

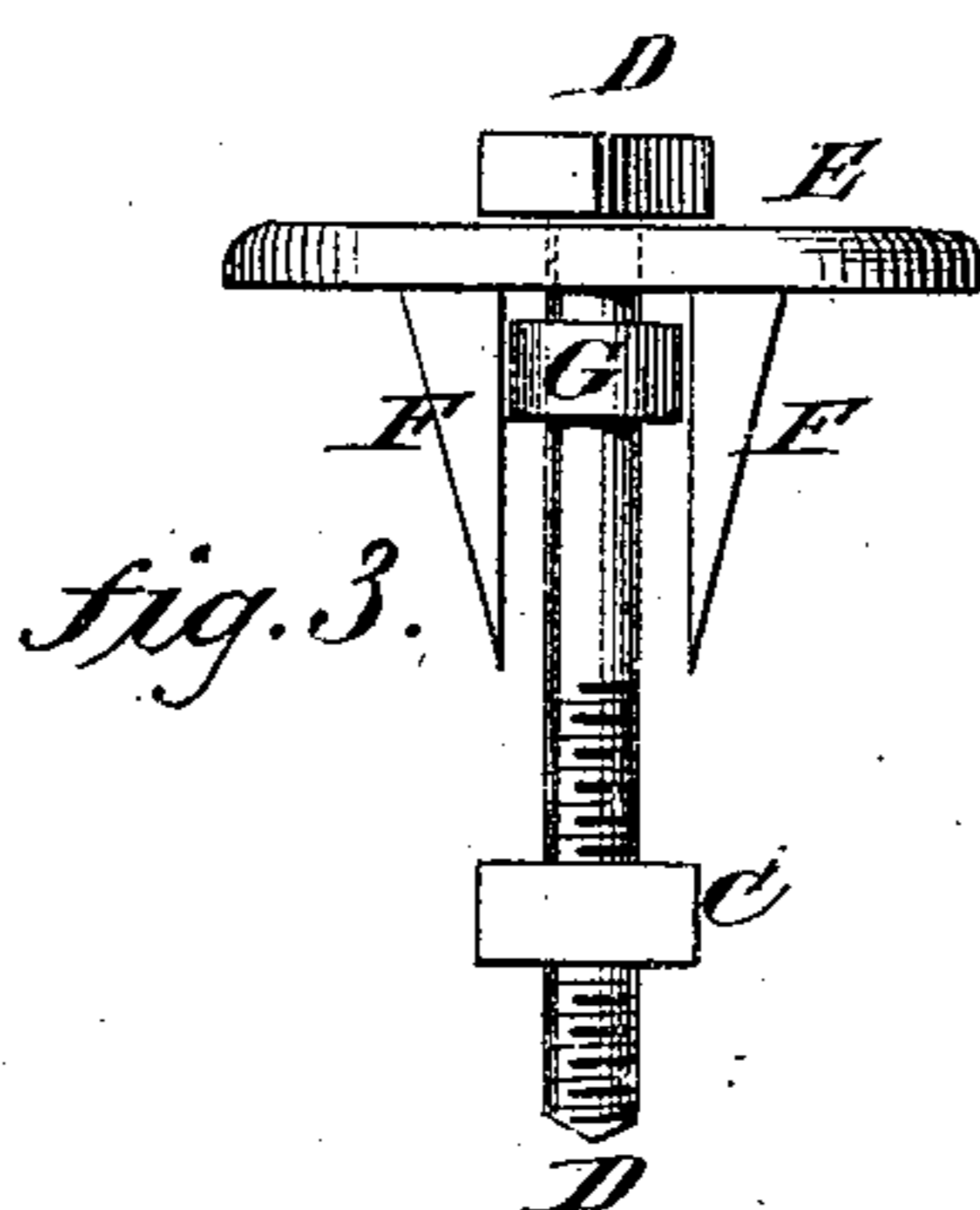
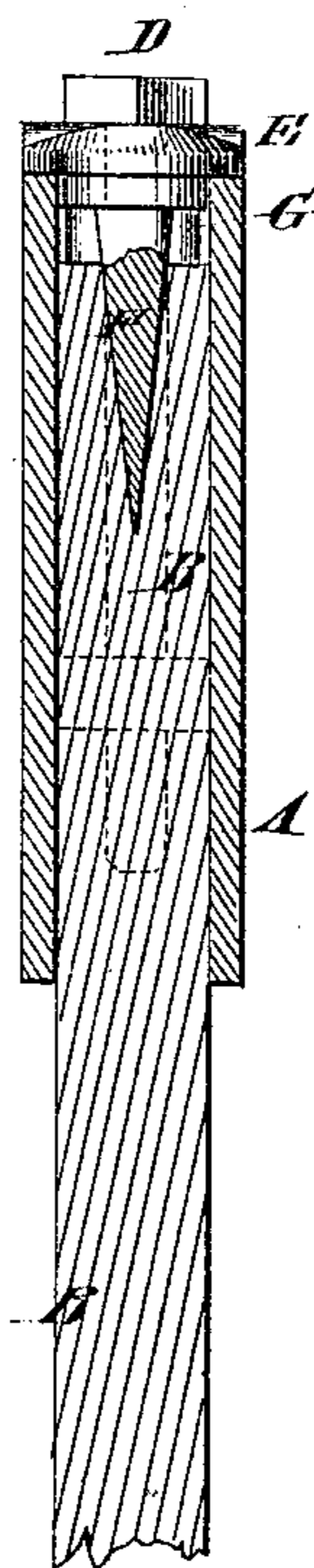
