July 5, 1927. 1,635,102

L. E. WATSON

WRENCH

Filed June 21, 1926

Fig. 1.

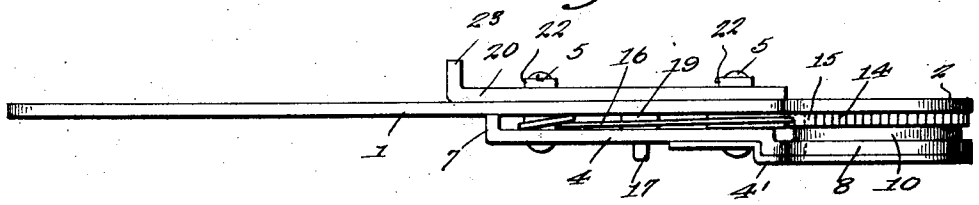


Fig. 2.

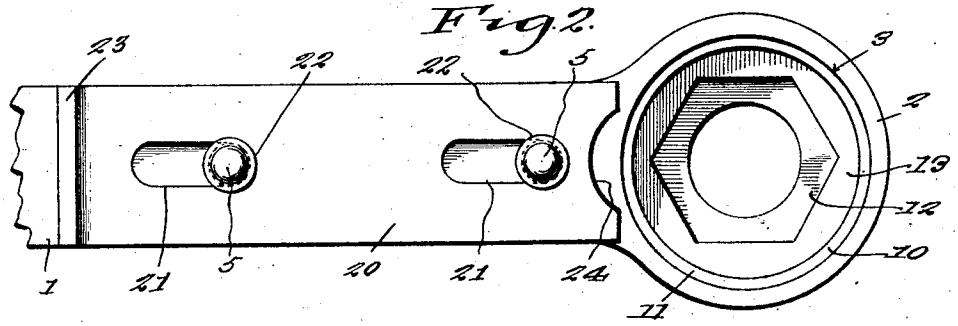


Fig. 3.

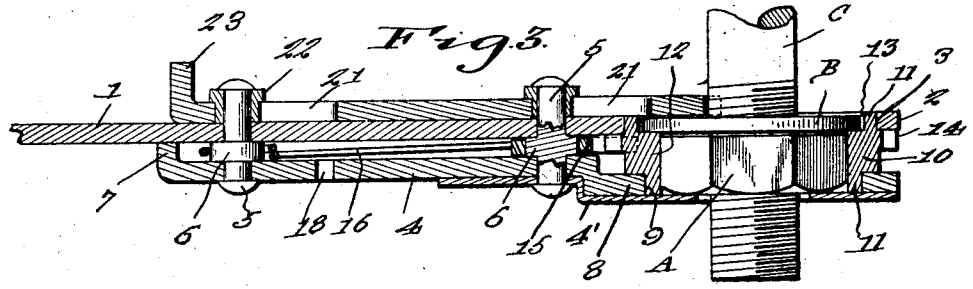
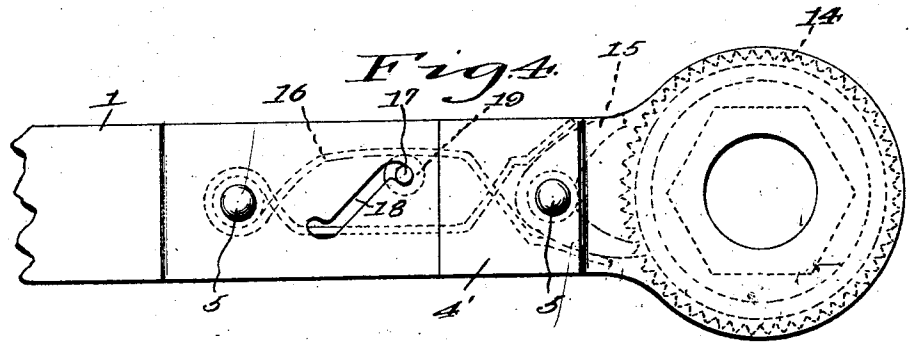


Fig. 4.



R. G. Thomas

WITNESS:

L. E. Watson INVENTOR

BY Victor J. Evans

ATTORNEY

Patented July 5, 1927. 1,635,102

UNITED STATES PATENT OFFICE.

LEONARD E. WATSON, OF ST. MARYS, WEST VIRGINIA.

WRENCH.

Application filed June 21, 1926. Serial No. 117,473.

