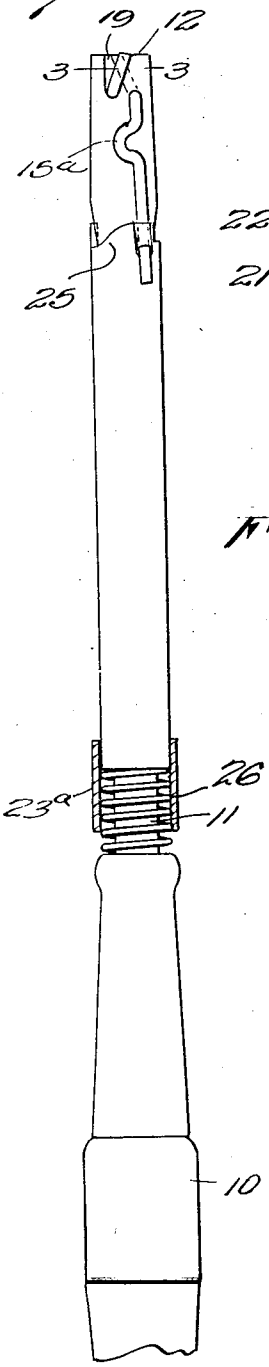
I. W. JAMES.

SCREWDRIVER.

APPLICATION FILED APR. 15, 1919.

1,359,384. **Patented Nov. 16, 1920.**

Fig. 1.



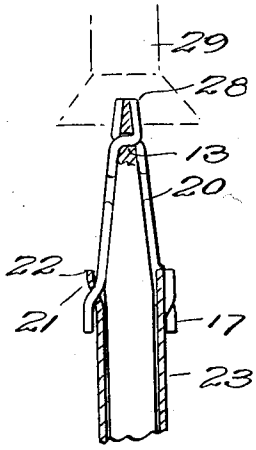


Fig. 2.

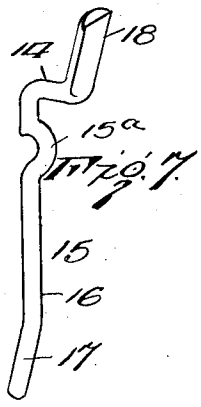


Fig. 7.

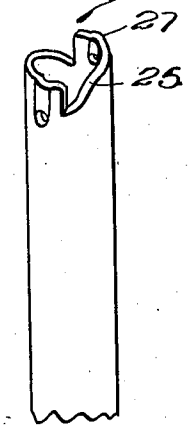


Fig. 6.

Fig. 3.

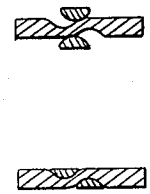


Fig. 4.

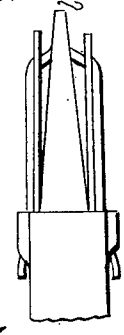


Fig. 10.

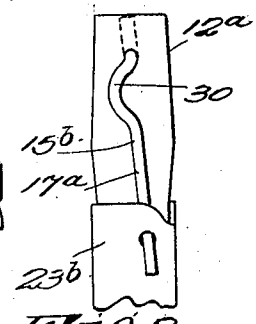


Fig. 8.

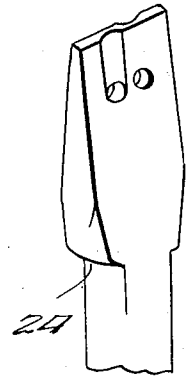


Fig. 5.

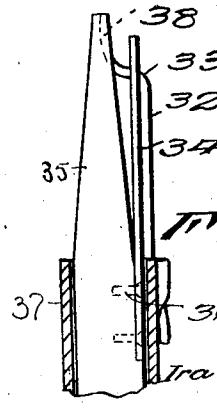


Fig. 9.

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UNITED STATES PATENT OFFICE.

IRA WATT JAMES, OF WOODLAND PARK, COLORADO.

