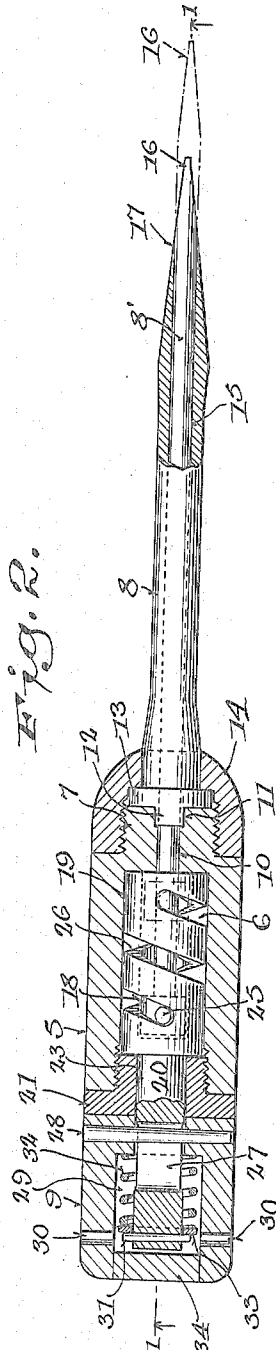
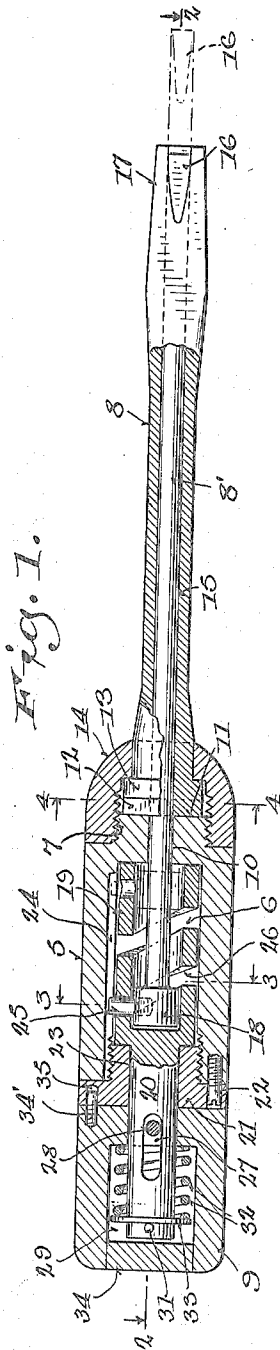


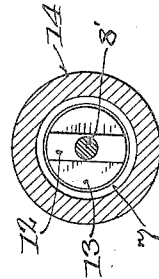
1,345,708.

V. H. SCHNEIDER.  
SCREWDRIVER.  
APPLICATION FILED JULY 11, 1919.

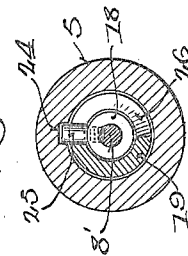
Patented July 6, 1920.



*Fig. 4.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

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## SCREWDRIVER.

1,345,708.

Specification of Letters Patent.

Patented July 6, 1920.

Application filed July 11, 1919. Serial No. 310,022.

*To all whom it may concern:*

Be it known that I, VICTOR H. SCHNEIDER, a citizen of the United States, and resident of Aurora township, in the county of Florence and State of Wisconsin, have invented new and useful Improvements in Screwdrivers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

The present invention relates to certain new and useful improvements in tools and refers more particularly to a combination tool or screw driver.

One object of the present invention is to provide a combination screw driver which will present a broad working edge or bit for use in connection with heavy screws or the like, or which may be operated to present a working edge or bit capable of use in connection with small screws or the like.

Another object of this invention is to provide a combination tool of the class described which will be of simple construction, efficient in operation and practical from every standpoint of view.

A still further object of this invention is to provide a combination tool of the class described in which the various parts thereof are readily accessible.

With the above and other objects in view which will appear as the description proceeds, my invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

In the accompanying drawing, I have illustrated one complete example of my invention constructed according to the best mode I have so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a view taken longitudinally through my tool on the line 1—1 of Fig. 2, parts being in elevation and parts in section.

Fig. 2 is a view similar to Fig. 1 taken on the line 2—2 of Fig. 1.

Fig. 3 is a transverse sectional view taken through the handle of my tool on the line 3—3 of Fig. 1, and

Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 1.

Referring now more particularly to the accompanying drawing, 5 designates the inner portion of a two-part handle which is hollow throughout the major portion of its length as at 6, and has its extreme inner end reduced and threaded as at 7 to receive means for securing a tool 8 thereto, as will be later described; and 9 designates the outer end of the handle, also to be later described.

The threaded boss 7 of the section 5 is centrally bored as at 10, and has formed in its outer face a transverse slot or groove 11 adapted to receive a transverse rib 12 formed on the inner end of the tool 8, and adjacent a collar 13 also formed on said tool. The tool 8 is rigidly secured to the handle by means of a cap member 14 in threaded engagement with the boss 7 and having a locking shoulder surrounding a central aperture therein through which the tool 8 passes for impinging against the shoulder 13 to thus secure the rib 12 within its recess 11, see Figs. 1 and 2.

The tool 8 is centrally bored as at 15 and has slidably mounted therein a supplemental tool 8' which has its outer end 16 tapered to correspond with the outer tapered end 17 of the tool 8, said tools 8 and 8' when in normal position, having their outer ends in the position depicted in Figs. 1 and 2 to thus present a broad working edge especially adapted for use in connection with large screws or the like. The inner end of the tool 8' is disposed within the hollow portion 6 of the section 5 and has formed on the extreme end thereof an enlargement or knob 18 slidably mounted within the central bore of a sleeve 19 which has projecting therefrom a rod or shank portion 20, to be later described.

