Mar. 6, 1923. 1,447,620

W. E. LOMBARD

TOOL HOLDER

Filed Sept. 17, 1921

Fig. 1.

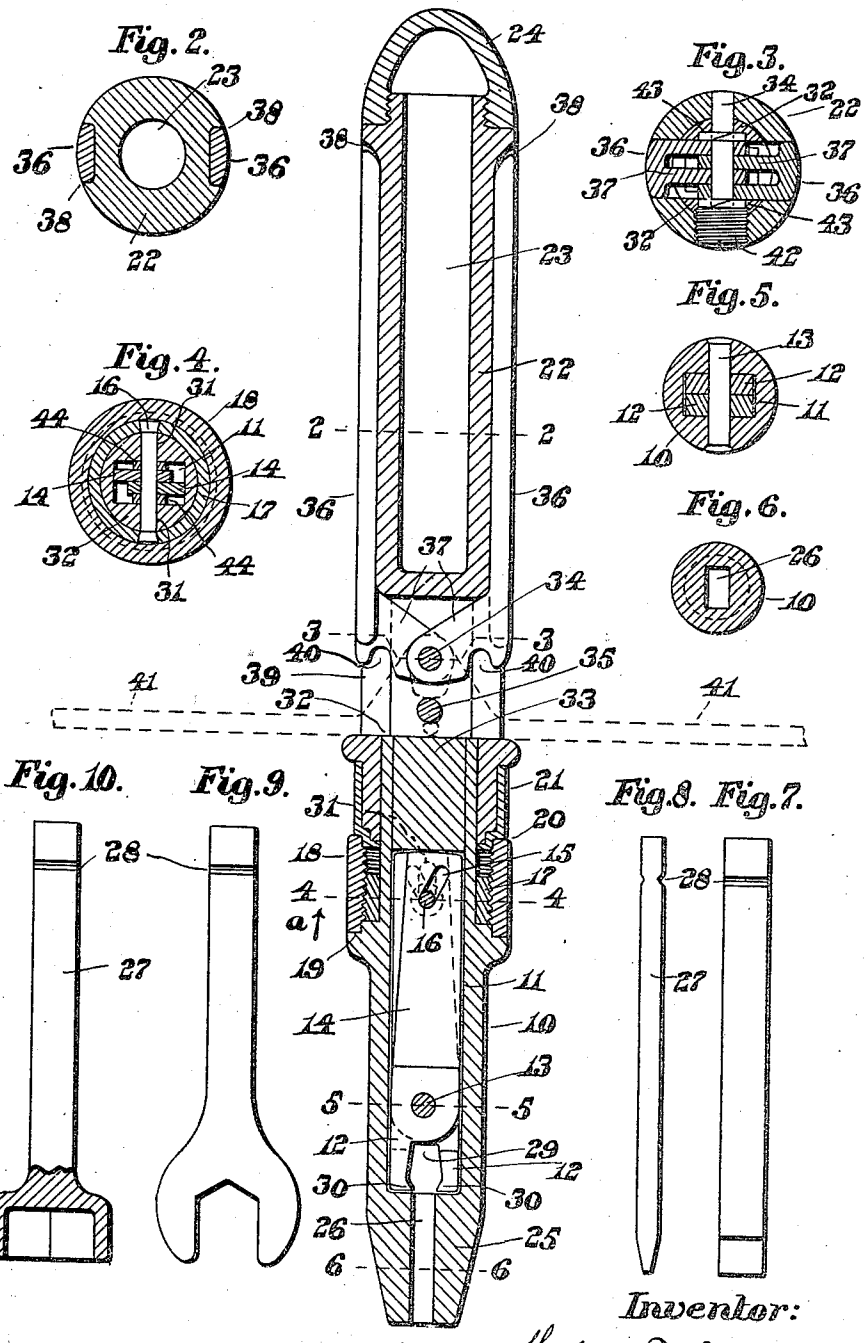


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 10.

Fig. 9.

Fig. 8.

Fig. 7.

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Patented Mar. 6, 1923. 1,447,620

UNITED STATES PATENT OFFICE.

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TOOL HOLDER.

Application filed September 17, 1921. Serial No. 501,406.

To all whom it may concern:

Be it known that I, WALTER E. LOMBARD, a citizen of the United States of America, and a resident of Arlington, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Tool Holders, of which the following is a specification.

This invention relates to tool holders and has for its object the production of a device of this character which is adapted to securely hold a selected tool in position during its use.

A further object is the provision of means whereby great leverage may be attained to rotate the tool about its axis.

The invention consists of a handle having an elongated rectangular socket at one end into which may be inserted the shank of a working tool the inner end of which is provided with shoulders adapted to be engaged by pivoted jaws within said handle.

The invention further consists in levers pivoted to the handle and adapted to be moved into position perpendicular to the axis thereof.

The invention further consists in means for retaining said levers under normal conditions in depressions in the side of the handle.

It further consists in certain novel features of construction and arrangement of parts which will be understood readily by reference to the description of the drawings and to the claims to be hereinafter given.

