Feb. 17, 1925. 1,526,502

J. PILGER, JR

WRENCH

Filed Sept. 14, 1922

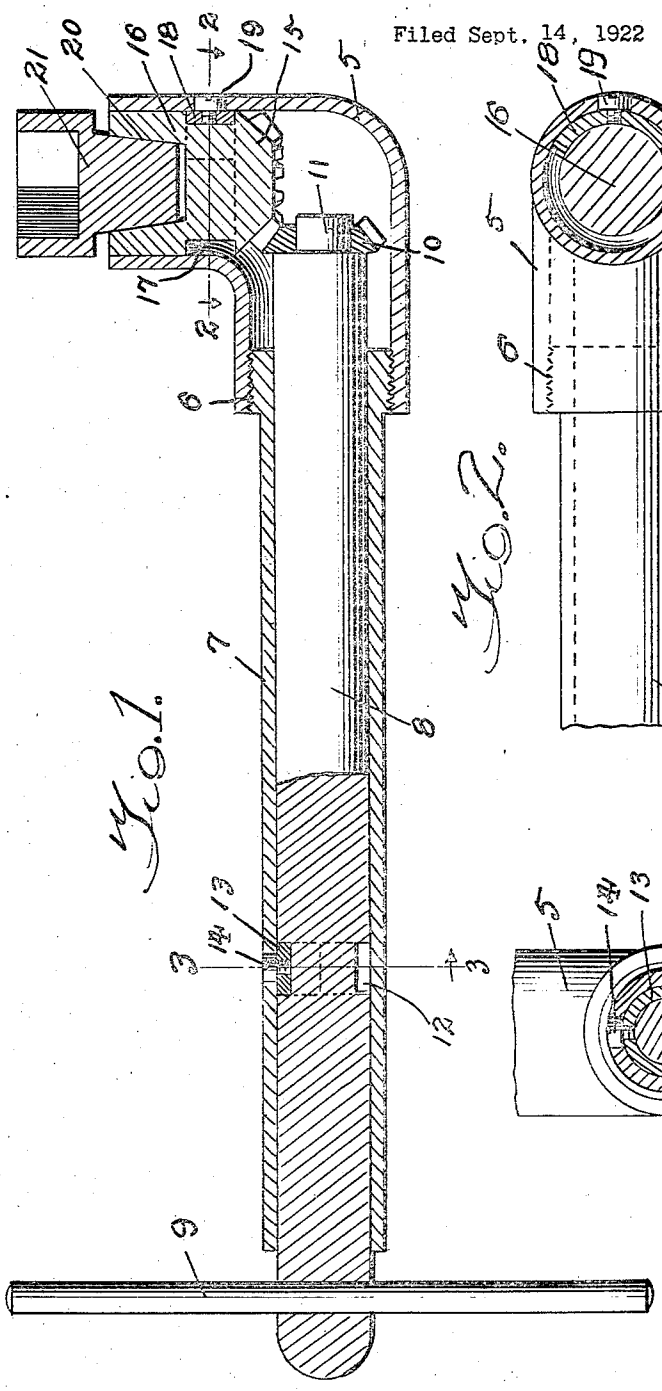


Fig. 1.

Fig. 2.

Fig. 3.

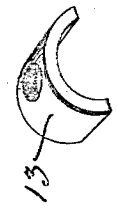


Fig. 4.

Inventor
J. PILGER JR,

WITNESSES
R. A. McLeod.
Frank Fraser

By Richard B. Owen

Attorney

Patented Feb. 17, 1925. 1,526,502

UNITED STATES PATENT OFFICE.

JOHN PILGER, JR., OF MILWAUKEE, WISCONSIN,

WRENCH.

Application filed September 14, 1922. Serial No. 588,438.

To all whom it may concern:

Be it known that I, JOHN PILGER, JR., a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to improvements in so called socket wrenches, an object being to provide a compact and reliable construction which may be used in places which are ordinarily very inaccessible and which can also be operated by means of a lever handle in the usual way or by means of gearing.

