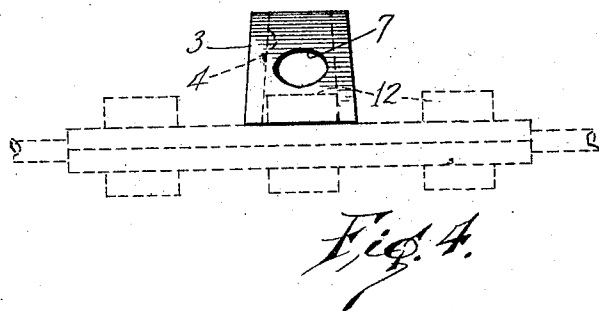
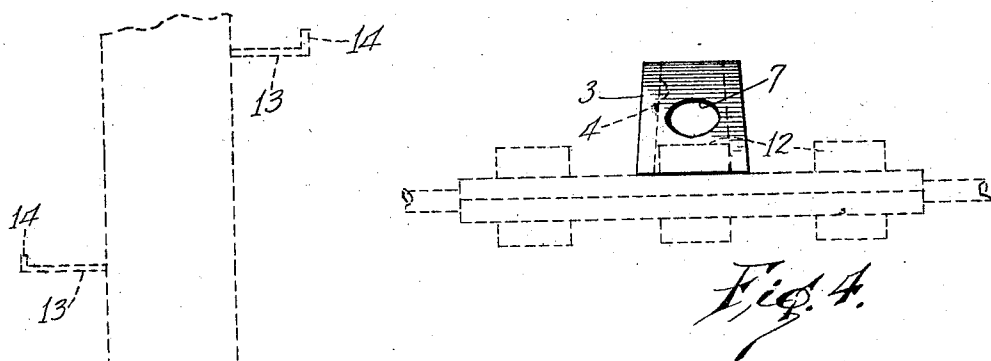
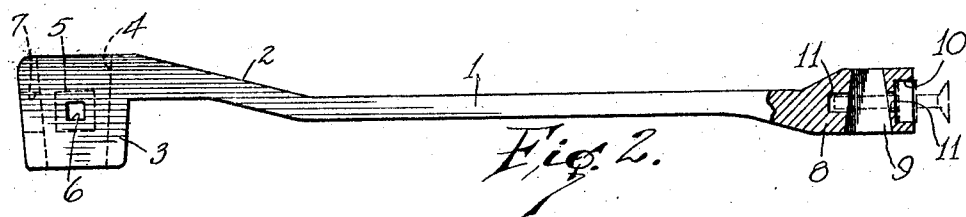
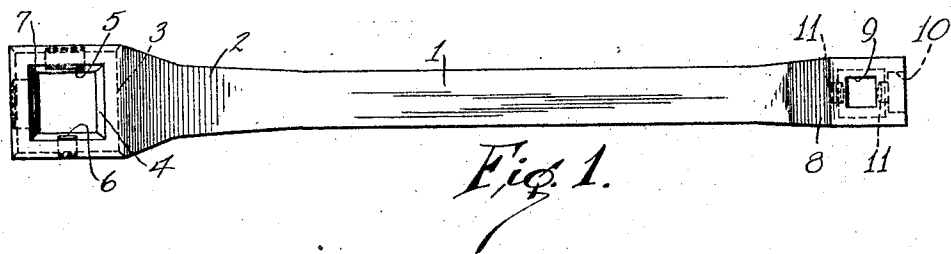


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F. J. GRANT
SOCKET WRENCH
Filed Oct. 1, 1923



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UNITED STATES PATENT OFFICE.

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SOCKET WRENCH.

Application filed October 1, 1923. Serial No. 666,008.

My invention relates to improvements in socket wrenches, which are especially adapted for use in outdoor telephone construction work, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of my invention is to provide a tool of the type described, which may be used for tightening or loosening nuts of various sizes, such as those in use on clamps for guy wires, for screwing in or unscrewing step hooks on telephone poles, and for removing or applying nuts to bolts in places which would be inaccessible to ordinary wrenches.

A further object of my invention is to provide a wrench of the socket type, which will adjust itself to nuts or bolts of various sizes, owing to the tapered construction of the socket.

Other objects and advantages will appear in the following specification, and the novel features of the invention will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings, forming part of this application, in which—

Figure 1 is a face view of one side of the wrench,

Figure 2 is an edge view at right angles to Figure 1,

Figure 3 shows the application of the wrench to a telephone step hook, and

Figure 4 shows the application of the wrench to a clamp or guy wire.

