E. A. STIMSON.

SCREW CUTTING DIES.

No. 175,579. Patented April 4, 1876.

Fig. 1.

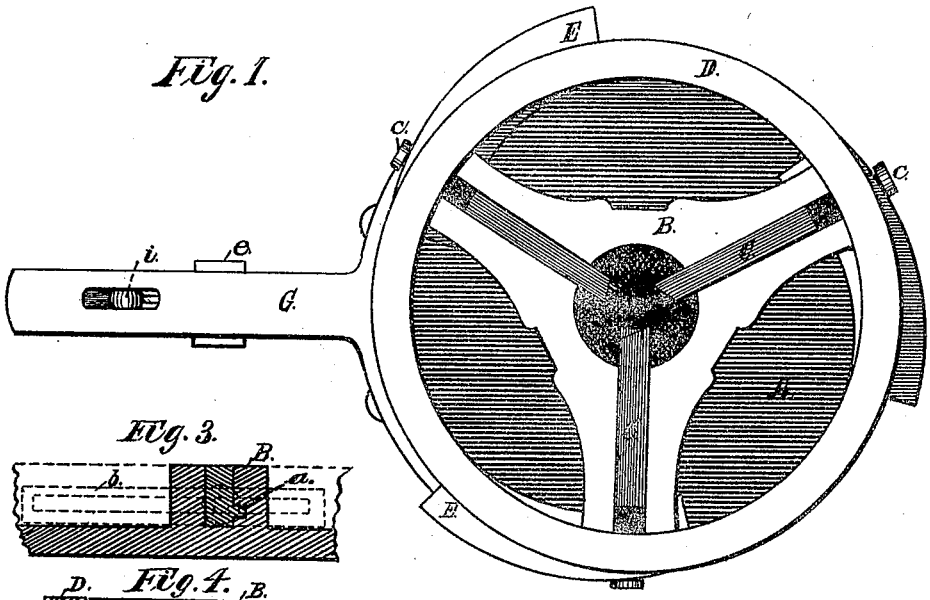

Fig. 3.

Fig. 4.

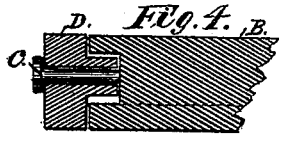

Fig. 5.

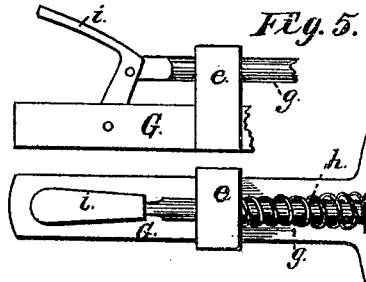

Fig. 2.

Witnesses:
Chas. M. Peck
Wm. Ritchie

Inventor:
Edwd. Almarine Stimson
by his Attys.
Peck & Co.

UNITED STATES PATENT OFFICE.

EDWARD A. STIMSON, OF DAYTON, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT TO EBENEZER F. STODDARD, OF SAME PLACE.

IMPROVEMENT IN SCREW-CUTTING DIES.

Specification forming part of Letters Patent No. 175,579, dated April 4, 1876; application filed February 17, 1876.

To all whom it may concern:

Be it known that I, EDWARD A. STIMSON, of Dayton, in the county of Montgomery and State of Ohio, 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 same.

This invention relates to that class of dies which are used as tools in a lathe, and are provided with adjustable radially-moving chasers or cutting-jaws for forming threads upon stems, pipes, &c., in steam, gas, and other fittings; and my improvements consist in the formation of the body or stock recessed radially for containing the cutters, and in the application thereto of an encircling ring having slotted cam-bearings arranged with it for actuating the cutters and giving them a strong and solid rear bearing; also, in the combination and arrangement of a handle, a spring-catch, and an index latch-plate, all as will be herewith described, and the invention distinctly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to make and use the same, I would thus proceed to describe its construction and mode of operation, referring throughout to the accompanying drawings, in which—

Figure 1 is a face view of my improved die. Fig. 2 is the reverse view of Fig. 1. Figs. 3, 4, and 5 represent minor devices, which will be referred to in the body of the specification.

Corresponding letters of reference indicate like parts in all the figures.

A represents the die-stocks, which is a disk having on its face a radially-recessed boss, B, in the recesses of which are confined the chasers or cutting-jaws C. Each of these cutters is formed with a gib, *a*, extending along one side near the bottom, which is keyed in a corresponding slot in the side of each recess, as seen in the sectional view in Fig. 3. D is a ring that fits snugly over the die-stock, and is provided with equidistant cam projections E on its outer and inner surfaces, as is seen in Fig. 1. The faces of these projections are parallel, and each is slotted longitudinally and through the ring. A face view of one of these cam projections is represented by the dotted lines *b* in Fig. 3. The chasers C have their rear ends resting against the inner faces of the cam projections E, and the ring and stock are connected together by pins or studs *c*, that are passed through the slots in said projections, and are screwed or in any convenient manner secured to the rear ends of the chasers C. These pins fit snugly in the slots, and are provided with heads which rest against the outer faces of the cams, as seen in Fig. 4. To connect the ring and stock more firmly, so as to resist pressure during the action of the die, the ends of the boss on each side of the recesses extend over the interior cam projections E, Figs. 1 and 4. The rear face of the die is provided with a chuck, F, or any suitable device for connecting it to the lathe-mandrel. G is a handle, secured to the periphery of the ring D, and provided with a bearing, *e*, in which, and in the bearing *f* upon the ring, the latch *g*, kept to its seat by the spiral spring *h*, works. A thumb-lever, *i*, pivoted in the handle G, and having the latch-rod *g* pivoted to it, serves to actuate the latter, whose projecting end engages with a seat in the arc-shaped slotted index-plate H, which is secured upon the rear face of the stock, Fig. 2, by screws *j* that pass through the slots in the plate H and clamp it to the stock.

A graduated scale upon the face of the stock, in connection with a corresponding scale upon the plate H, enables the die to be adjusted to the work with the greatest precision.

It will be noticed that there are no projections extending from the cutting-surface of the die, and that the surfaces of the ring, the boss, and the cutters are in the same plane.

Supposing the die to be attached to a lathe, its operation is as follows: After being presented to the work in the usual manner, and the thread being cut, the operator releases the latch from its seat, turns the ring by means of the handle, when the exterior cam-faces, acting upon the heads of the pins *c*, withdraw the chasers and allow the die to be removed. The interior cam-faces, when the ring is turned, move the chasers inward, and form a solid unyielding rear bearing that is much superior to the pins which usually extend from the chasers, and which, variously arranged in connec-

tion with slots, form the only supports for holding the chasers during the action of the die.

Having thus fully described both the construction and mode of operation of my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. The die-stock A, having formed with it a radially-recessed boss, B, in combination with the chasers C, formed with gibs upon their sides, that work in key-seats in the recesses of said boss, and provided with pins *c*, confined in slots of the encircling ring D, whose interior cam projections form a solid rear bearing for the chasers, in the manner and for the purpose specified.

2. The ring D, provided with the exterior and interior slotted cam projections E, and secured to the stock A, in the manner and for the purpose specified.

3. The herein-described improved screw-cutting die, consisting, substantially, of the stock A, boss B, chasers C, ring D, handle G, latch *g*, and index-plate H, when the respective parts are constructed and arranged in the manner and for the purpose specified.

Witness my hand this 12th day of February, A. D. 1876.

EDWARD A. STIMSON.

Witnesses:

CHAS. M. PECK,

WM. RITCHIE.