Nov. 21, 1933. F. DIXON 1,936,352

IMMOVABLE JAW WRENCH

Filed April 11, 1933

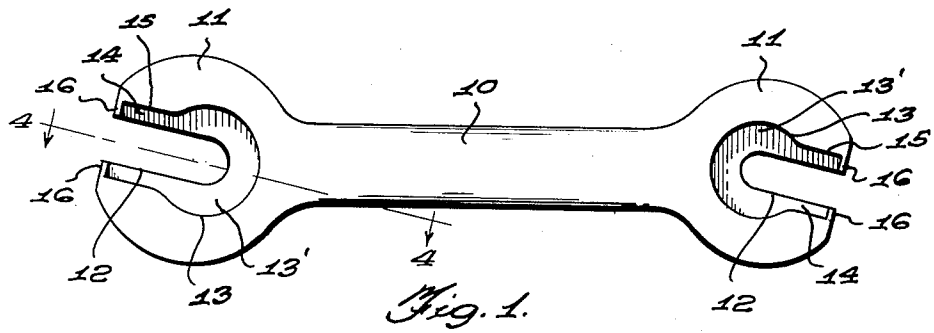

Fig. 1.

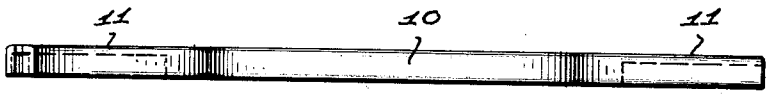

Fig. 2.

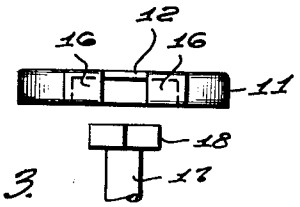

Fig. 3.

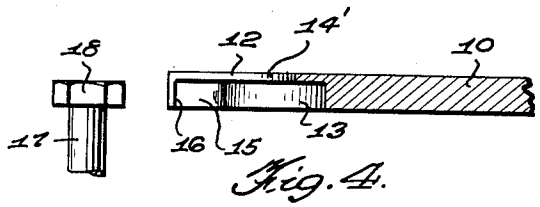

Fig. 4.

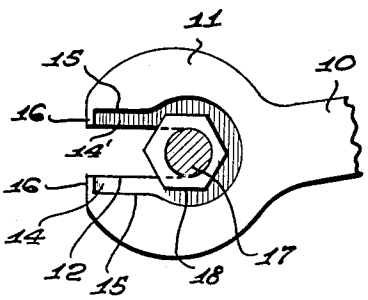

Fig. 5.

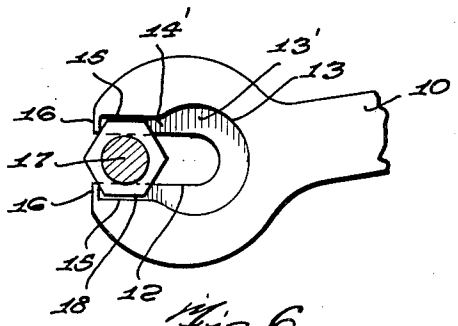

Fig. 6.

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Patented Nov. 21, 1933 1,936,352

UNITED STATES PATENT OFFICE

1,936,352

IMMOVABLE JAW WRENCH

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Application April 11, 1933. Serial No. 665,605

2 Claims. (Cl. 81—119)

My invention relates to improvements in wrenches of the type which embody immovable jaws.

An important object of the invention is to provide a wrench of the above-mentioned character, which may be employed to turn work having flats or facets, without removing the same from the work.

A further object of the invention is to provide a wrench of the above-mentioned character, which is reciprocated during its manipulation, in the performance of its work.

A further object of the invention is to provide a wrench of the above-mentioned character, so constructed that the wrench is forced forwardly when it is desired to turn the wrench with respect to the work and moved rearwardly for locking engagement with the work, thus rendering it remote that the wrench will accidentally separate from the work.

A further object of the invention is to provide a wrench of the above-mentioned character, which is extremely simple in construction, cheap to manufacture, and highly convenient in use.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawing, forming a part of this specification, in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a bottom plan view of a wrench embodying my invention,

Figure 2 is a side elevation of the same,

Figure 3 is an end elevation of the same,

Figure 4 is a longitudinal section taken on line 4—4 of Figure 1,

Figure 5 is a bottom plan view of the wrench, parts broken away, showing the work within the enlarged recess portion, and,

Figure 6 is a similar view showing the work within the reduced recess portion.

