April 12, 1966 F. SHANDEL 3,245,094

AX WITH SLEDGE AND DETACHABLE CUTTER

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Fig. 1.

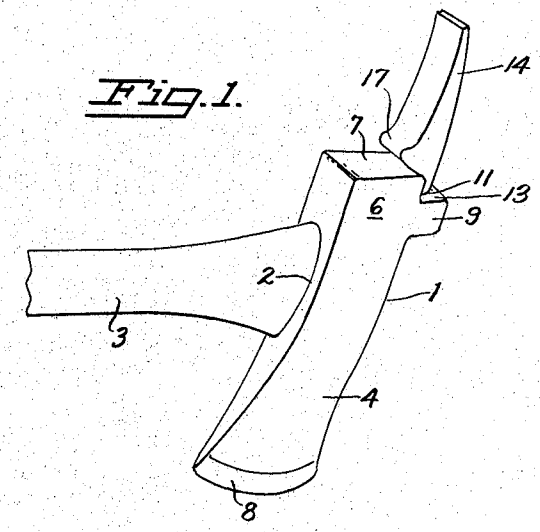


Fig. 4.

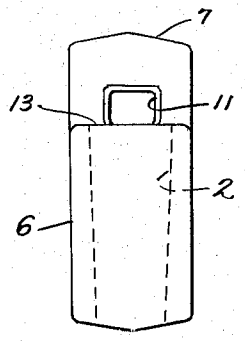


Fig. 2.

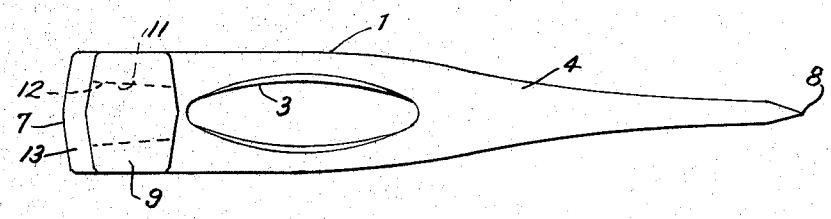
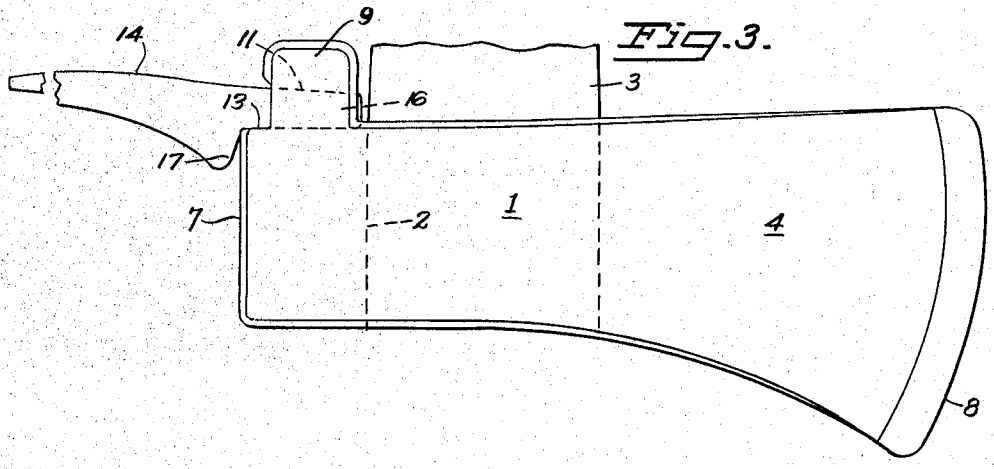


Fig. 3.



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Fig. 5.

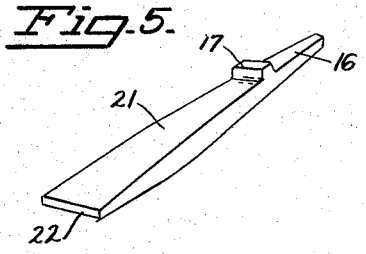


Fig. 6.

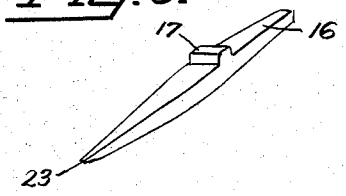


Fig. 7.

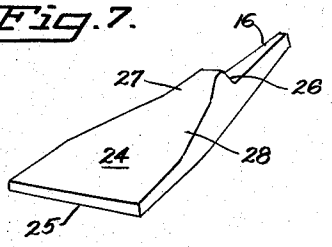
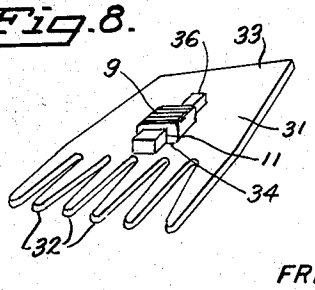


Fig. 8.



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3,245,094

AX WITH SLEDGE AND DETACHABLE CUTTER

Frederick Shandel, Albion, Calif.

Filed Jan. 13, 1964, Ser. No. 337,229
2 Claims. (Cl. 7—1)

This invention relates to axes and particularly to a sledge head provided for an ax and adapted to hold a cutter or chisel.

This application is a continuation in part of my co-pending application, Serial No. 19,439 filed on March 8, 1960, now abandoned, for Ax with Sledge and Detachable Cutter.

The principal object of this invention is to provide a sledge on the poll of an ax which is adapted to detachably hold a tool attachment in extended position for chopping, pitching, digging or raking, thereby to permit the ax to be used for the removal of undercuts from large or small timber, driving wedges, and building fire trails and the like; by the attachment and combination herein the cumbruous handling of several individual tools is eliminated and permits the ax to be quickly converted into the tool for the particular desired operation.

