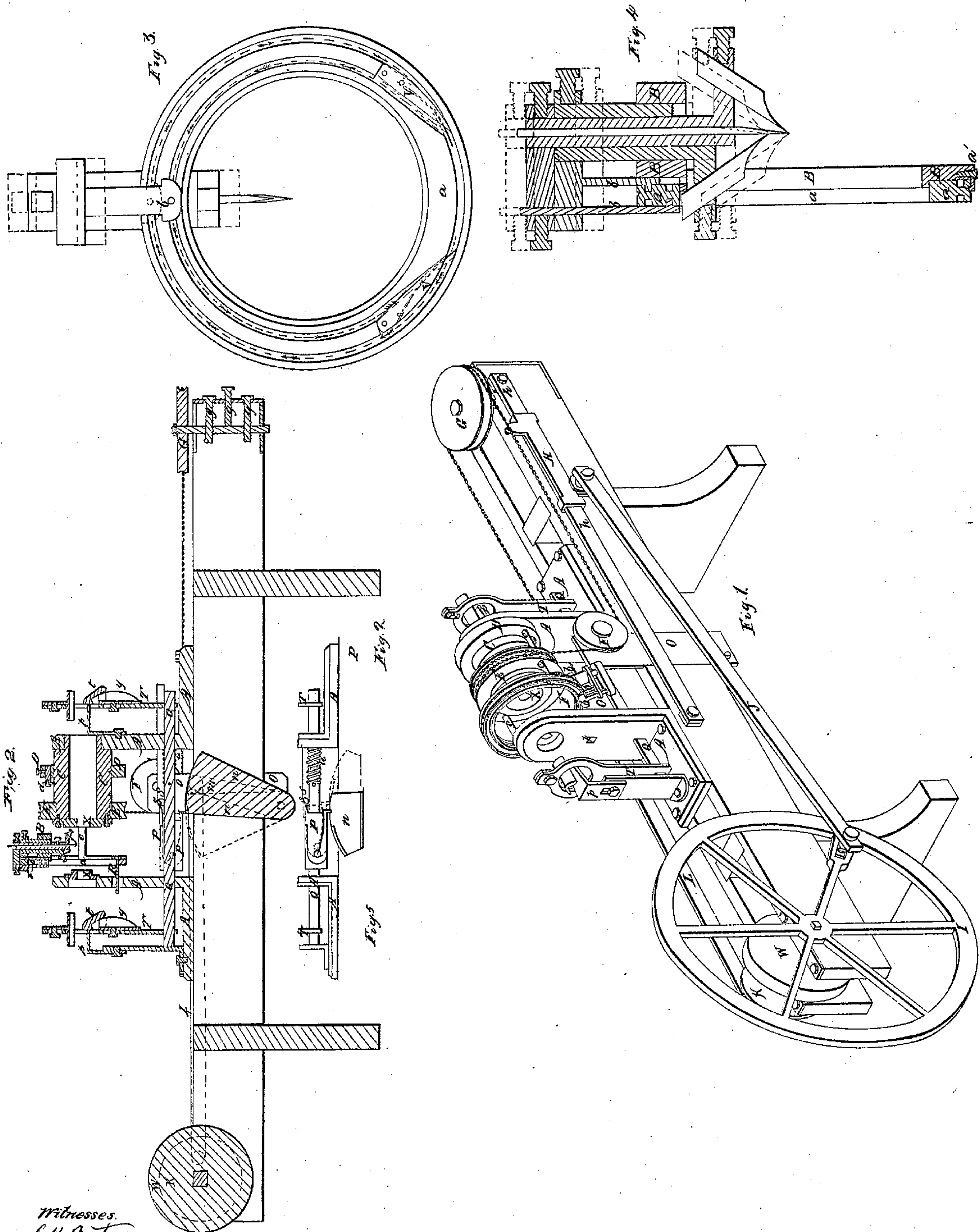


H. Newhouse, Making Rope Molding.

N^o 34,467.

Patented Feb. 18, 1862.



Witnesses.
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HENRY NEWHOUSE, OF CHICAGO, ILLINOIS, ASSIGNOR TO N. S. BOUTON, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR CUTTING TWIST-MOLDINGS.

Specification forming part of Letters Patent No. 34,467, dated February 18, 1862.

