

No. 684,971.

Patented Oct. 22, 1901.

M. BARR.
LINE ENGRAVING.

(Application filed July 26, 1900.)

(No Model.)

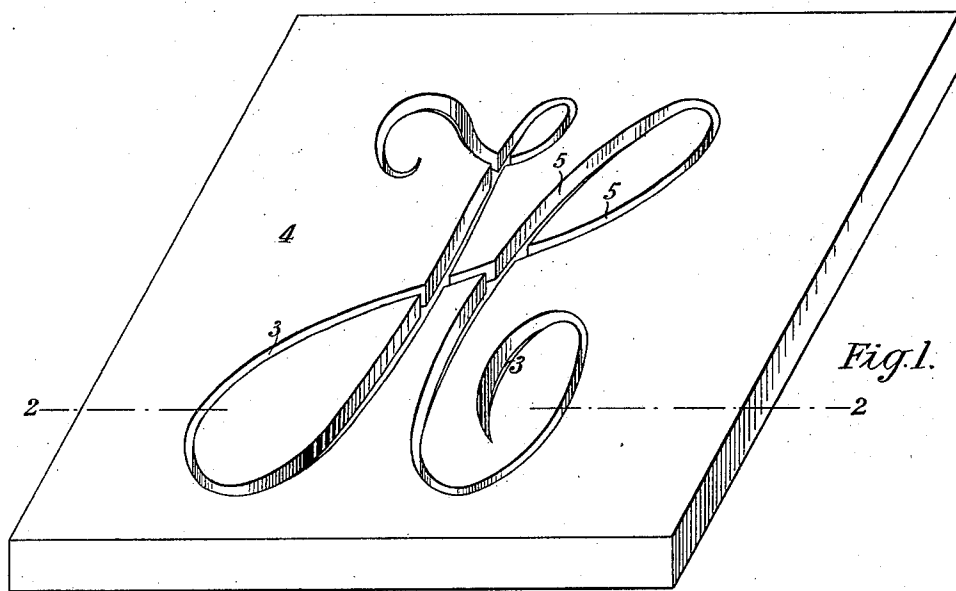


Fig. 1.

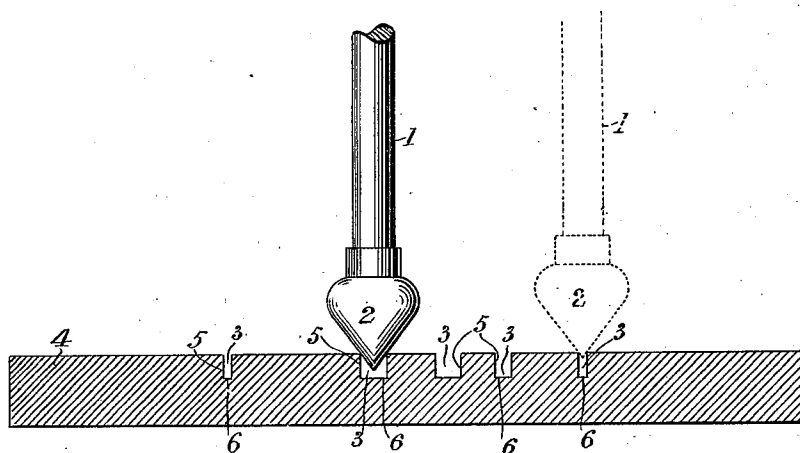


Fig. 2.

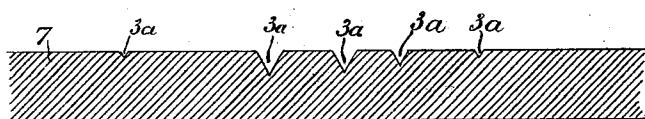


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

MARK BARR, OF BROADHEATH, ENGLAND, ASSIGNOR TO THE LINOTYPE COMPANY, LIMITED, OF LONDON, ENGLAND.

LINE-ENGRAVING.

SPECIFICATION forming part of Letters Patent No. 684,971, dated October 22, 1901.

Application filed July 26, 1900. Serial No. 24,918. (No model.)

To all whom it may concern:

Be it known that I, MARK BARR, of Broadheath, in the county of Chester, England, have invented certain new and useful Improvements in Line-Engraving; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in line-engraving. Hand line-engravers use a V-shaped tool, with the acute angle or point of it pointing downward. Consequently increase of width of engraved line is accompanied by an increase in depth of the same line, and the printed character has a greater body of ink on it per unit of area in the case of a wide line than it has in the case of a narrow line.

The object of the present invention is to enable an engraving-machine to deal with its lines in substantially the way just described. It is applicable to any pantographic engraving-machine having tracer-rod and tool, both capable of a vertical motion in either direction, and connections from the tracer-rod to the said tool adapted to make the latter partake of the vertical motion of the former.

Referring to the accompanying figures, which are to be taken as part of this specification and read therewith, Figure 1 is a perspective view of a pattern for a script "H;" Fig. 2, a section on the line 2 2 of Fig. 1, and Fig. 3 a transverse section along a corresponding line of the plate engraved by the machine from the pattern-plate shown in Fig. 1.

To prevent confusion and to make the invention more easily understood, all questions of reversal between pattern and work or engraved plate are ignored.

1 is the bottom portion of the tracer-rod of the engraving-machine. The latter may be of any construction so long as the tracer-rod is capable of a vertical motion in either direction, up or down, and of communicating the same to the tool in the desired ratio. As such machines are more or less well known, it has not been thought necessary to further illustrate and describe the construction of one.

2 is the tracer-point. It is conical in side elevation, the sides meeting at about a right

angle and the apex entering the lines 3 of the pattern. These lines are grooves in a flat pattern-plate 4. They vary in width as may be required; but they are too deep for the tracer-point 2 to reach the bottom of any of them. Thus in the case of the script "H" of the figures the hair-lines are narrow, while the body-lines are wide; but the depths 5 are equal throughout, as is clearly shown in Fig. 2. According to this invention it is not the apex of the tracer-point 2 that bears upon the pattern, but two opposite sides of it, and they bear upon the two edges of a line or groove 3, the apex being in the said line or groove, but not in touch at any time with the bottom 6 of it. The maximum diameter of the point 2 is longer than the width of the widest line 3. Thus the tracer-point 2 as it moves along the groove 3 descends farther into it the wider the said groove is and rises out of it as the width of the groove decreases. The full lines of Fig. 2 show the tracer-point 2 dealing with a body stroke or wide line. It is deep accordingly in the groove. The dotted lines of the same figure show the narrower groove raising the point 2 accordingly. The tool is in vertical section, either conical, convexo-conical, or concavo-conical. It partakes of the above-described motion of the tracer-point, and the depths of the engraved lines 3^a in the engraved plate 7 are consequently proportional to the widths of the said lines.

I claim—

The hereinbefore-described combination in an engraving-machine, of pattern-plate having a pattern consisting of incised lines or grooves too deep for the tracer-point to reach the bottom of any of them; a conical tracer-point adapted to enter the said lines or grooves to a greater or less depth according to their width; tool capable of a vertical motion in either direction; and connections from the tracer-rod to the said tool adapted to make the latter partake of the vertical motion of the former.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

MARK BARR.

Witnesses:

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