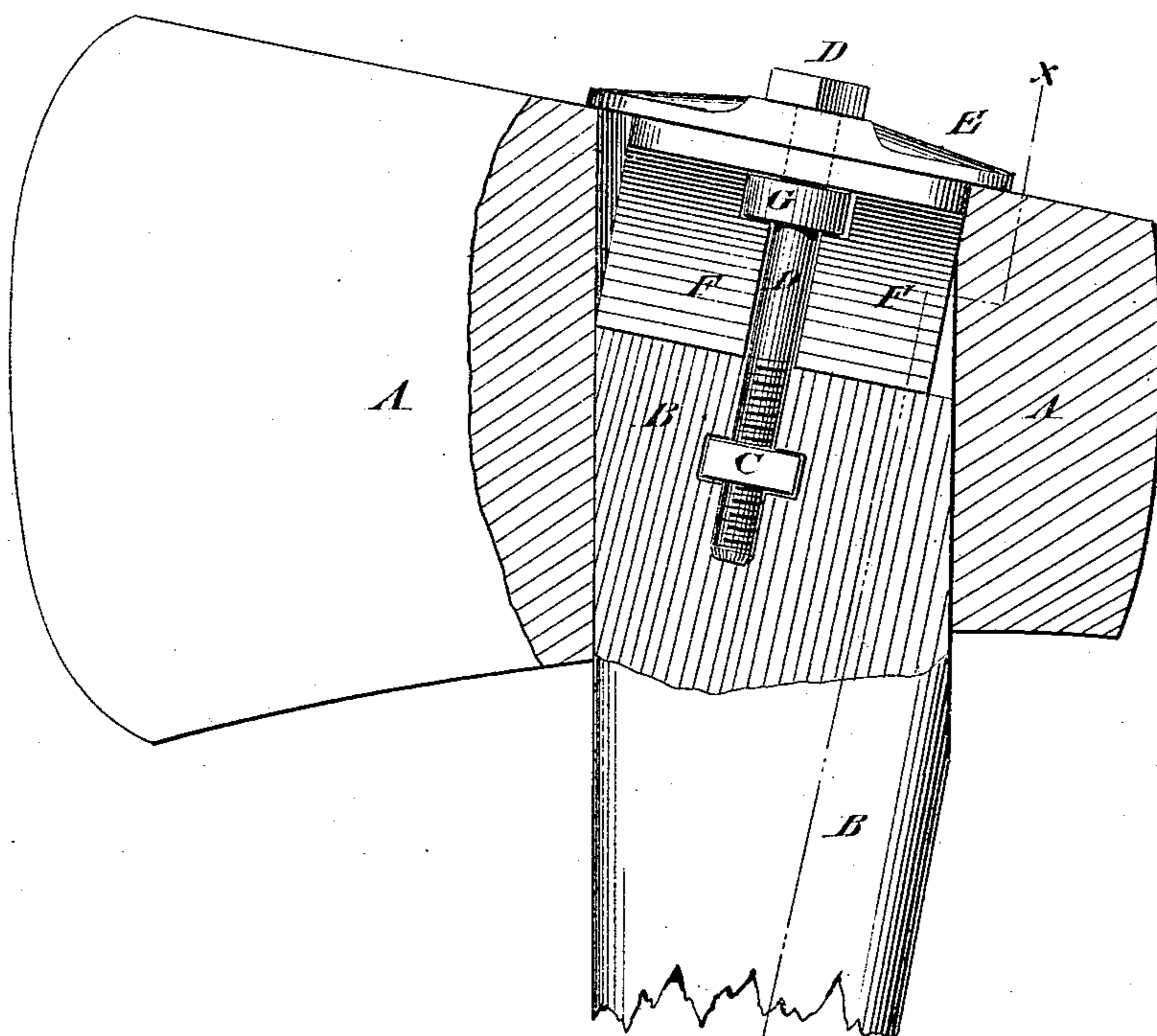
L. H. ROBERTS.  
TOOL-HANDLE.

