

(No Model.)

G. ARMSTRONG.  
TOOL HOLDER.

No. 492,381.

Patented Feb. 28, 1893.

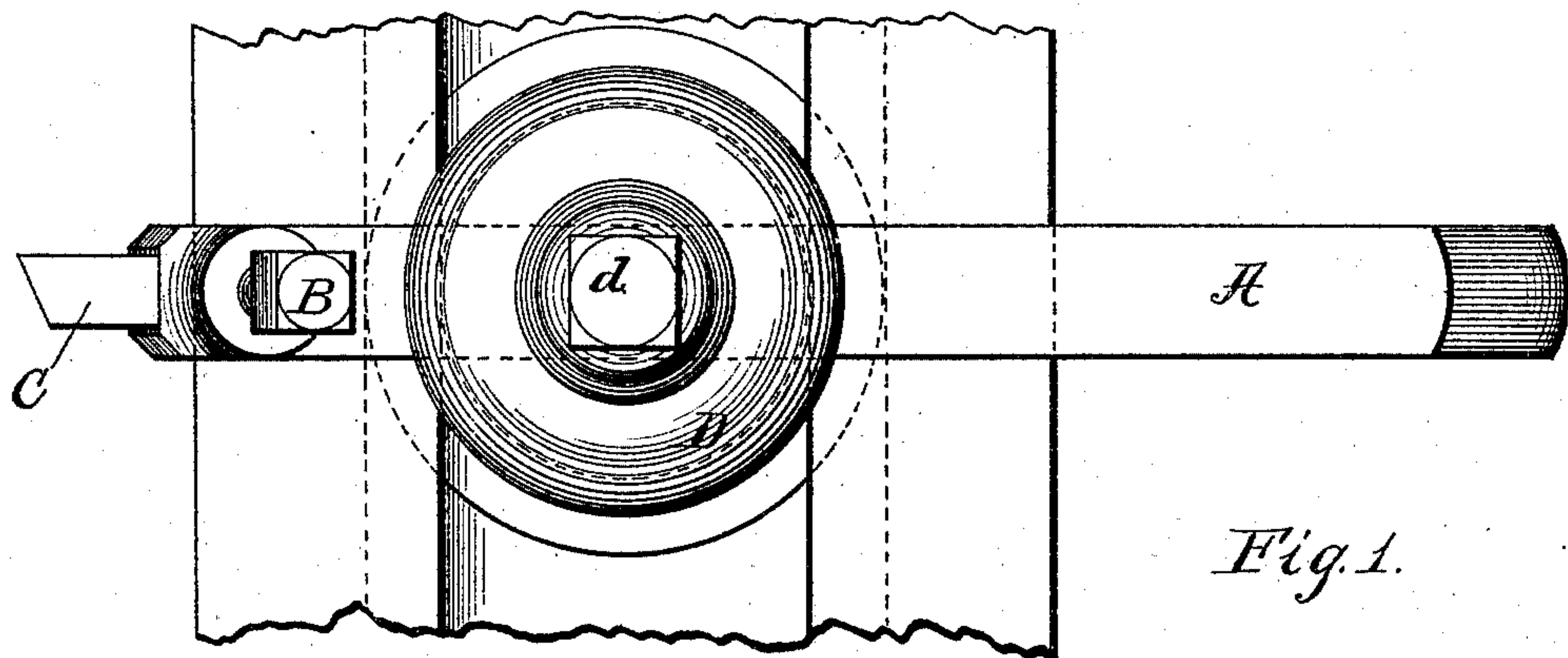


Fig. 1.

