April 1, 1930. A. K. ERSLAND 1,752,425

WRENCH

Filed April 22, 1929

Fig. 1.

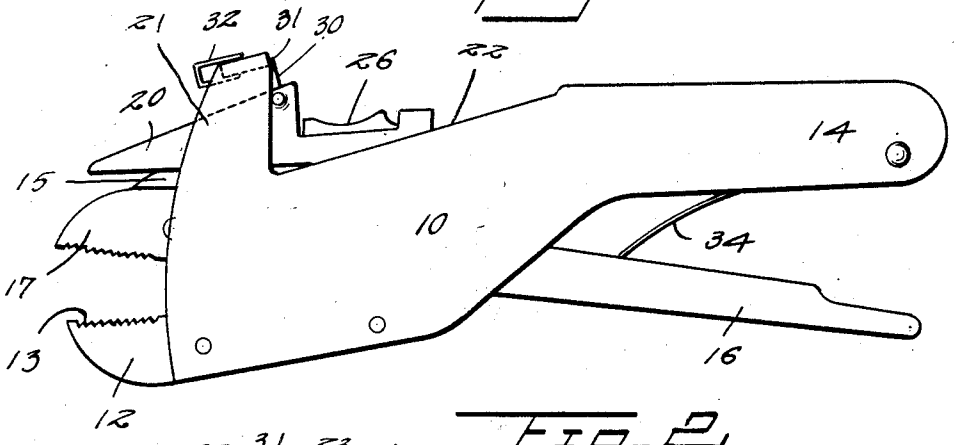


Fig. 2.

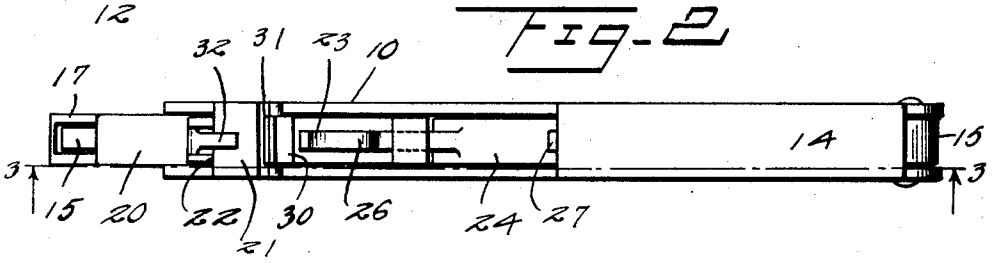


Fig. 3.

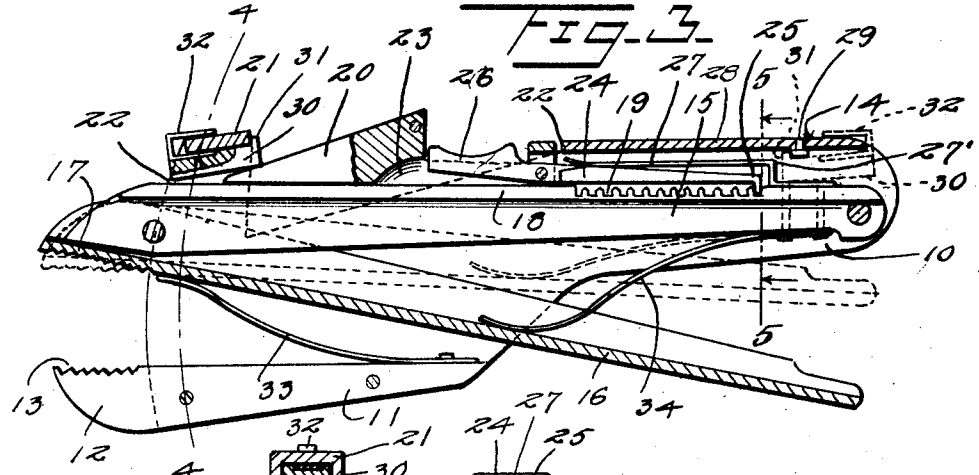


Fig. 4.

