

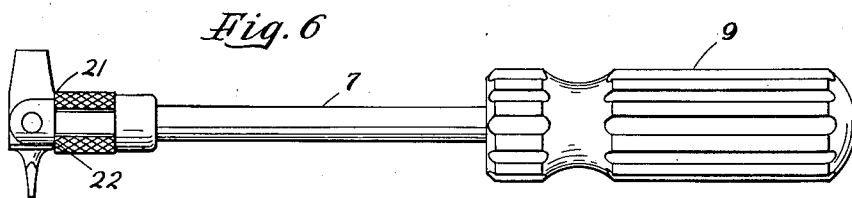
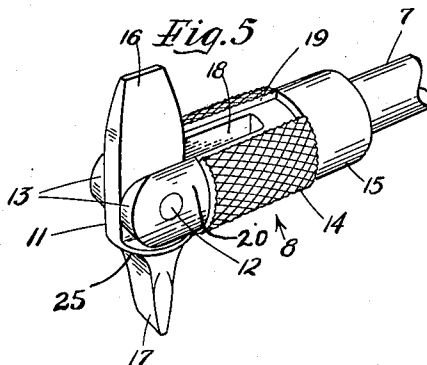
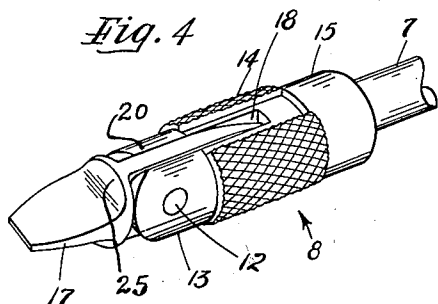
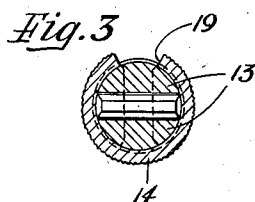
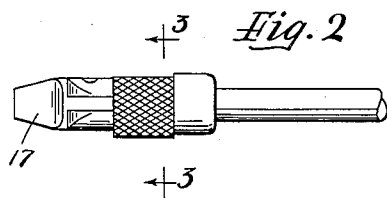
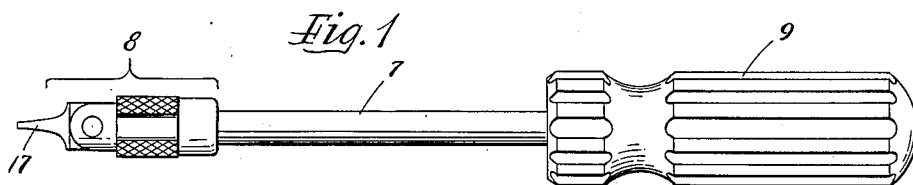
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H. W. CLAY

2,501,561

SCREW DRIVER HAVING ANGULARLY ADJUSTABLE BIT

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INVENTOR.

Howard W. Clay

BY

McLanna and Morsbach

ATTYS.

UNITED STATES PATENT OFFICE

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SCREW DRIVER HAVING ANGULARLY
ADJUSTABLE BITHoward W. Clay, Rockford, Ill., assignor to
Heinrich Miller and Clara L. Miller, Rockford,
Ill.

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1 Claim. (Cl. 145—50)

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This invention pertains to hand tools generally and the principles thereof are herein exemplified as embodied in a screw driver.

A primary purpose of the invention is the provision of a tool having an adjustable blade or bit which will facilitate the use of the tool under adverse conditions in restricted spaces.

Another purpose is to provide for securely locking and holding the blade in the position to which it has been adjusted.

A further object is the provision of a tool which will be durable and reliable and which can be produced at a reasonable cost.

One practical embodiment of the principles of my invention is illustrated on the accompanying drawings to which reference is made in the following specification. This exemplification is purely illustrative and not restrictive in character.

Referring to said drawings:

Fig. 1 is a plan view of a screwdriver constructed in accordance with my invention.

Fig. 2 is a fragmental elevation of the tool shown in Fig. 1.

Fig. 3 is a transverse section on the line 3—3 of Fig. 2.

Fig. 4 shows in perspective the operating end of the tool with the blade unlocked in one of its adjusted positions.

Fig. 5 is a similar view with the blade adjusted to another position and

Fig. 6 is a view similar to Fig. 1 but with the blade locked in the adjusted position shown in Fig. 5.

