(No Model.)

W. HUTCHESON.

SCREW CUTTING TOOL.

No. 453,811. Patented June 9, 1891.

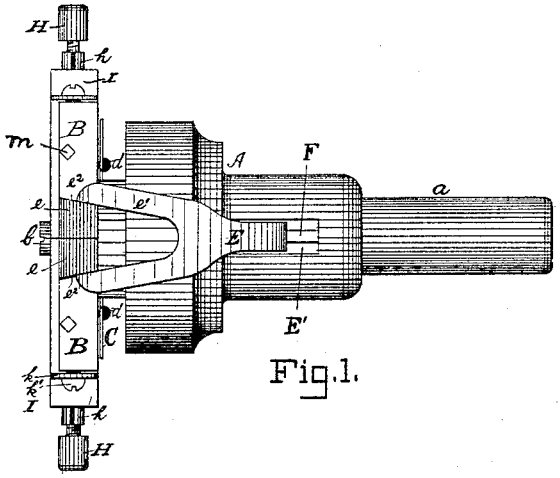

Fig. 1.

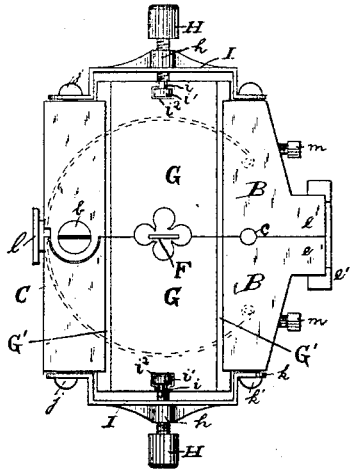

Fig. 4.

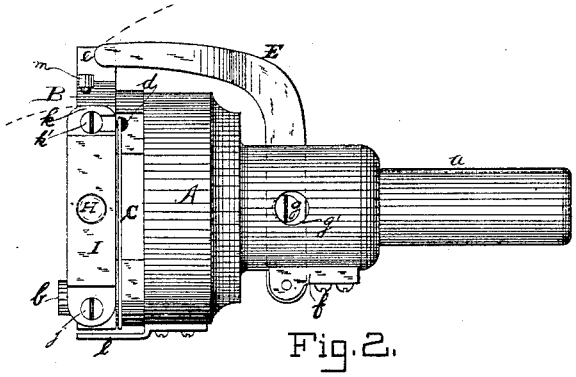

Fig. 2.

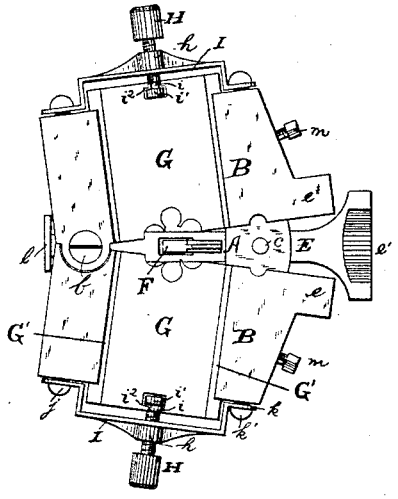

Fig. 5.

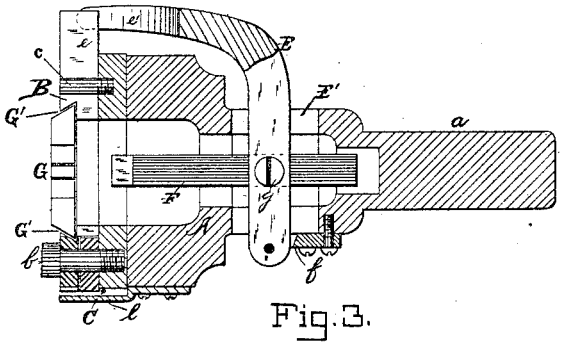

Fig. 3.

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SCREW-CUTTING TOOL.

SPECIFICATION forming part of Letters Patent No. 453,811, dated June 9, 1891.

Application filed October 28, 1890. Serial No. 369,555. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HUTCHESON, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Screw-Cutting Tools, of which the following is a specification.

My invention relates to an improvement in that class of screw-cutting tools in which the dies are automatically thrown off of the screw when the required length of thread has been cut; and the main object in view is to produce a more simple, cheap, and practical construction than has heretofore been known. I attain this result by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a top view of my improved tool; Fig. 2, a side elevation of the same; Fig. 3, a vertical longitudinal section; Fig. 4, an end view showing the die-holding jaws closed, and Fig. 5 a similar view showing the jaws thrown open.

