

E. P. BAVILLE.  
Screw-Cutting Stock and Tool.

No. 206,920.

Patented Aug. 13, 1878.

Fig. 1.

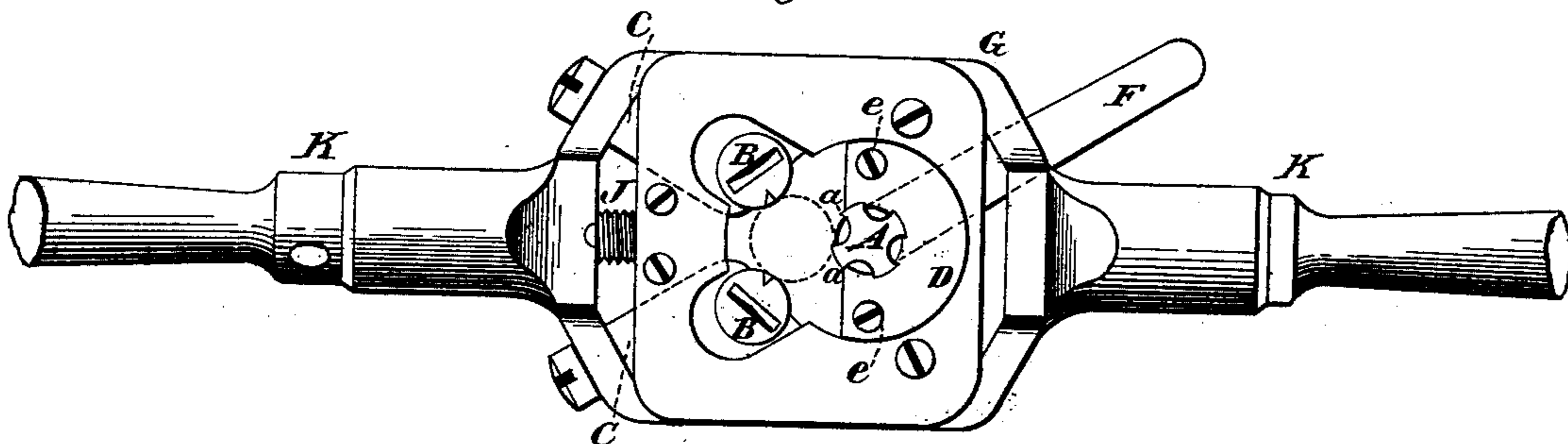


Fig. 2.

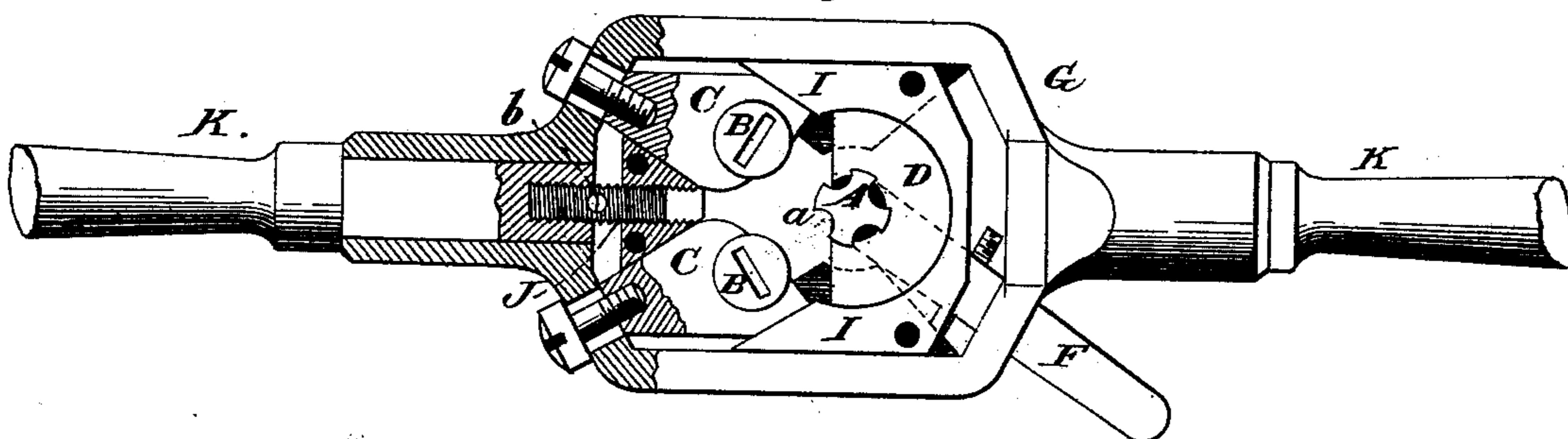


Fig. 3.

