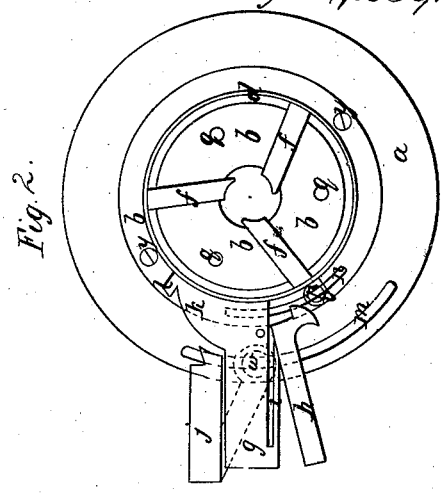
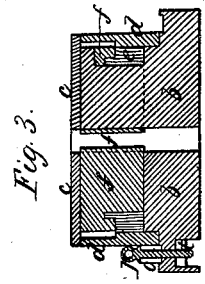
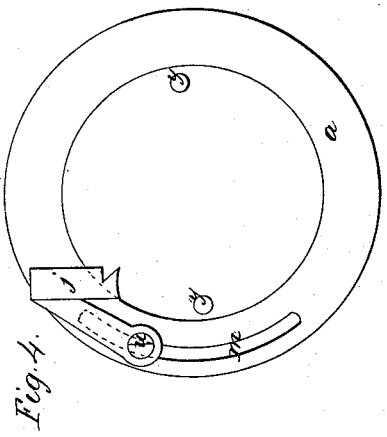
Nuttall & Kirkpatrick.

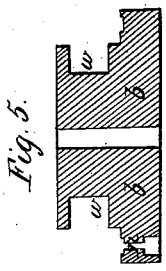
Cutting Screws.

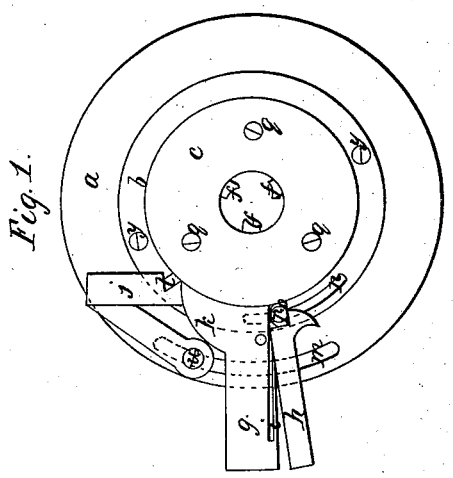
No. 24,152. Patented May 24, 1859.

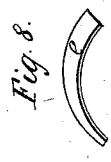


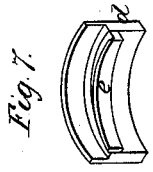


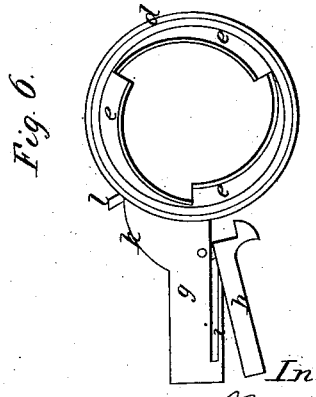




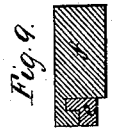


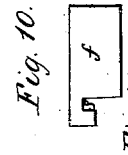






Witnesses.
James J. Johnston
George P. Steck





Inventor;
Richard Nuttall.
John Kirkpatrick

UNITED STATES PATENT OFFICE.

R. NUTTALL AND JNO. KIRKPATRICK, OF ALLEGHENY, PENNSYLVANIA.

CHUCK FOR SCREW-CUTTING.

Specification of Letters Patent No. 24,152, dated May 24, 1859.

To all whom it may concern:

Be it known that we, RICHARD NUTALL and JOHN KIRKPATRICK, of the city and county of Allegheny, in the State of Pennsylvania, have invented a new and Improved Chuck for Screw-Cutting; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, similar letters referring to similar parts.

The nature of our invention consists in furnishing the inside of a ring with a recess and cams, and the outside with a spring catch, lever, cam, and locking stud, said ring being used in combination with a die box, cap, movable stud and an eccentric lever which is placed on the face plate of the lathe or running head of the machine, the whole being arranged combined, and constructed in the manner hereinafter described.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

In the accompanying drawings Figure 1, is a top or face view of the chuck. Fig. 2, is a top or face view with the cap removed, showing the die box and cutting dies. Fig. 3, is a sectional view of the chuck. Fig. 4, is a top or face view of a face plate furnished with the eccentric lever. Fig. 5, is a sectional view of the die box. Fig. 6, is a top view of the ring which is furnished on the inside with three cams and on the outside with the spring catch, lever, cam, and locking stud. Fig. 7, is a sectional view of the ring represented in Fig. 6. Fig. 8, is a top view of one of the cams which are placed on the inside of the ring represented in Fig. 6. Fig. 9, is a side view of one of the cutting dies and an end view of one of the cams and represents them in proper position. Fig. 10, is a side view of the cutting die. Fig. 11, is an end view of the cams.

