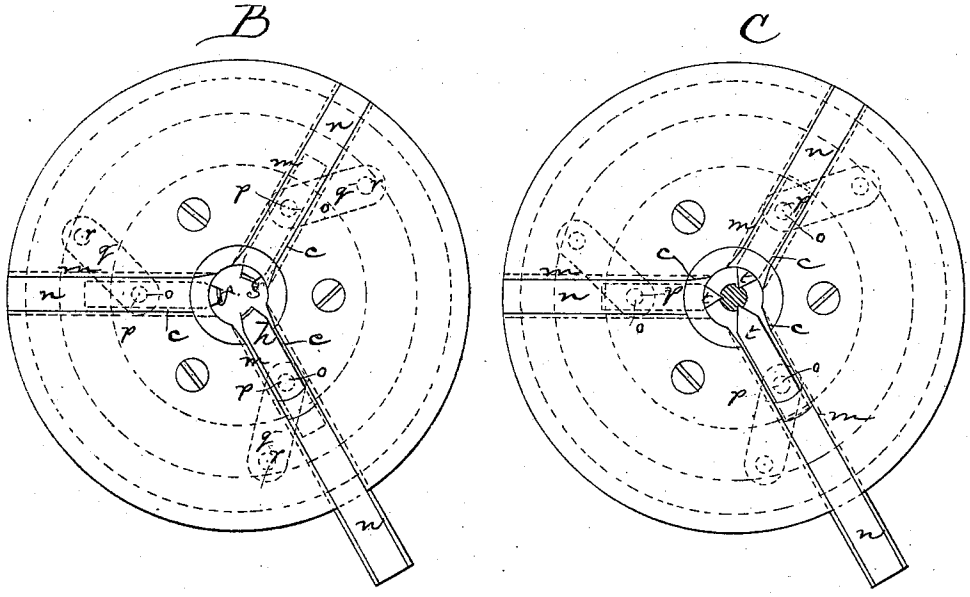
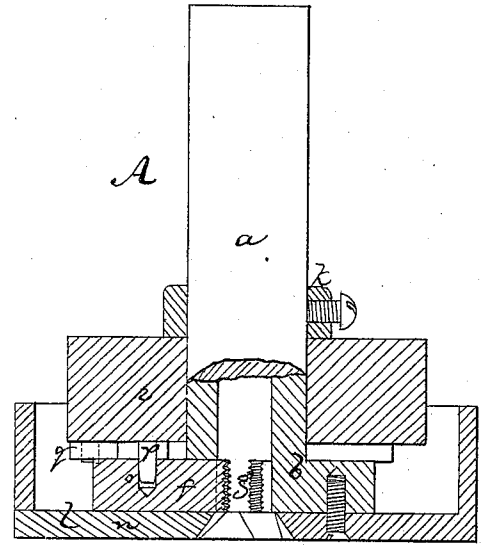
S. W. PUTNAM, Jr.

Improvement in Screw-Cutting Dies.

No. 127,793. Patented June 11, 1872.





Witnesses.
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S. B. Kidder

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By his Attys.
Crosby & Gould,
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UNITED STATES PATENT OFFICE.

SALMON W. PUTNAM, JR., OF FITCHBURG, MASSACHUSETTS.

IMPROVEMENT IN SCREW-CUTTING DIES.

Specification forming part of Letters Patent No. 127,793, dated June 11, 1872.

To all whom it may concern:

Be it known that I, SALMON W. PUTMAM, Jr., of Fitchburg, in the county of Worcester and State of Massachusetts, have invented an Improved Arbor-Head for Bolt-Screwing Machines, &c.; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention relates to an arrangement of mechanism to be used particularly in a screw-bolt-cutting machine for simultaneously and uniformly moving the screw-cutting dies toward or from their common axis of rotation.

In some machines—as, for instance, in the machine described in my patent No. 111,248—such dies are set in radial slots at the front end of the hollow arbor, and have rear projections, which extend into cam-grooves in a ring, so that by rotative movement of the ring in one or the opposite direction relatively to the arbor the dies are slid radially toward or from the axis of rotation of the arbor.

In my present invention I dispense entirely with the said cam-grooves, and joint each die to the inner end of a link, whose outer end is pivoted to a ring rotating, or capable of rotation, upon the arbor, the links, when in radial position, being in line with the respective dies, and holding said dies in their inmost position, while in any departure of the ring from this position the hold of the link-pins upon the dies causes the dies to draw back radially, thereby simultaneously and equally carrying their cutting-faces from the center. Dies other than screw-cutting dies may also be thus fed toward or from the axis of rotation of the arbor or griping devices, as, for instance, devices for griping the shank of a screw-tap may be operated by such a mechanism; and my invention consists, primarily, in connecting screw-cutting dies or other devices located in radial slots of an arbor, to be simultaneously and radially moved therein to bring them into cutting or griping position to a ring (turning upon said arbor) by links jointed at one end to the radially-sliding dies or bits, and at the other end to the ring, so that by rotative movement of the ring upon the arbor the links are caused to press the dies or bits radially toward or radially from the axis of rotation of the arbor.

The drawing represents a tool or arbor-head embodying my invention.

A shows the parts in sectional elevation. B is a front view; C, a front view, showing a tap-shank griped by the radial holders.

a denotes the arbor; *b*, the arbor-head, made with radial slots *c*, in each of which is a die, *f*, *g*, and *h*. Back of the radially-slotted head of the arbor is a ring, *i*, that is rotative upon the arbor, and is held in place by a collar, *k*, and around the ring and over the arbor-head is a cap, *l*. In the front of this cap are radial slots *m*, corresponding to the slots *c*, and in each slot *m* is a slide, *n*, that covers the die back of it, and keeps it in place, the die being removable by pressing out the slide. In the rear edge of each die is a round hole or socket, *o*, into which enters a straight pin, *p*, projecting from one end of a link, *q*, the opposite end of which link is pivoted upon a pin, *r*, extending from the ring *i*.

When the ring is brought to such position as to bring each link into the same radial plane with the die to which it is jointed the dies will all be carried to their extreme inward position, and as the ring is turned from such position in either direction it can only turn by the links drawing the dies radially outward, so that by such rotative movement of the ring the cutting-faces of the dies are brought to any required radial position. The dies are only connected to the ring by the pins *p*, the cap-slides *n* serving to keep them in position, and they may be very quickly removed by drawing out the cap-slides.

Precisely the same construction answers for griping the tap-shank, as seen at C, by simply removing the screw-cutting dies and substituting therefor the griping-bits or holders *t*. A twist-drill or similar tool may be simi-

larly griped, or for the screw-cutting dies any other suitable cutters may be substituted.

I claim—

1. In combination with the radially-slotted arbor and its sliding cutters, dies, or holders, the rotative ring and its links, each link being jointed to one of the slides and pivoted to the ring, substantially as shown and described.

2. Also, the radial slides in the periphery of the cap *l*, corresponding to the several dies through which to insert or remove said dies, substantially as described.

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