

L. R. FAUGHT.

Improvement in Die-Stocks for Cutting Screws.

No. 115,291.

Patented May 30, 1871.

Fig. 1.

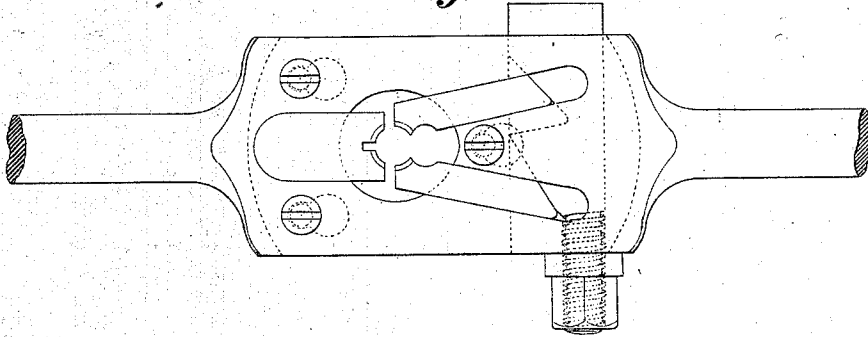


Fig. 2.

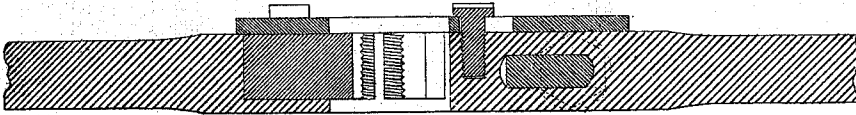


Fig. 3.

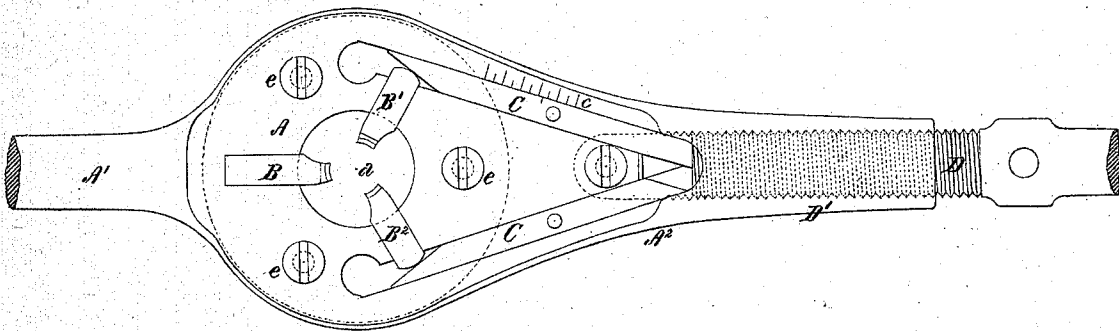
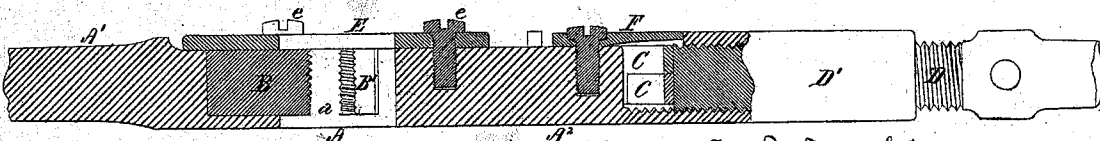


Fig. 4.



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# UNITED STATES PATENT OFFICE.

LUTHER R. FAUGHT, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN DIE-STOCKS FOR CUTTING SCREWS.

Specification forming part of Letters Patent No. 115,291, dated May 30, 1871.

*To all whom it may concern:*

Be it known that I, LUTHER R. FAUGHT, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Die-Stocks for Cutting Screws, of which the following is a specification:

My invention relates to an improved method of arranging and adjusting the dies in the stock so that the dies are adjusted radially to the center of the bolt to be operated on, and, when adjusted, each die will exert its cutting action upon the bolt in an advantageous manner and the operation of cutting a screw be performed with increased dispatch and accuracy; to which end my improvement consists in the combination of a fixed die, movable dies traversing in the stock and adjustable radially to the center of the bolt to be cut, sliding wedges to act upon the adjustable dies, and a screw to operate the wedges, as hereinafter more fully set forth.

