R. H. WHITE.

SCREW DRIVER.

APPLICATION FILED MAR. 25, 1921.

1,410,088. Patented Mar. 21, 1922.

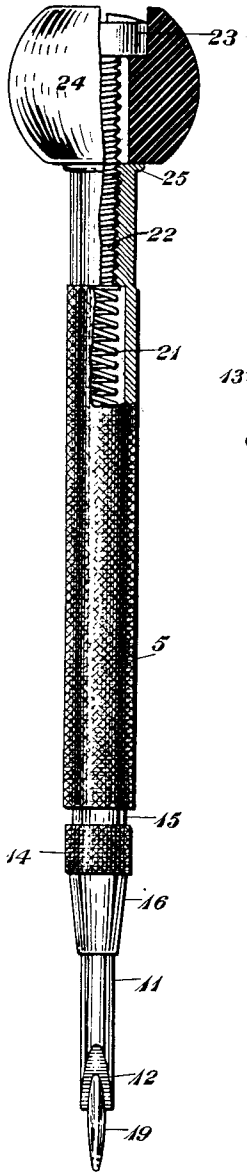


Fig. 1

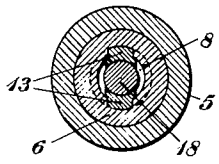


Fig. 3

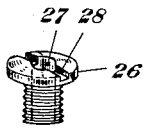


Fig. 4

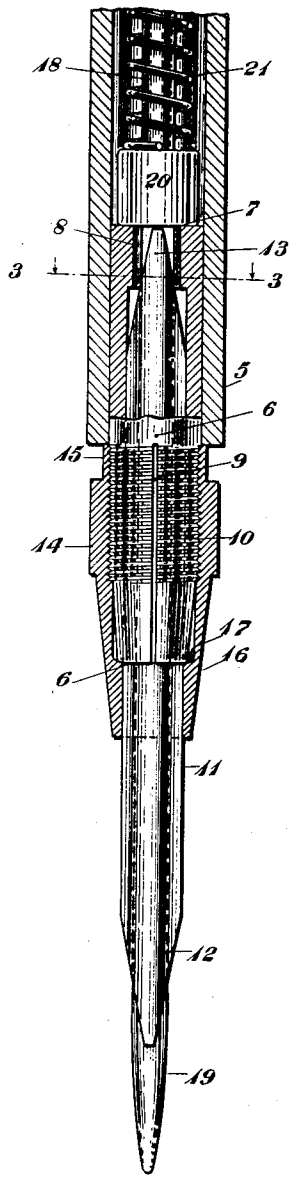


Fig. 2

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UNITED STATES PATENT OFFICE.

RALPH H. WHITE, OF CYNWYD, PENNSYLVANIA, ASSIGNOR TO AMERICAN TELEPHONE AND TELEGRAPH COMPANY, A CORPORATION OF NEW YORK.

SCREW DRIVER.

1,410,088. Specification of Letters Patent. Patented Mar. 21, 1922.

Application filed March 25, 1921. Serial No. 455,530.

To all whom it may concern:

Be it known that I, RALPH H. WHITE, residing at Cynwyd, in the county of Montgomery and State of Pennsylvania, have invented certain Improvements in Screw Drivers, of which the following is a specification.

This invention relates to screw-drivers, and more particularly to combination screw-drivers.

One of the principal objects of this invention consists in providing a screw-driver for use in connection with screws of the smaller variety. Another object consists in providing such screw-driver with means for readily picking up and holding the screws, and for centering and guiding said screws into position. Other and further objects of the invention will be apparent from the following description, when considered in connection with the accompanying drawing, in which is shown one embodiment thereof.

Referring to the drawing, Figure 1 illustrates a side elevation of the improved screw-driver, the upper portion of which is shown partly in section; Fig. 2 is a partial view of the device shown in enlarged section; Fig. 3 is a cross-sectional view on the line 3—3 of Fig. 2, looking in the direction of the arrows, and Fig. 4 is an enlarged view in perspective of one form of screw which the improved device is adapted to engage.

