Sheet 1 - 3 Sheets.

T. Lippiatt,

Rose Engine Lathe,

No. 80,292. Patented July 28, 1868.

Fig. 2.

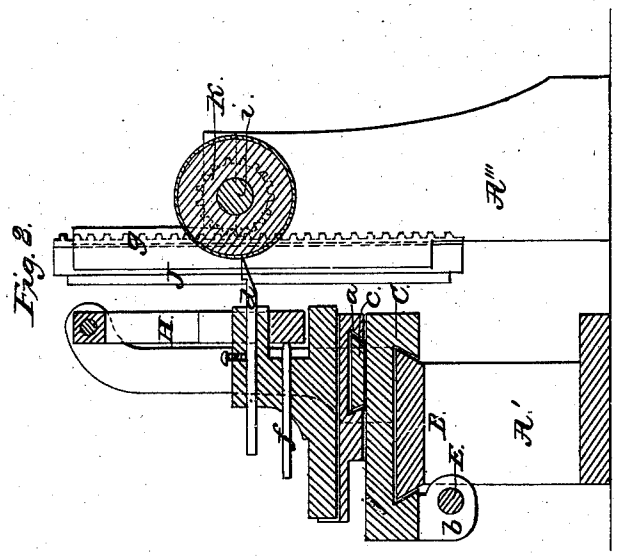


Fig. 1.

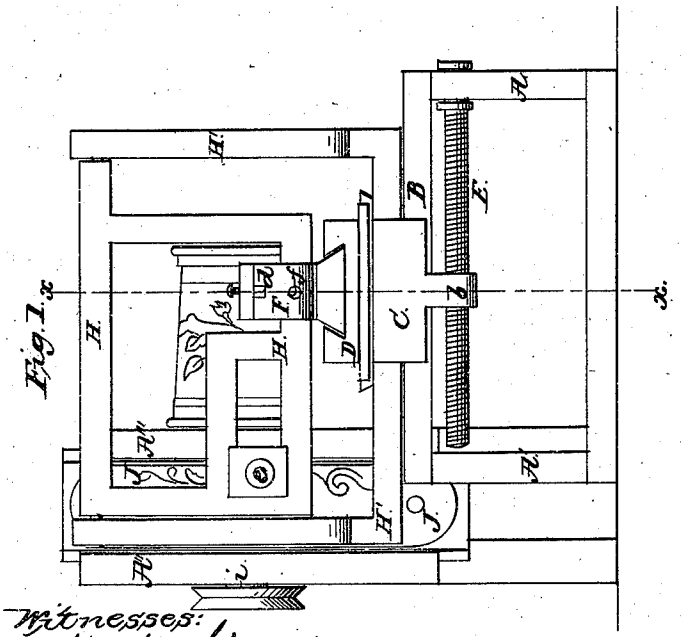
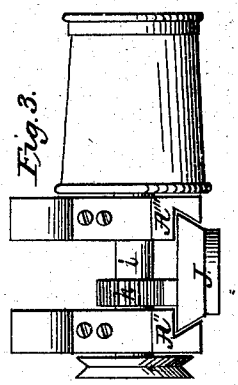


Fig. 3.



Witnesses:

M. M. Lamphier

J. Wm. Goodspeed

Inventor:

Thos. Lippiatt

Sheet 2 - 3 Sheets.

T. Lippiatt,

Rose Engine Lathe,

No. 80,292. Patented July 28, 1868.

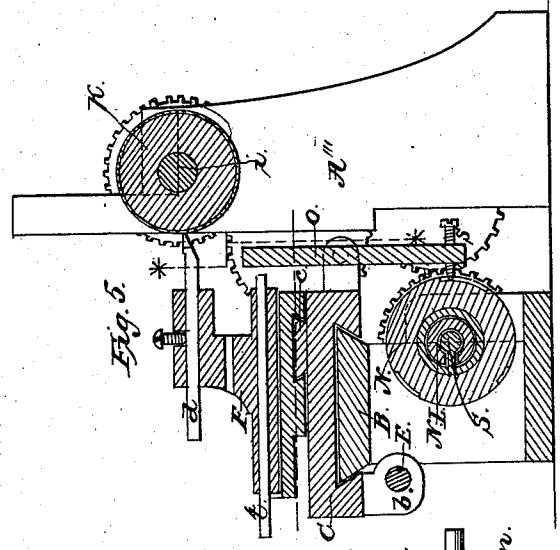


Fig. 5.

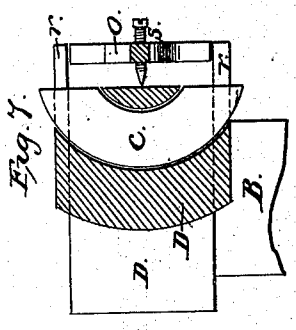


Fig. 7.

