

No. 765,527.

PATENTED JULY 19, 1904.

J. VORBACH.
SCREW CUTTING STOCK AND DIE.

APPLICATION FILED SEPT. 15, 1903.

NO MODEL.

FIG. 1

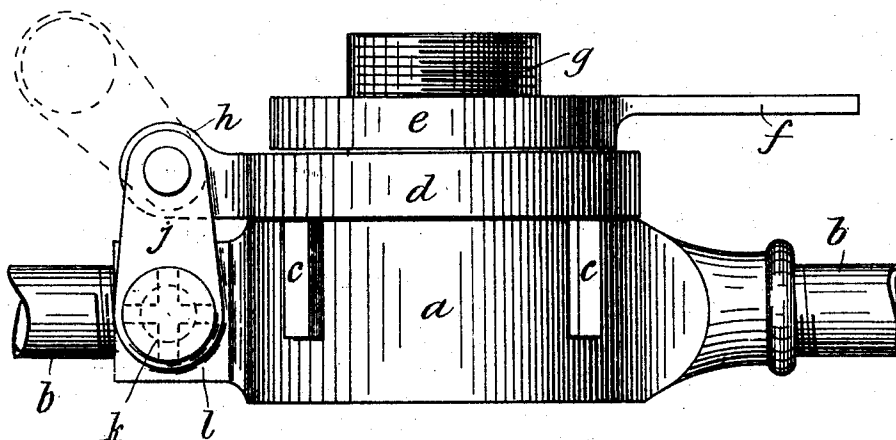
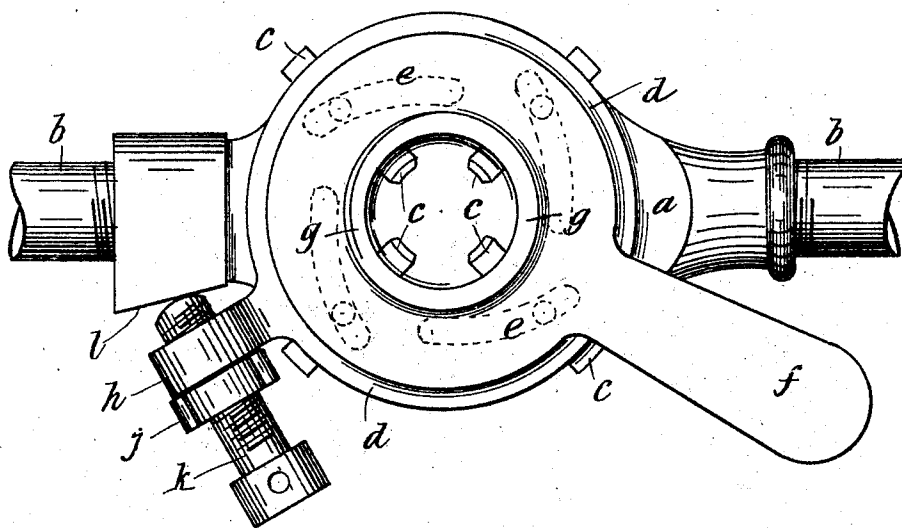


FIG. 2



Witness:
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UNITED STATES PATENT OFFICE.

JOHN VORBACH, OF RENWICKTOWN, MARLBOROUGH, NEW ZEALAND.

SCREW-CUTTING STOCK AND DIE.

SPECIFICATION forming part of Letters Patent No. 765,527, dated July 19, 1904.

Application filed September 15, 1903. Serial No. 173,268. (No model.)

To all whom it may concern:

Be it known that I, JOHN VORBACH, a subject of the King of Great Britain, residing at Renwicktown, Marlborough, in the Colony of New Zealand, have invented a new and useful Improvement in Screw-Cutting Stocks and Dies; and I do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to that form of screw-cutting stocks and dies in which the cutters are mounted in radial guides in an annular ring (to which the handles are attached) and are caused to move inward and outward along the guides by the partial rotation of an annular plate fitting over the annular ring and the under surface of which is formed with a number of eccentric grooves in which pins projecting upward from the cutters fit. This plate is adapted to be locked in any desired position so as to hold the cutters the required distance apart by means of a lock-nut screwing on a hollow central boss over which the plate is passed. To prevent the plate from working loose when a cutting strain is exerted upon the cutters and to regulate the distance apart of the cutters, an adjustable pin is screwed upon the peripheral face of the annular ring, against which a radial projection of the plate will engage, so that such plate will be locked from movement between this pin and the lock-nut. It has been found, however, that such means do not satisfactorily hold the plate firmly and that when cutting the cutters are allowed to ease away from their work, thus forming a bad thread and necessitating another cut being made or else the constant stopping of the cutting operation while the plate is tapped by a hammer or other tool into its proper position again. It is to obviate these disadvantages and to provide means whereby the cutters may be held firmly from giving that my present invention has been designed.

