Nov. 1, 1927. 1,647,340

L. A. BURCH

WRENCH

Filed Dec. 5, 1925

Fig. 1.

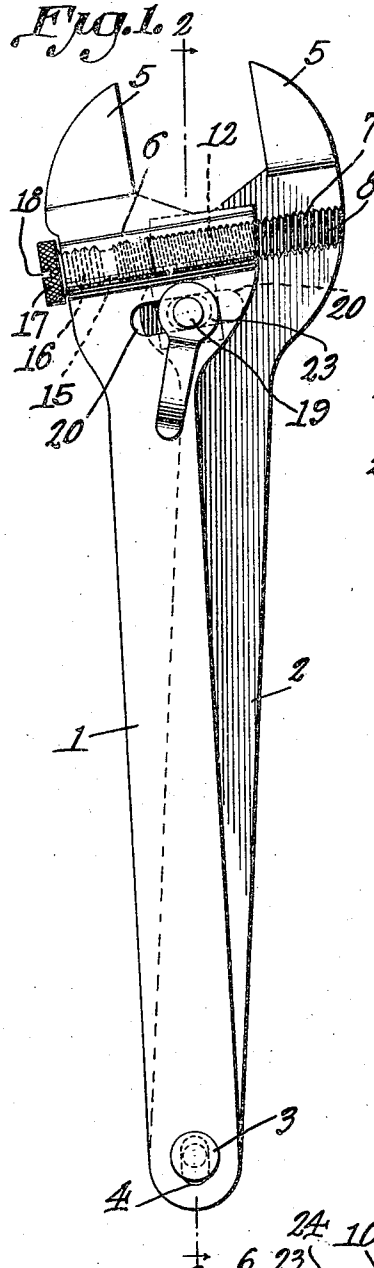


Fig. 2.

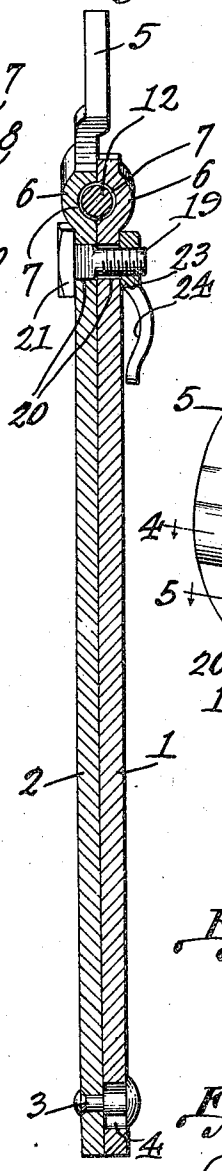


Fig. 6.

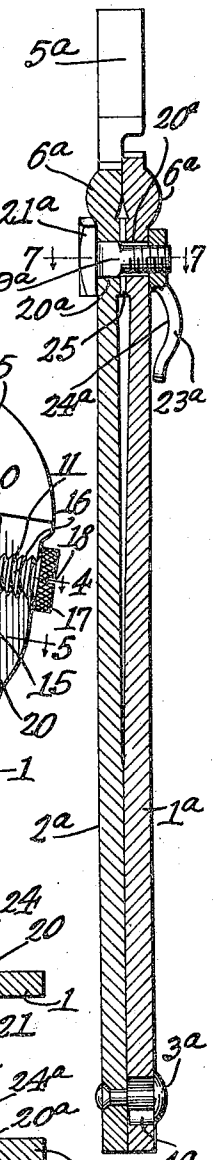


Fig. 3.

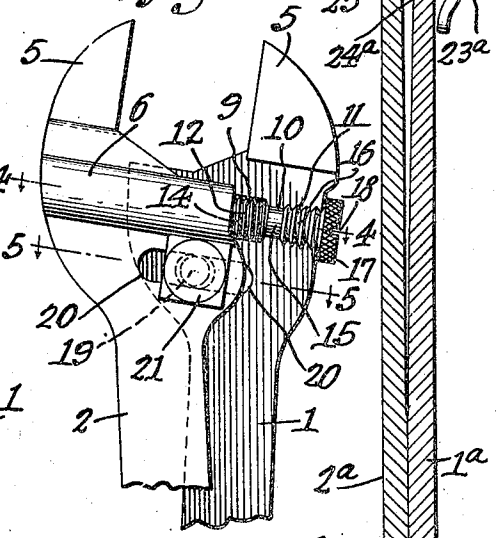


Fig. 5.

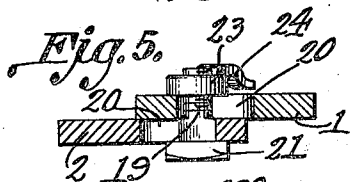


Fig. 7.

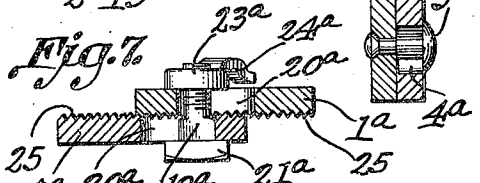
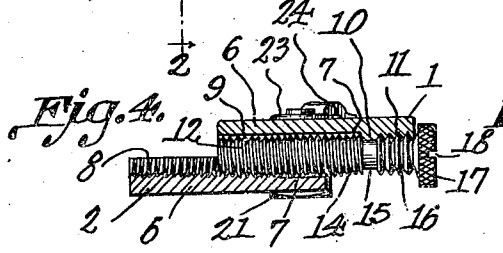


Fig. 4.



