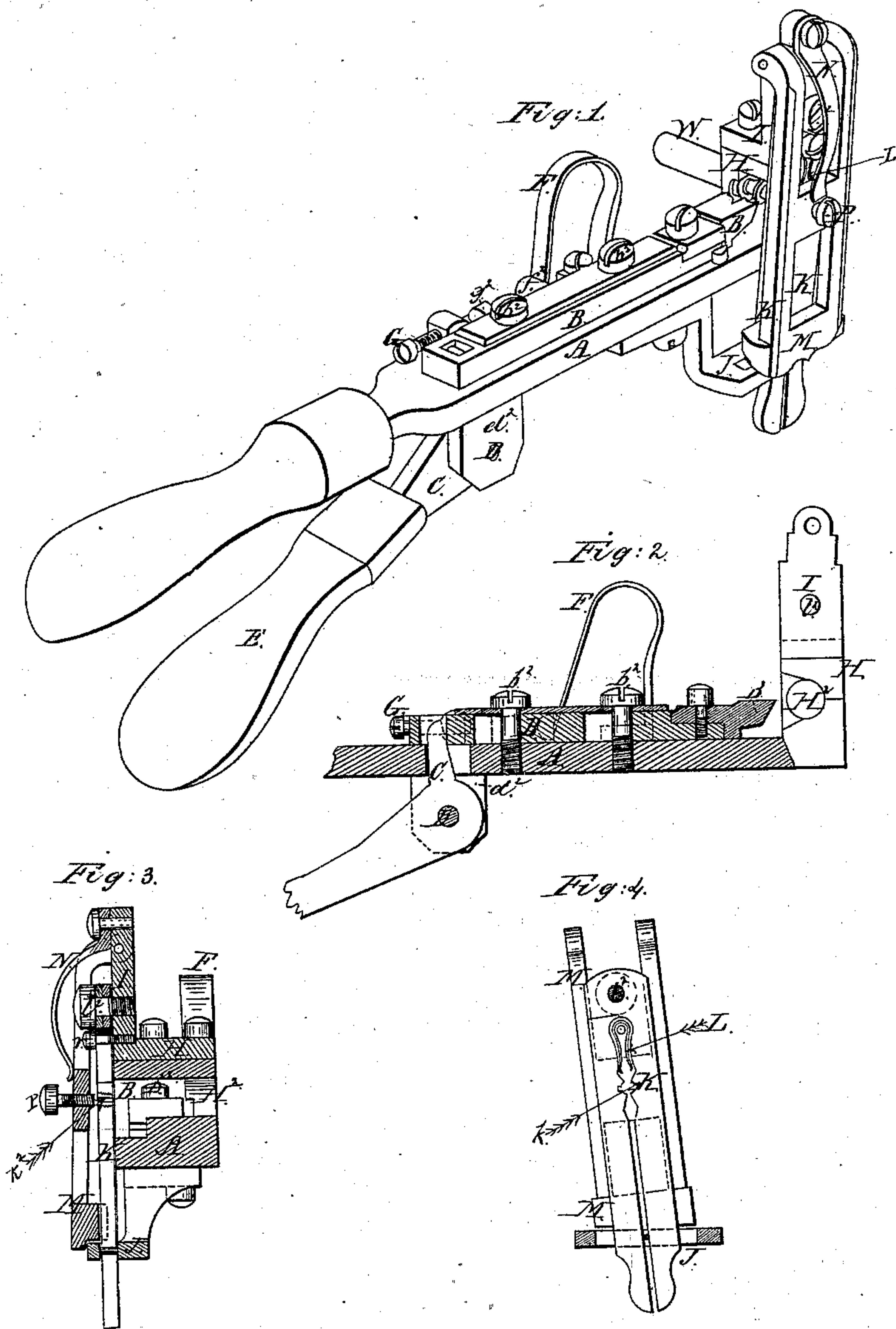


J. W. Lyon,

Screw-Threading Machine,

Patented Sept. 9, 1856.

No. 15,700,



UNITED STATES PATENT OFFICE.

JAMES W. LYON, OF BROOKLYN, NEW YORK.

IMPROVED SCREW-CUTTER.

Specification forming part of Letters Patent No. 15,700, dated September 9, 1856.

To all whom it may concern:

Be it known that I, JAMES W. LYON, of Brooklyn, Kings county, and State of New York, have invented certain new and useful Improvements in Machinery for Cutting Screws; and I do hereby declare the following to be a full description of the same.

