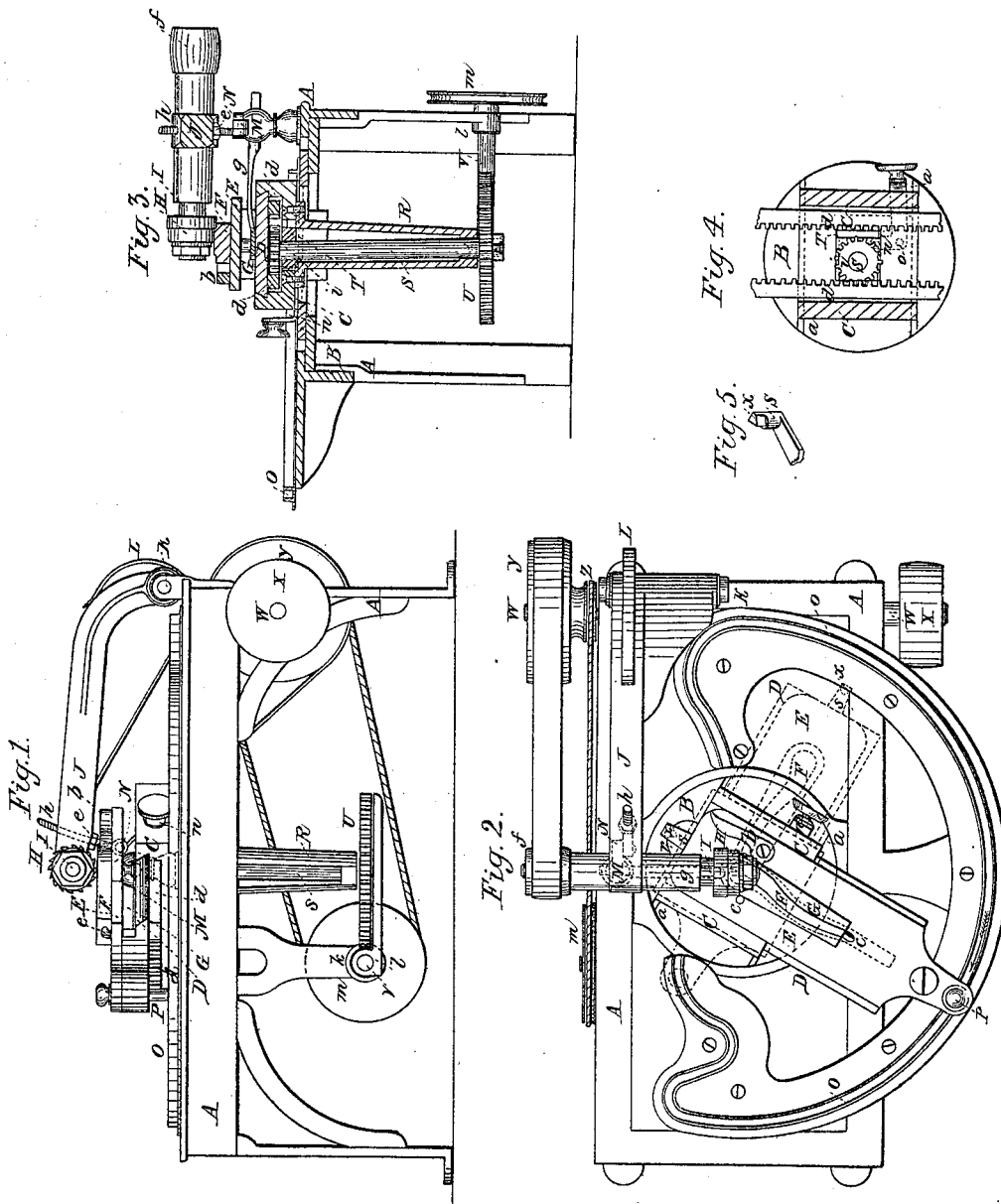


*A. Cary,
Turning Dralß.*

N^o 7750.

Patented Nov 5, 1850.



UNITED STATES PATENT OFFICE.

