(No Model.)

# H. A. ZECKENDORF.

## TOOL HANDLE AND DEVICE FOR SECURING SAME.

No. 597,451. Patented Jan. 18, 1898.

*Fig. 1,*




*Fig. 2,*

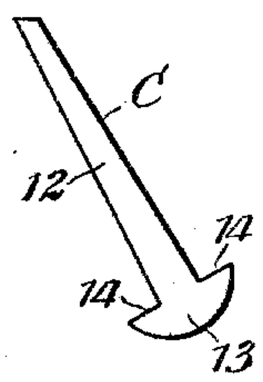


*Fig. 3,*

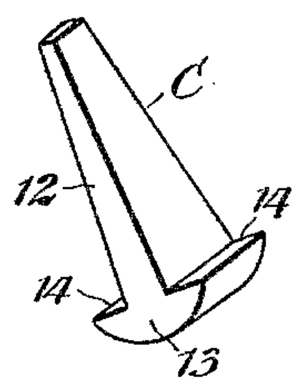


*Fig. 4,*

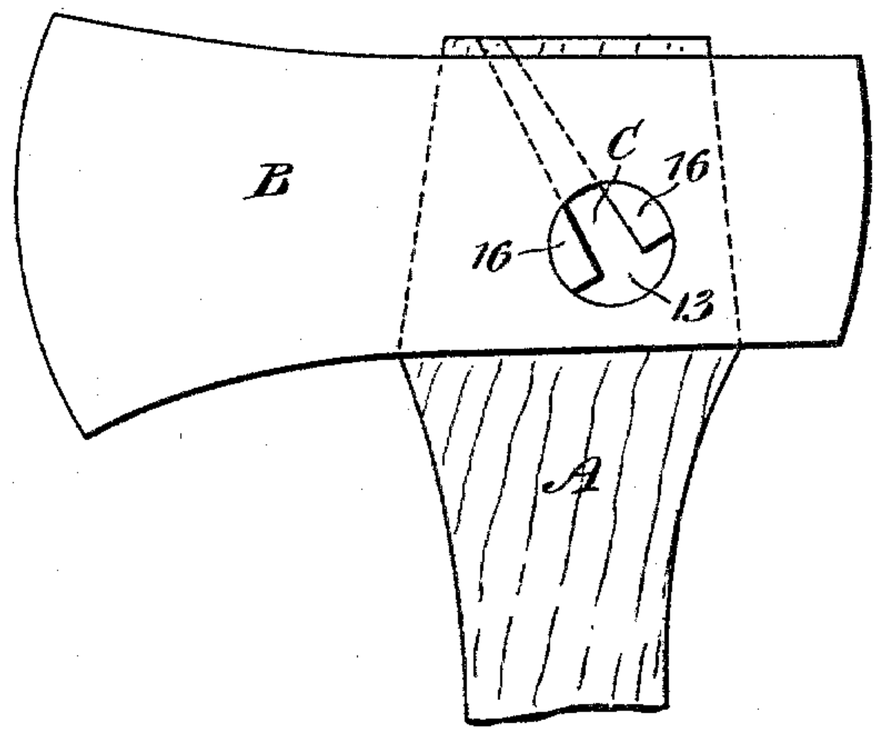


*Fig. 5,*


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HUGO A. ZECKENDORF, OF TUCSON, ARIZONA TERRITORY.

## TOOL-HANDLE AND DEVICE FOR SECURING SAME.

SPECIFICATION forming part of Letters Patent No. 597,451, dated January 18, 1898.

Application filed March 24, 1896. Serial No. 584,651. (No model.)

*To all whom it may concern:*

Be it known that I, HUGO A. ZECKENDORF, of Tucson, in the county of Pima and Territory of Arizona, have invented a new and useful Improvement in Tool-Handles and Devices for Securing the Same, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple and economic form of locking device and to prepare the body of the tool and its handle for the reception of the device, the locking device being placed in a position to hold the tool to its handle in an expeditious and in a convenient manner.

A further object of the invention is to so make the attachment between the handle and the tool adapted for the handle that there will be but little liability of the locking devices employed being displaced under excessive or violent use of the tool.

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 characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a handle constructed in accordance with the invention. Fig. 2 is a side elevation of the locking-wedge used in connection with the handle. Fig. 3 is a perspective view of the said wedge. Fig. 4 is a side elevation of an ax-blade to which the handle is attached through the medium of the improved locking devices, and Fig. 5 is a perspective view of the keys used in connection with the locking-wedge shown in Figs. 2 and 3.

