

(No Model.)

T. L. SMITH.
SCREW CUTTING DIE.

No. 421,773.

Patented Feb. 18, 1890.

Fig. 1.

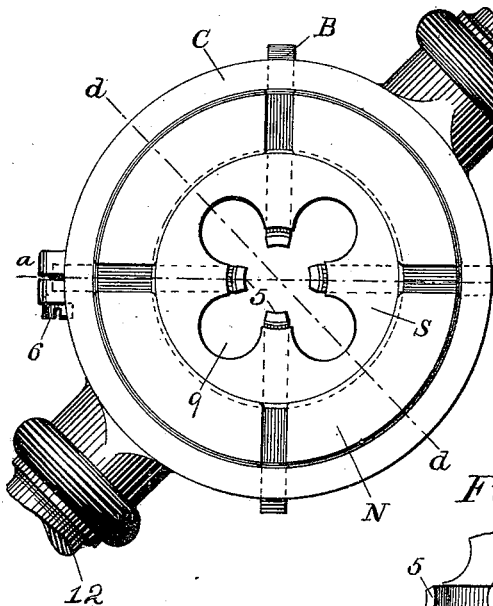


Fig. 2.

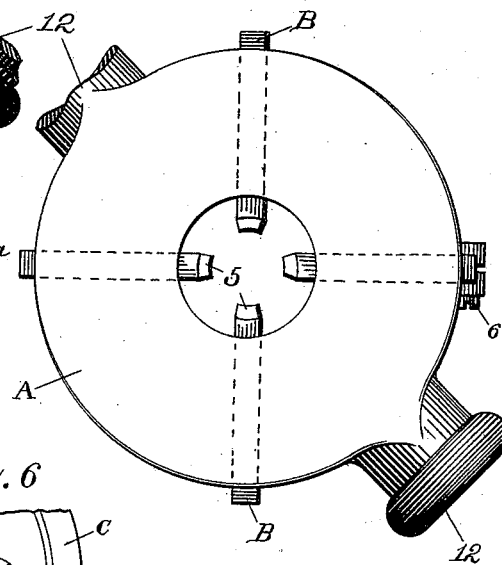


Fig. 6.

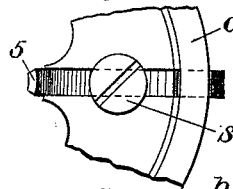


Fig. 3.

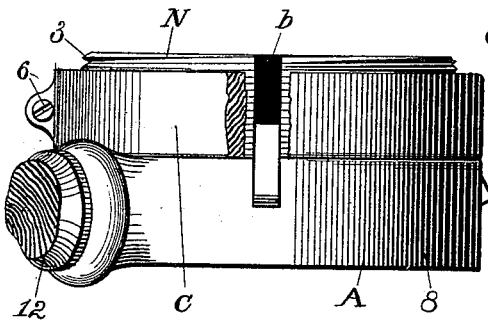


Fig. 4.

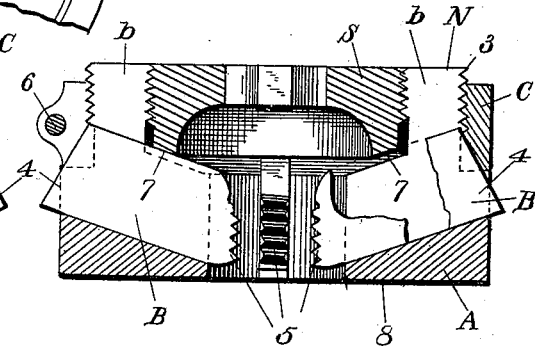
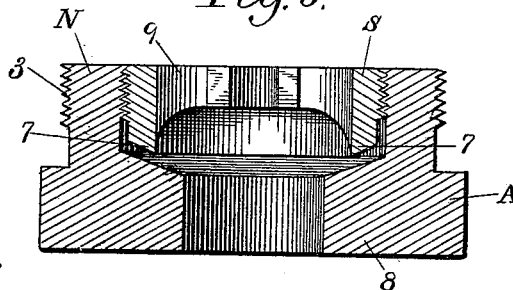


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

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SCREW-CUTTING DIE.

SPECIFICATION forming part of Letters Patent No. 420,773, dated February 18, 1890.

