

(No Model.)

2 Sheets—Sheet 1.

J. H. STERNBERGH & R. PEMBERTON.
SCREW CUTTING DIE STOCK.

No. 409,253.

Patented Aug. 20, 1889.

FIG. 1.

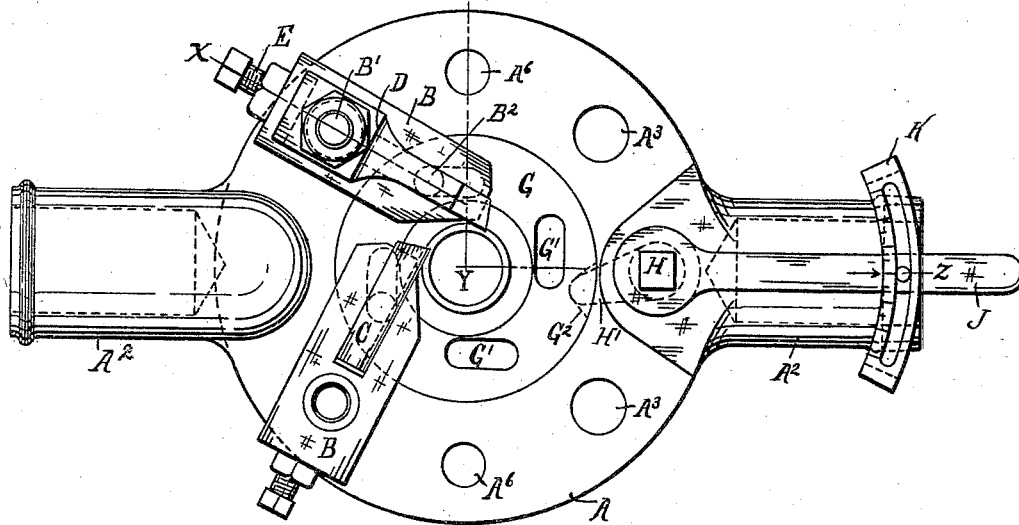
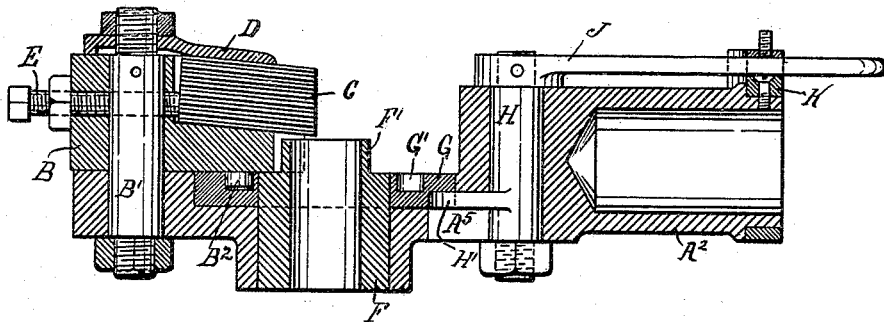


FIG. 2.



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FIG. 3.

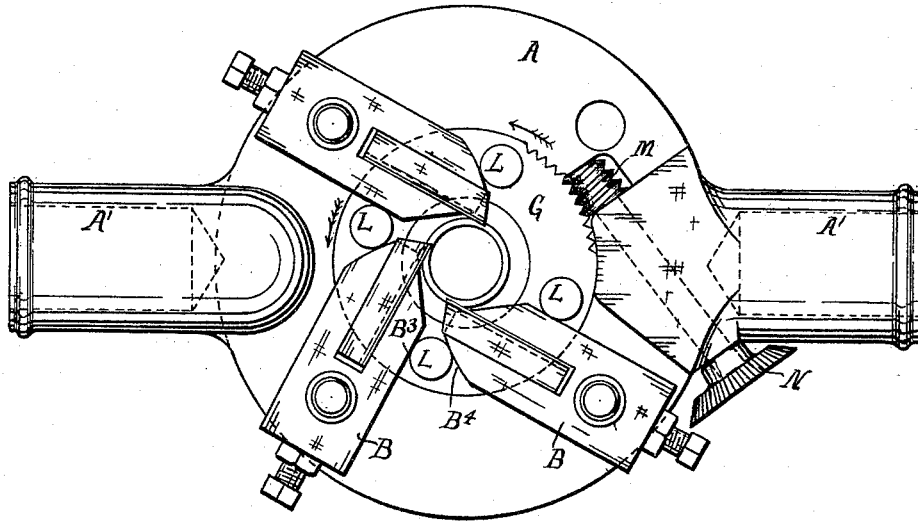
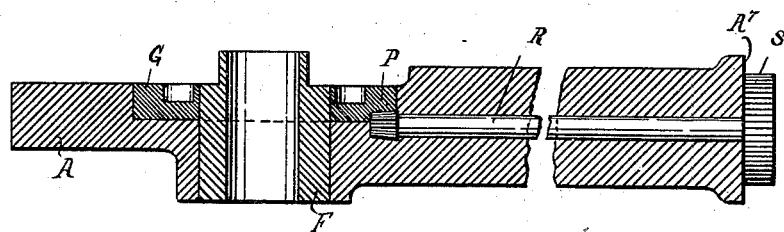


FIG. 4.



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UNITED STATES PATENT OFFICE.

JAMES H. STERNBERGH AND ROBERT PEMBERTON, OF READING,
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SCREW-CUTTING DIE-STOCK.

SPECIFICATION forming part of Letters Patent No. 409,253, dated August 20, 1889.

