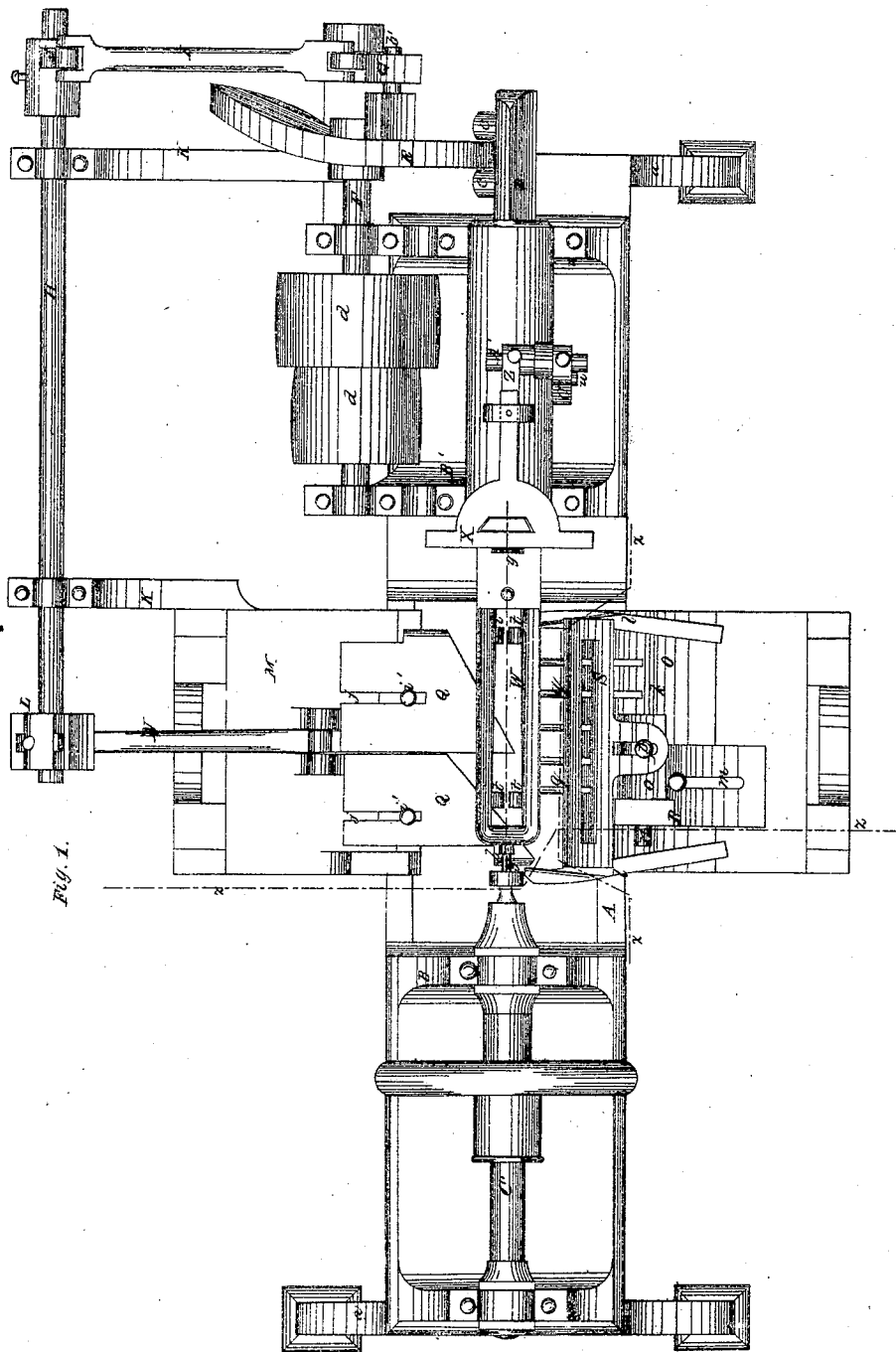


D. Dick.
Wood-Turning Lathe.
N^o 72973 *Patented Dec. 17, 1867.*



