

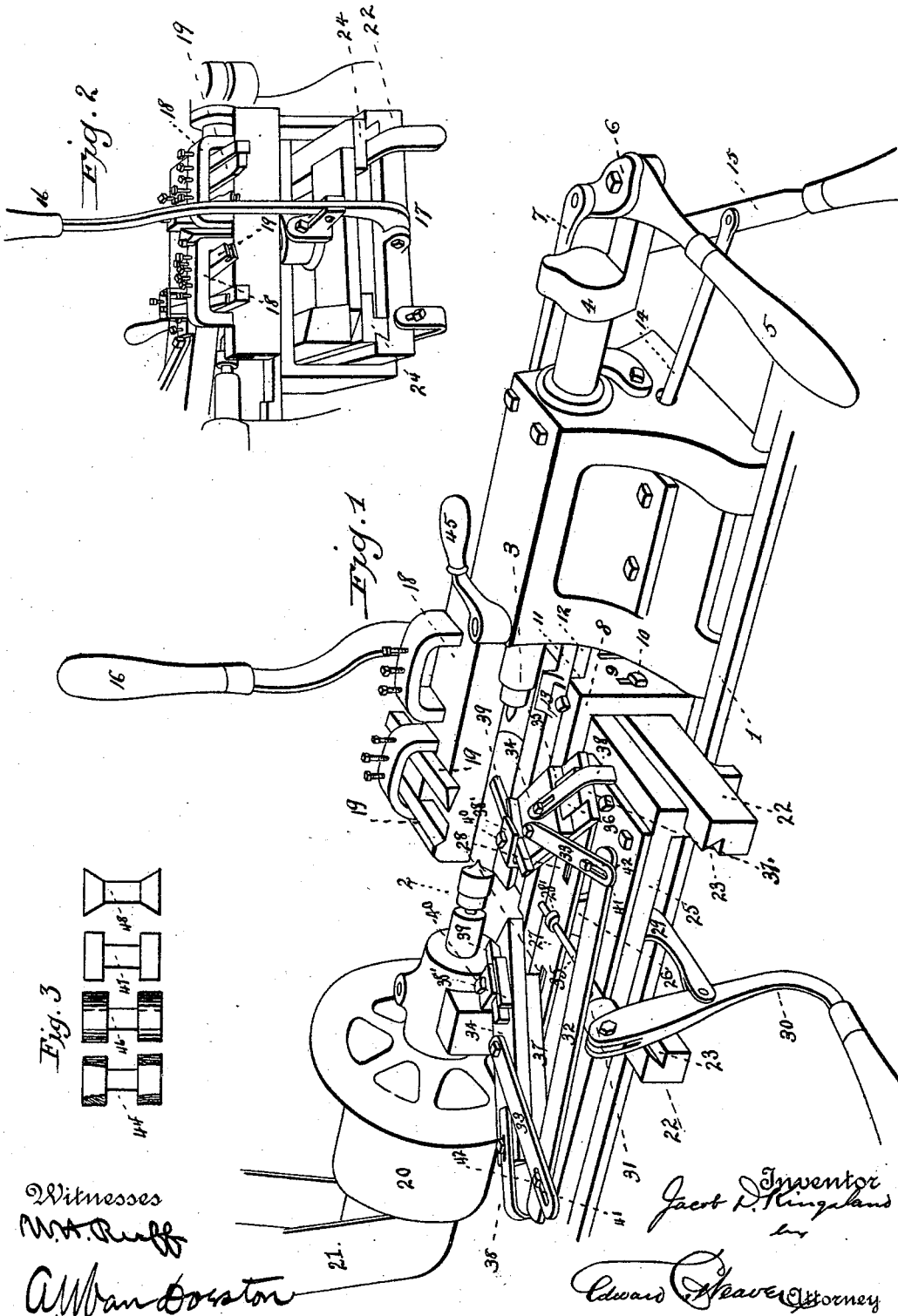
(No Model.)

2 Sheets—Sheet 1.

J. D. KINGSLAND. SPOOL CUTTING LATHE.

No. 554,881.

Patented Feb. 18, 1896.



Witnesses
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 4

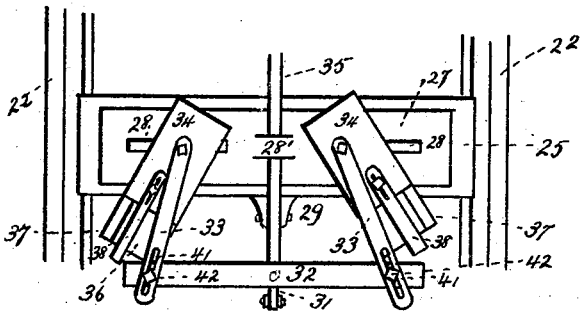


Fig. 7

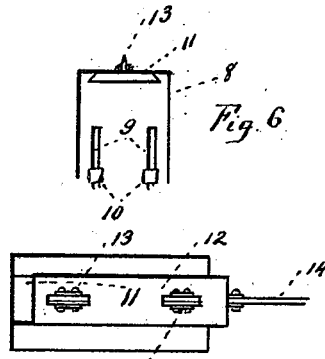


Fig. 6

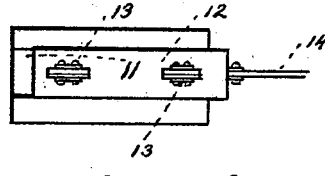


Fig. 5

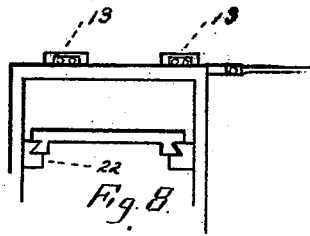
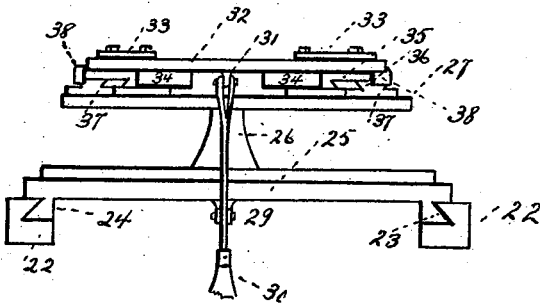


Fig. 8

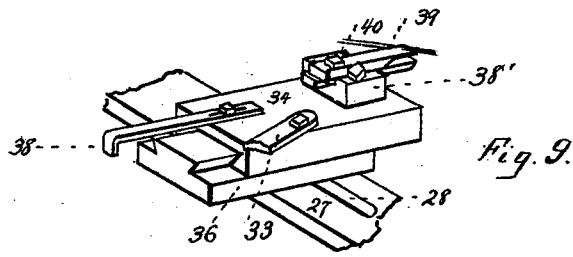


Fig. 9

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UNITED STATES PATENT OFFICE.

JACOB D. KINGSLAND, OF BURLINGTON, VERMONT.

SPOOL-CUTTING LATHE.

SPECIFICATION forming part of Letters Patent No. 554,881, dated February 18, 1896.

Application filed April 12, 1894. Serial No. 507,210. (No model.)

To all whom it may concern:

Be it known that I, JACOB D. KINGSLAND, a citizen of the United States, residing at Burlington, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Spool-Cutting Lathes; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to an improved lathe for the finishing of spools, the primary object being to provide in a single machine a simple and effective mechanism for completing a spool by successive steps or operations.

The invention consists in the combination, with means for reducing the diameters of the spool-heads and means for reducing the thickness of the heads of the blank, of beveling and finishing devices of novel construction.

The invention also consists in improved devices for supporting, adjusting, and regulating the beveling or finishing knives, as hereinafter fully described, and specifically defined in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a machine embodying my improvements from the front. Fig. 2 is a perspective view of the tool-carriage mechanism as seen from the rear of Fig. 1. Fig. 3 illustrates the spool-blank and the respective results of the several cutting devices. Fig. 4 is a plan view of the finishing and beveling mechanism, of which same Fig. 5 is the front elevation. Figs. 6, 7, and 8 illustrate the devices for supporting, adjusting, and controlling the cutters for reducing the diameter of the spool-heads. Fig. 9 shows the sliding blocks carrying the cutting-knives of the finishing and beveling mechanism.

In each of the figures the same numerals represent the same parts.

1 indicates the frame of the lathe, within which the centering-head 2 and tail-stock 3 are supported. The outer end 4 of the tail-stock is provided with the usual lever 5, pivotally secured at the point 6 and fulcrumed

upon the end of a fixed rod 7. 8 indicates a frame or guideway located below the centering devices, and provided with slots 9 and adjusting-nuts 10. This frame 8 is also formed with a slideway 11 of dovetail form in cross-section to receive a correspondingly-shaped slide 12 carrying cutters 13, and connected to the inner end of a rod 14, the outer end of which is secured pivotally to a lever 15, fulcrumed upon any convenient part of the frame of the machine.

16 represents a lever suitably fulcrumed at the rear of the machine at 17, and pivotally connected with tool or cutter holders 18, to which are applied the required knives or cutters 19.

The pulley 20 and belt 21 are arranged to impart the required rotary motion to the centering devices.

The parts thus far described are substantially similar to lathes now in common use, and no claim is made to the same except as they enter into combination with the novel features of the lathe, which will now be described.

Within the frame 8 I provide parallel guideways 22, having undercut grooves or channels 23 to receive the beveled flanges 24 of a carriage 25, upon which the beveling or finishing devices are supported. Centrally upon the carriage 25 is a bracket 26, which supports a cross-bar 27, formed with elongated slots 28 and central loop or keeper 28'. 29 indicates an arm depending from the carriage 25 and constituting a fulcrum for the lever 30. The upper end of this lever 30 is pivotally secured to a lug 31, depending from a cross-bar 32, which latter connects the slotted arms 33 of the slides 34. The lever 30 is also secured to the outer end of a guide-rod 35, which extends rearwardly through the keeper 28' to serve as a steadying-rod or evener for the sliding blocks or slides 34, as will be further explained hereinafter.

The slides 34 are each provided with a groove 35 of dovetailed form upon their under side, which receives a correspondingly-shaped slide 36 upon the upper face of the block 37. The slides 34 are also provided with angle-irons 38, embracing the outer ends of the blocks 37, which regulate the travel of the slides 34 upon the blocks 37, with blocks or

seats 38' which receive cutting-knives 39 firmly clamped by nuts 40, and with arms 33 pivotally fastened to the said slides 34 at one end and by means of slots 41 and bolts 42 secured loosely to the ends of the coupling-bar 32. It will be further noticed that the angle-irons 38 are slotted at their fixed end to permit their adjustment. The blocks 37 before described as carrying slides 34 are secured firmly by bolt or otherwise to the cross-bar 27 at slots 28, these latter permitting adjustment of the said blocks 37.

The carriage 25 is connected by a suitable coupling 43, Fig. 2, to the lever 16, and suitable gages and stops to control the cutting-knives should be employed.

The operation of the machine as thus constructed is as follows: The spool-blank 44, Fig. 3, is chucked between the centers 2 and 3, after which the usual screw-clamp 45 is turned to hold the work. The lever 15 is then pulled toward the machine, forcing the knives 13 (through the rod 14) under the blank to reduce the diameter of the spool-heads to the desired size. (See 46, Fig. 3.) The lever 16 is then pulled forward, thus bringing the knives 19 in contact with the inner and outer surfaces of the spool-heads to reduce the said heads to the required thickness, as shown at 47, Fig. 3. The lever 30 is then raised, which results in throwing the slides 34 inwardly, the motion being transmitted through the arms 33, coupling-bar 32 and pivotal connection of said lever with lug 31. The lever 16 being then thrown back, carries the cutters 19 away from the work, and moves at the same time the carriage 25 rearwardly till the cutters 39 are in contact with the barrel of the spool, such point of contact being at the ends of the said barrel and where the beveled cut is to begin. The lever 30 is now thrown down, drawing the slides 34, carrying tools or cutters 39, forward upon the blocks 37, (the dove-tail-formed slides 36 reciprocating within the similarly-formed grooves 35,) such motion being imparted to the said slides 34 through arms 33 and coupling-bar 32, as has already been described. It will be easily seen that as the blocks 37 are adjusted upon the cross-bar 27 at slots 28 in such manner as to be diagonal to the line between the centers 2 and 3 the slides 34 in responding to the lever 30 must follow the same direction and transmit the same line of motion to the cutter 39, which is clamped firmly to the said slide 34. The cutter will necessarily bevel and finish the head of the spool at such an angle as has been sought by the adjustment of the blocks 37 upon the cross-bar 27. This bevel is shown at 48, Fig. 3. The rod 35 passing through the keeper 28' serves to steady the reciprocating motion of the slides 34 upon their blocks 37.

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

1. In spool-making lathes, the combination with the centering devices, and the mechanism for imparting the initial cuts to blanks, of finishing and beveling mechanism comprising a movable carriage provided with a slotted cross-bar movable cutter-carrying slides reciprocating upon blocks arranged upon said cross-bar, and provided with bolts taking into the slots thereof, mechanism, including an operating-lever for throwing the said slides apart, and means for moving said carriage, substantially as described.

2. In spool-cutting lathes, the combination with the lathe-centers, and with cutting mechanism for imparting the initial cuts to the blank, of finishing-cutters supported upon slides reciprocating upon blocks arranged upon a movable carriage, guideways for said carriage and means for moving the carriage thereon, mechanism for throwing the said slides apart and returning them to their normal position, and a central guide-rod operating between the blocks, substantially as described.

3. The combination with a spool-making lathe, of a transverse frame, guideways arranged therein, a carriage moving upon said guideways, a slotted cross-bar supported upon said carriage, movable cutter-carrying slides reciprocating upon blocks having bolts taking into the slots of the said cross-bar and firmly attaching the said blocks to the said cross-bar, pivoted arms secured at their inner ends to the said slides and loosely connected at their outer ends to a coupling-bar, and an operating-lever connected to said carriage and to said coupling-bar, substantially as described.

4. The combination with a spool-cutting lathe, of finishing or beveling mechanism consisting of a carriage movable transversely upon guideways, a slotted cross-bar supported upon said carriage, slides carrying cutters, and reciprocating upon blocks provided with bolts entering the slots of the said cross-bar, arms pivotally secured to said slides and to coupling-bar, a steadying-rod held in a keeper on said slotted cross-bar, and an operating-lever connected with said carriage and said coupling-bar to throw the slides apart, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB D. KINGSLAND.

Witnesses:

WILLIAM L. FOY,
G. W. GRANDY.