SCREWDRIVER.

1,359,384. Specification of Letters Patent. Patented Nov. 16, 1920.

Application filed April 15, 1919. Serial No. 290,160.

To all whom it may concern:

Be it known that I, IRA WATT JAMES, a citizen of the United States, residing at Woodland Park, in the county of Teller and State of Colorado, have invented certain new and useful Improvements in Screwdrivers, of which the following is a specification.

This invention has for its object to provide an improved screw driver equipped with a screw head clamping or clutching device facilitating the placing and subsequent driving of the screw in an inconveniently accessible place.

Another object is the provision of an adjusting means for the clamping devices located conveniently near the main handle of the screw driver and actuated by the fingers grasping the handle.

With these and other objects in view as will appear as the description proceeds, the invention comprises the novel features of construction, combination of elements and arrangement of parts as will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the drawings:

Figure 1 represents a fragmentary side elevation of the improved screw driver,

Fig. 2 represents an enlarged fragmentary sectional view of the pointed terminal of the blade,

Fig. 3 represents an enlarged sectional view in the plane of the line 3—3 of Fig. 1,

Fig. 4 represents a similar sectional view illustrating the clamping terminals of the clamping members in retracted or inoperative position,

Fig. 5 represents a fragmentary perspective view of the screw engaging terminal of the blade, the sleeve and clamping members being detached,

Fig. 6 represents a fragmentary perspective view of the adjusting sleeve,

Fig. 7 represents a perspective view of one of the clamping members detached,

Fig. 8 represents a fragmentary side elevation of a modified type of screw driver, and

Fig. 9 represents a further modification of the screw driver.

Fig. 10 represents a still further modification of the invention.

Referring to the drawings in detail, wherein similar reference numerals designate corresponding parts throughout the several views the numeral 10 indicates the preferred type of handle carrying a cylindrical shank 11 having its outer terminal flattened to present a screw engaging blade or edge 12. Adjacent the edge 12 the blade or tapered terminal of the shank is provided with parallel transverse apertures 13 receiving the offset portions 14 of a pair of companion clamping members 15 each of which carries an elongated shank 16 directed angularly at its inner terminal as indicated at 17 and having its opposite terminal flattened as indicated at 18 to lie flush with and present a continuation of the surface and edge of the blade of the shank. In their normal inoperative positions the screw head engaging terminals of the clamping members 15 lie entirely within parallel seats or grooves 19 extending inwardly from the edge 12 to and communicating with the apertures 13 receiving the respective clamping members, and the shanks thereof are provided with crimps 15^a which lie flat against the blade and maintain the clamping elements in proper position.

The elongated shanks 16 of the clamping members extend along the oppositely inclined flat surfaces 20 of the shank and the extreme angular terminals 17 thereof are engaged in apertures 21 formed with the struck out portions 22 of an adjusting sleeve 23 rotatably mounted upon the shank 11 and movable longitudinally thereon.

The shank of the screw driver at the inner terminals of the flat surfaces 20 is formed with opposed shoulders 24 constituting an abutment for the terminal of the sleeve 23 and coacting with the diametrically opposed cam surfaces 25 thereof to maintain the sleeve in such position as to retain the clamping members in operative positions, with the assistance of the expansion spring 26 confined between the opposite terminal of the sleeve and the adjacent handle portion 10. The straight edges 27 intermediate the cam surfaces 25 are engaged with the shoulders 24 when the sleeve is moved to a position permitting the screw engaging terminals of the retaining members 15 to engage in the grooves 19.