By reference to the drawings more in detail it will be observed that the tool illustrated consists essentially of a shank 7 provided at its operating end with a head designated generally by reference character 8. The opposite end of the shank may be equipped with a handle 9 or shaped for reception in the socket of a brace or other operating means.

The head at the operating end of the shank 7 comprises a bit 11 journaled on a pintle 12 between the legs 13 of the bifurcated extremity of the shank and a ferrule 14 disposed between a shoulder 15 and a shoulder 20 formed on the shank and spaced from the shoulder 15. The legs 13 in effect define a slot for receiving the bit at one end of the shank.

The bit 11 is shaped to provide a pair of oppositely extending blades 16 and 17 each designed to be operatively engaged in a standard or specially shaped kerf of a wood screw or machine screw. These blades are disposed at right

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angles to each other, i. e. the end edge of blade 17 extends transversely of the longitudinal axis of the shank while the end edge of blade 16 is disposed in a plane including the longitudinal axis of the shank. The dimensions of blade 16 are such that the blade will lie wholly within the slot 18 between the legs 13 of the shank when the bit is adjusted to the position shown in Figs. 1 to 4 inclusive.

When the bit is in the adjusted position illustrated in Figs. 1 to 4, with the blade 17 extending longitudinally from the shank, the tool may be used in the manner of an ordinary rigid screw driver. Where obstructions or confined space render such use of the tool impracticable the bit may be adjusted to the transverse position of Figs. 5 and 6, thereby presenting the blades so that the tool may be used as an angle head screwdriver. In general shoulder means 25 act between the blade 17 and the side of the shank 7 to positively determine the position of the blades 16 and 17 relative to the shank when the shank and blades are in the position shown in Fig. 6. If thus employed under restricted space conditions reversal of the tool by a 180° rotation so as to present the blades for alternate engagement with the screw will enable the screw to be driven by successive short swings of the tool under conditions which without the angularity of the blades could not be met.

The sleeve or ferrule 14 previously mentioned serves to securely lock the bit in the adjusted positions of both Fig. 1 and Fig. 6. To this end the sleeve is provided with a longitudinal slot 19 of sufficient width and length to permit the passage of the blade 16 therethru during adjustment of the bit from the position of Fig. 4 to that of Fig. 5 and vice versa. When adjusted to either of said positions the bit may be locked by simply rotating the ferrule sufficiently to disalign the slot 19 from the blade 16.

When the bit is in the adjusted position of Fig. 4 rotation of the ferrule to the position of Fig. 1 will embrace the blade 16 within the ferrule and lock the bit against movement about its pintle. Likewise rotation of the ferrule from the position of Fig. 5 to that of Fig. 6 will present the end of the ferrule in abutting relation to the opposed faces of the bit at the points or abutment portions 21 and 22 respectively above and below the axis of the shank thereby locking the bit against rotative movement on its pintle. In general the points 21 and 22 are substantially flush with the shoulder 20 when the blades 16 and 17 are in the position shown in Figs. 5 and 6.

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It should be manifest that I have devised a tool having an adjustable bit which may be rigidly and securely locked in its positions of adjustment thereby providing a strong durable and practical article of exceptional utility.

I claim:

A combination screw driver comprising a shank having an end portion with a slot opening on diametrically opposite sides of the shank and through the end thereof, axially spaced opposed shoulders formed on said shank adjacent the said end thereof and defining a circumferential groove therebetween, a bit having screw driver blades at opposite ends thereof, one of said blades being disposed in a plane at an angle to the plane of the other blade, an abutment portion on one side of said bit, means for pivotally mounting said bit for movement between a position in which one of said blades is wholly received in said slot and the other blade extends axially of the shank and a position in which both the blades are disposed transversely of the shank and said abutment portion is substantially flush with one of said spaced shoulders, transverse shoulder means formed on said bit and engageable with a side of the shank for determining said last-mentioned

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position of the bit and a sleeve encircling said shank and having its ends disposed between and engaged with said spaced shoulders, said sleeve having a slot extending from end to end lengthwise thereof and rotatable in said groove between positions in which the slot in the sleeve is aligned with the slot in the shank to permit movement of the blades between the above-described positions and a position in which the slot in the sleeve is out of alignment with the slot in the shank to lock the bit in said above-described positions.

HOWARD W. CLAY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
573,135	Burket	Dec. 15, 1896
819,181	Stenstrom	May 1, 1906
1,238,300	Keppeler	Aug. 28, 1917
1,616,300	Bido	Feb. 1, 1927