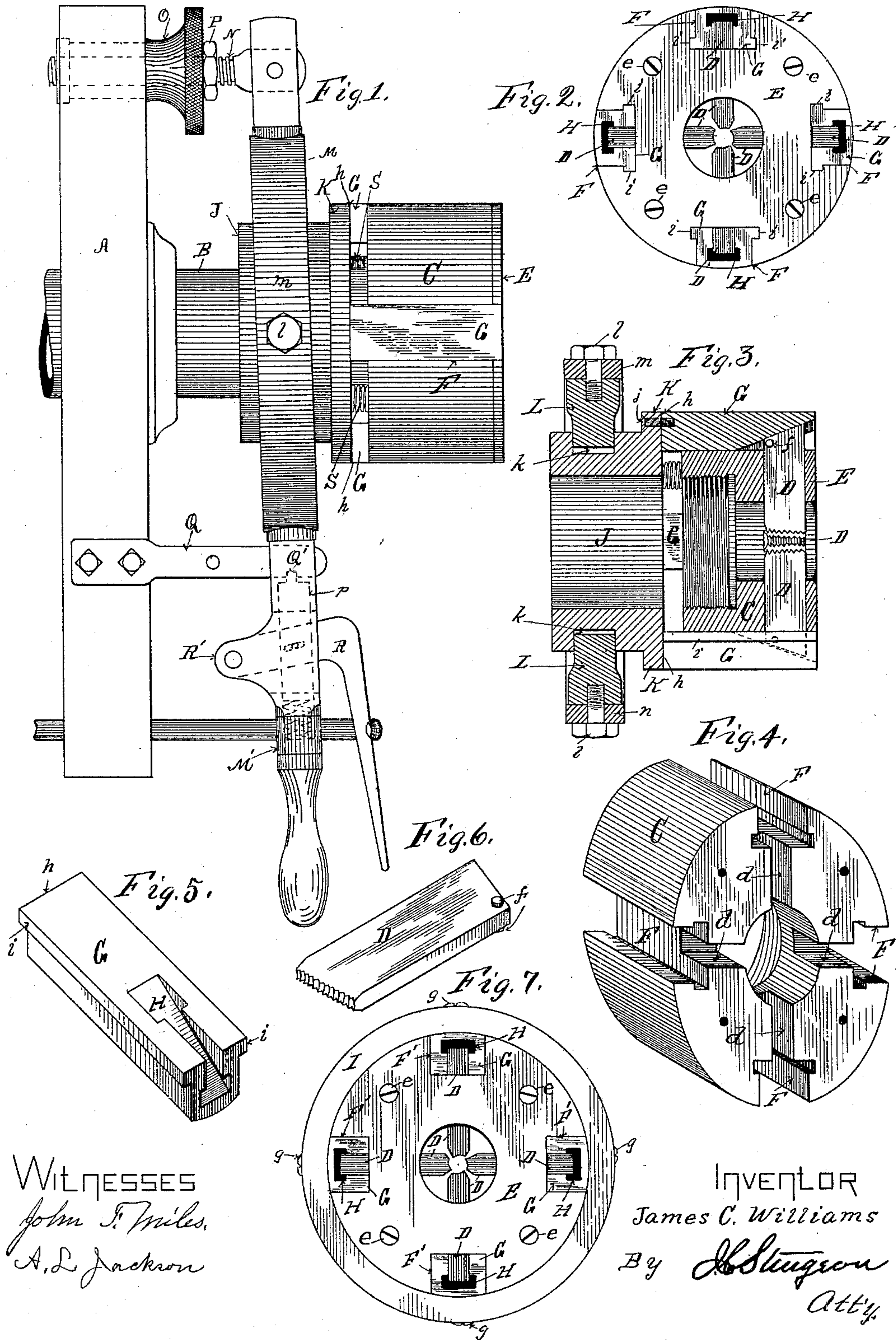


(No Model.)

J. C. WILLIAMS.
MACHINE FOR CUTTING THREADS ON BOLTS.

No. 434,898.

Patented Aug. 19, 1890.



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JAMES C. WILLIAMS, OF ERIE, PENNSYLVANIA, ASSIGNOR TO THE JARECKI MANUFACTURING COMPANY, LIMITED, OF SAME PLACE.

MACHINE FOR CUTTING THREADS ON BOLTS.

SPECIFICATION forming part of Letters Patent No. 434,898, dated August 19, 1890.

Application filed March 21, 1890. Serial No. 344,807. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. WILLIAMS, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Bolt-Thread Cutters; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention consists in the improvements in bolt-thread cutters hereinafter set forth and explained, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a head-block and head of a bolt-thread cutter embodying my improvements. Fig. 2 is an end elevation of the head of my improved bolt-thread cutter. Fig. 3 is a vertical longitudinal section of same. Fig. 4 is a perspective view of the head portion of my improved bolt-thread-cutter head. Fig. 5 is a perspective view of one of the die-operating guides used in my bolt-thread-cutter head. Fig. 6 is a perspective view of one of the dies used in my improved bolt-thread-cutter head. Fig. 7 is an end elevation of an alternative construction of my improved bolt-thread-cutter head.

Like letters refer to like parts in all of the figures.

