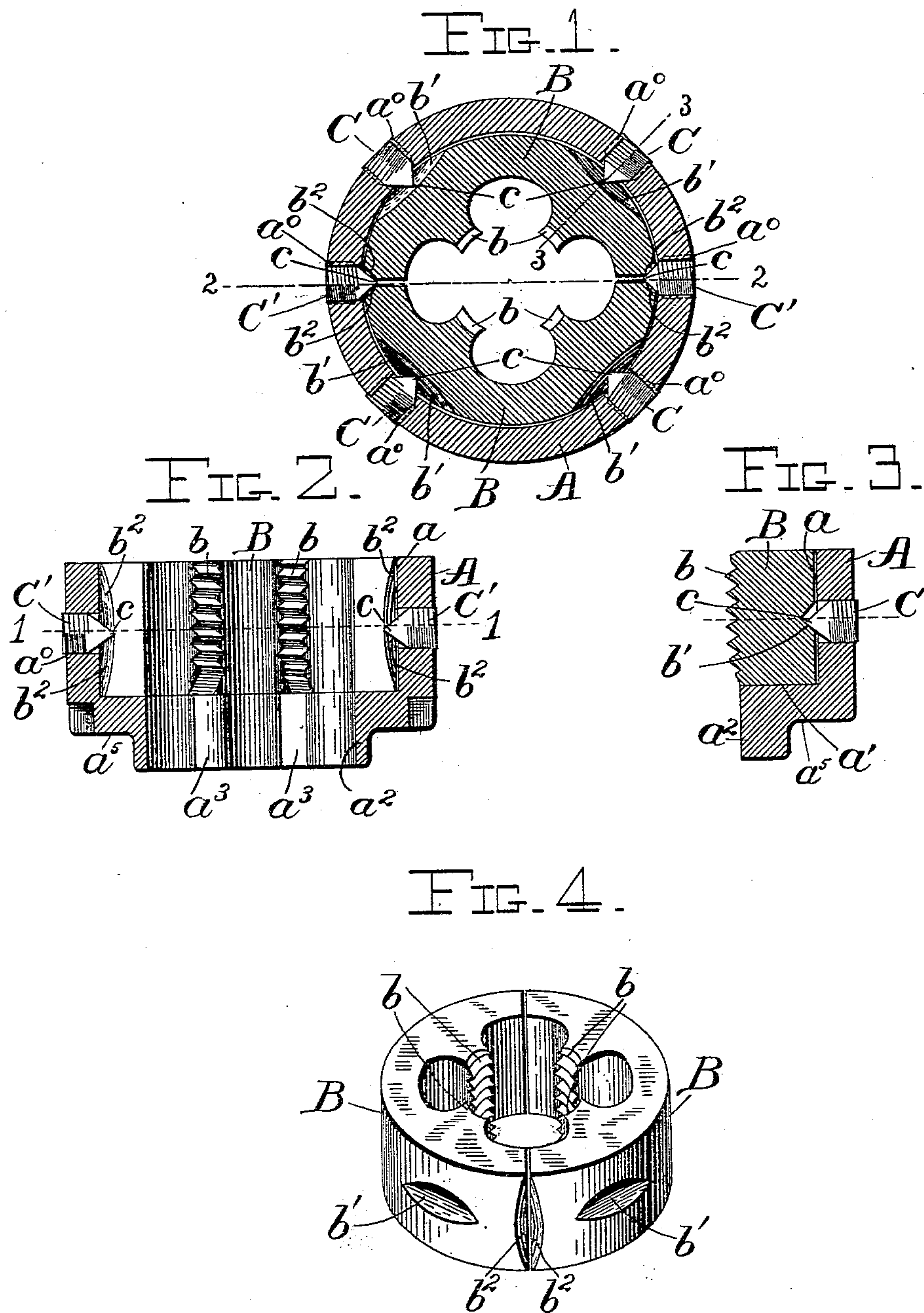


(No Model.)

A. J. SMART.  
SCREW CUTTING DIE.

No. 555,405.

Patented Feb. 25, 1896.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ALBERT J. SMART, OF GREENFIELD, MASSACHUSETTS, ASSIGNOR TO THE  
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## SCREW-CUTTING DIE.

SPECIFICATION forming part of Letters Patent No. 555,405, dated February 25, 1896.

Application filed December 12, 1895. Serial No. 571,956. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT J. SMART, a citizen of the United States, residing at Greenfield, in the county of Franklin and State of Massachusetts, 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, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in screw-cutting dies; and the said invention consists in improved means for readily adjusting and firmly holding the cutting-sections of the die within the holder.

The said invention is especially intended to provide for certain improvements upon the device shown in the patent granted to Nathan E. Martin July 23, 1895, No. 543,136.

