(No Model.)

J. M. PARKER.

MACHINE FOR TURNING SPOOLS.

No. 454,684. Patented June 23, 1891.

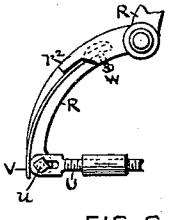


FIG. 6.

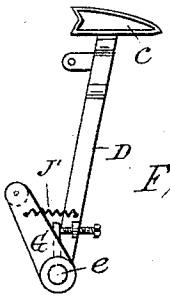


Fig. 7.

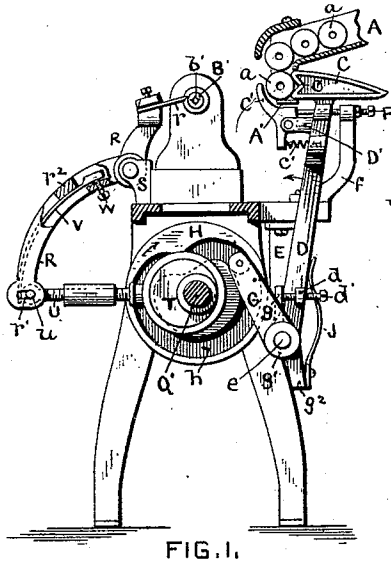


FIG. 1.

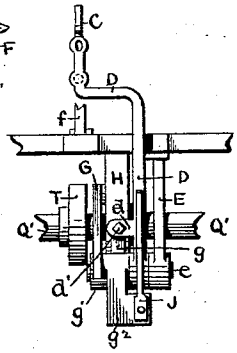


FIG. 4.

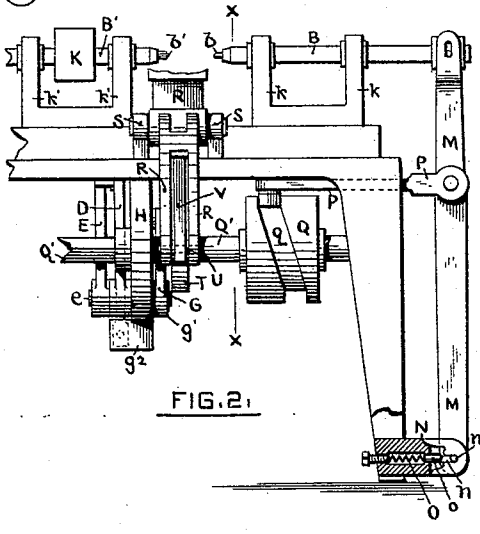


FIG. 2.

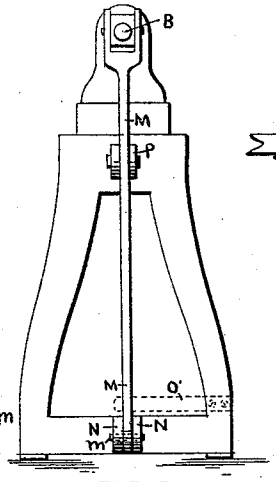


FIG. 3.

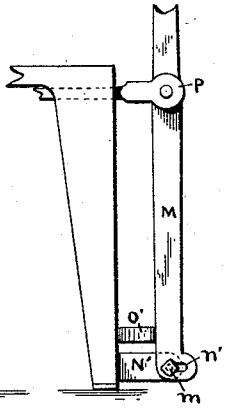


FIG. 5.

WITNESSES.

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MACHINE FOR TURNING SPOOLS.

SPECIFICATION forming part of Letters Patent No. 454,684, dated June 23, 1891.

Application filed June 21, 1890. Serial No. 356,248. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. PARKER, of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Machines for Turning Spools; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a description thereof.

The invention relates to gage-lathes for turning spools, &c.; and the improvements consist in the means for holding the blanks and transferring them from the conveyer or chute to the lathe-centers, where the blanks are turned or dressed into shape; in providing an arrangement for preventing a breakage of the transferring arm or lever in case anything prevents its full forward movement toward the lathe-centers; in mounting the lever for advancing the sliding lathe-spindle so that said lever can yield should the full forward motion of said spindle be prevented, and in arranging to prevent a breakage of the dressing-tool arm or holder should its full forward movement toward the lathe-centers be prevented, all as hereinafter described and claimed.

