

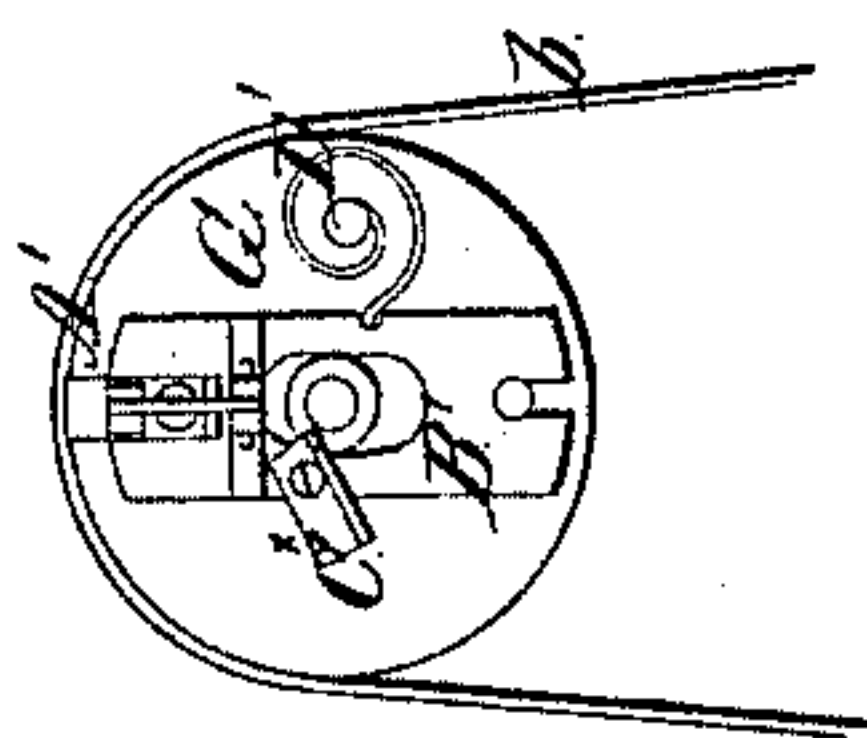
*F. Baldwin*

*Gage Lathe.*

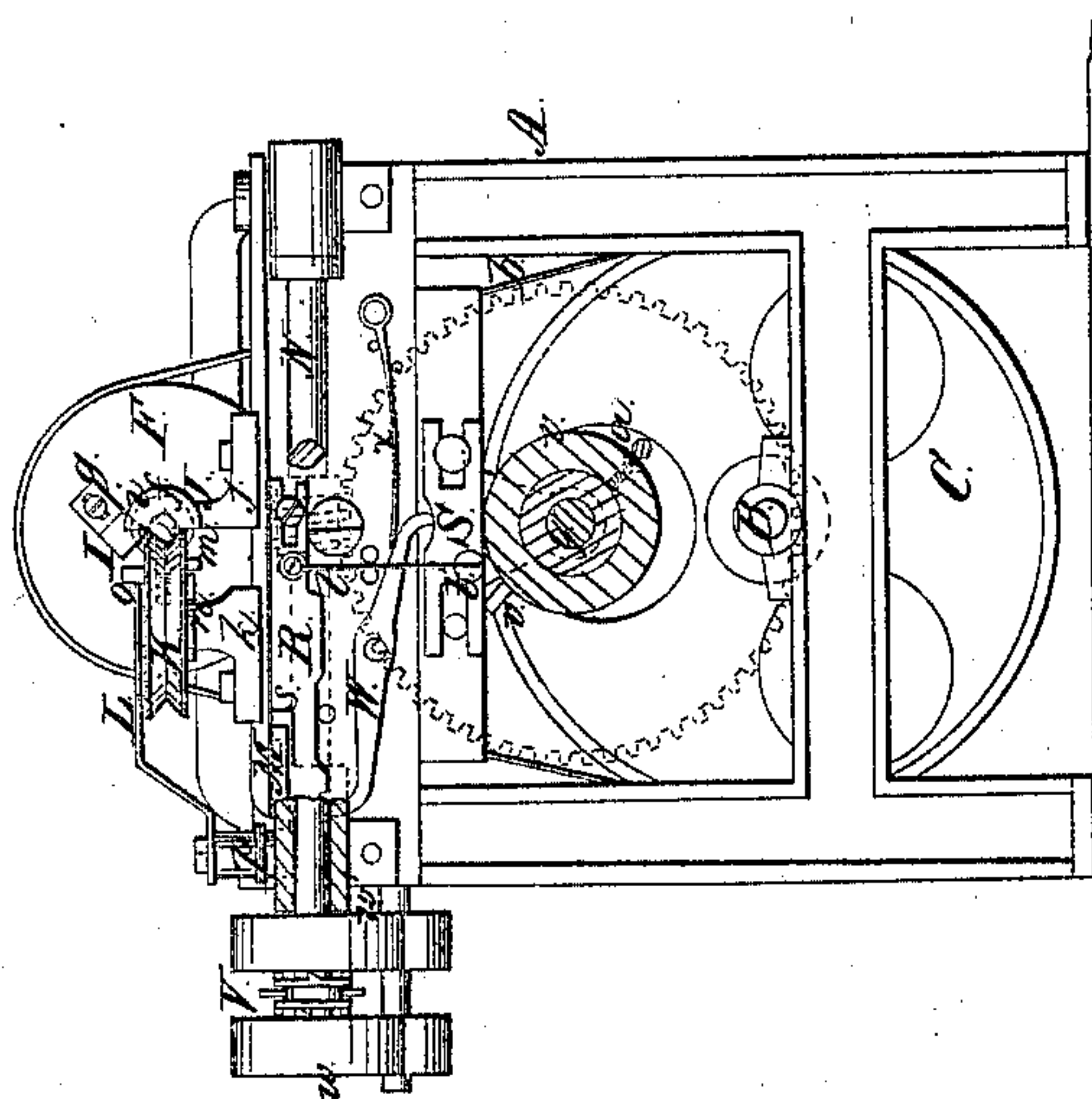
*Nº 21,240.*

*Patented Aug. 24, 1858.*

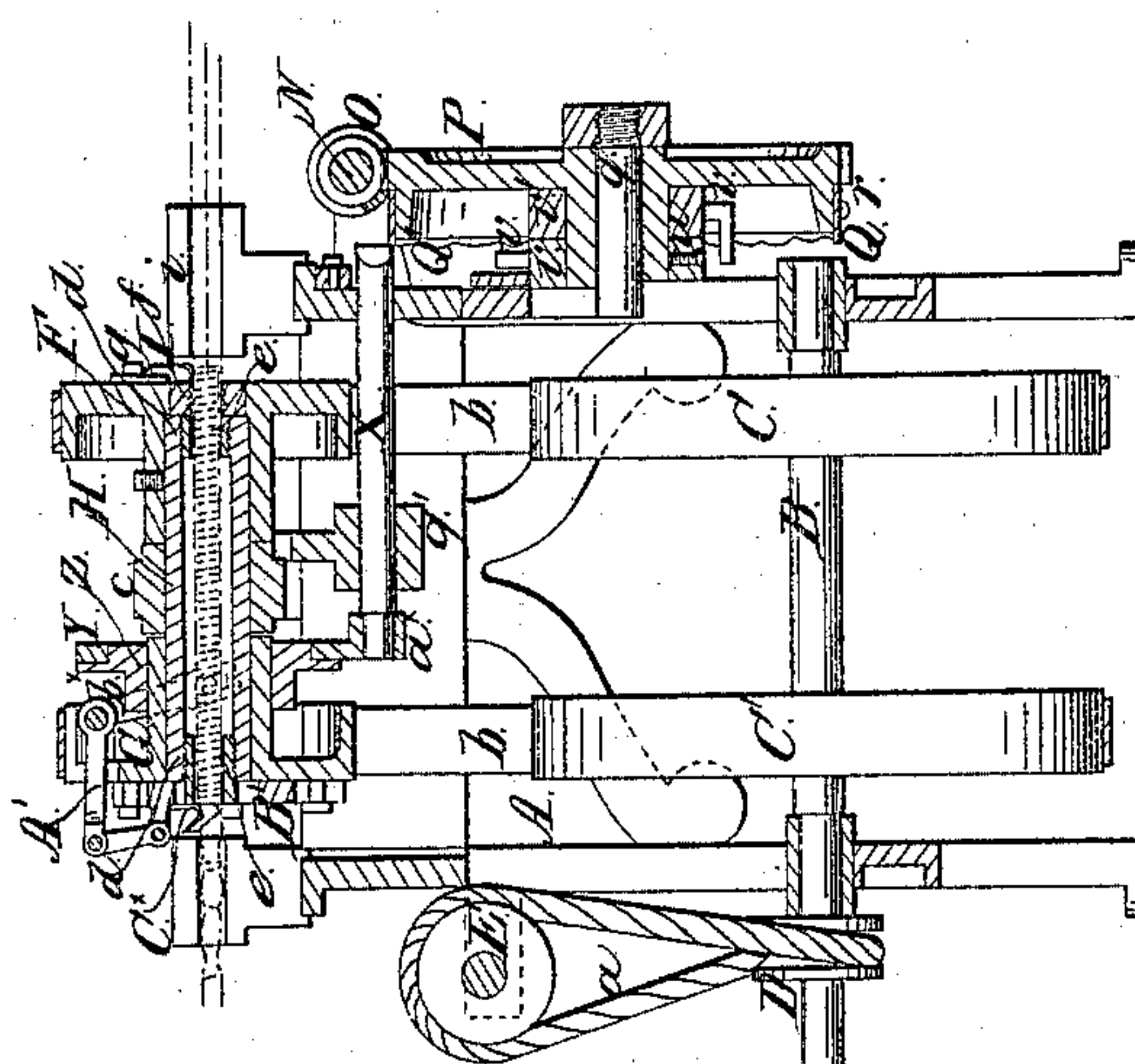
*Fig. 1.*



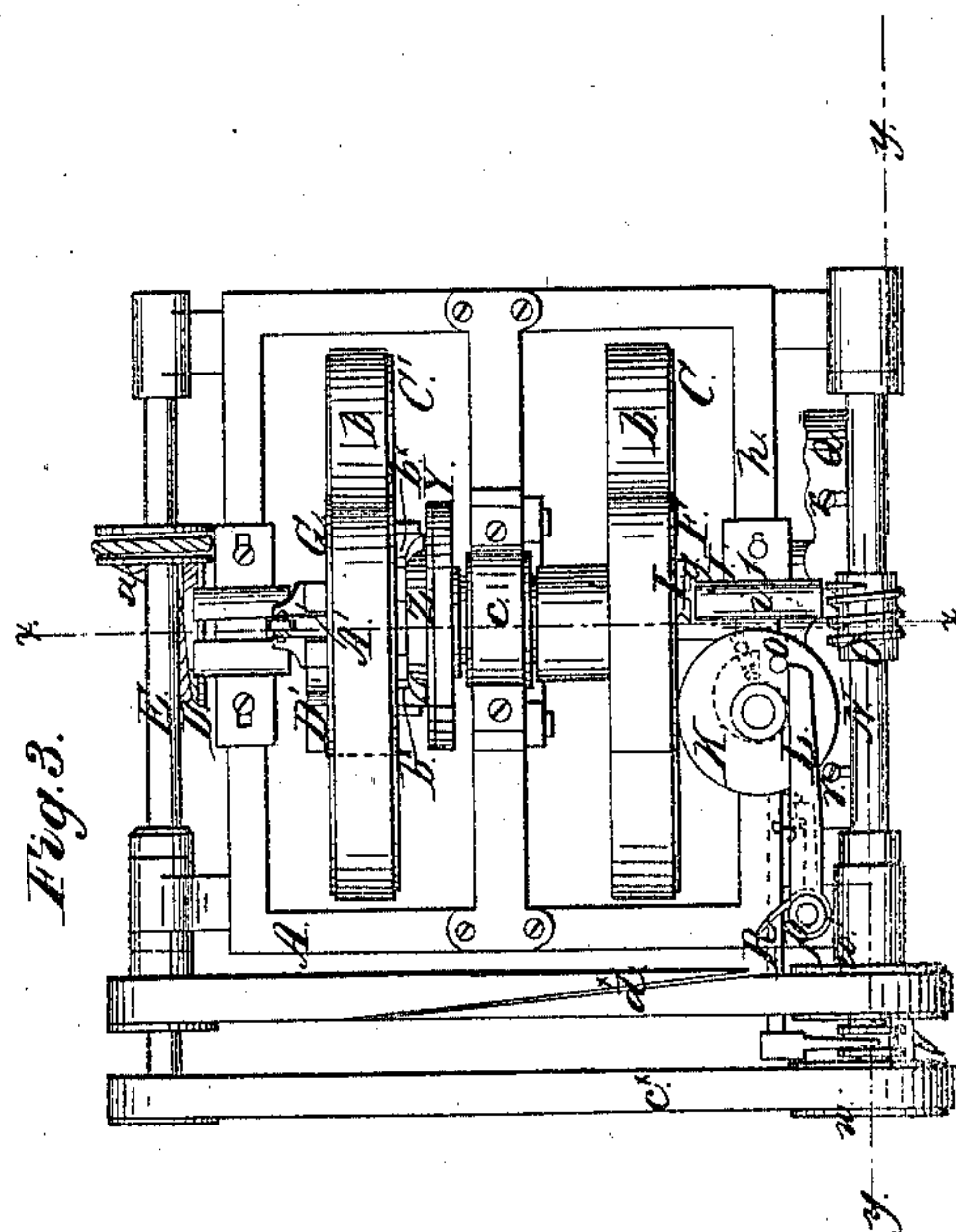
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*





# UNITED STATES PATENT OFFICE.

FREDERICK BALDWIN, OF SOUTH WARDSBORO, VERMONT.

## LATHE FOR TURNING BEADED WORK.

Specification of Letters Patent No. 21,240, dated August 24, 1858.

*To all whom it may concern:*

Be it known that I, FREDERICK BALDWIN, of South Wardsboro, in the county of Windham and State of Vermont, have invented a new and