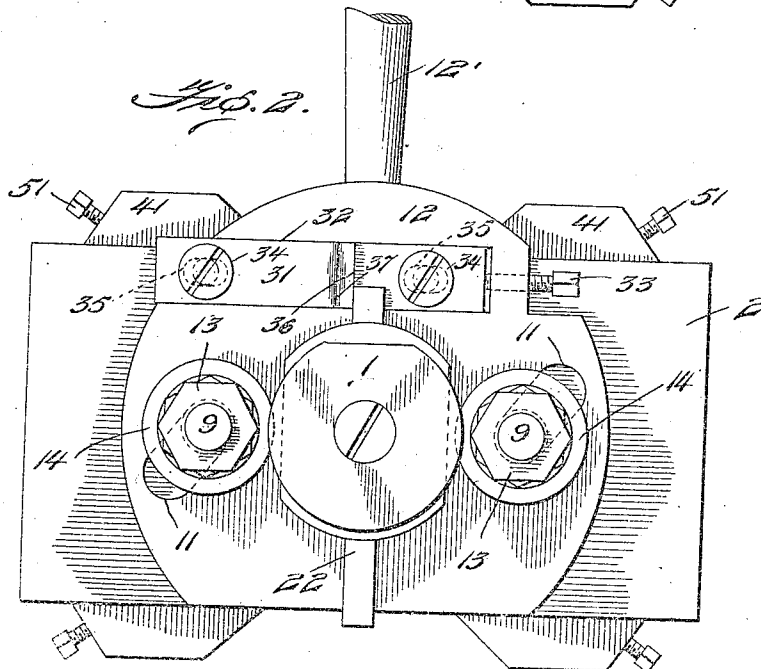
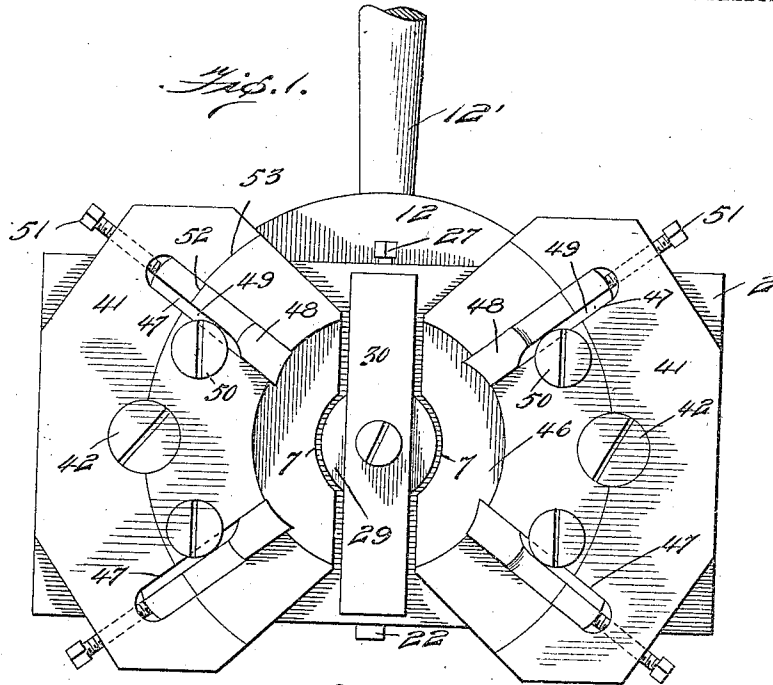


R. C. NUGENT.
SCREW CUTTING MACHINE.
APPLICATION FILED FEB. 10, 1908.

942,791.

Patented Dec. 7, 1909
3 SHEETS—SHEET 1.