The invention consists in forming the annular plate, by which the movements of the cutters are effected, with a projecting boss upon its periphery upon one of the radial faces of which is pivoted one end of a short crank-arm. Through the other end of this arm a set-screw is passed, the end of which

is adapted to bear against a face formed upon one of the handle-sockets of the stocks. This screw will thus serve to prevent the annular plate turning any farther than is desired and in conjunction with the lock-nut will lock the plate from movement in either direction and the consequent movement of the cutters in their guides. The distance apart the cutters are set will be regulated by the set-screw. When the cut has been effected, the crank-arm may be turned upon its pivot, thus allowing the plate to be turned farther round in order to release the cutters from their work and allow of the quick removal of the appliance.

In the accompanying drawings, Figure 1 is a side elevation of the stocks and dies with my improvements in position thereon. Fig. 2 is a plan of the same.

a is the annular ring, to which the handles *b* are attached and in which the dies or cutters *c* are mounted in radial grooves.

d is the annular plate, the under surface of which is provided with the eccentric grooves in which pins projecting upward from the dies or cutters *c* fit, so as to move such cutters in or out in their grooves as the plate is revolved in either direction.

e is the lock-nut, which is provided with a handle *f* for turning it and which screws on a central boss *g*, so as to bind the plate *d* down upon the ring *a*.

It has not been considered necessary to fully illustrate the eccentric grooves in the plate *d* and the pins of the dies or cutters *c*, as the arrangement and construction of such are well-known and form no feature of this invention; but they are shown in dotted lines in Fig. 2 in order to illustrate their action with regard to the other parts of the invention.

The annular plate *d* is formed with a boss *h* projecting radially upon its periphery, and upon one of the radial faces of this boss is articulated one end of a crank-arm *j*. The other end of this crank-arm has a set-screw *k* passing through it, such set-screw being provided with means whereby it may be turned in either direction, so as to lessen or decrease the length of the portion projecting through the crank-arm. The handle-socket upon one side of the

ring *a* is formed with a flat face *l* upon one of its sides and against which the end of the set-screw *k* may bear.

In operation the plate *d* is turned through
 5 the necessary distance to set the dies *c* in their proper position. The set-screw *k* is then screwed through the crank-arm *j* until its end bears against the bearing-face *l* of the ring *a*, after which the lock-nut *e* is screwed down
 10 upon the plate *d*, so as to jam it from movement between the lock-nut and the ring *a*. The direction of rotation of the lock-nut being the same as that of the engagement of the set-screw *k* with the ring *a* will insure that the
 15 plate *d* will be completely locked from movement in either direction, thus also insuring that the position of the dies *c* in their radial guides will remain constant throughout the whole of the cutting operation. After the
 20 cut has been made the lock-nut will be slightly unscrewed and the crank-arm *j* turned upward on its pivot to the position shown by dotted lines in Fig. 1, when the plate *d* may be turned farther round, so as to move the dies outward
 25 in their grooves to release them from their work and allow of the appliance being lifted freely off it. When the set-screw *k* has once been fixed for screwing threads of a certain diameter, it may remain constant in that posi-

tion, and will thereby serve to regulate the 30 position of the plate *d* and cutters for screwing any number of threads of the same diameter.

What I claim as my invention, and desire to secure by Letters Patent, is— 35

In screw-cutting appliances having the dies or cutters fitting in radial grooves in an annular ring and adjusted in position within such grooves by means of an annular plate fitting above the ring with eccentric grooves on its 40 under surface in which upwardly-projecting pins on the dies or cutters fit, a radial boss upon the periphery of the annular plate, a crank-arm one end of which is articulated to one of the radial faces of the boss, a set-screw 45 passing through the free end of the crank-arm and a bearing-face projecting from the side of the annular ring, against which the end of the set-screw is adapted to bear, substantially as herein specified. 50

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN VORBACH.

Witnesses:

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 M. A. MARCHANT.