Another object of the invention is to provide an ax on the poll of which is provided a sledge so proportioned in relation to a socket for tool attachments as to bear the impact on impact tools inserted in said socket thereby to save the poll of the ax from undue strain or cracking; and wherein the attaching tools are so formed as to bear upon the sledge directly as well as on the socket wherein the tool is attached.

I am aware that some changes may be made in the general arrangement and combinations of the several devices and parts, as well as in the details of the construction thereof without departing from the scope of the present invention as set forth in the following specification, and as defined in the following claims; hence I do not limit my invention to the exact arrangements and combinations of the said device and parts as described in the said specification, nor do I confine myself to the exact details of the construction of the said parts as illustrated in the accompanying drawings.

With the foregoing and other objects in view, which will be made manifest in the following detailed description, reference is had to the accompanying drawings for the illustrative embodiment of the invention, wherein:

FIG. 1 is a perspective view of an ax with a sledge and tool cutter showing a cutter tool thereon.

FIG. 2 is a top plan view of the ax.

FIG. 3 is a side view of the ax.

FIG. 4 is an end view of the ax.

FIG. 5 is a perspective view of an undercut remover tool for the herein combination.

FIG. 6 is a perspective view of a pick form of tool for the herein combination,

FIG. 7 is a perspective view of a grub hoe tool for the herein combination.

FIG. 8 is a perspective view of a reversible rake-hoe tool for the herein combination.

The herein ax has a poll 1 which is provided with a generally oval hole 2 to receive a handle 3 therein. From the poll 1 extends a sharp cutting end or ax blade 4 tapered and formed in the usual manner of an ax blade. A sledge 6 extends from the poll 1 oppositely to the ax blade 4. The sledge 6 is about the same width

and height as the thickest end of the poll 1. The distance between the end 7 of the sledge 6 and the center of the oval hole 2 in the sledge is about one-third of the total distance between the sledge end 7 and the sharp edge 8 of the ax blade 4 or in other words of the total length of the ax herein.

The bulk and weight of the sledge 6 beyond the end of the oval hole 2 is substantially equal to the total bulk or weight of the remaining portion of the ax.

On the top of the sledge 6 is provided a lug 9 which extends across the entire top of the sledge and has an axial socket 11 therethrough. The socket 11 is generally parallel with the top of the ax and is tapered so that the wider end 12 faces toward the sledge end 7 and is spaced therefrom so as to form a ledge 13.

The tool 14 to be inserted, whether it is a cutter or hoe or pick or rake hoe, has a shank 16 thereon so tapered as to be tightly driven into the socket 11 and be held therein. An abutment ledge 17 on one side of the tool 14 forms a corner which bears against the top corner of the sledge 6 after the shank 16 is driven tightly into the socket 11.

The particular proportions and balance of mass in the ax permits the use of the ax, even without a cutter or tool, as a heavy sledge for impacts much greater than the poll of the average ax could withstand. The lug 9 on the top of the sledge is also massive so as to increase the weight and mass of the sledge and to cooperate with the attached tool in bearing the impact on the tool 14.

The particular forms of tool attachments utilizable in combination with the sledge of the ax heretofore described, are illustrated in FIGS. 5 to 8 inclusive.

In FIG. 5 is shown an undercut remover which has the usual flat blade 21 which tapers to a cutting edge 22 at one end. The tapered shank 16 is formed at its other end. The abutment ledge 17 projects from one face of the tool 21 near the base of the shank 16.

The pick shown in FIG. 6 has a usual pointed pick end 23 with the shank 16 at its other end provided with the abutment edge 17 at the base of the tapered shank 16.

In the grub hoe shown in FIG. 7 the blade 24 is widened toward a broad cutting edge 25. The blade 24 is also gradually inclined on its underface so as to form a thickening of the blade toward the ledge 17. In this form the ledge 17 has a straight abutment face 26 adjacent the shank 16, and a sloping face 27 converging toward the inclined face 28 of the grub hoe blade 24. Thus the force of hoeing is transmitted through the shank 16 and the abutment face 26 directly to the sledge 6 of the ax.

The reversible rake-hoe shown in FIG. 8 is a flat blade 31 with rake teeth 32 extending at one end thereof and a hoe edge 33 formed at its edge. The flat blade 31 has a hole 34 at about the middle thereof which fits over the exterior of the sledge lug 9 so that the flat blade 31 can be placed over the top of the ax with either the teeth 32 or the hoe edge 33 projecting beyond the sledge 6. A tapered key 36 is driven into and through the socket 11, as shown, to secure the reversible rake-hoe in the selected position.

I claim:

1. In an ax with a detachable extension tool having an attaching element, said ax having an oval hole in its

poll to receive a handle therein and having a sledge end which is heavier than the remaining portion of the ax the improvement of

(a) a lug integral with the top of said sledge end and extended from said top oppositely to the handle and in line with the longer axis of said oval hole so as to increase the weight and mass of said sledge,

(b) said lug having a socket therein generally parallel with the top of said ax and at right angles to the axis of the ax handle in said oval hole for receiving the attaching element of said tool,

(c) the sledge end and the adjacent portion of the ax to the center of the hole being equal to about one-third of the total length of the ax thereby to provide added momentum during the swinging of the ax in either direction and to shield the poll from impact on the sledge end,

(d) the end surface of said sledge end forming a transverse corner with the top of the sledge at said lug adapted to be engaged by a ledge on said tool.

2. The invention defined in claim 1 and

(e) said attaching element being a wedge.

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