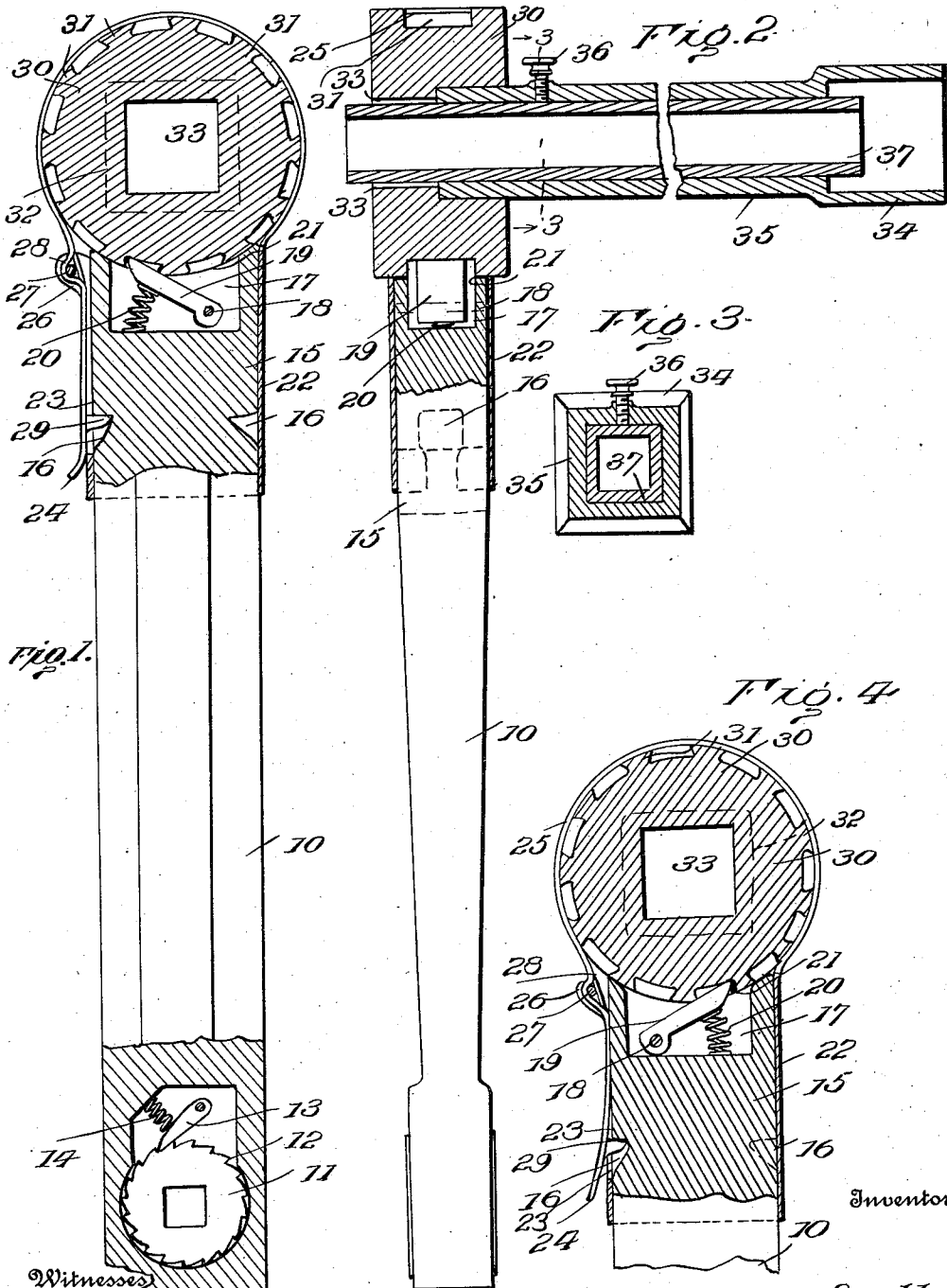


H. W. SCOTT.
WRENCH.

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Witnesses
W. K. Woodson

J. M. H. Fallin

Inventor

H. W. Scott

By

H. W. Scott, Attorneys.

UNITED STATES PATENT OFFICE.