The bore or hollow portion 6 of the section 5 is closed at its outer end by means of a flanged nut 21 adapted to be locked in adjusted position by means of a screw pin 22 and it is also provided with a central aperture 23 in which a portion of the rod 20 is journaled. Formed in the inner peripheral wall of the handle section 5 is a guide slot 24 adapted to slidably receive a pin 25 carried by the end 18 of the tool 8'. The pin 25 passes through a spiral groove 26 formed in the tubular sleeve 19 and prevents the rotation of the tool 8' when the sleeve 19 is rotated, by the means now to be described.

The rod 20 has formed therein medially of its ends an elongated opening or slot 27 through which passes a dowel pin 28 carried by the inner end of the handle section 9 which construction permits the partial sliding movement of the rod with respect to the section 9, but retains the same against rotation. The section 9 is also hollow or counter-bored as at 29 and has formed therein near its outer end a pair of alined openings 30, for convenience in inserting a dowel pin 31 in the outer end of the rod 20 for confining an extensile spring 32 between a washer 33 carried by the outer end of the rod 20 and the inner wall of the member 9. The recess 29 is inclosed by means of a plug or other suitable means 34, as best shown in Figs. 1 and 2.

The inner end of the section 9 carries a stud 34 adapted to selectively engage in a plurality of recesses 35 formed in the outer face of the flanged nut 21 whereby the section 9 is normally held from rotation with respect to the handle section 5. When it is desired to use a screw driver or tool having a small bit, the section 9 is drawn away from the section 5 and the flanged nut carried thereby compressing the spring 29 and disengaging the stud 34 from its recess 35, and the section 9 is then revolved in a clockwise direction, rotating with it the tubular sleeve 19. When the sleeve 19 is revolved in a clockwise direction, the pin 25 will ride along the spiral groove 26, and as the same is held from rotation by reason of its engagement with the slot 24, the same will be moved to the right with reference to Figs. 1 and 2 projecting the end of the tool 8' outwardly of the end of the tool 8 as depicted by dotted lines. When the tool 8' is in its extended position the section 9 is allowed to be drawn inwardly under action of its spring 32 so that the stud 34 will engage the adjacent recess 35 and thus permit the ready operation of the tool as will be obvious.

To move the tool 8' back to its normal position the action is the reverse to that just described, and it will be at once apparent to those skilled in the art to which this invention appertains, that I have provided a two-in-one screw driver which will be practical from every standpoint.

What I claim as my invention is:

1. A combination tool comprising a handle, a blade carried thereby, a supplementary blade carried by the handle and normally providing the other blade with a single working edge of one size, and means whereby said supplementary blade may be extended beyond the other blade to provide a smaller working edge independent of said other blade.

2. A screw driver of the class described, comprising a handle, a centrally bored tool having one end carried by the handle and

its other end shaped to provide a bit, a supplemental tool having its shank disposed within the bore of the other tool and its outer end normally in line with the outer end of the other tool, whereby both tools present a single working edge, and means for extending the outer end of the supplemental tool beyond the other tool.

3. A combination tool of the type described comprising a substantially hollow handle, a centrally bored tool carried thereby, a supplemental tool disposed in the bore of the other tool and having its inner end disposed in the hollow handle and its outer end normally in line with the outer end of said other tool, and means within the hollow handle for extending the outer end of the supplemental tool beyond the outer end of the other tool.

4. A combination tool of the type described comprising a substantially hollow handle, a centrally bored tool carried thereby, a supplemental tool disposed in the bore of the other tool and having its inner end disposed in the hollow handle and its outer end normally in line with the outer end of said other tool, a tubular sleeve mounted within the hollow of said handle and having a spiral groove therein, means carried by the inner end of the supplemental tool and engaged with the spiral groove of said sleeve, and means for rotating said sleeve to move said supplemental tool within the bore of said other tool.

5. A combination tool of the type described comprising a substantially hollow handle, a centrally bored tool carried thereby, a supplemental tool disposed in the bore of the other tool and having its inner end disposed in the hollow handle and its outer end normally in line with the outer end of said other tool, a tubular sleeve rotatably mounted within the hollow of said handle and having a spiral groove therein, a pin carried by the inner end of said supplemental tool and passing through the groove of said sleeve and engaged in a guide slot formed in the inner peripheral wall of said hollow handle, and means for rotating said sleeve to extend said supplemental tool beyond the outer end of said other tool.

6. A combination tool of the type described comprising a substantially hollow handle, a centrally bored tool carried thereby, a supplemental tool disposed in the bore of the other tool and having its inner end disposed in the hollow handle and its outer end normally in line with the outer end of said other tool, a tubular sleeve rotatably mounted within the hollow of said handle and having a spiral groove therein, a pin carried by the inner end of said supplemental tool and passing through the groove of said sleeve and engaged in a guide slot formed in the inner peripheral wall of said

hollow handle, means for rotating said sleeve to extend said supplemental tool beyond the outer end of said other tool, said means including a cap member forming an extension of said handle, means connecting said cap member with said sleeve, and means for normally locking said cap member and sleeve from rotation when the supplemental tool is in the desired position.

7. A tool comprising a handle, a pair of blades carried thereby and normally arranged with their working edges alined to present a relatively large single working edge, and means for permitting one of the blades to be used independently of the other to provide a relatively small working edge.

In testimony whereof I affix my signature.

VICTOR H. SCHNEIDER.