Improved Lathe for Turning Chair-Rounds and other Stuff of Regular Beaded Form; and I 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 front sectional elevation taken in the line *y, y*, Fig. 3. Fig. 2, is a side sectional view of ditto, taken in the line *x, x*, Fig. 3. Fig. 3, is a plan or top view of ditto. Fig. 4, is a detached face view of one of the rotating cutter disks.

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

This invention consists in the employment or use of a rotating pattern, in connection with rotating cutter disks, hollow stationary mandrel and feeding device, the whole being arranged as hereinafter fully shown and described whereby the several parts are made to work automatically and a simple machine obtained, one capable of working rapidly and at the same time performing its work in a perfect manner. The invention is designed for turning beaded work on cylindrical sticks, such as broom handles, tool handles, chair rounds, &c., &c., the sticks being taken in the rough and turned and beaded or ornamented simultaneously, or at one operation.

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

A, represents the frame of the machine which may be constructed of wood or iron and in any proper manner to support the working parts. Iron would probably be in most cases the most preferable material.

B, is the driving or power shaft which is placed in the lower part of the frame A, and has two pulleys C, C', on it within the frame and a pulley D, on it outside the frame, see Fig. 2, the pulleys C, C', being of equal size and comparatively large, the pulley D, being quite small and communicating a rotating motion by means of a belt *a*, to a shaft E, at the back end of the frame. The pulleys C, C', communicate motion by means of belts *b, b*, to two disks F, G, which are placed loosely on a hollow mandrel H, said mandrel being permanently fitted in a

cross piece *c*, on the upper part of the frame A.

