W. H. TREISCH.

WRENCH.

APPLICATION FILED NOV. 5, 1920.

1,431,064. Patented Oct. 3, 1922.

Fig. 1.

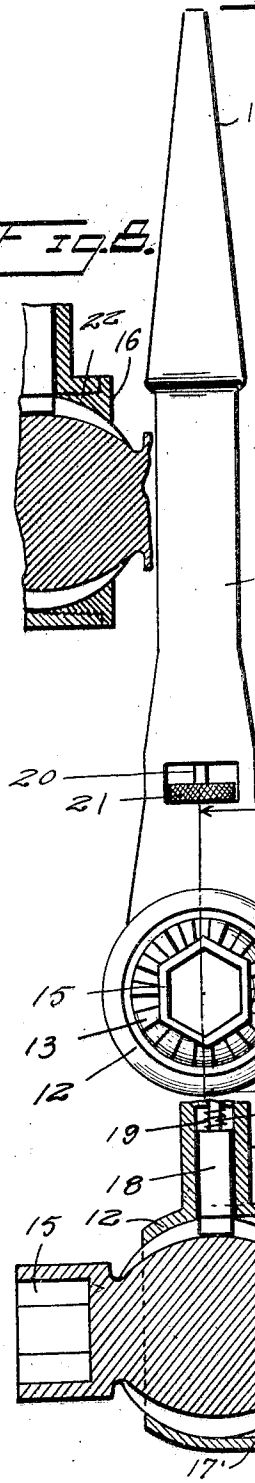


Fig. 2.

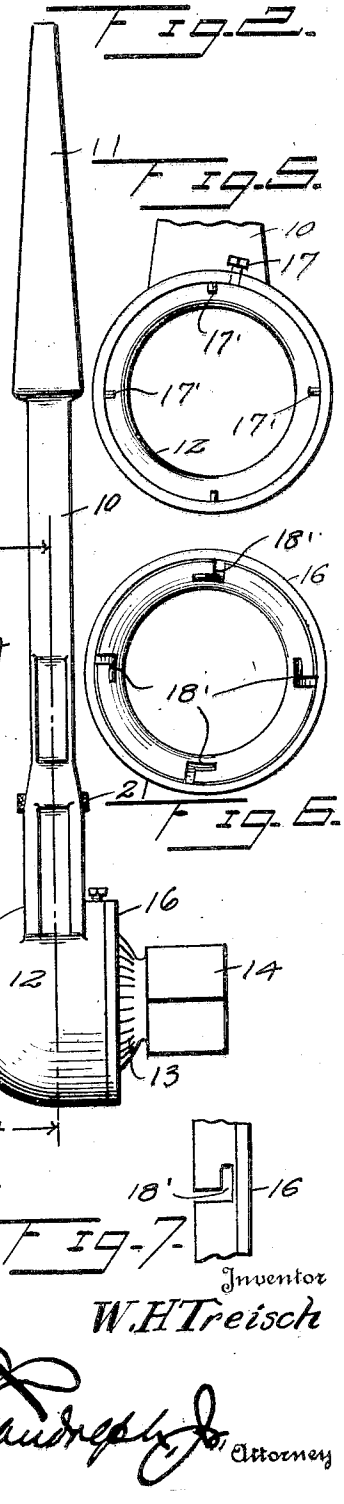


Fig. 3.

Fig. 4.

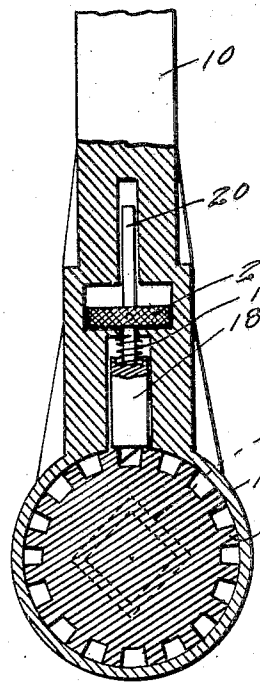


Fig. 5.

Fig. 6.

