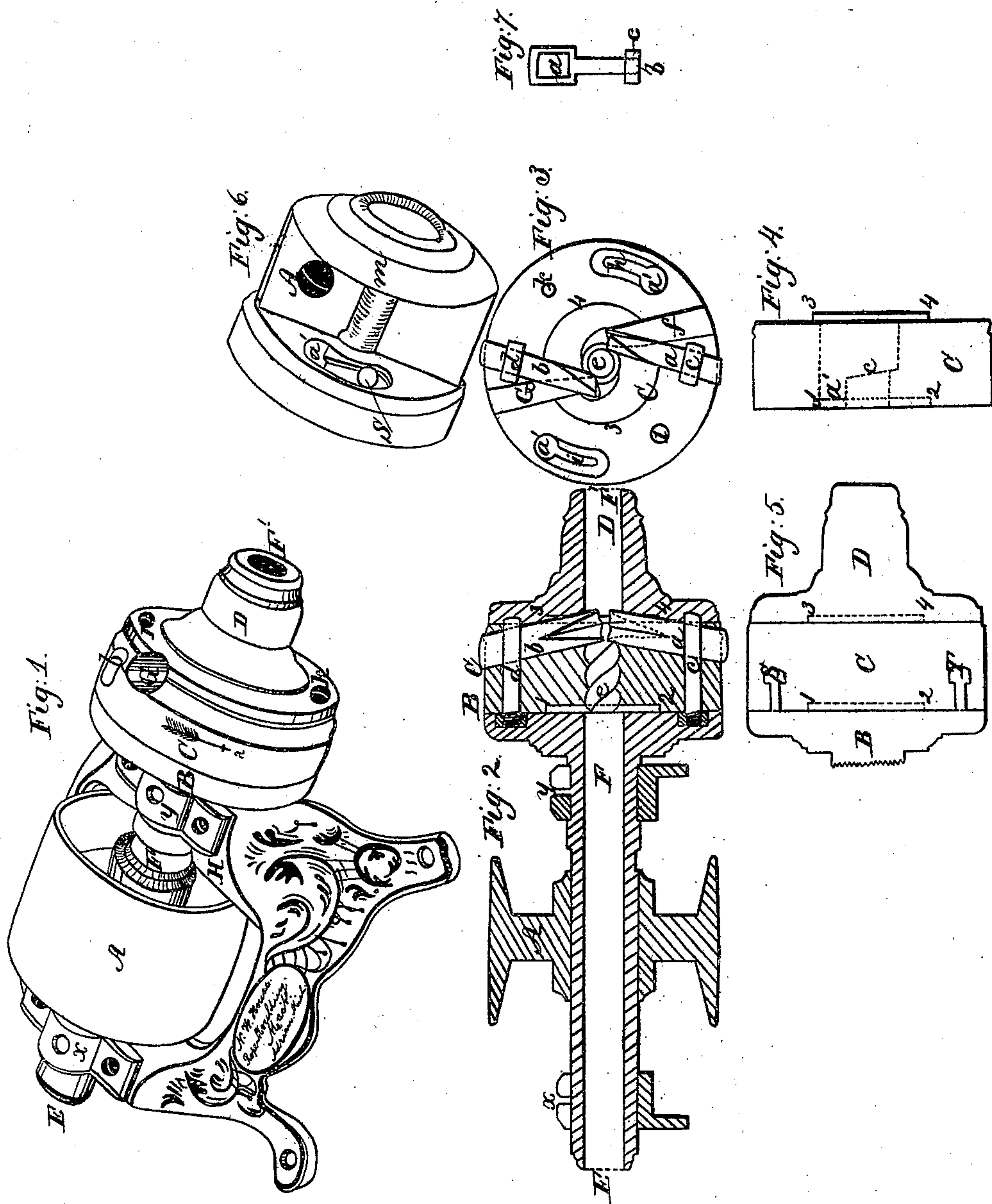


N. W. House
Rope Moulding Mach.
N^o 92312. Patented Jul. 6. 1869.



Witnesses
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NOAH WILLIAM HOUSE, OF ADRIAN, MICHIGAN.

Letters Patent No. 92,312, dated July 6, 1869.

IMPROVEMENT IN ROPE-MOULDING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, NOAH WILLIAM HOUSE, of Adrian, in the county of Lenawee, and State of Michigan, have invented a new and useful Improvement in Rope-Moulding Machines; and I do hereby declare that the following is a clear and exact description, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, and to the letters marked thereon, making a part of this specification.

My invention consists in providing a hollow mandrel with one or more radial dies or cutters, arranged on a section of the face-plate, behind which is a bore spirally grooved, precisely similar to that formed by casting metal around the moulding, the object of the spiral bore being to draw the moulding with uniform speed through and between the cutters while cutting it; also, in the construction of the several parts which constitute the machine, and in peculiar and novel devices by which they are attached one to the other; and furthermore, in providing within the die-plate back of the oblique knives, double spiral grooves, for the purpose hereinafter stated.

In the drawings—

Figure 1 is a perspective view of a rope-moulding machine embodying my invention.

Figure 2 is a vertical-section of the moulding-machine, passing longitudinally through the centre of the mandrel-shaft.

Figure 3 is a section of the die-plate of the mandrel, when viewed in the line of the mandrel-shaft, and contains, among other things, a view of the two slots for fastening this section to the face-plate.

Figure 4 presents a view of a longitudinal section of one of these slots.

Figure 5 shows the division-lines between the face-plate of the mandrel, the section containing the spiral bore, viz, the die-plate, and the nose-piece of the machine.