Original application filed August 30, 1887, Serial No. 248,240. Divided and this application filed February 23, 1889. Serial No. 300,917. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. SMITH, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Screw-Cutting Dies, of which the following is a specification.

This application is a division of my application, Serial No. 248,240, filed August 30, 1887.

This invention relates to that class of screw-cutting dies having adjustable and renewable chasers, and has for its object to furnish an improved die of that class in which the chasers are removably held in place by means independent of and located within the adjusting-ring, whereby said chasers may be removed and replaced without disturbing the adjustment of said ring.

In the drawings accompanying and forming a part of this specification, Figure 1 is a plan view of a screw-cutting die embodying my improvements. Fig. 2 is an opposite plan view of the same. Fig. 3 is a side elevation drawn in projection with Fig. 1. Fig. 4 is a sectional elevation in about line *a a*, Fig. 1. Fig. 5 is a section in line *b b*, Fig. 1. Fig. 6 shows one form of the chaser-clamping screw.

Similar characters designate like parts in all the figures.

The body of the die or the "collet" which carries the series of chasers is designated by A, and is bored, substantially as shown, to permit the passage through it of the bolt to be threaded. The chasers B are carried in a series of slots *b*, substantially radially disposed in the front part or annulus of said collet A, and are provided each with thread-cutting teeth 5 of the usual description. The outer ends 4 of the chasers are formed inclined to furnish a proper bearing for the adjusting-ring C, which is screwed onto the annulus N, and is beveled to bear on said ends. Screwing the said ring farther onto the collet serves to force the chasers inwardly, while to turn the ring oppositely permits the chasers to be forced outwardly by the piece being threaded, or by other means. The ring C should be fitted to turn closely on the thread 3 of said part N, or be provided with well-known means—as, for instance, the clamp-screw 6—

for temporarily fixing the same firmly on the collet or annulus.

For holding the chasers in place in the chaser-receiving slots *b*, I provide a removable clamp device S, which is accessible from the face or front of the die and intersects the slots *b*, as shown. This device is made in two forms, the simpler form being shown in Fig. 6, where one screw is used for each chaser. The other form in Figs. 1, 3, 4, and 5 is a ring bearing on all the chasers. For the purpose of receiving this ring, the part N is extended beyond the chasers, as shown, and has on the inner side thereof a thread, into which the clamp ring or screw S is closely fitted. The lower edge 7, Figs. 4 and 5, of the ring S bears on the several chasers, and thus clamps them down firmly to the bottom of slots *b*. The lower side or face 8 of the die in Figs. 3, 4, and 5 is considered the "front" of the same, and accordingly I set the chasers inclined, as shown, so as to bring the teeth 5 near to said face 8, whereby the die is adapted for cutting a thread up closely to the head of the bolt. Pockets or clearance-spaces 9 are usually made in the ring S, or in the body A, or in both, to facilitate the escape of chips.

By means of the clamp-ring C and by loosening the screws S the chasers may be taken out, reground, and replaced without disturbing their adjustment. Where large numbers of pieces are to be uniformly threaded, this feature becomes very important, and it is for this class of work that the present improvement is especially designed and used.

The die may be used by inserting the collet A within the circle of a die-stock in the usual manner, or it may be provided with handles 12 (not fully shown) for that purpose.

The operation of cutting a thread is carried out in the usual manner, the chasers being first set to the required position radially of the collet by the means described, or by other well-known means therefor, not shown herein, but shown in prior Letters Patent.

Having thus described my invention, I claim—

1. In a screw-cutting die, the combination, with the collet internally threaded and having radially-disposed chaser-receiving slots, of

a chaser fitted to slide in one of said slots, and a screw extending across said slot and engaging with the threads formed in the opposite sides thereof, said screw bearing on the chaser
5 in said slot in a direction crosswise to said sliding movement, all substantially as described.

2. In a screw-cutting die, the combination, with the collet internally threaded and having
10 ing radially-disposed chaser-receiving slots, of a series of chasers fitted to slide in said slots, and a ring-shaped screw extending across said series of slots and engaging with the
15 said screw bearing on the series of chasers in

said slots in a direction crosswise to said sliding movement, all substantially as described.

3. In a screw-cutting die, the combination, with the die-body having the annulus N and slots *b b*, of the chasers B in said slots, means,
20 substantially as described, for adjusting said chasers radially of said body, and the clamping ring screwed into said annulus and bearing on the several chasers, all substantially as described.

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