No. 680,971. Patented Aug. 20, 1901.

F. W. FÖRSTER.

SCREW THREAD CUTTING MACHINE.

(Application filed Oct. 17, 1900.)

(No Model.)

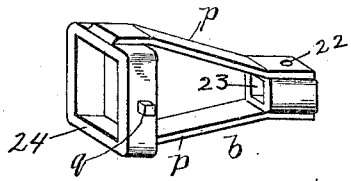


Fig. 4

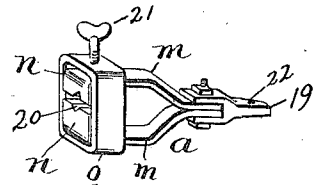


Fig. 3

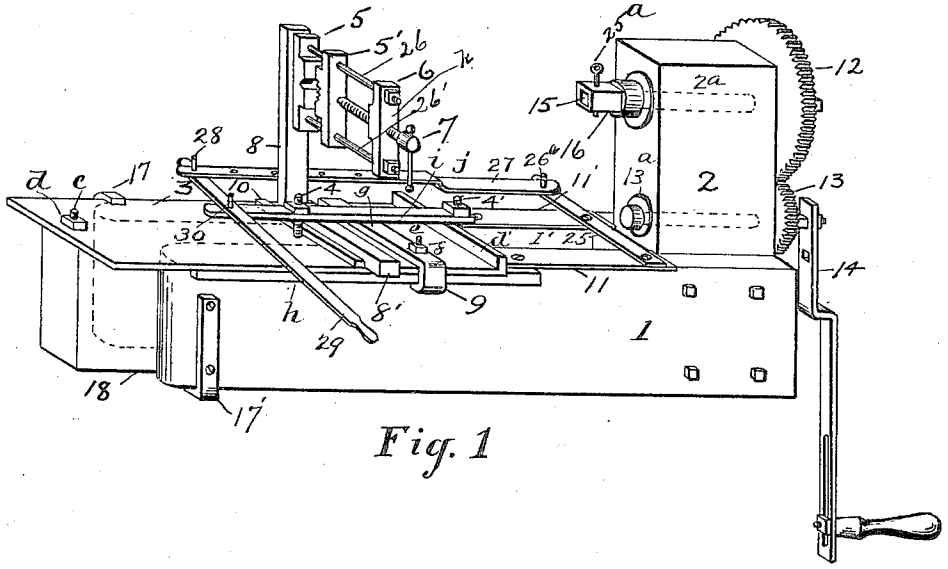


Fig. 1

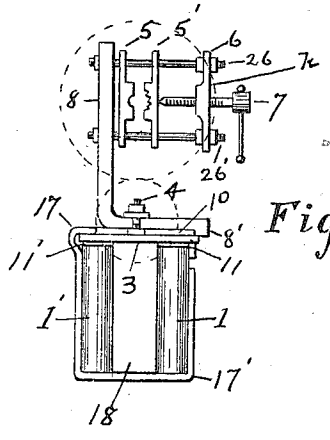


Fig. 2

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UNITED STATES PATENT OFFICE.

FRIEDRICH WILHELM FÖRSTER, OF BURLINGTON, IOWA.

SCREW-THREAD-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 680,971, dated August 20, 1901.

Application filed October 17, 1900. Serial No. 33,369. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH WILHELM FÖRSTER, a resident of Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in Screw-Thread-Cutting Machines; and I do hereby 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.

My invention relates to an improved screw-thread-cutting machine, one object of the invention being to provide an improved machine of this character which will securely hold the article on which the threads are to be cut and automatically feed the same to the cutter or die as the latter revolves.

A further object is to provide a machine of the above-mentioned character which will be extremely simple in construction, comparatively cheap to manufacture, easily operated, and most effectual when in use.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating my improvements. Fig. 2 is an end view, and Figs. 3 and 4 are detail views of die-holders *a* and *b*.

1 1′ represent parallel horizontal bars spaced a suitable distance apart and having secured between them at one end a post or standard 2, in which latter, near its upper end, is mounted a spindle 2^a, carrying a large gear-wheel 12, meshing with a smaller gear-wheel 13 on a spindle 13^a in the post 2, and each of said spindles is made angular on its outer end to receive an angular hole in a crank 14 for turning the same. The inner end of spindle 2^a projects beyond post 2 and is made angular, as shown at 16, and provided in its end with an angular socket 15, and a locking-pin 25^a is passed through the angular and socketed end of spindle 2^a to secure to the spindle die-holders *a* and *b*, as will be more fully hereinafter explained.