HOMER W. SCOTT, OF SUGAR RUN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO
REED G. FRUTCHEY, OF LOPEZ, PENNSYLVANIA.

WRENCH.

1,010,188.

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To all whom it may concern:

Be it known that I, HOMER W. SCOTT, a citizen of the United States, residing at Sugar Run, in the county of Bradford and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to improvements in wrenches, and has for an object to produce a novel ratchet wrench in which but one pawl is employed and is adapted to be so adjusted as to admit of the right and left hand operation of the wrench.

Another object of this invention is to provide a head carrying a rotary socket having teeth in its periphery, and a handle which is detachably inserted in the head and which carries a pawl in its inner end to engage against the teeth of the socket.

A further object of this invention is to provide the rotary socket with an adjustable extension adapted to engage over nuts, and other angular rotatable members, varying in size and located in confined places where it is impossible to operate the ordinary ratchet wrench.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a longitudinal central section through the improved wrench; Fig. 2 is an edge view of the wrench, the inner end of the same being disclosed in section; Fig. 3 is a transverse section of the extension member of the wrench taken on the line 3—3 in the direction of the arrows of Fig. 2; and, Fig. 4 is a central section taken through the inner end of the wrench, showing the handle reversed within the head.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

Referring to the drawing the numeral 10 designates a handle in the outer end of which is disposed a rotary socket 11 having

teeth 12 in its periphery coöperating with a pawl 13 embedded in the outer end of the handle 10 and adapted to control the movement of the socket 11. The pawl 13 is held in engagement with the teeth 12 by a spring 14 interposed between the outer end of the pawl 13 and inner wall of the handle 10. The inner end of the handle 10 is enlarged and angularly formed, as at 15, the opposite edges thereof being provided with depressions 16 producing shoulders at their inner ends. The angular portion of the handle or shank 15 is formed with a pocket 17 opening through its inner end in which is pivoted upon a transverse pin 18 a pawl 19. The pawl 19 normally extends from the inner end of the shank 15 under the tension of a spring 20 interposed between the inner wall of the pocket 17 and the inner edge of the pawl 19. The inner end of the shank 15 terminates in arcuate edges 21 for a purpose hereinafter set forth. The handle 10 carries a detachable head 22 formed, preferably, from sheet metal bent into a substantially rectangular hollow member adapted to fit snugly over the shank 15. The upper edge of the head 22 is open, as at 23, to receive a lip 24 carried upon the free end of a band 25. The band 25 is preferably formed integral with the lower edge of the head 22 and is looped over the end of the head to bring the lip 24 within the opening 23. The sides of the head are provided with a pair of upstanding ears 26 carrying a pin 27 engaging transversely across the upper side of the band 25. The band 25 is provided with a struck up strap 28 registering with the pin 27 and engaging over the same for the purpose of holding the band in its looped position. The lip 24 is made from spring metal and yieldingly presses against the adjacent edge of the shank 15. A shoulder 29 is carried against the inner side of the lip 24 in registration with the depression 16 and is adapted to engage against the shoulder formed in the inner end of the depression to hold the head 22 upon the shank 15. The outer end of the head 22 is concaved to register with the inner end of the shank 15, the same receiving an enlarged rotary socket

30. The socket 30 is provided with an annular depression in its periphery to snugly receive the band 25 which supports and holds the socket 30 in position. The face
5 of the annular depression of the socket 30 is provided with spaced teeth 31 adapted to move against the outer end of the pawl 19 when the head 22 is rotated about the socket 30. The socket 30 is provided in one side
10 with an enlarged angular opening 32 extending halfway through the socket 30 and communicating with a reduced opening 33, of angular form.

This improved wrench is provided with
15 an extension member adapted for cooperation with the socket 30 to apply the wrench to nuts in confined places. An angular socket 34 of reduced length is carried upon the lower end of an angular sleeve 35 provided in one side with a set screw 36 en-
20 gaging through the wall thereof and against a telescopically arranged hollow shank 37.

