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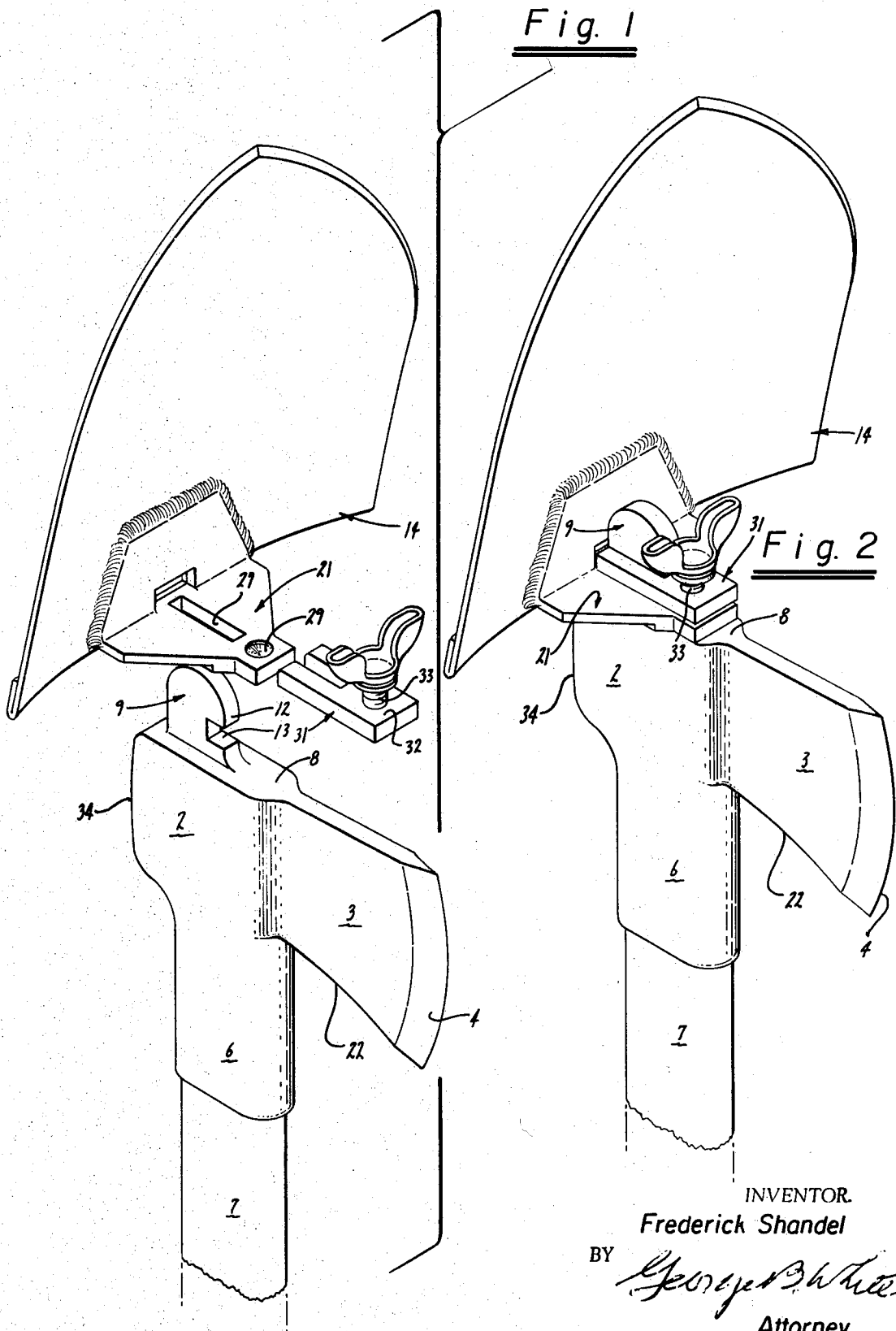
F. SHANDEL

