

No. 648,396.

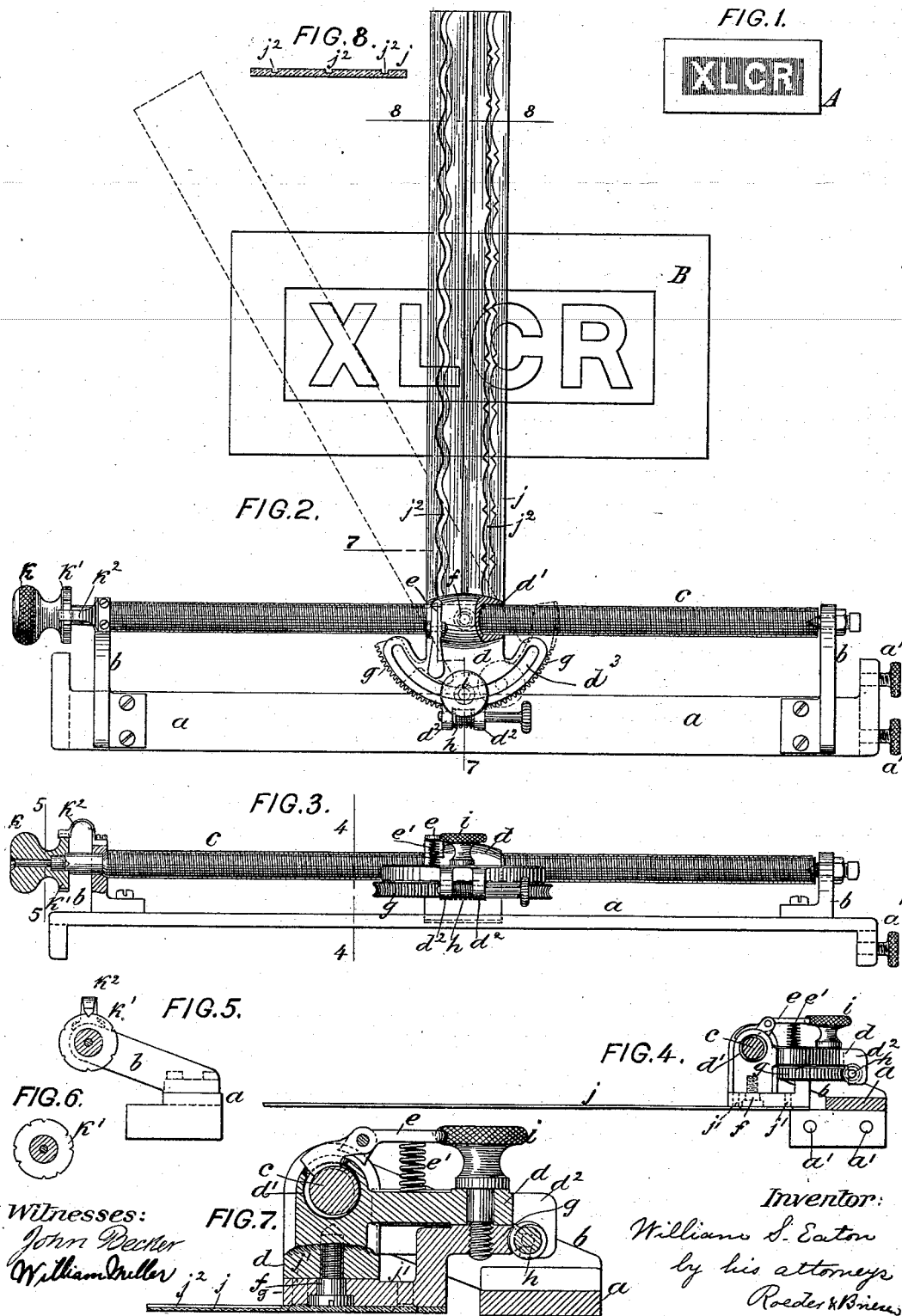
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W. S. EATON.

RULING ATTACHMENT FOR ENGRAVING MACHINES.

(Application filed Dec. 6, 1899.)

(No Model.)



Witnesses:  
John Recker  
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Inventor:  
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# UNITED STATES PATENT OFFICE.

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

## RULING ATTACHMENT FOR ENGRAVING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 648,396, dated May 1, 1900.

Application filed December 6, 1899. Serial No. 739,382. (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 Ruling Attachments for Engraving-Machines, of which the following is a specification.

This invention relates to an improved ruling attachment for engraving-machines which is adapted to be followed by the tracer.

Examples of the class of machines to which this attachment may be applied are illustrated in Patents No. 584,335, granted to me June 15, 1897, and No. 585,261, granted to myself and William T. Goodnow June 29, 1897.

