J. HOPE.

PENTAGRAPHIC ENGRAVING MACHINE.

No. 19,607. Patented Mar. 9, 1858.

Fig. 1.

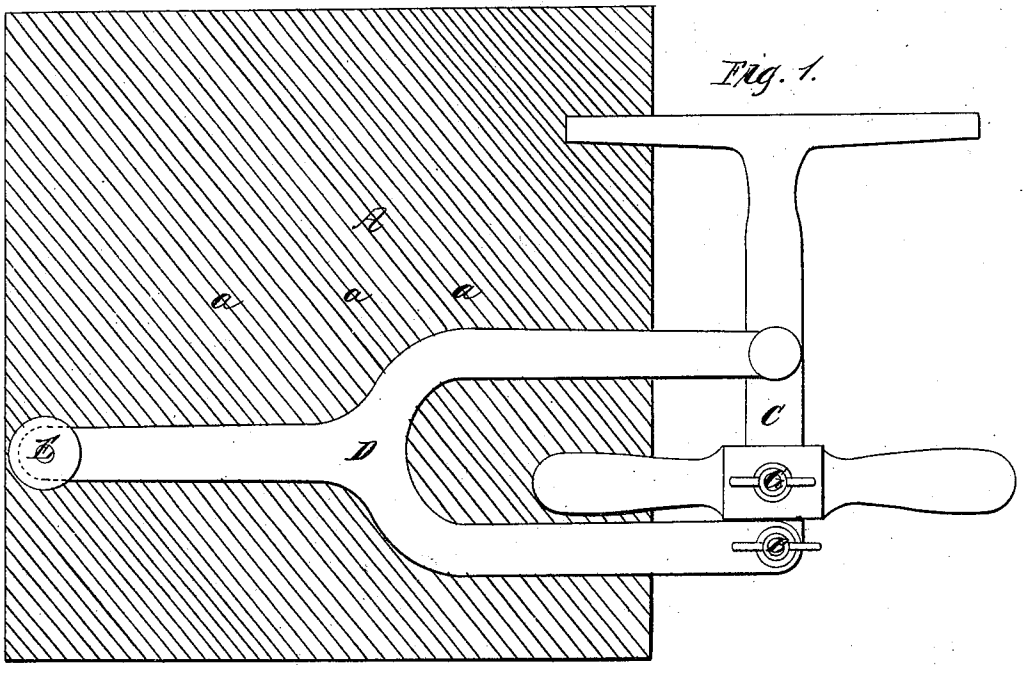


Fig. 2.

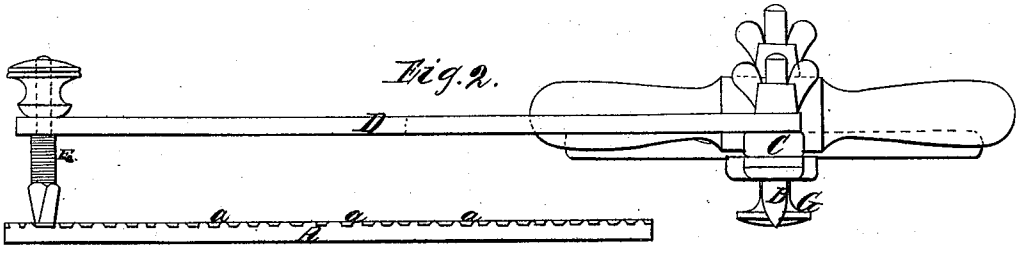
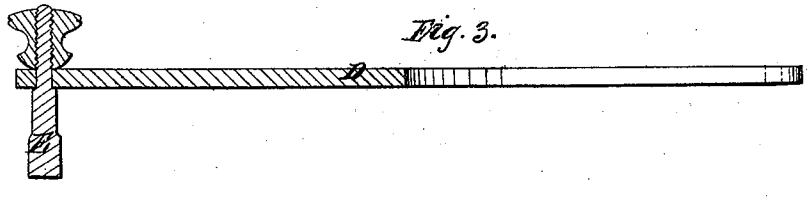


Fig. 3.



