

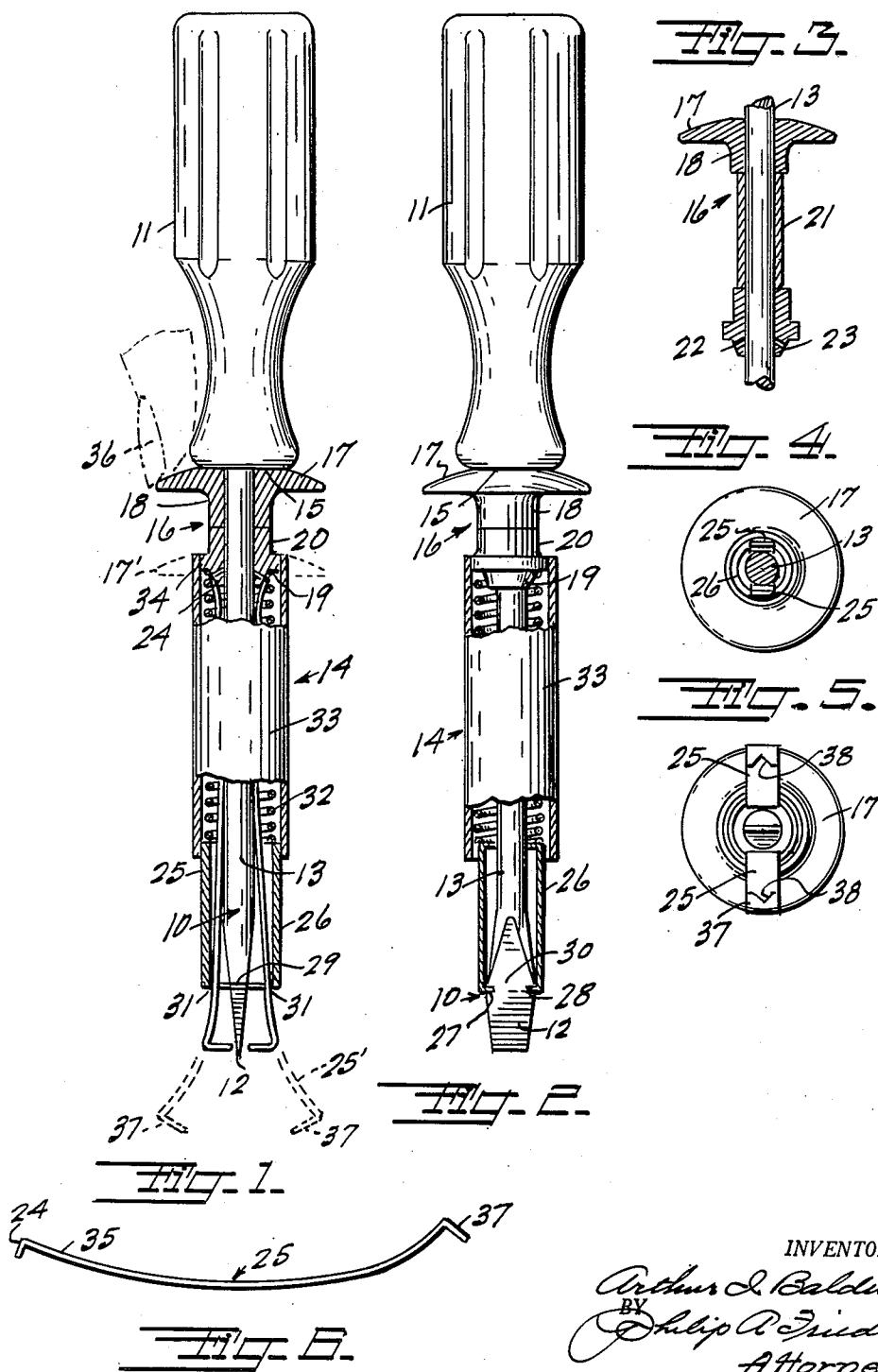
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SCREW HEAD GRIPPING ATTACHMENT FOR SCREW DRIVERS

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SCREW HEAD GRIPPING ATTACHMENT FOR SCREW DRIVERS

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2 Claims. (Cl. 145—52)

This invention relates to improvements in means for holding a screw in bit engaging position with a screw driver for driving the screw in a relatively inaccessible location, as also for retrieving screws, nuts and similar elements from such locations.

The device is very easily used, the operating means for the clamping device being provided with a disk which is normally in contact with the lower end of the handle so that it can be depressed to open the clamp jaws by the thumb of the hand that holds the screw driver, release of the disc permitting the jaws to close and clamp the screw or other element.

The objects and advantages of the invention are as follows:

First, to provide a tool for operation on screws or the like for insertion, application, or removal, and which will grip and hold the element during the operation.

Second, to provide a screw driver with screw gripping means and which gripping means is conveniently operable by the thumb of the hand that is holding the screw driver handle, leaving the other hand free for placing the screw in position with the screw driver bit in the slot in the screw head.