Referring to the drawings, Figure 1 represents a transverse section of the machine on line $x\,x$ of Fig. 2. Fig. 2 shows a front view of a part of the lathe portion of the machine. Fig. 3 represents an end view of the lathe portion of the machine. Fig. 4 shows a rear view of the transferring arm or lever and the means for moving it. Fig. 5 represents in side view a modification of the mounting of the lever for moving the sliding lathe-spindle. Fig 6 shows in side view a modified form of tool-holder and its mounting. Fig. 7 shows in side view a modified form of spring connection between the swinging finger-lever and the arm which moves it.

The bored cylindrical blanks a are fed to an inclined conveyer or chute A by hand or by any suitable mechanism, and they pass down the conveyer by gravity, the lowermost blank resting in time upon a supporting-ledge A′ on the conveyer.

For holding the blanks while they are being transferred from the conveyer to the lathe-centers $b\,b'$ a pair of fingers or jaws C C′ are employed, both of which are mounted upon a lever or arm D, which is pivoted upon a stud e, projecting from a bracket E, so that the lever shall swing in the arc of a circle. The finger C has a notch c in its face or end, and the lever D is so arranged with relation to the delivery end of the conveyer that when its jaw C is in a rearward position said jaw will lie in the rear of the mouth of the conveyer, so that a blank can pass down in front of said jaw. The finger C′ is pivoted upon a lug D′, projecting from the lever D, and the upper end of the finger is pressed toward the finger C by a spring c', so as to hold or clamp the blank during its passage to the lathe-centers. The top surface of the finger C is the segment of a circle, so that the top of the finger shall hold up the stack of blanks during the time the fingers are passing to and from the lathe-centers. In order that the lowermost blank of the stack may drop upon the ledge A′ and between the fingers C C′ when they are in a rearward position, (shown in Fig. 1,) a pin or screw F is made to project from a bracket f, so as to come in contact with the finger C′ and swing said finger open. As soon as the lever D begins to move forward the spring c' closes the finger C′ and causes it to clamp the blank against the finger C.

The lever D is provided with a lug d, through which passes an adjusting-screw d', Figs. 1 and 4, and said screw engages a lug g on the hub g' of an arm G, the said arm G bearing a roller which occupies a groove h in a cam H. The hub g' of the arm G is also furnished with a second lug g^2, to which a leaf-spring J is secured, the upper end of said spring bearing against the lever D and forcing the inner end of the screw d' into contact with the lug g. When the cam H swings the arm G toward the right hand, Fig. 1, the lever D is retracted or moved rearwardly by the engagement of the lug g with the screw d', (though the screw may be omitted and the lugs $d\,g$ be in contact, as will be readily understood,) and when the arm G swings toward the left hand the lever D is advaced or moved forward through the spring J. Should the improper presence of an undischarged blank on the lathe-center b' prevent the full forward movement of the lever D with a block in its fingers C C′, the spring

J will yield and prevent a breakage of the lever D or finger C. If desired, the spring J, which forms a yielding connection between the arm G and lever D, may be secured to the lever and bear upon the lug g^2, as will be readily understood. If preferred, also, the lug g^2 and leaf-spring J may be omitted and a spiral spring J′ (shown in Fig. 7) connect the arm G and lever D.

As shown in Fig. 2, the lathe-spindle B is mounted to slide longitudinally in bearings k k, and the spindle B′ is mounted in bearings k' k' to be rotated by a pulley K, secured to the spindle. The spindle B bears a spur or center b for entering the hole in the blank, and the spindle B′ bears a fluted or ribbed spur or center b' for entering the hole in the blank and rotating it. A lever M is pivoted at its upper end to the spindle B and at its lower end is loosely pivoted between the arms of a forked lug N. The arms of the lug N are furnished each with a slot n. A pin m passes through the said slots and the lever M, and a spring O, bearing directly against the lever or upon a pin o, which engages the lever, Fig. 2, holds the pin m in engagement with the outer ends of the slots n. A rod P is pivoted to the lever M between the latter's ends, and said rod bears a roller which occupies a groove q in a cam Q, mounted on a shaft Q′, which cam, through the rod P and lever M, produces the forward and backward movements of the sliding spindle B. Should any obstruction prevent the full forward movement of the spindle B, the lower end of the lever M will be drawn inward or toward the left hand, Fig. 2, by the action of the cam Q, the spring O yielding to allow such movement of the lever, and a breakage of the lever M or rod P will be prevented.

