Jan. 16, 1923. 1,442,181.

H. SIMON.

MAGAZINE SCREW DRIVER.

FILED JAN. 20, 1922.

Fig. 1.



Fig. 2.

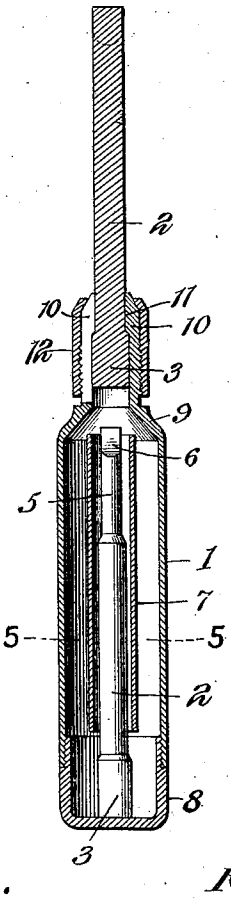


Fig. 3.

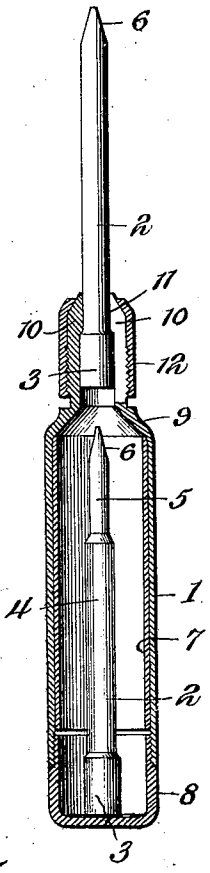


Fig. 4.

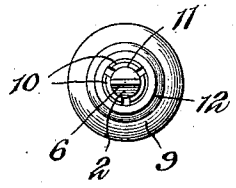
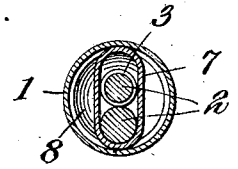


Fig. 5.



Henry Simon,

INVENTOR,

WITNESSES

Howard D. Orr.

F. T. Chapman.

BY

E. G. Siggers.

ATTORNEY

Patented Jan. 16, 1923. 1,442,181

UNITED STATES PATENT OFFICE.

HENRY SIMON, OF SANTA ANA, CALIFORNIA.

MAGAZINE SCREW DRIVER.

Application filed January 20, 1922. Serial No. 530,589.

To all whom it may concern:

Be it known that I, HENRY SIMON, a citizen of the United States, residing at Santa Ana, in the county of Orange and State of California, have invented a new and useful Improvement in Magazine Screw Drivers, of which the following is a specification.

This invention has reference to multiple tools, and more particularly to multiple screw drivers, although the invention may be applied to certain other types of multiple tools, but for simplicity, the description will be limited to a multiple screw driver, without necessarily being confined thereto.

In accordance with the invention, there is provided a handle of appropriate size, in which there is housed a plurality of screw driver blades, preferably of different sizes or specifically different capacities, and so arranged that a chosen one of the blades may be projected from the handle or housing into position for use, to the exclusion of the other blade or blades, and the chosen blade is there clamped or locked against retraction into the housing. The projected blade may be subsequently retracted and the second blade be similarly projected and clamped, without either blade interfering with the other blade, or there being any danger of loss of either blade.

Besides the casing and the blades, the screw driver structure includes a magazine or change-shell, in which the blades may be stored and shifted at will to bring one or the other of the blades into the center line of the casing. When the parts are appropriately assembled, and one of the blades is projected, the projected blade is clamped in the projected position and the other blade is at the same time housed in the magazine in the retracted position, and cannot then move more than a minimum distance lengthwise of the magazine.

The construction of the tool is such that the blades may be shifted laterally, one at a time, solely by gravity, while the blade which is not projected cooperates to guide the blade, which is projected, into operative or working position and back again into the handle of the screw driver.

