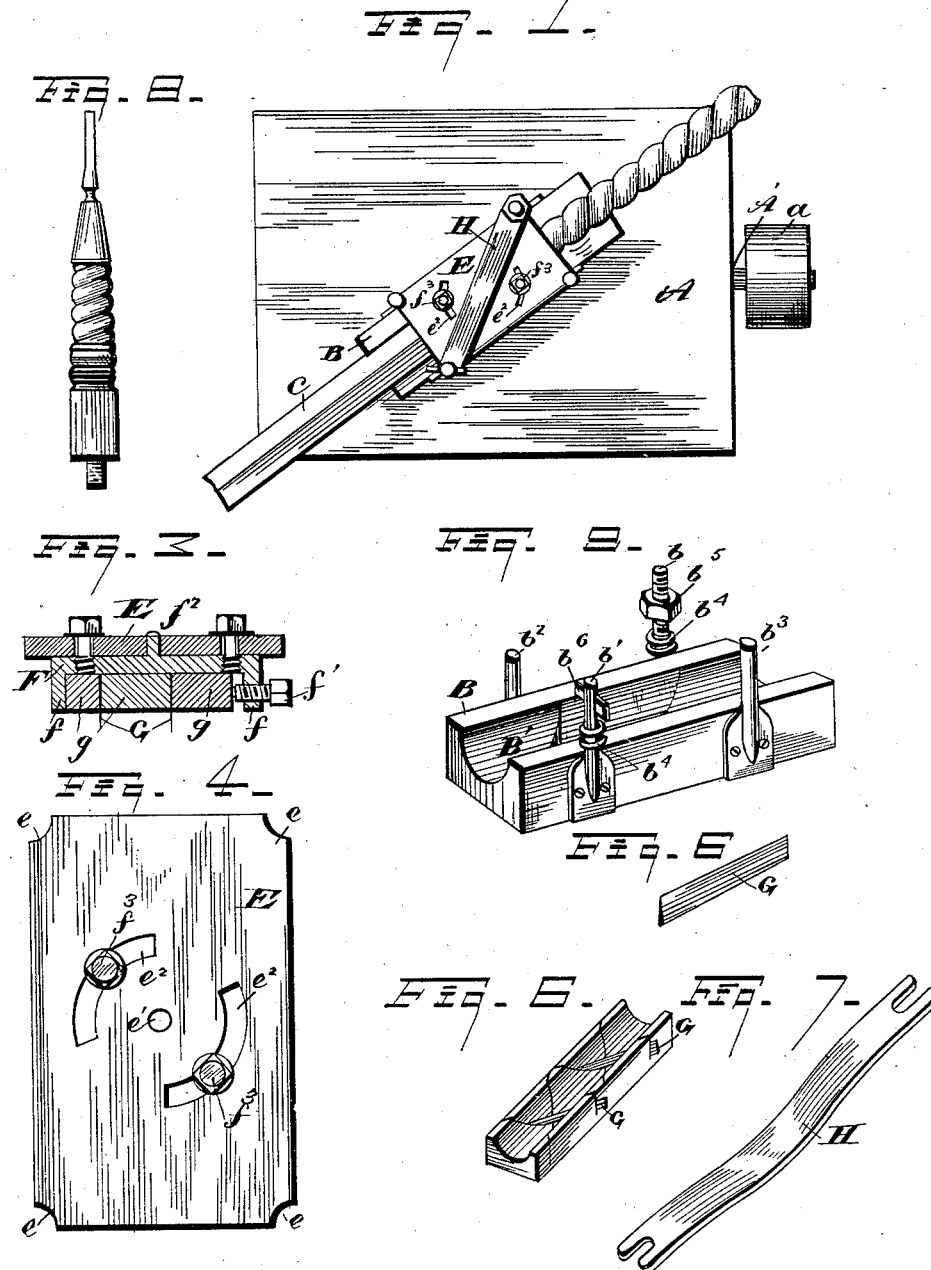


(No Model.)

M. Y. RANSOM.
LATHE FEEDING MECHANISM.

No. 307,332.

Patented Oct. 28, 1884.



WITNESSES

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MOSES Y. RANSOM, OF CLEVELAND, OHIO.

LATHE-FEEDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 307,332, dated October 28, 1884.

Application filed May 20, 1884. (No model.)

To all whom it may concern:

Be it known that I, MOSES Y. RANSOM, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful
5 Improvements in Feeding Mechanism for Making Spiral Moldings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains
10 to make and use the same.

My invention relates to feed mechanism for making spiral or cable moldings, the object being to provide one or more feeding-knives set obliquely to the axis of the blank, and so
15 arranged that the edges of the knives will engage and slightly crease the blank, and cause it to be fed endwise when it is revolved. A further object is to provide an adjustable knife-holder in which the desired number of
20 knives may be secured and readily adjusted to the required angle. A further object is to secure the knife-holder in such a manner that it may easily be removed. A further object is to provide springs or equivalent mechanism by means of which the feeding-knives are
25 yieldingly held in contact with the blank.

With these objects in view my invention consists in certain features of construction, and in combination of parts, hereinafter described, and pointed out in the claims.
30

In the accompanying drawings, Figure 1 is a plan view of my improved device attached to a table over revolving cutters. (Not shown.)
35 Fig. 2 is a view in perspective of the guide-box and attachments. Fig. 3 is a transverse vertical section of the knife-holder and attachments. Fig. 4 is an enlarged plan view of the plate to which the knife-holder is attached. Fig. 5 is a view in perspective of a
40 feeding-knife. Fig. 6 is a view in perspective of a modified knife-holder. Fig. 7 is a view in perspective of a spring hereinafter described. Fig. 8 is a plan view of a piece of finished work, showing a spiral groove on one
45 portion of the same.