To all whom it may concern:

Be it known that I, HENRY NEWHOUSE, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Machine for the Cutting of Twist-Moldings; and I do hereby declare that the following is a full, clear, and accurate description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a longitudinal section; Fig. 3, a face of the knife-changing ring or wheel, Fig. 4 showing the knives in one position and dotted lines showing the position when changed. Fig. 5 is an elevation of feed-slide P.

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

The nature of my invention consists in the construction of a lathe so arranged that the wood to be cut into twist-moldings is passed through the lathe longitudinally, firmly supported by rests at each end of the lathe and also forced into or through the machine at proper intervals of time when the machine is in motion for self-feeding, the lathe-head revolving nearly around the wood heretofore mentioned, and by the arrangements hereinafter to be described cutting the twist-molding by each turn of the same, enabling me thereby to turn out twist-moldings for the various purposes for which they are used much cheaper than ever before done and with the most perfect regularity and precision.

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

A A are the upright frames to support the lathe, and may be placed on such a bed of either wood or iron as may be chosen.

a is the knife-changing ring or wheel having two grooves in face and back, as more fully shown in Fig. 3.

B is the knife-holder attached to the back of the knife-changing ring a by the clamps a' a' a', but at the same time revolving independent of it.

b b are the knife-shifters working in grooves in the face and back of the knife-changing ring a and connected to the knives in B, as shown in Fig. 4.

C is the knife-directing cylinder having a

groove or grooves cut spirally around it for the knife-guide d to run in.

D is the knife-guiding ring, to which the knife-guide d is attached, as shown in Fig. 2.

E is the motion-wheel fastened to the knife-directing cylinder C in such a manner that it can rotate in its place, and e e are rods running through the rim of the wheel E and fastened on the one side of said wheel to the knife-holder B and on the other side to the knife-guide ring D, and in this connection termed by me as the "lathe-head."

F F are friction and direction wheels to hold the rope or chain, hereinafter to be mentioned, in proper position, one of which is shown in Fig. 1.

G is a larger wheel for the same purpose and also to spread the rope or chain working horizontally to the last two and placed a distance sufficiently far from the lathe-head and below it for the purposes for which it is designed, as more clearly shown in Fig. 1.

g g g are screws to move the position of wheel G.

H is the slide to which the rope or chain that connects the power with the motion-wheel E is attached.

h is the slide rest or seat.

I is the power crank-wheel, and J the connecting bar or rod to the slide H.

K is the feed-motion wheel on the same shaft with the power crank-wheel I and both securely fastened.

L is a rod connecting the wheel K to the lever-arm M.

N is the lever firmly connected to the arm M, so as to move with it on a shaft suspended under the bed of the lathe by the supports O O, the lever standing vertically beneath the lathe-head.

P is the feed-slide, (shown more fully in Fig. 5,) fastened to the connecting-rod Q in such a manner that it may be quickly moved, if necessary, as by it the feed of the machine may be regulated.

Q is a connecting-rod between rests T T, upon which are the dogs t t.

R is a support to hold a in position and prevent it from revolving with the lathe-head.

S is a key to unlock the feeding-slide P from the lever when it shall have moved far enough, as hereinafter more fully described.

W is a spring around the connecting-rod Q to throw back the connecting-rod Q to its position before moved by the lever acting in connection with the slide P, and thus feeds the wood to be cut into the machine.

p p are stops to help the dogs hold the molding or wood to be cut. *v v* are switches in both the face and back of the knife-changing wheel or ring *a*, though shown in only one place.