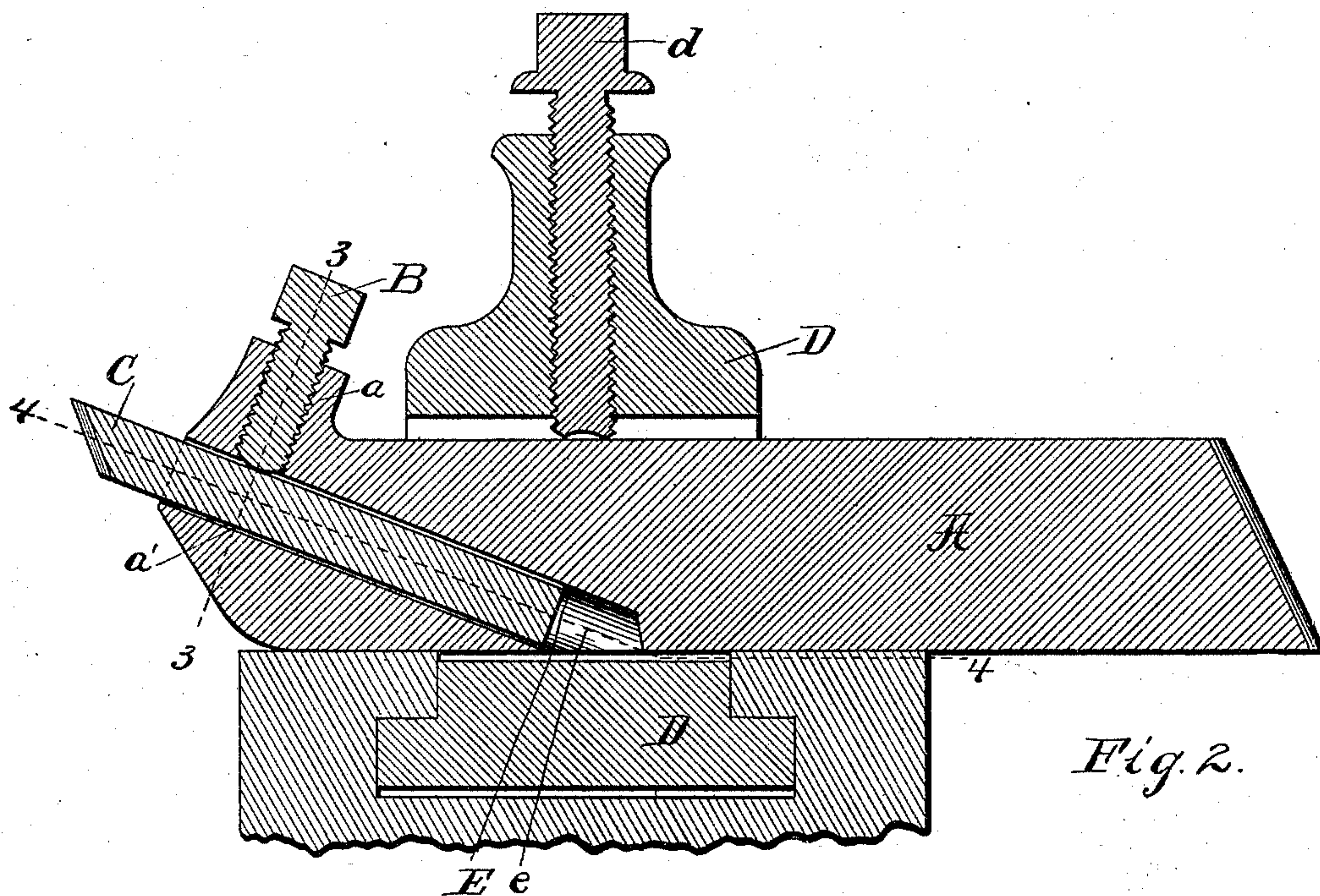


Fig. 2.

