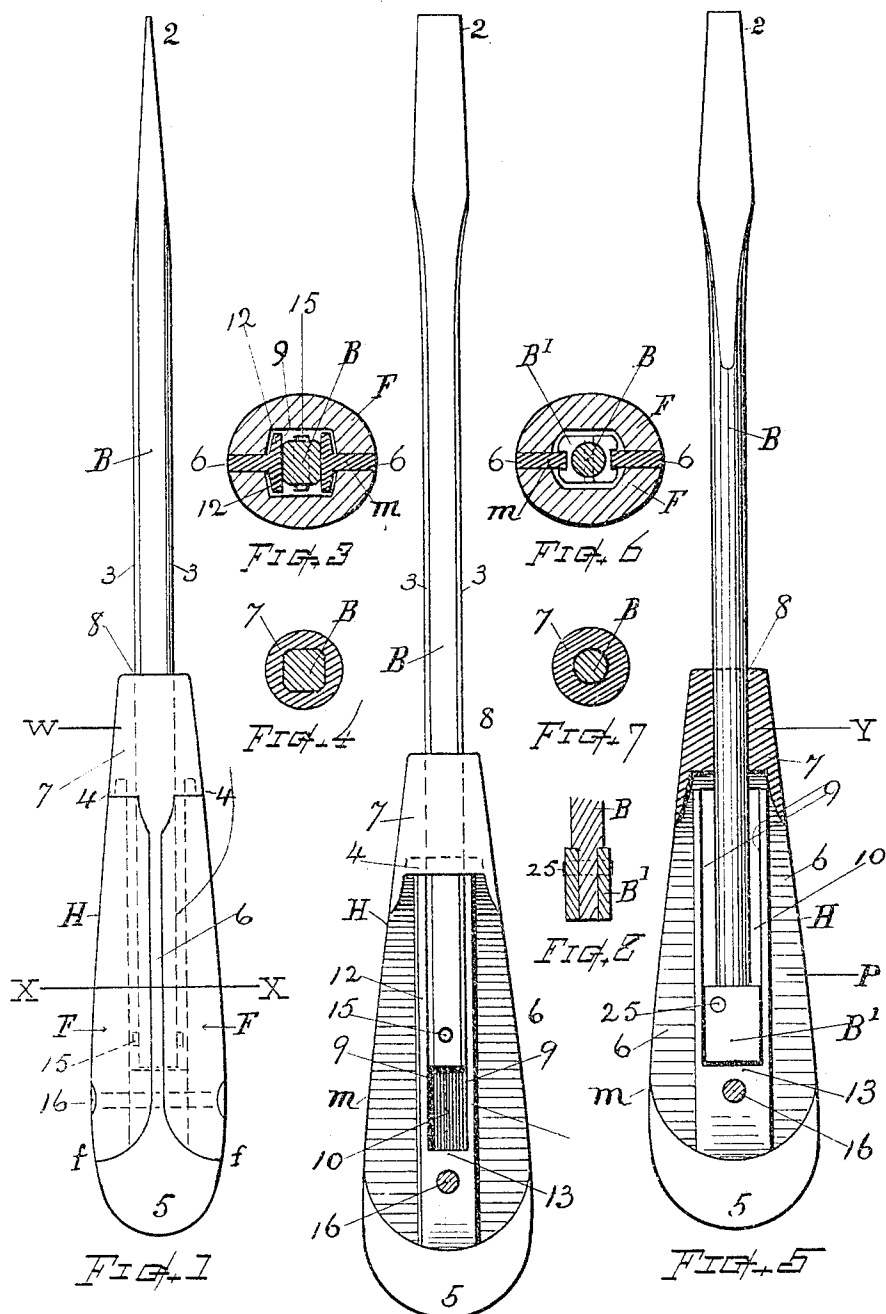


E. SEARLE.
SCREW DRIVER.
APPLICATION FILED MAR. 27, 1905.



Witnesses-

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FIG. 2

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SCREW-DRIVER.

