Walton & Edgarton,

Cage Lathe.

No. 17,762. Patented July 7, 1857.

Fig. 3

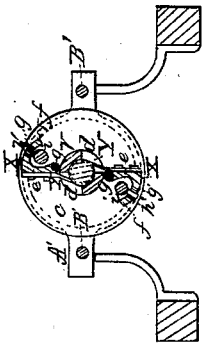


Fig. 4

Fig. 1.

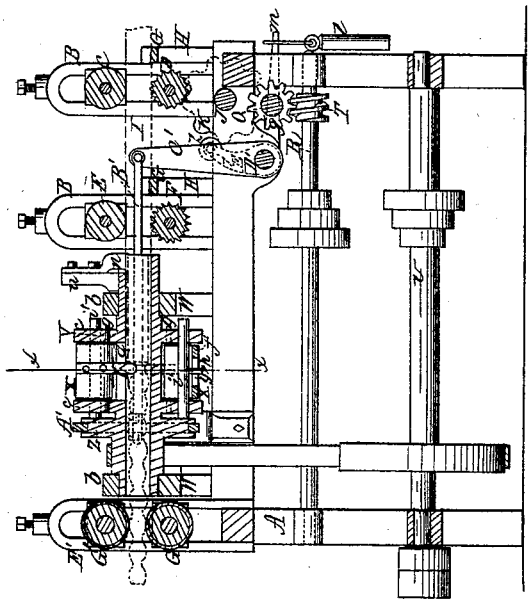
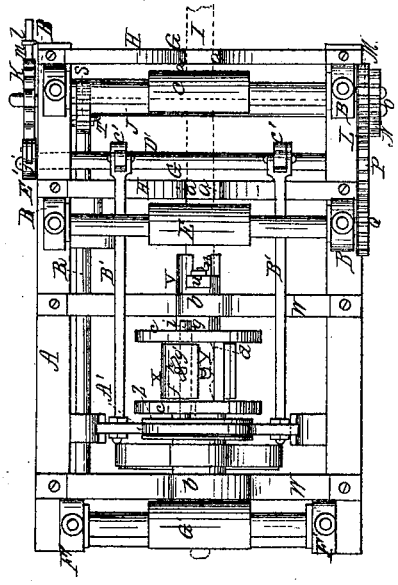


Fig. 2.



UNITED STATES PATENT OFFICE.

GEORGE W. WALTON AND HENRY EDGARTON, OF WILMINGTON, DELAWARE.

MODE OF OPERATING RADIAL CUTTERS IN LATHES FOR BEADED WORK.

Specification of Letters Patent No. 17,762, dated July 7, 1857.

To all whom it may concern:

Be it known that we, G. W. WALTON and H. EDGARTON, of Wilmington, in the county of Newcastle and State of Delaware, have invented a new and improved lathe or machine for cutting or turning beaded work for chair-rounds or handles for implements and other articles or sticks with beaded or similar regular turned or cut figures or ornaments; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section of our improvement, the plane of section being through the center. Fig. 2 is a plan or top view of ditto. Fig. 3 is a transverse vertical section of the cutting device by which the beads are cut, (*x*), (*x*), Fig. 1, indicating the plane of section. Fig. 4 is a detached view of the roughing-off tool.

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

Our invention consists in a cutting device peculiarly arranged and operated for cutting the beaded or similar ornaments on the sticks.

To enable those skilled in the art to fully understand and construct our invention we will proceed to describe it.

A represents a rectangular frame which may be constructed of wood or metal and in any proper manner to support the working parts.

At each side and at the upper part of the fram A there are placed two vertical bars or heads B, B, which contain the bearings of feed rollers C, D, E, F. These rollers are arranged in pairs the upper rollers C, E, having smooth peripheries, the lower rollers D, F, having corrugated peripheries, as shown clearly in Fig. 1. The bearings of the lower or corrugated rollers D, F, are permanent, but the bearings of the upper rollers are allowed to yield or give, set screws and springs being applied in the usual way. The feed rollers are arranged and constructed in the well known and common way and therefore a more minute description is not necessary.

G, G, represent two guides which are merely lips (*a*) formed on transverse metal bars H, H, attached to the upper part of the frame. The bolt I shown in red is fitted between the lips (*a*) as it is fed along by the feed rollers.

J represents a transverse shaft placed in the upper part of the frame A. This shaft has a pattern K attached to one end. The pattern K is formed by scalloping or notching the periphery of a circular disk, the forms of the scallops or notches corresponding to the form of the beads or ornaments to be cut on the sticks. The opposite end of the shaft J has a pinion L upon it and this pinion gears into a corresponding pinion M on the outermost lower feed roller D, and gears into a pinion N on a shaft O, just below the shaft J, and also gears into a wheel P attached to one side of the frame A, the wheel P gearing into a pinion Q on the innermost lower feed roller F. By means of this gearing the shafts J, O, and lower feed rollers D, F, are connected and are all operated from a longitudinal shaft R by means of a worm wheel S and screws T. The shaft R is driven by a belt from a driving shaft U which is placed longitudinally in the lower part of the frame A.

