(No Model.)

A. J. POLK.

SCREW CUTTING DIE.

No. 321,755. Patented July 7, 1885.

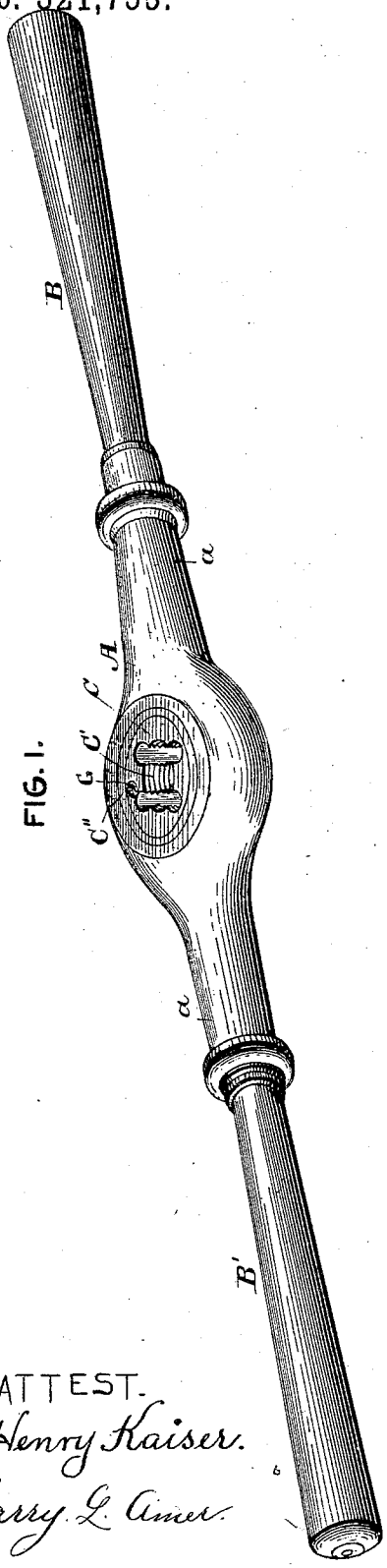


FIG. 1.

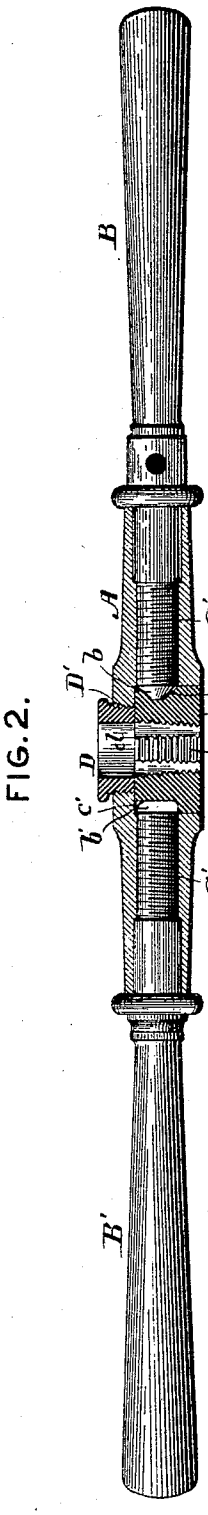


FIG. 2.

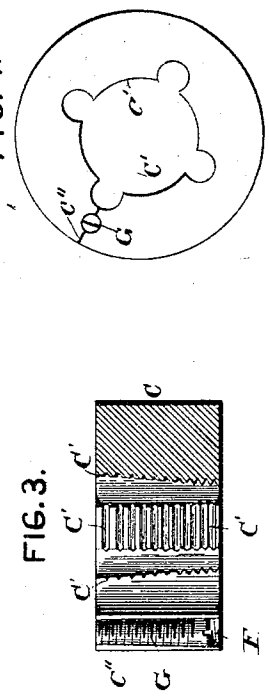


FIG. 3.

FIG. 4.

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UNITED STATES PATENT OFFICE.

ANDREW J. POLK, OF MILLERSBURG, PENNSYLVANIA.

SCREW-CUTTING DIE.

SPECIFICATION forming part of Letters Patent No. 321,755, dated July 7, 1885.

Application filed December 20, 1884. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. POLK, a citizen of the United States, residing at Millersburg, Dauphin county, Pennsylvania, have invented certain new and useful Improvements in Screw-Cutting Dies and Stocks therefor; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to an improvement in dies for cutting screw-threads and to stocks for containing the same.

My invention has for its object the provision of means for regulating or adjusting the size of the die, and it has for its further object the provision of means for securing the die in the stock.