No. 804,679.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD SEARLE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improved Screw-Driver, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

When putting up electric-light wiring and fixtures and in other overhead work, it is desirable to primarily start the points of screws into the joists or woodwork by a stroke or blow on the screw-driver while the screw is held with the point of the screw-driver against the screw-head. When, as in common practice, this is done by striking the palm of the hand against the end of the screw-driver handle, the hand soon gets sore and tender if there is much work of the kind to be done, thus causing much inconvenience and annoyance to the workmen and rendering its performance more laborious and irksome.

The object of my present invention is to provide means for obviating the source of the above-stated annoyance and to afford a more efficient and serviceable screw-driver construction having the characteristics shown and described and in which the handle is adapted for effecting a stroke or percussive impact upon the shank or rod while held firmly in the hand.

My invention consists in the novel construction and combinations specified in the following detailed description, and particularly defined in the claims.

In the accompanying drawings, Figure 1 represents a screw-driver embodying my invention. Fig. 2 is a side view of the same with the side plate of the handle removed for showing the internal structure. Fig. 3 is a cross-section at line X X on Fig. 1. Fig. 4 is a cross-section at line W W on Fig. 1. Fig. 5 is a side view with the side plate removed and collar portion in section, showing the construction as adapted for a cylindrical shaft, round rod, or shank. Fig. 6 is a cross-section at a position corresponding to line P on Fig. 5, but showing a modification in the form of the guiding devices. Fig. 7 is a cross-section

at line Y on Fig. 5, and Fig. 8 is a longitudinal section of the end of the shaft or shank as employed in Fig. 5.

In the preferred construction according to my invention as illustrated in Figs. 1 to 4 the screw-driver rod, shaft, or shank B is formed as a plain straight rod having at one end the flattened bit 2 for engagement with the nick of a screw. The cross-section of said rod or shank is made approximately rectangular, with the corners slightly beveled, as at 3, or a form that can be readily drawn in wire-drawing dies to a uniform dimension.

The handle H is composed of a metal frame *m* and opposite externally-rounded scales or side plates F, fitting upon the sides of the frame. This handle-frame comprises a solid externally-rounded butt-end portion 5, a conoidal ferrule end or collar portion 7, and opposite longitudinally-disposed webs 6, extending from the collar portion to the butt, all preferably cast integral. The collar portion has a longitudinal opening 8 therethrough that matches and slidably fits the form of the shank B, and the web members 6 are formed with inner parallel guiding-surfaces 9 and disposed with an intervening guideway-space 10 in alinement with the collar-opening.

A stop or abutment 13 is formed within the handle-frame near its butt-end, which is reinforced or made heavy for weighting or loading the handle. The inner guiding edges 9 of the webs are provided with laterally-projecting longitudinal lips 12 to afford greater width of surface for embracing and supporting the flat or angular sides of the shank B, which fits between their surfaces, as best shown in Figs. 2 and 3, and thus prevents rotation of the shank within the handle.

A pin 15 is inserted and fixed in the shank near its end. The ends of said pin project slightly, and contact of said pin with the inner end of the collar 7 prevents the shank being withdrawn from the handle.

The side plates or scales F, which are preferably of wood or non-metallic material, are grooved on their inner faces, and their edges seat upon the flat sides of the webs 6, which conform at their outer edges with the contour of the handle. The upper ends of said plates each lock under a lip formed on the collar at 4, while their lower ends at *f* are fitted to the

butt 5 and attached to the frame by a rivet or screw 16, passed through the plates, and that engages in or passes through the abutment-block 13 or central reinforcement of the frame beyond the end of the space 10. The shank and handle thus formed have free endwise sliding action in relation to each other within a determined limit of movement; but the said parts are confined against independent rotative action by means of the embracing guide-surfaces.

In the operation by placing the bit 2 in the screw and holding the latter with its point against the joist or ceiling and then with the handle gripped in the hand the operator by sliding the handle on the shank starts in the screw, after which it can be turned in by rotation of the screw-driver in usual manner.

