(No Model.) 2 Sheets—Sheet 1.

J. M. DIDERO.

FASTENING FOR AX HANDLES.

No. 456,802. Patented July 28, 1891.

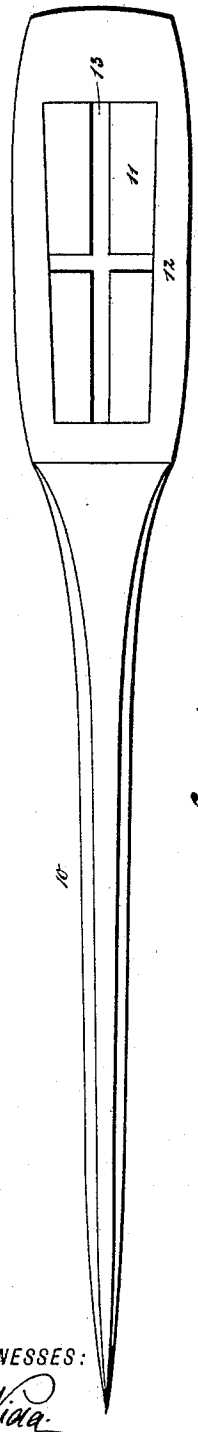


Fig. 2.

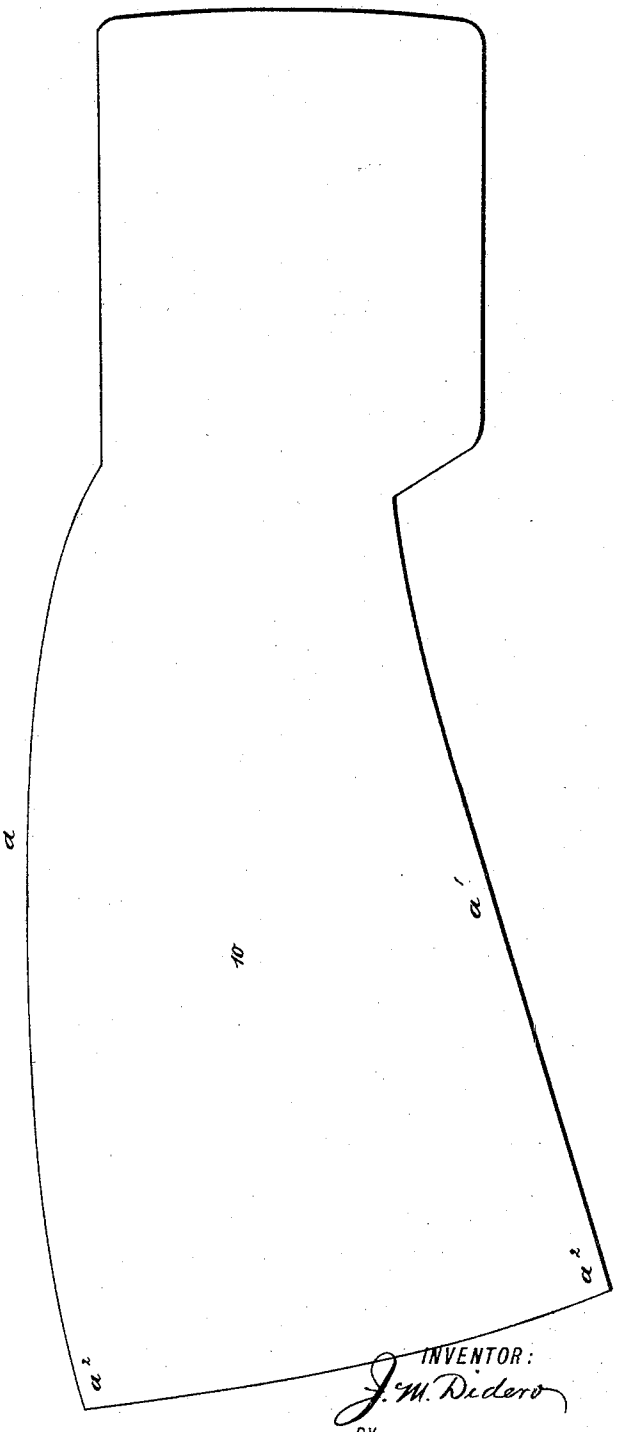


Fig. 1.

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ATTORNEYS

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

J. M. DIDERO.

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Fig: 3.

