A. MALCZYŃSKI.

WRENCH.

APPLICATION FILED SEPT. 18, 1911.

1,068,911. Patented July 29, 1913.

FIG. 1

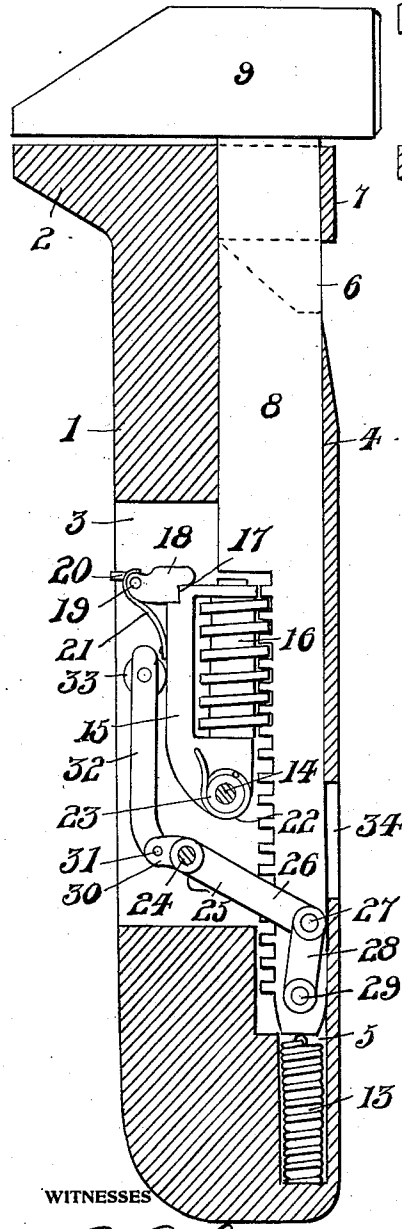


FIG. 2

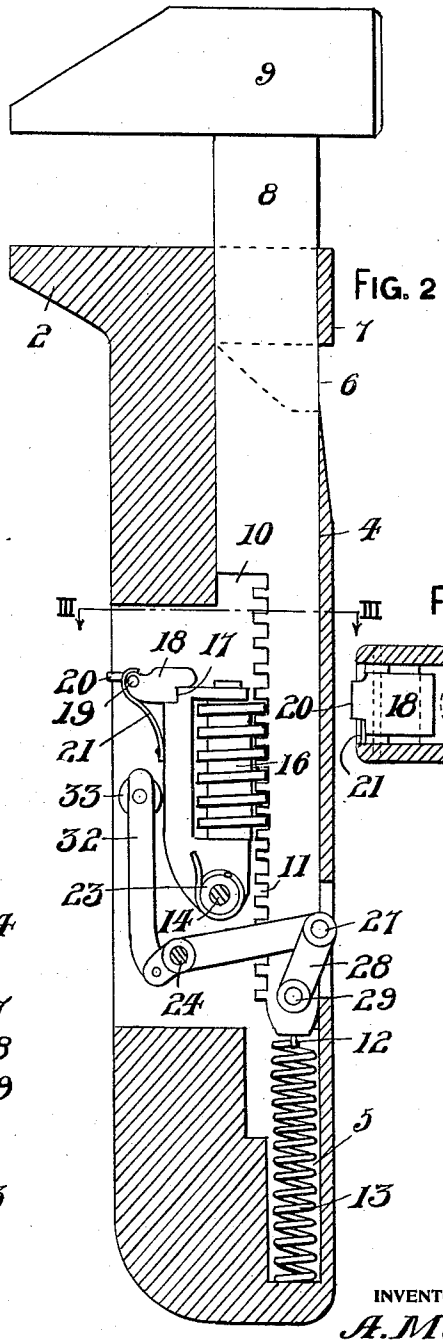
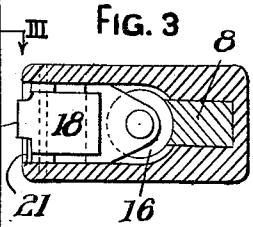


FIG. 3



WITNESSES

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WRENCH.

1,068,911. Specification of Letters Patent. Patented July 29, 1913.

Application filed September 18, 1911. Serial No. 649,794.

To all whom it may concern:

Be it known that I, ANTONI MALCZYŃSKI, a subject of the Emperor of Austria-Hungary, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Wrenches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to wrenches, and more particularly to that type of wrench commonly styled a quick-acting wrench and used for rotating nuts and bodies having flat faces.

My invention aims to provide a wrench with a spring-pressed shank, which, when released, will place the jaws of the wrench in an open position. The jaws can then be closed upon the piece of work and the shank locked, whereby it will not slip when the wrench is used for rotating the piece of work.

The invention further aims to provide an adjusting mechanism that is housed within the handle of a wrench and not liable to injury by ordinary use.

The invention further aims to accomplish the above results by a mechanical construction that will be hereinafter specifically described and then claimed.