In each end of the mandrel H, a die *d*, is fitted. These dies are simply annular pieces of metal which serve as bearings for the stick as it passes through the mandrel. These dies may be removed from the mandrel and different sized ones secured therein according to the size or diameter of the sticks to be turned, see Fig. 2. Each die *d*, is provided with spurs *e*, to prevent the stick from turning as it is forced through them.

The disks F, G, are at the ends of the mandrel H, and the disk F, has a nut *f*, placed on it at its center, the nut turning with the disk. To the outer or face side of the disk F, a cutter I, of gouge form is attached by a screw *g*. The cutting edge of this cutter is placed at the edge of the opening or center of nut *f*, and the cutter may be adjusted farther in or out so as to suit nuts of varying sizes.

On the front cross piece *h*, of the frame A, and directly in front of the disk F, an adjustable guide J, is placed, said guide being a grooved bar *i*, attached to a slide or adjustable standard *j*. On the cross piece *h*, an adjustable standard *k*, is also placed and a wheel K, is placed on the upper part of said standard. The wheel K, is placed in a horizontal position and has its periphery grooved, the groove of the wheel being in the same plane with the groove of the bar *i*. In the wheel K, a sliding pin *l*, is placed, said pin having a spiral spring around it, which spring has a tendency to keep the outer end of the pin outward and within the groove of the wheel K. A pend-ent projection *m*, is attached to the pin *l*, said projection when the pin *l*, is shoved inward coming in contact with a bar *n*, which is attached to the upper end of the standard *k*, said bar thereby stopping the movement of the wheel. The object of this will be explained hereafter.

To the upper surface of the wheel K, near its periphery a vertical pin *o*, is attached, said pin at every revolution of the wheel K, actuating a lever L, which is at the front part of the frame A, and is connected with a hooked rod M, said lever having a spring *p* attached to it, which spring has a tendency to keep the hooked rod inward toward the frame A.

N, is a shaft which is placed at the front



end of the frame A, near its upper part. This shaft has a screw O, placed on it, and the screw gears into a worm wheel P, which is placed on an axis *q*, attached to the front  
 5 side of the frame A. To the inner side of wheel P, and near its periphery a pattern Q, is attached. This pattern is formed of a metal plate, which is secured by screws *r*, to the periphery of the wheel P, at the inner  
 10 side of the gearing, the inner edge of the plate being cut or notched in form corresponding to the form to be given the stick, see more particularly Fig. 3.

To the front side of the frame A, a slide  
 15 R, is attached. This slide has a horizontal projection *s*, attached to it, the outer end of which is notched. The slide R, also has a spring *t*, attached to it, said spring extending down and being connected to a slide S,  
 20 which is attached to the frame A, see Fig. 1, said slide having a projecting pin *t'*, attached to it.

On the hub of the wheel P, two collars U, U', are placed and secured thereon by  
 25 set screws *u*. In each collar U, a pin *v*, is fitted, the use of which will be presently explained.

On the shaft N, two loose pulleys *w*, *w'*, are placed, and between these pulleys a  
 30 clutch V, is placed, said clutch being attached to the slide R, see Figs. 1 and 3.

W, is a lever attached to the front part of the frame A, said lever having a spring *w'*, bearing upon one end of it.

35 X, is a sliding rod which is fitted in proper bearings *y'*, in the frame A, below the mandrel H, see Fig. 2. One end of this rod bears against the pattern Q, and the opposite end is attached to a pendent arm *a'*,  
 40 which is secured to a sliding collar Y, on the hub of the disk G. A collar Z, is also placed on the hub of disk G, said collar Z, turning with the hub and being connected by arms *b'*, with a lever A', which is fitted  
 45 in the disk G, and is attached to a sliding plate B', on the face of said disk. To the plate B', a finishing knife C', is attached and a spring D', which is attached to the face of the disk G, is connected with plate B'.