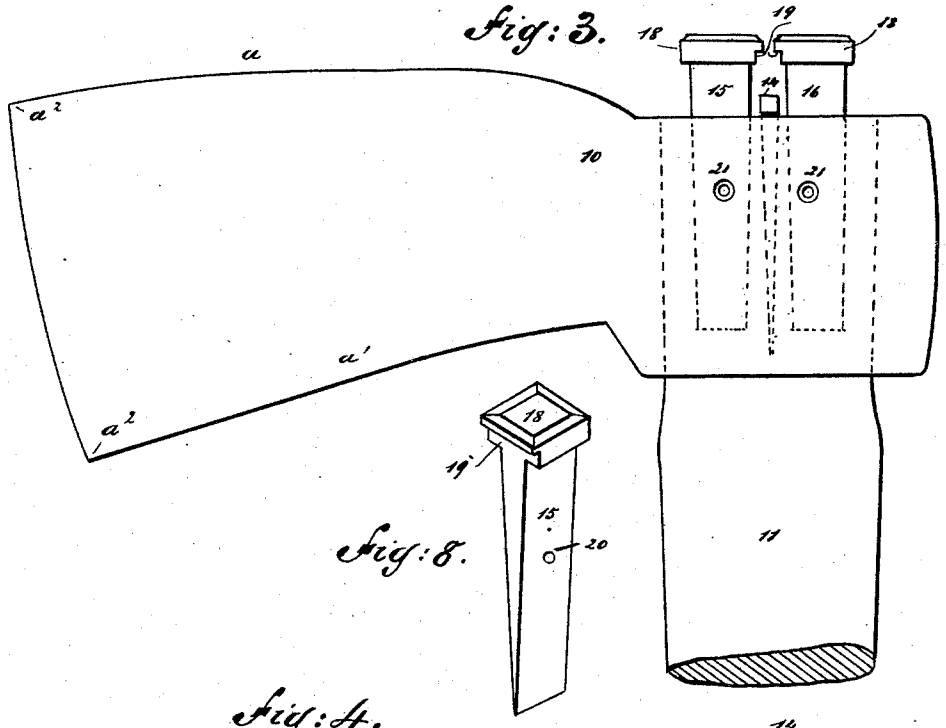


Fig: 8.

Fig: 4.

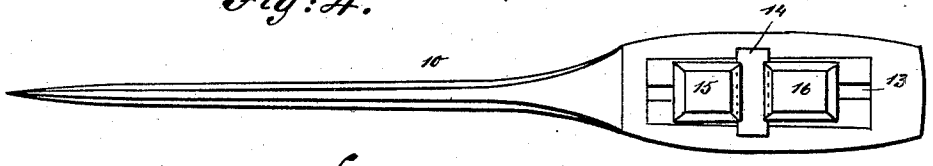


Fig: 7.

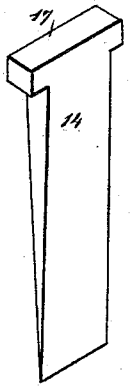


Fig: 5.

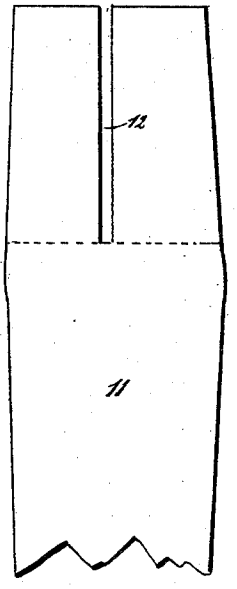


Fig: 6.

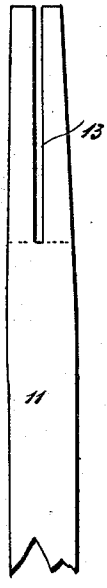
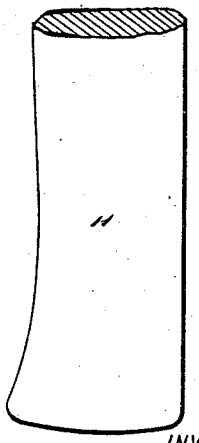


Fig: 3.a



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UNITED STATES PATENT OFFICE.

JOSEPH M. DIDERO, OF LORAIN, OHIO.

FASTENING FOR AX-HANDLES.

SPECIFICATION forming part of Letters Patent No. 456,802, dated July 28 1891.

Application filed August 23, 1890. Serial No. 362,848. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. DIDERO, of Lorain, in the county of Lorain and State of Ohio, have invented a new and useful Improvement in Axes, of which the following is a full, clear, and exact description.