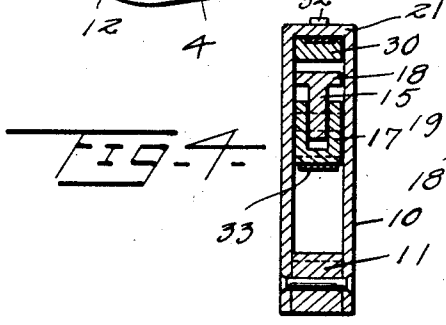
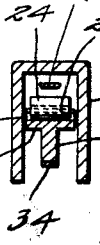


Fig. 5.



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UNITED STATES PATENT OFFICE

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WRENCH

Application filed April 22, 1929. Serial No. 357,193.

This invention relates to new and useful improvements in wrenches.

One object of the invention is to provide a wrench which includes novel means for accomplishing fine adjustments after the regular adjustments have been made.

Another object is to provide a wrench wherein the basis for the regular adjustments may be quickly and easily changed.

Another object is to provide, in a wrench of this character, means wherein the jaws may be quickly adjusted to the work by means of the one hand which grasps the wrench.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawing.

In the drawing:

Figure 1 is a side elevation of a wrench made in accordance with the present invention.

Figure 2 is an edge view of the same.

Figure 3 is a longitudinal sectional view on the line 3—3 of Figure 2, the parts being in normal position.

Figure 4 is a transverse sectional view on the line 4—4 of Figure 3.

Figure 5 is a transverse sectional view on the line 5—5 of Figure 3.

Referring particularly to the accompanying drawing, 10 represents a casing in which the various parts of the wrench are housed. Secured within one of the narrow sides of the casing is the shank 11 of the stationary jaw member 12, which jaw member projects beyond the end of the casing, as clearly seen in the drawing, and is formed with work gripping teeth 13. One end of the casing is reduced in width, as indicated at 14, and pivoted at one end, within the outer end of said reduced portion, is a lever 15, the other end of which projects beyond the other end of the casing and has pivotally connected thereto one end of a lever 16. This lever 16 has a toothed jaw portion 17, beyond the pivoted portion thereof, for cooperation with the jaw member 12, before mentioned. The pivotally connected ends of the members 15 and 16 is adapted to swing toward and away from the jaw member 12, as will be clearly understood, from an inspection of the drawing, for a purpose which will presently appear herein. Formed on the outer longitudinal edge face of the lever 15 is a back member 18, which projects slightly beyond both sides of the lever, and formed in the outer face of the said back, adjacent the pivotal end of the lever, are the series of teeth 19. Slidable on the said back member 18, is a tapered or wedge block 20, the point of which is arranged beneath the strap portion 21 of the casing, and which wedge block projects through an opening 22 in the casing 10. The lower end of the wedge member 20 is bifurcated, as shown at 23, and pivoted within this bifurcation is the upper end of the pawl 24, said pawl having its free end extended angularly, as at 25, and engaged with the teeth 19. The pawl 24 has that portion above its pivot formed with a recessed extension 26, which projects from the bifurcation 23 for engagement by the finger of the operator, for the purpose of rocking the pawl to disengage its angular end from the teeth 19, so that the wedge member 20 may be slipped longitudinally of the back 18, whereby to simultaneously engage with the said back and the strap 21 for the purpose of moving the levers 15 and 16 toward and away from the stationary jaw 12, in accordance with the size of the work to be accommodated between the jaws. A leaf spring 27 has its free end engaged with the outer face of the pawl 24, while its other end is offset, as at 27′, and secured to the face of the back 18, below the lowermost of the teeth 19, said spring yieldably holding the pawl engaged with said teeth. Upon inward pressure on the extension 26, the pawl will be rocked on its pivot so as to release its angular end from the teeth 19, thereby permitting the pawl, and the wedge member 20, to be moved longitudinally of the back 18, whereby the said wedge member will move the pivotal ends of the levers 15 and 16 toward or away from the stationary jaw member 12.