In carrying out my invention, I provide a body portion or shank 1 which is preferably made of steel and which, as will be seen from the drawings, is in the shape of a substantially flat bar, having a greater width than thickness. Near one end the bar is bent angularly, as at 2, and is flared outwardly. An integral head 3 is provided, this head having a tapered socket 4 which extends through the head, the axis of the socket being at right angles to the longitudinal axis of the bar 1. The side walls of the head are provided with rectangular openings 5 and 6, while the end wall is provided with an elliptical-shaped opening 7, which communicates with the opening or socket 4.

The opposite end of the bar 1 is enlarged and joins with an integral head 8, having a tapered socket 9 at right angles to the longitudinal axis of the bar. The end wall of the head is provided with a rectangular recess 10, and a bore 11 extends inwardly from

the recess 10 to the socket, and is continued on the opposite wall of the socket, as shown in Figure 2.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. It will be observed that the bending of the bar in the manner described brings the central portion of the heads at opposite ends substantially into alinement with the central longitudinal axis of the shank or bar. When it is desired to tighten nuts, as for instance, the nuts on clamping devices for guy wires, as illustrated in Figure 4, the head is placed thereon so that the nut 12 will enter the tapered socket 4. The rectangular side walls of the socket engage with the nut, so that the latter may be turned to unloosen or to screw it tighter. It often happens that the corners of a nut may be worn so as to cause an ordinary wrench to slip. In the present instance, however, the tapered socket tends to permit the wrench to work its way down, so as to grip the nut securely. The tapered socket also permits the wrench to be more easily removed, because of the taper, than the ordinary wrench. In view of the fact that the socket 4 runs clear through the head, it is apparent that nuts which are to be removed from bolts may be so removed, where the nuts are of varying sizes, since the shank of the bolt may pass through the opening 4 entirely.

In Figure 3 I have shown this wrench used as a means for removing or applying step hooks to telephone poles. These hooks 13 have bent-up portions 14, and the hook is threaded at its inner end to screw into the bore 15. In order to remove a hook, the end 14 is passed into the larger end of the socket 4, and then the wrench is swung so as to guide the end 14 through the elliptical opening 7. The wrench will then be in the position shown at the bottom of Figure 3. In this position, it is at right angles to the step hook and may be used to unscrew the hook or to screw it into the bore. It will be observed that, owing to the construction, the strain comes along the greatest width of the wrench, so that there is little liability of bending or breaking the wrench, as there might be if the strain should come at right angles or across the minor dimension, i. e., the thickness of the wrench.

The tapered socket not only provides for operating on nuts of various sizes, but the

openings 5 and 6 also permit the wrench to be used with different sized nuts or bolt heads.

The opposite end of the wrench contains a
5 socket 9 similar to the socket or opening 4, but of smaller dimensions, so as to provide for a still greater range of usefulness. In this end of the wrench the recess 10 is provided for receiving nuts, while the bores 11
10 receive a shank of the bolt. This provides means whereby a bolt or nut, in places which are inaccessible for the ordinary wrench, may be removed or replaced. The wrench is thrust toward the bolt until the latter enters
15 the bores 11, and the nut enters the recess 10. Now by twisting the wrench about its longitudinal axis, the nut may be removed or replaced.

While I have mentioned particularly out-
20 door telephone work, it will be understood that the use of the wrench is not merely confined to the purposes mentioned, but that its use may be extended to any work for which it is suited.

25 I claim:

1. A wrench of the socket type comprising a shank having a body portion of substantially uniform thickness and of greater width than thickness, a head carried by said

body portion and extending at right angles 30 to said shank, said head being provided with a socket extending therethrough, the axis of the socket being at right angles to the longitudinal axis of the shank, said head having an opening in the side, the axis of 35 said opening being at right angles to the socket and to the longitudinal axis of the shank and being in the same plane with the longitudinal axis of the shank.

2. A wrench of the socket type comprising 40 a shank having a relatively thin flat body portion of substantially uniform thickness, said shank having an integral inclined portion at one end of said body portion, an in- 45 tegral head secured to said inclined portion, and extending at right angles to the main body portion, said head having a tapered socket extending therethrough, the axis of the socket being at right angles to the longi- 50 tudinal axis of the body portion, said head having an opening in the side, the axis of said opening being at right angles to the axis of the socket and at right angles to the longi- 55 tudinal axis of the body portion of the shank, and the axis of the opening and the longitudinal axis of the shank being substantially in the same plane.

FRANK JONES GRANT.