

(No Model.)

W. PORTEOUS.
AUTOMATIC SCREW CUTTING DIE.

No. 427,903.

Patented May 13, 1890.

Fig. 1.

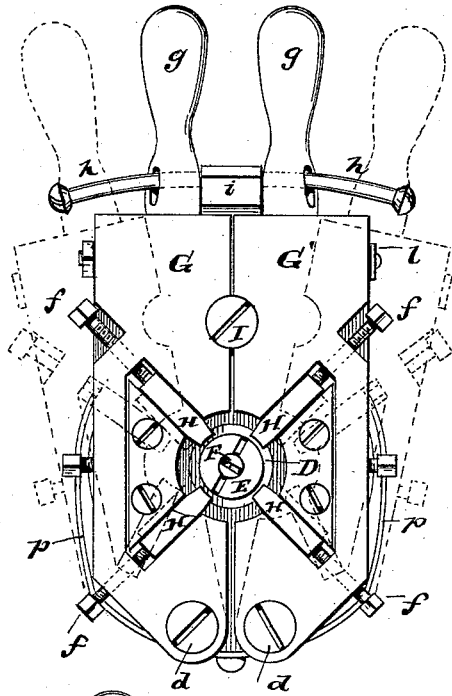


Fig. 2.

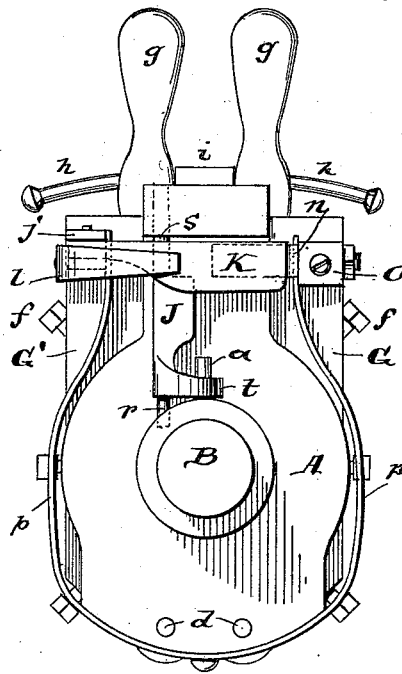


Fig. 3.

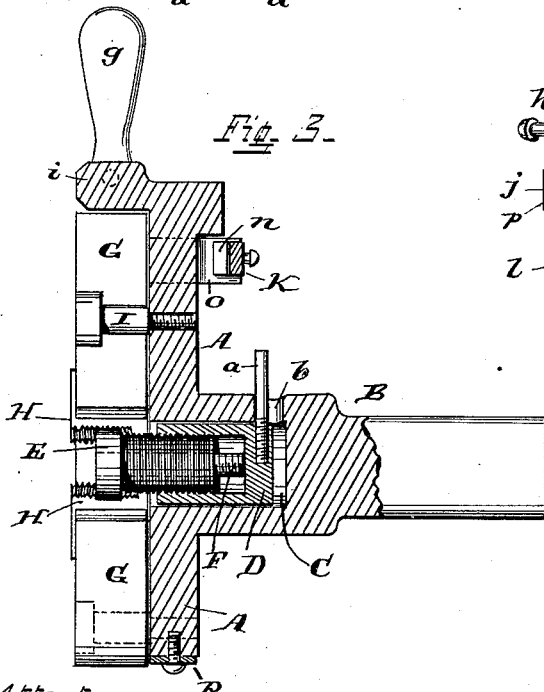
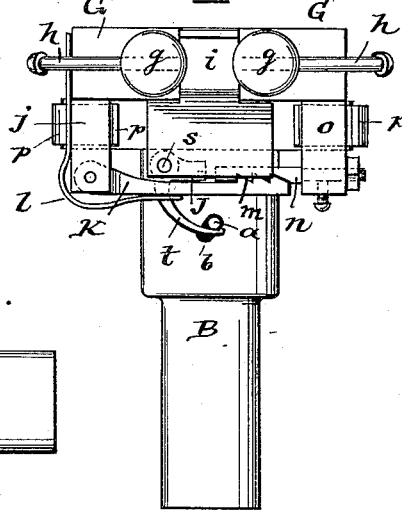


Fig. 4.



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AUTOMATIC SCREW-CUTTING DIE.

SPECIFICATION forming part of Letters Patent No. 427,903, dated May 13, 1890.

Application filed November 4, 1889. Serial No. 329,124. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PORTEOUS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Automatic Screw-Cutting Dies, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to that class of dies to be used as lathe-tools and inserted in a sliding head, usually a monitor, to be advanced up to and operate upon the work, which is secured to and revolved by the lathe-spindle.