The body portion of the handle A may be made in any desired shape necessary or that fancy may dictate, but the helve of the handle or that portion *a* which is to enter the eye of the tool B is provided with a tapering slot 10, the said slot being narrowest at its upper end. The slot extends from the upper or outer end of the helve to a point near its center and is in direct communication with an opening 11, which forms a socket and extends through the helve from side to side, as does likewise the aforesaid tapering slot 10. In the drawings the opening or socket 11 is of circular form, and while this form is preferred the opening may be given other contour. Also, preferably, as shown in Fig. 1, the tapering slot 10 is made diagonally in the helve instead of straight.

In Figs. 2 and 3 I have illustrated a locking-wedge C. This wedge comprises a body 12, which is of the same length as the slot 10 in the helve and has a corresponding taper, and a head 13, which is formed at the lower end of the body, extending beyond opposite sides of the same, forming shoulders 14, and the lower or outer surface of the head is given a shape corresponding to that of the socket or opening 11 in the helve in which the head of the locking-wedge is adapted to be located.

The body of the tool B which is to receive the handle is provided with an opening 15 in each side of its eye portion, the openings 15 of the tool corresponding in contour to the opening or socket 11 in the helve of the handle, and the openings 15 in the tool are so located that they will register with the opening or socket in the helve when the handle has been properly placed in the eye of the tool.

Prior to introducing the handle into the eye of the tool the locking-wedge C is fitted into the tapering slot 10 of the helve and the head portion of the locking-wedge is brought to close engagement with the lower wall of the socket or opening 11, connecting with the slot, as shown in Fig. 4.

In addition to the locking-wedge C, I ordinarily employ two keys 16, the inner faces of the said keys being made flat, as are likewise their lower surfaces, while their outer or circumferential faces are given a contour corresponding to the marginal contour of the opening or socket 11 in the helve. These keys are driven through the openings 15 in the tool, one at each side of the locking-wedge, their circumferential or outer faces being in close engagement with the side walls of the two openings 15 and helve-opening 11, while the inner faces of the keys fit tight to the sides of the locking-wedge and the bottom edges of the said keys rest firmly upon the shoulders 14 at the head portion of the locking-wedge.

From the above-described construction it will be seen that the keys 16 clamp the wedge

C so firmly that it is held to move therewith, and as the keys are carried by the tool any outward movement of the tool on the handle caused by the shrinkage or wear at the opening 11 in the handle will carry the wedge with it, and as the wedge is moved outward in the slot 10 of the handle it spreads the end of the handle, and thereby tightens the handle in the eye of the tool. It will also be seen that the wedge, in addition to acting as a part of the keys and serving to spread the end of the handle, as hereinbefore described, also serves with the keys to so lock the tool on the handle that it is prevented from rocking thereon even should the hole of the handle become enlarged.

The attachment is a secure one, and even when the tool is most violently used the possibility of the fastening devices becoming disarranged or displaced is exceedingly remote.

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

1. The combination, with a tool-handle having a tapering slot produced in its upper end and extending diagonally inwardly from said upper end, the said handle being likewise provided with a socket or opening in direct communication with the said tapering slot, of a locking-wedge the body of which is of such dimensions and inclination as to fit into the tapering slot of the helve, the locking-wedge being also provided with a head extending beyond opposite sides of the body, the extending inner portions of the head forming shoulders, the outer shoulders of the head conforming to the contour of a portion of the slot or socket 11 in the helve, and keys having their inner bottom faces shaped respectively for engagement with the sides and the shoulders of the locking-wedge, the outer side surfaces of the keys conforming to the contour of the side portions of the slot or socket in the said helve, as and for the purpose specified.

2. The combination, with a handle the upper part of which is provided with a tapering slot terminating in a socket at its lower end, the socket and slot extending from side to side of the helve, and a locking-wedge having its body of corresponding taper and dimensions to the taper and dimensions of the said slot, the locking-wedge being provided with a shouldered head, which head conforms to a portion of the margin of the aforesaid socket, of a tool into the eye of which the helve is introduced, the said tool being provided with opposing openings of corresponding contour to that of the socket in the helve, the openings in the tool being arranged to register with the socket in the helve, and keys passed through the openings in the tool and the socket in the helve, the said keys engaging with opposite sides of the locking-wedge, and filling up the space in the helve-socket not occupied by the head of the locking-wedge, the said keys being also in close engagement with the walls of the openings in the tool, as and for the purpose specified.

3. The combination with a tool having a transverse opening in its eye, of a handle provided with a circular opening and a tapering slot leading therefrom to the end of the handle, a wedge having a curved outer surface to fit the wall of the circular opening of the handle, and keys quadrantal in shape in cross-section and fitting in the apertures of the tool and handle and clamping the wedge between them, substantially as herein shown and described.

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