The operation of the machine is as follows: The slide H being connected by means of a rope or chain or an equivalent to the motion-wheel E, one end of the rope or its equivalent passing around the large friction-wheel G and under the small friction-wheel F on same side, then over the motion-wheel E, so as to make a half-turn round it when the knife-holder B and knives are above the center and perpendicular to it when it is made fast, the other end of the rope or equivalent passing direct from the slide H to and under the small friction-wheel on the same side, then over the motion-wheel E to the opposite side when fastened so as to have made a half-turn around the wheel E, corresponding to the part already fastened. Motion being given to the power crank-wheel I to cause it to revolve, the slide H is moved forward and backward on the slide-rest *h* by the connecting bar or rod J, and as it moves causes the motion-wheel E to rotate, making nearly a complete revolution around the knife-directing cylinder C at every half-revolution of the wheel I. The wheel E by its connections moves also the knife-holder B, the knife-guide ring D, the knife-guide *d*, and the shifters *b b*. The knife-guide *d*, following in the spiral groove of the knife-directing cylinder C, gives a spiral motion to the knife-holder B on account of the connection by the rods *e e* of B with D, to which *d* is firmly attached, the knives being attached to the knife-shifters *b b* and the latter moving in grooves in *a*. (Shown more fully in Fig. 3.) When the lathe-head has nearly completed a revolution, the knife-shifters are carried to that portion of the wheel *a* where both grooves uniting in one are separated by the switch V, which switch is kept in place by a spring under it, allowing the shifters *b b* to pass through the switch out of the groove in which they were moving and immediately closing, thereby preventing their return into the same groove. The face and back of the knife-changing ring are alike. The shifters are placed the one in the outer groove and the other upon the opposite side in the inner groove. By this position when the shifter in the outer groove has passed through the switch on that side the one in the inner groove upon the opposite side has also passed the switch on its side. The switches closing, as described, the continued motion passes the shifters into the other grooves—that is, the one previously in the outer groove is now passed into the inner and the one in the inner

groove passes into the outer groove. This movement acts upon the knives through the connections, as shown in Fig. 4, the shifter moving from the inner to the outer groove lifting up its connection with the knives and the one moving from outer to inner grooves pulling down its connection, thus acting as a lever and changing the positions of the knives, as shown in Fig. 4 by the dotted lines. The motion-wheel having performed its revolution nearly, the power crank-wheel, having made half a revolution, as the power crank-wheel continues to revolve reverses the movement of the motion-wheel because of the connections already shown, and the lathe-head is moved in the opposite direction. The change in the knives by the change of the shifters is already described. The wood in which the twist-moldings are to be cut being in place and the knives properly adjusted, the first rotation of the knife-holder the knives cut the deep portion between the beads and round off at the same time one half of the bead. The reverse motion of the knives cuts the other half of the bead opposite to that finished before, so making in one revolution of the power crank-wheel a complete cut of one twist of the molding. The feed-motion wheel K, revolving with the same speed as the power crank-wheel I, because fastened to the same shaft or axle, moves by means of its connecting-rod L and the lever-arm M the lever N, which is now by the revolution of the wheel about made brought forward into the position shown by the dotted lines in Fig. 2 and catches a spring on the feed-slide P, Fig. 5, carrying the slide forward and moving at the same time the connecting-rod Q and the rests T T, to which the dogs *t t* are attached, which are now loosed of their hold of the wood or molding, they only working in one way—that is, to push into the machine. The slide P thus forced forward is brought against the key S, which catches under the spring upon the slide P, as shown in Fig. 5, and is gradually lifted clear of the lever N. The spring U now acts, forcing back the connecting-rod Q and with it the rests T T, as well also as the dogs *t t*, which dogs now seize the wood or molding and carry it forward into the lathe-head preparatory for the next revolutions of the wheel I. The amount of the feed is regulated by the feed-slide P.

W is the driving-pulley from which I connect a belt with the power which is to drive the machine.

X X are gages, the one attached to one of the supports A and the other to the end of the knife-directing cylinder through which the moldings pass. Different sizes are used as the requirements of the work indicate.

y y are springs to force the dogs against the molding or wood.

The shifter *b*, working in the face of the knife-changing wheel *a*, is connected with the perpendicular knife and the diagonal knife farthest from it, while the shifter working in

the back of wheel operates the diagonal knife next to it, all of which is more fully shown in Fig. 4.

I do not claim any particular size of the machine, for they can be large or small, according to the size of the work required to be made. Neither do I claim a machine for making any one kind of twist-moldings in particular, for by change of knives it will make any form or style; but,

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

1. The grooved wheel *a*, with the switches or their equivalents, substantially as described.

2. The knife-holder B, constructed and operated substantially as described.

3. The knife-shifters *b b*, in combination

with the knife-holder used, in the manner and for the purpose specified.

4. The combination of the cylinder C, with the spiral grooves thereon or their equivalents for directing the knife, substantially as and for the purpose specified.

5. The knife-guide ring D, with its guide *d*, in combination with the spiral grooves of cylinder C, as specified.

6. The combination of the knife-holder and its adjusting mechanism with wheel E and the knife-guiding mechanism operating automatically, as and for the purpose specified.

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Witnesses:

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