

J. F. OLIVER AND J. P. FLEMING.
WRENCH.

APPLICATION FILED MAY 9, 1919.

1,435,548.

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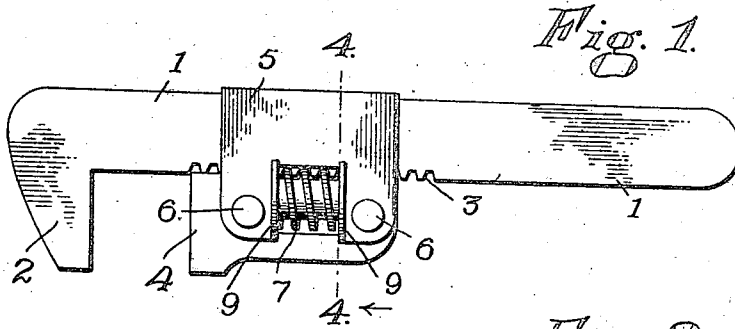


Fig. 2.

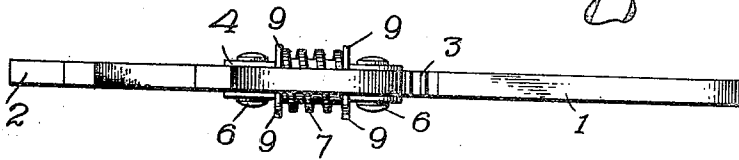
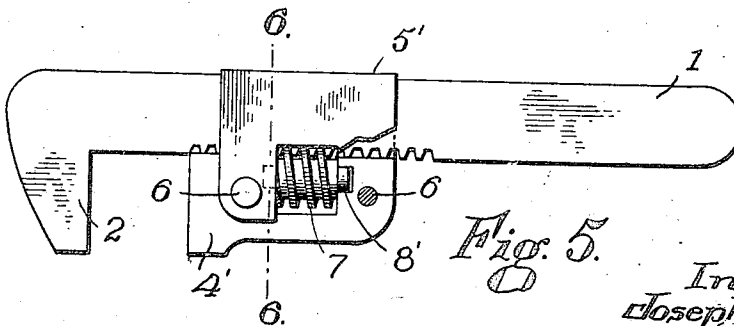
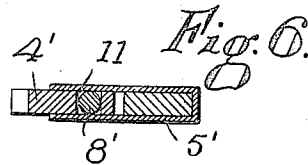
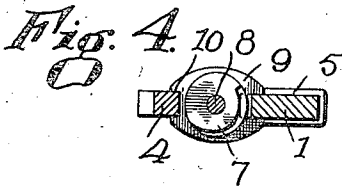
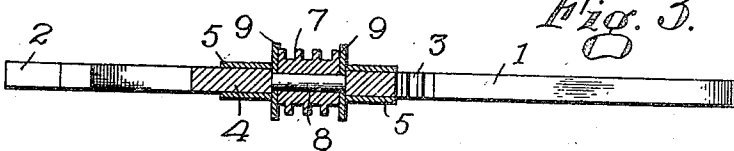


Fig. 3.



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WRENCH.

Application filed May 9, 1919. Serial No. 295,937.

To all whom it may concern:

Be it known that we, JOSEPH F. OLIVER and JOSEPH P. FLEMING, both citizens of the United States, residing at Worcester, in the
5 county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in a Wrench, of which the following, together with the accompanying drawings, is a specification.

10 The present invention relates to wrenches, and in particular to improvements in the construction of devices of this class whereby cheapness and ease of assemblage are secured, and at the same time the operation and
15 adjustment of the device is made more certain.

The features of the invention are fully set forth in the following description and pointed out in the annexed claims, reference being
20 had to the accompanying drawings, in which—

Figure 1 is a plan view of a wrench which embodies the invention.

Figure 2 is a side or edge view of said
25 wrench.

Figure 3 is a longitudinal sectional view through the movable jaw of the wrench.

Figure 4 is a transverse sectional view on the line 4—4, Fig. 1.

30 Figure 5 is a plan view of a wrench that contains a modification of the invention.

Figure 6 is a transverse sectional view on the line 6—6, Fig. 5.

Similar reference characters refer to similar parts in the different views.

Referring first to Figs. 1 to 4 inclusive, the wrench herein shown is of the usual adjustable type, providing jaws for the gripping of a square, hexagonal, or other form of bolt
40 or nut, but it is obvious that the improved construction herein disclosed is applicable alike to adjustable pipe wrenches, or wrenches for other purposes.

In the form of wrench shown, the shank
45 or bar 1 is of ordinary construction, providing at one end the fixed jaw 2. Said shank 1 provides the usual longitudinal toothed rack 3 that is adapted to be engaged by a screw or other adjusting device which is carried by
50 the movable jaw of the wrench.

In general, wrenches of this class, as previously constructed, have provided a one piece movable jaw, having a milled opening extending longitudinally therethrough and

fitting the shank 1, whereby to guide the
55 movement of said jaw relatively to the fixed jaw 2. The construction of such a movable jaw requires an extremely complicated and difficult casting or forging, not only due to the formation of the hole therein, but also to
60 the necessity of providing a suitable bearing for the screw that cooperates with the rack 3.