My invention relates to an improvement in axes, and has for its object to provide a means whereby the ax may be securely and rigidly connected with the handle and the fastening devices employed be readily removed when desirable and without possibility of injury to the blade.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the ax-blade. Fig. 2 is a plan view of the ax with the handle therein, but before the wedges are driven. Fig. 3 is a side elevation of the ax attached to a handle, one of the wedges being illustrated as driven and the other two in position to be driven; and Fig. 3ª is a continuation of the handle illustrated as broken off in Fig. 3. Fig. 4 is a plan view of the ax, the wedges having been driven to place. Fig. 5 is a side view of the upper end of the ax-handle adapted to be inserted in the eye of the ax, and Fig. 6 is an edge view thereof. Fig. 7 is a perspective detail view of the central wedge, and Fig. 8 is a similar view of one of the side wedges.

The blade 10 of the ax is provided with the usual eye, the end walls of which eye are preferably tapering, as illustrated in dotted lines in Fig. 3. The blade proper is of greater length than ordinary, and the upper edge *a* of the blade is convexed, while the lower edge *a'* is more or less inclined from the eye downward to the cutting-edge, whereby the corners a^2 of the said cutting-edge are sharp and well defined. The upper edge of the blade is longer than the lower edge, and the cutting-edge is thereby tapered downward upon an essentially straight line.

The handle 11, at its upper end, which is adapted to enter the eye of the blade, is provided with a central transverse vertical slot 12, extending through from side to side, which central vertical slot is crossed by a longitudinal central slot 13, extending through from edge to edge, the two slots being preferably of equal depth. The handle is preferably made of greater length than is usual, and is straight, as illustrated in Figs. 3 and 3ª. After the slotted end of the handle has been introduced into the eye of the blade three wedges 14, 15, and 16 are employed to hold it to place. The wedge 14, which is the central wedge, is illustrated in detail in Fig. 7, and is provided with a head 17, the ends whereof extend some distance beyond the side edges of the body, the side edges of the body and of the head being flush. The wedges 15 and 16 are alike in construction, and the body portion of each is provided preferably with a rectangular or polygonal head 18. In one lower edge of each of the said heads a rabbet 19 is formed.

In the operation of attaching the blade to the handle the wedge 14 is introduced into the transverse slot 12 of the handle and is driven downward in any suitable or approved manner until the projecting ends of its head rest upon the upper side edges of the eye of the blade. The wedges 15 and 16 are introduced into the longitudinal slot, one at each side of the central wedge, as illustrated in Fig. 3, the rabbeted surfaces of the heads of said wedges facing each other and inward. The side wedges are also driven down into the handle until the recessed surfaces of their heads receive and engage with the side edges of the head of the central wedge, as illustrated in Fig. 7. It will thus be observed that the side wedges when driven to place materially assist in preventing the central wedge from working upward out of place. As an additional security, each of the side wedges is provided in their body portions with an aperture 20, the said apertures being made to register with corresponding apertures 21, produced in the blade at each side of the eye, as shown in Fig. 3. The apertures in the wedges and the aperture in the blade do not register until the wedges have been driven to place, and when the wedges are in position a screw, bolt, or equivalent device is passed through

the registering-apertures and likewise through the handle. Thus the fastening devices—namely, the wedges—are effectually prevented from becoming loosened even when the ax is subjected to long and hard usage. By attaching the blade to the handle in the manner above described it is evident that the handle may be removed from the blade whenever desired and without heating the blade to destroy its temper and otherwise injure it, as the operation is effected by withdrawing the bolts or screws and forcing or drawing the wedges upward from engagement with the handle.

By reason of the formation of the blade of the ax, which partakes somewhat of the character of an adz or ice-ax, and the length of the handle attached to the blade, a blow may be given with a maximum of power, and the greater tapering surface and thinness of the blade enable the latter to penetrate the wood to a great depth; and, again, as the top and bottom edges of the cutting-surface of the blade are sharp, square, and well-defined, the likelihood of the blade slipping in the act of entering the wood is to a great extent avoided.

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

1. The combination, with an ax-blade and a handle provided at its upper end with a transverse and longitudinal slot, of a wedge located in the transverse slot and provided with a head the ends whereof extend beyond the body, and wedges located in the longitudinal slot, one at each side of the central wedge, the heads of which side wedges are provided with a rabbet in their opposed surfaces receiving and engaging with the head of the central wedge, as and for the purpose specified.

2. The combination, with an ax-blade and a handle provided at its upper end with a transverse and a longitudinal slot, of a wedge located in the transverse slot, provided with a head the ends whereof extend beyond the body, wedges located in the longitudinal slot, one at each side of the central wedge, the heads of which side wedges are provided with a rabbet in their opposed surfaces receiving and engaging with the head of the central wedge, and locking-bolts or screws passed through the blade, the handle, and the wedges when the latter have been driven to place in the handle, as and for the purpose specified.

JOSEPH M. DIDERO.

Witnesses:
W. B. THOMPSON,
JAMES SMITH.