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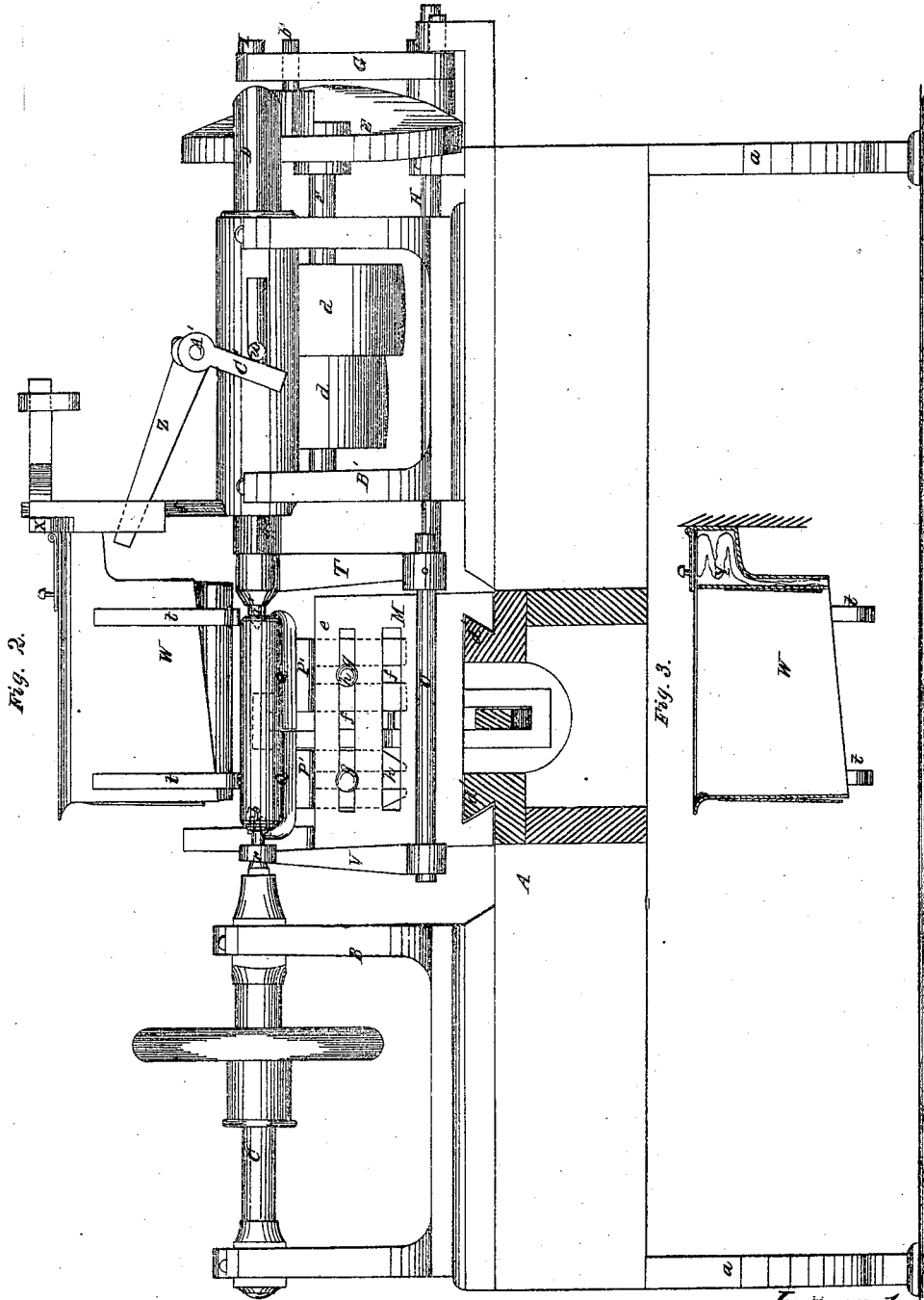