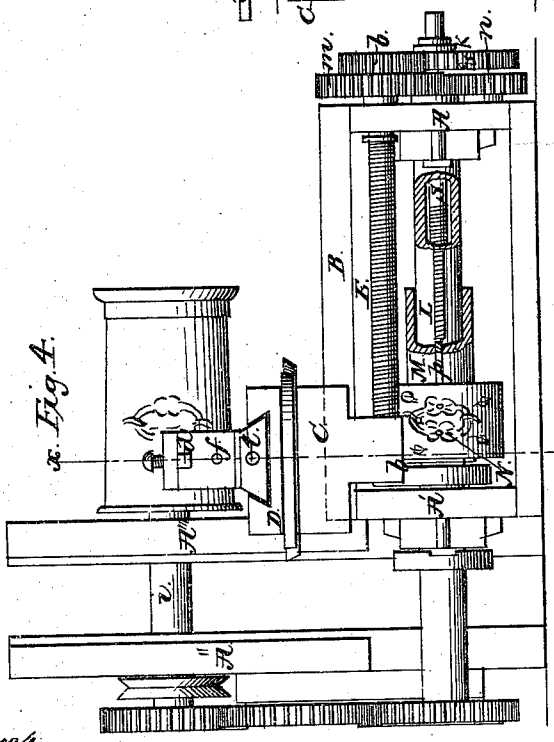


Fig. 4.

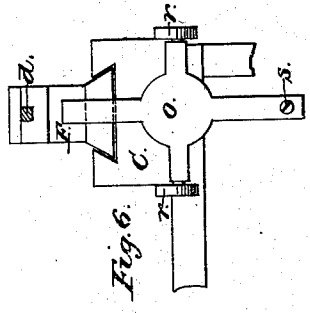


Fig. 6.

Witnesses:

M. M. Lamplugh

E. Mortimer

Inventor:

Thos. Lippiatt.

Sheet 3 - 3 Sheets.

T. Lippiatt,

Rose Engine Lathe,

No. 80,292. Patented July 28, 1868.

Fig. 9.

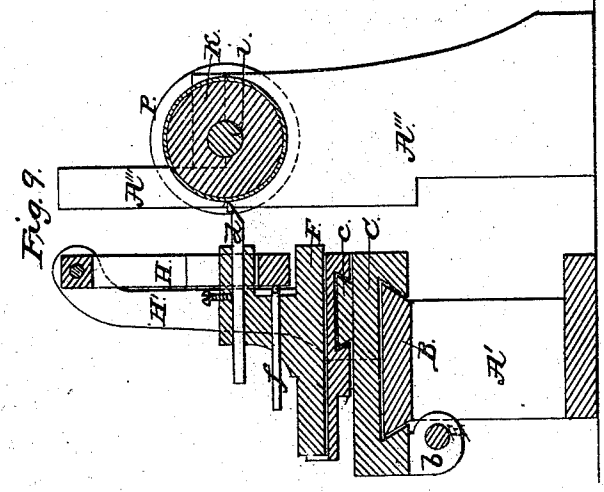


Fig. 8.

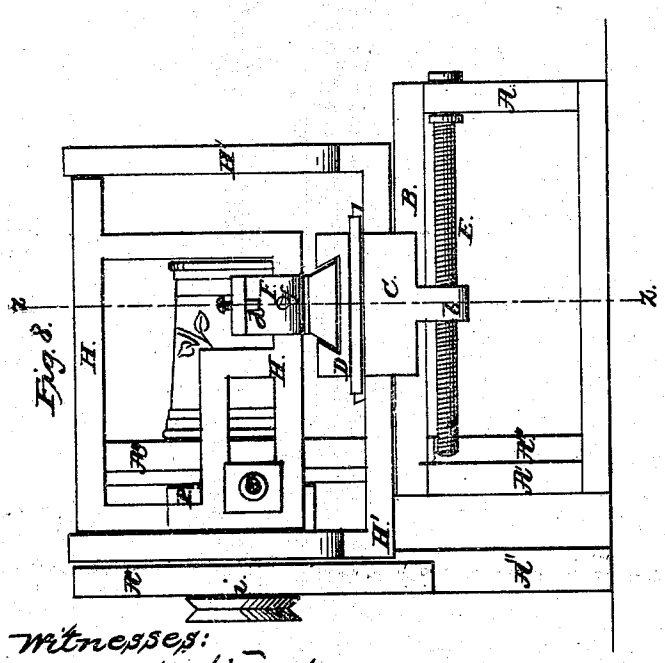
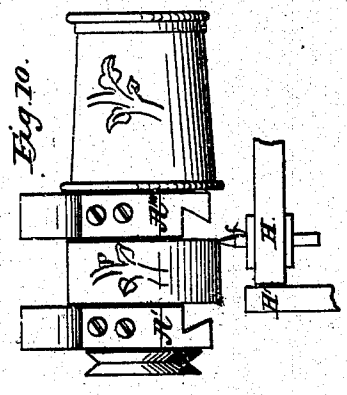


Fig. 10.