WITNESSES:

B. M. Offutt,
M. E. Moore.

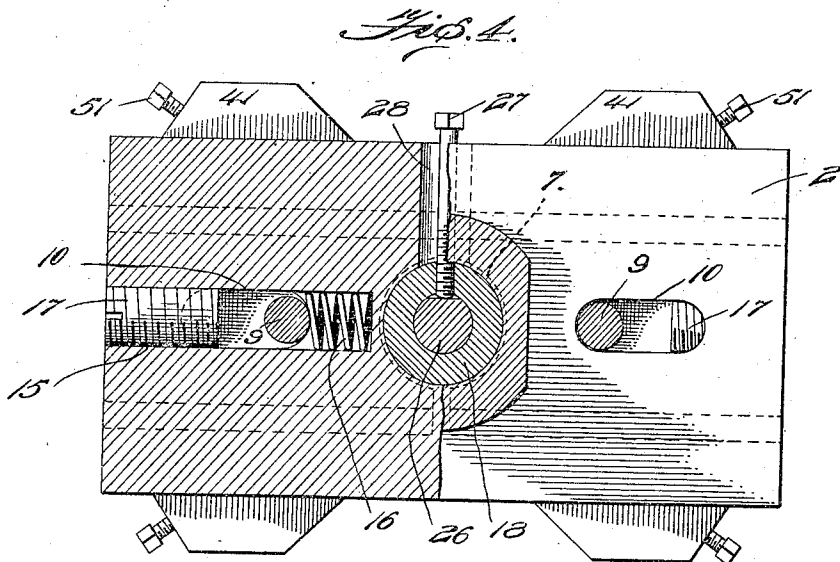
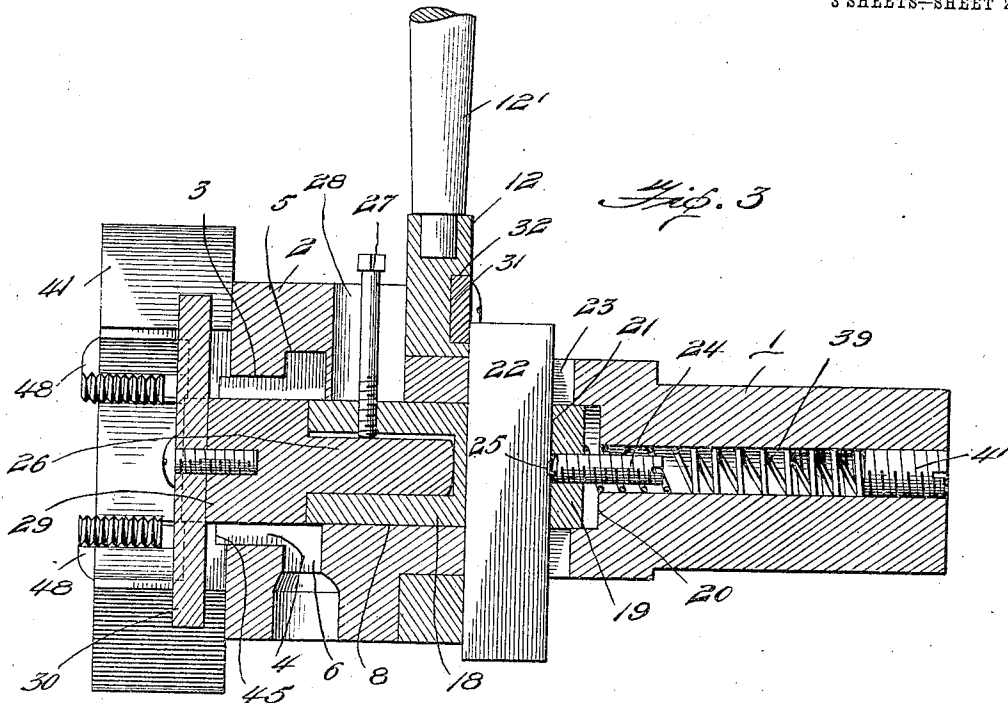
Richard C. Nugent
INVENTOR.

