

(No Model.)

J. P. BERKHOLZ.

MACHINE FOR CUTTING SCREW BLANKS AND SCREWS.

No. 410,484.

Patented Sept. 3, 1889.

FIG. 2.

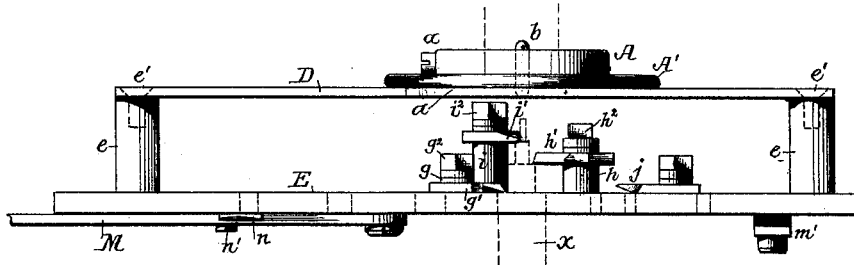


FIG. 3.

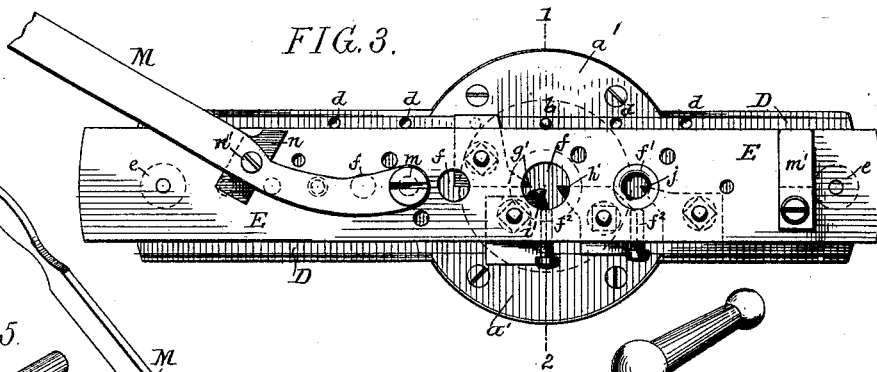


FIG. 5.

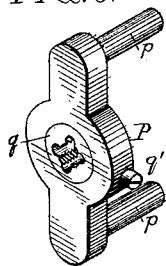


FIG. 1.