Metal strips 11 11′ are secured on the upper faces of bars 1 and 1′, respectively, and a platform 3 is mounted to slide on the strips and projects over the sides of the bars. A block 18 is mounted to slide between bars 1 1′ and is secured to the bottom of platform 3 by means of bolt *c* and nut *d*, and a rod 17′ is secured at one end to bar 1 and then bent and extends beneath said bars 1 and 1′ and block 18 and is bent upward along bar 1′ and then bent outward and inward to form a lug 17, projecting over platform 3 to hold the same down on bar 1′. The platform 3 is made at its forward edge with an upwardly-projecting flange *d′* and is provided between its ends with a transverse flange 10, and a rod *g* is secured transversely across platform 3 between flanges 10 and *d′* by means of bolt *e* and nut *f* and is bent at one end to form an inwardly-projecting lug 9, disposed beneath a flange *h* on the bar 1 to hold the platform down on bar 1.

A clamping-bar *i*, disposed centrally and longitudinally of platform 3 and adjusted on threaded rods 4 and 4′, projecting up from the platform 3 and block 18, respectively, by nuts *j*, as shown, is adapted to clamp a transverse bar 8′ on the platform, but permit of its transverse adjustment. An upright 8 is provided on one end of bar 8′ and supports a vise or clamp comprising parallel rods 26 26′, secured to the upright 8 and on which is secured a cross-head 6, supporting a screw 7, and clamping-jaws 5 and 5′ are mounted on the rods 26 26′ and are adapted to be forced toward each other by the screw 7 to clamp an article between them.

A bar 25 is secured to the strips 11 11′ near the standard 2 and projects at one end beyond one side of the device and is connected by a pin 26^a with a link 27, disposed approximately parallel with bar 1′ and connected by a pivot-pin 28 with a lever 29. The lever 29 is connected between its ends to clamping-bar *i* by a pin 30, as shown, so that by moving the free end of lever 29 the platform and clamp thereon will be moved toward or away from the die, and the link 27 is provided with a series of holes for the reception of pin 28 to regulate the movement of the platform by the lever according to the work being done by the machine.

When internal threads are to be cut on an article—as, for instance, a nut or pipe—the die-holder *a* is employed. This die-holder

comprises two spring-arms *m*, secured at one end in the bifurcated end of an angular bar 19, which latter is adapted to be secured in the notch 15 in spindle 2^a by means of pin 25^a, which latter is passed through a hole 22 in the bar 19, alining with the hole in the spindle. The free ends of the spring-arms *m* are sprung apart and have secured to them blocks *n*, having angular notches in their adjacent faces to receive the cutting-die, and a ring *o* surrounds the blocks *n* and is provided with a thumb-screw 21, adapted to force one block *n* toward the other and securely clamp the die between them.

When external screw-threads are to be cut—as, for instance, those on a bolt—the die-holder *b*, as shown in Fig. 5, is employed. This die-holder comprises a large and a small angular ring spaced apart and connected by rods *p*. The small ring 23 is adapted to be inserted on the angular end of spindle 2^a and be secured thereon by pin 25, which is passed through the hole in the spindle and a hole 22′ in the ring 23. The larger ring 24 is provided with a set-screw *q* to secure a die in the same.

The operation of my improvements is as follows: The article on which the threads are to be cut is secured between jaws 5 and 5′ and the die secured in either of the holders *a* or *b*, and the latter secured to spindle 2^a, as above explained, when platform 3 is pushed forward by lever 29 until the article is engaged by the die. The crank 14 is then turned, and as the die cuts the threads on the article it will draw it and the platform 3 on which it is supported forward to automatically feed the article to the die. If the work being done is light, the crank 14 can be connected directly to spindle 2^a; but if the work is heavy the labor will be greatly lessened by operating spindle 13^a and transmitting motion through small gear 13 and large gear 12 to spindle 2^a, as will be readily understood.

Various slight changes might be resorted to in the general form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I would have it understood that I do not wish to limit myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. The combination with a base, a post at one end thereof, a tool-holder carried by said post and means for operating said tool-holder, of a platform movably mounted on the base, a work-holder disposed horizontally over the platform, a post for supporting said work-holder, an arm projecting from said last-mentioned post and lying on the platform, a clamp for securing said arm in place on the platform and means for moving the platform to feed the work to the tool.

2. In a screw-thread-cutting machine, the combination with a base, a fixed standard at one end thereof, a tool-holder mounted in said standard and means for rotating said tool-holder, of a platform movable longitudinally on the base, a bar disposed on the platform, means for adjustably securing said bar to the platform, a work-holder, an arm at the base of the work-holder and disposed between the platform and said adjustable bar, an arm projecting laterally from the base adjacent to the fixed standard, a link pivoted at one end to said arm and a lever pivoted between its ends to the adjustable bar and pivotally connected at its end to said link.

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

FRIEDRICH WILHELM FÖRSTER.

Witnesses:
ARTHUR WILLIAM RICHARDSON,
CHAS. C. CLARK.