In the accompanying drawings, Figure 1 is a plan of a plate or work-piece engraved by a machine provided with my attachment. Fig. 2 is a plan of the ruling attachment; Fig. 3, an elevation, partly in section, of the same; Fig. 4, a cross-section on line 4 4, Fig. 3; Fig. 5, a cross-section on line 5 5, Fig. 3; Fig. 6, a detail of a division-plate  $k'$ , showing a different arrangement of notches from that shown in Fig. 5; Fig. 7, an enlarged section on line 7 7, Fig. 2; and Fig. 8, a cross-section on line 8 8, Fig. 2.

The letter  $a$  represents the base-plate of the attachment, adapted to be secured to the frame of the engraving-machine by screws  $a'$  or otherwise. From the plate  $a$  project the arms  $b$ , that constitute or support the bearings of a feed-screw  $c$ . The screw  $c$  passes loosely through the perforation  $d'$  of a carrier  $d$ , provided with a sectional nut or finger  $e$ , which is by a spring  $e'$  held in engagement with the thread of screw  $c$ .

To the base of carrier  $d$  is pivoted at  $f$  a toothed sector  $g$ , which is engaged by a worm  $h$ , turning in bearings  $d^2$  of carrier  $d$ . A clamp-screw  $i$ , passing through a concentric slot  $d^3$  of carrier  $d$  and into the sector  $g$ , serves to clamp the sector to the carrier after the latter has been adjusted by the worm in manner hereinafter described.

To the sector  $g$  there is attached, by screws  $j'$  or otherwise, a ruler or pattern-plate  $j$ , which is adapted to be turned on pivot  $f$  by means of the sector  $g$  and worm  $h$ , so that the ruler may be set at any desired angle with relation to the base-plate  $a$ . The ruler  $j$  is provided

with a number of straight, sinuous, broken, or other grooves or lines  $j^2$  or with any other grooved pattern which is to be followed by the lower tracer of the engraving-machine and is to be reproduced upon the work-piece, block, seal, &c.,  $A$  by the upper tool. The ruler  $j$  is preferably made of celluloid or other transparent material, so that a pattern-plate  $B$  placed underneath the same remains visible through the body of the ruler. The pattern of this plate may be passed over or skipped by the tracer, so as to become reproduced within the hatching of the engraved work-piece, Fig. 1.

The screw  $c$  is adapted to be turned by a removable and interchangeable knob  $k$ , provided with a spacing or division plate  $k'$ , having a notched periphery. This plate is adapted to be engaged by a spring catch or click  $k^2$ , secured to one of the arms  $b$ . The divisions of plate  $k'$  may be differently arranged, according to the work to be done, so that the hatching is either equally spaced or interrupted between groups of hatching-lines. Thus by the plate  $k'$  of Fig. 5 the lines will be spaced equally, while with the plate  $k'$  of Fig. 6 the lines will be so spaced that every pair of lines will be separated from the adjoining pair by an open space.

In use screw  $i$  is slackened and the sector  $g$  turned by worm  $h$  until the ruler  $j$  has assumed the desired angle with relation to the base-plate  $a$ , when the screw  $i$  is tightened up. The ruler, together with the carrier and sector, are now moved along the screw  $c$  by turning knob  $k$ , which advances the ruler by reason of the engagement of finger  $e$  with the screw-thread. Whenever the click  $k^2$  falls into a notch of division-plate  $k'$ , the motion of the screw is arrested and the tracer is drawn over the selected line  $j^2$  of ruler  $j$ , so as to form a corresponding line by the tool in the work-piece  $A$ . After a line has thus been formed the knob  $k$  is turned to advance the ruler one space, and the operation is repeated, the consecutive positions of the ruler remaining thus parallel for the same adjustment of the sector. In this way a uniform hatching or similar effect may be produced in which all the lines run parallel and are inclined to any desired angle. By running over the work two or more times with the

ruler set at different angles cross-hatching may also be produced in a simple and accurate manner.

What I claim is—

- 5 1. A ruling attachment for engraving-machines, composed of a feed-screw, interchangeable knobs adapted to be secured thereto and having differently-spaced division-plates, a carrier actuated by the feed-  
10 screw, a sector pivoted to the carrier, a ruler movable with the sector, and means for adjusting the position of the sector with relation to the carrier, substantially as specified.

2. A ruling attachment for engraving-machines, composed of a ruler having a grooved 15 transparent body, means for adjusting the inclination of the ruler, and means for advancing the ruler to consecutive parallel positions, substantially as specified.

Signed by me at New York city, county and 20 State of New York, this 5th day of December, 1899.

WILLIAM S. EATON.

Witnesses:

WILLIAM SCHULZ,  
F. V. BRIESEN.