No. 663,421. Patented Dec. 11, 1900.

J. B. DANIELS.

RATCHET WRENCH.

(Application filed Aug. 20, 1900.)

(No Model.)

Fig. 1.

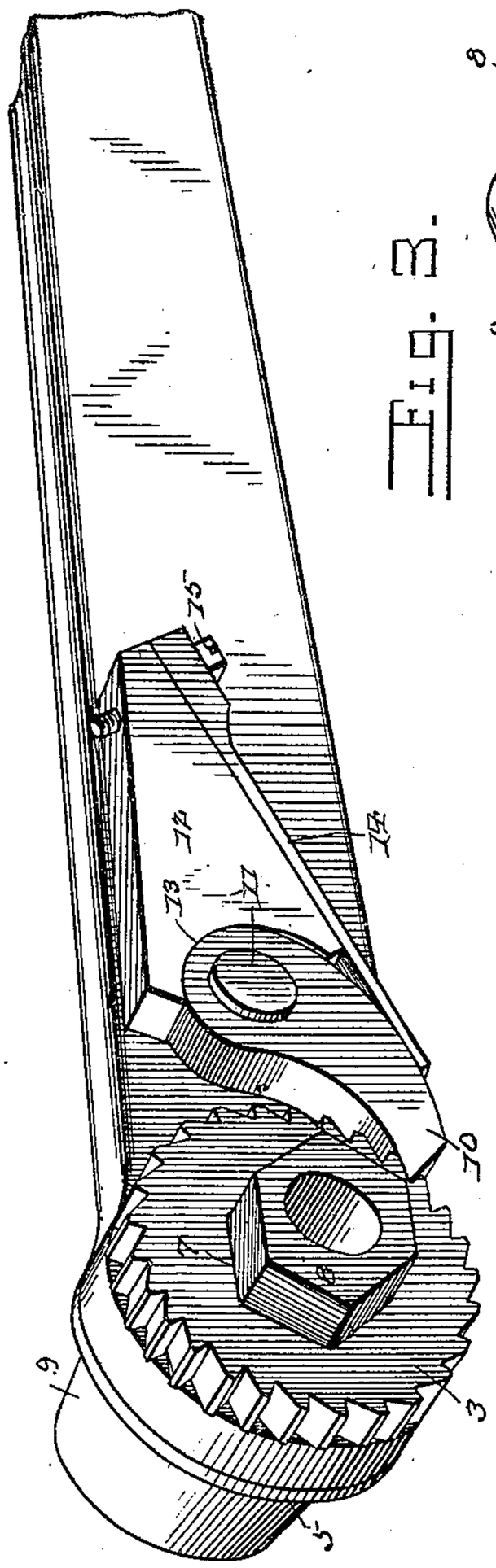


Fig. 3.

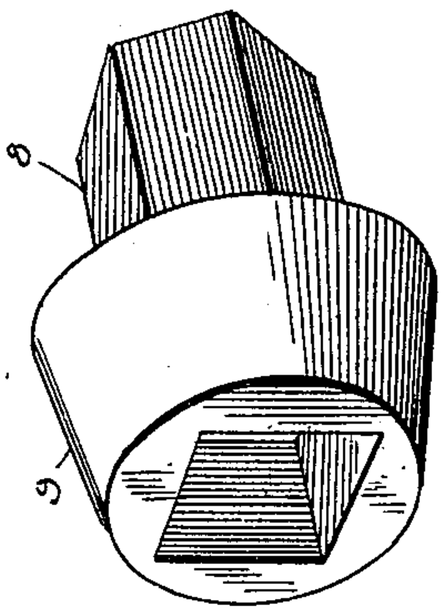
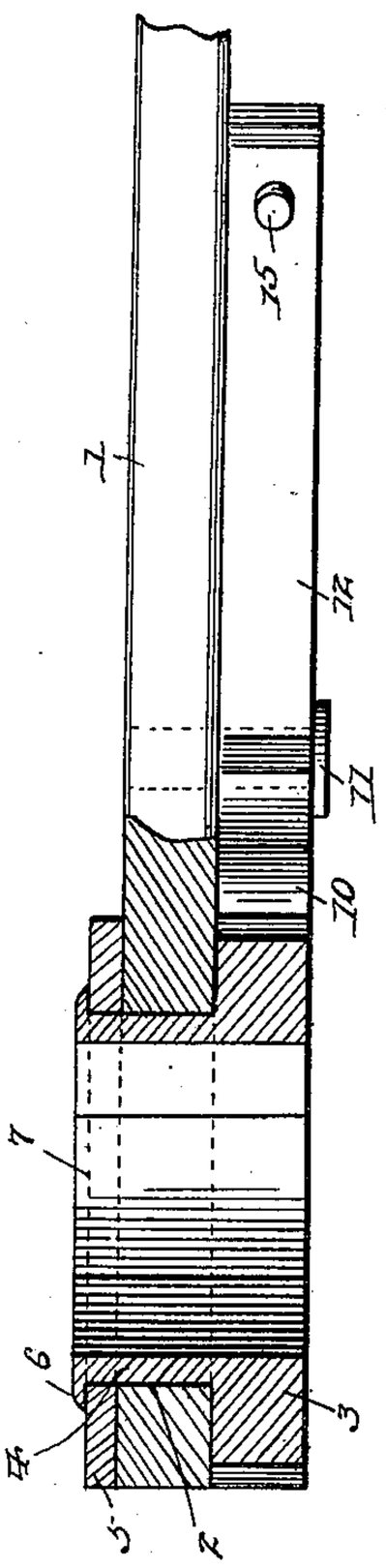


Fig. 2.