ALANSON CARY, OF WORCESTER, MASSACHUSETTS.

MACHINE FOR DRESSING IRREGULAR FORMS.

Specification of Letters Patent No. 7,750, dated November 5, 1850.

To all whom it may concern:

Be it known that I, ALANSON CARY, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Machinery for Cutting Irregular Forms in Ivory, Wood, or other Materials; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1, is a front elevation. Fig. 2, is a plan or top view. Fig. 3, is a transverse vertical section through the center of the table and bench. Fig. 4, is a horizontal section through the bottom slide of the work table. Fig. 5, is a perspective view showing the underside of the dog which locks the slide D.

Similar letters of reference indicate corresponding parts in each of the several figures.

The nature of my invention consists in a horizontal bench, in or near the center of which is a circular table which is fitted in such a manner to the bench as to be capable of receiving a circular motion, the table carries two slides placed at right angles one above the other, the lower one capable of sliding in a line across the circular table, and the upper one sliding in rabbets or guides in the lower one, at right angles to the direction in which the lower one itself slides; the work to be operated upon is secured by dogs to a plate above the top slide and by the means hereinafter described receives such a motion that a fixed point will mark the required pattern on the work; a rotary cutter is suspended on a swinging arm above the work, this is capable of being adjusted to take a cut of the required thickness, and while motion is given to the work in the required direction it will cut it to the required form.

To enable others skilled in the art to make and use my invention I will proceed to describe fully its construction and operation.

A, A, (Figs. 1, 2 and 3) represent the frame or bench which supports the machinery. B, is the circular table which is fitted and secured to the center of the bench in such a manner as to allow it to receive circular motion. C, is a metal slide which has two projections on its lower side fitting in rabbets (a) (a) on the surface of the table B; it is secured to the table so that it

can slide freely upon it. D, is a metal slide fitting in dovetail grooves in the slide C, at right angles to the rabbets in the table B, it has two toothed racks (*d, d,*) attached one near each edge to its under side. E, is a plate secured to the top slide D, a space is left between D, and E, the plate E, carries the work which is here represented (see F, Figs. 1, 2, and 3,) as an ivory handle for a table knife it is secured to the plate by an eccentric dog (*b*) which holds it firmly against studs (*c, c*).

G, the form of which is shown by dotted lines in Fig. 1, and which is also seen on edge in Fig. 1, and in section in Fig. 3) is a gage or pattern of the required form of the pattern which is to be cut upon the work, it is secured to the slide D, under the plate E.

H, is the rotary cutter which is similar to some of the cutters employed in other machinery used for similar purposes, it is secured upon a spindle (I,) which works in a bearing at the end of an arm (J,) which is hung upon a fixed pivot or center K, secured to one end of the bench. L, is a spring bearing on the arm J, *f*, is a pulley fast upon the spindle I.

M, is a short pillar secured to the top of the bench A, A. It carries a short fixed arm (N). *h*, is a screw which is jointed by a pin to the end of the arm N, and is curved to the form of an arc described from the center of K. It passes through the arm J, and is provided with a nut (*e*), upon which the arm J, rests, the spring L, always keeping it close down upon the said nut, which may be raised or lowered to suit the thickness of the work or of the required cut.

g, (seen in dotted lines in Fig. 2, and seen on edge in Fig. 3,) is a pointer. It has a shank passing through the pillar M, and is secured by a set screw. It bears upon the upper surface of the slide D; when the rotary cutter H, is in motion the gage or pattern G, being placed in contact with the end of the pointer, and its entire edge drawn past it, the material upon the plate E, will have a pattern cut upon it similar to G.

r, is a notched projection standing up above the table B.

s, is a dog attached to the slide D, having an angular projection *x*, (see Fig. 5,) fitting in the notch in *r*, for the purpose of locking the slide while a circular pattern is being cut.

O, (best seen in Fig. 2) is an irregular way or groove which is secured to the top of the bench A, A.

