No. 890,509. PATENTED JUNE 9, 1908.

H. HALL.

AX HELVE.

APPLICATION FILED APR. 25, 1907.

Fig. 1.

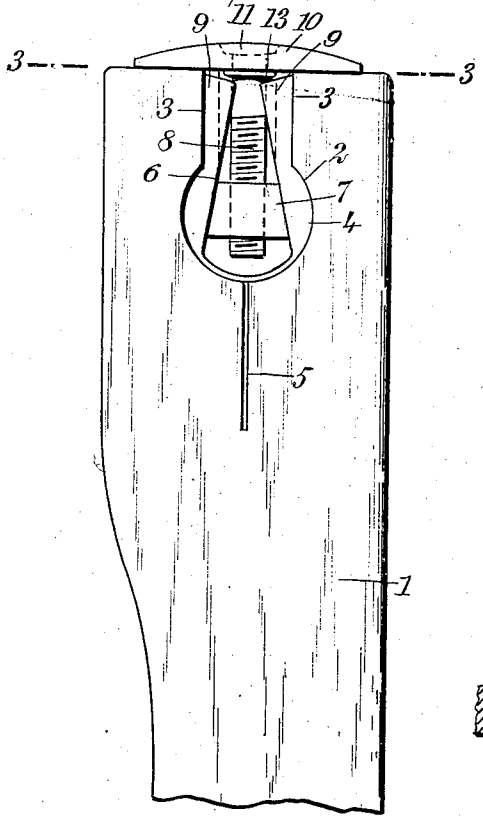


Fig. 2.

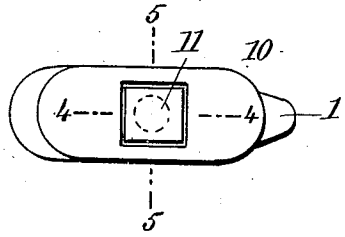


Fig. 3.

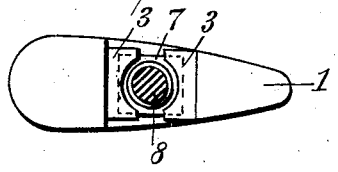


Fig. 4.

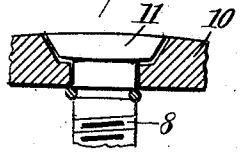


Fig. 5.

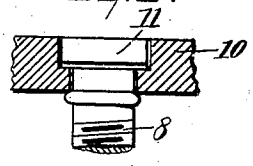


Fig. 6.

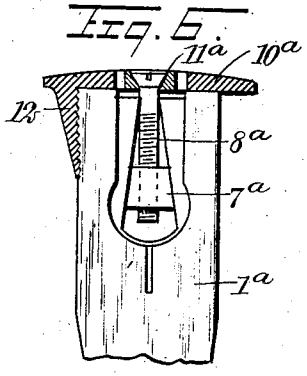


Fig. 7.

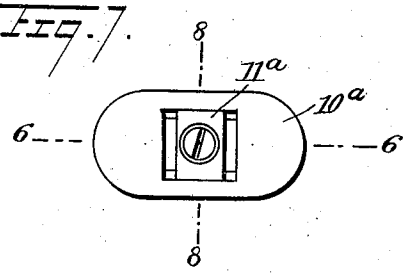
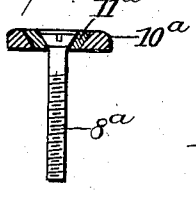


Fig. 8.



WITNESSES

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UNITED STATES PATENT OFFICE.

HIRAM HALL, OF SOUTH THOMASTON, MAINE.

AX-HELVE.

No. 890,509. Specification of Letters Patent. Patented June 9, 1908.

Application filed April 25, 1907. Serial No. 370,203.

To all whom it may concern:

Be it known that I, HIRAM HALL, a citizen of the United States, and a resident of South Thomaston, in the county of Knox and State of Maine, have invented a new and Improved Ax-Helve, of which the following is a full, clear, and exact description.

My invention relates to improvements in helves for axes and other tools, and has for its object to provide a fastening which will secure the ax or other tool firmly in place at a plurality of angles on the helve, the fastening being constructed so that it will offer the least possible resistance to the passage of the ax through the wood.

Other objects of the invention are to provide a fastening which can be readily adjusted and which will stand hard service.

Still other objects of the invention will appear in the body of this specification.

In the following specification I describe one form of my invention which form is shown in the accompanying drawings, but I do not limit myself thereto as I consider myself entitled to all forms and embodiments of the invention which may fall within the scope of the appended claims.

In the drawing similar reference characters refer to similar parts in all the figures, in which

Figure 1 is a side elevation of the end of a helve with my fastening applied. Fig. 2 is a plan view of the helve. Fig. 3 is a sectional view on line 3—3 of Fig. 1. Fig. 4 is a sectional view on an enlarged scale through line 4—4 of Fig. 2. Fig. 5 is a sectional view on an enlarged scale through line 5—5 of Fig. 2. Fig. 6 is a sectional view showing a modified construction and on a smaller scale, the view being taken on line 6—6 of Fig. 7. Fig. 7 is a plan view of the same, and Fig. 8 is a sectional view of the modification, taken on the line 8—8 of Fig. 7.