In the operation of the improved wrench, the extension member is adjusted, as is dis-
25 closed in Fig. 2, to engage the angular socket 34 over a nut. When in this position the hollow shank 37 is moved a short distance out of the upper end of the sleeve 35 and held rigid in such position by the set
30 screw 36. The hollow shank 37 is of a size to engage through the reduced opening 33 of the rotary socket 30, the shank 37 extending through the enlarged angular opening 32 so as to position the upper end of
35 the angular sleeve 35 in the opening 32. The handle 10 is now applied to the head 22 by inserting the shank 15 in the head 22. When the shank 15 is inserted in the head the shoulder 29 travels over the adjacent
40 edge of the shank until it drops into the depression 16 when the head is held from detachment from the handle. The pawl 19 now engages against the teeth 31 to admit of the rotation of the socket 30 in one direction, as for instance, to the right. When it
45 is desired to reverse the rotation of the socket 30 and the extension member attached thereto, the lip 24 is raised from the head 22 to release the shoulder 29 from the depression 16 when the shank 15 is with-
50 drawn from the head 22. The handle 10 is now turned over to dispose the pawl 19 in the opposite direction when the shank 15 is again inserted in the head 22 and locked therein by the shoulder 29. As the pawl 19
55 now extends in the opposite direction it engages against the opposite sides of the teeth 31 and admits of the rotation of the socket 30 in but one direction, to the left, or oppo-
60 site to the direction as previously set forth.

When it is desired to apply the extension to a small nut, or angular member to be rotated, the set screw 36 is loosened and the hollow shank 37 is moved through the sleeve

35 projecting the lower end thereof below 65 the angular socket 34. The set screw 36 is now tightened to hold the hollow shank 37 in such adjusted position. The upper end of the sleeve 35 is now inserted in the enlarged opening 32 of the rotary socket 30, 70 when the handle 10 is operated as above set forth. It will be noted that the opposite ends of the sleeve 35 and angular socket 34, and the hollow shank 37 may vary in bore 75 so as to provide shanks of different sizes to accommodate practically all kinds of nuts to which the improved wrench is to be applied. It will of course be understood that the rotary socket 30 may be directly applied to nuts where access thereto can be 80 readily had with the wrench. The reduced socket 11 is adapted for application to small nuts and other angular objects which are to be rotated wherein the enlarged socket 30 is not employed. It is designed to have heads 85 22 carry rotary sockets 30 varying in size so as to adapt the wrench to all kinds of work.

Having thus described the invention, what is claimed is:

1. A wrench comprising a head, a toothed socket mounted for rotation in the head, and a reversible handle detachably engaging with the head and having a pawl in its inner end operable in one direction. 95

2. A wrench including a head, a rotary socket mounted in the head and having teeth in its periphery, and a reversible handle detachably engaging in the head and having a pawl upon its inner end extending 100 in one direction.

3. A wrench including a handle having a shank upon its inner end, a pawl mounted in the shank and extending from the end thereof, the shank being provided with de- 105 pressions in its opposite edges, a head snugly engaging over the shank and carrying a spring lip provided with a shoulder engaging in the depressions, and a rotary socket mounted in the head for engagement 110 against the pawl.

4. A wrench including a handle, a pawl mounted in one end of the handle, a head detachably engaging over the end of the handle, a rotary socket mounted in the head 115 and having teeth in its periphery engaging with the pawl, and fastening means carried by the head for engagement with the handle to hold the same in opposite positions to effect the right and left hand movement 120 of the socket.

5. A wrench including a head, a band carried by the head and looped from the outer end thereof, a rotary socket having an an- 125 nular depression receiving the band to hold the socket against the head and having teeth in the face of the depression, a spring lip carried upon the head and projecting into

one edge thereof and having an inwardly
extending shoulder, and a handle engaging
in the head and having depressions in its
opposite edges to receive the shoulder, and
5 a pawl extending from the inner end of the
handle and engaging against the teeth of
the rotary socket.

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

HOMER W. SCOTT. [L. s.]

Witnesses:

JOHN E. COYLE,
JOS. S. GAMBLE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."