R. STANTORF.

RATCHET WRENCH.

APPLICATION FILED MAY 23, 1921.

1,436,610. Patented Nov. 21, 1922.

Fig. 1.

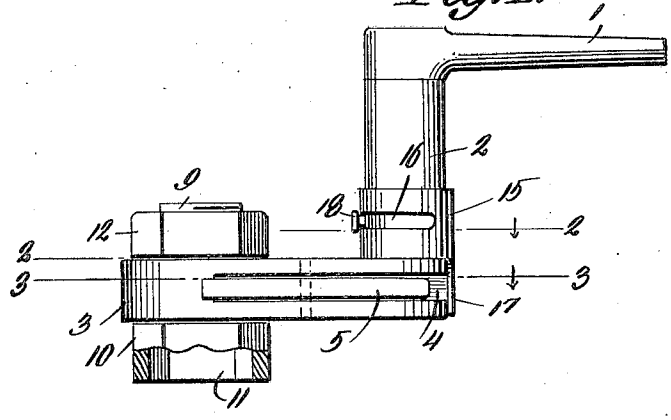


Fig. 2.

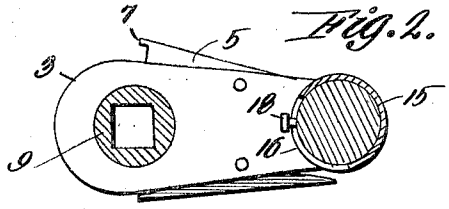


Fig. 5.

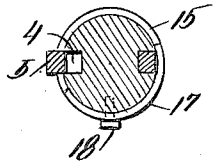


Fig. 3.

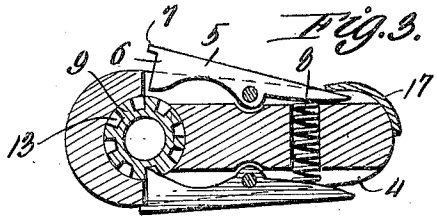
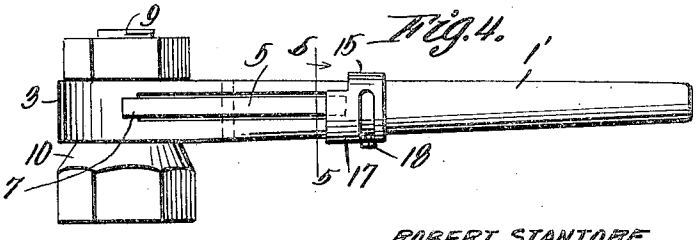


Fig. 4.



ROBERT STANTORF INVENTOR.

WITNESSES

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UNITED STATES PATENT OFFICE.

ROBERT STANTORF, OF PETERSBURG, WISCONSIN.

RATCHET WRENCH.

Application filed May 23, 1921. Serial No. 471,767.

To all whom it may concern:

Be it known that I, ROBERT STANTORF, a citizen of the United States, residing at Petersburg, in the county of Crawford and State of Wisconsin, have invented certain new and useful Improvements in a Ratchet Wrench, of which the following is a specification.

This invention relates to a ratchet wrench which is capable of turning nuts in either direction and has for its principal object to provide a device of this nature having a simple construction of a very durable nature.

With the above and numerous other objects in view, this invention consists of certain novel combinations, construction and arrangement of parts as will be more fully set forth and specifically claimed.

In the drawing:—

Figure 1 is a side view of the wrench,

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

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

Figure 4 is a side elevation of a slightly modified form of the wrench, and

Figure 5 is a section taken on the line 5—5 of Figure 4 looking in the direction of the arrow.