A further object of my invention is to provide a wrench which will enable inaccessible nuts to be manipulated without difficulty, which can be easily and quickly adjusted and which is not liable to break or get out of repair. A further object of my invention is to provide a wrench that is strong, durable, simple and inexpensive in construction and that is well adapted to the use for which it is designed.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the drawing, wherein like numerals are employed to designate like parts throughout the same,

Figure 1 is a longitudinal section taken through my improved wrench in its assembled condition,

Figure 2 is a section taken on line 2—2 of Figure 1 looking in the direction of the arrow,

Figure 3 is a section taken on line 3—3 of Figure 1 looking in the direction of the arrow, and

Figure 4 is a detailed construction of a semi-circular collar used in accordance with my invention.

In the drawings wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 5 designates an angular housing, which is provided at one end with the internal threads 6. A tubular handle casing 7 is adapted to be connected to one end of the angular housing 5 by means of the screw thread 6, said tubular handle casing 7 being adapted to receive a tubular handle 8, one end of which is provided with an operating lever 9 and the other end of which is provided with a beveled gear 10, which is keyed to the reduced portion 11 of the handle 8. The handle 8 is provided with an annular groove 12, said groove 12 being positioned within the tubular handle casing 7. A semi-circular bearing, which is carried by the tubular handle 7 by means of a set screw 14 is adapted to ride in the annular groove 12 in the handle 8. It will thus be seen, that the semi-circular bearing 13, will guard the handle 8 against a latter movement within the tabular casing 7.

As is clearly shown in Fig. 1 of the drawing, the beveled gear 15 is adapted to mesh with the beveled gear 10. The beveled gear 15 is carried by a socket member 16 which is mounted in the other end of the angular housing 5. The socket member 16 is provided with the annular groove 17 which is adapted to receive a semi-circular bearing 18 similar to the semi-circular bearing 13, and is carried by the angular housing 5 by means of a set screw 18. It will thus be seen that the semi-circular bearing 18 will prevent the pinion 15 from slipping out of mesh with the gear 10. It is found convenient to make the top of the socket member 16 flush with the end of the angular housing 5. The socket member 16 is provided with a recess 20 which is adapted to receive a socket wrench member 21.

In use, this wrench can be operated by means of the lever handle 8 within the housing 7, in the usual way or if it is desired it may be used by means of the gearing. It is of course to be understood, that the wrench socket member 21 is interchangeable, or, that is that various sized wrench members may be inserted in the recess 20 within the member 16. The wrench socket member 21 is adapted to engage a nut or the like. The lever 9 may be rotated in either direction, according to whether or not it is desired to screw or unscrew the nut. The rotation of the lever 9 will rotate the handle 8 within the housing 7, said handle 8 being guarded against lateral movement by means of the semi-curcular bearings 13 driving in the groove 5. As the beveled gear 10 is keyed to the reduced end 11 of the handle 8, the beveled gear 15 will be caused to rotate in the same direction, thereby rotating the wrench socket member 21. It will thus be seen, that I have devised a very simple form of wrench, that may easily be used on the ordinary inaccessible nut, and its value is enhanced by

reason of the interchangeable wrench member 21. The number of working parts has been reduced to a minimum, so that the possibility of my improved wrench of becoming temporarily out of order, is done away with.

It is to be understood that the form of my invention herewith shown and described is to be taken as the preferred embodiment of the same, and various changes in the shape, size and arrangement of parts may be resorted to, without departing from the preferred embodiment of my invention or the scope of the subjoined claim.

Having thus described my invention, I claim

A wrench of the class described comprising an angular housing, a socket receiving member mounted in one end of said angular housing, a bevel gear carried on the opposite end of said socket wrench receiving member, an operating member projecting into the other end of the angular housing, a bevel gear at the inner end of the operating member meshing with the first mentioned bevel gear, a handle casing for receiving said operating member, both of said members provided with annular grooves, a semi-circular bearing receivable in each groove, and screws receivable in the housing and casing for holding the semi-circular bearings in place.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN PILGER, JR.

Witnesses:
WM. N. PILGER,
F. C. RAPPS.