In my patent numbered 441,408, dated November 25, 1890, is disclosed a helve which has many merits, but which is defective in that when the end of the helve is not at right angles with the chamber it is impossible to adjust the nut on the screw or bolt. This I am able to do in the construction shown in the accompanying drawings, in which 1 is the helve and 2 the chamber. The end of the helve is cut to form the chamber 2, which extends through the helve from face to face and consists of two parallel walls 3, with the inner end of the chamber rounded so that it will be approximately circular in form as at 4.

The character 5 represents a saw-kerf which is a continuation of an imaginary line between and parallel with the walls 3 of the chamber. The double wedge-shaped member 6 has outside surfaces which are adapted to fit the walls and the circular end 4 of the chamber in the helve; the portion of the double wedge-shaped member 6 which fits against the end of the chamber being comparatively thin, acting as a web for two arms, and the space between the inner walls of the wedge-shaped member lessening in width from the inner end outwardly to afford proper surfaces over which the wedge-nut 7 may move when drawn outwardly by the rotation of the screw or bolt 8. The terminals 9 of the arms of the double wedge-shaped member 6 are concave in order that there will be no uneven surface in contact with the oval-shaped head 10 if the end of the helve should be cut so that it is not at right-angles with the straight walls 3 of the chamber.

As will be seen in the drawings, the screw or bolt 8 has a head 11 which is angular and is counter-sunk in the oval-shaped head 10. Fig. 5 of the drawings shows the sides of the head of the screw which are at right-angles with the top of the screw-head; these sides fitting the side walls of the opening in the oval-shaped head while the other two sides of the screw-head shown in Fig. 5 are at a different angle to permit the screw to move to slightly different angles with relation to the oval-shaped head 10.

At 13 is shown a ring which I adjust around the screw in the concave space at the terminals of the arms of the wedge-shaped member 6.

In Figs. 6, 7 and 8 a modification is shown in which the oval shaped head 10^a has a flange 12 which rests against the side of the helve, the side of the flange in contact with the helve being roughened to prevent it from slipping. In this construction the head 11^a on the screw 8^a fits the side walls of the opening in the oval-shaped head 10^a, but it does not extend to the end walls of this opening. This construction also affords opportunity for the screw to assume different angular positions with relation to the oval-shaped head.

The oval-shaped head 10 should be large

enough so that it will not pass through the eye of the ax or tool. This is necessary to prevent the ax or tool from flying off should it slip on the fastening.

In the use of my invention the double-wedged member 6 is inserted in the chamber, the oval-shaped head is placed in position, the screw is inserted in position through the opening in the oval-shaped head, the nut is adjusted on the screw and the oval-shaped head is turned, which draws the nut outwardly spreading the arms of the wedge-shaped member apart, which enlarges the terminal of the helve.

It will be observed that the screw may assume many different angles without making it impossible to adjust the nut thereon, and that it is therefore possible to adjust the ax or tool outwardly or inwardly relatively to the helve, or to adjust the ax or tool in operative position when the cutting edge of an ax or tool is not properly disposed with relation to the eye thereof.

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

1. An ax-helve fastening, consisting of a helve having a chamber formed in one of its terminals, a member having wedge-shaped arms which are joined by a web, the inner walls of the said arms forming an acute angle with each other at their outer terminals, the said walls being continued to form bearing surfaces for a wedge nut, an outer head, to which a screw is secured, the screw being adapted to be disposed between the wedge-shaped arms of the member at different angles, and a wedge-nut adapted to fit the screw.

2. An ax helve fastener, consisting of a chamber formed in one of its terminals, a member having wedge-shaped arms which is adapted to fit the said chamber, an outer head, a screw which with the exception of its head passes through the outer head, the screw pivoting at its head to permit it to form with the outer head a plurality of angles, and a wedged nut which is adapted to fit the screw and bear against the wedge-shaped arms of the said member.

3. An ax helve fastener, consisting of a chamber formed in one of its terminals, a member having wedge-shaped arms which is adapted to fit the said chamber, an outer head, a screw which with the exception of its head passes through the outer head, the screw pivoting at its head to permit it to form with the outer head a plurality of angles, the head of the screw engaging the outer head to prevent its relative rotary movement, and a wedge-shaped nut which is adapted to fit the screw and bear against the wedge-shaped arms of the said member.

4. An ax helve fastener, consisting of a chamber formed in one of its terminals, an outer head, a screw which with the exception of its head passes through the outer head, the screw being loosely mounted at its head to permit it to form with the outer head a plurality of angles, the head of the screw engaging with the outer head to prevent its relative rotary movement, and a wedge-shaped nut which is adapted to fit the screw and bear against the walls of the chamber and having a wedging action therewith.

5. An ax helve fastener, consisting of a chamber formed in one of its terminals, an outer head, a screw which with the exception of its head passes through the outer head, the head of the screw being loosely mounted, to permit it to form with the outer head a plurality of angles, an annular groove in the screw just below the outer head, a ring adapted to fit in the said groove, and a wedge-shaped nut which is adapted to fit the screw and bear against the walls of the chamber and having a wedging action therewith.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HIRAM HALL.

Witnesses:
R. K. SNOW,
G. HORN WIGGIN.