

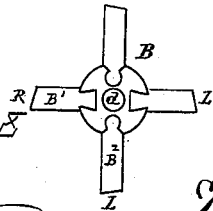
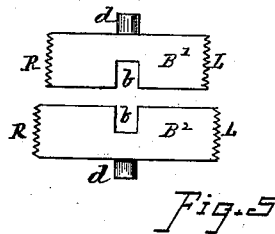
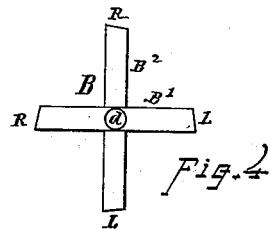
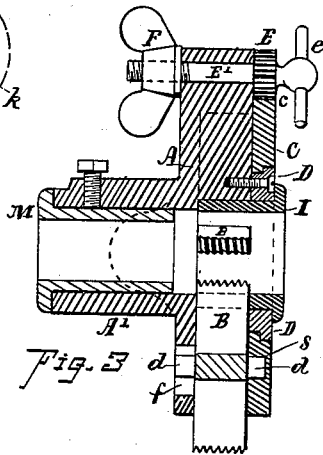
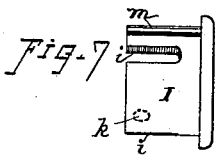
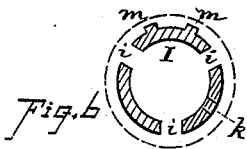
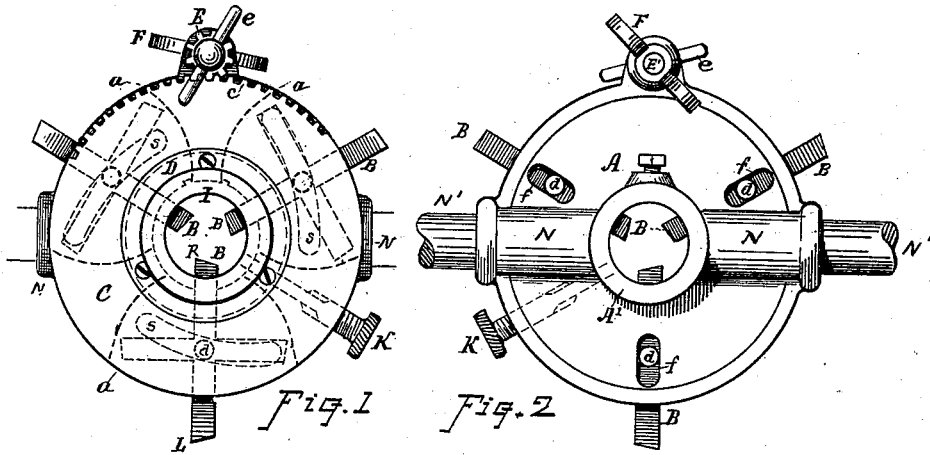
(No Model.)

T. M. BURKE.

ADJUSTABLE SCREW CUTTING DIE STOCK.

No. 316,330.

Patented Apr. 21, 1885.



WITNESSES.

Fig. 8

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# UNITED STATES PATENT OFFICE.

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## ADJUSTABLE SCREW-CUTTING DIE-STOCK.

SPECIFICATION forming part of Letters Patent No. 316,330, dated April 21, 1885.

Application filed April 28, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS M. BURKE, a citizen of the United States, residing at Fitchburg, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Adjustable Screw-Cutting Die-Stocks; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The object of my present invention is to provide a die-stock for screw-threading steam and gas pipes, and for similar purposes, having a series of changeable or rotatively-reversible dies or chasers which can be adjusted for threading different sizes of pipes without removing them from the supporting head or stock; also, to provide a form of die or chaser that can be easily constructed and kept in proper working order; also, to afford a convenient and efficient means for effecting adjustments and retaining the parts in position as adjusted. These objects I attain by mechanism the construction, arrangement, and operation of which are illustrated and herein described, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 is a front view of my improved die-stock, with dotted lines showing the interior forms. Fig. 2 is a back view of the die-stock. Fig. 3 is a vertical section. Fig. 4 is a plan of one of the threading dies or chasers. Fig. 5 is a side view of the parts of which the dies are composed. Fig. 6 is a section of the center collar. Fig. 7 is a side view of the center collar; and Fig. 8 is a modification in construction of the dies.

In reference to parts, A denotes the head or body casting provided with a central opening through which the pipe is entered, and with suitable recesses, *a*, for containing the screw-cutting dies or chasers B, which latter are arranged in relation to each other and to the central opening as indicated by dotted lines in Fig 1.

C indicates a face-plate provided with inclined or spirally-disposed slots, and mounted on a ring-piece, D, secured to the head A in such manner that the plate can be partially

rotated. The periphery of the plate C is provided with a segment of gear-teeth, as at *c*, and a pinion, E, is fixed on a stud, E', mounted in a projecting portion of the head A, which pinion meshes with the gear-teeth *c*, and serves as a means for rotating the plate C. The pinion E is provided with a cross-bar, *e*, or handle, by which it can be turned for adjusting the plate and dies, and the stud E' is fitted with a thumb-nut, F, which can be turned up against the back of the head A for clamping the pinion and thereby securing the plate C and dies B at any position of adjustment, when desired.