Third, to provide a screw driver as outlined with screw gripping means of the simplest possible construction and easily and conveniently operable.

In describing the invention reference will be had to the accompanying drawing, in which:

Fig. 1 is a front elevation of the invention shown partly in section.

Fig. 2 is a side elevation of Fig. 1.

Fig. 3 is a sectional elevation through the clamp operating head and shown with an extension for use with screw drivers having longer shanks of the same diameter.

Fig. 4 is a bottom plan view of Fig. 3.

Fig. 5 is a bottom plan view of Fig. 2.

Fig. 6 is a side elevation of one of the clamp members.

The invention comprises a screw head gripping attachment 14 for a conventional screw driver 10 having operating means such as a handle 11, and a shank 13 terminating in a bit 12, the attachment normally being adapted to a shank of minimum length for a specific diameter. This gripping attachment normally extends from the engaging end of the bit 12 to the bottom 15 of the handle for the minimum length of shank. The operating head 16 is of a predetermined axial length, and is made in two parts as shown, with the disc 17 with its hub 18 forming one part of the head, and the clamp spring anchor 19 with its hub 20 forming the other part. This construction permits the application of this unit to any screw driver having the same diameter and of any length of shank, a tubular spacer having a length equal to the excess length of the shank being interposed between the two halves of the head as indicated at 21 in Fig. 3, all three elements being slidable on the shank, though the invention is not limited to this construction as the head can be formed as a unit with heads of different lengths being provided for the different lengths of shanks.

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The clamp spring anchor is provided with two recesses 22 and 23 in which the bent terminal end 24 of the clamp spring 25 is anchored.

A combined clamp guide and retractor and spring seat 26 has diametrically disposed inturned flange portions 27 and 28 which fit in the transverse slots 29 formed in the respective side edges of the bit, and about at its widest point 30, the inturned flange portions being omitted between these portions 27 and 28 so that the device can be applied over the bit and turned to the proper position for the flange portions to engage in the slots 29, and these intervening unflanged portions forming the guide portions for the clamp members as indicated at 31.

A compression spring 32 surrounds the upper portions of the two gripping members, with the respective ends seated on the underside of the anchor member and the top of the clamp guide, and a sleeve 33 is applied over the spring to form a guard and may be fixed in position by any suitable means such as by a friction fit on the anchor member at 34, the lower end being slidable on the spring finger guide 26. The clamp or gripping members are formed of spring metal to a compound curve with a relatively short radius at the gripping end and continuing at the anchor end 35 in about 3 to 4 times the initial radius.

When the head disc 17 is depressed as indicated at 17' by the thumb 36, the compression spring is compressed and the gripping members are projected from the lower end of the clamp guide as indicated at 25' with the jaws 37 spaced apart to accept a screw, the gripping unit and the spread of the jaws being both shown in an exaggerated condition for purposes of clarity, only a slight moving of the head being required for suitable opening of the gripping members, and the unit as actually made being not over twice the diameter of the shank with the exception of the head disc 17. The jaws of the gripping members are both notched as indicated at 38, and the gripping members are tapered in width from the jaw end to the anchor end, ranging from about $\frac{7}{32}$ at the gripping end to $\frac{5}{32}$ at the anchor end for a $\frac{3}{8}$ inch shank, providing greater rigidity and gripping power for the gripping end coupled with increased flexibility toward the anchor end and thus increasing the efficiency and the ease of operation.

I claim:

1. A screw head gripping attachment for a screw driver having a handle having a lower end, and a shank of minimum length for a specific diameter and terminating in a bit having opposed faces having a width equal to the diameter of the shank and having side edges, comprising, a thumb actuable disc slidable on said shank and cooperatively with said lower end, an anchor member slidable on said shank and cooperatively related to said disc, opposed normally outcurved gripping fingers formed of spring material and having each one end fixed to said anchor member and terminating at the other end in inturned jaws cooperatively related to the terminal end of the bit, a guide sleeve having diametric inturned flange portions for engagement in transverse slots formed in said side edges and intermediate the height of the bit and engaged in said slots through rotational adjustment of the sleeve, a compression spring encompassing said gripping fingers and cooperative between the top of said sleeve and said anchor member, and a second sleeve having its upper end fixed to said anchor member and the lower end slidable on said guide sleeve for housing and retaining said spring and the spring fingers against transverse warping, said other ends of said spring fingers normally projecting beyond the lower end of said guide sleeve through the spaces between the opposed faces of the bit and the non-flanged portions of the lower end of the guide sleeve, depression of said disc operating to increase the projection

of said spring fingers and coincidently the spacing of the jaws to receive a screw therebetween, release of the disc freeing the spring to retract the spring fingers for closing of the jaws on the screw or the like.

2. A structure as defined in claim 1, a tubular spacer 5 for interposition between said disc and said anchor member for adaption of said attachment to a shank of greater length than the minimum, said tubular spacer having a length equal to the excess length of the shank of greater length over that of the shank of minimum length, whereby 10 said attachment is adaptable to any length of shank for a specific diameter.

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