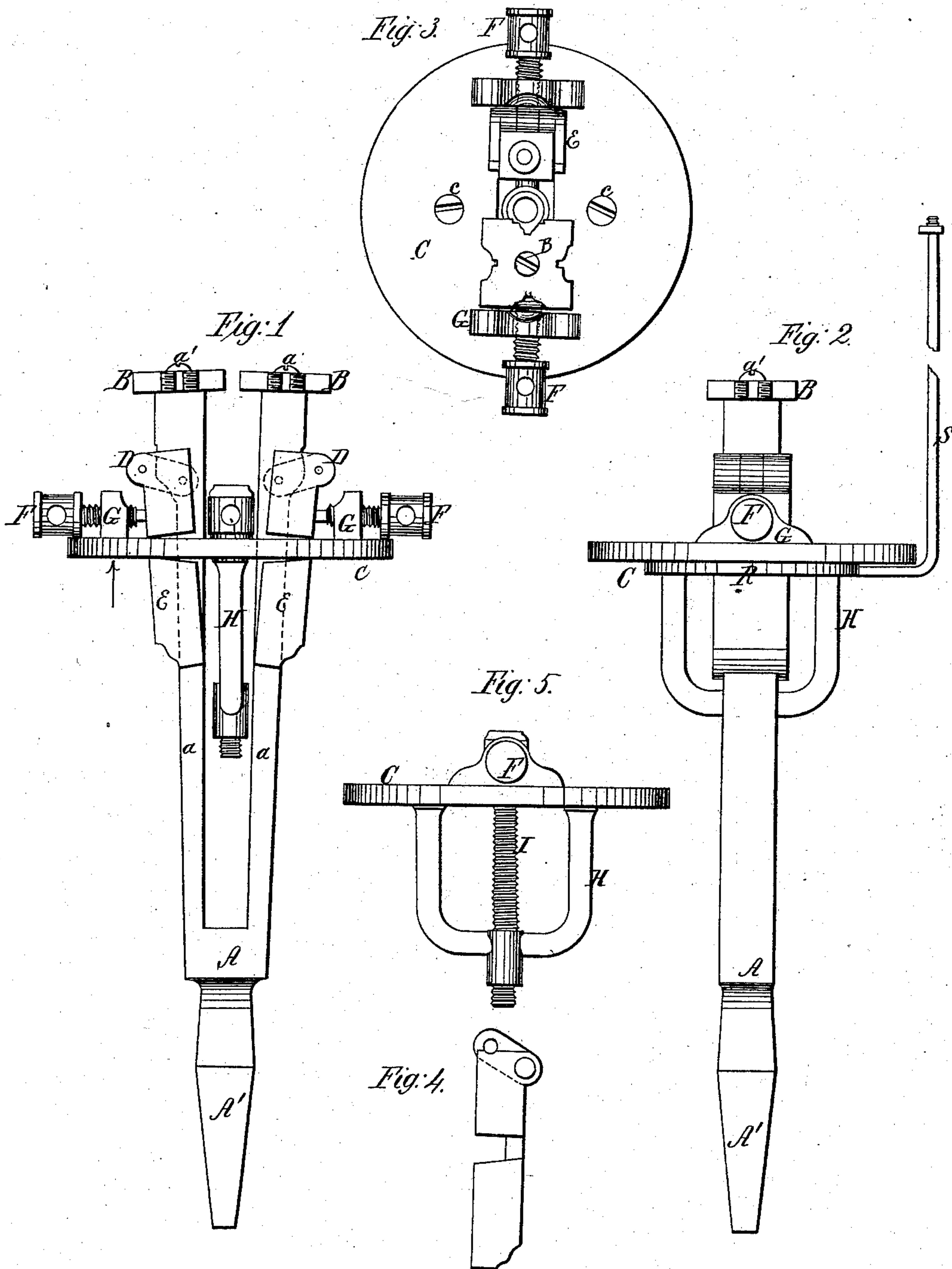


W. N. ADAMS.  
Screw Cutting Machine.

No. 17,187.

Patented May 5, 1857.





# UNITED STATES PATENT OFFICE.

WILLIAM N. ADAMS, OF OLMSTED, OHIO.

## SCREW-CUTTING MACHINE.

Specification of Letters Patent No. 17,187, dated May 5, 1857.

*To all whom it may concern:*

Be it known that I, WILLIAM N. ADAMS, of Olmsted, in the county of Cuyahoga and State of Ohio, have invented new and useful  
5 Improvements in Screw-Cutting Instruments; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings and to letters of reference marked thereon.