Application filed April 19, 1889. Serial No. 307,863. (No model.)

To all whom it may concern:

Be it known that we, JAMES H. STERNBERGH, a citizen of the United States, and ROBERT PEMBERTON, a citizen of Great Britain, both residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Screw-Cutting Die-Stocks; and we do 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, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

This invention relates particularly to screw-cutting die-stocks, and more especially to that class in which the cutters are adjustable simultaneously for the purpose of varying the diameter of the threaded bolt or of releasing them from the finished work. It is adapted for cutters having a longitudinally-grooved face which is held tangent to the work.

Heretofore screw-cutting die-stocks have been used in which cutters have been simultaneously adjusted radially. Our invention is adapted to give the cutters a simultaneous pivotal movement in a novel and effective manner; and it consists in the arrangement of the cutters and mechanism for moving them, as fully set forth herein.

Figure 1 is a full top view of our screw-cutting die-stock, showing two cutters in open position and the other two removed. Fig. 2 is an irregular section of the die-stock and the cutter-holder mainly on the line X Y Z of Fig. 1. Figs. 3 and 4 show modifications of our invention.

A represents the die stock or plate, provided with sockets A² for suitable handles. The cutter-holders B are pivoted to the stocks A by means of trunnions B', which pass through holes A³ in the stock, and cutters C, provided with a longitudinally-grooved face, are held at a proper incline for the angle of the thread in suitable slots in the holders by means of clamps D and nuts after having been adjusted by screws E. Pins B² project from the under face of the holders and enter eccentric slots G' in the upper face of an annular plate G,

which is recessed into the stock A, so that its upper surface is level with the upper surface of the stock A. A guide-thimble F is secured in the center of the latter, and its extension F' reaches nearly to the cutters, which move over it.

The mechanism employed to turn the plate G, which engages with and operates the cutters, consists of a vertical shaft H, journaled in the heavy part of the stock and provided with an arm H', which extends toward the center of the stock A a sufficient distance for its end to enter a recess G² in the under surface of the plate. This shaft is pushed upward into its position in the stock, the under side of the latter being slotted at A³ to permit the arm H' to enter and engage the plate. A lever J is secured to the projecting end of the shaft H for the purpose of turning the latter, and extends beyond the end of the socket A², to which a quadrant K is secured. This quadrant is provided with a scale and suitable means for holding the lever in any desired position, as determined by the diameter of the thread to be cut.

Our die-stock is intended more particularly for use as a hand-tool, but is also adapted to be chucked in a lathe or bolted, as through holes A², to a face-plate or the table of a drill-press, and to be thus used for either screw-cutting or milling purposes. The operation in any case is substantially the same. The cutters are set so as to do an equal amount of work on any size of bolt, and are then simultaneously and equally opened or closed to any desired extent by moving the lever J to the proper position on the quadrant K. The guide-thimble F may be changed to suit the size of the bolt to be worked on. The eccentric slots G' are entirely covered by the holders, and the chips can in no way interfere with the proper working of the parts. The cutters are arranged with the grooved face tangent to the work, are moved directly and accurately to and from the work, and being provided with ample clearance and adapted to cut with the greatest keenness, instead of pushing and bruising the metal, superior work is accomplished with greatly-reduced labor and wear.

We do not limit our invention to the exact construction shown, as the latter may be considerably modified without departing from the spirit of our invention herein described. Fig. 3, for instance, shows a modification in which the plate G is provided with pins L, each of which is in engagement with surfaces B³ and B⁴ of two adjacent pivoted cutter-holders in such a manner that the movement of the plate G in the direction indicated by the arrow will move the cutters simultaneously toward the center, and a corresponding movement in the opposite direction will in like manner withdraw them.

The mechanism for rotating the plate for the purpose of adjusting the cutters consists of a worm M, gearing with a toothed portion of the periphery of the disk and rotated by means of a wheel N, secured to the opposite end of the worm-shaft. This wheel may be graduated on the face and set to a line on the socket A' for exact adjustment. The worm will securely hold the plate at any point to which it is set.

Fig. 4 is a similar section to that shown in Fig. 2 of a die-stock in which the plate is rotated by means of a bevel-pinion on the end of a shaft passing through one of the handles of the tool and terminating in a suitable wheel S, which may bear against a graduated face A'. These and other modifications and equivalents involving the principle of our invention it is intended to cover by the following claims, which we desire to secure.

What we claim is—

1. The combination, with a die-stock and cutters pivotally secured to the front face of

said stock, of a sliding plate located within a recess in said front face and engaging each of said cutters and means for sliding the plate. 40

2. In a screw-cutting die-stock, the combination, with the cutter-holders pivoted to the front face of the die-stock, of a plate located within a recess in the front face of the die-stock and provided with eccentric slots, each of which engages a pin projecting rearwardly from the holders, and means for sliding said plate, all substantially as set forth. 45

3. The combination, with a die-stock having a recess in the front face thereof and a movable plate located within said recess, of cutters pivotally secured to the front face of the die-stock and engaging the movable plate and a rotary shaft for actuating said plate, substantially as set forth. 50

4. The combination, with a die-stock, movably-secured cutters, a sliding plate engaging each of said cutters, and means for sliding said plate, of the removable guide-thimble passing through the plate, substantially as set forth. 55

5. In a screw-cutting die-stock, the combination of the movable cutter-holders, the recessed plate engaging the holders, the removable guide-thimble, and means for sliding said plate, all arranged and adapted to operate substantially as set forth. 60

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES H. STERNBERGH.

ROBERT PEMBERTON.

Witnesses:

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A. J. WRIGHT.