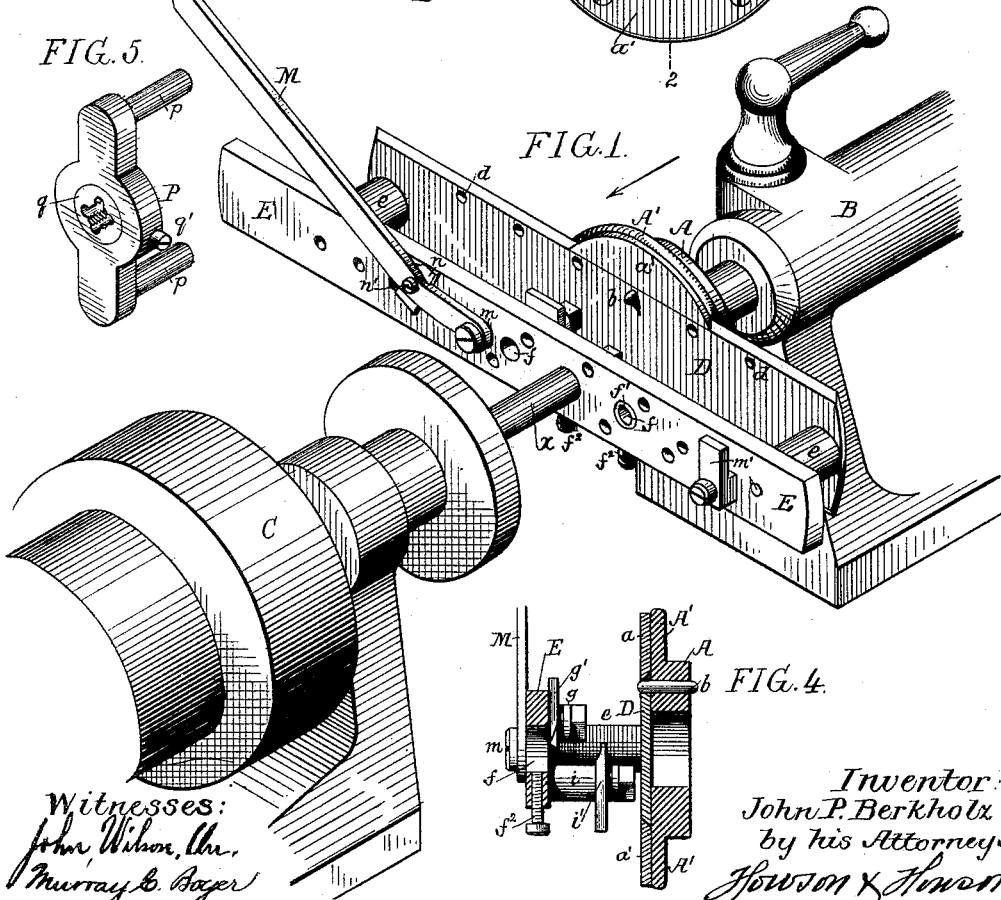
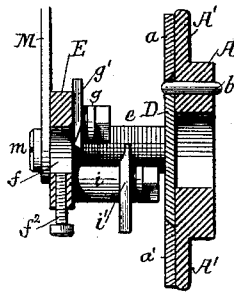


FIG. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN P. BERKHOLZ, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR CUTTING SCREW-BLANKS AND SCREWS.

SPECIFICATION forming part of Letters Patent No. 410,484, dated September 3, 1889.

Application filed March 26, 1889. Serial No. 304,775. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. BERKHOLZ, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Machines for Cutting Screw-Blanks and Screws, of which the following is a specification.

The object of my invention is to construct a device for cutting screw-blanks and for threading screws that can be readily attached to the tail-stock of a lathe or similar machine, and by which screws of odd sizes can be readily cut for use, especially in repairing special machinery.

In the accompanying drawings, Figure 1 is a perspective view of my improved screw-blank-cutting tool. Fig. 2 is a plan view. Fig. 3 is a face view. Fig. 4 is a transverse section on the line 1 2, Fig. 3; and Fig. 5 is a perspective view of the screw-cutting die and carrier.

Referring to the drawings, A is the base portion, (in the present instance in the form of a sleeve,) which can be secured to the spindle of the tail-stock B of the lathe by means of a set-screw *a*. To a flange A' of the sleeve are secured plates *a' a'*, having their inner edges undercut, and adapted to these undercut edges is a slide D. In the slide are a series of orifices *d* for the reception of a pin *b*, which passes through an orifice in the sleeve, and through one of the orifices in the slide D opposite the orifice in the sleeve. Thus the slide can be securely held in position during the cutting of the screw-blank. By this means the slide can be adjusted and set at different points on the face of the sleeve, for a purpose described hereinafter.

Mounted on the slide D is a plate E, having posts *e e*, which are secured to the slide D by means of screws *e'*. This plate E has a series of orifices *f* of different diameters to fit different-sized rods, from which the screw-blanks are made. These orifices may be provided with bushings *f'* for filling the opening in case smaller rods are to be cut, the bushings being held in place by set-screws *f²*, Fig. 3.

Attached to the rear side of the plate E are posts *g*, *h*, and *i*. On these posts are a series of cutting-tools *g'*, *h'*, and *i'*, held in place by set-screws *g²*, *h²*, and *i²*, which pass through

the posts and into orifices in the plate E; but it will be understood that other forms of posts may be used without departing from my invention.

