

C. A. SIMMONS.
ADJUSTABLE THREADING DIE.
APPLICATION FILED MAY 28, 1911.

1,056,843.

Patented Mar. 25, 1913.

Fig. 1,

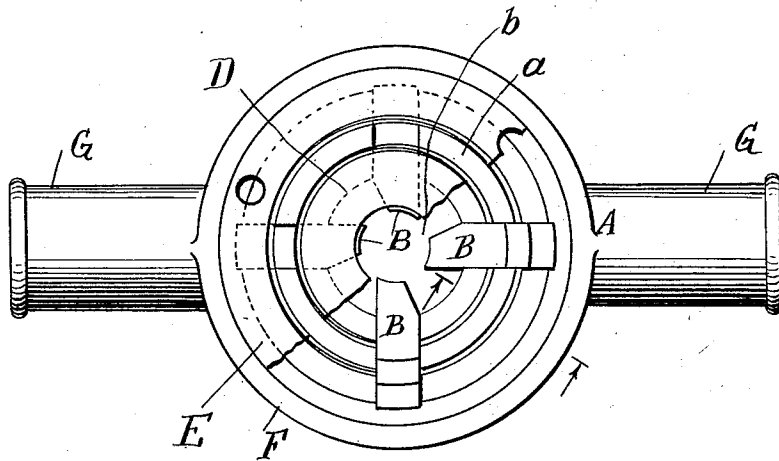


Fig. 2,

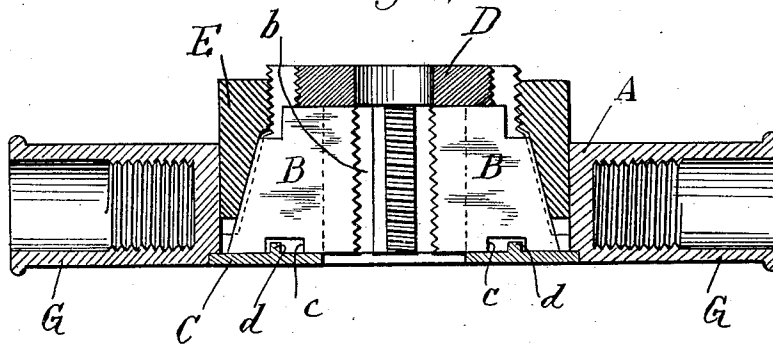
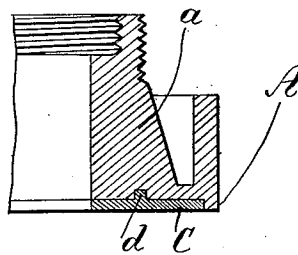


Fig. 3,



WITNESSES:

Minerva Lobel
Agnes Bill

INVENTOR

Charles A. Simmons

BY

James Davis & Sons
ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES A. SIMMONS, OF ALBANY, NEW YORK.

ADJUSTABLE THREADING-DIE.

1,056,843.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed May 26, 1911. Serial No. 629,718.

To all whom it may concern:

Be it known that I, CHARLES A. SIMMONS, a citizen of the United States, residing in Albany, county of Albany, State of New York, and whose post-office address is No. 119 State street, Albany, New York, have invented certain new and useful Improvements in Adjustable Threading-Dies; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention consists in providing the herein described improved die or screw plate with suitable cutting dies therefor which will admit of adjustment to cut threads varying from the normal or standard diameter, within reasonable limits, and have the advantages of extreme simplicity, low cost of manufacture and the facility of adjustment necessary to a successful mechanic's tool.

An embodiment of the invention is illustrated in the accompanying drawing in which,

Figure 1, represents a plan view of a die or screw plate. Fig. 2, represents a vertical section through the body and handle connections, the cutting dies not being in section, and Fig. 3 is a section on line 3—3 of Fig. 1, showing the body A and the plate C at a point other than that at the junction of the handle-connections G.

