March 31, 1953 G. H. SIEMS 2,633,169

SCREW DRIVER WITH SCREW HOLDING MEANS

Filed April 3, 1950

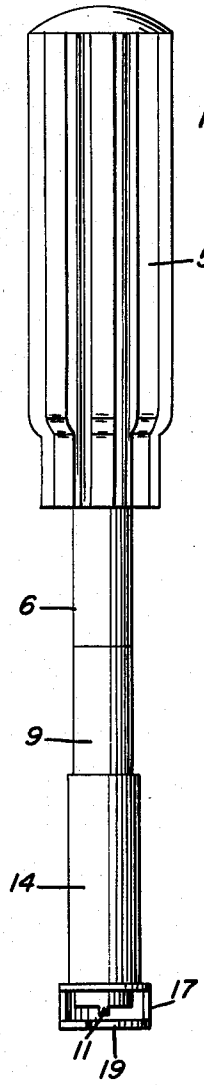


Fig. 1

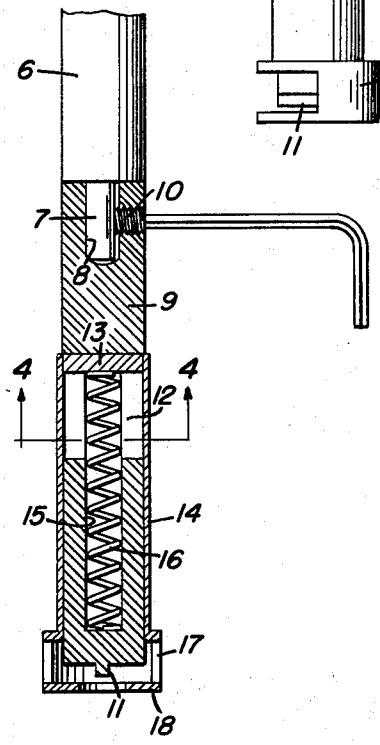


Fig. 2

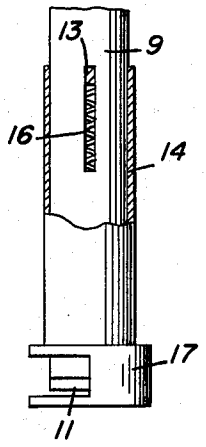


Fig. 3

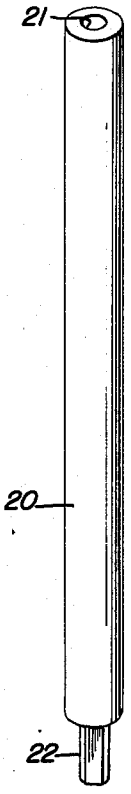


Fig. 6

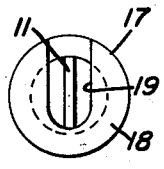


Fig. 5

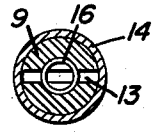


Fig. 4

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SCREW DRIVER WITH SCREW HOLDING MEANS

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Application April 3, 1950, Serial No. 153,733

1 Claim. (Cl. 145—52)

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The present invention relates to new and useful improvements in screw drivers and more particularly to screw holding means carried by the screw driver.

An important object of the invention is to provide a screw holding attachment for the bit end of a screw driver.

An important object of the invention is to provide a detachable bit for a screw driver constructed to slidably support a screw holder to facilitate starting a screw in the work and including spring means for retracting the holder on the bit to hold the head of the screw in engagement therewith.

A further object of the invention is to provide a screw holder constructed with a sleeve slidably mounted on the bit of a screw driver with spring means holding the sleeve in a retracted position and forming the outer end of the sleeve with a screw holding cage for receiving a screw upon an outward movement of the sleeve in a position for engagement by the bit when the sleeve is retracted.

A still further object is to provide an attachment of this character of simple and practical construction, which is efficient and reliable in operation, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view;

Figure 2 is an enlarged longitudinal sectional view of the detachable bit and screw holding attachment carried thereby;

Figure 3 is a side elevational view with parts broken away and shown in section;

Figure 4 is a transverse sectional view taken on a line 4—4 of Figure 2;

Figure 5 is a bottom plan view; and

Figure 6 is a perspective view of an extension of a shank of a screw driver.

Referring now to the drawing in detail wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention the numeral 5 designates a screw driver handle

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having a shank 6 at one end and formed with a reduced stem 7 received in a recess 8 at the inner end of a bit member 9 secured to the stem 7 by a set screw 10. Bit member 9 is formed at its outer end with the usual screw engaging rib or blade 11.

The central portion of bit member 9 is formed with a transverse slot 12 in which a crossbar 13 is slidable and formed at the inner end of a sleeve 14 slidable on the bit member 9.

Bit member 9 is formed with an axial bore 15 blind at both ends and traversed by said crossbar and in which a coil spring 16 is positioned with its upper end engaging the crossbar 13 to hold the sleeve 14 in a retracted position on the bit member 9. The bore 15 and slot 12 may be formed by casting the bit member in a mold with a sand core removable through said slot. The spring 16 may be formed of fine resilient wire such that it may be compressed and flattened to insert the same through the slot 12 into the bore 15.

The lower or outer end of sleeve 14 is formed with a cage structure 17 including a bottom 18 held in an outwardly spaced position with respect to the outer end of bit member 9 when crossbar 13 is in the upper end of slot 12. A radial slot 19 is formed in the bottom 18 of the cage.

In the operation of the device sleeve 14 and cage 17 are moved outwardly on bit member 9 sufficiently to place the head of a screw (not shown) in radial slot 19 in the bottom of cage 17 and upon releasing the sleeve 14 spring 16 will retract the sleeve and move the cage 17 with the screw supported therein inwardly on the bit member 9 to engage the rib 11 of the bit in the slot of the screw. The screw is then held firmly while the screw driver is manipulated to start the screw in the work.

In Figure 6 of the drawing I have illustrated a shank extension 20 having a recess 21 at its inner end for attaching to stem 7 and having a stem 22 at its outer end for attaching the bit member 9 thereto. The extension 20 may be used for starting a screw in inaccessible places.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the device will be quite apparent to those skilled

in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claim.

Having described the invention, what is claimed as new is:

A screw driver including a handle and a shank, and a combined bit part and screw holder secured to the shank and comprising a cylindrical body having a transverse slot and an axial bore blind at both ends thereof, a sleeve slidable on the body and having a crossbar slidable in the slot, a cage at the outer end of the sleeve and including a bottom portion having a radial slot adapted for receiving the head of a screw for entering the cage, and a coil spring confined in said bore and engaging the crossbar to retract the sleeve and to hold the head of the screw

engaged with the outer end of the bit part, said cross bar being normally engaged with one end of the slot to hold the bottom portion of the cage spaced outwardly of the outer end of the bit to protect said end of the bit.

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