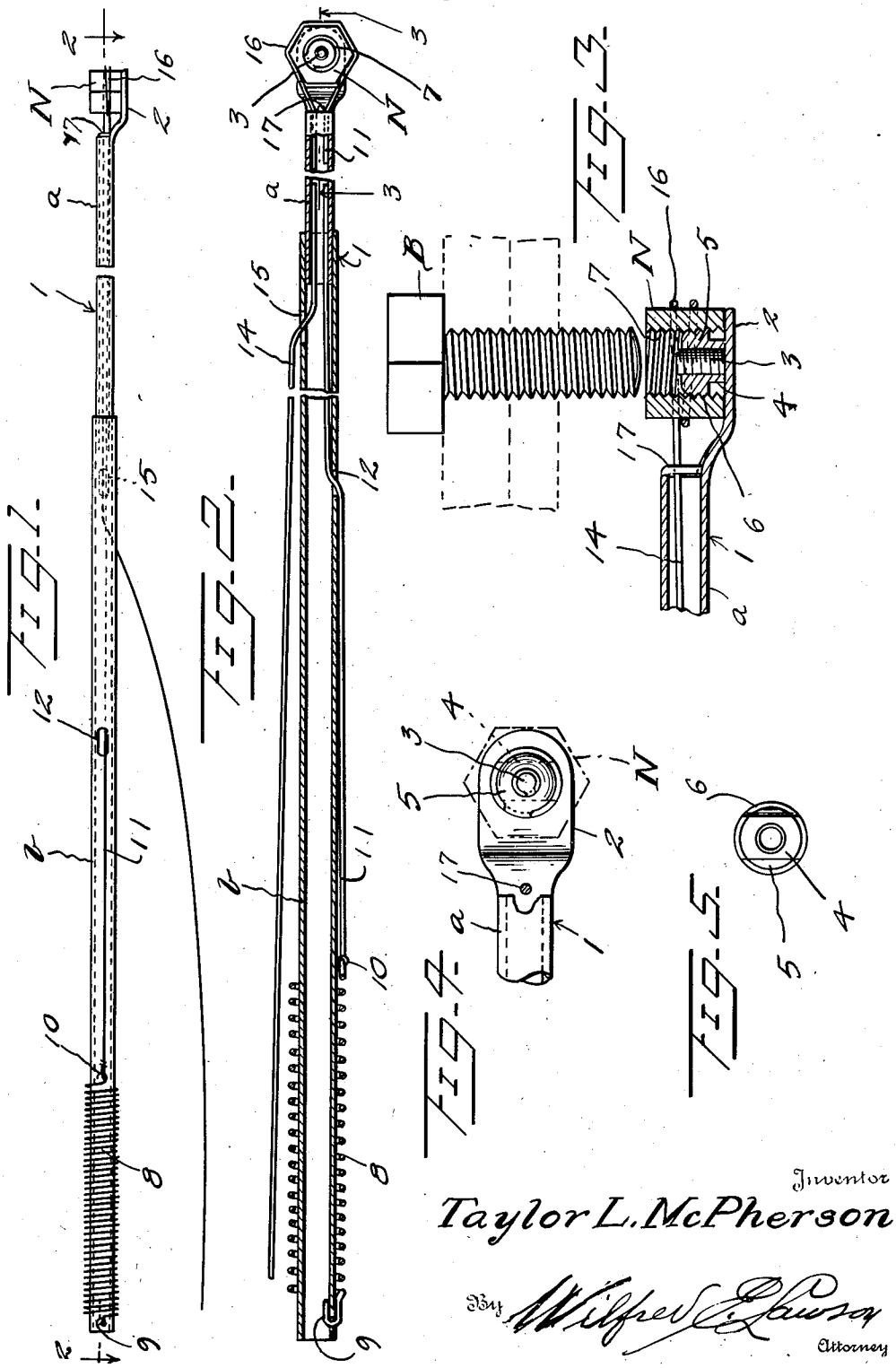
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WRENCH

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WRENCH

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6 Claims. (Cl. 81—125)

This invention relates to wrenches, and it is a particular object of the invention to provide a wrench which is especially designed and adapted for use in starting a nut.

It is also an object of the invention to provide a tool of this kind which includes a rotary socket, together with a flexible member associated with said socket and adapted to be manually operated to effect the desired rotation of the socket.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved wrench whereby certain important advantages are attained, as will be hereinafter more fully set forth.

In order that my invention may be better understood, I will now proceed to describe the same with reference to the accompanying drawing, wherein:

Fig. 1 is a view in elevation of a wrench constructed in accordance with an embodiment of my invention.

Fig. 2 is a sectional view taken substantially on the line 2—2 of Fig. 1 with parts in elevation.

Fig. 3 is an enlarged detailed sectional view taken through the working end portion of the wrench, a coacting bolt being illustrated in elevation.

Fig. 4 is a view in bottom plan of the working end of the device as herein disclosed, and

Fig. 5 is a view in bottom plan of the button herein employed, unapplied.

As disclosed in the accompanying drawing, the tool or wrench comprises an elongated tubular member 1 of desired dimensions and which is provided at one end portion with a forwardly and downwardly directed plate 2 herein disclosed as offset with respect to the member 1.

The outer portion of this plate 2 is provided with a laterally disposed threaded stub or shank 3 substantially at right angles to the axial center of the member 1 and on which threads the shank 4 at the axial center of a button or head 5.