For the purpose of illustrating the invention, one preferred form thereof is illustrated in the drawings, this form having been found to give satisfactory and reliable results although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and the invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described except as required by the scope of the appended claims. Of the drawings:

Figure 1 represents a longitudinal section of a tool handle embodying the principles of the present invention.

Figure 2 represents a transverse section on line 2, 2, on Fig. 1.

Figure 3 represents a transverse section on line 3, 3, on Fig. 1.

Figure 4 represents a transverse section on line 4, 4, on Fig. 1.

Figure 5 represents a transverse section on line 5, 5, on Fig. 1.

Figure 6 represents a transverse section on line 6, 6, on Fig. 1.

Figure 7 represents a front elevation of a screw driver adapted to be used with the tool handle.

Figure 8 represents an edge view of the same.

Figure 9 represents a front elevation of a spanner wrench adapted to be used with said handle, and

Figure 10 represents a front elevation, partly in section, of a socket wrench adapted to be used with the handle.

Similar characters indicate like parts throughout the several figures of the drawings.

In the drawings, 10 is a cylindrical member having a chamber 11 therein in which are positioned two pivoted gripping jaws 12 of which the fulcrum pin 13 extends through the cylindrical member 10 and is riveted thereto as indicated in Fig. 5.

These working jaws 12 have elongated extensions or arms 14 in the upper ends of which are the inclined slots 15.

Through the inclined slots 15 extends a pin 16 mounted in the slidable collar 17, the periphery of which is provided with a screw thread fitting and coacting with the helical thread of the rotatable nut 18.

One end of the nut 18 bears against a shoulder 19 on the cylindrical member 10 while the opposite end thereof bears against a shoulder 20 formed upon a ferrule 21.

This ferrule 21 surrounds one end of the body portion 22 of the tool handle. This body portion preferably has a chamber 23 formed therein closed by the cap 24.

The chamber 23 may be used for the purpose of storing a variety of screw drivers or other working tools designed to be held by said tool handle.

The outer end of the cylindrical member 10 is preferably tapered as at 25 and has extending therethrough the elongated socket 26.

This socket 26 is preferably flat-sided and is adapted to receive the shank 27 of a working tool.

This working tool may be in the form of a screw driver as indicated in Figs. 7 and 8 of the drawings, in the form of a spanner wrench as in Fig. 9 of the drawings, or a

socket wrench as in Fig. 10 of the drawings or some other form of working tool may be used.

In all cases, however, the shanks of the tools are preferably made flat-sided and accurately fit the socket 26.

The opposite sides of the shank 27 are provided with depressions 28.

When the shank 27 is inserted into the elongated slot 26, the inner end thereof will abut the shoulders 29 on the gripping jaws 12 and the transverse projections 30 formed upon these gripping jaws 12 will be opposite to the depressions 28 in the shank 27.

By rotating the nut 18, the slidable member 17 may be moved endwise in the direction of the arrow *a* on Fig. 1 of the drawings thereby causing the pin 16 to move lengthwise of the oppositely disposed slots 31 formed in the reduced shank 32 of the cylindrical member 10.

This movement of the pin 16 acting upon the walls of the inclined slots 15 will cause the gripping jaws 12 to be moved about the pivot 13 and the transverse projections 30 to enter the depressions 28 in the shank 27 of the working tool being used.

When this operation has been performed, the working tool will be securely held in position in the tool handle and its accidental displacement will be effectually prevented.

The upper end of the chamber 11 is preferably closed by means of a plug 33 welded or otherwise secured therein.

The reduced extension 32 of the cylindrical member 10 is forked and positioned within a socket in the lower end of the body portion 22 as indicated in Fig. 1 of the drawings and is secured rigidly in position by means of the fulcrum pin 34 and a second pin 35 parallel to said fulcrum pin.

On said fulcrum pin 34 are mounted two levers 36, the lower end of each of which is provided with two ears 37 interlocking the ears 37 on the other lever as indicated in Fig. 3 of the drawings.

The body portion 22 of the tool handle is provided with oppositely disposed depressions 38 extending longitudinally thereof.

The long arms of the levers 36 are under normal conditions positioned in these depressions 38 as indicated in Fig. 1 of the drawings, while the ears 37 of said levers 36 are positioned within a slot 39 extending transversely of the handle through the body portion 22 and the reduced extension 32.

The ears 37 are provided with notches 40 which are adapted to straddle the second pin 35 when the levers 36 have been moved about the axis of the fulcrum pin 34 into a position perpendicular to the axis of the tool handle as indicated in dotted lines in Fig. 1.

The fulcrum pin 34 is provided with a threaded head 42 by which said pin may be secured in position in the body portion 22 of the tool handle.

Surrounding the pin 34 and bearing against the outer faces of the ears 37 are spring washers 43 which create sufficient friction upon the ears 37 to retain the levers 36 in their adjusted position whether extending longitudinally of the axis of the handle or perpendicular thereto.