In the construction of my improved bolt-thread-cutter head shown, A is one of the head-blocks, in which the shaft B of the head revolves. Upon the outer end of the shaft B (which shaft B is preferably made hollow throughout its entire length) is secured the head C of my improved bolt-thread-cutter head. This section of the head, being provided in its outer end with radial slots *d*, is adapted to receive radially-moving threading-dies D, which dies are secured in place by means of a face-plate E, secured to the outer end of the section C by means of tap-screws *e*. The section C is also provided with longitudinal T-shaped slots F, which cut the outer ends of the radial slots *d*, in which slots F longitudinally-moving die-operating guides G, provided

with longitudinal ribs *i*, operate. These die-operating guides G, I make preferably of tempered steel, and they are each provided with an inclined T-shaped slot H, formed in the under surface of the outer end of the guides, which T-shaped slots are adapted to receive the outer ends of the threading-dies D and engage with pins *f*, inserted transversely through the upper ends of the threading-dies D, so that the longitudinal movement of the die-operating guides G operates the threading-dies D radially in and out, as desired. To the rear ends *h* of the threading-guides G, I secure a loose collar J by means of tap-screws *j*, passing through a flange K on the collar J, into the ends *h* of the threading-die guides G, so that the collar J will move longitudinally on the shaft B in unison with the threading-die guides G. Between the section C of the head and the sliding collar J, I place small spiral springs S, which are compressed by moving the collar J outward, and which operate automatically to move the collar J back when released. In the collar J is an annular groove *k*, in which groove *k* a loose ring L operates. In opposite sides of the ring L are secured studs *l*, which engage with the opposite sides *m* and *n* of a cylindrical opening in the operating-lever M. The fulcrum of this lever M is in the form of a screw-threaded stud N, which passes through an internally-threaded sleeve O, secured in one end of the head-block A, so as to be rotated therein, by means whereof the fulcrum N can be adjusted in and out at pleasure, a lock-nut P on the stud N operating to secure it in place when properly adjusted.

To the opposite end of the head-block A is secured an arm Q, having a catch Q' thereon, which is adapted to engage a sliding spring-dog *p*, operated by means of a small bell-crank lever R, pivoted to a lug R' on the arm M' of the lever M.

In Fig. 7 I show an end elevation of an alternative construction of my improved bolt-thread-cutter head. In this construction I place a longitudinally-sliding ring I around the section C of the head, which ring I is secured to the periphery of the outer ends of the sliding threading-die guides G by means of tap-screws *g*, so that the threading-die guides G and ring I will move together on the

section C of the head. In this construction I can, if I so desire, do away with the T-shaped slots F on the head-section C, and also with the longitudinal ribs *i* on the threading-die guides G, and use plain slots F' and threading-die guides G, made without ribs *i* thereon, as the sliding ring I operates in this construction to retain the threading-die guides G in place in the slots F' in the head-section C.

In operation the movement of the arm M' of the lever M by the operator moves the collar J and the threading-die guides G longitudinally back and forth, which operates to move the threading-dies D in and out radially, as desired. The adjustment of the movement of the dies D is accomplished by moving the fulcrum N of the operating-lever M in and out such distances as may be desired by the rotation of the internally-threaded sleeve O, the catch in the arm Q at the opposite end of the lever M being fixed and stationary. Thus by means of the adjustment of the fulcrum N of the operating-lever M the dies D can be adjusted to operate on any-sized bolt desired within the scope of the machine.

I am aware that radially-moving dies have heretofore been made to operate in inclined T-shaped grooves in a sleeve sliding over the central section of a bolt-thread-cutter head. In my construction, however, I have done away with this sleeve, and also with the heads or shoes on the threading-dies, and am enabled to use a threading-die with simply a steel pin inserted transversely therein; and I also do away with the slotted sleeve heretofore employed for moving the threading-dies, and am enabled to use tempered steel threading-die guides, which in case of injury or wear can easily and quickly be replaced with others, thus greatly simplifying the construction and repair of machines of this character.

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

1. The combination, in a bolt-thread cutter, of a longitudinally and radially slotted head-section secured to the shaft, radially-moving threading-dies in the radial slots, and longitudinally-moving threading-die guides in the longitudinal slots in said head-section engaging and actuating said threading-dies, with a loose collar adapted to slide on the shaft back of said head-section, secured to the inner ends of said longitudinally-moving threading-die guides, substantially as and for the purpose set forth.

2. The combination, in a bolt-thread cutter, of a longitudinally-sliding collar mounted on the shaft back of the head and connected with the die-actuating guides of said cutter-head, and a lever pivoted to a loose annular ring on said collar for moving said collar longitudinally on the shaft, with an adjustable fulcrum on the machine-frame, to which one arm of said actuating-lever is pivoted, and a fixed catch adapted to engage the opposite arm of said actuating-lever, substantially as and for the purpose set forth.

3. In a bolt-thread cutter, the combination of a head-section C, having longitudinal T-shaped slots F therein, with the longitudinally-ribbed threading-die actuating-guides G, substantially as and for the purpose set forth.

4. In a bolt-thread cutter, the combination of a sliding collar J, adapted to be coupled to the die-actuating mechanism of the machine, a lever M for moving said collar J longitudinally on the shaft of the machine, with the fulcrum N of the lever M and the adjusting-sleeve O thereon, and the fixed catch Q', substantially as and for the purpose set forth.

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

JAMES C. WILLIAMS.

Witnesses:

WM. P. HAYES,
C. B. HAYES.