The dies or chasers B are made as bars or in the form of a cross. They are preferably formed of two pieces of steel, (see Fig. 5.) B' B', halved or recessed, as at *b*, and secured together in the manner indicated in Fig. 4. Trunnions or studs *d* are formed on the centers of the die, one of which studs fits into a radial slot, *f*, in the back or head A, and the other into the spirally-disposed curved slot *s* in the face-plate C, thereby securing the die within the stock while permitting radial movement of said die when the plate C is partially rotated, by revolving the pinion E.

The chasing-points or cutting-edges are formed on the ends of the bars B' B' of which the dies are made, those for right-hand threads on one end, as R, and those for left-hand threads upon the other ends, as at L. The two bars are made of different lengths, so as to adapt them for cutting threads on different-sized pipes. For instance, the bar B' may have chasing-points for threading one-fourth-inch and three-eighths-inch pipes, while the bar B'' may have chasing-points for threading one-half-inch and three-fourths-inch pipes, the change for the different sizes where the same die or chaser is used being effected by adjustment of the face-plate C to move the die nearer to or farther from the axis of the stock. In similar manner the chasers for other sizes of pipes and screw-threads may be formed.

I indicates a thimble or supporting-ring fitted to the central opening of the head A, and provided with slots or recesses *i*, that embrace the arms of the respective dies and serve to support them against the strain of the work and to keep them in radial position. Said thimble I is furnished with splines *m*, that en-

ter grooves in the head A and prevent the thimble from turning out of place.

K indicates a set-screw fitted in the side of the head A, the point of which enters an opening, *k*, in the thimble I, and secures the thimble within the head. When the screw K is turned back, the thimble can be withdrawn from the opening, leaving the dies free to be revolved on their pivots *d* within the recesses *a*, for bringing any of their chasing-points into working position, as desired.

M indicates an interchangeable bushing used in the hub A' for fitting and guiding the pipes.

N indicates sockets in which are supported the arms or handles N', by which the die-stock is revolved upon the pipe when cutting the threads by hand. This construction of die-stock may also be used in a power-machine, if desired, in which case the handles N<sup>2</sup> would be omitted, and the hub A' would be mounted on the arbor or spindle of the lathe or machine.

In the operation of the apparatus the dies can be adjusted outward or inward by turning the pinion E, which moves the plate C. The spirally-disposed slots *s*, acting upon the studs *d*, in conjunction with the radial slots *f*, effect the radial movement of the dies. For bringing the several sets of chasing-points into working position, the collar I is first removed from the opening, when the dies are moved to their outward limit, in which place they can be revolved to bring either point desired to the center of the head, after which the collar is again inserted and secured by the screw K.

When the dies are adjusted to proper position for threading a pipe of any particular size, the thumb-nut F is turned tight against the back of the head-block. This locks the pinion E and retains the parts securely in place, so that the dies or chasers will not be forced back by the strain of cutting the threads. In lieu of making the dies of two bars crossed and notched together, they could be made with the separate arms individually fitted to a center or hub, as indicated in Fig. 8.

By constructing and arranging the mechanism as herein described the die-stock is complete in itself, with dies for several sizes of pipes, and there is no liability of losing or mislaying the dies for the different sizes, as

frequently occurs with the ordinary die-stocks when separate dies are used. The dies can be easily and cheaply constructed, and in case one of the chasers becomes broken that part can be renewed without the necessity of an entire new set.

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

1. The combination, with the head-block A, having the central opening and side recesses, as *a*, of the reversible chasers B, mounted for radial adjustment within said recesses and having series of arms for working different diameters, provided with right-hand and left-hand thread-cutters at their respective ends, a ring for supporting the arms at working position, and means for securing the chasers at positions of adjustment, substantially as hereinbefore described.

2. The combination of the recessed head-block A, rotative dies B, having arms fitted for chasing different styled threads, mounted for radial adjustment in said head, the rotative face-plate C, having slots for moving said dies, the center thimble, I, and means for securing the parts at positions of adjustment, substantially as set forth.

3. The combination, with the rotative face-plate having inclined slots for moving the dies or chasers, of the gear-pinion meshing with teeth *c* on said plate and provided with a handle for turning and adjusting it, and means for locking or clamping said pinion in position for retaining the plate and dies as adjusted, substantially as set forth.

4. The die B, formed in separable parts B' B<sup>2</sup>, fitted and locked together, substantially as set forth.

5. The removable non-rotative thimble I, having slots *i*, in combination with the revolvable dies B and supporting-head A, substantially as and for the purpose set forth.

6. The combination, with the head-block A and dies B, of the removable die-supporting ring or thimble having splines *m* and slots *i*, and the set-screw K, as shown and described.

Witness my hand this 22d day of April, A. D. 1884.

THOMAS M. BURKE.

Witnesses:

JOSEPH W. WILDER,  
DAVID H. MERRIAM.