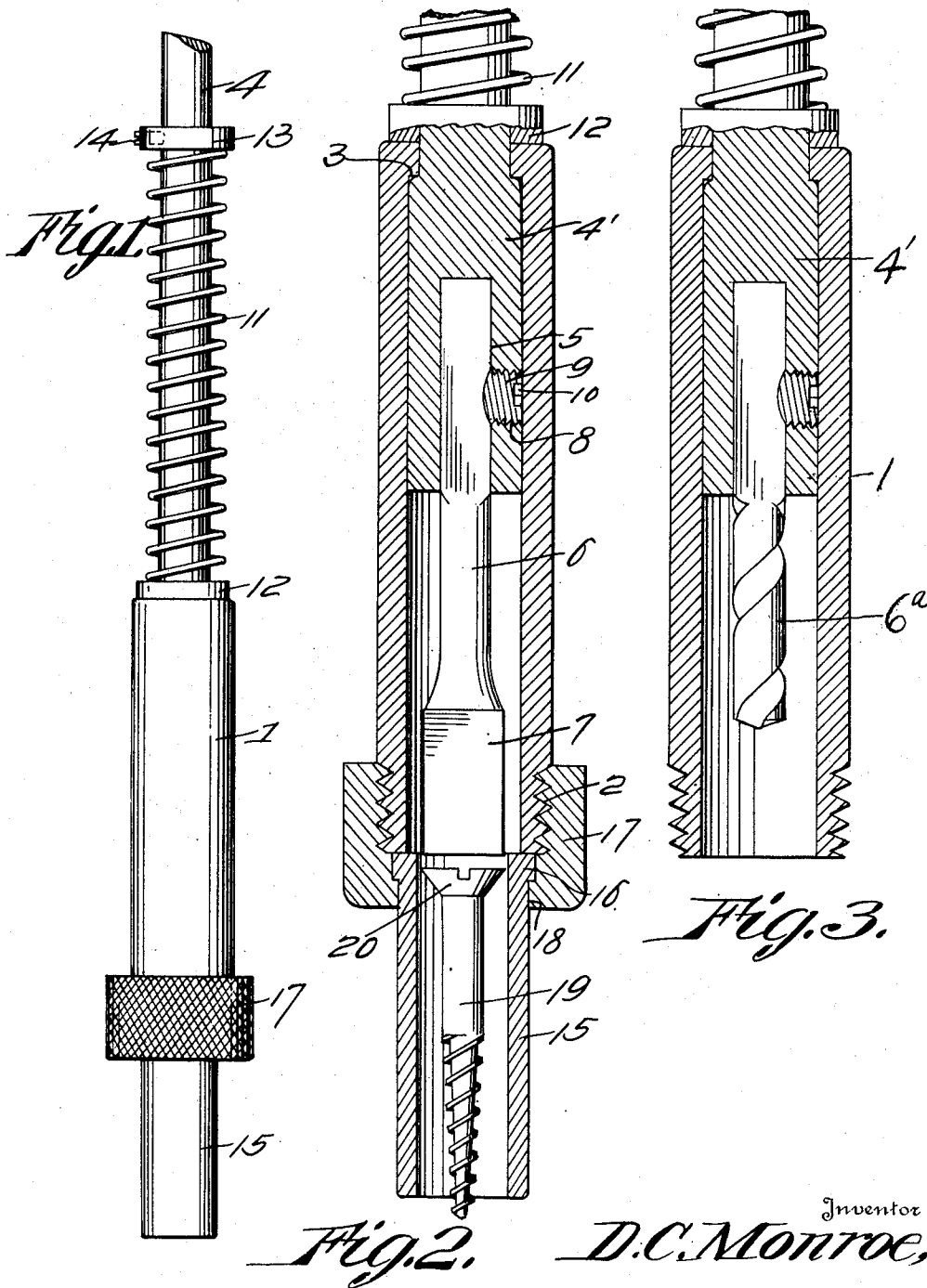


D. C. MONROE.  
SCREWDRIVER.

APPLICATION FILED APR. 12, 1917. RENEWED AUG. 28, 1919.

1,333,437.

Patented Mar. 9, 1920.



By

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# UNITED STATES PATENT OFFICE.

DON C. MONROE, OF SHAWNEE, OKLAHOMA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO MONROE POWER SCREW DRIVER COMPANY, OF SHAWNEE, OKLAHOMA.

## SCREWDRIVER.

1,333,437.

Specification of Letters Patent.

Patented Mar. 9, 1920.

Application filed April 12, 1917, Serial No. 161,499. Renewed August 28, 1919. Serial No. 320,461.

*To all whom it may concern:*

Be it known that I, DON C. MONROE, a citizen of the United States, residing at Shawnee, in the county of Pottawatomie and State of Oklahoma, have invented certain useful Improvements in Screwdrivers, of which the following is a specification, reference being had therein to the accompanying drawing.

The present invention has reference generally to improvements in that class of inventions known as woodworking tools and more particularly relates to an automatic screw driver.

As the primary aim and object, the present invention includes the provision of novel means for rotatably supporting a tool such as a screw driver or bit during its slidable and rotatable movement.

The present invention also includes the provision of novel resilient means for normally holding the socket head which receives the tool or bit in an inoperative position yet is capable of being compressed when it is desired to actuate the tool or bit permitting of the head to slide through the casing so that it may assume a position to readily operate upon the work.

More particularly, the present invention includes the provision of novel means removably engageable with the casing for supporting and guiding a screw as it is being actuated upon by the tool such as a screw driver, during the rotation of the latter.

Among the other aims and objects of this invention may be recited the provision of a device of the character mentioned, with a view to compactness, and in which the number of parts are few, the construction simple, the cost of production low, and the efficiency high.