UNITED STATES PATENT OFFICE.

JOHN HOPE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO HIMSELF AND THOMAS HOPE, OF SAME PLACE.

DEVICE FOR PANTOGRAPHIC ENGRAVING-MACHINES.

Specification of Letters Patent No. 19,607, dated March 9, 1858.

To all whom it may concern:

Be it known that I, JOHN HOPE, of the city and county of Providence and State of Rhode Island, have invented an Improvement in Pantographic Machines for Engraving Calico-Printers' Rollers; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

Figure 1, is a top view of my improvement as applied to the tracer and tracer carrier of an engraving machine. Fig. 2, a front elevation of the same. Fig. 3, a longitudinal section of the arm carrying the secondary tracer.

My invention has reference to a machine of the character or kind on which Letters Patent numbered, 13462, were granted to me and Thomas Hope on the 21st day of August A. D. 1855. In such machine the pattern tracer is arranged over a board or table on which the pattern or drawing is stretched. By moving the tracer over the pattern, and on the lines thereof in a manner well known, the several gravers of the machine will be set in motion so as to engrave reduced fac-similes of the pattern on the surface of a copper roller.

After the outline or outlines have been engraved on the cylinder, it becomes necessary to engrave the ground lines, which consist of lines drawn parallel and close together over the surface of the figure.

The object of my invention is to enable an attendant on the engraving machine readily to produce the ground lines with despatch and at equal distances apart from one another. For this purpose, I make use of a grooved board or tablet A, (see Figs. 1 and 2,) whose upper surface is scored with straight parallel grooves, *a*, *a*, *a*, arranged at equal distances apart. Instead of such grooves being parallel and straight they may take any other relation to one another or may be curved as fancy may dictate in order to the completion of a design or ground of a figure. The said tablet may be a thin plate of metal or it may be made of wood or other proper material. When used it is to be laid on the table or pattern board of the engraving machine, and near to the pattern. It may be fixed in position by points or any other convenient means.

The tracer of the machine is shown at B, in Figs. 1, and 2, as fastened in the usual manner, to a carrier or arm C. From said tracer or its carrier an arm D, extends laterally over the grooved tablet, and supports at its outer end a guide or finger E, so applied to the arm as to be capable of being revolved or turned around horizontally. The lower end of the finger or guide E, is made wedge shaped or pointed in order that it may fit in either of the grooves, *a*, *a*, *a*, of the tablet.

Having arranged the tablet as before specified the attendant moves the tracer in parallel lines over his pattern, at the same time governing the motions of the tracer by the guide E, the grooves of the tablet and the boundaries of the pattern. By such means, the figures on the copper cylinder may be engraved in parallel lines or the ground may be produced thereon. The lines of the ground of the figure are successively formed by moving the finger E, successively through the grooves of the tablet and determining the length of the various lines by boundaries of the pattern and the main tracer, as will be well understood by those accustomed to use pantographic engraving machines. The tablet may be turned around so as to cause the lines to be engraved in any desirable direction, the finger E, turning on the arm and accommodating itself to the grooves of the tablet. In connection with the tracer B, I make use of a rest or support G, which is formed as shown in Fig. 2, and extends down from the part C, in the position as shown in Fig. 1, when the machine is in use the under surface of the rest is arranged a little below the point of the tracer B, in order to support the tracer and prevent it from catching in the cloth or pattern.

My invention and what I claim consists in—

1. Combining with the main tracer of a pantographic engraving machine a grooved tablet A, or its equivalent and an arm D, and secondary tracer or guide E, to run or work

in the grooves of the tablet and to govern the directing of the movements of the main tracer in producing the ground lines of the engraved figures as specified.

2. I also claim combining with the tracer B, the rest G, so as to operate therewith as specified.

In testimony whereof, I have hereunto set my signature.

JOHN HOPE.

Witnesses:
R. H. EDDY,
T. R. HALE, Jr.