

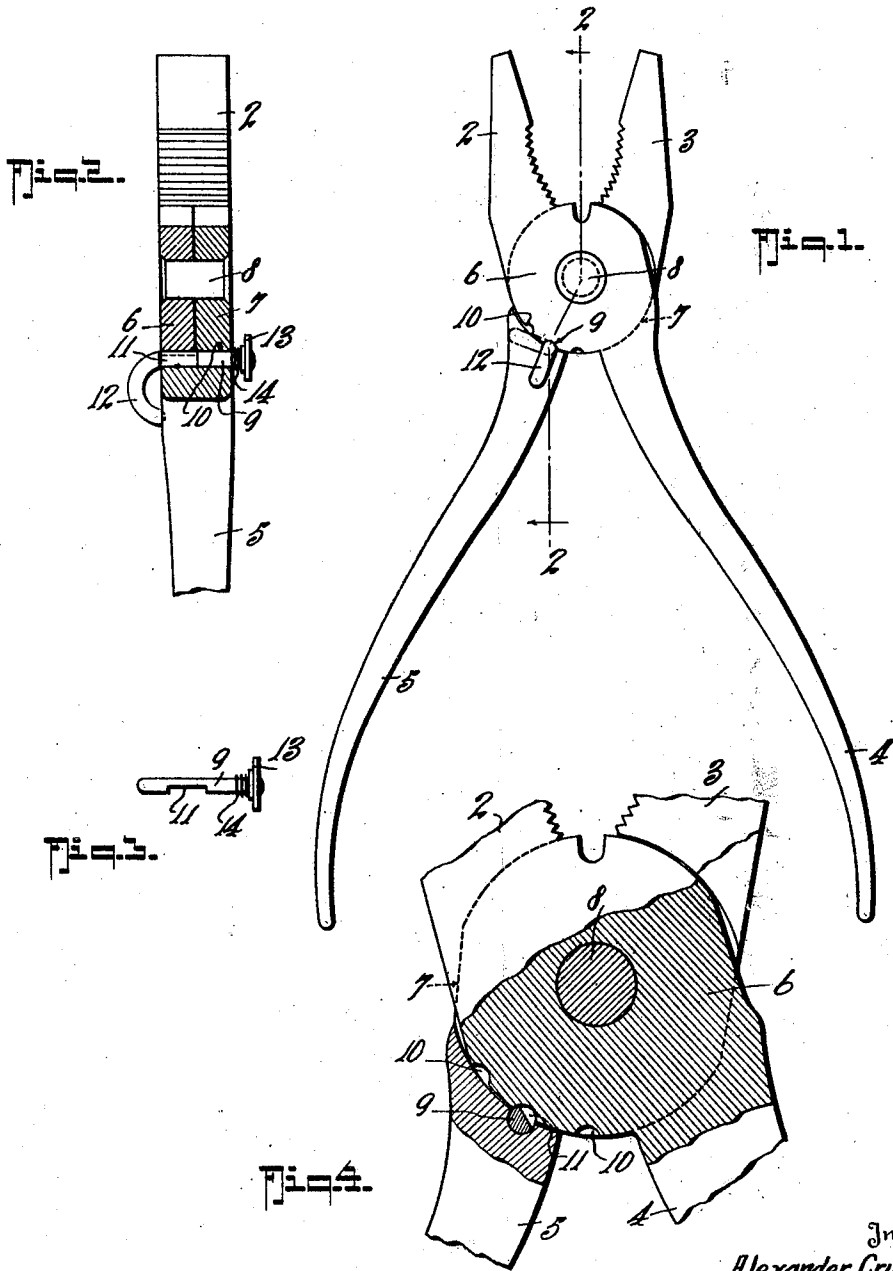
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PLIER WRENCH

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PLIER WRENCH.