J. P. Moore
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Richard C. Nugent.
INVENTOR.

WITNESSES:

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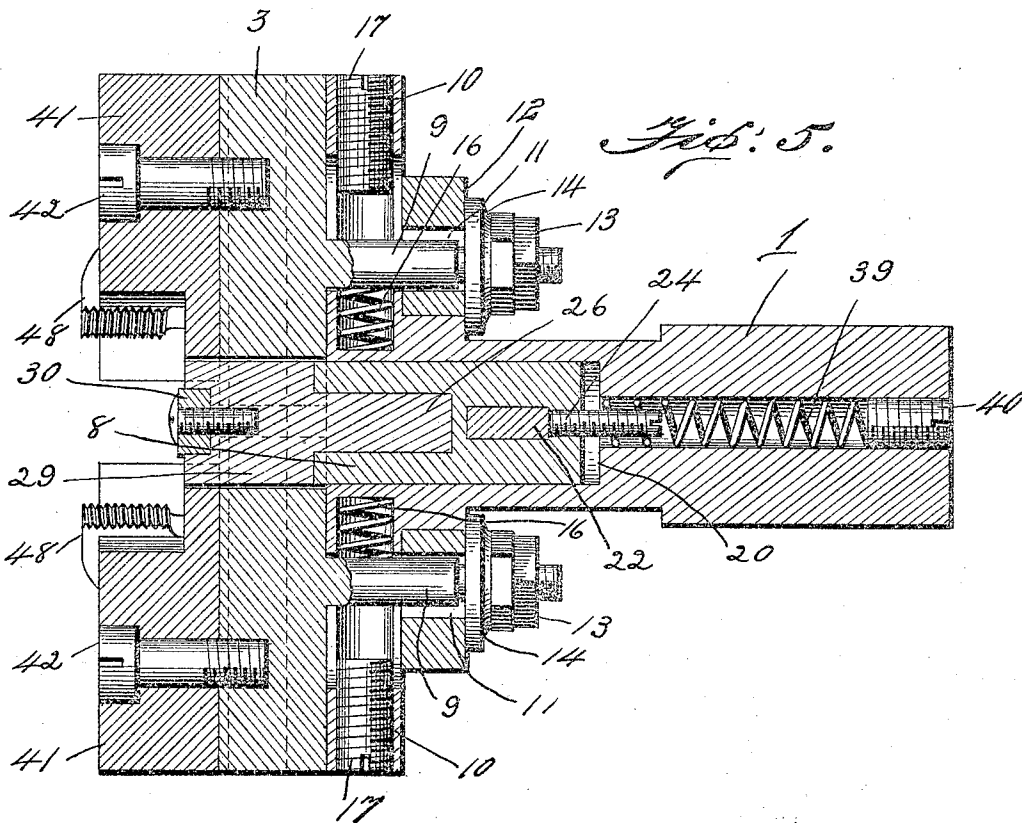
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3 SHEETS—SHEET 3.



Witnesses
B. M. Offutt
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 Attorney

UNITED STATES PATENT OFFICE.

RICHARD C. NUGENT, OF CINCINNATI, OHIO, ASSIGNOR TO THE NUGENT TOOL COMPANY, OF CINCINNATI, OHIO.

SCREW-CUTTING MACHINE.

942,791.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed February 10, 1908. Serial No. 415,113.

To all whom it may concern:

Be it known that I, RICHARD C. NUGENT, 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 Screw-Cutting Machines, of which the following is a specification.

My invention relates to improvements in screw-cutting machines, and refers in particular to a device adapted for application to monitor lathes and the like machines for threading different kinds of work.

One object of my invention is the provision of a thread cutting machine which may readily be adapted for various kinds of work and which when the proper length of screw threads have been cut will be automatically opened to release the work from the dies.

Another object of my invention is the provision of a screw cutting device of strong, simple and practical construction, which is adjustable as to all its parts so as to give a wide range of usage, and which will be efficient for all purposes.