A represents a table, under which is journaled the shaft A', provided with the driving-pulley a, and has attached a cutter-head, (not shown,) in which are secured cutters of the
50 proper shape for cutting the desired grooves

in the blank. The cutter-head and cutters are of the ordinary construction, and well known to the trade, and it is therefore not considered necessary to further describe them.

B is a guiding-box, and is provided with the longitudinal semicircular channel B', in which the blank C will fit easily. The box is provided with the vertically-guiding pins b, b', b², and b³. The upper portion of the pin b is threaded and provided with a nut, b⁵, and the
55 upper portion of the pin b' is provided with a lateral slot and key, b⁶, as shown. Spiral springs b⁴ are placed, as shown, around two of the guiding-pins, and preferably around all of them, and when the parts are in position
60 these springs are between the box B and the plate E. The plate E has a central vertical hole, e', and circular slots e² concentric with the central hole, e'. When this plate is in position, the curved corners e engage the said
65 guiding-pins of the box B, by means of which the plate is held horizontally, but has a limited vertical movement between spring b⁴, below the plate, and the spring H, that is located above the plate, as hereinafter shown.
70

The knife-holder consists of a flat and, preferably, square plate, F, with pendent flanges f around the edges, forming an inverted open box-like holder, in which any number of knives, G, are set with the backs resting against the
75 plate F, and separated by the blocks g, preferably of wood, and held in position firmly by one or more set-screws, f', that engage threaded holes in the flange f, as shown. The plate F is provided with a central pin, f², that passes
80 through the hole e', and the plate F is held firmly against the plate E by the bolts f³, that pass through the slots e² and screw into the plate F. By loosening these bolts the knife-holder may be turned on the center pin, f², to
85 adjust the knife to the required angle with the blank. When the parts are in position, as shown in Fig. 1, the forked ends of the spring H embrace, respectively, the pins b and b', with its depressed central part resting on the central
90 part of the plate E, and by means of the nut b⁵ and the key b⁶ the spring H is made to press down the plate E onto the spring b⁴ until the edges of the knives G, secured, as
95 aforesaid, in the holder and set at the required an- 100

gle, engage and cut slight diagonal creases on the blank. As the blank is revolved by hand or otherwise, these creases lead around the blank, like the thread of a screw, and the blank, by means of such engagement with the knives, is fed along through the guiding-box B and over the revolving cutters, resulting in a spiral groove being cut on the blank that will have more or less lead, according to the angle of the knife with the axis of the blank. The feeding-knives should be set in such relative position to the revolving cutter that the latter, in cutting the spiral grooves, will obliterate the creases made by the former. For light work but one feeding-knife is required, but for heavy work several knives are preferable. If the operator while turning the blank will press more or less against the rear end of the blank to aid the knives in feeding the same, the knives will regulate the feed, when set, so as to cut creases in the blank that are hardly noticeable when the work is finished.

In a large class of work, one variety of which is shown in Fig. 8—for instance, banisters, newel-posts, columns, &c.—the spiral grooving is only required to be cut over one portion of the blank. In such cases the blank is laid in the box B in such position lengthwise that the revolving cutters will commence the work at the required point. The plate E and attachments are then placed in position and the blank is revolved until it is fed along to the point where the spiral groove is to end, and the work is then removed from the feed-box. The key *b'* is only thrust into the slot by the fingers, and is easily withdrawn, after which the spring H and the plate and attachments are quickly removed and as easily again placed in position. A guiding-box with a suitable-sized channel is required for each different size of blank; but the guiding-pins may be so arranged that one plate E will fit different guiding-boxes that have, respectively, different-sized channels. When a guiding-box is required of such large size that a large plate is required to span it, the same knife and knife-holder may still be used, if the hole *c'* and the circular slots *c''* in the large plate are properly arranged.

For temporary purposes, in place of the aforesaid plate E and attached knife-holder, a wooden trough, similar to that shown in Fig. 6, may be employed, with diagonal grooves cut with a saw, the whole structure resembling a common miter-box. The knives G are set in the bottom of the grooves, so that the edges slightly protrude in the trough, as shown. This structure may be fitted between the guiding-pins of the part B and secured between the springs *b'* and H, as already described. Of course, the knives in such a device are not adjustable; but still it may be used to good advantage for temporary purposes.

What I claim is—

1. In a machine for cutting spiral moldings, one or more knives arranged obliquely to the longitudinal axis of the blank, and constructed to feed said blank to the cutter, substantially as set forth.
2. In a machine for cutting spiral moldings, the combination, with a box and a knife-holder, of stationary feeding-knives arranged in said knife-holder obliquely in the line of motion of the blank, substantially as set forth.
3. In a machine for cutting spiral molding, the combination, with a box and a knife-holder, or adjustably secured to said box, of one or more feeding-knives removably secured in said holder.
4. In a machine for cutting spiral molding, the combination, with a feeding-box, of a knife-holder yieldingly secured to the feeding-box, and knives secured to the holder, substantially as set forth.
5. In a machine for cutting spiral molding, the combination, with a feeding-box, of the adjustable knife-holder, knives removably secured in said holder, and springs for yieldingly holding the knives against the blank, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 13th day of May, 1884.

MOSES Y. RANSOM.

Witnesses:

CHAS. H. DORER,
ALBERT E. LYNCH.