Reference is had to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a section through a collet or holder and the die-sections in place therein, the said section being along the line 1 1 of Fig. 2. Fig. 2 represents a section along the line 2 2 of Fig. 1. Fig. 3 represents a section along the line 3 3 of Fig. 1, and Fig. 4 represents a perspective view of the die-sections as detached from the holder.

A represents a collet which is provided with a vertical cylindrical wall  $a$ , a bearing-flange  $a^1$ , and a bottom piece  $a^2$ , preferably ribbed, as at  $a^3$ . Instead of the collet, as herein described, an elastic stock or other suitable holder may be used, if desired.

Mounted in the holder are the two die-sections B provided with screw-cutting threads  $b$ . These die-sections have their outer abutting edges cut away to form double wedge-shaped grooves  $b^2$ , which are deepest at the center and become shallower toward each edge of the die-sections, as shown most clearly in Fig. 4. These grooves are preferably curved somewhat, so that the surface of each approximates that of two inclined planes placed end to end and then hollowed out somewhat, while a transverse section through any part of the said double groove is V-

shaped. The die-sections may also be provided with bearing-slots  $b'$ , the bearing-faces of which are above and below, respectively, a horizontal plane through the center of the die.

The collet or holder is perforated with two or more holes  $a^0$  oppositely disposed and interiorly screw-threaded, as shown, through which holes the conical-headed screws C and C' are screwed in. These holes  $a^0$  have their axes slightly below the center of the vertical walls  $a$ , considering the bearing-flange  $a'$  as the bottom of the holder, although it is immaterial whether the holder be used in the position shown in Fig. 2 or be turned upside down when in use.

The screws C have their conical heads  $c$  to bear against one of the faces of the slots  $b'$  and thus hold the die-section down on the bearing-flange  $a'$ , as shown in Fig. 3, while the screws C' separate the two die-sections and by entering the wedge-shaped groove  $b^2$  not only serve to give a limited adjustment to the distance between the die-sections, but also tend to assist in holding the said die-section down on the bearing-flange  $a'$ . When the cutting-threads  $b$  wear by screwing down on the screws C and easing up on the screws C', a limited adjustment of the die-sections may be had, while at the same time the said die-sections are at all times held firmly in place.

It will be obvious that where an elastic stock is used the screws C and grooves  $b'$  may be done away with and the die-sections may be both held in place and adjusted by means of the separating-screws C', which both bear down on and tend to spread apart the ends of the die-sections by means of the double wedge-shaped grooves  $b^2$ . By constructing these grooves  $b^2$  symmetrically, as shown, the die-sections may be turned over bodily in the holder and adjusted and held down by the screws C', as before. This is important where it is desired to pass bolts through the die from either direction.

By the herein-described construction the required degree of adjustment is obtained in a simple and very efficient manner, and the adjusting parts being out of the way and protected against accident the die becomes very durable.



The various other advantages of the herein-described construction would readily suggest themselves to any one skilled in the art.

It will be obvious that this method of adjustment may be used with a great variety of forms of die-holder, and I do not mean to limit myself to any particular form of collet or stock or holder.

It will be obvious that various modifications of the herein-described device might be made which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a screw-cutting die, the combination with a holder provided with a bearing flange or support on the bottom thereof, with screw-threaded perforations through the sides thereof, and opposite to each other, of die-plates mounted on said support and having their centers slightly above the axes of said perforations, with double wedge-shaped grooves in the abutting ends of said die-plates, and screws passing through said perforations and provided with conical points engaging in said double wedge-shaped grooves, and tending both to hold down and to force apart said die-plates, substantially as described.

2. In a screw-cutting die, the combination with a holder provided with a bearing flange or support on the bottom thereof, with screw-threaded perforations through the sides there-

of and opposite to each other, of die sections or plates mounted on said support with double wedge-shaped grooves in the abutting ends of said die-plates and having their deepest portions slightly above the axes of said screw-threaded perforations, and taper-pointed screws passing through said perforations and engaging in said double wedge-shaped grooves, and tending both to hold in place and to adjust the distance apart of said die-plates, substantially as described.

3. In a screw-cutting die, the combination with a holder provided with a bearing flange or support on the bottom thereof, with a plurality of screw-threaded perforations through the sides thereof and opposite to each other, of die sections or plates mounted on said support with double wedge-shaped grooves in the abutting ends of said die-plates having their deepest portions slightly above the axes of said screw-threaded perforations, and bearing-slots on the outer face of said die-sections, and taper-pointed screws passing through said perforations and engaging in said grooves and slots, substantially as and for the purposes described.

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

ALBERT J. SMART.

Witnesses:

EMORY E. KILBURN,

FRANCIS M. THOMPSON.