With the above and other objects in view, my invention comprises a head or supporting member, jaws slidably mounted therein and carrying coacting dies or cutters, means tending to force the jaws apart and a latch to lock the jaws set or closed, and an adjustable member adapted to be contacted by the work to release the latch and allow the jaws to be spread or opened.

My invention further consists of a device of the character set forth embodying certain other novel features of construction, combination and arrangement of parts substantially as disclosed herein and as illustrated in the accompanying drawings, in which:

Figure 1 is a front or face view of my improved screw cutting device. Fig. 2 is a rear end elevation of the same. Fig. 3 is a longitudinal sectional view of the invention taken in a vertical plane. Fig. 4 is a broken sectional view of the head. Fig. 5 represents a longitudinal sectional view of the device taken on a plane at right angles to that of Fig. 3.

In the drawings: the numeral 1, designates the shank or spindle of the device by means of which it is usually applied to a lathe or other metal working machine. The shank has a transversely disposed head or support-

ing member 2, at its forward end, and the head has an open grooveway 3, therein to receive the slidable jaw members 4. The base of the grooveway is widened out as at 5, to receive the complementary ribs 6, on the jaw slides so as to prevent displacement of the slides while allowing transverse sliding movement thereof. The opposing inner ends of the slides are concaved as at 7, so as to correspond to the bore 8, in the head and shank of the device. Pins or bolts 9, extend from the back of the jaw slides through elongated openings 10, in the rear face of the head, and the extended plain portion of the bolts also pass through the eccentric slots 11, in the annular jaw closing member 12. This jaw closing member or eccentric plate is rotatably confined on the plain portion of the shank resting against the rear face of the head. Nuts 13, on the outer threaded ends of the bolts hold the eccentric plate in position, and washers 14, serve to reduce friction between the nuts and the surface of the plate and also prevent loosening of the nuts. Radial pockets 15, are formed in the head parallel to the grooveway therein and spiral springs 16, are confined in said pockets and bear against the inward side of the pins on the slides, thereby tending to force the slides outward and apart. Set screws 17, are entered through the outer ends of the head in line with the spring-receiving pockets to serve as abutments for the bolts or pins on the back of the slides, to limit the outward throw of the slides. The eccentric plate is provided with a handle 18, by means of which the plate may be given a partial rotation to force the slides toward each other against the tension of the coil springs.

A sleeve or thimble 18, having a closed rear end 19, is loosely confined in the bore of the head and shank, and an internal shoulder 20, is provided in the bore of the shank to limit the inward movement of the sleeve. The sleeve has a transverse opening 21, therethrough to receive the transverse key 22, which plays in the elongated slot or opening 23, formed transversely through the shank. This key is secured in the sleeve by means of the set screw 24, in the end wall of the sleeve which engages a seat or, recess 25, in the edge of the key. The shank of the bolt 26, is received in the sleeve and is secured at any adjusted posi-

tion therein by means of the set screw 27, which set screw is received in and passes up through the slot 28, in the die head so as to be readily accessible for adjusting the
 5 bolt 26. This bolt has a head 29, at its outer protruding end which carries the transverse stop piece 30, which is adapted to be contacted by the work after the threads have been cut thereon. A latch member 31,
 10 is seated in the tangential slot or groove 32, on the back of the eccentric annulus, and is adjusted therein by means of the screw 33, which bears on the end of the latch, and the latch is held in the adjusted position by
 15 means of the clamping screws 34, which bear in the longitudinal slots 35, formed in the body of the latch. The latch has a lug 36, on the face thereof adapted to be engaged by and interlock with the key to lock the
 20 annulus to hold the jaws closed, and the corresponding inactive edges of the lug and key are beveled as at 37, to cause the key to ride up over the lug and interlock with the same when the annulus is rotated to close the
 25 die. The spring 39, in the bore of the spindle or shank bears against the closed end of the sleeve therein, thereby holding the key in engagement with the latch and forcing the stop piece to the outermost position.
 30 The spring is held in the bore by means of the screw bolt 40, and the tension of the said spring may be adjusted by means of this screw. Jaw blocks 41, are carried by each of the slides and are secured to the slides
 35 by means of screws 42, or other suitable fastenings. The slides preferably project slightly beyond the face of the head block and the jaws are each channeled to fit down over the edge of the slides as shown, so that
 40 there is no danger of twisting the jaws upon the slides.

