(No Model.)

W. S. BISHOP.

MACHINE FOR TURNING TERRET RINGS.

No. 341,876. Patented May 18, 1886.

Fig: 1.

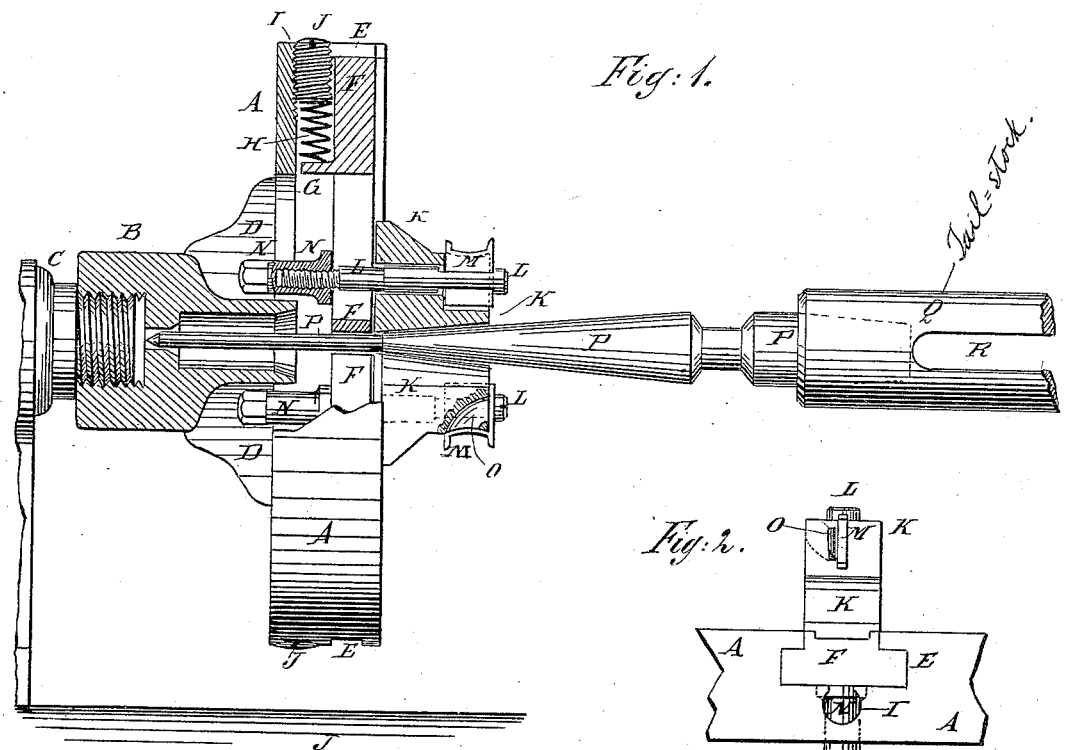


Fig: 2.

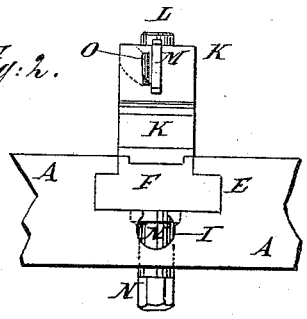
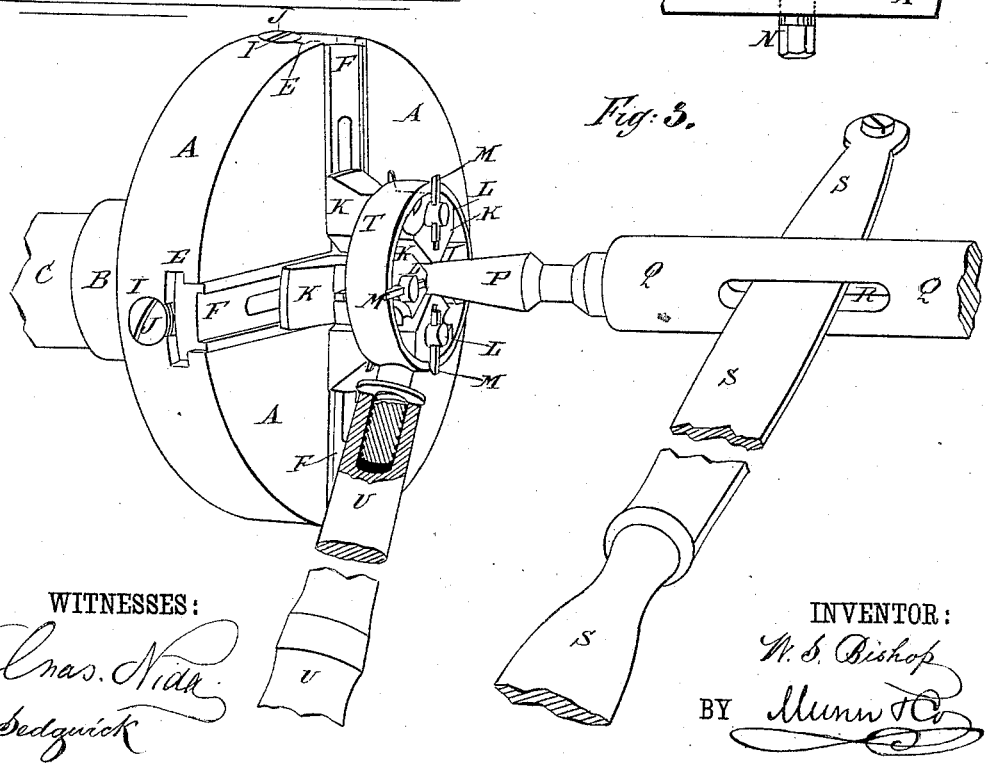


Fig: 3.