Fig. 7.

Inventor

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By A. Landgraf Jr. Attorney

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UNITED STATES PATENT OFFICE.

WILLIAM H. TREISCH, OF SEATTLE, WASHINGTON, ASSIGNOR OF ONE-THIRD TO STANLEY E. SUNSKI AND ONE-THIRD TO JOSEPH GERRICK, BOTH OF SEATTLE, WASHINGTON.

WRENCH.

Application filed November 5, 1920. Serial No. 421,956.

To all whom it may concern:

Be it known that I, WILLIAM H. TREISCH, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in a Wrench; 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.

The object of the invention is to provide a comparatively simple and efficient wrench, reversible as to its direction of movement and having means whereby the handle or lever may be oscillated in the plane of the axis of the head to provide for using the wrench with facility under conditions in which there are obstacles in the path of movement of a handle or lever disposed in a plane perpendicular to the axis of the head; and furthermore to provide the wrench having the characteristics above indicated which shall also include the advantages of a tool of the ratchet type; and with these objects in view the invention consists in a construction and combination of parts of which a preferred embodiment is shown in the drawing, wherein:

Figure 1 is an edge view of the wrench.

Figure 2 is a side view of the same.

Figures 3 and 4 are sectional views respectively on the planes indicated by the line 3—3 and 4—4 of Figures 1 and 2.

Figure 5 is a detail view illustrating the pins on the sockets,

Figure 6 is a plan view illustrating the retaining ring,

Figure 7 is a detail view illustrating one of the bayonet slots of said ring,

Figure 8 is a detail sectional view illustrating a modified form of my invention.

The shank or handle 10 obviously may be made of any preferred form and dimensions to suit the purpose for which the tool is designed, that which is illustrated in the drawing having a terminal pilot or punch 11 for clearing or opening bolt holes, at the extremity of which shank is arranged a spherically rounded socket 12 for the reception of a ball 13 having an exterior ratchet surface as indicated by the teeth disposed thereon respectively in the planes including the axis of the surface and disposed in angular relation with each other. The opposite ends of the head are provided with bolt heads or nut sockets 14 and 15 which may as shown to be of different cross sectional form to receive bolt heads or nuts of different shapes. In connection with the socket 12 there is employed a retaining ring 16 held in place by a set screw 17 and pins 17′ fitting in bayonet slots 18′ and complementing the body portion of the socket to hold the shank or handle in proper relation with the ball forming the body portion of the head while permitting swinging movement in a plane perpendicular to the axis of the head and also swinging movement in the plane of the axis. The movability of the shank or handle with relation to the head in a plane including the axis of the head adapts the wrench to be used in position and under conditions which are impossible with a wrench wherein there is a rigid relation between the shank or handle and the head except for swinging movement in a plane perpendicular to the axis of the latter. The teeth of the ratchet being extended toward the axis of the ball provides for the proper engagement of the handle or shank therewith through the agency of the spring actuated pawl 18, regardless of the angular position of said handle or shank with relation to the head, and accordingly the availability of the wrench in machine work is very materially increased.

In the construction illustrated, the pawl 18 is reversible and is yieldingly held in engaging relation with the teeth of the ball by means of the spring 19, the stem 20 of said pawl being fitted with a thumb nut 21, which being exposed at its periphery may readily be grasped to retract the pawl so that it may be turned to reverse the direction of operation of the wrench.

Referring to my modified form of invention as shown in Figure 8, the retaining ring 16 has formed integrally therewith a screw threaded extension 22 which is threaded into the socket thereby obviating the employment of the bayonet slots 18′ and the pins 17′.

Having thus described the invention, what I claim is:

A wrench having a socket member, a head

reversible independently of and relatively to said socket member having a substantially spherical portion disposed in said socket member, a retaining ring having a portion insertable into one end of the socket member and against said spherical portion, a bayonet slot and pin connection between said socket member and said second portion, and means to secure said second portion against movement relatively to the socket member.

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

WILLIAM H. TREISCH.

Witnesses:
B. G. OWEN,
J. A. ALEXANDER.