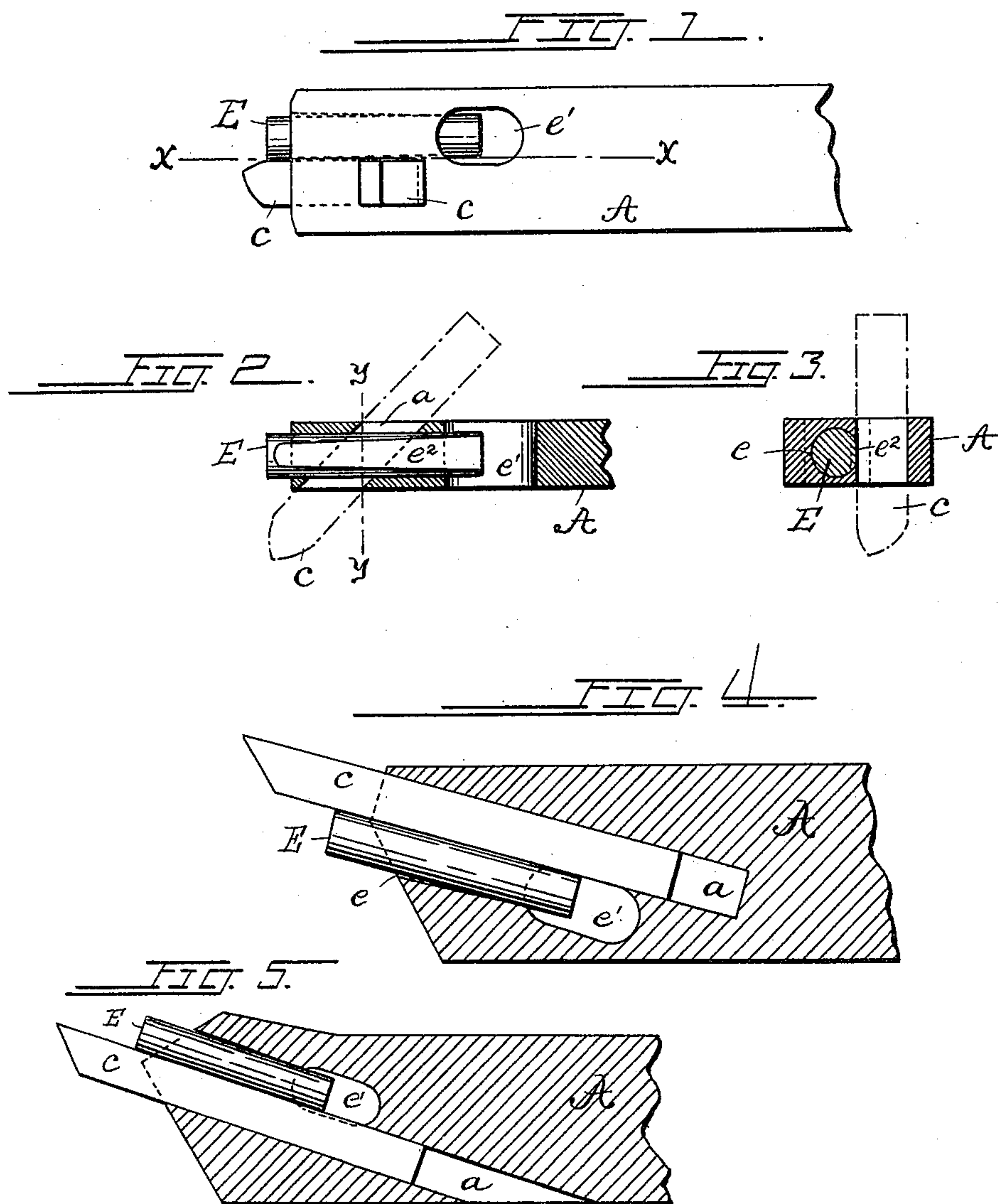


(No Model.)

G. W. FRANCIS.  
TOOL HOLDING BAR.

No. 583,285.

Patented May 25, 1897.



Witnesses  
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# UNITED STATES PATENT OFFICE.

GEORGE W. FRANCIS, OF READING, PENNSYLVANIA.

## TOOL-HOLDING BAR.

SPECIFICATION forming part of Letters Patent No. 583,285, dated May 25, 1897.

Application filed October 28, 1896. Serial No. 610,271. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. FRANCIS, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Tool-Holding Bars; and I do hereby 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.

My invention relates to improvements in tool-holding bars, and is intended more particularly for securely holding small steel cutters for boring and turning metal.

The invention consists of a bar in the end of which the cutting-tool is held by means of a pin and is of very simple construction.

The invention is more fully described in the following specification and clearly shown in the accompanying drawings.

Figure 1 is a plan view of the end of my improved tool-holding bar. Fig. 2 is a longitudinal sectional view on line  $xx$  of Fig. 1. Fig. 3 is a cross-section on line  $yy$  of Fig. 2. Figs. 4 and 5 are modified forms of my invention.

The bar  $A$  is provided near its forward end with an oblique opening  $a$ , in which the cutting-tool  $c$  is held. A circular hole  $e$  is bored into the front end of the bar immediately alongside of and passing through one side of the oblique opening  $a$ . This hole  $e$  ends in an opening  $e'$ , running at right angles thereto and entirely through the bar. A circular pin  $E$ , with a flat tapering surface  $e^2$  at one side, is inserted into the hole  $e$  with said flat surface bearing against the side of the tool  $c$ . The hole  $e$  is bored at a slight angle to the line of the bar, so that when the tool  $c$  is in the desired position the pin  $E$  is entered into the hole  $e$ , and by reason of this angle and the flat tapered surface on said pin it will wedge itself therein and securely hold the tool in the position placed.

When it is desired to remove the tool, a wedge or bar is entered into the opening  $e'$  back of the pin  $E$  and said pin forced out, thus releasing the tool  $c$  and permitting of its easy withdrawal.

In Figs. 4 and 5 I have shown the invention applied to a threading-tool and of slightly-modified form. In Fig. 4 the tool  $c$  is entered into an opening  $a$ , made lengthwise of the bar and at a slight angle, and the pin  $E$  is entered immediately underneath it and is adapted to wedge the tool in the same manner as shown in Fig. 1. Fig. 5 shows the relative positions of the tool and pin reversed in their order from that shown in Fig. 4, and the end of the bar is slightly upset.

It will be readily seen that the present invention shows a very simple manner of securely holding a cutting-tool and one in which the tool can be very readily removed, while at the same time the construction is very effective.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A tool-holding bar provided with an inclined diametrical opening near one end and adjacent the side edge thereof, a tapered central longitudinal bore leading in from the end of said bar and intersecting one side of said opening, and a transverse opening intersecting the inner end of said bore, and a pin working in said bore, one side thereof being adapted to bind against the side of a tool when inserted through said inclined opening, substantially as set forth.

2. A tool-holding bar provided with an inclined diametrical opening near one end and adjacent the side edge thereof, a tapered central longitudinal bore leading in from the end of said bar and intersecting one side of said opening, and a transverse opening intersecting the inner end of said bore, and a pin working in said bore and provided with a flat tapering surface adapted to engage the side of a tool when the latter is inserted through said inclined opening, substantially as and for the purpose set forth.

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

GEORGE W. FRANCIS.

Witnesses:

ED. A. KELLY,  
W. Z. DECK.