Witnesses
F. E. Alden.
H. B. Shepard.

J. B. Daniels Inventor
By C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

JOHN BERNARD DANIELS, OF BROWNSTOWN, WEST VIRGINIA, ASSIGNOR OF ONE-HALF TO JOHN W. ASHBAUGH, OF SAME PLACE.

RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 663,421, dated December 11, 1900.

Application filed August 20, 1900. Serial No. 27,484. (No model.)

To all whom it may concern:

Be it known that I, JOHN BERNARD DANIELS, a citizen of the United States, residing at Brownstown, in the county of Kanawha and State of West Virginia, have invented a new and useful Ratchet-Wrench, of which the following is a specification.

This invention relates to wrenches, and has for one object to provide an improved ratchet-wrench in which the parts thereof are compactly arranged and disposed so as not to hang in external objects and interfere with the convenient operation of the wrench. It is furthermore designed to provide an improved manner of mounting the ratchet-pawl, so as to relieve the pivot thereof of considerable strain, thereby rendering the wrench stronger and more durable.

With these objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a wrench constructed and arranged in accordance with the present invention. Fig. 2 is a sectional view thereof, taken through the rotatable head. Fig. 3 is a detail perspective view of the removable nut-socket.

Corresponding parts are designated by like characters of reference.

Referring to the drawings, 1 designates the handle of the wrench, one end of which is laterally enlarged and provided with a circular opening 2. A ratchet-disk 3 is placed flat against one side of the handle and has a cylindrical hub 4 projecting at one side only thereof and loosely fitted in the circular opening in the end of the handle. The outer end of this hub projects a suitable distance beyond the opposite side of the handle, and a ring or washer 5 snugly embraces this projecting portion of the hub, and the latter has its outer end upset against the outer face of the ring or washer, as indicated at 6 in Fig. 2 of the drawings, so as to connect the ring to the hub and form a flange therefor, which prevents endwise displacement of the ratchet-disk and also forms a swiveled connection between the latter and the handle. The ratchet-disk is also provided with a central angular opening 7, which extends through the hub and forms a seat for the reception of the angular stem or shank 8 of a nut-socket 9, whereby the latter is designed to turn with the ratchet-disk. In order that the wrench may be accommodated to nuts of different sizes, it is designed to provide a plurality of nut-sockets of different sizes, so that they may be fitted to the wrench as required.

A pawl 10 is mounted upon that side of the handle which carries the ratchet-disk and arranged to coöperate with the toothed periphery of the disk. The rear end of the pawl is rounded laterally or convexed and is also pivoted at its rear end by means of a pivot-pin 11. In rear of the pawl is a shoulder 12, which is fixedly carried by the handle and has its forward end provided with a concaved recess 13, forming a seat for the reception of the similarly convexed rear end of the pawl, whereby the shoulder forms a brace to relieve the pivot of the pawl of considerable strain. A leaf-spring 14 has its rear end removably secured to one longitudinal edge of the shoulder by means of a removable fastening 15, while its forward end projects beyond the forward end of the shoulder and bears against the pawl, so as to yieldingly hold the free end of the pawl in engagement with the ratchet-teeth of the disk.

It will be observed that the outer faces of the spring, the pawl, and the shoulder are all in substantially the same plane, so as to render the wrench free from projections which might hang in some external parts and interfere with the proper operation of the wrench; also, the shoulder 12 forms a means for bracing the pawl and furthermore serves for the mounting of the spring and is arranged so as to facilitate the application and removal of the pawl and the spring without removing the shoulder.

What is claimed is—

A ratchet-wrench, comprising a handle, a rotatable ratchet-disk carried thereby, a nut-socket carried by the disk, a pawl coöperating with the toothed periphery of the ratchet-disk, the rear end of the pawl being convexed laterally and pivotally connected to the handle, a shoulder carried by the handle and located at the rear end of the pawl, the forward end of the shoulder having a concaved recess forming a seat receiving the convexed end of the pawl, whereby the shoulder forms a brace for the pawl and relieves strain from the pivotal connection thereof, and a leaf-spring connected to one longitudinal edge of the shoulder, the free end of the spring projecting beyond the forward end of the shoulder and in engagement with the free portion of the pawl to yieldingly hold the latter in engagement with the toothed periphery of the ratchet-disk.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN BERNARD DANIELS.

Witnesses:

C. P. PEYTON,

S. M. PRICHARD.