It has for its object an improved construction by which, when the thread has been cut to the proper distance, the cutters are automatically thrown apart to release the work from their action.

The novelty of my invention will be hereinafter set forth, and distinctly pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of a die embodying my invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a side elevation of the same, partly in section. Fig. 4 is a plan view of the die.

The same letters of reference are used to indicate identical parts in all the figures.

The body of the tool is composed of a vertical face-plate A, from which projects horizontally a shank B, for insertion in the sliding head to which it is locked.

A central recess C is formed through the face-plate and back into the shank to receive a sliding and partially-turning thimble D, interiorly threaded and provided with a pin *a*, which projects up through an inclined slot *b*, Figs. 3 and 4, in the shank, as shown.

Screwed into the thimble D is a tubular plug E, interiorly threaded to engage a jam-screw F, which is inserted through it and bears at its rear end against the inner wall of the thimble to lock the plug when adjusted in the thimble, as will be readily understood.

Pivoted at their lower ends upon the front of the face-plate A, as at *d*, are two jaws G G', which, when brought together in a vertical position, have a central opening *e* coinci-

dent with the recess C in the face-plate and shank.

Secured in the jaws G G' and adjustable by set-screws *f* are four cutters H, projecting into the opening *e* and constituting the screw-cutting die.

While I have shown the cutters to be each independently adjustable, the die may be in two parts and of the shape usually employed in screw-cutting and with each half adjustable. The upper ends of the jaws G G' are preferably provided with grasping-handles *g*, to draw the jaws together after they have been automatically thrown apart to the position indicated by the dotted lines of Fig. 1, and *h h* are stop-rods secured to a lug *i* upon the face-plate and passed through perforations in the handles *g*, and having buttons or heads upon their outer ends to arrest the jaws when thrown open. I is a stop-screw secured in the face-plate, and serving to arrest the jaws in proper position when drawn together, as well as to support the upper ends of the jaws against torsion. Projecting from the rear upper side of the jaw G' is a lug *j*, in which is pivoted a latch *k*, normally pressed forward by a spring *l*, and having serrations or engaging points, which, when the jaws are brought together, engage with a similarly serrated or notched adjustable arm *n*, secured to a lug *o*, projecting from the upper rear side of the jaw G, in such manner as to hold the jaws firmly locked during the operation of the die. A spring *p*, secured to the under side of the face-plate, has its two ends extending up and engaging under tension the inner sides of the lugs *j o*.

While I have shown but one spring, it is evident that there may be two—one for each jaw.

Pivoted, as at *r*, to the shank B, and as at *s* to an upper rear projection of the face-plate, is a vertical trigger-piece J, having a lower rear extension or curved finger *t* engaging the rear side of the pin *a*.

When the jaws are locked together, the latch *k* bears against the trigger J, and the finger *t* bears against the pin *a*, holding it in the forward extremity of the slot *b*.

Now, when the tool is advanced to the revolving work and the thread has been cut to the proper distance, the further advance of

the tool causes the work to come in contact with the plug E, which by frictional contact is simultaneously turned and forced back thereby, and through the medium of the thimble F moves the pin *a* and vibrates the finger *t* and trigger-piece J, and thus forces the latch *k* out of engagement with the arm *n*, and thereby frees the jaws, which are at once thrown apart by the action of the spring *p* to the position shown by the dotted lines of Fig. 1. This throwing apart of the jaws frees the work from the cutters, and in cases where there is a shoulder at the end of the thread prevents the stripping or injury of the cut thread. By adjusting the plug E the jaws can be thrown apart for shorter or longer threads, as desired.

Having thus fully described my invention, I claim—

20 1. In a die, the combination, with a recessed face-plate and shank, of two pivoted jaws carrying the cutters and held together against spring-tension, a lock for said jaws, and a trigger for breaking the lock, operated by the

work to automatically release and throw the 25 jaws apart, substantially as described.

2. In a die, the combination, with a recessed face-plate and shank, of two pivoted jaws carrying the cutters, a lock to hold said jaws together in proper working position, a spring 30 put under tension by the locked jaws, a trigger for the lock, and a plug within the recess, provided with means for pressing the trigger to break the lock, substantially as described.

3. In a die, the combination and arrange- 35 ment of the face-plate A and shank B, provided with recess C, jaws G G', pivoted to the face-plate and carrying cutters H, the spring *p*, engaging said jaws, the notched bar *n* and spring-latch *k*, the trigger J, and the thimble 40 F, with its adjustable plug E, and pin *a*, engaging the trigger J, substantially as and for the purpose specified.

WM. PORTEOUS.

Witnesses:

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