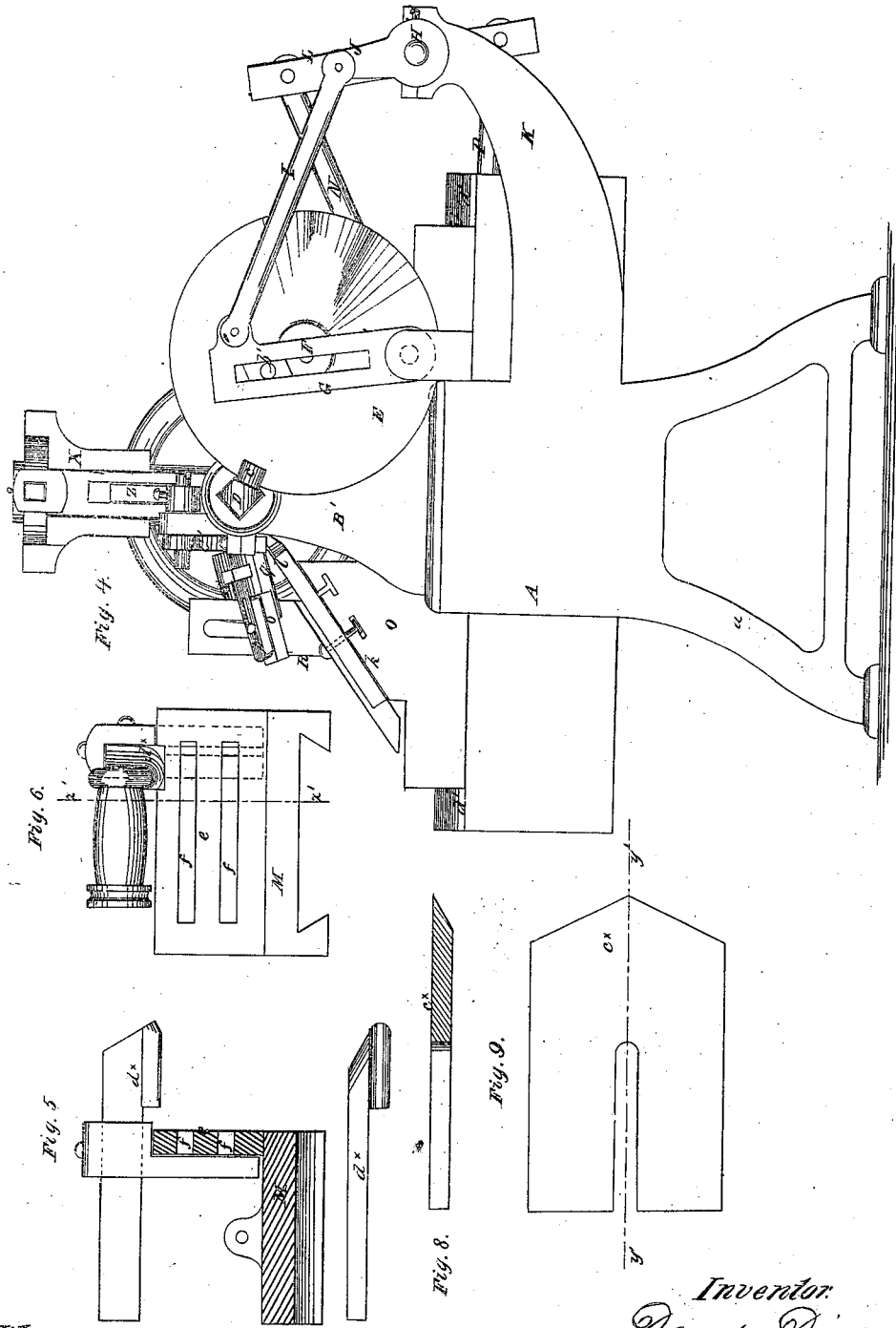
Fig. 2.

Fig. 3.

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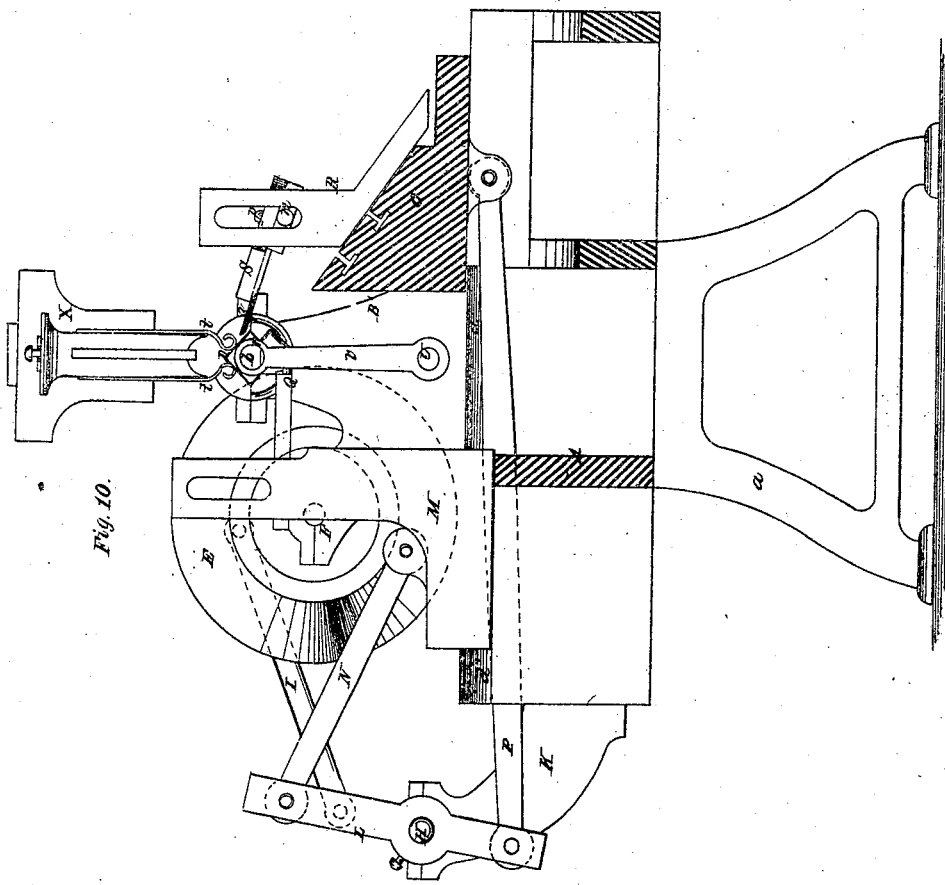


