

(No Model.)

E. J. VOEGTLIN.

SCREW CUTTING DIE.

No. 270,618.

Patented Jan. 16, 1883.

Fig. 1.

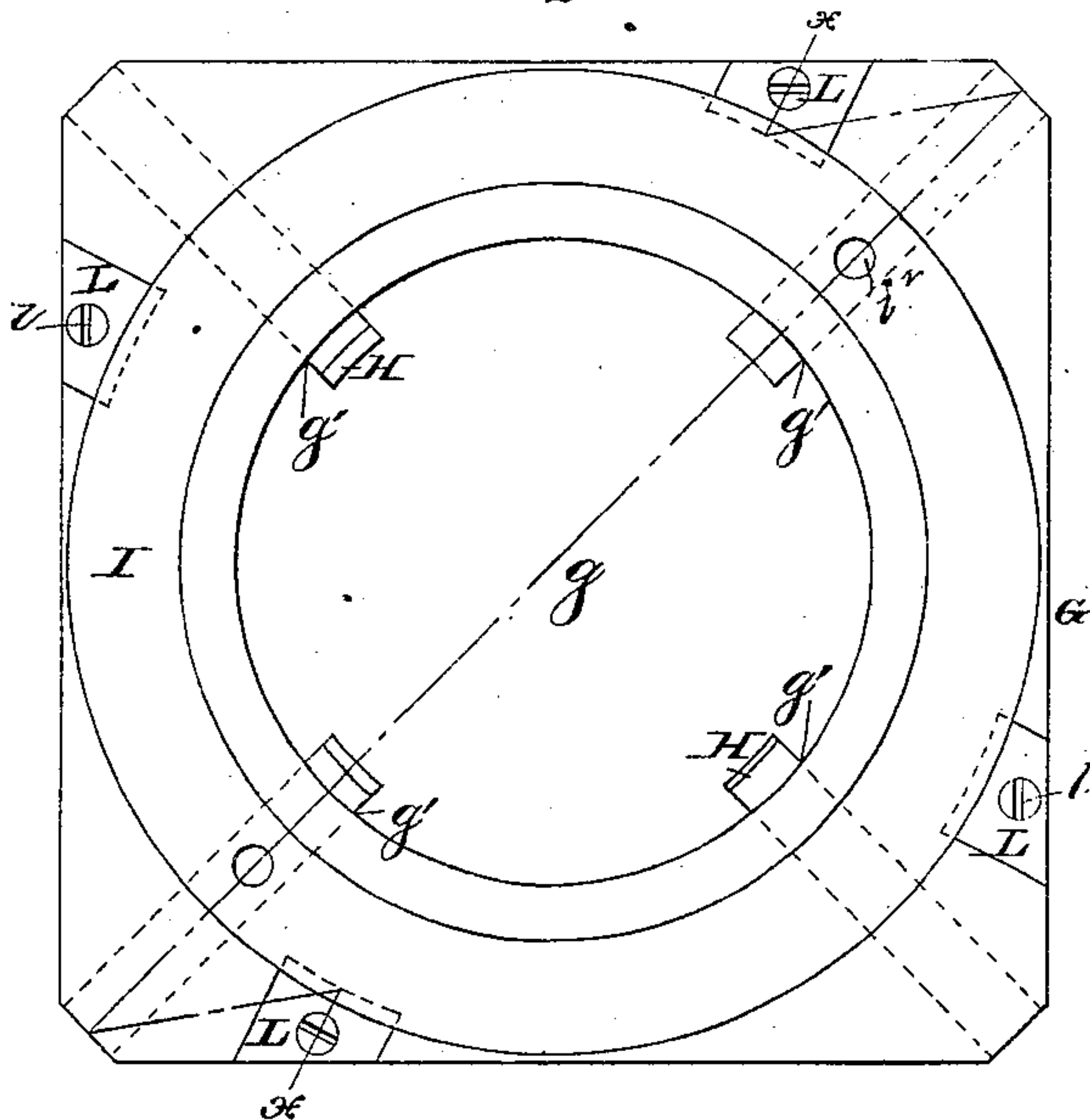


Fig. 2.