In the lower portion of the wall 28, of the casing 10, there is secured a rivet 29, the head of which is exposed on the inner face of said wall, as seen in the sectional view,

Figure 3. Removably disposed between the strap 21 and the slidable wedge member 20, is a block 30, one end of said block having a flange 31 which engages with the lower edge face of the strap, while a leaf spring 32, in the form of a U, has one end secured to the other end of the flange carrying face of the block, while its other end embraces the upper portion of the strap. When this block is not in use, it is disposed within the lower end of the casing 10, in the manner shown, the flange engaging with the head of the rivet 29, while the spring embraces the lower end of the said wall 28, such wall being cut out, as clearly seen in Figures 2 and 3.

In the operation of the wrench, the operator grasps the smaller end of the casing within the palm of his hand, and curles the last three fingers of the hand around the adjacent end of the lever 16. He engages the work between the jaws 12 and 17, places his thumb in the recessed end 26, of the pawl 24, and rocks the pawl, to disengage its other end from the teeth 19, so that he may slip the wedge member 20 whereby to move the pivoted ends of the levers 15 and 16 into proper contact with one side of the work. He then exerts pressure on the lever 16, drawing the same toward the casing, with the result that the toothed end of the lever 16 will be tilted into a position which is practically parallel with the jaw 12, and into firm gripping engagement with the work. The tool may then be rotated in either direction to rotate the work. The fact that the pivot of the lever 16 is so close to the work effectively prevents the lever being moved out of engagement with the work, when the wrench is rotated. Furthermore, the movement of the jaw 17, upon rocking the lever 16, compensates for, or takes up any loss in adjustment of the jaws, with respect to the work, occasioned by the size of the teeth 19, and the movement of the pawl, permitted thereby.

Secured to the inner end of the shank 11 is one end of a leaf spring 33, which has its other end engaged with the adjacent face of the lever 16, adjacent the pivot thereof, such spring urging the lever on its pivot so that its free end will be pressed against the strap 21, or the block 30, should said block be positioned on the strap. When the wedge member 20 is moved the action thereof on the levers 15 and 16 is thus governed by said spring 33.

Secured to the lower end of the lever 15 is one end of a leaf spring 34, the other end of which engages the adjacent face of the lever 16, whereby to normally urge the latter, on its pivot, away from the corresponding end of the lever 15.

What is claimed is:

1. A wrench including a pair of pivotally connected jaws, means for adjusting one of the jaws toward and away from the other jaw, a jaw face on said adjustable jaw, and a lever for moving the jaw face independently of the jaw.

2. A wrench including a casing having a stationary jaw therein, a lever mounted in the casing and having an end opposed to said jaw, means in the casing for swinging the lever toward and away from the said jaw, and a lever movably connected with the free end of the first lever having a jaw face for cooperation with the stationary jaw, said second lever being movable independently of the first lever.

3. A wrench including a casing having a stationary jaw therein, a lever pivotally mounted in the casing and having an end opposed to said jaw, slidable means between and contacting with the lever and casing for moving the former toward and away from the said stationary jaw, a lever carried by the first lever having a jaw face for cooperation with the stationary jaw, and a detent carried by the slidable means adjustably engaging said lever.

4. A wrench including a casing having a stationary jaw, in one end, at one side thereof, a lever pivotally mounted in the other side of the casing having a free end movable toward and away from the stationary jaw, said lever having notches adjacent its pivoted end, a wedge member slidable between the casing and the free end of the lever for adjusting said free end toward and away from the stationary jaw, a detent on the wedge member engaged with said notches, and a lever pivotally mounted on the free end of the first lever having a jaw face for cooperation with the stationary jaw, said second lever being movable independently of the first lever.

In testimony whereof, I affix my signature.

AMOS K. ERSLAND.