The opposing faces of the jaws are radially countersunk at 46, to provide plenty of clearance for the work, and radial grooves
 45 47, are provided in the jaws diverging outwardly from the countersunk inner portion thereof, in which the cutters or dies 48, are seated. The cutters are each provided with a shoulder 49, along one edge upon which
 50 the heads of the securing screws 50, bear, and in this way the cutters are held in their seats and clamped in their adjusted position. The heads of the securing screws are thus countersunk in the material of the jaws and
 55 the surface of the jaws are not broken by any protruding parts. The cutters are adjusted by means of the set bolts 51, which bear upon the ends of the cutters, and as an aid to the proper adjustment of the cutters
 60 they may be each provided with a notch 52, adapted to register with the corresponding circular mark 53, on the face of the jaws.

In operation, the spindle of the die is placed in the head stock or tail stock of the
 65 lathe, according as to whether the die or

the work is to be revolved, or it may be mounted upon any other machine of a like character. The jaws being closed, the work is acted upon by the cutters until the desired length of cut has been made, and the
 70 stop piece is so adjusted that at the end of such cut, the stop piece is contacted by the work and is forced inward against the tension of the spring in the bore of the spindle. This inward movement of the stop
 75 piece frees the key from engagement by the latch and the eccentric annulus is then free to revolve. The springs in the head then force the slides outward and this movement causes a partial rotation of the an-
 80 nulus by reason of the eccentric connection with the slides. The jaws are now open and the work may be readily removed. To close the jaws to the set position, the eccentric annulus is given a twist backward which
 85 draws the jaws together again and the key then interlocks with the latch member and locks the part set. The depth of the threads may be governed by adjusting the cutters in their radial seats, and the length of the
 90 cut or threaded portion is regulated by adjusting the stop piece outward or inward according to requirements. If so desired, instead of using the die as a machine tool,
 95 it may be used as a hand tool by providing a pair of handles for the head, by means of which the die may be rotated upon the work.

From the foregoing description taken in connection with the drawings it will be evident that I have produced an automatic
 100 collapsible die which is thoroughly practical, and which accomplishes all the objects herein aimed at.

I claim:

1. A collapsible die comprising a spindle
 105 and a head carried thereby, the head having a grooveway therein, die supporting slides held in said grooveway, pins carried by the slides and projecting rearwardly through slots in the head, pockets being
 110 formed in the head and springs seated in said pockets bearing against the slide pins to force the slides apart, abutment screws to be engaged by the pins to limit the opening movement of the slides, an annulus mounted
 115 on the spindle in rear of the head having cam slots receiving the slide pins, a latch on the annulus, an adjustable stop member mounted in the bore of the spindle, a transverse key carried by the same to engage the
 120 latch on the annulus to lock the annulus and hold the slides closed, a spring adjustably held in the bore of the spindle to hold the key in engagement with the latch, and cutters adjustably mounted on the slides.
 125

2. A die comprising a head having a grooveway therein, die supporting slides held in the grooveway, pins on the slides projecting rearwardly through the head, springs seated in the head and bearing out-
 130

wardly against the heads to force the slides
outward, abutments to be engaged by the
pins to limit the outward movement of the
slides, an annulus rotatably mounted in rear
5 of the head and having cam slots receiving
the pins, a latch member carried by the an-
nulus, an adjustable stop mounted in the
head, a key carried by the same to engage
the latch, a spring to hold the key in en-

gagement with the latch, and cutters mount- 10
ed in the slides.

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

RICHARD C. NUGENT.

Witnesses:

JAMES I. STEPHENSON,
PAUL B. MARFIELD.