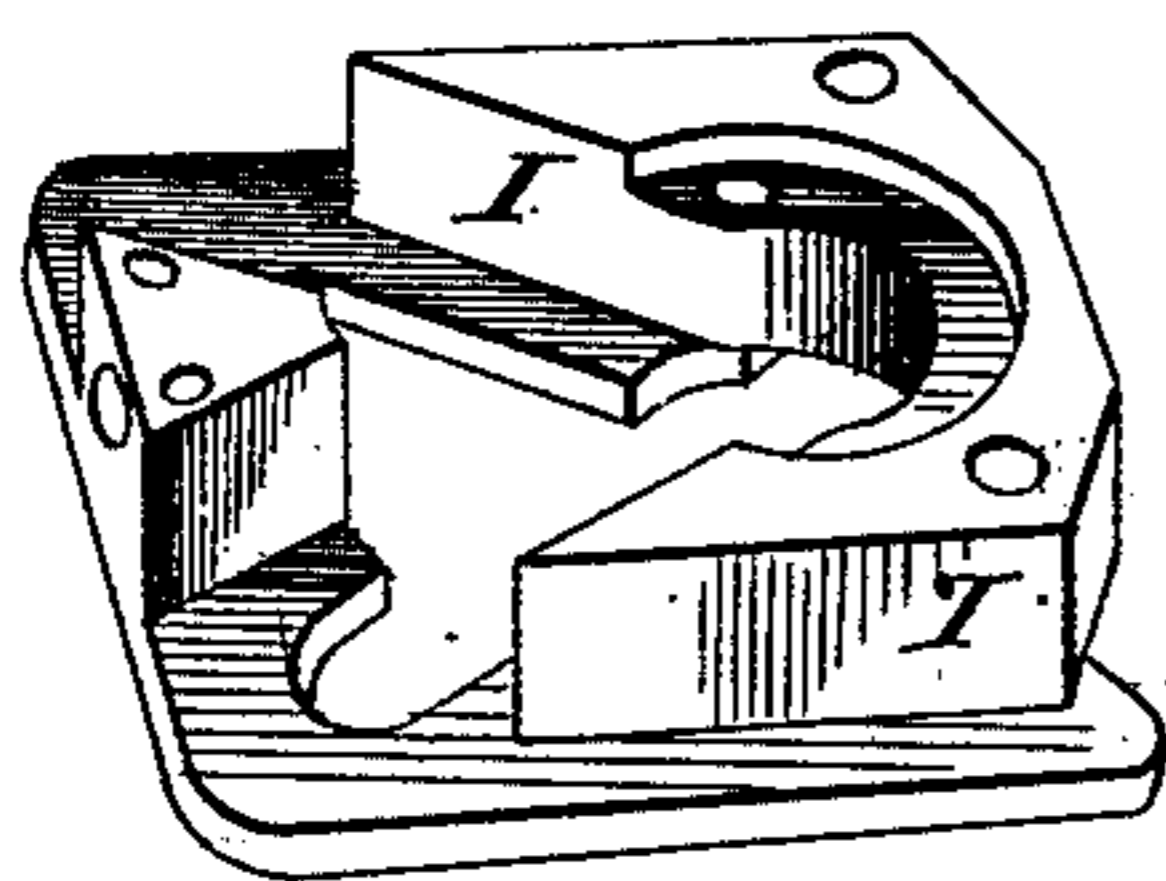


Fig. 4.