By the construction and combination of the parts as shown and described I produce a very strong, durable, and practically efficient tool for the purpose in hand.

In Figs. 5, 6, 7, and 8 I have shown a modification by which a round or cylindrical shank may be employed. In this case the opening in the collar 7 is made to fit the round rod of the shank B, and a rectangular or other suitably-shaped head or guiding-block B' is attached to the end of the round shank within the space 10 for engaging with the guide-faces 9 or edges of the web members 6 of the handle-frame. The end of the round shank is preferably flattened to fit into a corresponding opening in the guide-block member B', as in Fig. 8, and is secured by a pin 25 or other suitable means.

In Fig. 6 there is shown a modification in which the shank-guide member is fitted with side grooves to embrace the thin edges of the web members in lieu of having the edges made with broad faces to embrace the sides of the shank or inner guided member. The guiding effect in this is substantially the same as that above described.

What I claim, and desire to secure by Letters Patent, is—

1. A screw-driver comprising a shaft made of a rod of uniform section throughout its length, with one end flattened to form a screw-engaging bit, and a metal handle-frame having a head and collar portions united by side webs with an opening through the collar portion and between the webs, said webs having parallel inner faces that embrace the sides of said shaft, a pin fixed in the inner end of the shaft, and opposite applied side pieces or scales longitudinally grooved on their inner faces, and having edge surfaces that rest upon the webs at either side of said shaft.

2. A screw-driver having a metal handle-frame comprising a centrally hollow collar portion, and a solid butt-end portion, integrally united by opposite side webs having a central space and internal parallel edges adapted for

supporting the shank, a central portion adjacent to the butt-end, made of a greater thickness than the webs and forming an abutment-block with a transverse abutment-face across the central space; in combination with a screw-driving shank non-rotatively confined and endwise slidable between said webs toward and from said abutment, and the non-metallic scales or side plates longitudinally grooved on their under sides to match said abutment-block and fitting upon the handle-frame over the shank with their ends respectively engaging in the collar and against the shoulder of the butt, and means securing the same in place.

3. A screw-driver handle provided with a metal frame consisting of a solid externally-rounded butt-end portion, a ferrule end or collar portion having a guiding-opening therethrough, and opposite webs or side bars uniting said collar portion with the butt-end portion, the inner edges of said webs forming bearing-faces along a central space in alignment with the collar-opening, and their outer edges conforming to the exterior contour of the handle, under-grooved scales fitting the sides of said frame, means for securing the scales thereon, and a shank having a screw-driving bit, the end of the shank supported within the collar and between the bearing-faces along the central space.

4. A screw-driver handle, comprising a handle-frame having a collar portion with a guiding-opening therethrough, integrally-attached side webs forming a guideway-space in alinement with the collar-opening, and a stop or abutment member carried by said webs at the opposite end of said guideway; in combination with a shank having a screw-driving bit, said shank supported within said collar-opening and guideway, the handle-frame and shank being relatively movable for effecting percussive contact of said abutment against the end of the shank.

5. In a screw-driver, the combination, of a straight shank-rod of uniform size and approximately angular or flat sided cross-section; in combination with a handle-frame having a collar-opening and internal guides that non-rotatively embrace the sides of said shank, an abutment or stop for contact with the end of the shank within the handle, a guard-pin fixed in the shank and protruding therefrom, overlying side plates seated upon the sides of the handle-frame, and a rivet or screw attaching said plates to the handle-frame through the abutment-block.

6. In a screw-driver of the character described, the handle-frame comprising a solid butt and abutment-block, a tubular collar portion and thin web members uniting the same and affording a central guideway-space in alinement with the collar-opening, said web members provided with laterally-projecting

longitudinal lips along their inner edges having parallel inner surfaces; in combination with the screw-driver rod or shank slidably fitting in the collar-opening and having its
5 inner end supported and guided between the parallel faces of the lipped inner edges of said web members, substantially as set forth.

Witness my hand this 21st day of March, 1905.

EDWARD SEARLE.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENUS.