Sept. 26, 1944. J. HAHN 2,358,858

PLIER TYPE WRENCH

Filed Aug. 27, 1943 2 Sheets-Sheet 1

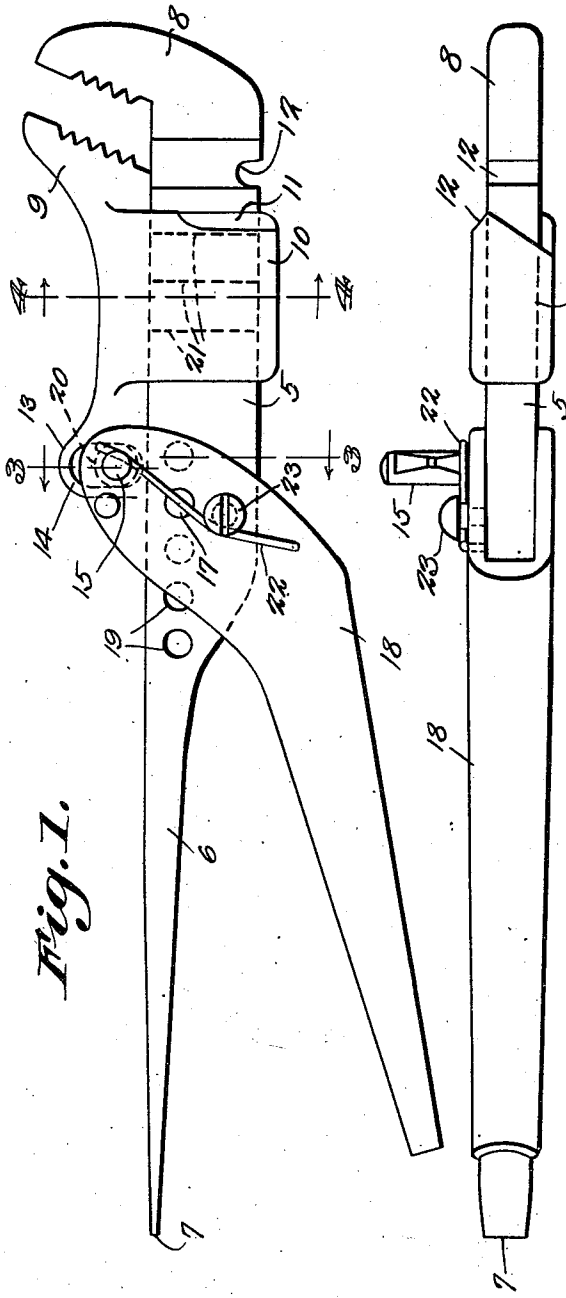


Fig. 1.



Fig. 2.

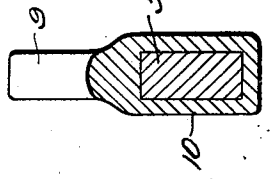


Fig. 4.

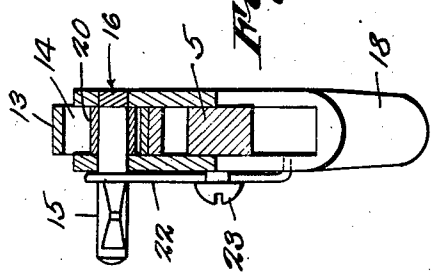


Fig. 3.

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PLIER TYPE WRENCH

Filed Aug. 27, 1943 2 Sheets-Sheet 2

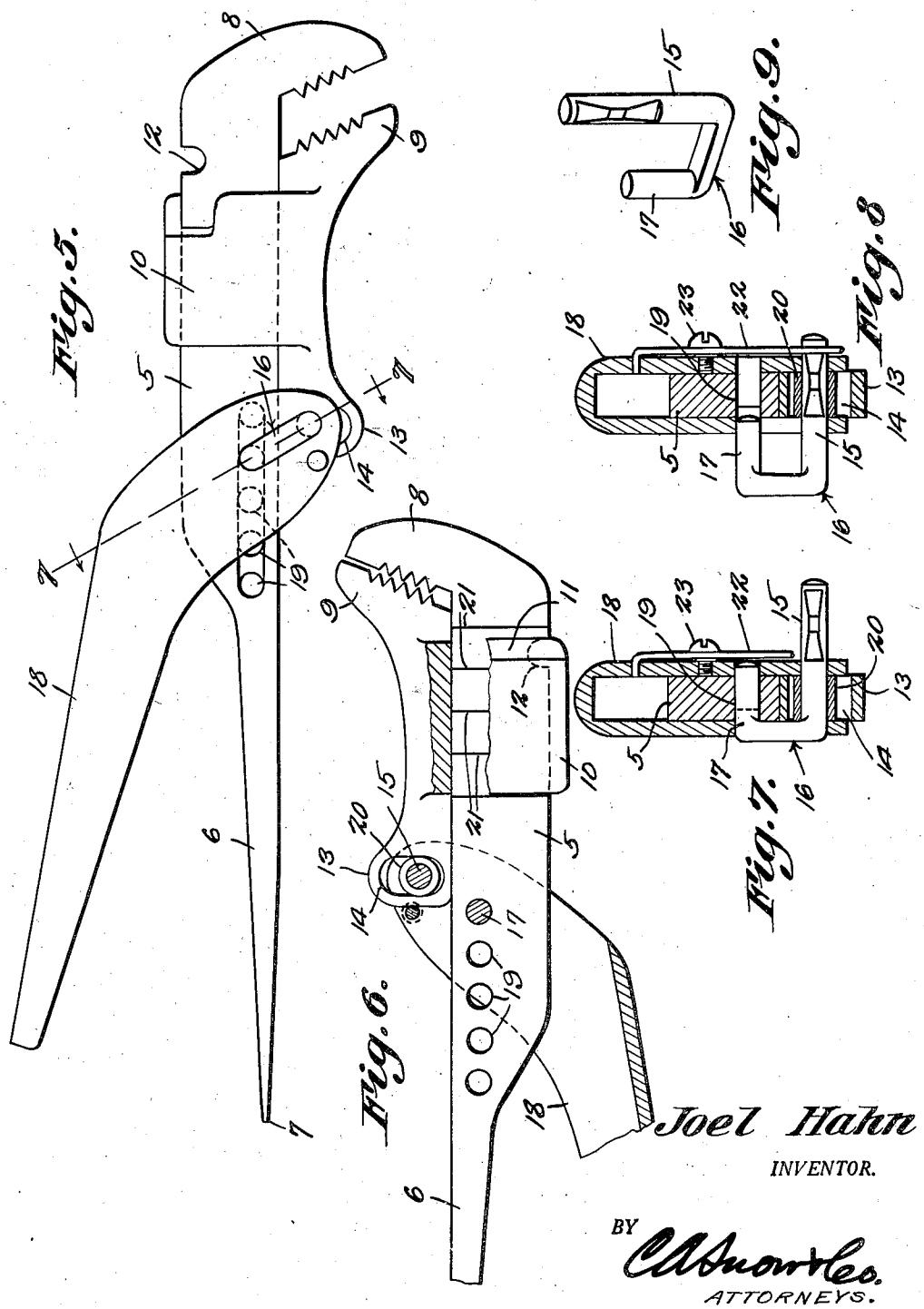


Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8

Fig. 9.

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# UNITED STATES PATENT OFFICE

2,358,858

## PLIER TYPE WRENCH

Joel Hahn, Beatrice, Nebr.

Application August 27, 1943, Serial No. 500,267

3 Claims. (Cl. 81—85)

This invention relates to quick-acting plier type wrenches, and aims to provide means whereby the movable jaw of quick-acting plier type wrenches may be secured in various positions of adjustment, to vary the capacity of the wrench for use in working nuts or bolts of various sizes.

Another object of the invention is to provide a movable pivot pin or fulcrum for the movable jaw, which may be readily and easily moved or adjusted to vary the movement of the movable jaw of the wrench, to the end that the operation of the pivot pin or fulcrum may be accomplished with the thumb and index finger of the hand, without removing the hand from the wrench handle.

Another object of the invention is to provide a wrench of this character wherein the rear edge of the movable jaw may be used as a wire-cutting implement.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawings

Figure 1 is an elevational view of a wrench constructed in accordance with the invention.

Figure 2 is an edge elevational view thereof.

Figure 3 is a sectional view taken on line 3—3 of Fig. 1.

Figure 4 is a sectional view taken on line 4—4 of Fig. 1.

Figure 5 is an elevational view disclosing the opposite side of the wrench.

Figure 6 is a fragmental sectional view through the movable jaw and handle used in operating the movable jaw of the wrench.

Figure 7 is a sectional view taken on line 7—7 of Fig. 5.

Figure 8 is a sectional view similar to Figure 7, illustrating the pivot pin or fulcrum of the movable jaw as moved to its inactive position.

Figure 9 is a perspective view of the movable pivot pin of the wrench.

Referring to the drawings in detail, the reference character 5 designates the shank of the stationary jaw, which is formed into a handle 6, the free end thereof being flattened, providing a screw-driver 7.

The reference character 8 designates the jaw that is formed integral with the shank 5 and constitutes the stationary jaw of the wrench.

The movable jaw is indicated by the reference character 9 and includes the yoke 10 that slides over the shank 5, as clearly shown by the drawings. One edge of the yoke 10 is beveled as at 11 providing a knife for cutting wires or the like, held in the groove 12 and which is formed at the rear of the shank 5, adjacent to the jaw 8.

Extending from the shank of the movable jaw, is the extension 13 which is formed with an elongated opening 14 designed to receive the long end 15 of the substantially U-shaped pivot pin 16. The short end 17 of the U-shaped pivot pin is designed to extend through openings of the lever 18 which fits over the shank of the stationary jaw.

A line of openings 19 are formed in the stationary jaw shank, and are adapted to aline with the openings of the lever 18 to receive the U-shaped pivot pin.

It will of course be understood that when the lever 18 is moved to actuate the movable jaw of the wrench, pressure is brought to bear on the long end 15, and to reduce friction at this point, a sleeve 20 is provided on the long end of the U-shaped pivot pin, as clearly shown by Fig. 6. This sleeve will permit a rolling action of the pivot between the lever and movable jaw 9.

In order that the adjustment of the U-shaped pivot pin may be accurately and rapidly made, marks indicated at 21 are formed on the sides of the shank of the stationary jaw. These marks indicate the point where the movable jaw should be moved in order for the openings of the shank 5 and lever 18 to be accurately aligned to receive the U-shaped pivot pin.

One edge of the long end 15 of the U-shaped pivot pin, is formed with recesses, the bottoms of the recesses being inclined towards the center. The recesses are designed to receive the wire 22, which is secured to the outer surface of the lever 18 and tensioned by the screw 23 which is secured in the lever 18. One end of the wire 22 is shown as resting in the notches to exert pressure on the U-shaped pivot pin and restrict movement thereof, under normal conditions.

From the foregoing it will be seen that when it is desired to adjust the wrench, it is only necessary to press the long end of the U-shaped pin through the openings of the lever and shank of the stationary jaw, from the position shown by Fig. 7 of the drawings to the position shown by Fig. 8. The movable jaw may now be slid

to the proper position. After the adjustment has been made, the U-shaped pin as shown by Fig. 8, is forced to the position as shown by Fig. 7, whereupon the jaws are properly positioned for use.

What is claimed is:

1. A quick-acting plier type wrench comprising a stationary jaw including a shank and a handle, said shank having a plurality of openings formed therein, a movable jaw including a yoke, slidable over said shank, an extension on the movable jaw, having an elongated opening, a lever having openings adapted to aline with the openings in the shank of the stationary jaw, said lever having openings adapted to aline with the elongated opening in the extension, a substantially U-shaped pivot pin having a substantially long end and a short end, said long end being slidably held in the alining openings of the extension and lever, the short end being slidably held in the alining openings of the lever and shank of the stationary jaw, and means for normally holding the U-shaped pivot pin against movement, within the openings.

2. A quick-acting plier type wrench, comprising a stationary jaw including a shank having a plurality of pivot pin openings, a movable jaw, means for slidably mounting the movable jaw on the shank of the stationary jaw, an extension forming a part of the movable jaw and having an elongated opening, an operating lever having openings for alignment with said elongated opening and additional openings for alignment with a pivot pin opening, a sleeve in said elongated opening of the movable jaw, a U-shaped pivot pin, one leg of the pivot pin being extended through the aligning openings of the sleeve, movable jaw and lever, the other leg of the U-shaped pivot pin being extended through the aligned openings of the lever and a pivot pin opening of the shank of the stationary jaw, and a yieldable member mounted on the lever and adapted to bear against the U-shaped pivot pin whereby said pivot pin is normally held against movement.

3. A quick-acting plier type wrench, comprising a stationary jaw including a shank having a line of openings formed therein, a lever having openings adapted to align with the openings of the shank, a movable jaw mounted for sliding movement on the shank of the stationary jaw, said movable jaw having an elongated opening, said lever having openings adapted to align with the elongated opening, a substantially U-shaped pivot pin, one leg of said pivot pin being positioned in registering openings of the lever and shank, pivotally connecting the lever and shank, the other leg of the pivot pin being positioned in openings of the lever aligning with the elongated opening of the movable jaw, pivotally connecting the lever and movable jaw, said other leg having a pair of recesses, said pivot pin being transversely movable relative to the lever, and a spring adapted to engage in either recess, normally holding said pin in its positions of adjustment.

JOEL HAHN.