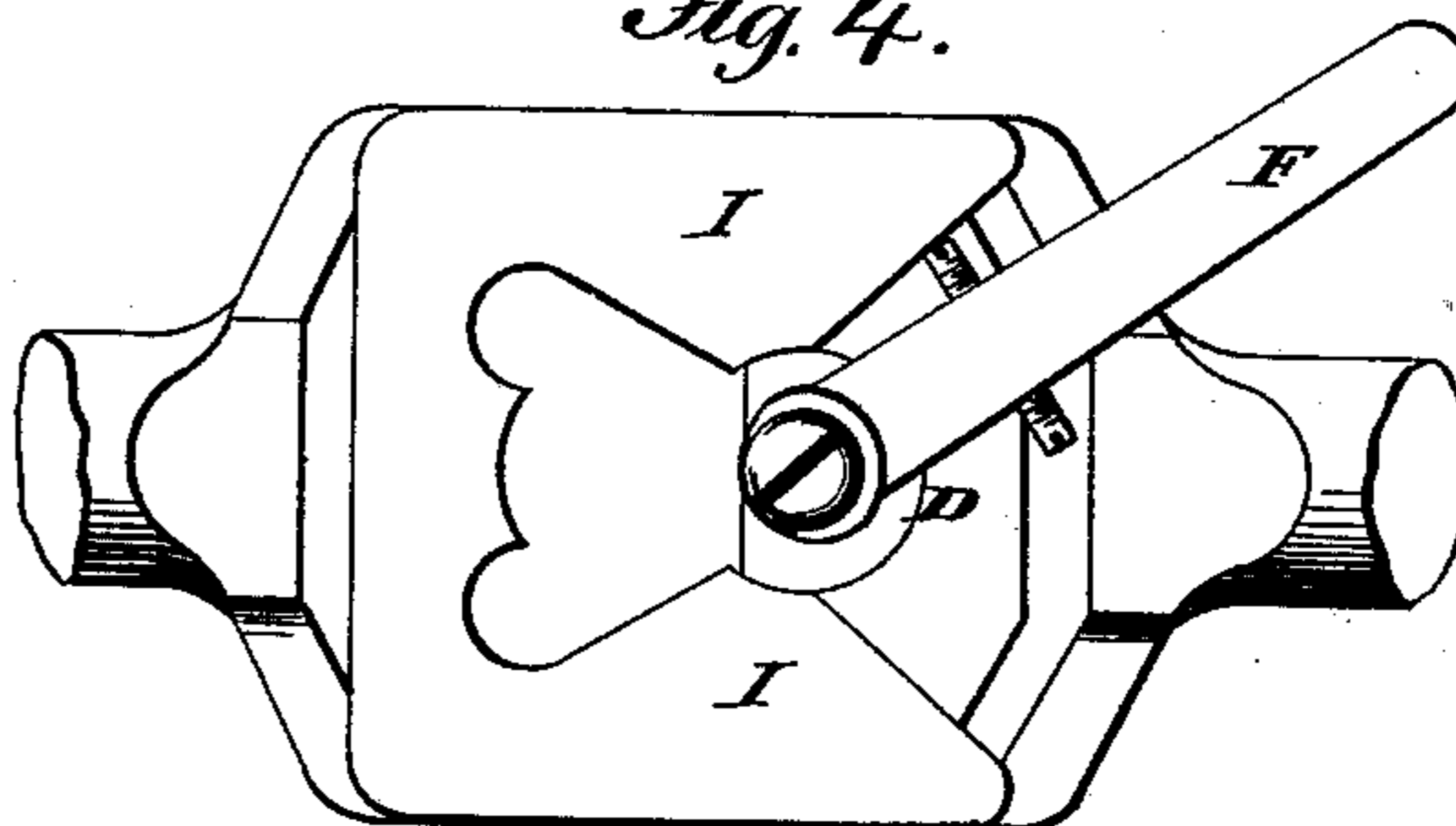


Fig. 5.

