Oct. 31, 1950 J. S. MARSHALL 2,528,068

NUT GRIPPING WRENCH

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Fig. 1

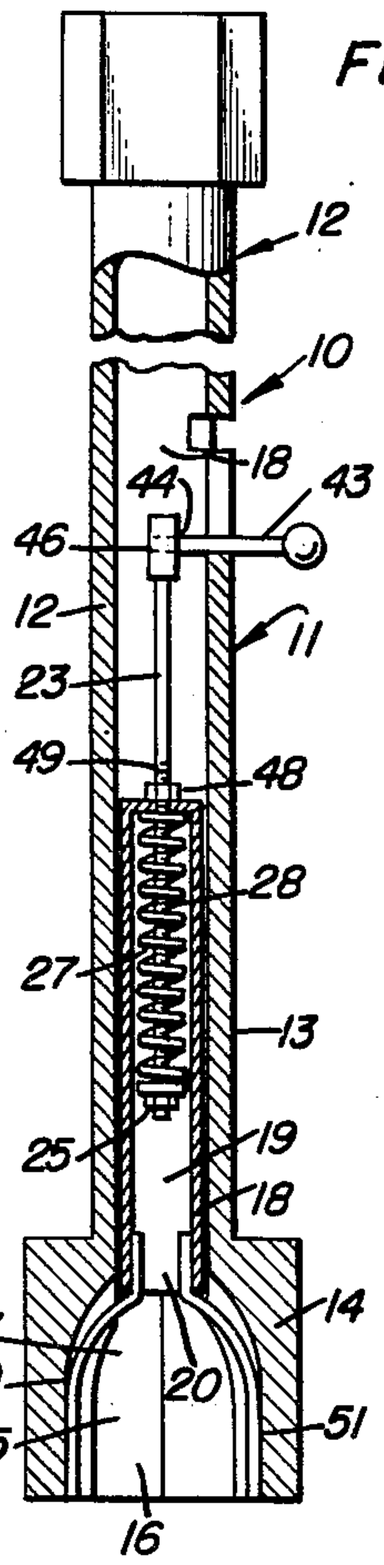


Fig. 2

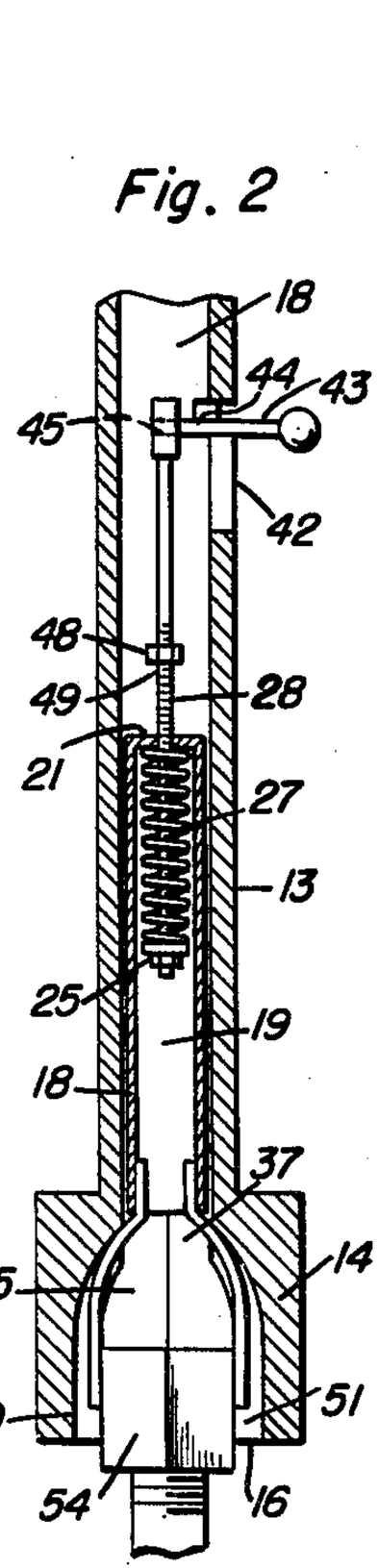
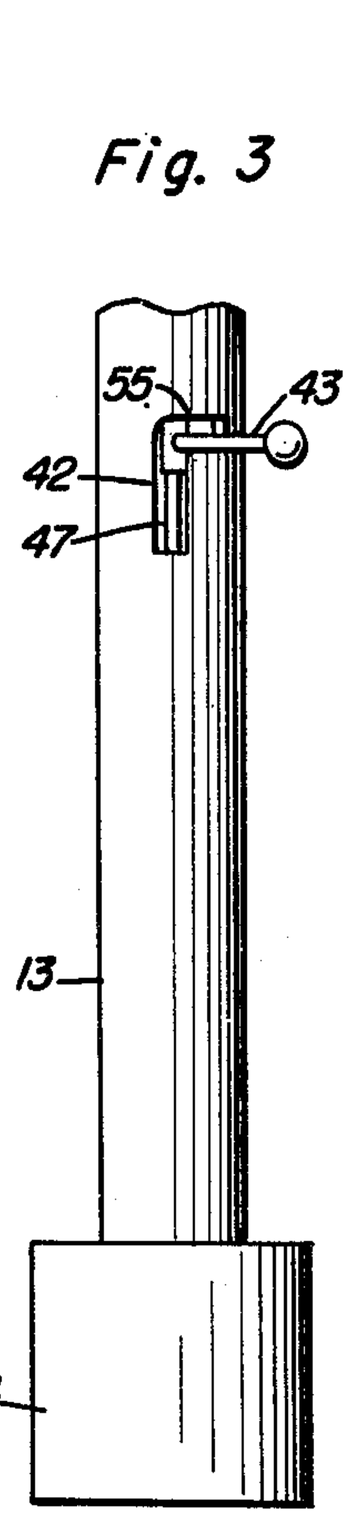


