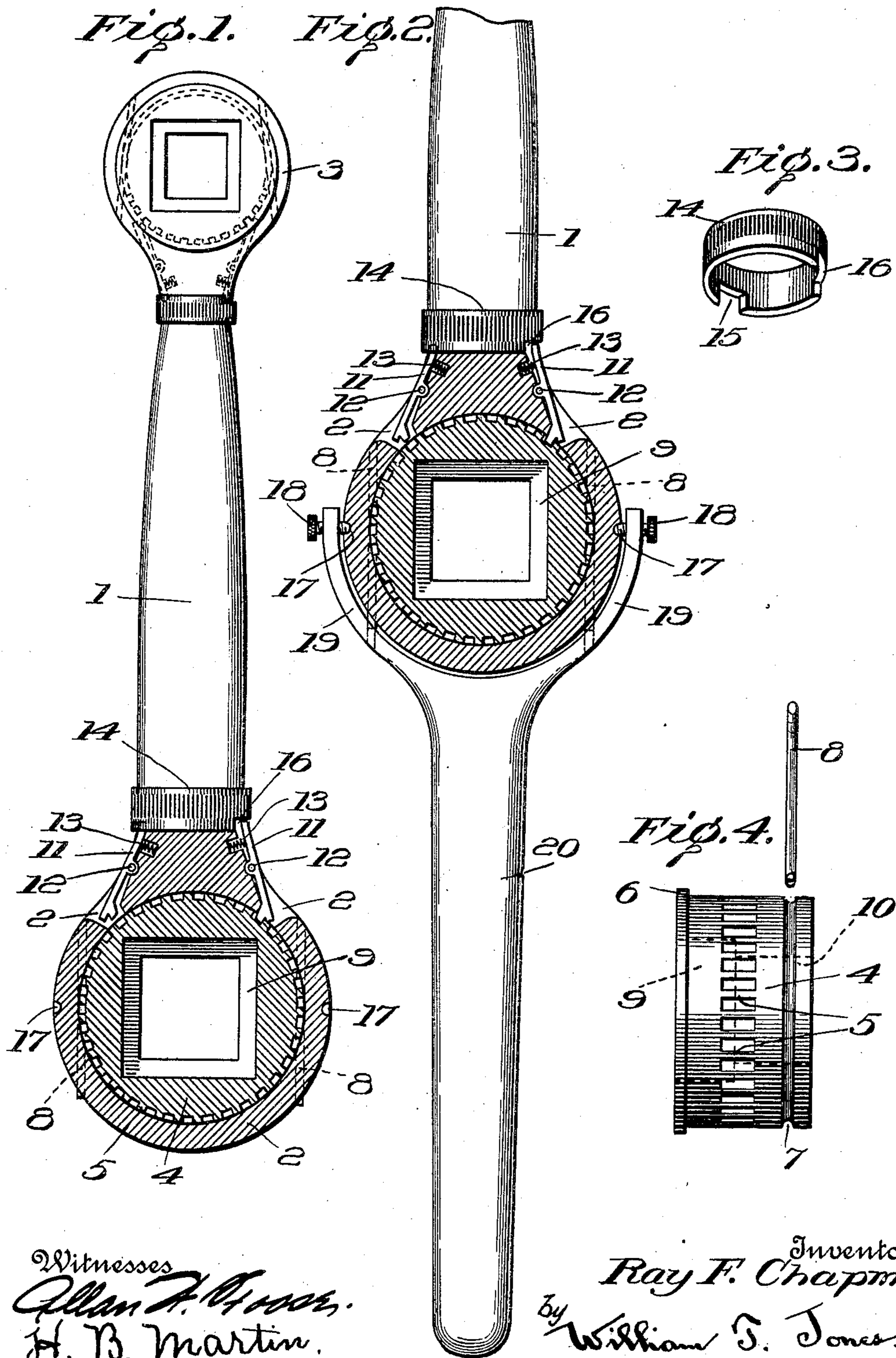


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 RATCHET WRENCH.
 APPLICATION FILED AUG. 7, 1908.

934,503.

Patented Sept. 21, 1909.



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RATCHET-WRENCH.

934,503.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed August 7, 1908. Serial No. 447,493.

To all whom it may concern:

Be it known that I, RAY F. CHAPMAN, a citizen of the United States, residing at Content, in the Province of Alberta, in Canada, have invented certain new and useful Improvements in Ratchet-Wrenches, of which the following is a specification.

This invention relates to ratchet wrenches, and one of the principal objects thereof is to provide a simple and efficient means for turning nuts of different sizes without adjustment of the wrench.

Another object of the invention is to provide means whereby nuts of varying sizes may be manipulated upon bolts, and to provide means whereby the bolts may extend through the wrench without interfering with the turning of the nut.

Another object sought by my invention is the provision of a reversible ratchet wrench in which means are provided for engagement with nuts of different sizes without adjustment of the nut holding means, and to provide means for throwing into and out of operation the pawls for engaging the ratchet part of the wrench.

Still another object contemplated by my invention is to furnish means whereby an auxiliary handle may be connected to the wrench proper to facilitate screw thread tapping and other similar operations.

To the accomplishment of the recited objects, and others coördinate therewith, the preferred embodiment of my invention resides in that construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and embraced within the scope of the appended claims.

In said drawings:—Figure I is an elevation of the wrench, the lower enlarged head portion being shown in section. Fig. II is an elevation of one terminal of the wrench in cross section, showing the manner of attaching the auxiliary handle thereto. Fig. III is a detail perspective view of the adjusting ring, and Fig. IV is an elevation of the nut holder.

Similar reference characters indicate corresponding parts throughout the several views.