Other objects as well as the nature, characteristic features and scope of this invention will be more readily apparent from the following description taken in connection with the accompanying drawings and pointed out in the claims, forming a part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation.

Fig. 2 is a longitudinal section thereof.

Fig. 3 is a longitudinal section of the invention arranged for supporting a drilling bit.

Similar characters of reference are employed in all of the above described views, to indicate corresponding parts.

Referring now, more particularly, to the accompanying drawings there is provided a cylindrical casing 1 one end of which is open and is exteriorly screw threaded as indicated by the numeral 2 for a purpose that will presently appear, while the opposite end has an inwardly extending and annular shoulder 3 formed thereon. A manually rotatable shank 4 is slidably and rotatably mounted in the casing being of a diameter that is slightly less than the diameter of the opening or space between the edges of the shoulders so as to allow slidable and rotatable movement in the casing. A head 4' is formed on one end of the shank and is preferably cylindrical in cross section having its outer surface arranged in close relation with the inner wall or surface of the casing 1 while the outer edge is provided with an inwardly extending socket 5. This socket is preferably formed square in cross section and receives the bit 6 of a suitable tool on the outer end of which is preferably formed a tool head 7 in the present instance consisting of a screw driver. Suitable means are provided for removably retaining the bit in a substantially rigid position with respect to the head and in the present instance consist in providing a threaded transverse opening 8 communicative with the outer surface and the socket. A set screw 9 is engaged in the opening and adapted for frictionally engaging the bit or shank 6 being provided in its outer edge with a square recess adapted for receiving a suitable tool in order that the set screw may be adjusted. As indicated in Fig. 1 the outer edge is adapted to lie within the outer surface of the head so as not to interfere with the sliding and rotating movement thereof.

In order to normally hold the head 4' entirely within the casing so that it abuts the shoulder 3 to consequently hold the tool head within the casing, suitable resilient means are provided in the present instance including the coil spring 11 one end of which bears against a washer 12 loosely arranged about the socket and in turn bearing against the inner end of the casing while the opposite end bears against the collar 13. This collar is in turn removably held in a substantially rigid position with respect to

the shank 4 by means of a set screw 14. By this arrangement it will be appreciated that by adjusting the collar the tension of the spring will be regulated accordingly.

5 As intimated, improved means have been provided for supporting and guiding a screw as it is being driven into a piece of work. In carrying out this purpose a tubular support and guide 15 is provided, the  
10 inner end of which has an exteriorly extending annular flange 16 formed thereon. An exteriorly threaded union 17 having an inwardly extending annular shoulder 18  
15 formed thereon is arranged about the casing so that the shoulder abuts the flange and clamps the flange against the outer edge of the casing when the said union is arranged in adjustable engagement with the threaded end 2 of the casing. It will be readily apparent that a screw 19 the head 20 of which  
20 is adapted to be arranged in close relation with the inner wall of the support 15 is thereby prevented from falling over and held in such a position that the screw driver  
25 head 7 will readily engage the slot therein preparatory to adjusting the screw by imparting a rotary and sliding movement to the shank 4. In this connection it is also to be observed that the support and guide 15  
30 is of a height substantially the same as the length of the projecting portion of the screw driver so that when the device is in use the head 4' will abut the upper edge of the support and guide 15 at the time the screw 19  
35 is fully driven into position, that is, the head 20 of the screw will be countersunk so that the upper surface thereof will lie flush with the piece of work, and will not be driven beyond this point since the guide prevents further downward movement of the  
40 head.

In Fig. 3 an auger bit 6<sup>a</sup> is fastened in the head 4'. When this auger bit is used it is, of course, apparent that the guide and the  
45 union are disconnected to permit of the convenient operation of the auger bit. Moreover, attention is especially directed to the fact that the casing and the guide 15 are constructed separately to permit of the use  
50 of the auger bit or other tool and are used in conjunction with each other when the device is used as a screw driver, this construction being in contra-distinction to an elongated casing for accommodating a screw  
55 driver bit and a screw which would not effectively accommodate a bit. In other

words an elongated bit used in an elongated casing would not operate effectively and for this reason it has been found practical to construct the casing and the guide separately so that the latter may be used in connection with the former when desired.

It is believed that in view of the foregoing description that a detail description of the operation is unnecessary. Likewise it is believed that the advantages of the invention  
65 will be readily apparent.

It will be understood that the foregoing description and accompanying drawings comprehend only the general and preferred  
70 embodiments of this invention and that various minor changes in detail of construction, proportion and arrangement of the parts may be made within the scope of the appended claim and without sacrificing any  
75 of the advantages of this invention.

Having thus fully described this invention, what is claimed is:

A device of the character described including a cylindrical casing having the  
80 outer end open and provided with external screw threads, an annular and inwardly extending shoulder formed on the opposite end of the casing, a shank slidably and rotatably arranged through the annular shoulder,  
85 a tool receiving head formed on the inner end of the shank and guided and supported in its movement by the casing, a screw driver the shank of which is removably mounted in the head and actuatable therewith, a washer disposed on the shank and  
90 abutting the casing, a collar adjustably mounted on the shank, a coil spring disposed about the shank and positioned between the washer and the collar the tension thereof  
95 being controlled by the collar and being designed for normally holding the head against the shoulder yet being compressible to permit of the extending of the tool beyond the outer edge of the casing, a tubular  
100 screw support of a diameter less than the diameter of the casing, a flange formed at the upper end of the support, and a union for removable engagement with the exteriorly threaded end of the casing and  
105 clamping the screw support at the outer edge thereof, the upper edge of the screw support serving as a stop for the head at the completion of the adjustment of a screw.

In testimony whereof I affix my signature. 110

DON C. MONROE.