Fig. 3



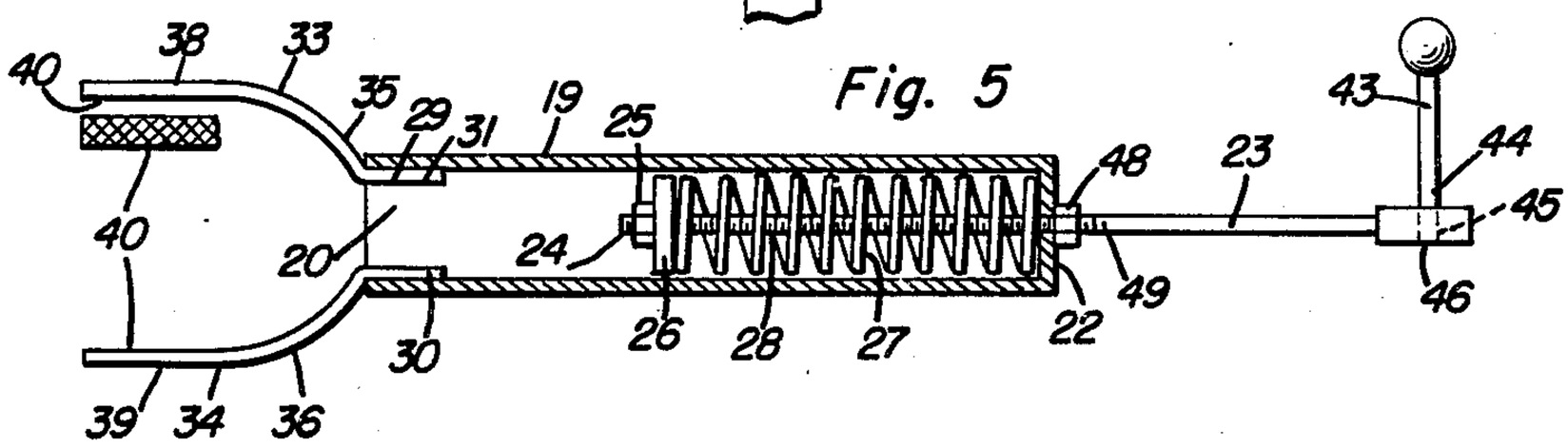


Fig. 5

Fig. 4

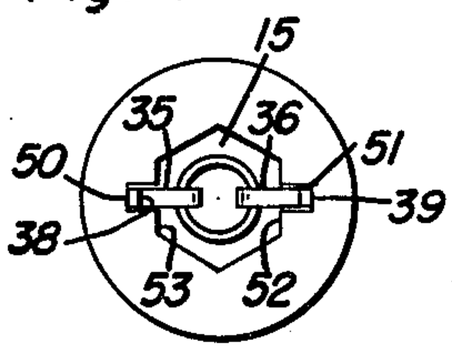
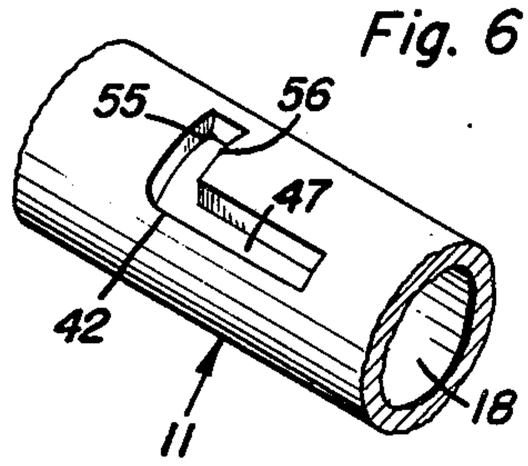


Fig. 6



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NUT GRIPPING WRENCH

John Stewart Marshall, Ipava, Ill.

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3 Claims. (Cl. 81—125)

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This invention relates to improvements in socket wrenches and has for its object to provide such a wrench having a nut grip therein.

Another object of this invention is to provide in a socket wrench spring actuated jaws for gripping a nut, or a bolt head.

A further object of my invention is to provide in a socket wrench a pair of gripping jaws adapted to be embedded in the walls of the wrench in order not to interfere with its operation as an ordinary socket wrench.

Other features and advantages will become more readily apparent from the following description and the accompanying illustrative drawings in which:

Figure 1 is a vertical sectional view of my improved wrench,

Figure 2 is a similar view, the parts being shown in changed position,

Figure 3 is an elevational view of the wrench,

Figure 4 is an end view of the wrench,

Figure 5 is a detail sectional elevation of a gripping device shown removed from the wrench, and

Figure 6 is a detail perspective view of a broken away section of a wrench shank.

In the accompanying drawings as above enumerated and in the following specification, like characters of reference indicate like parts throughout and in which 10 refers to my improved wrench as a whole and which consists of a socket wrench 11 comprising a shank 12, the lower portion 13 of which is tubular and the end 14 is enlarged to provide for the socket 15 the inner side walls 16 of which may be square or otherwise angularly formed, but in the instant showing hex-shaped at the outer end, tapering into an upper dome or conic form as indicated at 17, the extreme terminal of which converges into the longitudinal bore 18 of the said shank.

Slidably seated within the said bore 18 is a tube 19 open at its lower end 20, but being provided with a top wall 21 having a central bore 22 through which a rod 23 projects. The lower end 24 of said rod is screw-threaded and has a nut 25 threaded thereon to hold a washer 26 between which and the wall 21 a spring 27 is coiled around the inner portion 28 of the rod. Welded or fixed in any suitable manner to the inner opposing surfaces 29 and 30 of end 20 of the tube 19 are the parallel terminals 31 and 32 of a pair of gripping spring fingers 33 and 34 provided with arcuate shoulders 35 and 36, which conform to the upper surface 37 of said socket

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15. The lower parallel ends 38 and 39 of said fingers are provided with inner serrated gripping surfaces 40 and 41.