The nature of my invention consists in the construction of a slide rest having a slide cutter-tool working thereon, and combining them with a hollow box into the axis of which the end of the wire to be operated upon for making the screw is inserted and shaped and finished by the cutting-tool; also, in combining with the box for holding and supporting the end of the wire a set of "snap-dies," for cutting the screw-threads, and, lastly, in combining and arranging the slide cutter-rest and slide cutter-tool with the box for holding the wire, and dies for cutting the threads upon the screw preparatory to their being severed or detached from the stump of the wire; but to describe my invention more particularly I will refer to the accompanying drawings, forming a part of this specification, the same letters of reference, wherever they occur, referring to like parts.

Figure 1 is a perspective view of the machine. Fig. 2 is a longitudinal cut section of the same, except the handles and snap-dies. Fig. 3 is a transverse cut section of the hollow axle, wire-holder box, and snap-dies. Fig. 4 is a detached face view of the snap-dies.

Letter A represents the slide-rest. This is made of metal and has a handle attached to one end of it. Upon the upper side of this slide-rest is arranged a slide-cutter, B, by means of set-screws b^2 b^2 passing vertically through the slide-cutter B, through a slot, and into the slide-rest A, so that the cutter may have a reciprocating motion given to it by means of a lever, C, secured by a center pin, D, to a stump, d^2 , on the lower side of the slide-rest, and operated by the handle E, attached to the lever C. To react the cutter-slide, a spring, F, attached to the slide-rest, acts against a stud, f^2 , on the cutter-slide and forces it back immediately on letting go the handle E.

Letter G is an adjusting-screw secured to a shoulder upon the side of the cutter-slide. The object of this adjusting-screw is to regulate the

diameter of the screw to be cut by means of the set of the screw, so as to come in contact with a stud, g^2 , on the upper side of the slide-rest, and thereby prevent the cutter from any further forward motion.

Letter H is a hollow box attached to the end of the slide-rest A and having an opening, H^2 , through it at right angles to the slide-rest for the support of the rod of wire to be operated upon for making the screw. Secured to the top of the box H is a die-cutter holder, I, and to its lower side is a guide, J, for holding the lower ends of the dies for cutting the screws.

Letter K represents the dies for cutting the screw-threads, as shown at the point k^2 . These dies are jointed at their upper ends and attached by their center pins, l^2 , to the face of the die-cutter holder I, so as to bring the dies directly on a line with the axis of the orifice or tap of the box H. Between the sides of the die-stocks is interposed an opening-spring, L, the object of which is to open the die-stocks after the threads of the screws have been cut to let it fall from the machine.

Letter M is a die-stock clamp suspended at its upper end by ear-pieces on the die-cutter holder I to the back side of the die-stocks, so that its claw or clamping end will clasp the lower ends of the die-stocks to hold it closed while cutting the thread on the screw. To the back of the clamp is a spring, N, secured at its upper end to the head of the clamp, and having its elastic point resting against the middle bar of the clamp M for the purpose of holding it firmly upon the die-stocks.

Letter P is a set screw passing through the middle bar of the clamp M. The object of this screw is to regulate the length of the screw to be cut—that is, the end of the wire pressing against the end of the set-screw P forces the clamp off from the die-stock, and thereby lets the new-made screw fall as soon as cut off by the sliding cutter to make room for the succeeding screw to be made.

The operation of my machine is that when the wire is inserted in the orifice of the box H, so that the end of it rests against the face of the die-stocks, the cutter is projected forward by means of the handle of the lever C to bring it in contact with the wire to reduce it to the

shape required for the screw, the diameter of it being governed or gaged by means of the gaging-screw acting upon or against the stop to prevent the cutter from further forward motion. When the shape of the screw has been cut, the handle on the lever C is released and the cutter draws back. The shank of the screw is then forced into the die, which cuts the thread upon it. During this operation of cutting the threads the end of the screw comes in contact with the adjusting-screw in the clamps, and as it is graduated to correspond with the length of thread cut on the screw it gradually pushes the clamp back till the point of finishing the screw, when it slips off the die-stocks and allows them to open, so as to avoid damaging the thread, and at the same time allow the new-made screw, as soon as cut off by the cutter in the process of turning the

new screw, to fall from the machine, when the operator, with his hand, readjusts the clamps on the die-stocks, as before, for cutting the threads on the new screw to be formed.

Having now described my improved machine for cutting and finishing screws, I will proceed to state what I claim and desire to secure by Letters Patent of the United States:

Slide-rest, slide cutter-tool, wire-holder box, and spring clasp-dies or their equivalents, constructed, combined, and operated in the manner described, for the purpose of cutting and finishing screws, substantially as hereinbefore set forth.

JAS. W. LYON.

Witnesses:

ROBT. S. ROWLEY,
CHARLES S. BARRITT.