Reference will now be had to the drawing, wherein:—

Figure 1 is a longitudinal sectional view of the wrench, showing the adjustable jaw in a closed position. Fig. 2 is a similar view showing the adjustable jaw in an open position; and Fig. 3 is a horizontal sectional view of the wrench taken on the line III—III of Fig. 2.

A wrench in accordance with this invention comprises a handle 1 having the inner end thereof provided with an extension 2 constituting a stationary jaw. The handle 1 has a recess 3 and a longitudinal bore 4 that is rectangular in cross-section, said bore extending from the outer end of the handle to a point in proximity to the inner end thereof. The bore 4 is in communication with the recess 3 and the inner end of said bore is reduced, as at 5, to provide a spring socket or chamber.

The outer end of the handle 1 is cut away, as at 6, to reduce the weight of the wrench and leave a strap 7 that embraces a shank 8 slidably mounted in the bore 4 of the handle 1. The outer end of the shank 8 has a jaw 9 coöperating with the jaw 2 in gripping a piece of work. The inner end of the shank 8 is reduced, as at 10, and provided with transverse teeth 11. Connected to the outer end of the shank 8, as at 12, is a coiled compression spring 13 arranged within the socket or chamber 5 of the handle 1. Arranged transversely of the handle 1 and extending through the recess 3 is a pivot pin 14 for a nut holder 15, said nut holder containing a worm or spirally threaded nut 16 adapted to engage the teeth 11 of the shank 8. The casual rotation of nut 16 will serve to distribute the wear over the entire length of its threads.

The upper end of the nut holder 15 is cut away to provide a seat 17 for a keeper 18 pivotally mounted upon a transverse pin 19, carried by the handle 1. The keeper 18 has a finger piece 20 and said keeper is normally retained in engagement with the nut holder by a flat spring 21, carried by the holder 15 and engaging the pivoted end of the keeper 18. The finger piece 20 permits of the keeper being easily swung out of engagement with the holder and when said holder is to be released, the nut 16 thereof is moved out of engagement with the teeth 11 by a coiled spring 22 arranged upon one of the hubs 23 of the nut holder 15. Said spring has one end thereof connected to the wall of the recess 3 and the opposite end thereof to the nut holder 15.

Arranged transversely of the handle 1 and extending through the recess 3 adjacent to the inner wall thereof is a pivot pin 24 for a lever 25. The long arm 26 of said lever is pivotally connected by a pin 27 to a link 28 and said link is pivotally connected to a pin 29, carried by the side of the shank 8 at the inner end thereof. The short arm 30 of the lever 25 is pivotally connected by a pin 31 to a hand bar 32 and this bar has the upper end thereof provided with a revoluble anti-friction roller 33 adapted to engage the nut holder 15. The handle 1 has a longitudinal slot 34 providing clearance for a movement of the lever 25 and the link 28.

Assuming that the jaw 9 is in a closed position, as shown in Fig. 1, and it is desired to open the jaw: the finger piece 20 is pressed upon to open or swing the keeper 18 outwardly. The tension of the spring 22 then swings the nut holder 15 forwardly to release the shank 8. An outward move-

ment of the nut holder 15 is limited by the keeper 18. Immediately upon the nut holder 15 being shifted, the tension of the spring 13 is sufficient to shift the slidable shank 8 within the bore 4 and open the jaw 9 relatively to the jaw 2. By pressing inwardly upon the hand bar 32, the nut holder 15 can be shifted inwardly, whereby the nut 16 will engage the teeth 11 of the shank, and then the keeper 18 can be swung to a lowered position to lock the nut holder.

In practice, the shank 8 is released to its fullest extent and then the jaw 9 is manually moved into engagement with the piece of work. It is then that the hand bar 32 is pressed inwardly to restore the nut holder 15 to its normal position in engagement with the shank. The lever 25, handle bar 32 and link 28 are further utilized for forcing the shank outwardly if desired, when the force of the spring 13 has been spent. When the handle bar 32 is forced toward the inner end of the wrench the lever 25 is rocked on its pivot in a direction whereby the long arm 26 of said lever will swing toward the outer end of the wrench and shift the shank outwardly.

What I claim is:—

A wrench of the type described comprising a handle having a recess formed therein, a jaw carried by the outer end of said handle, a shank slidably mounted in said handle and having the inner end thereof cut away and provided with teeth, a jaw carried by the outer end of said shank and opposing said other jaw, a spring-pressed nut holder arranged in the recess of said handle, a nut carried thereby and adapted to engage the teeth of said shank, a spring-pressed keeper arranged in the recess of said handle for holding said nut in engagement with said shank, a handle bar arranged in the recess of said handle for shifting said nut holder to a locked position, a link and lever connection between said bar and said shank, and a spring located in the inner end of said handle for forcing said shank outwardly when released by said nut, said link and lever connections further providing means for shifting the shank outwardly when the force of said spring has been spent.

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

ANTONI MALCZYŃSKI.

Witnesses:

PETER KROPA,

FELIX LUSKOWSKI.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."