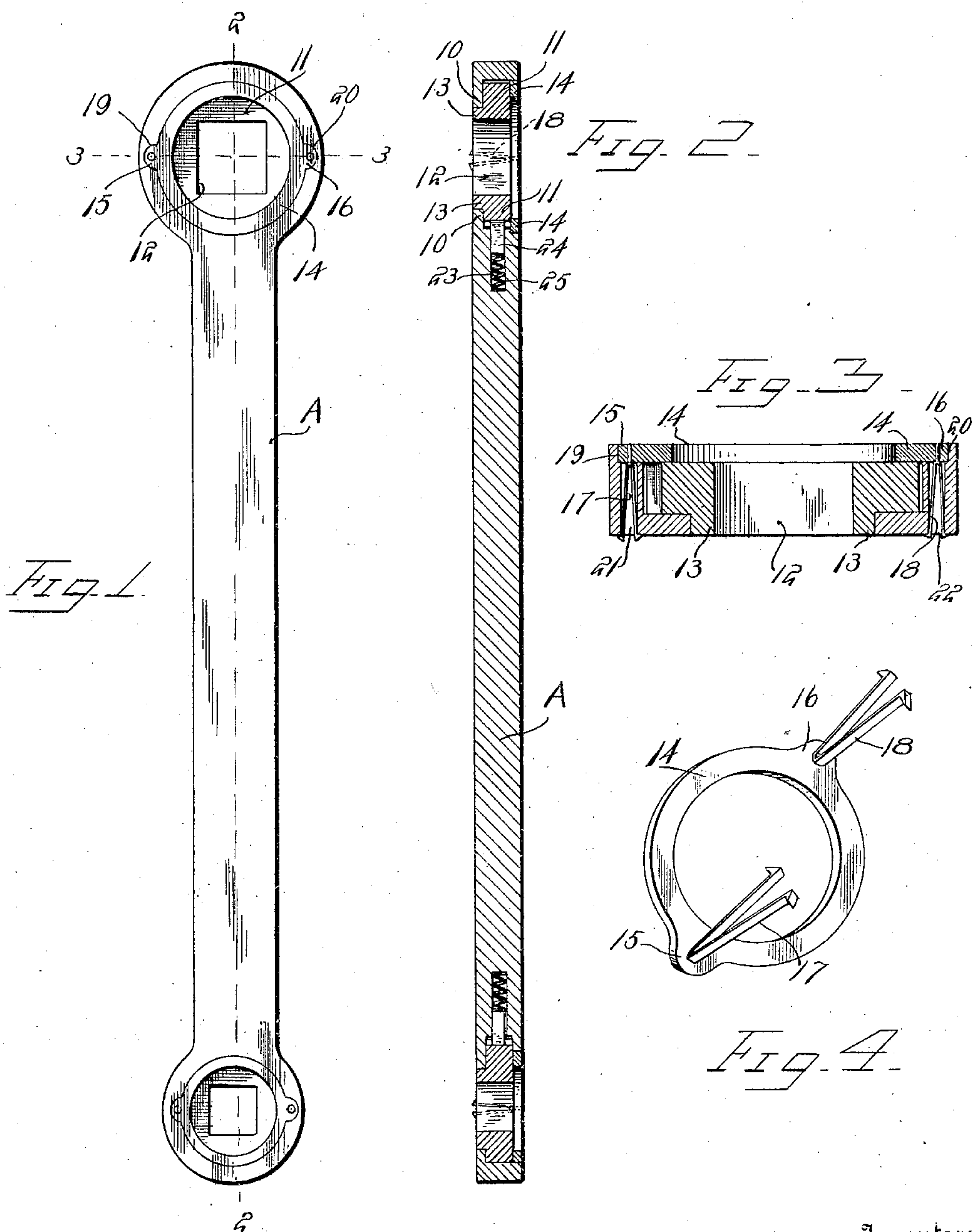


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WRENCH.
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UNITED STATES PATENT OFFICE.

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WRENCH.

966,130.

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To all whom it may concern:

Be it known that I, WILLIE C. SCHNEIDER, a citizen of the United States, residing at Verdon, in the county of Richardson, State of Nebraska, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to wrenches and particularly to that type which embodies as a component part of their structure a ratchet mechanism to enable same to be employed for turning nuts or bolts in places offering but little movement of the handle thereof.

The object of the invention resides in the production of a wrench of the character named which will be simple in construction, efficient in use and comparatively inexpensive to manufacture and which includes an improved form of locking plate for securing the ratchet wheel in the head thereof.

With these and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully described and set forth in the claims.