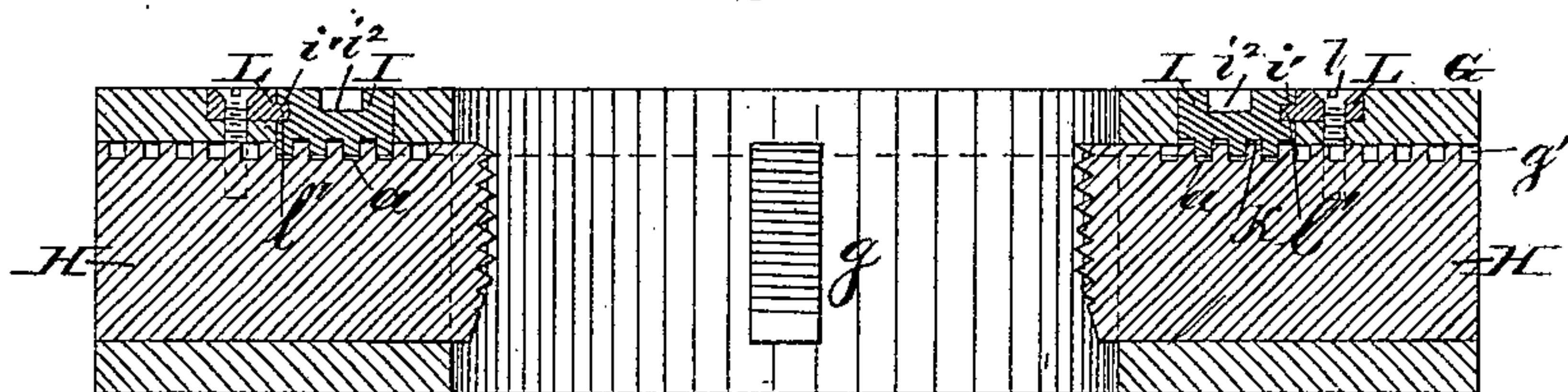


Fig. 3.

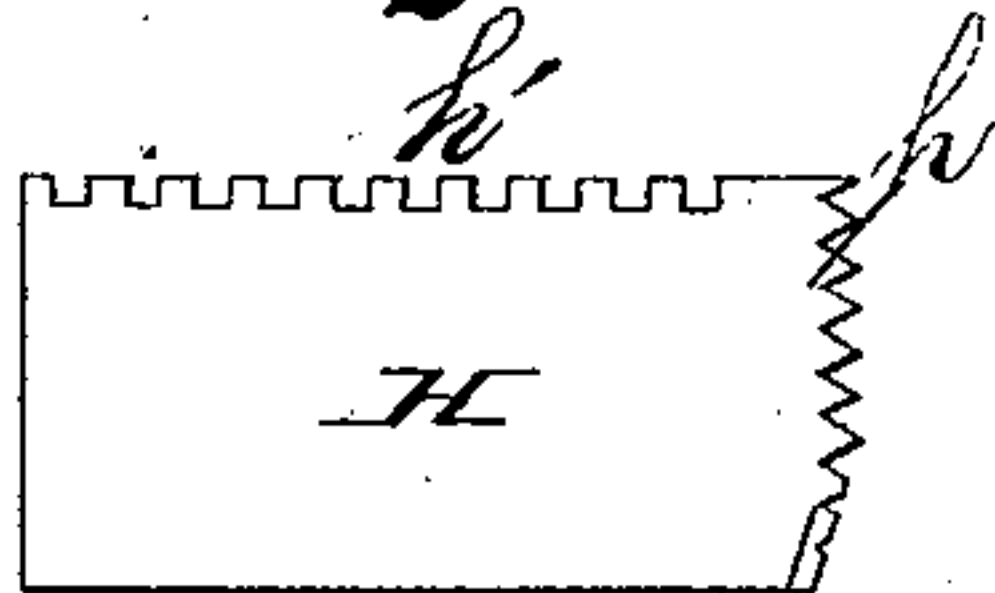
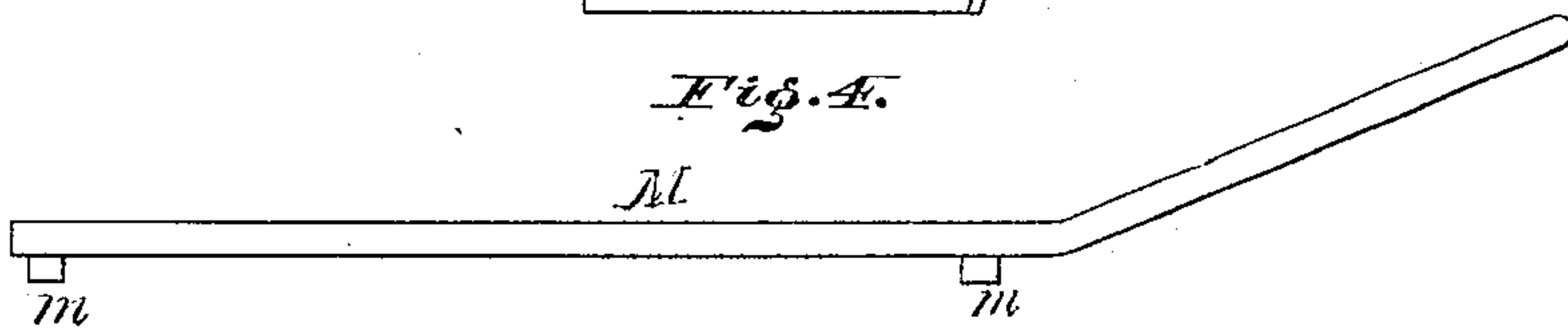


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EMILE J. VOEGTLIN, OF TELFORD, PENNSYLVANIA.