Surrounding the pin 16 and between the outer walls of the extensions 14 and the opposite walls of the chamber 11, are preferably positioned washers 44.

The tool handle is designed essentially for use of drivers of motor cars and is intended to be supplied with the necessary screw drivers and wrenches and other working tools to fit the various screws and nuts upon the car.

In many cases it would be difficult to rotate a screw or nut by simply grasping the body portion of the handle. In such cases provision is made whereby additional leverage may be secured.

This is accomplished by the operator moving the levers 36 into the dotted positions shown in Fig. 1 of the drawings.

In some cases in cramped quarters, a single lever 36 may be used or both levers may be used alternately under certain conditions.

It is believed that the operation and many advantages of the invention will be understood without further description.

Having thus described my invention, I claim:

1. In a device of the class described, a handle having at one end an enclosed chamber terminating in an elongated socket adapted to receive the shank of a working tool; positively held gripping means wholly within the chamber of said handle for preventing displacement of said tool; and means surrounding said handle for adjusting said gripping means.

2. In a device of the class described, a handle having at one end an enclosed chamber terminating in an elongated flat-sided socket adapted to receive the shank of a working tool; pivoted jaws wholly within the chamber of said handle adapted to grip the portion of said shank within said chamber and prevent its accidental removal; and means for positively holding said jaws in adjusted position.

3. In a device of the class described, a handle having at one end an enclosed chamber termniating in an elongated flat-sided socket adapted to receive the shank of a working tool; two members wholly within the chamber of said handle and pivoted thereto provided at one end with jaws adapted to grip the portion of said shank within said chamber and having inclined slots at their opposite ends; a slidable mem-

ber within said handle having a pin extending through said inclined slots; and means on said handle for moving said slidable member.

4. In a device of the class described, a handle having at one end an elongated flat-sided socket adapted to receive the shank of a working tool; two members wholly within said handle and pivoted thereto provided at one end with jaws adapted to grip said shank and having inclined slots at their opposite ends; a threaded collar within said handle having a pin extending through said inclined slots; and means on said hadle restrained from end movement and engaging the thread of said collar and adapted in its rotation to move said collar endwise.

5. In a device of the class described, a handle having at one end an enclosed chamber terminating in an elongated flat-sided socket adapted to receive the shank of a working tool; and pivoted jaws wholly within the chamber of said handle having transverse projections adapted to grip the portion of said shank within said chamber and prevents its accidental removal.

6. In a device of the class described, a handle having at one end an enclosed chamber terminating in an elongated flat-sided socket adapted to receive the shank of a working tool provided with opposed transverse depressions at the inner end thereof; and pivoted jaws wholly within said handle having transverse projections adapted to enter the depressions of said shank within said chamber and prevent its accidental removal.

7. In a device of the class described, a handle; a member one end of which is secured to said handle and provided with a chamber, and the other end of which is provided with a flat-sided socket communicating with and in alinement with said chamber; said socket being adapted to receive the shank of a working tool; two shank-gripping jaws within said chamber; a pivot pin mounted in said member and extending transversely thereof through both jaws; a slidable non-rotatable member surrounding said chambered member; means actuated thereby for moving said jaws about their pivot pin; and a rotatable member fixed as to end movement adapted in its rotation to move said slidable member endwise.

8. In a device of the class described, a handle; a member one end of which is secured to said handle and provided with a chamber, and the other end of which is provided with a flat-sided socket communicating with and in alinement with said chamber; said socket being adapted to receive the shank of a working tool; two shank-gripping jaws within said chamber movable about a pivot pin extending transversely of said chamber through both jaws; a slidable non-rotatable member surrounding said chambered member; means actuated thereby for moving said jaws about their pivot pin; and a rotatable member fixed as to end movement adapted in its rotation to move said slidable member endwise.

9. In a device of the class described, a handle; a member one end of which is secured to said handle and provided with a chamber, and the other end of which is provided with a flat-sided socket communicating with and in alinement with said chamber, said socket being adapted to receive the shank of a working tool; two shank-gripping pivotally mounted jaws within said chamber, and each provided with an inclined face at its upper end; a slidable non-rotatable member surrounding said chambered member; means actuated thereby and coacting with each inclined face to move each jaw about its pivot; and a rotatable member fixed as to end movement adapted in its rotation to move said slidable member endwise.

10. In a device of the class described, a handle; a member one end of which is secured to said handle and provided with a chamber, and the other end of which is provided with a flat-sided socket communicating with and in alinement with said chamber, said socket being adapted to receive the shank of a working tool; two shank-gripping jaws pivotally mounted within said chamber, and each provided with an inclined slot at its outer end; a slidable non-rotatable member surrounding said chambered member; a pin carried thereby and extending through said inclined slots to move said jaws about their pivot; and a rotatable member fixed as to end movement and threaded to said slidable member whereby in its rotation it is adapted to move endwise said slidable member and the pin carried thereby.

Signed at Boston, in the county of Suffolk, and Commonwealth of Massachusetts, this 16th day of September, 1921.

WALTER E. LOMBARD.