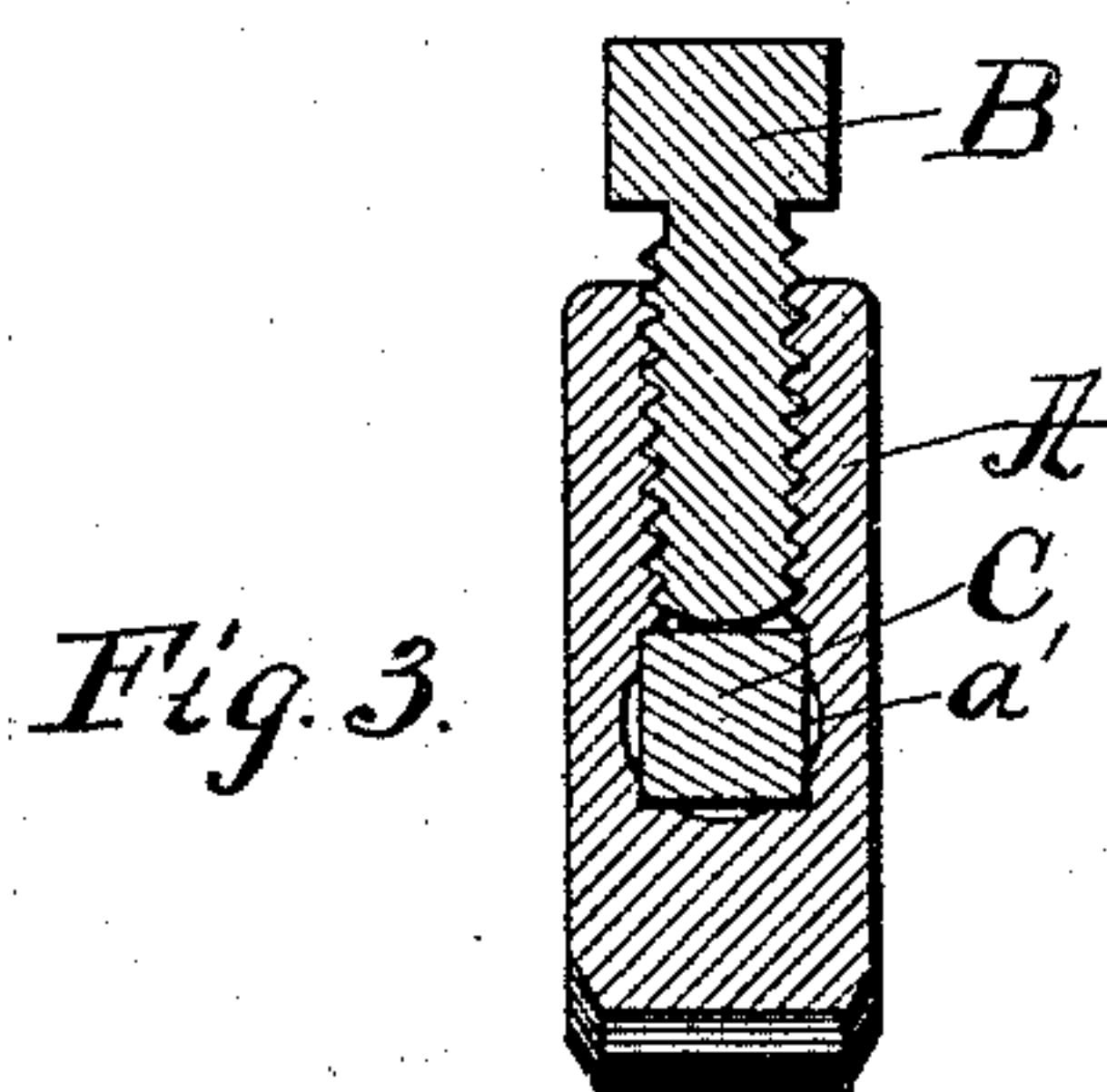


Fig. 3.

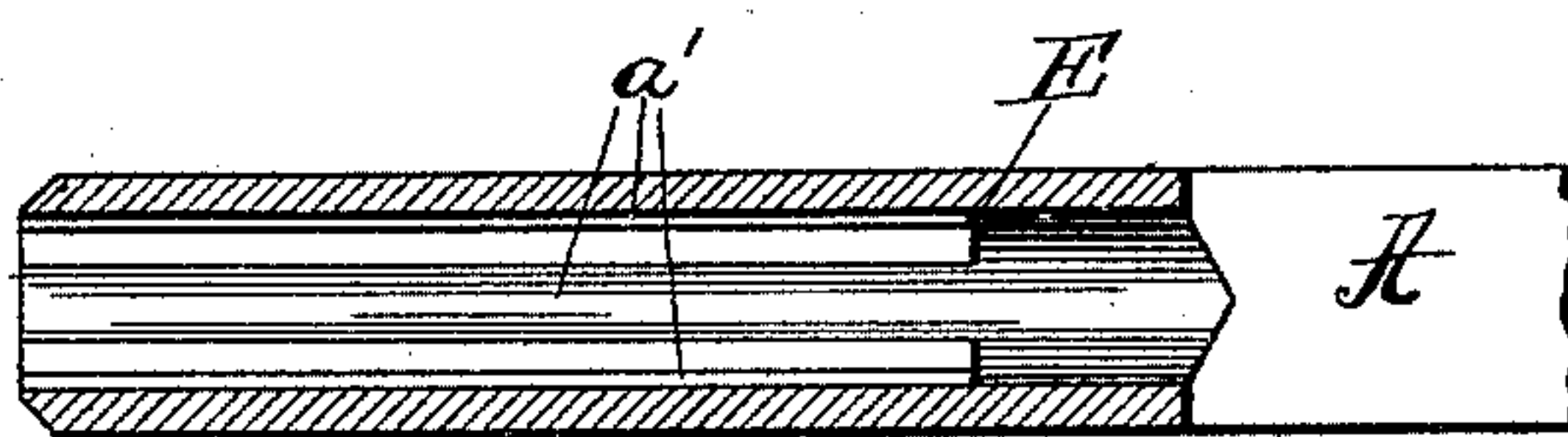


Fig. 4.