As suggested in Figs. 3 and 4, the grooves 19 are substantially semi-circular in cross section and conform to the external contour of the adjacent side portions of the screw engaging terminals 18 of the clamping members whereby as the clamping members are

turned upon the offset portions 14, incident to a rotary movement of the sleeve 23 the screw engaging terminals 18 thereon slide upon the concave surfaces of the grooves 19 and are projected beyond the surface of the edge 12 thereby firmly clamping the walls of the groove 28 in the screw 29 and permitting the same to be conveniently placed in any desired position and subsequently driven. Subsequent to placing and starting the screw the clamping members are returned to their inoperative position in the grooves 19 by a reverse rotational movement of the sleeve 23 and, as will be clearly evident, the clamping members are preferably constructed of spring material so as to afford such resiliency as is necessary in moving the screw engaging terminals 18 thereof laterally with relation to the blade of the screw driver.

In the modification of the invention illustrated in Fig. 8 the blade 12^a is provided with but one opening receiving a single clamping element 15^b, the elongated shank 17^a of which is connected with the adjacent terminal of the adjusting sleeve 23^b. Except for the elimination of one of the clamping members the type of the invention illustrated in Fig. 8 is similar to that disclosed in Figs. 1 to 7. The clamping member 15^b is preferably provided with a substantially U-shaped crimp which lies flat against one of the tapered faces of the blade 12^a and is designed to prevent the clamping member from twisting or turning out of operative position.

In the modification of the invention illustrated in Fig. 9 the clamping member 32 having the offset medial portion 33 is pivotally supported in a supplementary plate 34 riveted or otherwise secured to the screw driver shank 35 as indicated at 36 and the inner terminal of the clamping member is directed angularly and engaged in the adjacent terminal of an adjusting sleeve 37 identical in construction to the sleeve 23 in the type of the invention illustrated in Fig. 1. The screw head engaging terminal of the clamping member 32 is normally seated within a groove 38 formed in the beveled surface of the shank 35 and as the sleeve 37 is turned upon the shank, the terminal of the clamping member is tilted out of the groove and projected against the inner surface of the screw head slots.

In the type of the invention disclosed in Fig. 1, as well as the modifications, the spring 26 permits the sleeve 23 to be moved toward the handle 10 thereby permitting withdrawal of the shanks of the clamping members from the apertures in the sleeve and by a subsequent lateral and rotary movement of each shank it may be removed from under struck out portion 22 and removed bodily from the screw driver. In this manner a broken clamping member may be readily replaced by a new one and the movement of the sleeve with relation to the handle 10 is limited by a ferrule 23^a.

As in the modification shown in Fig. 10 two supplementary plates 34 and a corresponding number of clamping members may be utilized if preferred, at the option of the user.

What I claim is:—

1. A screw driver including a shank provided with a beveled screw engaging terminal having a groove and aperture therein, a screw head clamping member having an offset portion pivotally secured in the aperture and partially engaged in said groove, and means engaging the opposite terminal of the clamping member for swinging the latter out of the groove.

2. A screw driver including a shank provided with a beveled screw engaging terminal provided with an aperture and a groove, a screw head clamping member having an offset portion pivotally mounted in the aperture and having one terminal engaged in said groove, means rotatably supported upon the shank engaging the opposite terminal of the clamping member to disengage the latter from the groove.

3. A screw driver including a shank provided with a blade, a clamping member comprising a shank provided with an offset portion pivotally mounting said member, means on the second mentioned shank engaging the first mentioned shank to prevent turning the clamping member on its longitudinal axis, and means rotatably supported upon the first mentioned shank for moving the clamping member to operative position.

4. A screw driver including a shank provided with a blade, a clamping member comprising a shank having an angular portion forming a pivot and a crimp lying in contact with one of the side faces of the blade and preventing the clamping member from turning on its longitudinal axis, and means rotatably mounted upon the shank and connected with the clamping member for swinging the latter to operative position.

5. A screw driver including a blade provided with a seat in the side face thereof, said seat having inclined side walls, a clamping member having one terminal normally disposed in said seat and presenting a continuation of the side face of the blade, and means connected with the opposite terminal of the clamping member to unseat the first mentioned terminal and swing the latter into prominent clamping position upon the side face of the blade whereby to clamp a screw head.

In testimony whereof I affix my signature hereto.

IRA WATT JAMES.