SCREW-CUTTING DIE.

SPECIFICATION forming part of Letters Patent No. 270,618, dated January 16, 1883.

Application filed May 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, EMILE J. VOEGTLIN, a citizen of the United States, residing at Telford, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Screw-Cutting Dies; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a plan view of the die embodying my invention. Fig. 2 is a vertical section of the same in line *x x*. Fig. 3 is a side elevation of a die-bit detached. Fig. 4 is a side elevation of a form of wrench employed.

My invention has relation to expanding and contracting dies, and has for its object to improve the efficiency and durability of these articles and to render their working or wearing parts interchangeable or replaceable.

The said invention consists of a die-stock having a central opening and radial mortises, in combination with notched bits in said mortises, a rotatable grooved ring having a scroll rib for operating said bits, and blocks which have tongues that enter the groove of said ring, both ring and blocks being on the same face of the stock, flush with it and with each other, as hereinafter set forth and claimed.

Referring to the accompanying drawings, G represents a block, forming the stock of the die and having a central opening, *g*. Said stock has radial mortises or slots *g'*, into which are fitted bits or toothed pieces H, whose inner ends have teeth *h*, adapted to cut threads. The upper edges of each of these bits have notches *h'*, which receive a scroll or volute rib, *a*, formed on the under side of a ring, I. This ring I rests in an annular groove, K, on the upper side of the block G, and extending downwardly or inwardly a sufficient extent to intersect the slots *g'*, so as to bring said ring and the bits H, which rest in said slots, into contact. By rotating the ring I in one direction the bits H are caused to move toward the center of the opening *g*, and a rotation of said ring in a contrary direction moves said bits outwardly. The die is thus caused to con-

tract and expand, a single motion serving to produce a simultaneous and uniform adjustment of all the bits. To hold the ring in place and yet permit its rotation, fastening-blocks L, secured to the stock G by screws *l*, and having rabbeted lips *l'*, which fit, as shown, in a groove, *i'*, in the edge of said ring, are used. To rotate the ring I a key, M, having studs *m m*, which enter sockets *i² i²* in said ring, may be employed. Inasmuch as the scroll is a spiral it gradually recedes from the center. Hence, to make the cutting-edges of said bits equidistant from a common center, they must be graduated in length, or the distance of their notches *h' h'* from their ends duly regulated for the purpose mentioned. The coils of the scroll should be a regulated distance apart—say, for example, one-eighth of an inch—and the ring I have a mark registering with another mark on the stock G. Each revolution of the ring will move the bits the distance between the spirals of the scroll, and this extent of movement can be made and ascertained with accuracy by bringing the marks into registration with each other.

When any one or more of the bits or working parts become worn out or discarded it may be taken out and a new one substituted therefor. So, too, by employing bits of different sizes and pitch of teeth, screw-threads of various grades may be made, so as to enable one and the same instrument to do the work for which several would be required if made solid or non-interchangeable.

The die herein described is best adapted for use with a lathe or other machine for cutting threads on pipes of large diameter, and for this reason I have constructed the stock so that its working parts are all within the periphery of the stock proper, and have constructed it in such manner that the cutters may be adjusted by means of a wrench or key applied to the face of the stock, thus obviating the necessity of removing the stock from the lathe when the cutters are to be adjusted.

What I claim as my invention is—

The die-stock G, having a central opening, *g*, and radial mortises *g'*, in combination with the bits H, with notches *h'*, the rotatable ring

I, having a scroll-rib, *a*, and the fastening-
blocks L, said ring having a groove, *v*', on
its outer periphery, and the blocks having
tongues or lips *l*', which enter said groove,
5 both ring and blocks being on the same face
of the stock, flush with each other and with
the stock, substantially as and for the purpose
set forth.

In testimony that I claim the foregoing I
have hereunto set my hand this 22d day of 10
April, 1882.

EMILE J. VOEGTLIN.

Witnesses:

ANDREW ZANE, Jr.,
WILL H. POWELL.