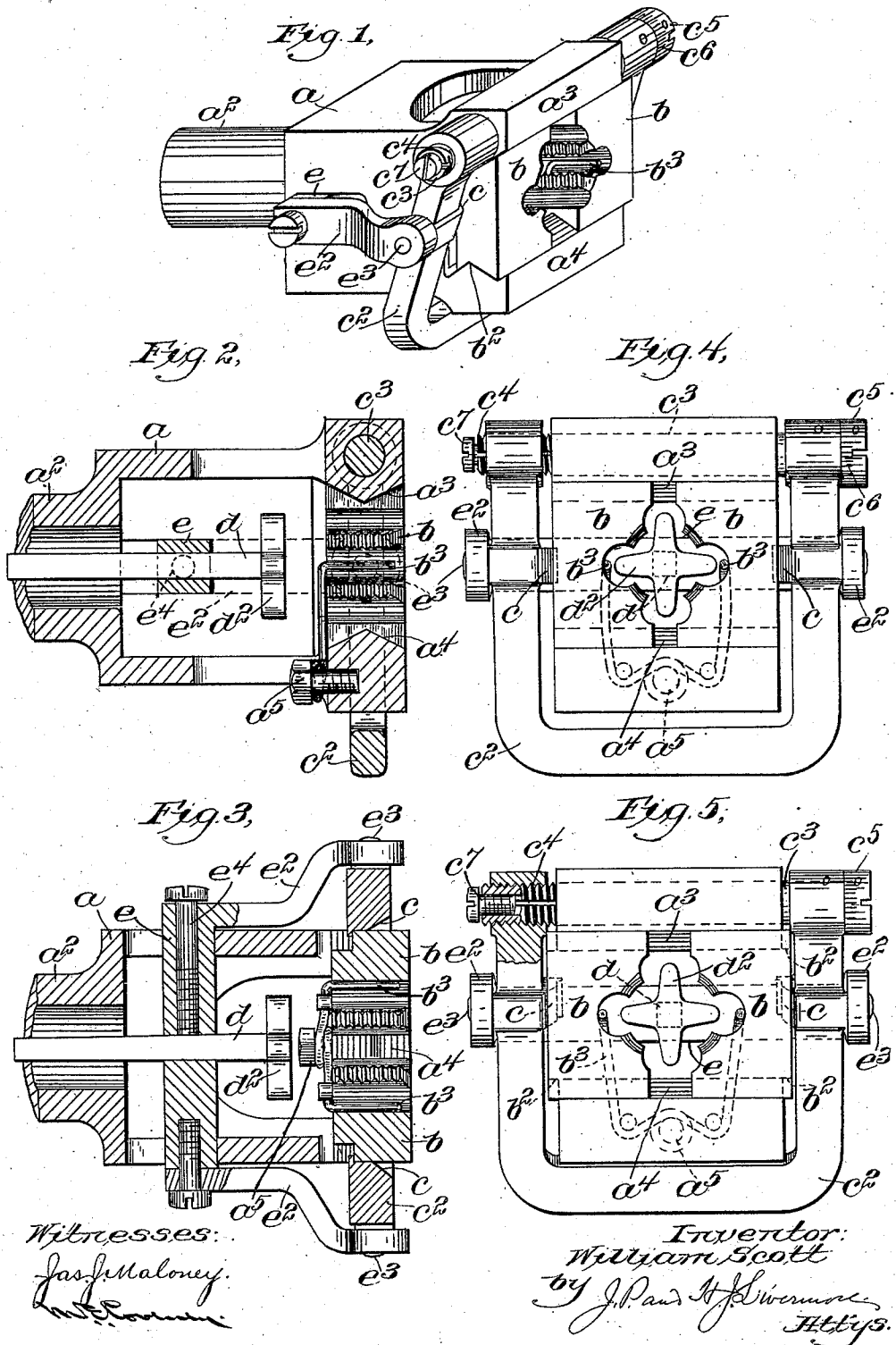


W. SCOTT.
 THREAD CUTTING DIE.
 APPLICATION FILED JULY 2, 1906.

968,701.

Patented Aug. 30, 1910.



UNITED STATES PATENT OFFICE.

WILLIAM SCOTT, OF MEDFORD, MASSACHUSETTS.

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Specification of Letters Patent. Patented Aug. 30, 1910.

Application filed July 2, 1906. Serial No. 324,403.

To all whom it may concern:

Be it known that I, WILLIAM SCOTT, a citizen of the United States, residing in Medford, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Thread-Cutting Dies, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to a die for cutting screw threads, and is embodied in an expanding die, the purpose being to cause the chasers to disengage from the material by a lateral movement after the threads are cut, so that the material can be withdrawn from the die without reversing the lathe.