Witnesses  
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By Louis H. Willson  
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# UNITED STATES PATENT OFFICE.

GEORGE ARMSTRONG, OF CHICAGO, ILLINOIS.

## TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 492,381, dated February 28, 1893.

Application filed June 25, 1892. Serial No. 437,968. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE ARMSTRONG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tool-Holders; and I 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 of reference marked thereon, which form a part of this specification.

My invention relates to cutter- or tool-holders for lathes and planers.

Its object is to provide a holder for cutters used in connection with such tools which will possess great strength; will present the cutter at the most effective angle; will hold the cutter secure and prevent it from impinging upon the tool post or bed plate should it slip back in the socket.

The invention consists essentially in the position and shape of the socket of the holder or stock.

In the accompanying drawings, Figure 1 shows a plan view of the tool post of a lathe or planer with my improved holder in position for use. Fig. 2 is a central longitudinal vertical section of the same. Fig. 3 is a transverse section of the tool-holder on the line 3, 3, of Fig. 2. Fig. 4 is a view in the direction of the arrows, partly in section on the line 4, 4, Fig. 2.

I am aware that a variety of tool-holders have been made, but it has been found difficult to design a stock for this purpose which will present the cutter to its work at such an angle as to secure proper clearance, while obtaining ample strength in the stock for heavy work.

The purpose of this invention is to provide a stock which will possess substantially the strength of the old style of cutters, in which the cutter and stock were integral and the tool could be repeatedly resharpened only by reforging, and will be available for use in any position in which the old style of cutter could be used. To this end I use an ordinary piece of bar steel A, for the holder or stock, cutting a socket  $a'$ , of peculiar shape back

from one end of the bar at an angle of about twenty degrees to its top line, but in direction parallel to its sides, the socket being continued so as to open through the bottom of the bar A, as shown at  $e$ , but being formed with a shoulder E, near its inner end so as to prevent the cutter-bar C, from projecting beyond the under surface of the bar A. A boss  $a$ , is formed upon the top of the bar A, near its forward end to provide body within which to form a socket for the binding-screw B, which bears against the cutter bar C. The stock is secured in the aperture of the tool-post D, in the usual manner by means of the binding-screw  $d$ .

In forming the socket  $a'$ , a drill is used to form a circular aperture of a diameter somewhat greater than the width of the cutter bar. This socket is drilled from the end of the bar A, the drilling is continued until the bottom of the bar is perforated as shown at  $e$ , but not far enough for the drill to pass entirely through. The socket is now squared, to correspond to the size of the cutter bar, back to the juncture of its lower side with the bottom of the bar A, thus forming a shoulder to prevent the cutter bar from projecting beyond the bottom of the holder, and leaving a longitudinal groove in each side of the socket. The cutter is preferably of "self-hardening" steel. The bars of this steel are not uniformly square, the sides being usually somewhat rounding or ribbed. If the lower side of the socket is perfectly flat, an uneven bar will not rest firmly in its place. The purpose of forming the sides of the socket with grooves is to accommodate the irregularities of the cutter bar by practically providing longitudinal shoulders upon which it may rest as a seat. It will be found cheaper to groove all of the sides in the manner described rather than the lower side only. The purpose of the stop shoulder E, is to prevent the hard cutter-bar from falling back upon the floor of the tool-post or upon the tool ring when one is used, and thereby locking the parts together very awkwardly, as has been found in practice; while the socket is open through the bottom of the holder, so that the cutter bar may, if necessary, be forced out. As thus formed the tool-holder combines all of the

advantages of the old form of tool whose body formed the stock, and the tool-holders already known, without any of the disadvantages of either form of construction.

5 I claim as my invention—

1. A tool-holder or stock having a tool socket extending from one of its ends diagonally through its body at an angle of approximately twenty degrees to the longitudinal line thereof, and opening through the under side of the stock, said socket being rectangular in cross-section and having its lower side centrally longitudinally grooved, and be-

ing provided with a stop shoulder near its inner end whereby the tool is prevented from projecting beyond the bottom of the stock, substantially as described. 15

2. A tool-holder having a rectangular socket whose lower side is centrally longitudinally grooved, substantially as described. 20

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE ARMSTRONG.

Witnesses:

L. K. GILLSON,  
MAY H. L. WING.