The tubular shank 13 is provided with a bayonet aperture 42 through which projects a handle 43 having its inner end 44 threaded into a screw-threaded bore 45 horizontally disposed in the enlarged head 46 of rod 23. When the rod is rotated by its crank handle 43, this permits said handle to drop into the vertical portion 47 of the slot 42. Through the action of spring 27, the tube 19 may be forced to its lowermost position by means of a nut 48 threaded on the upper threaded portion 49 of the rod, which nut engages the wall 21 and drives the tube down, carrying the fingers down with it and permitting them to flip back into vertical pockets 50 and 51 provided in the opposite wall surfaces 52 and 53 of the socket 15.

In operation, where it is desired to manipulate a nut or bolt in close quarters inconvenient for hand manipulation, the bolt head or nut 54 is placed in the socket 15 and the handle 43 drawn up and turned into the horizontal portion 55 of slot 42 where it will be held upon the shoulder 56 in raised position; the action will draw the fingers 35 and 36 into clamping engagement upon the member 54 due to drawing the spring fingers up into the inclining surface 37 of the socket 15. After the element 54 has been secured in position, the handle 43 is reverted to the slot portion 47, allowing the fingers 35 and 36 to drop back into the pockets as above explained and the further use of the device as an ordinary socket wrench. The slots 50 and 51 converge into the surface 37.

It is thought that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Changes in shape, size and rearrangement of details and parts such as come within the purview of the invention claimed may be resorted to, in actual practice, if desired.

Having now described my invention that which I claim as new and desire to procure by Letters Patent is:

1. A nut-gripping wrench including a socket with a dome-shaped portion having oppositely disposed vertical pockets in the inner walls thereof, a hollow shank portion on said socket extending outwardly from said dome-shaped portion, a tube reciprocable within said shank por-

tion, a rod axially slidably mounted in said tube and having one portion extending toward the socket and another portion extending through the end of the tube remote from said socket and having a handle portion on said another portion extending through an aperture in the wall of said shank portion, and nut-gripping spring jaws terminally secured to an end of said tube adjacent said dome-shaped portion and normally seating in said pockets, said jaws being collapsible to grip a nut within the socket when retracted into frictional engagement with said dome-shaped portion by means of said handle.

2. A nut-gripping wrench including a socket with a dome-shaped portion having oppositely disposed vertical pockets in the inner walls thereof, a hollow shank portion on said socket extending outwardly from said dome-shaped portion, a tube reciprocable within said shank, a rod axially slidably mounted in said tube and having one portion extending toward the socket and another portion extending through the end of the tube remote from said socket and having a handle portion on said another portion extending through an aperture in the wall of said shank, and nut-gripping spring jaws terminally secured to an end of said tube adjacent said dome-shaped portion and normally seating in said pockets, said jaws being collapsible to grip a nut within the socket when retracted into frictional engagement with said dome-shaped portion, said aperture being a bayonet slot to allow the locking of said jaws in nut-gripping position.

3. A nut-gripping wrench including a socket with a dome-shaped portion having oppositely

disposed vertical pockets in the inner walls thereof, a hollow shank portion on said socket extending outwardly from said dome-shaped portion, a tube reciprocable within said shank, a rod axially slidably mounted in said tube and having one portion extending toward the socket and another portion extending through the end of the tube remote from said socket and having a handle portion on said another portion extending through an aperture in the wall of said shank, and nut-gripping spring jaws terminally secured to an end of said tube adjacent said dome-shaped portion and normally seating in said pockets, said jaws being collapsible to grip a nut within the socket when retracted into frictional engagement with said dome, said aperture being a bayonet slot to allow the locking of said jaws in nut-gripping position, and a spring compressed between the end of said one portion of rod and the end of said tube remote from said jaws, whereby said jaws are constantly urged toward said dome-shaped portion of the socket.

JOHN STEWART MARSHALL.

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