The screw driver body or casing is provided at one end with a chuck having split jaws and a screw sleeve, through which either one of the screw-driver blades may extend, with the blade having a butt end too large to pass through the chuck, and the shank of the blade is small enough in diameter to pass through such jaw. The clutch sleeve may be manipulated to clamp the split jaw upon the shank of the blade so tightly as to hold the projected blade against any liability of the clamped blade being retracted by any force to which the blade is subjected when in use.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing, but may be changed and modified so long as such changes and modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:—

Fig. 1 is an elevation of a screw driver embodying the invention.

Fig. 2 is a longitudinal section of the structure of Fig. 1.

Fig. 3 is a longitudinal section at right angles to the showing of Fig. 2.

Fig. 4 is a top plan view of the screw driver structure.

Fig. 5 is a section on the line 5—5 of Fig. 2.

Referring to the drawing, there is shown a substantially cylindrical casing 1, which may be in the form of a metallic shell of suitable length, pressed or stamped, or even spun out of metal, and, in practical form, may be provided with a nickel-plated finish, but it is to be understood that any other appropriate finish may be employed.

The handle or casing 1 is designed to house appropriate screw-driver blades 2, which may be conveniently formed of bar steel. In the drawing, each blade is provided with a butt end 3, a shank portion 4, and a blade end 5 remote from the butt end 3. The blade end 5 terminates in a tapered extremity 6, designed to enter a screw kerf when the screw-driver blade is projected.

Fixed to the inner wall of the handle or housing 1 is a change-shell or magazine 7 of substantially elliptical form though not necessarily confined to such cross-sectional shape. It is necessary, however, that its diameter should be greater in one direction than the other, and that its least diameter should be just sufficient to receive the screw

driver blades placed one against the other and allow their transverse bodily movement. The change-shell 7 may be secured to the inner walls of the handle 1 by solder or in other manner, and has its major diameter substantially that of the inner diameter of the casing 1.

The basic end of the body 1 is closed by a cap or closure 8, screwed into the lower end of the casing 1, while the other end of said casing is contracted into conical form, as shown at 9, and merges into a split clamp or chuck 10, with a passage 11 therethrough located in the longitudinal center line of the screw-driver structure. Applied to the clamp 10, which is externally screw-threaded, is a clamping screw sleeve 12, so arranged that when applied to the split clamp 10, it will contract the latter, and so cause the sleeve 12 to tightly embrace the jaws of the split clamp 10 and hold them upon or about a screw-driver blade 2, which at the time is projected through the clamp, with the basic end 3 lodged between the jaws, while the shank 2 projects beyond them.

When the screw-driver of this invention is not in use, the sleeve 12 is partially unscrewed so as to relieve pressure upon the jaws of the chuck or clamp 10, whereupon, with the tool held upright or approximately so, the projected screw-driver blade 2 will gravitate into the change-shell 7 to push the blade 2 already therein laterally out of the way. To prevent either of the screw-driver blades from accidentally escaping, the sleeve 12 may be tightened upon the clutch 11 to a sufficient extent.

When both blades are housed, with the butt ends downward in the handle, and within the change-shell, either of the two blades may be shifted to one side so that the chosen blade is positioned below the opening through the clamp or chuck, and then, by turning and rocking the screw-driver structure as a whole, the chosen one of the screw-driver blades is brought into register with the clamp, and caused to move by gravity through such clamp to the projected position, the clamp having been first loosened, and then by tightening the sleeve 12, the projecting screw-driver blade is anchored in position sufficiently to withstand any force exerted on the screw-driver blade, which force should not be sufficient to push the blade back into the screw-driver handle.

The enlarged portion 3 of the screw-driver blades aids materially in tightly gripping the projected screw-driver blade in place by the clamp or chuck. It is to be observed that the blades before being projected are positioned or indexed by gravity so that either blade may be first brought into proper position for projection through the clamp, and subsequently, by tipping the screw-driver as a whole, the properly positioned blade may be caused to move by gravity through the clamping end of the screw-driver structure into the fully projected position, and then clamped in such position. This will retain the blade in the retracted position, against interference with the other blade, and the latter blade may afterwards be advanced to the projected position only after the first blade has been released from the projected position and retracted into the change-shell.