In place of employing a spiral spring O to hold the pin m in contact with the outer walls of the slots n, a leaf-spring O′ (shown by dotted lines in Fig. 3 and by full lines in Fig. 5) may be secured to the frame of the lathe and bear upon the lever M. In place, also, of using a forked and slotted lug N, a lug, as N′, Fig. 5, may have a pin or bolt m' secured thereto and the lever M be pivoted on one side of said lug and be furnished with a slot n'. The spring O or O′ would then keep the pin m' in contact with the inner wall of the slot n' under normal conditions. As will be seen, the spring takes up any wear on the pin or slots and prevents any "backlash" or chatter of the lever M at all times, and yet allows the lever to yield when an obstruction occurs to the forward movement of the spindle B.

The tool r, for giving shape to the periphery of the blanks, is mounted on a holding-arm or bell-crank lever R, which is pivoted to rock to and from the lathe-centers b b' in bearings S. The lower portion of the lever or arm R is preferably bifurcated, and its forks are provided at their lower end each with a slot r', Fig. 1. An eccentric T on the shaft Q′ vibrates an eccentric-rod U, the outer end of which enters between the forks of the lever R, and a pin u passes through the slots r' and the rod U. A leaf-spring V is mounted upon or secured to the lever R in any preferred manner, and the lower end of this spring bears against the outer end of the eccentric-rod and holds the pin u normally in contact with the inner ends of the slots r'. As shown in Fig. 1, the spring V has a bearing or fulcrum on a portion r^2 of the arm R, and an adjusting-screw W secures the spring in place and produces the proper tension on the spring. When the rod U moves toward the right hand, the tool r will be retracted or moved away from the lathe-centers by the engagement of the pin u with the inner walls of the slots r', and when the rod U moves toward the left hand the tool r will be moved toward the lathe-centers by the engagement of the spring V with the end of the rod. The spring V therefore forms a yielding connection between the arm R and the rod U, and should anything obstruct the forward motion of the tool r the spring would yield and prevent damage to the tool or its holding-arm R. The spring V also takes up all wear on the pin u and slots r', so that there can be no backlash or chatter of the tool. If desired, the lever R, instead of having its lower portion bifurcated, may be pivoted on one side of the rod U, and the pin u may be secured to the lever R and pass through a slot in the rod U, the spring V holding the pin in contact with the outer wall of said slot, as shown in Fig. 6.

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

1. The combination, with the conveyer or chute for holding a stack of blanks, of the lever D, having a finger or jaw C upon its upper end, the said lever being pivoted to swing in the arc of a circle and so arranged with relation to the delivery end of the conveyer that its jaw C when in a rearward position shall lie in the rear of the mouth of the conveyer, substantially as described, a finger or jaw C′, pivoted upon said lever to co-operate with the jaw C in holding a blank, a pin or screw F for opening the finger C′ to allow a blank to enter between the fingers, and a spring c' for closing the finger C′ to clamp the blank between the fingers or jaws, substantially as set forth.

2. The combination, with the jaw-lever D, of a cam, as H, an arm G, engaged by the cam, contact-pieces, as d g, between the said lever and arm, whereby the arm may move the lever in one direction, and a yielding member or connection between the said arm and lever by which the lever is moved in the opposite direction, substantially as and for the purposes specified.

3. The combination of the jaw-lever D, having a lug d, a cam, as H, an arm G, engaged by the cam and having lugs g g^2, an adjusting-screw between the lugs d g, and a spring

J, bearing on the lever D and lug g^2 and secured to one of them, substantially as and for the purposes specified.

4. The combination, with the sliding lathe-spindle B, of the lever M, pivoted at its upper end to said spindle and loosely pivoted at its lower end, a cam and rod for vibrating said lever, and a spring which furnishes a yielding support or backing for the lower end of the lever, substantially as and for the purposes specified.

5. The combination, with the sliding lathe-spindle B, of the lever M, pivoted at its upper end to said spindle and loosely pivoted at its lower end on a slotted lug N, a pin passing through the lever and the slots in the lug, a pin *o*, engaging the lever, and a spring O, engaging the pin *o*, substantially as and for the purposes specified.

6. The combination, with the lathe-centers, of the tool-holding lever R, pivoted to swing to and from said centers, an eccentric and rod for vibrating the lever, and a yielding member or connection between said rod and lever, substantially as set forth, and for the purposes specified.

7. The combination, with the lathe-centers, of the tool-holding arm R, pivoted to swing to and from said centers and furnished with a spring V and slots *u*, and an eccentric and rod for vibrating the lever, the rod having a pin which passes into the slots *u*, and the end of the rod abutting said spring, substantially as and for the purposes specified.

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Witnesses:
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M. W. JONES.