Referring to the drawing in detail it will be seen that the modification disclosed in Figures 1 to 3 inclusive consists of the handle 1 having the offset right angularly extending portion 2 which is fixed to the wrench head 3 in any suitable manner. This wrench head 3 is of a tapered elongated construction and has provided in its side walls the grooves 4 in which are pivotally mounted the pawls 5 the forward ends of which are provided with noses 6 and stops 7. A transversely extending recess is provided adjacent the smaller end of the wrench head 3 and has situated therein an expansion coil spring 8 which engages the rear ends of the pawls 5 so as to normally separate them. A cylindrical recess is provided in the larger end of the body 3 for receiving the shank 9 of the jaw 10 which is provided with a nut receiving cavity 11 of any desired configuration. The shank 9 of this jaw 10 is provided with suitable threads at its end for receiving a nut 12 whereby the same may be securely locked in engagement with the wrench head 3. The shank 9 of the jaw 10, however, is always mounted so as to rotate within the recess of the head 3. This recess in head 3 communicates with the forward end of the grooves 4 so that the noses 6 of the pawls 5 may project therethrough for engagement with the shank 9 of the jaw 10. The portion of the shank 9 which registers with the grooves 4 is provided with a series of indentures 13 into which are adapted to project the noses 6 of the pawls 5. Both of the noses 6 are normally adapted to engage the indentures 13 and in order to hold one of these pawls out of engagement with the shank I have provided a collar 15 swivelly mounted on the extension 2 adjacent the head 3. This collar 15 is provided with a slot 16 extending approximately half way around and a depending extension 17 which also extends approximately half way round. This extension 17 upon turning the collar 15 in the proper direction will engage one of the rear ends of one of the pawls 5 thus holding its nose out of engagement with the shank 9 of the jaw 10. A set screw 18 is carried by the extension 2 so as to register with the slot 16 in the collar 15 and by tightening this set screw rotation of the collar 15 may be prevented.

Referring to the modification disclosed in Figures 4 and 5 it will be noted that it only differs from the above described modification in that the handle 1′ is extended from the head 3 in alignment therewith and the collar 15 is swivelly mounted thereon so that its extension 17 will engage the pawls 5 for keeping them in a lifted or non-engaging position.

As stated above the extension 17 does not extend quite half around the collar, and consequently only one of the pawls can be lifted at one time, thus enabling the handle to be turned in one direction. When the other pawl is lifted, the handle may be turned in the opposite direction. Also, the collar may be so disposed as to not to lift either pawl, and then the handle will be locked in both directions, as will be readily seen.

I am aware that it is not new to provide a wrench with a ratchet and handle having a pawl thereon to enable the same to be turned in either direction, and I do not claim this broadly.

I am further aware that it is not new to provide a wrench with a removable jaw, and

I do not claim it. The peculiar arrangement and combination of the parts as herein shown and described are, however, new, and are extremely simple and effective in operation, besides being arranged so as to greatly increase the durability of the wrench.

The operation of the wrench is well known to those skilled in the art to which it pertains, and a detailed description thereof need not be here given.

Having thus described my invention what I claim as new is:—

In a wrench, a handle, a head attached thereto, said head having straight converging side portions and rounded ends, said side portions each provided with a slot the base of which extend parallel to each other, a recess extending through the head from one slot to the other, a second recess extending at right angles to the first mentioned recess and communicating with the ends of the grooves, pawls pivotally mounted within the grooves and provided with noses adapted to project into the second mentioned recesses and projections for engaging the head and acting as stops, an expansion coil spring situated within the first mentioned recess for normally holding the noses in engaging position, a jaw situated so as to be rotatable in the second mentioned recess and provided with indentures engagable by the noses of the pawls and a collar swivelly mounted on said handle, being provided with a slot extending approximately $\frac{1}{2}$ the way around and a depending extension which extends $\frac{1}{2}$ way around, said collar being adapted to be turned thereby allowing said extension to engage with the rear end of one of the pawls, thereby holding its nose out of engagement with said indentures.

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

ROBERT $\overset{\text{his}}{\underset{\text{mark}}{\times}}$ STANTORF.

Witnesses:
T. N. NELSON,
OLGA MARSTON.