Fig. 10.

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DAVID DICK, OF CORNING, NEW YORK.

Letters Patent No. 72,273, dated December 17, 1867.

IMPROVEMENT IN WOOD-TURNING LATHES.

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, DAVID DICK, of Corning, in the county of Steuben, and State of New York, have invented a new and improved Machine for Turning Spools, Bobbins, &c., and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim, and desire to have secured to me by Letters Patent.

This invention relates to a new and improved machine for turning spools, bobbins, and other wooden articles of a similar character, and has for its object rapidity of execution, and an automatic operation of the several parts throughout. In the accompanying sheet of drawings—

Figure 1, Sheet No. 1, is a plan or top view of my invention.

Figure 2, Sheet No. 2, a side sectional view of the same, taken in the line $x x$, fig. 1.

Figure 3, a detached vertical section of the hopper, pertaining to the same, taken in the line $y y$, fig. 1.

Figure 4, Sheet No. 3, an end view of the same.

Figures 5, 6, 7, 8, and 9, detached views of parts pertaining to the same, fig. 5 being a section of fig. 6, taken in the line $x' x'$, and fig. 8 being a section of fig. 9, taken in the line $y' y'$, and

Figure 10, Sheet No. 4, is a transverse vertical section of the invention, taken in the line $z z$, fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the bed of the invention, supported at a suitable height by legs a , or any proper framing. On this bed A there are secured two fixed heads B B', in one of which there is placed a rotary mandrel, C, driven by a belt or suitable gearing, and in the other head, B', there is placed a sliding bar, D, having a centre-point, a' , at its inner end, while on the inner end of the rotary mandrel C there is a flanged centre-point, b , by which the article to be turned is rotated from or by said mandrel, (see more particularly fig. 2.)

The sliding bar D has two pins, $c c$, projecting from it, between which a cam, E, works, the shaft F of said cam having its bearing on the head B', or attached thereto. The cam E is rotated by belts working over pulleys d on the shaft F, or gearing may be employed for the purpose. This cam gives a reciprocating movement to the bar D, and by means of a crank or wrist-pin, b' , extending from its side and working in a slotted radius, arm G imparts a vibratory movement to said arm, from which a rock-shaft, H, is operated through the medium of a rod, I, and arm J, as shown clearly in fig. 4. The rock-shaft H has its bearings on curved arms K K, which project from the bed A, and on the end of said shaft, opposite to that where the arm J is attached, there is secured a double crank, L, to the upper end of which a slide, M, is connected, by a rod, N, another slide, O, being connected to the lower end of the arm by a rod, P. These two slides, M O, work on dove-tail ways $d' d'$, which project from the bed at right angles, said slides being in line with each other, but at opposite sides of the bed A, as shown clearly in fig. 1.

The upper arm of the double crank L is longer than the lower one, and it will be seen that the slides M O are moved by this double crank simultaneously in opposite directions, or towards and from each other, and as the slide O is connected to the shorter arm of the double crank L, its movement will be slower, and the distance it travels over shorter than the other slide M, but both slides, of course, will complete the length of their movement in the same time.

The slide M is provided with an upright plate, e , in which two parallel horizontal slots $f f$ are made, and to this upright plate e tool-holders P P are attached by set-screws g , which pass through upright slots h , in the holders, and through the slots $f f$. To the tool-holders P' P', chisels or finishers Q Q, are attached by screws i , which pass through oblong slots j , in the tools, into the holders. By this arrangement, the chisels or finishers may be adjusted higher or lower, and also adjusted laterally, as may be desired; and these tools or chisels operate upon the under side of the article being turned, as will be seen by referring to fig. 2, in which a spool or bobbin is shown in red.