Figure 6 is a perspective view of the cutter-head of the mandrel, and is to be used for rounding the timber preparatory to cutting the moulding thereon.

In fig. 1 of the drawings, E and F represent the mandrel-shaft, and A the band-wheel for driving the same. B represents the face-plate of the mandrel-shaft; C, the die-plate; D, the nose-piece; *x* and *y*, the journal-boxes; *b*, one of the dies or cutters; G, one of the holes through which to let the shavings pass; and *k* and *l*, screws by which the nose-piece D is secured to the die-plate C. H is the frame that supports the machine.

In figs. 2 and 3, *a* *b* represent the dies or cutters, and *c* *d*, the loop-bolts for securing them to their respective place on the die-plate. *e* represents the spiral bore.

In fig. 3, *f* G represent the openings through which

the shavings pass out; *h* *i*, the slots by which the die-plate C is secured to the face-plate B; *k* *l*, holes to admit the screws which connect the nose-piece D to the die-plate C.

In fig. 4, *a'* is the opening, and *c* the inclined plane of the slots, represented by *h* and *i* in fig. 3.

The die-plate *c* is constructed so as to be readily detached from the face-plate B in the following manner:

Press one hand on the band-wheel A, so as to prevent it from turning; then clasp the die-plate C firmly with the other hand, and turn it slightly in the direction indicated by the arrow *a*. In this way the clutches S and T, in figs. 5 and 6, are brought through the slots *h* and *i* (fig. 3) to the openings *a'*, (figs. 3, 4, and 6,) down the inclined plane *c'*, fig. 4.

In the same manner the cutter-head of the mandrel, *m*, fig. 6, is readily attached to or detached from the face-plate B, fig. 1.

The material to be turned into rope-moulding is first to be rounded and brought to the proper thickness by being passed through the rounder *m*. To accomplish this, the die-plate C is detached from the face-plate B, and the rounder *m* secured in lieu thereof. The machine is now ready to round the material preparatory to being turned into moulding. When sufficient material has thus been rounded, the rounder is removed, and the die-plate C again attached, when the machine is ready for turning.

It is designed to cut any desirable size of mouldings with the same machine, by having suitable-sized die-plates and rounders for each size of moulding.

It is also designed to have one or more cutters, corresponding to the number of threads or leaders desired on the moulding.

The timber, when rounded the size requisite, is introduced into the nose-piece D, through the leader F'. This leader is a smooth bore, just large enough to admit of the entrance of the round on which it is desired to cut the moulding, and thereby keeps the material, while being acted upon, central with the edges of the cutters and spiral bore behind.

The bore *e*, behind the cutters, is spirally grooved, and an exact counterpart of the moulding after it has left the knives. The purpose of this spirally-grooved bore is to facilitate the action of the knives upon the material. When the material enters the leader F', the bore of which being smooth, and just large enough to receive it, it is necessarily held centrally to the edges of the cutters; but after the material has been acted upon by the knives, it is no longer round, but screw-formed, and requires something to keep it in a direct line with the cutting-edges of the knives, and to regulate its speed of egress.

To obviate these difficulties I have provided this spirally-grooved bore.

In fig. 6, A is the cutter for rounding the timber,

and is constructed upon any of the well-known plans of the hollow mandrels; the mode of fastening it to the face-plate being the only novelty claimed.

Figure 7 shows a longitudinal section of one of the loop-bolts *c* or *d*, represented in fig. 3, and when thus viewed in the direction in which the cutters pass through it, it shows the opening *a*.

b is the screw, and *c'*, the nut, which, screwed tightly against the back of the die-plate, holds the cutters firmly in the places made for that purpose in the die-plate.

By means of the nut *c'* and loop-bolts *c* and *d*, the cutters can be easily placed in working-position, both loop-bolts being constructed alike.

Both the die-plate *C* and the rounder *m* are fastened to the face-plate *B* in the same manner, to wit, by means of the clutches *S* and *T*, and the slots *h* and *i*, their tendency being (on account of the inclined plane *c*, fig. 4) to draw tighter to the face-plate when the face-plate is turned in the direction for cutting mouldings.

In the drawings, the style of moulding contemplated is that of an oval-shaped strand; but it is nevertheless designed (with suitable-shaped cutters and spiral) to cut mouldings of any other style of strands.

The red lines 1, 2, 3, and 4, shown in figs. 2, 3, 4, and 5, represent projections of the face-plate *B* and die-plate *C*. Said projections enter corresponding cav-

ities in the die-plate *C* and nose-piece *D*. To illustrate, the die-plate *C* has on its side which abuts against the nose-piece *D*, a projection, 3, and the nose-piece *D* has on its side against which the die-plate abuts, a cavity, 4, just sufficiently large enough to receive the projection 3 of the die-plate *C*. In the same manner the face-plate *B* enters upon the die-plate *C*, and the rounder *m* upon the face-plate *B*. This arrangement guarantees the centring of the different parts, one upon another, and prevents accidental displacement.

Having described my invention,

I claim as new therein, and desire to secure by Letters Patent—

1. A machine for cutting rope-moulding, provided with a face-plate, *B*, die-plate *C*, nose-piece *D*, oblique knives *a b*, and spiral grooves *e*, arranged, connected, and operating substantially as and for the purposes herein described.

2. The face-plate *B*, die-plate *C*, and nose-piece *D*, in combination with the clutches *S T*, slots *h i*, and projections and depressions 1, 2, 3, 4, substantially as described.

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Witnesses:

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