A further feature of the invention consists in means for causing the chasers to disengage automatically, the disengaging means being adjustable so as to operate after any desired length of thread has been cut.

A further feature of the invention consists in means for adjusting, to a slight degree, the position of the chasers when closed ready for operation, so that a variation in the thread diameter is provided for, thereby affording provision for a tight or loose fit without departing materially from the standard size.

In accordance with the invention, the die head is provided with transverse guides for the chasers which, in turn, are caused to move toward each other in said guides by means of a yoke pivotally connected with the head and having inclined surfaces at opposite sides to engage the outer ends of the chasers. The yoke is of substantial strength and is extended around the body of the die, so that when closed in upon the chasers, it forms a solid abutment therefor, capable of resisting all the lateral strain due to the thread cutting operation. The yoke is conveniently located for operation by hand in either direction, and is also arranged so as to be connected with a member longitudinally movable with relation to the die head, and in the path of the material to be operated upon, so that the material itself, at the finish of the thread cutting operation, will act to withdraw the yoke and permit the spreading of the chasers in response to the action of a spring or springs with which they are provided for the purpose.

Figure 1 is a perspective view of a thread

cutting die embodying the invention; Fig. 2 is a vertical, longitudinal section, through the axis of the die; Fig. 3 is a horizontal, longitudinal section through the axis of the die; Fig. 4 is a front elevation showing the die closed; and Fig. 5 is a similar view showing the die open or expanded.

The die *a* is herein shown as a rectangular block of metal cast integral with the supporting shank *a*² and formed hollow to permit the entrance of the material upon which the thread is to be cut. The head *a* is provided at the front with guides *a*³ and *a*⁴ which are shown as V-shaped tracks to fit into corresponding V-shaped grooves *b*² formed along the top and bottom of the chasers *b*. The said chasers are shown as acted upon by springs *b*³ which are herein shown as formed of a single wire bent around a support *a*⁵, indicated as a bolt screwed into the head at the back part of one of the guides *a*⁴.

To close the die, that is to say, to bring the chasers into proper position to act upon the material, the outer ends of the chaser members *b* are acted upon by wedges *c* which are herein shown as inclined surfaces formed at the inner sides of a yoke *c*² which is pivotally supported in a bore or opening through the die head *a*. By making this member in the form of a yoke extending around the three sides of the head *a*, it is not only accessible for manipulation, but can be made of great strength so as to resist all the strain which is brought to bear to separate the dies in the thread cutting operation. The construction, furthermore, is susceptible of minor adjustment, the upper ends of the yoke *c*² being supported upon a bolt *c*³ which extends through the bearing in the die head, one end of said bolt being provided with a screw thread *c*⁴ cooperating with a thread in one of the yoke members, so that by turning the said bolt, the upper ends of the yoke can be sprung together to a slight extent, thereby bringing the inclined surfaces closer to the ends of the chasers and causing the chasers to be moved nearer together.

In the construction shown, the bolt-head *c*⁵ is in the form of a screw head, and the said member may further be provided with calibrations *c*⁶ to indicate the amount of adjustment, thereby practically constituting a micrometer screw.

In order to lock the parts firmly together after adjustment has been made, a locking screw c^7 may be employed, the said screw being shown as extending through an opening in the end of the bolt c^3 which is split so as to be slightly expanded through the action of the screw c^7 .

In order that the opening of the die may be automatic, so that the chasers b will expand and free themselves from the material after the desired length of thread has been cut, the yoke c^2 is connected with a supplemental actuating member d , herein shown as a rod having an engaging end portion d^2 which stands in the path of the material, passing into the die when being threaded. The said member d is herein shown as adjustably connected with a cross arm e which, in turn, has links e^2 pivotally connected at e^3 with the sides of the yoke c^2 . The member d is longitudinally adjustable with relation to the member e and is held in its adjusted position by means of a set screw e^4 , shown as extending longitudinally into the member e . The member d may, therefore, be set to the

proper position for getting any desired length of thread, and, as the final threads are being cut, the inward movement of the material will push the member d back, carrying with it the yoke and thereby releasing the chaser members b which are then separated through the action of the springs b^3 .

Claim—

The combination with the die head; of chasers movable therein; an actuating yoke pivotally supported at its open ends on the outside of the die head, the side members of the said yoke having inclined surfaces to cooperate with the chaser members; and means acting on said yoke at its open ends to draw the said ends together for the purpose of adjustment.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM SCOTT.

Witnesses:

M. E. COVENEY,
H. J. LIVERMORE.