(No Model.)

S. TIDEMAN.

DIE AND DIE STOCK.

No. 441,603. Patented Nov. 25, 1890.

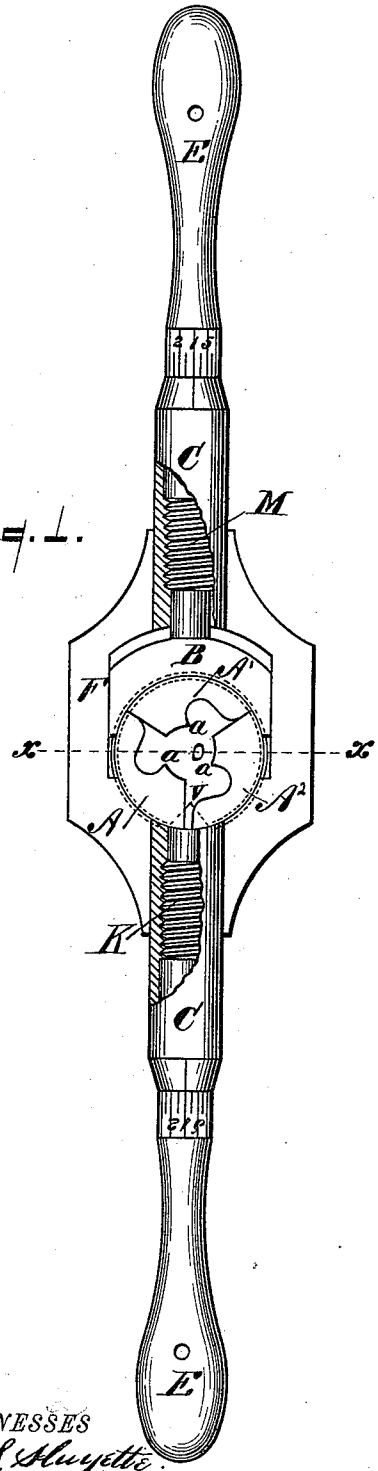


Fig. 1.

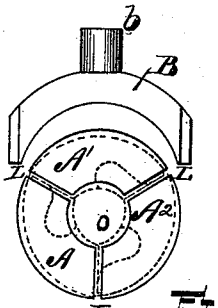


Fig. 3.

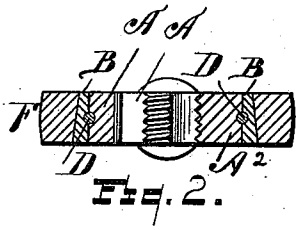


Fig. 2.

WITNESSES

Will S. Shuyette.

Gertrude H. Anderson.

INVENTOR

Sam Tideman

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SVEN TIDEMAN, OF DETROIT, MICHIGAN, ASSIGNOR OF ONE-THIRD TO LOUIS J. WOHNLICH, OF SAME PLACE.

DIE AND DIE-STOCK.

SPECIFICATION forming part of Letters Patent No. 441,603, dated November 25, 1890.

Application filed November 13, 1889. Renewed October 2, 1890. Serial No. 366,827. (No model.)

To all whom it may concern:

Be it known that I, SVEN TIDEMAN, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in Dies and Die-Stocks, of which the following is a specification.

My invention consists in an improved screw-cutting die and die-stock, hereinafter fully described and claimed.

Figure 1 is an elevation, partly in section, of my improved die and die-stock. Fig. 2 is a section on the line *x x*, Fig. 1. Fig. 3 is a diagram showing how the cutting-edges are made in relief.

The object of my invention is to make an adjustable die, the cutting-edges of which are in relief to avoid friction between the die and its work. I prefer to make the die cylindrical in form when the three parts of which it is composed are together, as this form admits of comparatively great strength with small amount of space and material, and in the drawings the die is shown as so made; but the external shape of the die may be of other forms, if desired.

The die is radially divided into three pieces of substantially equal size and shape, each part having a cutting-edge standing out in relief toward the screw-hole, as illustrated in Fig. 3, and which may be described as follows: A disk of metal (represented by the full lines) having a circular hole O through its center tapped by a screw-tap, is cut into three parts A A′ A^2 on the substantially radial lines L L L. This cutting having also removed some material, the result is that when the edges of these parts are brought together the hole O is no longer a true circle, but is made up of three arcs, the middle of each one being nearer to the center of hole O than its ends, as shown in dotted lines, Fig. 3. The middle of each of these arcs is therefore made the cutting-edge on each part of the die by removing the metal in front of it, as shown in dotted lines in Fig. 3, leaving the cutting-edges *a a a* in relief toward the center, thus preventing friction between the rest of the thread and the die.

F, Fig. 1, indicates the yoke of a die-stock having handles E E, by which the tool can be rotated.

Fig. 1 shows the adjustment of the die.

B represents a follower movable in yoke F.

M represents a screw engaging with a thread in projection C, by which the follower B may be moved.

K represents a screw engaging with a thread in the other projection C and provided at its front end with conical or wedge-shaped point V, which enters between the parts A and A^2 of the die to spread them.

In the drawings the screws M and K are shown as formed in the handles E E, but they may be entirely independent of said handles.

D represents a spring-key lying in a groove on the external surface of the parts A A′ A^2, serving to hold these parts together, and also engages with a groove in the inside of yoke F and follower B, thus retaining the die in the stock.

When the die is being expanded by the point of screw K, it is evident that the parts A and A^2 swing in the arcs of circles on their points of contact with part A′ as centers, thus preserving uniformity of shape in the opening O.

The operation of my invention is obvious.

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

1. The combination of a die stock or holder, a screw-cutting die divided radially into three independent sections having cutting-edges and two of the sections adapted to swing in the arcs of circles on the opposite ends of the remaining section as centers, and an adjusting-point between the adjacent ends of the swinging sections, whereby the die is adjusted and the uniformity of shape in its opening preserved, substantially as described.

2. In combination with a die-stock, the follower B, the adjusting-screw K, and the die A A′ A^2, substantially as shown and described.

3. In combination with a die-stock F and a die A A′ A^2, the key D, substantially as shown and described.

SVEN TIDEMAN.

Witnesses:
HENRY B. LOTHROP,
GERTRUDE H. ANDERSON.