My invention consists, first, in the provision of a die composed of a single piece of metal of cylindrical form, and having the usual screw-cutting central orifice, said die being split at one side, where it is provided with a tapered screw, which works in a tapered screw-threaded hole running parallel to the screw-cutting orifice.

My invention further consists in the combination, with a cylindrical screw-cutting die having a square slot on one side and a concavity on the other, of a die-stock having a cylindrical opening for the reception of such die, and two handles screwing into said stock, one of said handles being provided with a squared end, which enters the slot on one side of the die, and the other with a tapered end, which enters the concavity on the other side of the die, whereby the die is held rigidly in position in the stock.

My invention still further consists in the novel construction and arrangements of parts hereinafter described and claimed.

Referring to the accompanying drawings, Figure 1 is a perspective view of the stock and the die in position therein; Fig. 2, a longitudinal section of the same; Fig. 3, a vertical section of the die, and Fig. 4 a plan view of the die.

A designates the body of the die-stock, having the side extensions, *a a*, screw-threaded at *a' a'* for the reception of handles B B'. The body of the stock has a central opening, A', for the reception of the die C, and the ends of the handles B B' project slightly into said opening. The handle B' has a square end, *b'*, and the handle B a tapered end, *b*, the square end *b'* entering a slot, *c'*, on one side of the die, and the tapered end *b* entering a depression, *c*, on the other, thereby serving to retain the die firmly in position and preventing it from turning in the stock. The handle B' is permanently screwed into the stock, while the handle B is removable.

The die may be removed from the stock, when desired, by slightly unscrewing the handle B, the slot *c'* permitting the die to be drawn out when the tapered end of handle B is withdrawn from the depression *c*.

The opening A' in the stock does not extend completely therethrough, the face of the stock, or that side which is presented to the work, being provided with a smaller screw-threaded opening, D', into which screws a bush, D, having a central opening, *d*. The inner end of said bush bears against the face of the die, and prevents the latter from starting obliquely to the direction of its axis.

I will now proceed to describe more particularly the construction and operation of the die.

Said die consists of a single cylindrical piece of metal, provided with the usual central opening with screw-cutting faces C' C'. The die is split at one side at C'', and at that point a tapering screw-threaded hole, F, is formed, running through the die from front to rear. In the said hole F is screwed a tapering screw, G, and by screwing the same into or out of the hole the die is expanded or allowed to contract by its own elasticity, and the size of its central orifice correspondingly increased or diminished. The screw G being made to fit tightly the tapering hole F, by reason of the slight amount of spring and the great resistance of the die to the expanding action of the screw as it enters its tapering hole, the opposing cutting-faces of the interior orifice of the die are kept in perfect alignment, and it is impossible for one side of the die to rise above or sink below the other; hence it is that the die will always hold the exact lead and cut a perfect screw.

I am aware that it is not new to construct a screw-cutting die of a single cylindrical piece of metal split at one side, and expanded by

means of a screw; but I would call particular attention to the fact that in my die the screw enters a tapering hole which passes through the die from front to back in the direction of the longitudinal axis of the screw-cutting orifice. By means of this novel construction and arrangement I am enabled to expand or contract the die-opening simply by turning a single screw, and without removing the die from the stock. The screw in this position also serves to preserve the proper alignment of the cutting-faces, as before mentioned, and insures the cutting of a perfect thread.

The peculiar construction and arrangement of the handles permits of the stock being manufactured at less expense than where one or other of the handles is made integral with the stock and the die secured in position by means of separate fastening devices, the projecting ends of the handles serving to retain the die firmly in position without the aid of other securing devices. This arrangement of the handles with relation to the stock and die materially cheapens the manufacture, for the reason that the opening A′ may be cut in the stock without leaving any projection or lug. This arrangement allows the die to be readily removed and replaced when desired to use one of different size or pitch.

Having fully described my invention, I claim—

1. A screw-cutting die consisting of a single piece of metal having a central orifice, a longitudinal split at one side, a tapering screw-threaded hole running parallel to said split, and a tapering screw fitting in said hole, substantially as described.

2. The combination, with a cylindrical die having a slot at one side and a depression at the other, of a stock having screw-threaded handles adapted to screw into the stock, their ends projecting, respectively, into said slot and depression, substantially as described.

3. The combination, with die-stock A, having opening A′, for the reception of a die and handles, B B′, whose ends project into said opening, of die C, having split C′ at one side, tapering hole F, receiving tapering screw G, slot *c′*, and depression *c*, all constructed and arranged substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 15th day of December, 1884.

ANDREW J. POLK.

Witnesses:
B. F. STONER,
SIMON S. BOWMAN.