This invention relates to a wrench, the general object of the invention being to provide a wrench which is provided with a recess to receive a nut and washer, with means for holding the nut and washer in the recess so that they cannot drop from the wrench after they have been removed from the threaded member.

Another object of the invention is to provide ratchet means for rotating the recessed part of the wrench, with means for adjusting such ratchet means so that said recessed part can be turned in either direction or can be rotated by hand.

This wrench is especially designed for removing the nut and washer from the pedal shaft of the Ford type of motor vehicle and it is adapted to be used with the tool forming the subject matter of an application filed by me on June 21, 1926, Serial No. 117,474.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is an edge view of the improved tool.

Figure 2 is a plan view, with the holding slide retracted.

Figure 3 is a longitudinal sectional view showing the device in use.

Figure 4 is a bottom plan view.

In these views, 1 indicates a plate having one part forming a handle and which has a circular part 2 at one end which has an opening 3 therein. A shorter plate 4 is held in spaced relation to the plate 1 by means of the bolts 5 which have spacing collars 6 therein against which the inner faces of the plates bear, and said plate 4 has one end turned up at right angles, as shown at 7, to rest against the plate 1. This plate 4 also has a circular head 8 which is offset from the rest of the plate and this head has an opening 9 therein which is slightly smaller than the opening 3 in the plate 1.

A rotary member 10 is mounted between the heads of the two plates and said member is provided with the reduced end portions 11 for engaging the holes or openings 3 and 9, so that the member is rotatably supported by the plates. This member is formed with a hexagonal recess 12 to receive a nut, such as A, and a circular recess 13 is formed in the member to receive a washer, such as B, so that the member will engage both a nut and a washer. A ratchet ring 14 is formed on the member 10 and a double dog 15 is pivotally supported in the space between the two plates by one of the bolts 5 and is designed to engage the ratchet ring. A double spring 16 is fastened to the other bolt 5 and has its ends engaging the two parts of the double dog.

A pin 17 is slidably arranged in a substantially S-shaped slot 18 formed in the plate 4 and has its head 19 adapted to engage one part or the other of the spring when it is moved to either end of the slot. The head will, therefore, place that portion of the spring engaged by it under tension and thus force the extremity of this part of the spring against one part of the dog and force this part into engagement with the ratchet ring. Then when the handle is rocked, the member 10 will be moved in one direction on one movement of the wrench and will remain idle on the return movement, due to the dog ratcheting over the ring. Thus it will be seen that the member can be rotated in either direction so as to screw a nut on a threaded member or to unscrew it therefrom. By placing the pin in the central portion of the slot 18, the dog will be inactive and the member 10 can be spun by the fingers.

In order to hold the nut and washer in the member 10, I provide a plate 20 which is slidably mounted on the plate 1 by having elongated slots 21 therein engaging the collars 22 on the bolts 5, the collars having heads or flanges for holding the plate in place. The outer end of the plate is provided with a turned up portion 23 which forms a handle for moving the plate and the other end is provided with a curved recess 24 so that when the plate is moved forwardly over the washer and nut, the curved recess will receive a portion of the threaded member C upon which the nut and washer are being placed or from which they are being removed. This slide will hold the nut and washer in the member 10 after they have been removed from the threaded member.

From the foregoing, it will be seen that

I have produced a wrench which can be used for removing nuts and washers from threaded members or for replacing such parts on the threaded member, the rotary member being so formed that it will cause the nut to rotate with it, while the washer need not rotate. This is necessary, for in some cases, the washer is provided with a tongue which engages a groove in the threaded member. The slide, as before stated, will hold the nut and washer in the rotary member so that there is no danger of them dropping off when they are free of the threaded member.

A small plate 4' is fastened to the outer face of the plate 4 by means of one of the bolts 5 and forms a bottom to the recess in the member 10 to hold the nut therein. This plate is provided with a hole through which the threaded member C can pass.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:—

A wrench of the class described comprising a pair of plates, each provided with a circular head having an opening therein, means for connecting the plates together in spaced relation, a rotary member supported in the openings by the heads, said member being recessed to receive a nut and a washer, there being ratchet teeth on the member, a double dog pivotally arranged in the space between the two plates, a double spring in said space having its extremities engaging the two portions of the dog, an S-shaped slot in one plate, a pin slidably mounted in the slot and having a part on its inner end for engaging the spring for placing either portion of the spring under tension or for freeing both portions of tension, a sliding plate slidably mounted on one of the other plates for holding the washer and nut in the rotary member.

In testimony whereof I affix my signature.

LEONARD E. WATSON.