The slide O has a fixed inclined plate, k , attached to it with a gouge, l , at each side or end, and to this inclined plate there is attached a tool-holder, R, the base of the latter having an oblong slot or opening, m , made in it, through which a set-screw passes into the inclined plate. The tool-holder R is provided with an upright slotted portion, through which the tang n of a plate, o , passes, said tang being capable of being raised

and lowered, and secured at any desired point within the slot of the upright portion of the tool-holder by means of a screw-nut pin, or other suitable fastening. On the plate *o* there is secured, by a set-screw, *p*, a stock, *S*, to which a series of gouges, *g*, is attached. It is designed in practice to have these gouges adjustable, so that their points or cutting-edges may be in a straight line, or in a curved line, according to the shape designed for the spool or bobbin. The gouges work at the upper surface of the spool or bobbin, and rough off the work, while the chisels underneath the spool or bobbin smooth or finish it. The gouges, it will be seen, owing to the manner in which they are connected to the slide *O*, are rendered capable of being adjusted higher or lower, or laterally, as may be desired.

To the inner end of the bar *D* there is attached a pendent arm, *T*, having one end of a horizontal rod, *U*, secured to its lower end, the opposite end of rod *U* having an upright arm, *V*, attached, with an eye, *r*, in its upper end to work over the flanged centre-point *b*, (see fig. 2.)

W is a hopper, secured to a slide, *X*, on an upright, *s*, on the head *B'*. This hopper is open at its bottom, and is provided with springs *t* at each side, which extend down a trifle below it, and are curved inward to serve as holders and retain the wooden pieces, out of which the spools, bobbins, or other articles, are turned. This hopper has at one end of it, over the centre-point *a* of the bar *D*, a chamber, *Y*, in which any suitable absorbent material is placed, saturated with oil or other lubricating material, (see fig. 3.) This slide *X* rests upon an arm, *Z*, which is fitted on a shaft, *A'*, the bearing of the latter being on the head *B'*. This shaft *A'* also has a pendent arm, *C'*, attached, against which a pin, *u*, on the sliding bar *D* acts.

The hopper *W* is supplied with a series of sticks, bored and roughed off, suitable for the device, the sticks resting upon one another in the hopper *W*, and retained therein by the springs *t*. The stick is roughed off by the gouges *g*, and finished by the chisels *Q*, which gives a smooth surface to the work. The gouges and chisels are moved automatically towards and from their work, being moved towards it with a slow motion, and from it with a quick motion, owing to the action of the cam-pin *b'* in the slot of the arm *G*, and when the turning of a spool or bobbin is completed, and the slides *M O* move back from their work, the sliding bar *D* is also moved back by the cam *E*, and the finished spool or bobbin discharged from between the centre *a' b*, by the movement of the eye *r* of arm *V*, and the finished spool or bobbin discharged, and in the mean time the hopper *W* descends and causes a stick, held by the springs *t*, to be kept in line with the centre-points *b a'*, so that when the bar *D* is again moved inward, the stick will be secured between the centres and in proper position to be operated upon by the gouges and chisels, or finishers, when they are again moved towards the work. The centre-point *a'* is lubricated by the absorbent material in the chamber *Y*, each time the hopper *W* reaches the lowest point of its descent. The hopper *W*, it will be understood, is made to rise and fall under the action of the arm *Z*, which is operated by the arm *C'* and the pin *u* of the sliding bar *D*.

I would remark that different forms of cutting-tools may be used, according to the kind of work to be turned. A pointed chisel or finisher, *C^x*, may be used, as shown in figs. 8 and 9, and a gouge, *d^x*, used, as shown in figs. 5, 6, and 7, for turning heads on a spool or bobbin. I do not confine myself to any particular shape or form of tool.

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

1. The two sliding tool-beds *M O*, provided with adjustable cutting-tools, and operated simultaneously towards and from each other, at opposite sides of the lathe-bed, by means of the cam *E*, arm *J*, rock-shaft *H*, and double crank *L*, all constructed and arranged to operate substantially as shown and described.

2. The slotted arm *J*, with the pin *b'* of the cam *E* applied to the cam *E* and rock-shaft *H*, substantially as shown, for the purpose of moving the slides *M O* slowly towards each other, and with a quick movement outward from each other, as set forth.

3. The rising and falling hopper *W*, operated automatically from the sliding bar *D*, through the medium of the arms *Z C'* and pin *u*, all constructed to operate substantially as and for the purpose set forth.

4. The lubricating-chamber *Y* in the hopper *W*, arranged in relation with the centre-point *a'*, operating substantially as and for the purpose specified.

5. The flanged centre-point *b*, on the mandrel *C*, with the eye *r* working over said point, and operated automatically from the sliding bar *D*, constructed and operating substantially as and for the purpose set forth.

DAVID DICK.

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