This button or head 5 has its outer portion rounded and is provided with peripheral threads 6 so that this button or head 5 may be engaged within the bore 7 of a nut N and sufficiently hold such nut N to facilitate the starting of the nut on a bolt B or other threaded shank.

The button or head 5 is of such size as to only be received within an end portion of the bore 7 of the nut N so that it offers no hindrance or obstruction to the application of the nut N to the bolt B or the like.

The butt end portion of the member 1 is surrounded by a retractile coiled spring 8 having its inner extremity anchored, as at 9, to the member 1 while the opposite extremity of the spring 8 has secured thereto, as at 10, an end portion of a flexible member 11.

The member 11 leads from the spring 8 and passes within the tubular member 1 through a suitably positioned opening 12. This flexible member 11 is of considerable length and at a point beyond the end of the member 1 provided with the arm 2 is returned, having a second portion 14 extending back within the tubular member 1 and out through a second opening 15 provided in the wall of the tubular member 1.

The outer or looped portion 16 of the flexible member 11 is adapted to be wound around the nut N when applied to the button or head 5, so that when pull is imposed upon the extended or free extremity of the portion 14 of the flexible member 11, the nut N will be rotated in a direction to facilitate its starting onto the bolt B or the like.

The spring 8 operates to maintain the flexible member 11, or more particularly the looped portion 16, in engagement with the nut N, although as pull is imposed upon the returned portion 14 as by the right hand, a digit of the left hand, as the thumb, grasping the butt end portion of the member 1 is used to expand the spring 8.

It is also to be stated that during this starting operation, the nut N mounted upon the button or head 5 is pressed against the receiving end of the bolt B or other shank. As the nut N threads upon the bolt, it passes off of the button or head 5 and after this initial starting, the usual wrench or other tool may be employed for turning the nut.

In the present embodiment of the invention, the member 1 comprises two sections, one telescoping in the other, and the section *a* carrying the plate 2 is somewhat smaller than the other section *b*. In the present embodiment of the invention, this section *a* is shown as straight although it can be bent to any angle desired as the requirements of practice may prefer. It is also to be stated that, in practice, several of the sections *a* are to be included in a set with the second section *b* of the member 1 and these several sections *a* will be of a type to be selectively used for right or left jobs.

It is also to be stated that the button or head *b* fits upon the stub or shank 3 sufficiently tightly so as not to spin off.

While the use of the flexible member 11 in many instances is of advantage yet at times the wrench

or tool as herein comprised can be effectively used without pull upon the flexible member especially when the fingers of a hand or a screw-driver or the like can readily engage the nut N to start the same on the bolt B or the like.

The section *a* at its outer end is provided with an extended member or bar 17 which is disposed inwardly and radially across the outer end of the section *a* whereby spaced openings are provided through which the flexible member 11 is threaded and whereby this member or bar 17 provides means to prevent the member 11, or more particularly the loop 16 thereof, being drawn entirely within the section *a*.

In the accompanying drawing, the nut N is shown as fully screwed onto the button 5. It is to be stated, however, that this is not at all times necessary because in many instances advantageous use of the tool may be had with the nut placed on the button 5 with only about one or one and one-half turns.

From the foregoing description it is thought to be obvious that a wrench constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated.

What is claimed is:

1. A tool of the class described comprising a tubular member, a retractile member at one end portion of the tubular member, a flexible member secured to said retractile member and extending into and through the tubular member and out beyond an end thereof, the flexible member being looped outside the said end and returned into the tubular member, the wall of the tubular member being provided with an opening through which passes the returned end portion of the flexible member, means carried by the tubular member adjacent to and in front of the said end for supporting a nut for rotation on an axis extending transversely of the tubular member, the said loop of said flexible member being adapted to encircle a nut supported on said means to rotate the nut upon pull being imposed upon the returned end portion of the flexible member.

2. A tool for starting a nut, comprising a relatively long handle member, means extending longitudinally from one end of the handle member providing a nut support, means upon said support for maintaining a nut in position thereon, said means being designed to maintain the nut for rotation on an axis extending transversely of the adjacent end of the handle, means at the said adjacent end of the handle forming a guide, and a relatively long flexible member looped upon itself to provide two parallel portions and supported longitudinally of the handle member, the two portions passing through said guide, the loop formed by looping the flexible member on itself being disposed over the nut supporting extension and adapted to encircle a nut disposed thereon.

3. A tool as set forth in claim 2, in which the said means for supporting the nut for rotation is exteriorly threaded for threaded engagement with the nut and is secured against accidental rotation whereby the nut will be advanced off of the threaded means upon turning of the nut by said flexible member.

4. A tool as set forth in claim 2, including a contractile spring secured at one end to the handle member adjacent the end remote from the first-mentioned end, the free end of one of the two portions of the looped flexible member being secured to the other end of the spring.

5. A tool for starting a nut, comprising a relatively long tubular member, means extending longitudinally from one end of the member providing a nut support, a button mounted upon said support adapted for engagement within a nut to maintain the nut on the support for rotation on an axis extending transversely of the tubular member, said button being adjacent to the said end of the member, a relatively long flexible member folded upon itself to provide two parallel portions, the free ends of said portions being extended through the said end of the tubular member into and part way through the member and then passing outwardly through apertures in the wall of the member, the folded flexible member forming a nut encircling loop over the nut supporting means, and means yieldingly attaching one end of one of the portions of the flexible member to the tubular member.

6. A tool of the character set forth in claim 5, with a pin secured across the said one end of the tubular member to form two guide openings through each of which one of the two portions of the flexible member extends into the tubular member.

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