T. K. DOWNING.

Axe.

No. 202,159. Patented April 9, 1878.

Fig. 1.

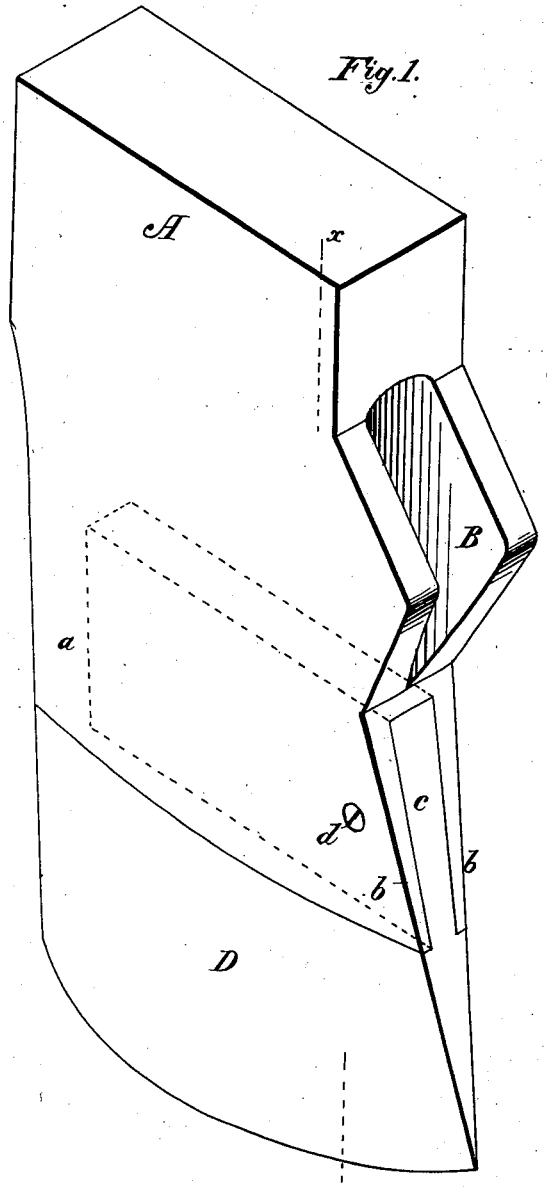
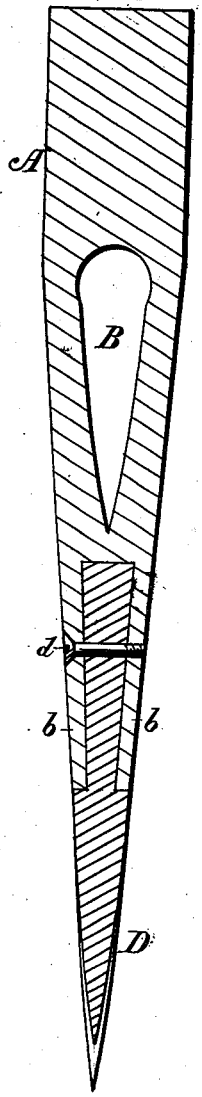


Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS K. DOWNING, OF OKOLONA, MISSISSIPPI.

IMPROVEMENT IN AXES.

Specification forming part of Letters Patent No. **202,159**, dated April 9, 1878; application filed March 29, 1878.

To all whom it may concern:

Be it known that I, THOMAS K. DOWNING, of Okolona, in the county of Chickasaw and State of Mississippi, have invented certain new and useful Improvements in Axes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which they appertain to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective view of the ax complete, the dotted lines showing the position occupied by the tongue of the bit within the poll. Fig. 2 represents a section on the line *x x* of Fig. 1.

This invention relates, principally, to that class of axes in common use for felling trees, and the various other purposes to which an ax having a comparatively short cutting-edge may be applied, and commonly called "chopping" or "narrow" axes, to distinguish them from those used for hewing timber by ship and house carpenters, and which are known as "broad-axes."

It is well known that the edge portion of the ax, called the "bit," which is made of steel, is the part which quickly wears out or breaks, while the poll, or part that receives the handle, and which is commonly made of iron, to which the steel bit is welded, is comparatively free from wear or danger of being broken.

The object of this invention is therefore to so construct the ax that one poll may be used to wear out a series of bits by making them readily removable from the poll when broken or worn out, so as to allow a new one to take the place of the old; and this I accomplish in the following manner:

The poll A of the ax is formed, in the usual manner, of wrought metal, or it may be, if it is desired to form a cheap ax for light work, cast from what is commonly called "malleable metal," or crucible steel may be used, the material being unimportant so long as it possesses the requisite strength and durability. Through this poll is formed a hole, B, for the reception of a handle, and adjacent to this is the dovetail recess, passing from the inner side of the ax nearly to its outer edge, but leaving a rib, *a*, as shown by the dotted lines in Fig. 1, connecting the two sides *b b* of the projecting parts of the hole forming the dovetail recess.

The bit D of the ax is formed of steel, in the usual manner, except that instead of being chamfered, so as to be readily welded to the poll, the part farthest from the cutting-edge is given the form of a dovetail tongue, *c*, exactly fitting the recess formed for its reception in the poll. In order to prevent its accidental removal, a screw, *d*, is inserted into an orifice in one side of the poll, passing through it, also through the dovetail tongue *c*, and screwing into the opposite side of the poll, thus securely holding the parts together. A rivet may be used in place of the screw, but is more difficult to remove when it is desired to exchange the worn-out or broken bit for a new one.

I am aware that axes and hatchets have been made by forming a tongue upon the steel bit and casting the metal forming the poll about it; also, that a square mortise has been made in the poll, and the tongue of the bit thrust into it; but these methods of construction have been found impracticable when applied to chopping-axes, as the first lacked in strength, while the last formed an implement of such a bungling shape as to render its use or sale almost impossible.

The advantages possessed by my axes over those formed in one piece are many, and especially recommend it to the emigrant and others whose work or habitation is far removed from the ordinary marts of trade, as by the use of a single poll and half a dozen fitted bits he may dispense with the use of sharpening devices for a long time, and always have a tool ready for efficient work.

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

1. An ax composed of a poll provided with a hole for the reception of a handle, and a dovetail recess extending nearly across the

width of the poll, and receiving the correspondingly-shaped tongue of a removable bit, as and for the purpose set forth.

2. The ax-poll provided with the dovetail recess and edge-connection *a*, in combination with the bit D, having a tongue, *c*, and the securing-screw *d*, substantially as specified.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

THOMAS K. DOWNING.

Witnesses:

JAMES M. HIGHTOWER,

J. W. BUCHANAN.