It is difficult to attain accuracy of workmanship in cutting screws by the common die-stocks or hand-plates as heretofore constructed, the thread produced being imperfect and the pitch irregular. The dies, moreover, owing to their imperfect action upon the metal of the screw-blank, tend to squeeze or jam the same instead of cutting it freely, and screws are frequently produced of varying diameters in different portions of their length, rendering it extremely difficult to obtain a fit between the screw and nut. Such screws, likewise, are necessarily inferior in strength to those which have a clean and true thread, and the cutting-dies become rapidly worn and require frequent grinding. In the die-stocks embracing my improvements practice has demonstrated that these difficulties are overcome. The dies cut easily and rapidly from their position and favorable action upon the screw-blank. Each thread of each die performs a cutting office, and, by reason of their triangular bearing toward a common center, the strain upon them is equalized. As there is no tendency to jam or squeeze the metal the dies do not wear with the rapidity of those heretofore used. The dies, moreover, having a narrow face, can be readily ground when worn.

I have found that the screws produced by my improved die-stocks have a clean, sharply-defined, and regularly-pitched thread, very

nearly approximating to those cut in a lathe and the operation is performed with a great saving of time and labor.

In the accompanying drawing, Figure 1 is a view, in elevation, of Whitworth's die-stock, heretofore known and used, the cap-plate being removed to show its construction more clearly; Fig. 2, a longitudinal central section through the same; Fig. 3, a view, in elevation, of a die-stock embracing my improvements, with the cap-plate removed; and Fig. 4, a longitudinal central section of the same.

A suitable metallic plate or stock, A, provided with arms  $A^1 A^2$ , one of which,  $A^1$ , is made of sufficient length to be used as one of the handles by which it is turned, serves for the reception of the operating mechanism. A circular opening,  $a$ , is formed in the center of the plate, from which three guide-slots radiate at points equidistant from each other. Within these guide-slots are placed steel dies  $B^1 B^2$ , that one, B, which corresponds in position with the longitudinal center-line of the die-stock being stationary, the other two being movable, and, from the radial position of the guide-slots, necessarily adjustable to a common center. The dies  $B^1 B^2$  are, respectively, moved toward the center of the opening  $a$  by two sliding wedges, C C, which traverse in slots formed in the die-stock A, and inclined at equal angles to its longitudinal center-line, their meeting-point being therein, and their greatest distance apart being on or nearly on a transverse line drawn through the center of the opening  $a$ . The guide-slots of the dies  $B^1 B^2$  open into the slots of the wedges C C, into which slots the dies project to a greater or lesser extent, and from which they are projected toward a common center by the wedges C C when the latter are moved toward the opening  $a$ , which movement is effected by a screw, D, working in a long nut,  $D'$ , formed in the arm  $A^2$  of the stock A. The screw D is prolonged to such length as required, to be used in connection with the arm  $A^1$  for turning the die-stock. A gage,  $c$ , may be formed upon the stock A to indicate the proper positions of the dies and wedges for the diameters of the screws cut. The dies and wedges are maintained in the stock by a cap-plate, E, secured by screws  $e$ , and a smaller cap, F, is screwed to the stock near the meeting-point of the wedges B C to further guard against displacement thereof.

By comparing my improved die-stock with the Whitworth stock, shown in Figs. 1 and 2, its advantages will be more clearly apparent. In this form of die-stock the adjustable dies are not radial, and, from their form and position, cannot act with the ease and accuracy of mine. The stationary die serves chiefly as a guide or bearing in forming the thread, and only one cutting-edge at a time practically acts, thereby increasing the wear of the dies and the labor and time required for the operation.

The arrangement and operation of my dies, as hereinbefore shown, are such as to equalize the strain and wear upon them. They exert equally a guiding and a cutting action, and are easily and quickly adjustable or removable, as circumstances may require.

I do not claim the use of radial dies in a

screw-stock, as such have been heretofore known, but differently constructed and operated from mine.

What I claim as my invention is—

1. The combination of the stationary die, the movable dies adjustable radially relatively to the axis of the dies, and the adjusting-wedges moving endwise in the die-stock, all these parts being constructed to operate in combination, substantially as hereinbefore set forth.

2. The combination of the die-stock, the radially-adjustable dies, the adjusting-wedges, and the adjusting-screw moving longitudinally in the die-stock, as described.

L. R. FAUGHT.

Witnesses:

GEO. H. KIRK,  
JOHN H. REDFIELD.