This invention is a modification of the invention disclosed in my application filed January 20th, 1922, Serial No. 530,588.

What is claimed is:—

1. A magazine screw-driver or other like tool, comprising a hollow handle with a longitudinal fixed change-shell or magazine therein of less length than the handle, a clutch at one end of the tool having a centralized opening, a closure at the other end of the tool, and a plurality of loose blades arranged side by side and of approximately the same length as the magazine and located within the latter free of any connection therewith, whereby upon turning the magazine both blades may be shifted laterally within the magazine to either side of the longitudinal center line of the handle so that one of the blades may be projected by gravity from the handle through said opening and held by said clutch.

2. A magazine screw-driver or other like tool, comprising a hollow handle, having a clutch at one end in the longitudinal center line of the handle, a flattened magazine within the handle of a width in one direction to house two blades side by side and provide room for the movement of the blades laterally to centralize either of the blades in the center line of the handle to the exclusion of the other blade, and the centralized blade being responsive to gravity to locate and project said blade through the said clutch.

3. A magazine screw-driver or other like tool, comprising an elongated hollow substantially cylindrical handle, an elongated flattened magazine fast in and extending lengthwise of the handle through the longitudinal center line thereof, blades normally located and capable of telescoping into the magazine, with either blade movable by gravity in the magazine laterally of the handle into the longitudinal center line thereof, and a clutch or clamp having a passage therethrough at its forward end on such center line to hold a chosen one of the screw-driver blades.

4. A magazine screw-driver, or other like tool, comprising a hollow handle with an elongated, flattened magazine having its longer axis diametrical of the handle and of a cross sectional size to hold two blades side by side, said blades being movable si-

multaneously laterally of the handle by gravity and projectable also by gravity one at a time lengthwise through the longitudinal center line of the magazine, said handle having at its outer end a clutch provided with a passage on such center line and operable to clamp the screw-driver blade in the projected position.

5. A magazine screw driver or other like tool, comprising a hollow handle with an elongated flattened elliptical-shaped magazine of a size to contain two blades side by side in contact with each other and leave room for their lateral movement in one direction only, said blades being free to move laterally under the action of gravity, and movable one at a time lengthwise of the magazine and handle also by gravity, and a clutch and manipulating means therefor at the forward end of the handle provided with a passage on such center line to grip a projected blade when extended beyond the clutch.

6. A magazine screw driver or other like tool, comprising an elongated hollow handle, with a longitudinally extended magazine therein, said magazine being of elliptical cross section having a width in one direction to accommodate two screw-driver blades in side by side contact, and a width in the other direction which constrains the blades from movement in that direction, and a clutch at the forward end of the handle and having a through passage located in the longitudinal center line thereof, said clutch having a clamping sleeve to compress the clutch onto a projected blade which is passed through the chuck from the inside.

7. A magazine screw driver or other like tool, comprising a hollow handle with a fixed magazine centralized therein and flattened into elliptical form to accommodate two blades lengthwise of the handle in side engagement and to contact sidewise and crosswise of the handle, to locate either blade in the longitudinal center line of the handle, the forward end of the magazine being open and said opening being on such center line, whereby either blade may be caused to project individually through the front end of the handle and be held in the projected position.

8. A magazine screw driver or other like tool, comprising a hollow handle with an elliptical-shaped magazine located centrally therein, said magazine extending from side to side of the handle and secured to the inner walls of the handle, and the flat sides of the magazine being spaced from the corresponding sides of the handle, a clutch at the forward end of the handle provided with a through passage on the longitudinal center line of the handle, said forward end being contracted, and the forward end of the magazine terminating at the contracted portion, and a pair of screw-driver blades normally housed in the magazine, and said blades being located to gravitate in the magazine into side by side relation, with a chosen one of the blades in line with the clutch for projection therethrough by gravity and there held by the clutch against retraction.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

HENRY SIMON.