P, is a pin passing through the plate E, and slide D, its lower end fits easily in the way O, which is of such form, that when the pin is moved along it, it will cause the slides C, and D, and the table B, to take such motions, as to cause the upper slide D, and plate E, to describe the required pattern to be given to the material; the motions of the slides at right angles to each other, and the circular motion of the tables, will allow of any form being given to the pattern.

R, is a standard secured by screw bolts to the under side of the slide C. S, is an upright shaft passing through a socket in the lower part of the standard R, which serves as a guide; it also fits in a metal box or bearing T, (see Figs. 3 and 4,) which slides in rabbets in the lower slide C, above the said box; it is provided with a toothed wheel (*i*) which may be geared with either of the racks *d*, *d*, on the upper slide D; the lower end of the shaft carries a worm wheel (*v*), in which an endless screw (*k*), upon a horizontal shaft V, gears; the shaft V hangs in bearings (*l*, *l*)—one of which is suspended from the frame or bench A, A, and the other from the shaft S. It carries a pulley (*m*).

n, (see Figs. 3 and 4,) is a bent lever which works on a fixed stud (*o*) below the slide, one end is attached to the sliding box or bearing T, and the other end projects out from under the slide C, and is provided with a knob or handle which may be moved so as to throw the wheel *i*, in gear with either of the racks *d*, *d*, or out of gear with both, in either of which positions it may be secured by a spring catch.

W, is the driving shaft, carrying the pulley X, which receives the motion, the pulley Y, which communicates it (through a band running on the pulley (*f*) to the cutter shaft, and the pulley Z, which communicates it by a band running on the pulley *m*,) to the shaft V.

The operation is as follows: The feed or work table may be operated by hand or by the upright shaft S. If it is intended to operate the feed by hand, the lever *n*, is set so as to throw the wheel *i*, out of gear with both the racks *d*, *d*. The work is secured to the plate E, and the cutter shaft I, being set at the proper height the machine is started; the slide D, receives its motion in the required direction, by the operator leading the pin P, round the irregular way, or by moving the edge of the pattern or gage G, past the end of the pointer *g*; either of these devices for giving form to the material may

be employed separately or both at the same time.

If it is intended to make the feed self acting, the wheel *i*, must be thrown into gear with either of the racks *d*, *d*, according to the direction in which it is desired to move the work, and rotary motion must be given to the upright shaft S; in cutting patterns which are not circular but straight or only slightly curved the dog *s*, is thrown back from the notch in the projection *r*, on the table B, see the red lines in Fig. 2, and the wheel *i*, only moves the top slide D, forward, across the bottom one C, which accommodates itself by sliding on the table B, to any slight curve in the line in which the pattern leads it. When the circular part (as the end of the knife handle) is being cut the slide is moved to its lowest position forward and the dog *s*, is brought into the notch in the projection *r*, on the table B, which prevents the slide D, from traveling farther forward and causes the wheel *i*, to give a circular motion to the table B, the pin P, at this time runs in a part of the "way" O, which is concentric with the center of the table B, (see Fig. 2;) the motion will require to be changed at various points on the pattern, this is effected by throwing the wheel *i*, into gear with the opposite rack.

This machinery may be used for cutting various patterns on the handles of table cutlery or other similar articles, as for instance a fluted pattern, and also for some forms of pistol-stocks, and for many other purposes.

The forms of the pattern or gage G, and "way" O, and also of the cutter must be changed for cutting work of different patterns; an irregular surface may be cut on the top side of the material at the same time by using gages to give a vibratory motion to the cutter arm J.

Having thus fully described my invention I will proceed to state what I claim as new and desire to secure by Letters Patent—

I claim the toothed wheel *i*, upon the shaft S, arranged so that it is capable of being thrown in gear with either of the racks *d*, *d*, in combination with the dog *s*, on the slide D, and the notched projection on the table B by which the slide is locked to or unlocked from the table for the purpose of enabling the wheel *i*, to give either a rectilinear motion to the said slide D, or a circular motion to the table B, as may be required, in the manner and for the purposes substantially as herein set forth.

ALANSON CARY.

Witnesses:

CHARLES O. DAVIS,
PHILIP L. MOEN.