50 The pulleys *w*, *w'*, are rotated from the shaft N, by belts *c'*, *d'*, the belt *d'*, which passes around the pulley *w'*, being a cross belt.

The operation is as follows: Motion is  
 55 given the shaft B, in any proper way, and the two disks F, G, are rotated from said shaft by the belts *b*, *b*. The stick to be turned, shown in red is grasped by the operator and forced along between the wheel  
 60 K, and guide *i*, until the end of the stick enters the nut *f*. The nut *f*, feeds the stick along through the dies *d*, *d*, and mandrel H, the spurs *e*, preventing the stick from turning and the cutter I, "roughs off," the stick  
 65 giving it a cylindrical form. When the

stick passes through the die at the center of the disk G, the stick will press inward the pin *l*, said pin having moved in proper time to be thus acted upon and the projection *m*, of said pin will come in contact with the  
 70 bar *n*, and cause the wheel K, to stop. Just previous to the stopping of wheel K, the pin *o*, actuates the lever L, and the hooked rod M, will be thrown out from the notched projection *s*, on the slide R, and said slide will  
 75 be actuated by the spring *t*, and one of the pulleys *w*, thrown in gear or connected with the shaft N, by means of the clutch V. The shaft N, will consequently be rotated and the screw O, will rotate the worm wheel P. As  
 80 the wheel P, rotates the pattern Q, thereon will actuate the rod X, which will actuate the finishing knife C', through the medium of the collars Y, Z, arms *b'*, *b'*, lever A', and sliding plate B', and the knife C', cuts the  
 85 stick in proper form corresponding with the pattern Q. When the wheel P, has turned the length of the pattern Q, the pin *v*, of one collar U, or U', strikes the pin *t'*, of slide S, and moves said slide along, which strains  
 90 the spring *t*, and also raises the lower end of lever W, causing the opposite end to be free from the slide R, so that the spring *t*, will throw the slide R back until the hooked  
 95 bar M, catches into the notched projection *s*, and the clutch being thrown out of gear with the pulley *w*, or *w'*, with which it was connected the shaft N, remains stationary until a succeeding stick is placed in the man-  
 100 drel, when the operation is repeated, the operation in all cases being the same as described with the exception that the pulleys *w*, *w'*, are alternately thrown in gear or connected with the shaft N, so that the wheel  
 105 P, will rotate the length of the pattern Q, first in one direction and then in the other. The wheel K, it will be seen is left in proper position at the termination of each revolution of the wheel K, by means of the stop arrangement *l*, and the pins of the collars U, U', alternately actuate the slide S, and consequently the lever W, and slide R.

From the above description it will be seen that the machine is automatic in its  
 115 action, and may be operated or attended with but trifling labor, the sticks merely being required to be fed to the disks F, between the wheel K, and guide *i*.

I am aware that hollow mandrels, and rotating cutter disks have been previously  
 120 used and also that movable cutters operated by patterns have been used and arranged in various ways. I therefore do not claim separately and irrespective of arrangement the parts herein shown; but,  
 125

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

1. The stationary mandrel H, provided  
 130 with the movable or adjustable dies *d*, and



spurs *e*, rotating cutter disks F, G, provided respectively with the cutters I, C<sup>x</sup>, the feeding nut *f*, and the rotating pattern Q, actuating the cutter C<sup>x</sup>, through the medium of  
5 rod X, collars Y, Z, and plate B', the whole being combined and arranged to operate substantially as and for the purpose set forth.

10 2. The guide *i*, and wheel K, provided with the stop pin *l*, pin *o*, and bar *n*, in connection with the slides R, S, connected by the spring *t*, the lever W, clutch V, and

collars U, U', provided with the pins *v*, the whole being combined and arranged substantially as and for the purpose specified. 15

3. The feeding nut *f*, placed in the cutter disk F, in combination with the stationary mandrel H, and cutter disk G, substantially as described.

FREDERICK BALDWIN.

Witnesses:

A. J. DEXTER,  
M. L. KIDDER.