Referring to the accompanying drawings for a more particular description of my invention, the numeral 1 designates the handle which is terminally enlarged to form heads at 2 and 3, the latter portion being slightly more reduced in size than the former por-

tion. Otherwise, the terminals and appurtenances are substantially identical in arrangement and construction, and it is, therefore, only deemed necessary to describe one of these terminals. The lower head (2) is substantially circular shaped and is provided with a bore which is adapted to receive a rotatable nut holder (4). As exhibited in Fig. IV of the drawings, the nut holder (4) is provided medially thereof on its periphery with ratchet teeth (5) and on one side with an annular flange (6) which is adapted to engage the outer portion of the head (2), the other side of the nut holder having a circumferentially extending groove or depression (7) which is designed to be engaged by the pins (8) on opposite sides of the head portion. Furthermore, it will be noted, as indicated by dotted lines in Fig. IV, that the nut receiving depressions (9) and (10) are of different sizes, the same principle being maintained in the other head of the wrench. Adjacent the bottom of the head (2) and on opposite sides thereof, are pivotally mounted pawls (11), as at 12, the same being actuated by the spring detents (13) which are likewise seated at the base portion of the head (2). The upper distal ends of the pawls (11) are arranged coincident with the ratchet teeth (5), and the lower distal ends thereof are adapted to be engaged by the ring escapement device (14) being cut out or mutilated, as at 15 and 16. Exteriorly of the enlarged head (2), at diametrically opposite points, are arranged depressions (17) which are adapted to receive the engaging ends of the screws (18) of the bifurcated terminals (19) of the auxiliary handle portion (20). In this connection it will be observed that the pins (8) extend beyond the periphery of the head (2) and engage apertures at approximately the central portions of the arms (19), thus serving a dual capacity in securing the rotatable nut holder and preventing vertical oscillations of the auxiliary handle with respect to the head.

When it is desired to adjust a nut upon a bolt or remove the nut therefrom, the wrench head is placed over the nut to be engaged by the corresponding depression (10) or (9) of the nut receiving member (4), one of the pawls (11) being disconnected from the ratchet teeth (5) by rotating the escapement ring (14) until the inner side thereof engages the upper distal end of said pawl, and simultaneously and in proper sequence

the upper terminal portion of the other pawl will be disengaged, due to the registration of one of the cut out portions (15) or (16) of the escapement ring and the action of the spring detent (13). When the wrench is to be reversed the opposite pawl is released and the other pawl is engaged. It frequently happens that a change in the size of the nut receiving depressions is required, and to provide for this contingency I have mounted the said nut holder (4) in detachable relation with the head portion (2), the latter portions being held together by the pins (8) which can obviously be removed at will. Another salient feature of my invention is the employment of the auxiliary handle (20) conjunctively with the head portion (2). The smaller head portion (3) on the opposite terminal of the handle (1) serves to accommodate a nut holder with nut receiving depressions that are smaller than the depressions in the nut holder mounted on the opposite end of the handle and, while ordinarily the two head portions with the nut receiving members may be applied to any work, as hereinbefore stated, if it is found that other sizes of nut holding members are required the same can be removed, and others substituted therefor in an instant's notice.

It should be understood that in its broader aspects my invention comprehends the employment not only of the various means described, but of equivalent means for performing the recited functions.

While the arrangement shown is thought, at the present time, to be preferable, it is desired to reserve the right to effect such modifications and variations thereof as may come fairly within the scope of the appended claims.

What I claim as new is:—

1. A ratchet wrench comprising a handle, a head, a rotatable nut holding member having ratchet teeth, an auxiliary handle adapted to be mounted on said head, means carried by the latter for detachably securing said nut holding member and preventing oscillations of the said auxiliary handle with respect to the head, pawls carried by the wrench head, and means associated therewith for throwing said pawls into and out of engagement with the ratchet teeth.

2. A ratchet wrench comprising a handle, a head, a rotatable nut holding member having ratchet teeth, an auxiliary handle adapted to be mounted on said head, pins carried by the latter for detachably securing said

nut holding member and preventing oscillations of the said auxiliary handle with respect to the head, pawls carried by the wrench head, and means associated therewith for throwing said pawls into and out of engagement with the ratchet teeth.

3. A ratchet wrench comprising a handle, a head, a rotatable nut holding member having a groove and ratchet teeth, an auxiliary handle adapted to be mounted on said head and having apertures therein, pins carried by the head for removably engaging the groove and the apertures, pawls carried by the wrench head, and means associated therewith for throwing said pawls into and out of engagement with the ratchet teeth.

4. A ratchet wrench comprising a handle, a head, a rotatable nut holding member having a circumferentially extending groove and ratchet teeth, said head having apertures extending therethrough at diametrically opposite points, said apertures being tangent and in juxtaposition to said groove, pins adapted to be detachably inserted through said apertures and groove and having their outer distal ends protruding beyond the periphery of said head, an auxiliary handle adapted to be secured to said head and having coöperation with the distal ends of said pins, pawls carried by the wrench head, and means associated therewith for throwing said pawls into or out of engagement with the ratchet teeth.

5. A ratchet wrench comprising a handle, a head, a rotatable nut holding member having a circumferentially extending groove and ratchet teeth, said head having apertures extending therethrough at diametrically opposite points, said apertures being tangent and in juxtaposition to said groove, pins adapted to be detachably inserted through said apertures and groove and having their outer distal ends protruding beyond the periphery of said head, an auxiliary handle having a bifurcated extremity secured to opposite sides of said wrench head and having apertures for the reception of the distal ends of said pins, pawls carried by the wrench head, and means associated therewith for throwing said pawls into or out of engagement with the ratchet teeth.

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

RAY F. CHAPMAN.

Witnesses:

CHARLES A. DAVIES,
T. Q. MOORE.