In the drawing, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates the lever-handle of the wrench, preferably provided at each end with a head 11, preferably formed integral therewith. This head is provided with an elongated opening or slot 12, which extends through the forward end of the head, and may receive a rod or bolt. Upon one face, the head 11 is provided with a recess 13' embodying an enlarged preferably circularly curved portion 13, and an elongated portion 14, the walls 15 of which are parallel and constitute immovable jaws to grip the flats or facets of the work. The jaws 15 are parallel, as stated, and lead into the enlarged circular portion 13, at a point inwardly of the maximum circumferential points of the portions 13, whereby the recess 13 projects laterally beyond the recess 14 upon both sides thereof. The jaws 15 are not only parallel but are parallel with the side walls of the slot 12, and the central longitudinal axis of this slot passes substantially through the center of the circularly curved recess 13, as shown. It is thus seen that the walls of the slot 12 constitute a straight line guide when receiving the bolt, whereby the wrench may be rapidly shifted longitudinally to alternately bring the nut within the circularly curved recess 13 and between the jaws 15. Stop elements or lips 16 are also provided upon the same face of the head with the recess 13.

The numeral 17 designates the work which may be a nut or the head of a bolt, or the like, having flats or facets 18.

Since the recess 13' is formed upon one side only of the head, a marginal flange 14' is afforded, which prevents the work 17 from passing through the recess, when the head is applied to the work. This flange also serves to guide the head upon the work, during the reciprocatory movement of the head.

The operation of the wrench is as follows:

The head 11, with the recess 13 arranged lowermost, is placed upon or over the work 17, the work passing into the enlarged recess portion 13. The lever-handle 10 is now drawn rearwardly with respect to the work, so that the work passes into the recess portion 14, and the flats 18 engage with the parallel jaws 15, the stops or lips 16 limiting the rearward movement of the head 11, so that the head 11 will not be separated from the work. The lever-handle 10 may now be turned in either direction, and when it is desired to take a new hold upon the work, the lever-handle 10 is shifted forwardly with respect to the work, again bringing the work into the enlarged recess portion 13. When the work is in this recess, the head 11 may be freely turned in either direction, without separating from the work. When the lever-handle has been shifted to the selected angular position, it is again shifted rearwardly, and the work will be engaged between the jaws 15 for further turning movement.

While I have shown the lever-handle as provided with a head 11, at both ends, the invention is, of course, not restricted to this arrangement, as satisfactory results may be obtained by having the head at only one end of the lever-

handle. Where two heads 11 are provided, the work-engaging means are of different sizes, as is obvious. It is also preferred that the enlarged portion of the recess be disposed at the rear of the small portion of the recess, but the invention is not necessarily restricted to this feature, as these recesses may be reversed, and some degree of success obtained. It is preferred, however, that the enlarged portion of the recess be arranged rearwardly, as it will more readily prevent the separation of the head and work when the head is freed from locking engagement with the work.

It is to be understood that the form of my invention herewith shown and described, is to be taken as the preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having fully described my invention, what I claim is:

1. A wrench comprising a lever-handle, and a head secured to one end of the handle, said head having a substantially straight slot formed therein which extends through the free edge of the head, said slot having substantially parallel side walls, said head also having a recess formed upon one side thereof and in communication with the slot, said recess comprising an inner curved recess portion and an outer substantially straight recess portion, the substantially straight recess portion having substantially parallel walls constituting nut-engaging jaws which are parallel with the side walls of the slot, the nut-engaging jaws and the wall of the curved recess being spaced outwardly from the walls of the slot, said slot having its central longitudinal axis passing substantially through the center of the curved recess, the side walls of the slot extending from the center of the curved recess portion to the outer end of the straight recess portion, whereby said side walls constitute a straight line guide means for the bolt, and the wrench may be rapidly reciprocated upon the bolt to alternately bring the nut into the curved and straight recess portions.

2. A wrench comprising a lever-handle, and a head secured to one end of the handle, said head having a substantially straight slot formed therein which extends through the free edge of the head, said slot having substantially parallel side walls, said head also having a recess formed upon one side thereof and in communication with the slot, said recess comprising an inner curved recess portion and an outer substantially straight recess portion, the substantially straight recess portion having substantially parallel walls constituting nut-engaging jaws which are parallel with the side walls of the slot, the nut-engaging jaws and the wall of the curved recess being spaced outwardly from the walls of the slot, said slot having its central longitudinal axis passing substantially through the center of the curved recess, the side walls of the slot extending from the center of the curved recess portion to the outer end of the straight recess portion, whereby said side walls constitute a straight line guide means for the bolt, and the wrench may be rapidly reciprocated upon the bolt to alternately bring the nut into the curved and straight recess portions, and a stop element carried by one jaw at its free end to prevent the nut from passing from between the free ends of the jaws.

FATE DIXON.