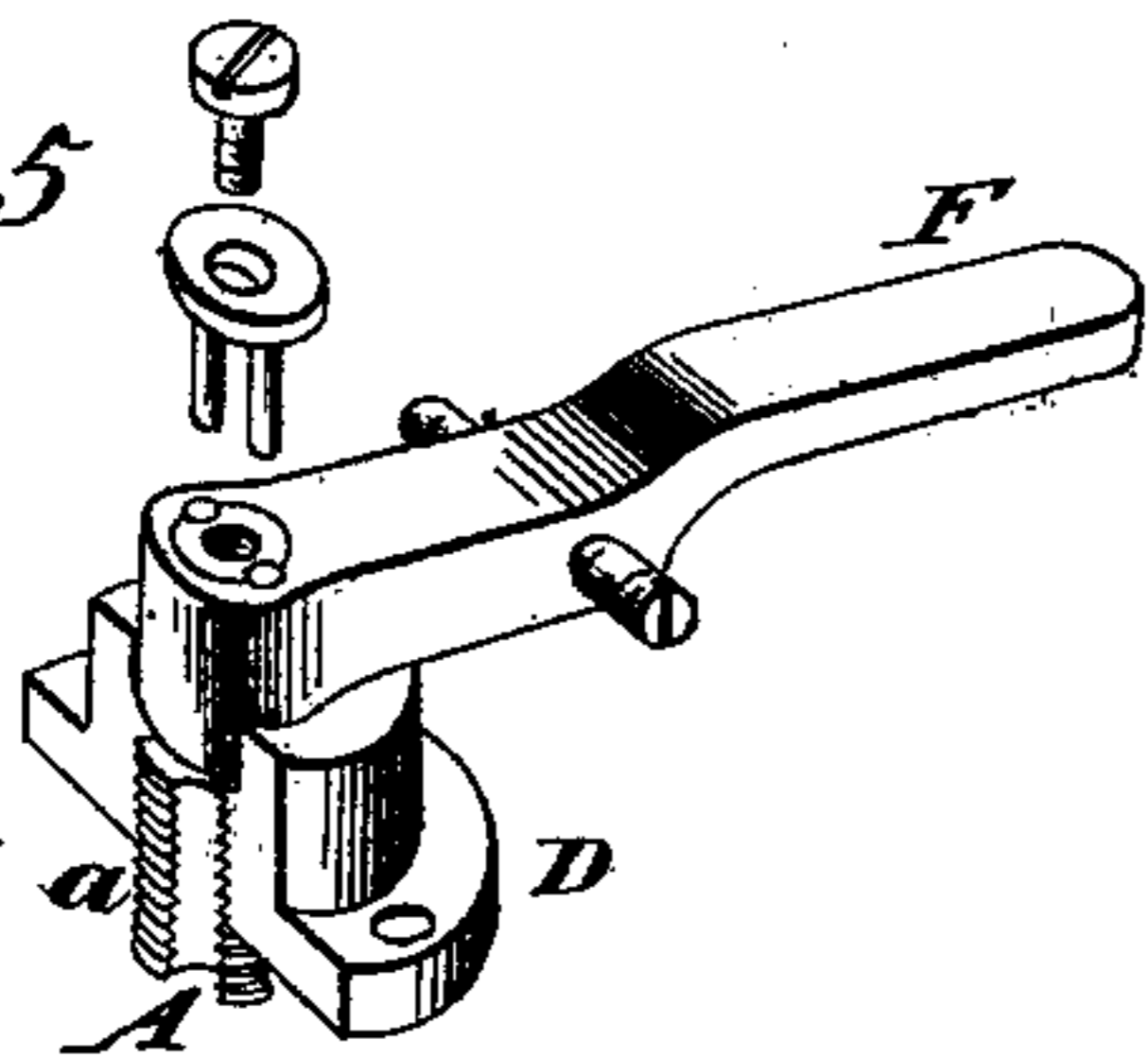
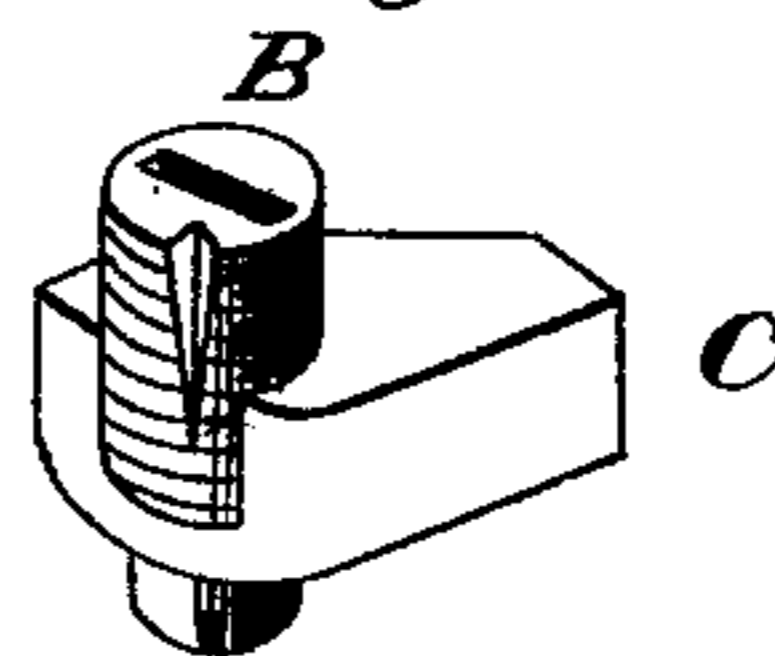


Fig. 6.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN SCREW-CUTTING STOCKS AND TOOLS.

Specification forming part of Letters Patent No. **206,920**, dated August 13, 1878; application filed May 9, 1878.