The nature of my invention consists in the construction of an instrument, which can be attached to the spindle of a common  
15 turning lathe, and formed in such a manner that the burs or cutters are easily adjustable at certain distances, and continue in such relation while in the act of cutting the thread upon the screwbolt, of any desirable length, when they are released from  
20 contact with the screw, thus allowing the bolt to be withdrawn without reversing the direction of the rotation of the instrument.

Figure 1, is a side view of the instrument.  
25 Fig. 2 is an edge view, and Fig. 3, an end view.

Like letters refer to like parts.

The main part of the instrument consists of a piece of wrought steel, or other suitable metal, and is represented by A, Figs.  
30 1 and 2, having a shank A' (which fits the spindle of the lathe,) and two branches seen at *a a* Fig. 1. The two extremities of these branches are somewhat enlarged, and are  
35 armed with burs or cutters B, made of tempered steel, and having segments of threads on four sides for cutting the thread on the screw bolt. These burs B, are fitted to the extremities of the branches *a*, and are  
40 secured by a screw *a'*. In Fig. 3, but one of these burs is shown in place, the other being removed to show the end of the bar *a*, and other parts hereafter to be described.

The elasticity of the two branches *a, a*,  
45 and their distance from each other when not compressed, is such, that the burs B, B, are far enough apart, to admit the end of the bolt, freely; or to allow the screw bolt to be removed without contact with the  
50 threads of the burs B, B. It is therefore necessary in cutting a thread upon the screw bolt, to bring the parts or branches *a, a*, into closer proximity during the act of cutting, and to hold them firmly in their  
55 positions during their action. This is accomplished by means of the disk C, and the

lever D Fig. 1, and the sliding fulcrum E. These parts are also shown in Fig. 4. The sliding fulcrum E, fits the sides of the branches *a, a*. To the forward end of these,  
60 is attached by a pin or hinge joint the lever D, whose opposite end is in like manner attached to the branch *a*. The slot or mortise in these arms admitting the lever D, are sufficiently extended to allow the lever D, to  
65 pass the dead center, when the sliding fulcrum is moved forward for the purpose of bringing the branches *a, a*, and the burs B, B, nearer together, during the act of cutting the thread upon the screw bolt.  
70 The sliding fulcrums E, E, are made adjustable in relation to their distances from each other, and governing also the distance of the burs, B, B, during the act of cutting by means of the set screws F, F, passing  
75 through the projections G, G, upon the disk C.

The disk C, in its movement backward and forward, carries with it the sliding fulcrum E, E, and the outer end of the levers D, D, the sliding fulcrum being attached to  
80 the disk C, by means of notches in the sides of the sliding fulcrum.

For the purpose of securing uniformity in the length of the thread upon the screw bolt, I attach a U shaped piece H, Figs. 1,  
85 2 and 5, to the back side of the disk C, by means of the screws *c, c*. This piece H, is placed between the arms *a, a*, and at its helix or bend, carries a screw I, the head of which reaches the plane of the disk C and  
90 occupying its center. This screw H, may by being turned in either direction, be made to regulate the distance between the burs B, B, and its outer end, and consequently, when thus set, will be crowded backward  
95 by the screw bolt that is being cut, coming into contact with its head, whereby the disk C, and the sliding fulcrum E, are pushed backward, carrying with them the levers D, D, past their dead centers, the  
100 elasticity of the branches *a, a*, to the extremities of which the burs B, B, are attached, separates these burs, and thus releases the screw bolt. The burs B, B, are so constructed that the four edges can be  
105 used for cutting the thread of the screw bolts, by removing the screw *a'*, and turning the matched parts together, and then replacing the screw.

In Fig. 2, R represents a ring that en-  
110 circles the whole instrument just back of the disk C. This ring has a rod S, at right



angles to its plane, to which is attached a clasp or clutch that holds the bolt while being cut, and when the bolt is withdrawn, brings the disk C, forward and thus closes the burs B, B, ready to cut the thread upon another bolt.

The whole instrument is attached to the spindle of a lathe, by means of the shank A', and the ring R moved forward to close the burs, a bolt is placed in the clasp, and the instrument caused to rotate and the bolt rod, caused to enter between the burs B, B, by which means the thread is cut upon the bolt; as the bolt passes forward between the burs, its end is brought into contact with the head of the screw I, the pressure upon which, carries the disk C backward, reverses the position of the levers D, D,

separates the burs B, B, and thus releases the newly cut screw bolt. Then by bringing forward the disk C, in the direction of the arrow, the several parts are brought into proper position for cutting another bolt.

What I claim as my invention is—

The construction of the branched body A, the disk C, sliding fulcrums E, E, levers D, D, and adjustable releasing screw I, combined in such a manner as to gage the size of screw and depth of screw-thread, and to release the screw as soon as cut to a determinate extent, substantially as described.

WILLIAM N. ADAMS.

Witnesses:

A. H. HOUSE,  
WM. BUSBY.