper face is provided with a pair of parallel grooves or rails b^2, extending at right angles to the rails a^2. The rails b^2 are engaged by the wheels or rollers c' of an upper carriage c, which is thus adapted to be moved horizontally in any direction.

Motion is imparted to the carriage c by means of a pivoted handle d', which is adapted to be moved by hand. This handle is provided with the tracing-tool d, the point of which engages the pattern A to be reproduced and which is supported by a table a^3. In order to hold the pattern in position, the table a^3 is provided with a movable jaw a^4, which engages a fin A' of pattern A and may be operated by screws a^5.

The work-piece B on which the pattern is to be reproduced is adapted to be secured to the table c, so as to participate in its motion, it being held between a flange c^3 and a clamp c^2, movable in a groove c^4 of the table.

The machine may be either adapted for engraving a single work-piece or for engraving several work-pieces simultaneously, the drawings showing a gang-machine with three routing-tool spindles e. These spindles are mounted in bearings e' and are driven by a common belt e^2, running over guide-pulleys e^3, cone-pulleys e^4 on spindles e, and tension-pulleys e^5.

The bearings e' are clamped to a rock-shaft f, hung across the upper carriage c and oscillating on centers f'. The rock-shaft f is provided with a rearwardly-extending arm f^2, influenced by a spring f^3, which tends to rock the shaft f backward and to lift the routing-tools e off the work-pieces B.

In order to rock the shaft f forward and lower the tools into operative engagement with the work-pieces, the shaft f is provided with a second arm f^4, adapted to be engaged by a cam g, formed on one end of a curved lever g', pivoted to frame a at g^2. The other end of the lever g' is connected to a treadle h by rod h'. Thus by depressing the treadle the cam g will, by engaging arm f^4, tilt the rock-shaft forward against action of spring f^3, and thus force the routing-tool against and into the work-piece, according to the degree of pressure placed upon the treadle.

The depth to which the routing-tool may be introduced may be regulated by an adjustable stop i, that limits the play of arm f^4.

The operation of the machine will be readily understood. The pattern and work-pieces being adjusted, the routing-tools are lowered upon the latter by pressure upon the treadle h. The handle d' is now manipulated to guide the tracing-tool d over the pattern and to impart a corresponding motion to the table c, and consequently to the work-pieces B. Thus the latter are guided underneath the rotating routing-tools e, and the design of pattern A is reproduced upon the work-pieces. When the operation is completed, pressure upon the treadle is removed, so that the spring f^3 is free to rock the shaft f backward and cause the routing-tools to clear the work-pieces.

It will be seen that in my improved machine routing-work may be quickly and accurately executed, that the machine may be

readily driven and manipulated, and that the depth of the groove cut into the work-piece is under the constant control of the operator.

What I claim is—

In an engraving-machine, the combination of a freely-movable table, with a tracer movable therewith, a rock-shaft extending across the table, a routing-tool having a bearing that is mounted upon the rock-shaft, a spring adapted to rock the shaft backward, an arm depending from the rock-shaft, a cam adapted to engage said arm and to rock the shaft forward, and a stop for limiting the movement of the rock-shaft, substantially as specified.

Signed by me at New York city, county and State of New York, this 7th day of August, 1900.

WILLIAM S. EATON.

Witnesses:
BARNET JADLOVKIN,
BECKIE J. GEIGER.