*To all whom it may concern:*

Be it known that I, EDMOND PIERRE BAVILLE, civil engineer, of the city of Paris, Republic of France, have invented certain new and useful Improvements in Hand Screw-Cutting Stocks and Tools, which said improvements are fully set forth in the following specification, reference being had to the annexed drawings, forming part of said specification, and of which—

Figure 1 is a plan view. Fig. 2 is a similar view, partly in section. Fig. 3 is a perspective view of the inner face of the slide. Fig. 4 is a plan view of the opposite side to that shown in Fig. 1. Fig. 5 is a perspective view of the lever and its attachment. Fig. 6 is a perspective view of one of the guides and attachment.

Heretofore the machinery, apparatus, or tools used in cutting screws have generally consisted of square or rectangular blocks of steel, which are bored through, tapped, and split apart in two equal pieces, thus forming two distinct tools, constituting the so-called "dies" applied to screw-cutting, both by hand and machinery, one set being necessary for each diameter of bolt or screw that may be required. Every practical machinist is aware of the grave objection existing against this class of tools. Having no edge or cutting angle whatever, they merely press upon the entire circumference of the bolt at once, and, by repeated action, cause the thread to be impressed rather than cut upon the surface of the metal. The consequence of this operation is, that the metal thus compressed swells and expands as soon as it is released from the pressure upon it, so that the thread can never be made with perfect accuracy. I overcome all these difficulties by means of the devices and tools which I have invented.

In lieu of the concave dies above described and now in general use, I use a screw-cutting tool of a convex tap-like shape, A, Figs. 1, 2, and 5, regularly cut on the lathe. This tool or cutter is provided with lengthwise grooves, two, three, or four in number, giving as many cutting-edges, *a*, as there are threads on the length of the tool. This is the cutting-tool proper or screw-cutter.

The other two most important elements of

my invention are the guides B B, Figs. 1, 2, and 6, which consist of two steel cylinders bearing a thread of the same pitch as that of the cutter, the object of which is to trace the thread on the surface of the bolt, and support the latter while subjected to the action of the cutter A. One important feature of my invention, to which I must call special attention, is that these two guides, as well as the cutter, must all be threaded in a direction opposite to that which it is desired to give to the bolt. Thus, if the bolt is to bear a right-hand thread; the guides must be made with a left-hand thread, and vice versa.

The following is a clear and complete description of a hand screw-cutting stock constructed according to my invention: G is a stout wrought-iron frame, fitted to receive within it the screw-cutting stock I. This stock is provided with two recesses for receiving the guide-holders C C, which hold the guides B B. It is also provided with another recess at its lower part, wherein to receive the cutting-tool A, with its holder D. This holder is tapped through with a thread similar to that of the cutter, and into this tap-hole the latter is screwed and firmly set. The upper part of the cutter projects in the shape of a small square stem, upon which is affixed the lever F. The cutter-holder is held on the stock by means of the screws *e e*. The regulating-screw J, lodged within one of the handles K K, serves to move up or down the screwing-stock I, thus bringing the cutter A nearer or farther at will. This motion also causes the guide-holders C C, which are loose in their recesses, to move on an angle of sixty degrees, which motion keeps them always centered upon any bolt, whatever its diameter, on which it may be desired to cut a thread. In this manner bolts of any one given pitch may be cut of any diameter within the capacity of the tool.

After the first cut, and before working upward for a second cut, the lever F is thrown back, so as to present to the bolt the other cutting-angle of the cutter A, and thus I obtain an upward as well as a downward cut. With a tool thus constructed a screw may be perfected in two cuts—one down and one up—whereas, with the stocks and dies now in use, as many as sixteen cuts are frequently re-

quired. Finally, when the edges of the cutter have become dull by usage, they may easily be sharpened on the grindstone, and the tool thus made to last almost indefinitely, whereas the dies now generally in use cannot be ground, and are soon destroyed by the great strain upon them.

Having now fully described my invention, I desire to say that I do not mean to confine its application to the design shown in the drawing, but that the same combination may be used in connection with machinery worked by steam or other power, for the purpose of cutting screws or bolts, and that

What I claim as new, and desire to protect by Letters Patent, is—

1. The combination of the reversible cutting-

tool A with the supporting-guides B B, both having on their surfaces reversed threads of corresponding pitch, substantially as set forth.

2. In combination with the cutter A and guides B B, the parts D, I, and C, and screw J, by means of which the cutting and supporting parts are held and simultaneously adjusted, substantially as set forth.

3. In combination with the screw-cutting tool A and holder D, the lever F, or its equivalent, for reversing the position of the cutter, substantially as set forth.

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Witnesses:

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