In describing the invention in detail reference will be had to the accompanying drawings in which like characters of reference denote corresponding parts in the several views, and in which,

Figure 1 is a side elevation of a wrench constructed in accordance with the invention; Fig. 2, a section on the line 2—2 of Fig. 1; Fig. 3, a section on the line 3—3 of Fig. 1; and, Fig. 4, a detail perspective view of the locking plate for securing the ratchet wheel in the rotary head.

Referring to the drawings, A represents the handle of the wrench, each end of which is enlarged and bored transversely to form a head for a ratchet wheel. As the mechanisms mounted in the head at each end of the handle are identical in every respect, only one of same will be described in detail, it being understood that they are of different sizes in order to more readily accommodate a single wrench for a varying character of work. The bore through the enlarged end of the handle A is provided at one termination with an inwardly extending flange 10. A ratchet wheel 11 has formed

centrally therethrough a squared aperture 12 and is provided on one side with a projecting annular portion 13 surrounding said squared aperture. Said ratchet wheel 11 is disposed in the bore through the enlarged end of the handle A and has one face abutting against the flange 10 and the projecting annular portion extending completely through said bore with its outer end in registration with the corresponding face of the enlarged end of the handle. Said ratchet wheel 11 is of a thickness somewhat less than the length of the bore through the enlarged end of the handle and is adapted to be locked in said bore through the medium of a locking ring 14 which is provided with diametrically opposite projecting ears 15 and 16 carrying the spring clips 17 and 18 respectively.

Formed in the face of the enlarged end of the handle A on diametrically opposite sides of the bore therethrough are the recesses 19 and 20 corresponding in shape to the ears 15 and 16 of the locking ring 14 and adapted to receive said ears so that the outer face of said ring when said ears are disposed in said recesses will register with the outer face of the enlarged end of the handle A. Passing transversely through the enlarged head of the handle A and opening into the recesses 19 and 20 are the apertures 21 and 22 which are adapted to receive the spring clips 17 and 18 respectively when the ring 14 is mounted in place for the purpose of securing the ratchet wheel 11 in the head of the wrench. The spring clips 17 and 18 are of the diverging two-arm type provided at their terminals with laterally extending portions so that after the ends of said clips have passed entirely through the apertures 21 and 22 the arms of each clip will expand and thus lock the plate 14 against displacement by reason of the engagement of the laterally bent portions of the arms of the clips with the opposite face of the enlarged head of the handle.

The handle A is provided with a longitudinal socket 23 which opens into the bore in the enlarged head of the handle and a pawl 24 is mounted in said socket and a spring 25 is disposed between the rear end of said pawl and the rear wall of the socket whereby said pawl is constantly forced outward into engagement with the periphery of the ratchet wheel 11.

By this construction it will be apparent

that a movement of the handle A in one direction will effect a simultaneous movement of the ratchet wheel therewith, while a movement of the handle in the opposite
5 direction will be without effect on said ratchet wheel, thus enabling a nut or other object to be turned continuously in one direction by short oscillations of the handle of the wrench without detaching the wrench
10 from the work.

What is claimed is:

1. A wrench comprising a handle portion provided with an annular head on one end, said head having an inwardly projecting
15 flange, and being further provided with apertures extending therethrough, a ratchet wheel having a work engaging aperture therein and disposed in the head with one side thereof abutting said flange, a pawl
20 mounted in said handle for operative engagement with said ratchet wheel, and a locking ring disposed against the other side of said ratchet wheel for securing the same in the head, said locking ring having V-
25 shaped springs attached thereto and extending through the apertures of the head, the said springs having outstanding projections on their outer sides engaging the said head and locking said ratchet wheel in place.

2. A wrench comprising a handle portion 30 provided with a head on one end having a central bore therethrough and a plurality of apertures disposed around said bore, a flange projecting inwardly of the bore at one end thereof, a ratchet wheel having a work en- 35 gaging aperture therein disposed in the bore of the head with one side thereof abutting said flange, a pawl mounted in said handle for operative engagement with the ratchet wheel and a locking ring disposed against 40 the other side of said ratchet wheel, said locking ring having a plurality of spring clips secured thereto adapted to be inserted through the apertures disposed around the bore of the head, said clips each comprising 45 a pair of spring arms having outwardly extending lips at their terminals adapted to engage one side of the head when said clips have been inserted therethrough to detach- 50 ably secure the locking ring to the head and thereby hold the ratchet wheel in place.

In testimony whereof, I affix my signature, in presence of two witnesses.

WILLIE C. SCHNEIDER.

Witnesses:

C. WEAR,
E. E. EWING.