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UNITED STATES PATENT OFFICE.

LAWRENCE A. BURCH, OF JAMESTOWN, NEW YORK.

WRENCH.

Application filed December 5, 1925. Serial No. 73,520.

This invention aims to provide a simple wrench which will work in small spaces, novel means being provided for adjusting the wrench to fit articles of different sizes, and novel means being provided for holding the wrench in any position to which it may have been adjusted.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the drawings:—

Figure 1 shows in side elevation, a wrench constructed in accordance with the invention; Figure 2 is a section on the line 2—2 of Figure 1; Figure 3 is a fragmental elevation, wherein the opposite side of the wrench from that disclosed in Figure 1 is exposed; Figure 4 is a section taken on the line 4—4 of Figure 3; Figure 5 is a section on the line 5—5 of Figure 3; Figure 6 is a longitudinal section showing a modification; Figure 7 is a section on the line 7—7 of Figure 6.

The wrench forming the subject matter of this application comprises levers 1 and 2, connected pivotally at one end, in any suitable way, for instance, by means of a headed pivot element 3 carried by the lever 2 and slidable in an elongated slot 4 on the lever 1. The levers 1 and 2 are equipped with cooperating jaws 5 having transverse off-sets 6, the off-sets 6 defining transverse grooves 7 in the inner surfaces of the levers 1 and 2. The groove 7 of the lever 2 is threaded as at 8, throughout the major portion of its length, whereas the groove 7 in the lever 1 is smooth throughout the major portion of its length, as shown at 9, there being a transverse rib 10 extending across the groove of the lever 1, and there being, in the groove of the lever 1, at the outer end of the said groove, a plurality of seats 11, which are V-shaped in cross section, it being observed, especially, that these seats are not to be mistaken for threads.

A means is provided for holding the levers with the jaws 5 at adjusted distances apart, and for adjusting the distance between the jaws, the aforesaid means embodying a screw 12 received in the smooth portion 9 of the groove in the lever 1, and cooperating with the threads 8 in the groove of the lever 2, the screw having a threaded portion 14 which cooperates with the threads at 8. The screw 12 has an annular circumscribing recess 15, receiving the rib 10 on the lever 1, the screw being supplied, outwardly of the recess 15, with ribs 16 (not threads) which coact with the seats 11 of the lever 1, and, together with the elements 10 and 15, serve to hold the screw 12 for rotation, but against longitudinal movement, the screw having a head 17 provided with a screw driver kerf 18, it being possible to rotate the screw and separate the jaws 5, because the threaded portion 14 of the screw 12 cooperates with the threaded part 8 of the lever 2. The jaws 5 move toward and away from each other along a right line, represented by the axis of the grooves 7, and it is to permit such a movement in the jaws that the lever 1 is provided with the slot 4 for the reception of the pivot element 3.

A means is provided for holding the levers against separation in a plane at right angles to the plane in which the jaws 5, and for clamping the screw 12 against turning, the aforesaid means embodying a bolt 19 movable in transverse slots 20 formed in the levers 1 and 2, near to the off-sets 6, the head 21 of the bolt 19 being engaged with one of the off-sets 6, as shown in Figure 3, to prevent the bolt from turning. A lever nut 23 is threaded on the bolt 19 and cooperates with the lever 1, the handle of the lever nut being concaved, as at 24, so that it can be sprung over the off-sets 6 on the jaw 1, to hold the lever nut against turning.

In Figures 6 and 7, parts hereinbefore described have been designated by numerals previously used, with the suffix "*a*". The modification consists in omitting the grooves 7 and the screw 12. The means for holding the levers 1^a and 2^a with the jaws 5^a at adjusted distances apart, consists in cooperating teeth or ribs 25 on the inner surfaces of the levers 1^a and 2^a, the teeth on the respec-

tive levers being adapted to be interengaged, and the bolt 19a and the lever nut 23a cooperating to hold the teeth interengaged.

What is claimed is:—

1. A wrench comprising levers each having a jaw at one end, a bolt and nut connecting the jaws, one jaw having an elongated slot wherein the bolt is received, both jaws having off-sets, one off-set engaging the head of the bolt to hold the bolt against rotation, and the nut having a handle adapted to be sprung over the other off-set, and means for holding the levers with the jaws at adjusted distances apart, said means embodying a screw held for rotation but against longitudinal movement in the off-set of one jaw and threaded into the off-set of the other jaw.

2. A wrench comprising levers each having a jaw at one end, a screw held for rotation but against longitudinal movement in one lever, and having threaded connection with the other lever, a bolt and a nut constituting means for binding the levers on the screw, thereby to hold the screw against rotation, the levers having cooperating slots wherein the bolt is received, and means for movably connecting the levers at their opposite ends.

3. A wrench comprising levers each having a jaw at one end, means for movably connecting the levers at their other ends, and a screw provided with a threaded portion and with a plurality of annular ribs located side by side and at right angles to the axis of the screw, one lever having a smooth portion housing the threaded portion of the screw, and being provided with a plurality of annular ribs located side by side and at right angles to the axis of the screw, the ribs of the screw and of said lever constituting means for holding the screw for rotation but against longitudinal movement.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

LAWRENCE A. BURCH.