V represents a hollow shaft, the ends of which are fitted and work in bearings (*b*), (*b*) at the centers of transverse bars W, W, attached to the upper part of the frame A.

On the shaft V two circular disks (*c*), (*c*) are formed said disks being of equal diameter with a suitable space allowed between them. The portion of the hollow shaft V between the two disks (*c*), (*c*), has longitudinal openings (*d*) made in it at opposite sides, said openings extending the whole length of the shaft V included between the two disks (*c*), (*c*).

Between the two disks (*c*) (*c*) two swinging cutter stocks X, X, are placed. These stocks transversely are of **V**-shape as shown clearly in Fig. 3, and the sides or edges (*e*) to which the cutters Y are attached have a planed surface the other sides (*f*) may be slightly curved. The lower parts of the sides (*e*) of the stocks X have rods (*g*) passing through them, the stocks being allowed to work or turn freely on these ends.

The cutters Y are made on the gage principle their cutting edges being rounded and the front side of the tool hollowed out in the usual way. The stocks X, X, are placed or fitted between the two disks at opposite sides of the shaft V, as shown clearly in Fig. 3.

The sides (*f*) of the stocks X have each an oblique slot (g^1) made in them, and a pin (*h*) is fitted in each slot. The pins (*h*) are attached to rods (*i*) (*i*) which pass through

and are allowed to work freely in the disks. These rods (*i*) (*i*) are attached to a collar Z which is allowed to slide freely on the shaft V and the collar Z is encompassed by a metal strap A^1 to each side of which a rod B^1 is attached. The rods B^1 are connected to the upper ends of arms C^1 which are secured on a shaft D^1, said shaft having a bent lever E^1 secured on one end. The upper end of the upright arm (*j*) of the lever E^1 has a friction roller (*k*) fitted in it, and this roller is made to bear against the periphery of the pattern K by means of a weight (*l*) which is attached to the end of the horizontal arm (*m*) of the bent lever E^1.

The front end of the hollow shaft V has an arm (*u*) attached to it, said arm having a cutter (*n*) attached to it, the cutting edge of the cutter projecting slightly beyond the inner surface of the shaft V.

On the back end of the frame A two vertical bars F^1 are placed, one at each side and the bearings of two rollers G^1, G^1 are fitted in said bars F^1. The rollers G^1 may be covered with india rubber cloth or other suitable elastic material. These rollers serve to discharge or aid in discharging the turned sticks from the hollow shaft V. Motion is given the hollow shaft V, by a belt from the driving shaft U.

The operation is as follows: Motion is given the driving shaft U in any proper manner, and the bolts I are fed one at a time by the rollers C, D, E, F, into the hollow shaft V, the roughing off tool or cutter (*u*), as the shaft V rotates cutting the bolt I in cylindrical form and allowing it to be fed through the shaft V. A reciprocating movement is given the collar Z and rods (*i*) (*i*) in consequence of the bent lever E^1 and pattern K. The sliding movement of the collar Z and rods (*i*) (*i*) as they move back and forth actuate the cutter stocks X, X, in consequence of the pins (*h*) which are attached to the rods (*i*) (*i*) working in the oblique slots (g^1) the stocks X swinging or oscillating on the rods (*g*) and causing the cutters Y to cut the stick in a beaded or similar form, the precise form of the beads or ornaments being determined by the form of the pattern K, the construction of which may be such as to cause the sticks to be cut in any form depending solely upon a variable diameter of the sticks not varying however from a cylindrical form.

The above machine does not require the attendance of an experienced person, all that is required is merely to feed the bolts to the machine, as all the parts work automatically.

We are aware that cutters for cutting beaded work have been arranged so as to be operated automatically, and a patent was granted to A. H. Brown for a machine having an automatic cutter head. We therefore distinctly disclaim all parts on our machine which may be considered equivalent to those of the aforesaid and other machines, intending thereby to limit ourselves to the combination and arrangement of parts shown.

We therefore claim as new and desire to secure by Letters Patent—

The rotary pattern K, bent lever E^1, arms C^1, C^1, connected to the sliding collar A^1 in combination with the swinging or oscillating cutter stocks X, X, arranged substantially as described for the purpose specified.

GEORGE W. WALTON.
HENRY EDGARTON.

Witnesses:
A. POULSON,
WILLIAM T. MASSEY.