3,561,023

AX WITH REPLACEABLE TOOLS

Filed Jan. 10, 1969

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

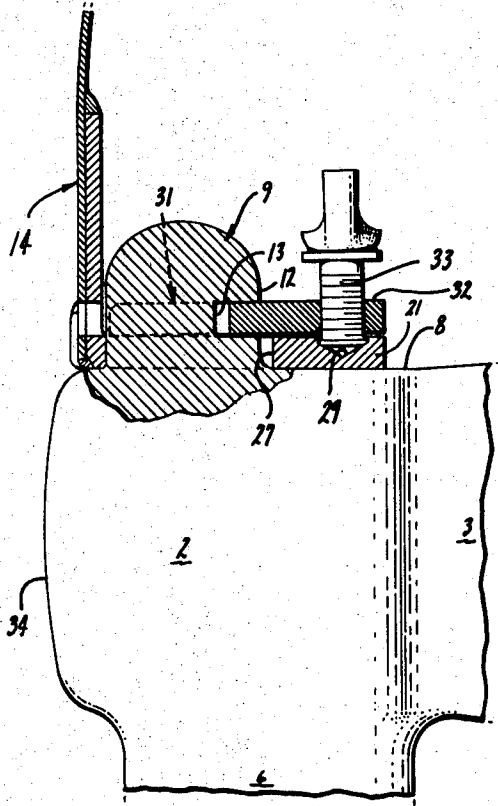


Fig. 3

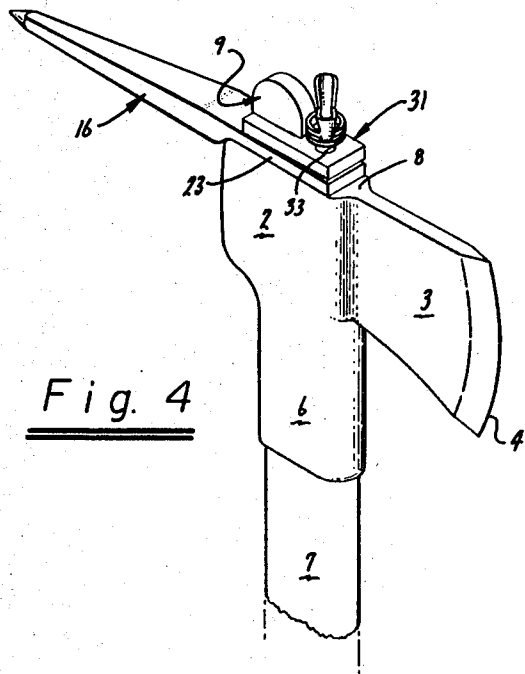


Fig. 4

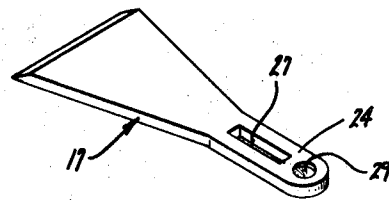


Fig. 5

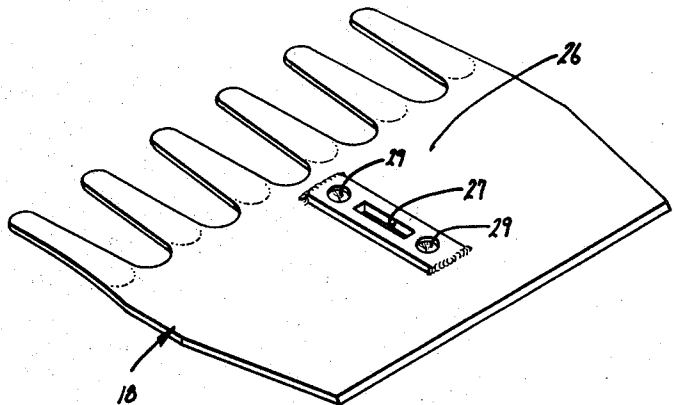


Fig. 6

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3,561,023

AX WITH REPLACEABLE TOOLS

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5 Claims

ABSTRACT OF THE DISCLOSURE

An ax with a flat top on its poll, a narrow lug projecting from the top and having a recess in its edge facing toward the sharp edge of the ax, and a securing flange on each attachment tool having a slot slideable over the lug to rest flat on said poll top, and a clamping fork held in the recess and straddling the lug with limited play; a keeper pocket in the flange spaced from the lug and a set screw through the base of the clamping fork engaging said keeper pocket to tightly clamp the flange of the attachment tool to the lug and to the top of the poll of the ax.

BACKGROUND OF THE INVENTION

This invention is a modification of the type of ax shown in U.S. Letters Pat. No. 3,245,094, granted on Apr. 12, 1966 to F. Shandel on Ax With Sledge and Detachable Cutter and the various attachment means shown in some of the references cited in said patent. An object of the herein improvement is to provide tool attachment means wherein a securing flange on a tool co-operates with a lug on the top of the poll of the ax and with a forked clamp to quickly yet firmly attach the tool to the ax in such manner that the resultant forces exerted on the tool further tighten the engagement between the tool flange and the ax.

DESCRIPTION OF DRAWINGS

FIG. 1 is a perspective developed view of the ax, the attachment and the attaching means.

FIG. 2 is a perspective view of the ax with the attachment assembled thereon.

FIG. 3 is a fragmental, partly sectional view of the assembled attachment means on the ax.

FIG. 4 is a perspective view showing the attachment of a pick on the ax.

FIG. 5 is a perspective view of a hoe attachment.

FIG. 6 is a perspective view of a rake attachment.

DETAILED DESCRIPTION

The ax head has a poll 2 and a cutting end 3 with a sharp edge 4 parallel with the axis of the poll 2. A sleeve 6 on the poll 2 is adapted to function as a ferrule and have the end of handle 7 secured therein.

