August 4, 1913.

DRAWING

10,089

A careful search has been made this day for the original drawing or a photolithographic copy of the same, for the purpose of reproducing the said drawing to form a part of this book, but at this time nothing can be found from which a reproduction can be made.

Finis D. Morris,

Chief of Division E.

AWK

UNITED STATES PATENT OFFICE.

PHILIP P. RUGER, OF NEW YORK, N. Y.

MACHINE FOR TURNING SPIRAL MOLDINGS.

Specification of Letters Patent No. 10,089, dated October 4, 1853.

To all whom it may concern:

Be it known that I, PHILIP P. RUGER, of the city, county, and State of New York, have invented certain new and useful Improvements in Machinery for Cutting Configurations of a Wavy or Spiral Character Never Before Effected; and I do hereby declare that the following is a full, clear, and exact description thereof, in which—

Figure 1 is a perspective view of the machine; Fig. 2 is a diagram of cutters of one pattern; Fig. 3, is a diagram showing a complex variety of patterns such as the machine is susceptible of cutting.

My invention consists in the combination of rotating tools, the axes of motion of which are perpendicular to the axis of the motion of the article to be cut, so as to cut any variety of pattern in the cross section with very bold and complex undercutting in any style desired.

I am aware that spiral and other figures have before been made, such as common screws, roping, reeding, &c.; but by any means heretofore adopted, a spiral roping could not be made with an under cut, or with much boldness, except by a hand or stationary tool, which precludes a rapid and perfect action in all cases; and in many kinds of material the work of this character cannot be done at all. By my invention it will be perceived that any number of tools can be used at once, either in the same or different channels; and an infinite variety and beauty of ornament can be given to the article wrought.

The following is a description of the construction and operation of the machine.

At A is represented carriage sliding upon guides similar to a slide lathe; at (a, a') is a rack and pinion for carrying the carriage along, back and forth; (b) and (c) are centers for supporting the piece of wood (d) to be operated upon. The center (b) is connected with a cog wheel (e) or pulley, from which rotary motion is given to the piece (d); (f) is a shaft for giving motion to the piece (d); it passes the whole length of the frame, being held in a box at the end where the wheel (g) is fixed, which is firmly keyed upon it; the opposite end is supported in bearings in the frame A, but so that the frame may slide along. Upon the shaft, but kept in place by the frame A, is a wheel (i) gearing into (e); through the eye of this wheel the shaft may play lengthwise; but in revolving it turns the wheel around by means of a key or feather working within the groove, shown in said shaft (f) and which extends the whole length of it.

B is the frame for holding the revolving chisels. This rests about midway of the main bed-piece, and at right angles to it.

At (m, m') are the revolving chisels, and there is another set in the opposite angle, but hidden in the drawing, by the piece (d), a diagram of the arrangement being shown in Fig. 2. The end of the chisels are formed to a point and cut on both edges in a manner common to such a tool; the end however may be differently shaped, according as the form of the spiral rib itself is to be modified according to fancy, as illustrated in Fig. 3. The spindles to which the chisels are attached terminate in pulleys, or pinions, as may be most desirable, to give them motion, as shown, an endless cord passes around the several pulleys, and over a pulley on the main shaft (o), to effect this object, as clearly shown.

The operation is as follows: Set the carriage A back, so that the chisels shall be a little in advance of the end of the stick (d) to be turned. Then adjust the stick so that they will enter and cut at equal, and also at proper depths. Start the main shaft (f); this immediately gives motion to every part. The carriage A begins to approach toward the end (g). The wood (d) passes through between the points of the chisels, the latter cutting the grooves represented; the spiral form being given by the rotation of (d), several figures may be given instead of a true spiral. Thus by changing the speed of revolution of (d) as compared with its progressive motion along the frame in the carriage A the angles or pitch may be varied also by stopping the revolution altogether, fluting may be performed, or fluting and spiraling the post may be combined, &c.

What I claim and desire to secure by Letters Patent is—

Combining with a rotary progressive motion of the article to be cut a series of cut-

ters placed around the article to be cut of any desired configuration or varieties of configuration to form and complete the pattern upon the article, said cutters being made to revolve in a stationary frame perpendicular to the axis of motion of the article to be wrought either in a radial line or somewhat inclined thereto so as to form the desired figure and undercut to any extent desired.

PHILIP P. RUGER.

Witnesses:
S. H. MAYNARD,
JOHN JACOBUS.