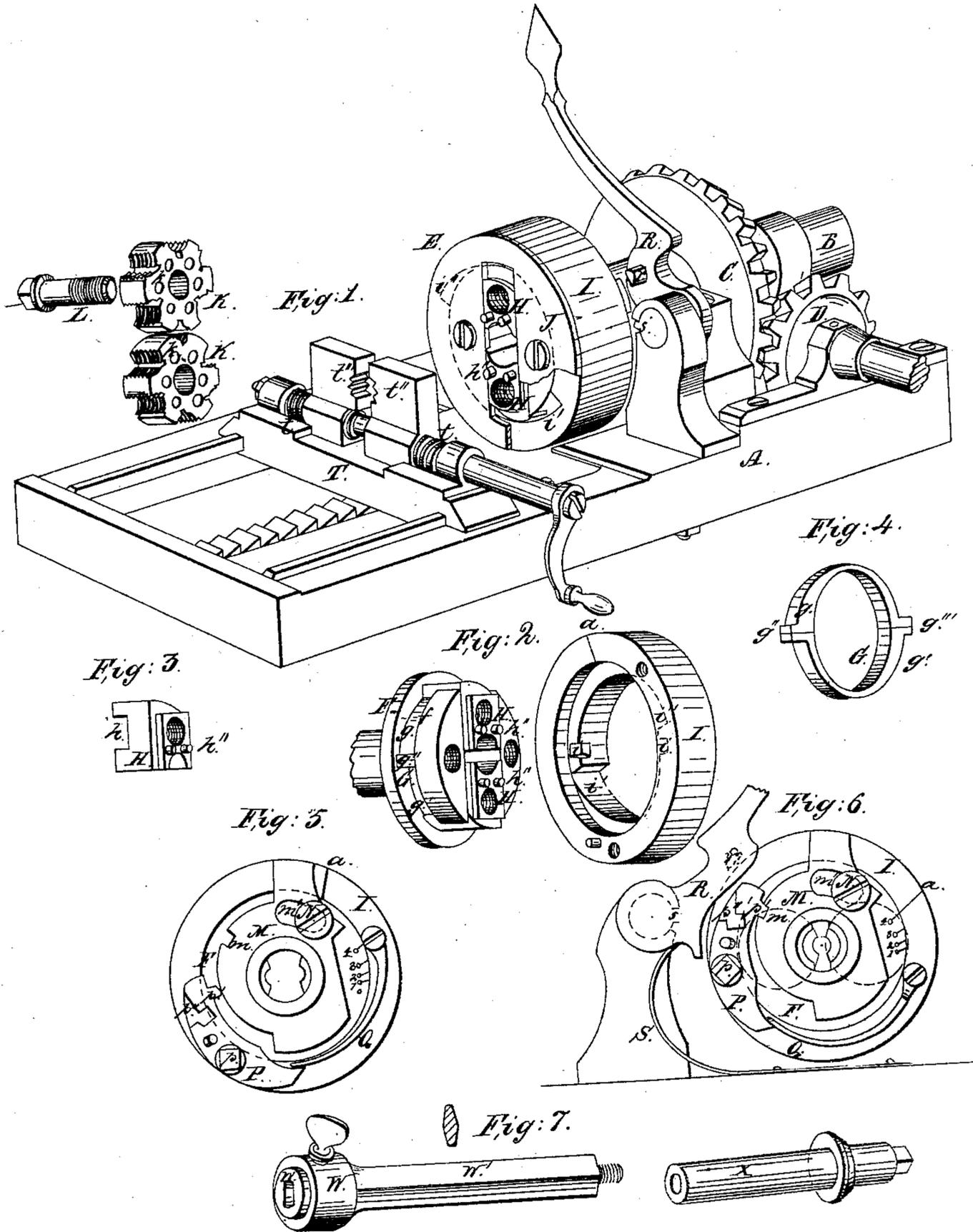


E. Royon.

Cutting Screws.

N^o 16,351.

Patented Apr. 7, 1868.



Witnesses:

H. G. Hebbes
J. H. Layman

Inventor:

Edwards Royon
Roy & Knight Bros
110 1/2 St

United States Patent Office.

EDWARD ROYON, OF PIQUA, OHIO.

Letters Patent No. 76,351, dated April 7, 1868.