Referring to the drawings, the letter A indicates the tubular stock of the tool, which is made with a solid reduced end *a*, which adapts it for insertion in one of the centers of a lathe. Across the outer end of this stock is arranged a pair of jaws B, which are hinged together by a bolt or screw *b*, which also extends into the lower part of the stock, and said jaws shut against each other around a stop-pin *c*, which projects from the face of the stock and limits the movement of the jaws, so that their line of juncture will come directly across the center of the stock and intersect the axis of the same. The jaws are actuated away from each other by a compression-spring C, which is secured at its opposite ends on pins *d*, which project from the rear sides of the jaws, and said spring extends around the outside of the stock, being substantially semicircular in general outline. The jaws are provided with extensions *e* of reduced width, which project beyond the stock, and said jaws are held closed by a curved lever E, having a forked or Y-shaped end *e'*, which is adapted to embrace the extensions *e*, which have tapering side faces e^2, and can thus be wedged in said Y, whereby the jaws are held tightly closed. The lever E is curved and extends through a lengthwise slot E', running vertically through the center of the stock, and thus across the bore of the same, and said lever has its fulcrum at its end in a cleat *f*, secured to the under side of the stock and extending over said slot. A straight bar F is contained within the bore of the stock, extending lengthwise therewith, and said bar runs through a corresponding opening in the lever C, and is adjustably secured to the latter by a set-screw *g*, which shows through a side opening *g'* in the stock, so that access may be had for lengthwise adjustment of the bar F. The end of the set-screw *g* impinges against the bar F. The latter projects into the mouth of the stock, coming directly behind the opening in the cutting-dies and constitutes a trigger, as hereinafter explained.

The spring-jaws before mentioned carry dies G, which are fitted in dovetailed crossways G' in said jaws, and each die is rendered adjustable therein to cut different-size screw-threads or for a deeper or lighter cut by means of a thumb-screw H, having a quick thread and operating in a box *h* at the center of a bridge I, spanning the dovetailed recess G'. The thumb-screw has a narrow neck *i* at its inner end, and beyond this an enlarged head *i'* is formed, and in the die a corresponding recess i^2 is provided, which extends back from the front face of said die, and is adapted to contain said head and reduced neck, whereby the manipulation of the thumb-screw causes the die to advance or recede. The bridge I is pivotally secured at one end to the jaw by a screw *j* and at its opposite end is formed into a hook *k*, which engages a pin *k'*, projecting from the jaw, and when thus secured the bridge extends across the end of the die, and the inner end of the thumb-screw H engages the recess in the latter; but if it is desired to remove the die G for the substitution of another or for any other purpose the hooked end *k* of the bridge can be readily disengaged from the pin *k'*, and said bridge can then be shifted on its pivot *j* to clear the die, when the latter can be easily removed. Suitable set-screws *m* will be provided at the side of the dovetailed recess to securely hold the dies in position after they have been adjusted. A stop-lug *l* projects from the side of the stock A adjacent to the pivot *b*, on which the jaws turn, and

prevents said jaws from swinging off the end of the stock.

The preferred construction of my device having been set forth, I will next proceed to describe its operation. During the thread-cutting process the die-carrying jaws B will be held tightly closed by the forked lever E in the manner previously explained; but the bar or trigger F has been so adjusted that when the desired length of thread has been cut the end of the screw which is being cut will abut against or press said trigger-bar and push it back, whereby the lever E will also be thrown back and its upper forked end *e'* released from the jaws, which will then spring open and instantly stop the cutting of the thread. By adjusting the bar or trigger F by means of the set-screw *g* any desired length of screw-thread can be cut, the action of the cutting-dies being automatically stopped at the proper moment.

It will be evident that changes which might suggest themselves to a skilled mechanic could be resorted to without departing from the spirit and scope of my invention, and hence the same is not limited to the exact construction shown.

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

1. In a screw-cutting tool, the combination of a suitable stock, spring-actuated pivotal jaws carrying cutting-dies and occupying a plane at right angles to the axis of said stock, a lever fulcrumed to the stock behind the said die-carrying jaws and adapted to engage the same and hold them together, and a trigger for automatically releasing said lever when the desired length of thread has been cut on the screw.

2. In a screw-cutting tool, the combination of a hollow stock, die-carrying jaws, spring-actuated away from each other and pivoted to occupy a plane at right angles to the axis of said stock, a forked lever to hold said jaws together, and a trigger connected to said lever and contained within the hollow stock with its end behind the cutting-dies, whereby the end of the screw which is being cut will press said trigger, and thereby release the jaws.

3. In a screw-cutting tool, the combination of a hollow stock, a pair of die-carrying jaws, spring-actuated away from each other and pivoted to said stock to occupy a plane at right angles to the axis of the latter and provided with suitable extensions, a lever having a forked end embracing said extensions to hold the jaws together, said lever extending crosswise of the hollow stock, and a trigger-bar adjustably secured to the lever and extending behind the cutting-dies, whereby the screw which is being cut will strike said trigger, and thereby release the jaws, in the manner described.

4. In a screw-cutting tool, the combination of a sliding cutting-die carried by a pivotal holder B, and a bridge attached to the die-holder and extending across the end of the die and carrying a thumb-screw which is loosely connected to the end of the cutting-die, as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM HUTCHESON.

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