The top 8 of the poll 2 is flat. A narrow lug 9 extends axially from the flat top 8. The thickness of the lug 9 is such that a bearing shoulder 11 is provided along each face of the lug 9. The opposite faces of the lug 9 are generally parallel with the side faces of the poll 2 and of the cutting end 3, thereby to facilitate swinging of the ax in the usual manner. In the edge 12 of the lug 9 facing in the direction of the cutting edge 4 is a retaining recess 13. The top of the lug 9 is suitably rounded.

The attachment tool may take several suitable forms such as a spade 14 shown in FIGS. 1 to 3 inclusive, or a pick 16 shown in FIG. 4, or a hoe 17 shown in FIG. 5 or a rake 18 shown in FIG. 6.

On each attachment is provided a base flange. For instance, on the spade 14 the base flange 21 extends substantially at right angles to the plane of the spade 14 so that when the base flange 21 is flat on the flat top 8 of the poll 2, the spade 14 extends parallel with the axis of the poll 2 and of the handle 7, thus the lower edge 22

of the ax can be utilized for foot leverage to press the space 14 into the ground.

The base flange 23 on the pick 16 is in extension of the pick so as to hold the pick 16 projecting substantially oppositely to the cutting edge 4.

The base flange 24 of the hoe 17 is extended from the narrow end of the hoe so that the hoe 17 projects in opposite direction from the cutting edge 4.

The base flange 26 of the rake 18 forms a wide base from which extend the prongs or teeth of the rake.

In each form the respective base flange has a slot 27 somewhat longer than the length of the lug 9 along the poll top 8 so as to slide over the lug 9. The thickness of each base flange is about equal to the distance between the flat top 8 of the poll 2 and the edge of the recess 13 nearer to the flat top 8. Between the end of the slot 27 and the free end 28 of the respective base flange is a keeper pocket 29.

A clamping fork 31 is of a thickness to fit into the recess 13 with limited play. The fork 31 straddles the lug 9 and has a fork base 32 extending toward the free end of the base flange. A set screw 33 threaded through the fork base 32 is spaced about the same distance from the free end of the fork as the corresponding spacing of the pocket 29, so that when the base of the fork is within the recess 13 the set screw 33 is in registry with the pocket 29.

The lug 9 is spaced from the heel 34 of the poll 2 so as to form a shoulder between said heel 34 and said lug 9.

OPERATION

The base flange 21 is placed over the lug 9 so that the tool is at the heel 34 of the ax and the base flange 21 lies flat on the shoulders 11 and on the flat top 8. Then the clamping fork 31 is pushed over the lug 9 toward the heel 34 of the ax so as to insert a part of the fork base 32 into the recess 13. Then the set screw 33 is tightened into the keeper pocket 29 so as to force the fork base 32 away from the base flange 21, and tighten the fork base 32 against the top of the recess 13 and force the free end of the clamping fork 31 against the respective base flange near the heel 34 of the ax. Thus forces exerted during usual work on the attachment tool tend to lift the base flange near the heel 34 and thus tighten contact with the top of the recess 13 and exert pressure on the set screw 33 into the flange pocket 29.

I claim:

1. In an ax with replaceable tools thereon, detachable mounting means comprising:

a lug extended from the top of the ax,

a base flange on the replaceable tool having a slot therein slideably engaging said lug whereby said base flange rests on the top of the ax,

said lug having a keeper recess on its edge facing toward the sharp edge of the ax,

a clamping fork insertable over said lug so as to straddle said lug above said slot and partly extending into said recess,

and a threaded element extended through said clamping fork spaced from said recess toward said sharp edge and bearing against said base flange thereby to force said insertable portion of the clamping fork against the top of said recess and the free end of said clamping fork against said base flange.

2. The invention defined in claim 1 and the thickness of said base flange being substantially equal to the distance between the top of the ax and the wall of the recess nearer to said top.

3. The invention defined in claim 1 and a retainer pocket in said flange spaced from the end of said slot to a distance to register with said threaded element whenever said clamping fork is in position in said recess whereby said threaded element engages said keeper pocket.

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4. The invention defined in claim 1 and
said lug being narrower than the width of the top of
said ax, and said top being flat, thereby to form a
shoulder on each side of said lug,
said lug being spaced from the heel of said ax to form
a shoulder between the heel of the ax and said lug. 5
5. The invention defined in claim 1 and
the top of the poll of said ax being flat,
a ferrule extended from said poll oppositely to said
lug for receiving a handle,
said base flange resting flat on the flat top of the poll, 10
said base flange joining said tool at about the heel of
said ax thereby to bear against said heel under
certain working forces thereon,

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said clamping fork extending substantially to the por-
tion of the flange adjacent said heel to exert a clamp-
ing force on said flange toward said heel.

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