IMPROVEMENT IN SCREW-CUTTING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN:

Be it known that I, EDWARD ROYON, of Piqua, Miami county, and State of Ohio, have invented a certain new and useful Screw-Cutting Machine; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to machines for cutting screw-threaded bolts and nuts, and consists, first, in constructing a set of dies in disk form, capable of rotation, if necessary, and cut die-form in several places (differing in size) on the periphery, for the purpose of adapting one set of dies to cut several sizes of bolts; second, in a peculiar construction and arrangement of the die-chuck, by which the jaws to which the dies are attached can be expanded and contracted by the partial rotation of a part of the chuck, and be firmly retained in any desired position for the required depth of cut, the retaining-devices being capable of nice adjustment for different depths of cut; third, in an improved device for holding "taps" for tapping nuts, &c. In the accompanying drawings—

Figure 1 is a perspective view of a machine complete, embodying my invention, the dies and bolts for same being detached as shown.

Figures 2, 3, and 4, are detached views of portions of the die-chuck.

Figure 5 is a rear view of the chuck, with the jaws open.

Figure 6 is a rear view of the chuck, with the jaws closed, showing also the device for releasing the retaining-mechanism.

Figure 7 exhibits the device for holding the taps.

A is the frame of the machine; B the hollow shaft, C D the driving-gear, and E the die-chuck, composed of the following parts, to wit, a permanently-attached head, F, diametrically-divided clip G, concentric inside, and having opposing eccentric-arcs $g g'$ outside, sliding jaws H, revolving ring I, (provided with notches i), and opposite eccentric-arcs $i' i''$, outside plate J, dies K, and bolt L. A groove, f , is turned in the head F for the reception of the clip G, which rotates within the notches h of the jaws H, the lips $g'' g'''$ fitting into the notches i of the revolving ring. The ends of the jaws H are eccentrically curved to fit against the corresponding cuttings $i' i''$ of the ring. By a partial rotation of the ring I, the jaws and dies are contracted or expanded at will, the arcs $i' i''$ serving to force the jaws in, and by a reversal of the clip G, as it is carried round with the ring, serving to force them out. The projecting pins b'' , fitting into corresponding holes k in the dies K, serve to adjust the dies, and the bolts L to secure them to the jaws.

It will be seen that the dies can be turned round to present different-sized cuttings for different-sized bolts. The back of the ring I is notched, a , and the head F is graduated, 1 2 3 4, to indicate the depth of cut. A plate, M, notched at m and slotted at m' , is fitted over the shaft B. A screw, N, is tapped into the head F, to receive the plate in any desired position, and a tumbler, P, is pivoted at p to the ring I, the lip p' being adapted to fit the notch m . The tumbler is forced against the plate M by the action of spring Q. When the ring I is revolved, the tumbler slips into the notch m , and the jaws are retained in that position until the bolt is cut. To release this mechanism, I provide an incline-faced projection, p'' , on the tumbler, which, on depression of lever R, engages the projection P, when, by a slight rotation of shaft B, the tumbler is forced from the notch, and the jaws H can be again expanded. By the adjustment of the plate M in the slot m , the tumbler can be made to drop into the notch m when the notch a is at either 1, 2, 3, or 4.

The lever R is kept up by a spring, S, and confined to a definite range of action by the lip s on its shaft. T is the sliding carriage, adapted to hold bolts or nuts. It is fitted with right and left-hand screws $t t'$, to operate the jaws $t'' t'''$. W is the socket for holding taps, having bushes w for different-sized taps. The shank W' slips into the hollow shaft B, and is confined by the chuck-jaws H, the nut x , when screwed to the shank W', serving to prevent displacement. By means of the devices $w w w'$, x , I enable my machine to be used for tapping nuts.

I claim herein as new, and of my invention—

1. As herein arranged and for the purpose explained, the hollow die-chuck E, having the permanent head F, clip G, with opposite eccentric-arcs $g g'$, sliding jaws H, notched revolving ring I, eccentric $i' i''$, and plate J.

2. The combination of the hollow shaft B, die-chuck E, jaws H, adjustable dies K, and bolts L.
3. The notched and adjustable plate M, and tightening-screw N, in combination with the tumbler P, ring I, and spring Q.
4. I claim, in combination with the screw-threading machine herein described, the right and left screw *t t'*, jaws *t'' t'''*, socket W, and nut X, all arranged as set forth.

In testimony of which invention, I hereunto set my hand.

Witnesses:

GEO. H. KNIGHT,

JAMES H. LAYMAN.

EDWARD ROYON.