No. 191,073.

Patented May 22, 1877.

*Fig. 1.*

*Fig. 2.*



WITNESSES:  
*Gustave Dietrich*  
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# UNITED STATES PATENT OFFICE.

LEVI H. ROBERTS, OF MORLEY, MICHIGAN.

## IMPROVEMENT IN TOOL-HANDLES.

Specification forming part of Letters Patent No. **191,073**, dated May 22, 1877; application filed March 19, 1877.

*To all whom it may concern:*

Be it known that I, LEVI HENRY ROBERTS, of Morley, in the county of Mecosta and State of Michigan, have invented a new and useful Improvement in Tool Handles, of which the following is a specification:

Figure 1 is a side view of an ax to which my improvement has been applied, partly in section to show the construction. Fig. 2 is a detail section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a detail view of a modified form of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved device for securing tools to handles, which shall be simple in construction, and safe and convenient in use, being readily applied, holding the tool securely to the handle, and enabling the tool to be readily attached to, and detached from, the handle.

The invention will first be described in connection with the drawing, and then pointed out in the claim.

I will describe the device as applied to an ax; but it is equally applicable to hammers and various other tools.

A represents an ax, into the eye of which is fitted the end of the handle B. The end of the handle B is cut off about half an inch within the eye of the tool A, and in the part of the said handle that enters the said eye is formed a transverse mortise, in which is loosely fitted a nut, C.

In the end of the handle B is bored a longitudinal hole to receive the bolt D, the forward end of which is made conical, to enable it to center and readily enter the nut C.

E is a plate, made a little larger than the eye of the tool, and which may be rabbeted upon its inner side, to allow its middle part to enter the eye of the tool, as shown in Figs.

1 and 2, or may be made without said rabbet, as shown in Fig. 3.

Upon the inner side of the plate E, and upon the opposite sides of the hole for the bolt D, are formed two wedges, F, which may be in line with each other, as shown in Fig. 1, or parallel with each other, as shown in Fig. 3, according to the form of the eye of the tool which is to be secured to the handle.

Slits are sawed in the end of the handle B to receive the wedges F, which slits should be sawed as deep as, but no deeper than, the said wedges will enter the said handle.

To the bolt D, upon the inner side of the plate E, and at a little distance from said plate, is secured a collar, G. This arrangement allows the bolt D to be started a little before it begins to withdraw the plate E and wedges F, so that should the said plate and wedges stick, they may be started by means of a chisel, or other suitable instrument, inserted beneath the edge of the plate E.

This arrangement is also of use in inserting the bolt, plate, and wedges, as it enables the said plate and wedges, when the bolt has been screwed in till its head strikes the plate E, to be hammered in till the plate E strikes the collar G. The bolt D can then be again screwed in, and the plate and wedges again hammered, and so on until the bolt, plate, and wedges are in place.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The screw-bolt D, having collar G, and end nut C, in combination with the handle B and wedging device E F, constructed as shown and described, for the purpose specified.

LEVI HENRY ROBERTS.

Witnesses:

W. I. JONES,

D. W. STEWART.