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To all whom it may concern:

Be it known that I, ALEXANDER CRUICKSHANK, citizen of the Dominion of Canada, residing at Matsqui, in the Province of British Columbia, Canada, have invented certain new and useful Improvements in Plier Wrenches, of which the following is a specification.

This invention relates to a plier wrench, that is a pair of pliers having provision for securing the jaws of the pliers at various open positions whereby the pliers may be used as a wrench for nuts or the like.

More specifically, the invention relates to the means for securing the jaws of a pair of pliers of that class wherein the jaw and handle members are half-lapped together where they cross one another at their connecting pivot.

The invention is particularly described in the following specification, reference being made to the drawings by which it is accompanied, in which:

Fig. 1 is a face view of the pliers partially open.

Fig. 2, a sectional elevation on the line 2-2 in the direction of the arrows.

Fig. 3 is a detail of the lock pin detached, and

Fig. 4, an enlarged view of the pivotal joint, showing the locking device.

In these drawings 2 and 3 represent the jaw members of the pliers, formed on the ends of their respective handle portions 4 and 5. Where these parts 2, 3, 4, 5 are connected together by the pin 8, each is half-lapped with the other, as at 6 and 7 and at the half-lap is enlarged concentrically with the pin 8, the convex arc of one 6 toward its handle portion 4 fitting the concave arc of the recess in the other handle portion 5.

In this arcuate joint between 6 and 5 a pin 9 is fitted in 5 with its axis substantially parallel to that of the pin 8, the half of which pin projects into one of a series of grooves 10 formed in the edge of 6.

One side of this pin 9 is removed as at 11, see Fig. 3, opposite the edge of 6, so that when the pin is turned to bring the side from which the portion has been removed, toward the edge of 6, the members 2, 3, 4, 5 of the pliers will move freely on the pin 8, but if the pin 9 be turned through a quarter revo-

lution, as shown in Fig. 4, when one of the grooves 10 is opposite it, the pin, fitting the groove, will lock the members 2, 3, 4, 5 against pivotal movement on the pin 8 from the position to which the jaws have been set.

One end of the pin 9 is bent around as at 12 to bear against the adjacent face of 5 and enter a slight depression by which the pin is retained in the locked position. On the other end of the pin is secured a head 13 between which and the adjacent face of 5 is a spring 14, that tends to hold the end 12 of the pin in the recess, but the pin may be endwise moved against the spring resistance that it may be turned to the release position, shown by dot and dash lines in Fig. 1.

Obviously, this locking device may also be applied in the joint between the enlargement 7 and the handle member 4, the grooves in the member 7 being spaced to give jaw openings intermediate those provided for in the joint between 6 and 5.

Having now particularly described my invention, I hereby declare that what I claim as new and desire to be protected in by Letters Patent, is:

1. A plier wrench, comprising the combination with a pair of pliers the members of which are half lapped together at the pivoted connection with the concentric enlargement of the joint of one member fitting a corresponding concave recess of the other, and a pin mounted in one member to project part into the concave and part into the convex portions of the joint whereby the joint is locked, and means for releasing the lock.

2. A plier wrench, comprising the combination with a pair of pliers the members of which are half-lapped together at the pivotal connection with the concentric enlargement of the joint of one member fitting a corresponding concave recess of the other, a locking pin rotatably mounted in the recessed member to project into one of a series of grooves in the convex portion of the other member, said pin having a portion removed from one side that when turned toward the convexity will permit the plier members to turn on their pivot.

3. A plier wrench, comprising the combination with a pair of pliers the members of which are half-lapped together at the pivotal connection with the concentric en-

largement of the joint of one member fitting a corresponding concave recess of the other, a pin rotatably mounted in the recessed member the axis of which pin is parallel to that
5 of the pivot, said pin having a portion removed from one side that when turned toward the convexity of the joint will permit the members to move on their pivots but when turned across the joint will secure the pliers against such movement, and means for retaining the pin in the locked position and
10 unlocked position.

In testimony whereof I affix my signature.

ALEXANDER CRUICKSHANK.