(*a*) is the face plate which is placed on the running head of the lathe or machine, this plate is furnished with an eccentric lever (*j*) which is held to its place in the slot (*m*) by the bolt (*u*).

(*b*) is the die box which is furnished with a recess and slot (*n*) for the regulating stud, which consists of a bolt or pin (*p*), cylinder (*o*), and nut (*r*). By making the regulating in three parts as represented in Fig. (3), it can be changed with ease and speed from one point to another, and will not be liable to slip or move from the desired position in the slot (*n*) when tightening or securing it, which is done by simply turning the pin (*p*). The die box (*b*) is also furnished with a chamber (*w*) which extends around the whole circumference of the die box and is used for the cams (*e*) to travel in. The die box is also furnished with suitable chambers for the cutting dies (*f*), which are plainly shown in Figs. 2 and 3.

(*d*) is a ring which fits around the die box (*b*), the inside of this ring is furnished with cams (*e*) and the outside with a spring catch (*h*), lever (*g*), cam (*k*), and locking stud (*l*). It will be observed that a portion of the inside of the ring is removed or cut away to make room for the outer end of the cutting dies. The cams (*e*) are placed in the chambers (*w*) of the die box, the ring (*d*) is then set to its place on the die box, the cams are then secured to the ring by means of screws which pass through the ring into the cams. It will be observed that by placing the cams (*e*) in chambers (*w*) and by securing them to the ring, it will be held to its place on the die box. The cutting dies (*f*) are then placed in their chambers in the die box and held to their place by means of cap (*c*) which is secured to the die box by the screws (*q*). When the die box is furnished with the ring and its parts, the cutting dies and cap, it is then secured to the face plate (*a*) by means of the bolts or screws (*y*). The cutting dies are moved out from the work by the arrangement of the projection (*v*) on the cams (*e*) and the notch (*s*) in the cutting dies (*f*); the arrangement of the projection (*v*) and notch (*s*) is plainly shown in Figs. 3 and 9, which also shows that the cams act direct on the end of the cutting dies in bringing them up to their work.

The operation of our improvement is as follows: Having all the parts properly arranged as represented in Figs. 1, 2 and 3, the regulating stud is then set so as to allow the cutting dies to cut the desired depth of thread; the lever (*g*) is then drawn forward until the catch (*h*) grasps the regulating stud, (the catch is held to the regulating stud by the springs (*i*). The bolt or article to be threaded is then placed in the chuck and when the desired length of screw is cut, the spring catch (*h*) is pressed back against the lever (*g*) until it comes in contact with the eccentric lever (*j*). This

movement of the catch (*h*) and lever (*g*) will move the ring (*d*) with cams (*e*) which will move the cutting dies (*f*) out from the work which is then withdrawn from the chuck, which is again set for work by pressing on the eccentric lever (*j*) which will press against the cam (*k*) and throw the lever (*g*) forward until the catch (*h*) grasps the regulating stud and the eccentric lever (*j*) comes in contact with the locking stud (*l*), which will hold it until relieved by the hand or some suitable machinery.

It will be observed that by the back and forward movement of the ring with its parts, the cutting dies are brought up to and relieved from the work, and it will also be observed that the eccentric lever will not be required when the chuck is used as a hand machine.

Having thus described the nature, construction and operation of our improvement in chucks for screw cutting, what we claim as our invention and desire to secure by Letters Patent of the United States is—

1. The ring (*d*) having a portion of the inside cut away or recessed for the purpose of making room for the outer end of the cutting dies, said ring being furnished with cams (*e*) on the inside and with a spring catch (*h*), lever (*g*), cam (*k*), and locking stud (*l*) on the outside, as herein described and for the purpose set forth.

2. The cam chamber (*w*) in the die box (*b*) when used in connection with the cams (*e*) and ring (*d*) as herein described and for the purpose set forth.

3. The regulating stud when made in three parts as herein represented and used in connection with the die box (*b*), ring (*d*), and spring catch (*h*), as herein described and for the purpose set forth.

4. The combination and arrangement of the die box (*b*) cutting dies (*f*), and cap (*c*), with the ring (*d*) the whole being combined arranged constructed and operated as herein described and for the purpose set forth.

5. The eccentric lever (*j*) on the face plate (*a*) when used in combination with the lever (*g*) cam (*k*) locking stud (*l*) and spring catch (*h*) as herein described and for the purpose set forth.

RICHARD NUTTALL.
JOHN KIRKPATRICK.

Witnesses:
JAMES J. JOHNSTON,
GEORGE P. STECK.