According to the present invention, we provide a movable jaw 4 which is preferably made from a stamping of the same thickness
65 as the shank 1. Said jaw 4, instead of having an offset portion that surrounds the shank 1, is made with a straight edge in opposition to the edge of shank 1 that is formed with the toothed rack 3. For slid-
70 ably securing the jaw 4 to the wrench, we provide a sheet metal yoke 5, substantially U-shaped in cross section, which embraces the jaw 4 on opposite sides thereof and fits over the shank 1, with the bottom of the U-
75 section in sliding engagement with the edge of shank 1 that is farthest from the toothed rack 3. A pair of rivets 6, 6, are employed to firmly unite the yoke 5 with the jaw 4, so that when assembled, the movable or adjust-
80 able part of the wrench is constituted by two easily stamped out pieces of metal, rather than by the complicated and difficult forging now in ordinary use.

The adjustable portion of the wrench, carrying the jaw 4, is also, as usual, adapted to carry a screw 7 that co-operates with the toothed rack 3 on the shaft 1, and to this end the straight or inside edges of the jaw 4 proper, is suitably slotted to provide a space
85 for said screw, and the yoke 5, at the end thereof which embraces said jaws, is correspondingly bifurcated so as to expose said screw from the outside. The screw 7 is
90 journaled on a pin 8, the ends of which find bearing in a pair of guard plates 9, 9, that are interposed between the ends of the screw 7 and the sides of the slot in the jaw 4. Said
95 guard plates 9, 9, are constituted by thin metallic stampings of generally oval shape, as shown in Fig. 4, being formed with slots 10, 10, at their opposite ends, to embrace respectively the shank 1 and the jaw 4. In this way, the pivot pin 8 of the screw 7 is fixed with respect to the movable jaw 4, and
105 furthermore, because of the extension of said guard plates beyond the periphery of screw 7, as shown in Fig. 4, said screw is

prevented from being accidentally turned, when the wrench is laid down on the bench or floor. In other words, the screw 7 is always maintained by these guard plates 9, 9, out of contact with any supporting surfaces, and hence the possibility of any accidental disturbance of a given setting of the wrench is practically eliminated. In the form of device shown in Figs. 5 and 6, the omission of the guard plates above described makes necessary the provision of other means for supporting the pivot pin 8' of the screw 7. In this form of wrench the jaw 4' is of substantially the same construction as the jaw 4 of the first described form, except that the slot or opening that receives the screw 7 is provided in its sides with shallow milled recesses that receive the end of pin 8', as shown in Fig. 6. As also shown in Fig. 6 the yoke 5' that is riveted as above described, to the jaw 4', is so disposed as to overlap said milled slots 11, 11, whereby to prevent sidewise movement of pin 8', the ends of the latter being thus received in the square recesses that are provided when the jaw 4' and yoke 5' are secured together by the rivets 6.

The assemblage and operation of the improved construction will be apparent to those skilled in the art to which the invention relates, it being clear that in each case the screw 7 and its pivot pin are set in place before the two parts of the movable portion of the wrench are joined together by the rivets 6.

In both cases the screw 7 becomes an inseparable and non-removable part of the movable jaw as soon as the rivets 6 are set, whereas in previous devices of this class, the adjusting screws are liable to be lost, when their pivot pins become loosened through continued use.

We claim,

1. In a wrench, a movable jaw provided with an open slot, a screw freely insertable in said slot, and a U-shaped member, the sides of which are bifurcated to permit the passage of the said screw when the U-shaped member is slipped over the jaw.

2. In a wrench, a movable jaw provided with an open slot, a screw freely insertable in said slot, and a U-shaped member, the sides of which are bifurcated to permit the passage of the said screw when the U-shaped member is slipped over the jaw, other por-

tions of the arms serving to hold the screw in position in the slots.

3. In a wrench, a movable jaw provided with an open slot, a screw freely insertable in said slot, and a U-shaped member embracing said jaw, the sides of said U-shaped member being bifurcated to permit the passage of said screw and being joined to said jaw for retaining said screw in position.

4. In a wrench, a movable jaw comprising two bifurcated members joined together, the arms of said members being in register, a screw for moving said jaw, and a guard plate for rotatably supporting said screw and having a portion projecting beyond the periphery of said screw, the said screw and the said plate being non-removably positioned between the arms of said members by the joining thereof.

5. In a wrench, a movable jaw comprising two bifurcated members joined together, the arms of said members being in register, a screw for moving said jaw, and a guard plate for rotatably supporting said screw between the arms of said members and for preventing accidental turning of said screw when placed on a flat surface, the said screw and the said plate being non-removably positioned between the arms of said members by the joining thereof.

6. In a wrench, a movable jaw provided with an open slot, a pair of plates located in said slot, a screw rotatably supported between said plates, and a U-shaped member embracing said jaw, the arms of said member being provided with open slots to receive said screw and plates and being joined to said jaw for retaining said screw and plates in position.

7. In a wrench, a movable jaw provided with an open slot, a pair of plates located in said slot, a screw rotatably supported between said plates, and a U-shaped member embracing said jaw for holding said screw and plates in said slot, portions of said plates extending beyond the periphery of said screw to prevent accidental turning thereof.

Dated this third day of May, 1919.

JOSEPH F. OLIVER.

JOSEPH P. FLEMING.

Witnesses:

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PENELOPE COMBERBACH.