In the drawing, in which like numerals refer to like elements throughout, 5 represents a tubular shell or casing provided with a chuck 6, having a split sleeve one end of which extends into the tubular chamber of said casing, and is fixed thereto in any suitable manner. This end of the sleeve terminates in a shoulder 7, and extending from such shoulder into the central bore of the sleeve is a key-way 8. The opposite end of the sleeve 6 extends downwardly from the casing 5, and is provided with longitudinal slots disposed about its wall, one of which is shown at 9, and an exteriorly threaded surface 10.

At 11 is indicated a screw-driver member, which is longitudinally bored and provided with blade-portions 12 and 13, the points of which are oppositely positioned with respect to each other. The blade portions are adapted to be used interchangeably in connection with the operation on screws, and, in this instance, the blade 12 is shown as projecting through the central opening in the sleeve 6, and the blade 13 as positioned within the key-way 8. A cap-sleeve 14, having an interiorly threaded surface, engages the threaded surface 10 of the sleeve 6. When the cap-sleeve is screwed on the sleeve, it applies pressure thereto, and the slots disposed about its wall allow said sleeve to yield and securely clamp the lower part of the screw-driver member 11, while the blade-portion 13 of the member 11, which rests within the key-way 8, as just outlined, prevents the rotation of said member. The cap-sleeve 14 is provided with an annular flange 15 formed at the upper end thereof and a tapered portion 16 formed at the opposite end, and intermediate said flange and tapered portion, the cap-sleeve is preferably provided with a knurled surface, as shown in Fig. 1 to facilitate the gripping thereof. A shoulder 17 is formed on the inner surface of the tapered portion 16, which acts in conjunction with the top of the flange 15 in limiting the upward movement of the cap-sleeve 14 when said shoulder and flange contacts with the lower edges of the sleeve 6 and casing 5, respectively.

Co-operating with the screw-driver member 11 is a supplementary tool in the form of a plunger-pin 18, which is mounted within the bores of the casing 5 and screw-driver 11, and terminates in a tapered-pin 19 which extends below the blade 12. A collar 20 is fixed to the plunger pin 18, and is movable upwardly therewith within the tubular casing 5, while the downward movement of said plunger member is limited by the collar 20 contacting with the shoulder 7 of the sleeve 6. A helical compression spring 21 encircles the plunger-pin 18, and bears at one end against the collar 20, and at the other end against the bottom of screw 22 which is threaded into the upper portion of the tubular casing 5. Tension is thus applied to the collar 20 by means of spring 21 which normally maintains said collar in contact with the shoulder 7 of the sleeve 6 and the tapered-pin 19 in projected position from the blade 12. The screw 22 is provided with a slotted head 23, which is seated in a manner which will permit its rotation in the counter-sunk portion of a ball-swivel top 24, and said top rests in a rotatable manner upon a flange 25 of the casing 5. The top 24 is preferably made of some hard substance, for example fibre, and although de-

picted in the present instance, as of rounded form and mounted in the manner shown, it will be understood that other forms and mountings may be employed.

The screw 26 illustrated in Fig. 4, with which this improved device is particularly adapted to be used, is externally threaded and has a central opening 27, extending longitudinally of the screw, and a transverse slot 28 in the top thereof.

In the operation of the improved screw-driver, the tapered-point 19 is inserted in the opening 27 of the screw 26, which is thus readily picked up and held on said point. The point 19 is also used for centering and guiding the screw into position with the threaded object with which it is to be engaged. When in the desired position pressure is applied to the handle member comprising the casing 5, and the complementary member or top 24, causing the depression of spring 21 so that the screw-driver blade 12 engages the transverse slot 28 of the screw 26. At such time while the top 24 is held in the palm of the hand, the tool is turned until the screw is securely in position. The reverse movement of the screw-driver removes the screw from place.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described and delineated invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion and minor details may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What is claimed is:

In a device of the character described, the combination of a handle having a screw-driver blade, and a tapered pin yieldingly projectable concentrically with the screw-driver blade to preliminarily engage a perforation in a screw-head while permitting subsequent pressing of the blade to the screw.

In testimony whereof, I have signed my name to this specification this 15th day of March, 1921.

RALPH H. WHITE.