Witnesses:

M. M. Murphy

J. Wm. Cooper

Inventor:

Thos. Lippiatt.

THE ECKERT LITHOGRAPHING CO., WASHINGTON, D. C.

United States Patent Office.

THOMAS LIPPIATT, OF NEW YORK, N. Y.

Letters Patent No. 80,292, *dated July* 28, 1868; *antedated July* 11, 1868.

IMPROVEMENT IN ROSE-ENGINE LATHES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, THOMAS LIPPIATT, of the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Rose-Engine Lathes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to certain improvements in machinery or apparatus for engraving upon cups, napkin-rings, and other articles, as will be hereinafter explained.

In the accompanying drawings I have shown three different arrangements of equivalent parts, shown respectively on separate sheets.

Figure 1, Sheet I, is a front elevation of one form of my invention.

Figure 2, Sheet I, is a transverse vertical section of the same, taken on the plane of the line *x x*, fig. 1.

Figure 3, Sheet I, is a plan or top view of the vertically-sliding die and the mandrel.

Figure 4, Sheet II, is a front elevation of the second form of my invention.

Figure 5, Sheet II, is a transverse vertical section of the same, taken on the plane of the line *x x*, fig. 4.

Figure 6, Sheet II, is a front elevation of the vibrating-frame, which carries the tracing-tool and actuates the engraving-tool.

Figure 7, Sheet II, is a horizontal section, taken on the plane of the line *y y*, fig. 5.

Figure 8, Sheet III, is a front elevation of the third form of my invention.

Figure 9, Sheet III, is a transverse vertical section thereof, taken on the plane of the line *z z*, fig. 8.

Figure 10, Sheet III, is a plan or top view of the revolving die and mandrel.

Similar letters of reference indicate like parts in all the figures.

Refer especially to Sheet I.

A A′ A″ A‴ are vertical portions of the frame. Upon the tops of the uprights A A′ there is secured a bed-plate, B, upon which is fitted to slide horizontally a bed, C, upon which sliding bed C is mounted the tool-box carriage D.

The edges of the bed-plate B are bevelled to fit into dove-tail grooves, *a*, formed in the sliding bed C, as shown clearly in fig. 2.

E is a screw-rod, journalled at its outer end in the upright, A, of the frame, so as to revolve, but not move longitudinally. The other end passes into a screw-box, *b*, attached to the sliding bed C, and hence, when the screw-rod E is revolved, the sliding bed C is caused to travel along the bed-plate B. The said screw-rod E can be revolved by any suitable gearing connected to it, as shown in fig. 4, Sheet II.

The tool-box carriage D is pivoted to the sliding bed C so as to move laterally on the arc of a circle or guiding-block *c*, (refer to fig. 2, Sheet I, and fig. 7, Sheet II,) controlling its motion.

F is the tool-box, having the side edges of its base bevelled, so as to fit into a groove formed in its carriage D, as shown in fig. 1, whereby the tool-box is held securely, and allowed a forward-and-backward sliding motion, to adjust the engraving-tool *d* to its work.

H is a swinging frame, journalled at the upper part in a stationary frame, H′, the latter being bolted to the sliding bed, so as to travel with it. The frame H is allowed a to-and-fro swinging motion. This frame carries the tracing-pin *e*.

Extending beyond the inner face of the tool-box F there is a pin, *f*, whose point bears against the lower part of the frame H, so that when the frame is set in motion by the tracing-pin *e*, it will jump in and out of the die or pattern J, as the latter slides up and down. Of course the distance which the tracing-pin *e*, pin *f*, and engraving-tool *d* protrudes may be regulated by any proper means. The said die or pattern J is arranged so as to slide vertically in the upright portions A″ A‴ of the frame.

The means shown in the present instance for actuating the sliding die or pattern is by a rack, *q*, secured to the back of the said die, into which engages a cog-wheel, *h*, mounted on the mandrel-shaft *l*. K, (refer to figs. 2, 3, and 9,) is the head of the mandrel, on which the piece of work to be engraved is placed.

I purpose employing a system of cog-gearing for imparting motion to the several parts of the machine, (see fig. 4, Sheet II.)

The operation of this form of my invention is as follows:

Motion is imparted to the machine by any suitable motor, to the mandrel-shaft *i*, and by means of suitable-sized cog-wheels the desired motion is imparted to the several parts of the mechanism. As the die or pattern J slides up and down, the tracing-pin *e* is thrown in and out of the configuration, and it moves the frame H, which latter throws backward the tool-box F, and hence the engraving-tool *d*, and in this way the pattern is engraved on the cup (as shown in the drawing) or other article on the mandrel. The tool-box F should be kept pressed up by the hand against the work, but not so hard that it cannot be operated by the frame H, or this pressure on the tool-box may be performed by a spring properly applied to the tool-box.