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WALTER S. BISHOP, OF NEW HAVEN, CONNECTICUT.

MACHINE FOR TURNING TERRET-RINGS.

SPECIFICATION forming part of Letters Patent No. 341,876, dated May 18, 1886.

Application filed October 9, 1885. Serial No. 179,441. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. BISHOP, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Machines for Turning Terret-Rings, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved machine, partly in section, and parts being broken away. Fig. 2 is a plan view of a part of the same, the screw-plug being removed. Fig. 3 is a perspective view of the same, parts being broken away.

The object of this invention is to provide machines for turning the concave surfaces and side edges of terret-rings; and the machine is constructed in such a manner that the terrets will be turned quickly and accurately, and can be readily applied to and removed from the machine.

The invention consists of the construction and combination of various parts of the machine, as will be hereinafter fully described and then claimed.

A represents the chuck-plate, the hub B of which has a screw-hole in its outer end, so that the said hub can be screwed upon the head C of a lathe. The connection between the chuck-plate A and its hub B is strengthened by angle-flanges D, formed upon the said plate and hub.

In the face of the chuck-plate A are formed four radial T-shaped grooves, E, in which slide four ways, F. Upon the rear sides of the ways F are formed flanges G, to serve as seats for the inner ends of the spiral springs H, placed in recesses I in the chuck-plate A, at the rear sides of and opening into the T-shaped grooves E. In the surfaces of the upper parts of the recesses I are formed screw-threads, into which fit the screw-threads of the plugs J, so that the tension of the springs H can be regulated by screwing the said plugs J in or out. With this construction the ways F can be forced outward against the pressure of the springs H, and when left free will be pushed inward and held by the elasticity of the said springs H.

In the outer sides of the ways F are formed longitudinal grooves to receive the tool-blocks K, which are perforated horizontally to receive the tool-posts L, and have radial slots in their outer parts to receive the cutters M. The cutters M are inserted in slots in the outer parts of the tool-posts L, which pass through the perforations in the tool-blocks K, and through radial slots in the ways F, and have nuts N screwed upon their inner ends. The nuts N are made long, to project at the rear side of the chuck-plate A, between the angle-flanges D, so that a wrench can be readily applied to their outer ends to screw them on and off. With this construction the cutters M will be drawn against the tool-blocks K at the inner ends of the tool-slots, and the tool-blocks K will be drawn against the ways F by the tool-posts L and nuts N, so that the said tool-blocks K and cutters M will move out and in with the ways F, and can be readily adjusted as the size of the terret-rings may require. The cutters M are made with concaved edges, and with projecting points at the ends of their edges, as shown in Fig. 1, so as to turn the concave surface and the side edges of the terret-rings at one operation.

In the tool-blocks K, at the forward side of the cutters M, are formed channels O, leading out through the forward sides of the said tool-blocks, so that the chips can escape freely.

The inner edges of the tool-blocks K are tapered, as shown in Fig. 1, to fit upon the inclined sides of the tapered or conical mandrel P, attached to the tail-stock Q of the lathe. The forward end of the mandrel P is cylindrical, and fits into a central perforation in the hub B, so as to hold the said mandrel P always in a central position. The inner end of the hub B is countersunk to receive the tapered part of the said mandrel when the mandrel is pushed forward to expand the tool-blocks and cutters.

In the tail-stock Q is formed a slot, R, to receive a lever, S, the end of which is designed to be pivoted to the frame of the lathe or other suitable support, so that the said tail-stock Q and the mandrel P can be pushed forward to expand the tool-blocks K and the cutters M, and drawn back to allow the said tool-blocks K and cutters M to be pushed inward by the springs H by operating the said lever S.

The terret, T, to be turned has a handle, U,

slipped upon its shank, for convenience in handling it.

In using the machine the tail-stock Q and mandrel P are drawn back until the forward end of the mandrel P is free from the tool-blocks K. The terret T is then placed upon the cutters M, and the tail-stock Q and mandrel P are pushed forward until the said cutters are forced outward into contact with the inner surface of the said terret, and the work of turning is begun. The cutters M are forced outward, as the work progresses, by pushing the mandrel P and tail-stock Q forward by means of the lever S until the work is completed, when the tail-stock Q and mandrel P are withdrawn, allowing the tool-blocks K and cutters M to be pushed inward by the springs H, and the terret to be removed from the machine.

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

1. In a machine for turning terrets, the combination, with the slotted ways F, the tool-blocks K, and the cutters M, of the slotted tool-posts L and the nuts N, substantially as herein shown and described, whereby the said ways, tool-blocks, and cutters are secured to each other firmly and adjustably, as set forth.

2. In a machine for turning terrets, the combination, with the chuck-plate A, having radial T-shaped grooves E and recesses I, and the ways F, having flanges G, of the spiral springs H and the screw-plugs J, substantially as herein shown and described, whereby the said ways are pressed inward and held, as set forth.

3. The combination, with the head C and the tail-stock Q of a lathe, of the chuck-plate A, having radial T-shaped grooves E and recesses I, the slotted ways F, having flanges G placed in the said grooves, the springs H and screw-plugs J, for pushing the said ways inward, the tool-blocks K and cutters M, and the slotted tool-posts L and nuts N, securing the said tool-blocks and cutters to the said ways, the tapering mandrel P, having cylindrical forward end, and the adjusting-lever S, substantially as herein shown and described, whereby the concave surface and side edges of terrets can be readily turned, as set forth.

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Witnesses:
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