Referring to the drawing, the body of the die is indicated by A and consists of a central part *a* which has an axial aperture *b* and radial slots in which rest the cutting dies B. These cutting dies B have thread chasing teeth upon their inner edges which project into the axial aperture *b*, and inclined outer edges, and grooves *c* are provided in their bottom edges, the ends of which grooves act as stops with which a stop rib *d* on a plate C contacts to limit the radial movement of the cutting dies. In the form shown, the plate C, provided with the circular rib *d*, is inserted in the body of the die and forms the bottoms of the radial slots, the rib *d* furnishing a stop in the bottom of each radial slot but the bottom of the radial slots may be integral with the body and a pin inserted in each slot to contact the dies or other equivalent means may be employed for this purpose. A guide ring D having a central circular opening of the

proper diameter to guide the stock to the dies B is threaded into a depression in the top of the central part *a* and has the added function of confining the dies B to a radial movement only. An adjusting ring E has an internal screw thread within its upper part by which it is engaged with a complementary screw thread upon and near the upper edge of the central part *a*. The remainder of the interior of the adjusting ring E is tapered to act as an abutment for the inclined outer edges of the dies B and accordingly as the ring is screwed up or down the dies B may be moved outwardly or are forced toward the center. The adjusting ring E is provided upon its upper edge with spanner holes to facilitate its being quickly and easily adjusted. The body A is extended beneath and about the adjusting ring E to form a flange F from which two handle connections G G project in opposite directions from about midway of the die.

When the die is placed upon the end of the stock to be threaded it will force the dies B to position as the limit of adjustment is small, and therefore no opening means are necessary, the stops preventing the projection of the dies into the axial aperture beyond the minimum diameter of thread which can be cut by a die of given size. The dies B as used are very easily removed and ground and any change resulting from grinding can be immediately compensated for by adjustment.

Having thus described my invention what I claim is:

1. An adjustable die comprising an axially apertured, radially slotted and exteriorly threaded central part, a series of cutting dies confined within the slots in said central part for radial movement and provided with inclined outer ends, an interiorly tapered and interiorly threaded adjusting ring screwed upon said central part for adjustment to various positions to offer an abutment of varying diameter to the inclined outer ends of said dies, and an annular ring rigid with said central part closely surrounding said adjusting ring to prevent undue expansion thereof; substantially as described.

2. An adjustable die comprising an axially apertured, radially slotted and exteriorly threaded central part, a series of cutting dies confined within the slots in said central part for radial movement and provided with inclined outer ends and stops

upon their bottom edges, an interiorly tapered and interiorly threaded adjusting ring screwed upon said central part for adjustment to various positions to offer an abutment of varying diameter to the inclined outer ends of said dies, stops in the bottoms of the slots in said central part cooperating with the said stops on said dies to limit the radial movement of said dies to the range of adjustment of said adjusting ring and an annular ring rigid with said central part closely surrounding said adjusting ring to prevent undue expansion thereof; substantially as described.

3. An adjustable die comprising an axially apertured, radially slotted and exteriorly threaded central part, a series of cutting dies confined for limited radial movement in the slots in said central part and provided with inclined outer ends, an interiorly tapered and interiorly threaded adjusting ring screwed upon said central part for adjustment thereon to offer an abutment for the inclined outer ends of said dies at any point within the limits of their movement and an outer part extending beneath and about the periphery of said adjusting

ring to prevent undue expansion of said adjusting ring; substantially as described.

4. An adjustable die comprising an axially apertured, radially slotted and exteriorly threaded central part, a series of cutting dies confined for limited radial movement in the slots in said central part and provided with inclined outer ends, an interiorly tapered and interiorly threaded adjusting ring screwed upon said central part for adjustment thereon to offer an abutment for the inclined outer ends of said dies at any point within the limits of their movement, an outer ring projecting from said central part and closely surrounding said adjusting ring to prevent undue expansion thereof, and oppositely disposed handle connections projecting from said outer ring in substantially the plane of said dies; substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses.

CHARLES A. SIMMONS.

Witnesses:

S. J. OWEN,
S. F. BURNS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."