The rod from which the screw-blanks are to be cut is passed through the head-stock C, as shown in Fig. 1, and when in position is clamped to the head-stock, so that it will turn when power is applied. The tail-stock is then moved forward in the direction of the arrow by turning the usual tail-stock screw. The tool *g'*, cutting the first cut in the bar *x*, shapes the head of the screw. The end of the bar then comes in contact with the tool *h'*, which cuts the shank of the screw, and if it is required to make a shoulder and reduce the shank at the screw-thread portion the tool *i'* will reduce this portion. The tail-stock screw can be returned until the required length of screw-blank to be cut is inserted into the cutting device, after which the cutter (which I will describe) can be used to sever the screw-blank from the rod. In some cases the cutter can be dispensed with, and the blank cut from the rod after it leaves the machine.

In some cases the tool *i'*, instead of being a reducing-tool, can be a taper-cutting tool, the same as the tool *j* for pointing the end of the screw-blank. This tool *j* is mounted so as to cut a tapered point on a screw that is inserted in the bushing *f'* when the screw-blank is only to be finished.

Pivoted at *m* to the plate E is a lever M, carrying a cutting-off tool *n*, secured to the lever by means of a screw *n'*. The pivot of the lever M is adjustable on the plate E, and is shown pivoted in such position that when the lever is moved the cutting-off tool *n* will cut off a bar that is inserted in the central orifice, (shown in Fig. 3,) a stop *m'* limiting the movement of the lever.

In some instances a thread is required to be cut on the screw-blank, in which case the die-carrier, as shown in Fig. 5, is placed over the plate E, so that the center of the die will come in line with the central orifice of the plate. In this instance the blank is not cut off from the rod until after the screw-thread is cut upon its shank.

P is the die-carrier, and has two arms *p p*, as shown in Fig. 5. The die *q* is placed cen-

trally between the two arms in an orifice in the carrier, and is held in place by a set-screw q' . The arms of the die-carrier pass on each side of the plate E, the die being placed
 5 opposite one of the orifices in the plate, and the blank to be threaded is forced into the die, and when the die commences to bite upon the blank the arms will bear against the plate E—one against the top and the other against
 10 the bottom of the plate—thus not only serving to support the die-carrier, but also to prevent the carrier from turning on the plate while the blank is being threaded, and holding the carrier in line with the center of the lathe.

15 I claim as my invention—

1. The combination, in a screw-blank-cutting tool, of the base portion, and a slide adapted to slide thereon and carrying a plate on which are mounted cutting-tools, substantially
 20 as and for the purpose described.

2. The combination of the base portion and a slide adapted thereto, said slide carrying a plate having a series of orifices for the insertion of the rod to be cut, with posts secured
 25 to the rear of the plate and carrying cutting-tools for reducing portions of the blank, substantially as described.

3. The combination of the base portion having undercut ways with a slide adapted to

said ways and having a plate carrying the
 screw-cutting tool, with a series of orifices in
 said slide, and a pin carried by the base portion and adapted to one or other of said orifices, substantially as described. 30

4. The combination of the tail-stock of the
 lathe, the base-plate carried thereby and having
 a plate provided with the screw-blank cutters, the head-stock carrying the rod from
 which the screw-blanks are to be formed, and
 a handled lever pivoted to the cutter-carrying
 plate and carrying a cutting-tool for severing
 the rod, substantially as specified. 35 40

5. The combination of the tail-stock, the
 plate carried thereby and provided with
 screw-blank cutters, a screw-threading die, a
 carrier therefor, having arms which engage
 with the edges of the plate and hold the die-carrier in position thereon, and the head-
 stock of the lathe carrying the rod to be
 formed into screws, substantially as specified. 45 50

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN P. BERKHOLZ.

Witnesses:

WILLIAM D. CONNER,
 HENRY HOWSON.