Refer especially to Sheet II.

All the parts shown in the previous sheet, and in this also, are designated by the same letters. Their construction and operation are the same. I will, however, remark, that the two prominent features shown on that sheet, namely, the swinging frame H and its supporting-frame H′, have been removed, as also has the sliding die or pattern, they being unnecessary when this form is employed. I will describe only the additional parts.

L is a shaft, journalled at respective ends in the upright, A A′, of the frame, carrying upon its end a cog-wheel, *k*, which engages with other cog-gearing, *l m n*, by which a rotary motion is imparted to the shaft L.

M is a sleeve, fitted on the shaft L, upon which sleeve a circular die or pattern, N, is secured. The shaft L has a central core, into which is placed a nut, having a lug or neck, which passes through a slot, *p*, in the said shaft, which lug is secured to the sleeve M. A screw-rod, S, works into this nut, and when said rod is revolved the said sleeve and die are caused to travel along the shaft L.

Motion is imparted to this screw-rod by a gear-wheel, *q*, meshing with a gear-wheel on the screw-rod E. When it is not desired to cause the die to travel along the screw-rod S, the wheel *q* may be thrown out of gear. The advantage of providing a lateral movement of the die, I will hereafter explain.

O is a frame, pivoted to two arms, *r r′*, (refer to fig. 6,) which latter are connected to the sliding bed C, and travel with it.

The said frame may be so pivoted that its fulcrum may be changed so as to raise or lower it, whereby less depth of pattern on the die is required. The lower end of this frame carries the tracing-pin *s*, and the upper end bears against a regulating-pin, *t*, in the tool-box F; hence, as the die revolves, the tracing-pin jumps in and out of the pattern, and causes the tool-box, and hence the engraving-tool, to have the same motion previously described.

In operating this form of my invention, the requisite motion is imparted to all parts of the machine by suitably-connected gearing. If it is desired to engrave, upon the piece of work on the mandrel, the figure on the die of same size as that figure, the die is allowed to remain stationary on the shaft L, and the progressive motion of the sliding bed C regulates the work to be done. But if it be desired to engrave upon these pieces of work a large pattern, *i. e.*, a design of larger size than the one on the die, the gear-wheel *o* is thrown into gear, and this moves the nut along, and also the sleeve, and hence the die.

By having provision for changing the fulcrum of the frame, a die, having its pattern cut shallower than usual, may be employed.

Refer to Sheet III.

In the form of my invention, illustrated on this sheet of the drawings, the swinging frame H is employed, and all the other parts on Sheet I, hereinbefore described, except the sliding die or pattern J, and the means employed for actuating it.

P is a cylindrical die or pattern, mounted on the shaft *i* of the mandrel, between the uprights A′ A′ of the frame, against which die or pattern the point of the tracing-pin *e* rests, and as the said die revolves, motion being imparted to it by any suitable gearing, the pin is caused to jump in and out of it, and vibrate the swinging frame, which strikes the regulating-pin *f*, and thereby operates the engraving-tool *d* in the tool-box F. The tracing-pin progresses along the die the same as in the arrangement herein first described, and the work is performed in substantially the same manner.

I will here remark that these several arrangements, particularly the two last described, are well adapted for doing other work than engraving on metal; for instance, a last may be placed on the shaft, in the position occupied by the die N, or on the mandrel-shaft *i*, in the position occupied by the die P, and a wheel or an equivalent device used instead of a tracing-pin. A rotary cutter should then be secured to the tool-box, with proper gearing for revolving it rapidly. With this arrangement it is evident that as the tracing-wheel, so called, follows the curves of the pattern-last, the cutter would cut the block upon the mandrel in the same shape as the pattern. In this way, with but slight changes, the machine may be adjusted to various kinds of work in both metal and wood.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The arrangement of the swinging frame H, carrying a tracing-pin, *e*, or an equivalent device, the vertically-sliding die or pattern J, mandrel K, and engraving-tool *d*, operating substantially as herein specified.

2. The arrangement of the revolving die or pattern N, the swinging frame O and tool-box F, operating substantially as herein described.

3. The combination of the screw-rod S and shaft L with the sleeve M and die N, substantially as herein specified, for giving a lateral progressive movement to the said die N.

4. The arrangement of the revolving die or pattern P on the mandrel-shaft *i*, the swinging frame H, and tool-box F, operating substantially as herein specified.

THOS. LIPPIATT.

Witnesses:
M. M. LIVINGSTON,
T. B. BEECHER.