O. F. BALTZLEY.

TOOL.

APPLICATION FILED FEB. 18, 1916.

1,209,658. Patented Dec. 26, 1916.

Fig. 1

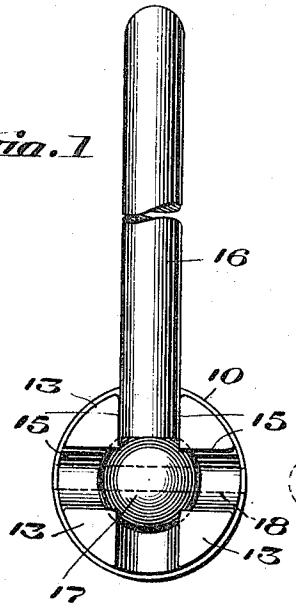


Fig. 2.

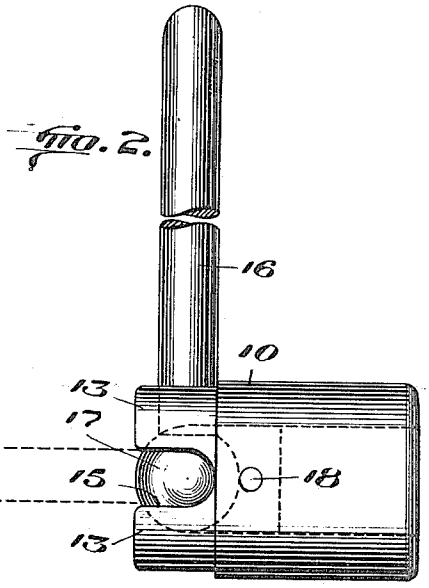


Fig. 3.

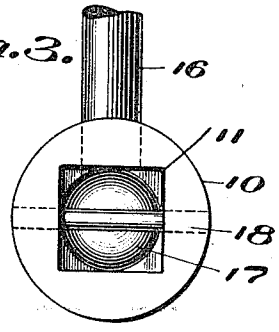


Fig. 4.

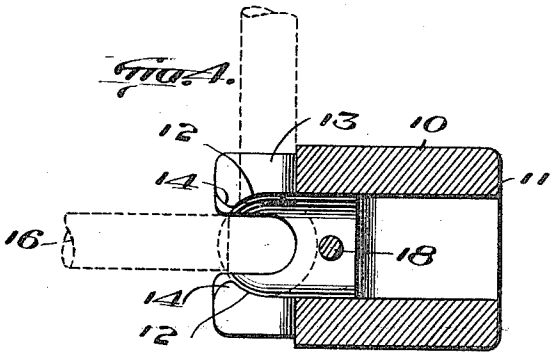


Fig. 5.

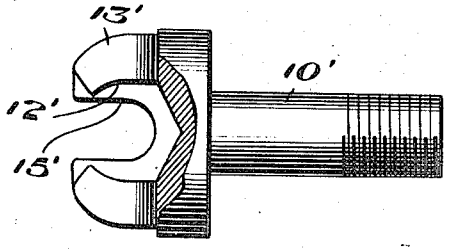
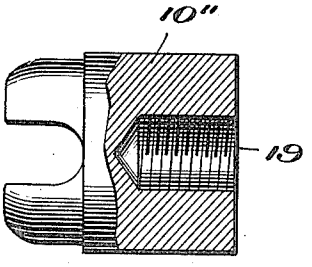


Fig. 6.



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TOOL.

1,209,658. Specification of Letters Patent. Patented Dec. 26, 1916.

Application filed February 18, 1916. Serial No. 79,085.

To all whom it may concern:

Be it known that I, OREN F. BALTZLEY, a citizen of the United States, residing at Hagerstown, in the county of Washington, and State of Maryland, have invented new and useful Improvements in Tools, of which the following is a specification.

This invention relates to tools wherein a rotatable member is provided with a handle by means of which the rotatable member is adapted to be turned, step by step, or continuously rotated.

Objects of my invention are to provide a tool which is particularly adapted for use in places not readily accessible, or where an obstruction or the like prevents the continuous movement of the rotatable member by means of the handle; to provide such a tool which is very simple in construction and which is especially durable, having the necessary strength and rigidity to resist any breaking or torsional strain exerted thereon; to provide a device which comprises substantially few parts, which may be manufactured at a relatively low cost, and which may be assembled in a quick and ready manner.

The above and other objects of my invention are obtained in the structure described in the following specification and illustrated in the accompanying drawing wherein—

Figure 1 is an end elevation of a wrench constructed in accordance with my invention. Fig. 2 is a side elevation thereof. Fig. 3 is an end view of the wrench looking at the end opposite to that shown in Fig. 1. Fig. 4 is a sectional view taken through the socket member of the wrench, the handle being shown in dotted lines. Fig. 5 is an elevational view partly in section illustrating my invention as embodied in a bolt. Fig. 6 is an elevational view partly in section showing my invention applied to a nut.

Referring to the drawings, wherein like numerals represent like parts in the several views, 10 designates a rotatable member which in Figs. 1 to 4 is illustrated as being the nut-receiving or socket member of a wrench. The socket member 10 has a socket opening 11 through the body portion thereof which, as shown in Fig. 4 is square in cross-section, so as to receive a square-headed bolt nut, or the like, but, of course, the socket opening 11 may be a polygon of any number of sides, such as, for instance, six or eight. At one end of the socket or rotatable member 10 is a handle-receiving socket or seat 12 which is preferably formed of a plurality of projections 13 provided with internal shoulders 14 projecting inwardly toward the axial center of the socket member and beyond the line of the walls of the socket opening 11. The bearing surfaces of the shoulders 14 are preferably curved to make the socket or seat 12 of spherical shape.

15 designates notches or grooves in the end of the socket member and between the projections 13 and in the present illustration of my invention four such notches are shown which, of course, corresponds to the number of projections, but it is to be understood that the number of notches and projections may be varied as desired.

The member which coöperates with the socket member 10 comprises a handle portion 16 having a spherical ball 17 at its end, which ball is adapted to seat in the spherical seat or socket 12, so as to provide a ball-and-socket arrangement. With the construction shown in Figs. 1 to 4 the handle 16 and the socket member 10 are assembled by inserting the outer end of the handle in the open end of the socket opening 11 and drawing the socket member downwardly over the handle until the ball engages in the spherical socket 12, it being understood that the socket opening 11 is just large enough to receive the ball 17. If desired, a pin 18, or other means may be provided to retain the ball in its spherical seat, and in the present instance the pin is shown as extending diametrically through the walls of the socket member and across the socket opening thereof.

The operation of my device is evident from the above description, it being understood that when it is desired to turn a nut or bolt the head of the same is received by the socket opening 11 of the socket member and the handle is drawn or moved into position at right angles to the axial line of the socket member, so that the handle engages in one of the notches 15 and between the projections as shown in full lines, Fig. 2. The handle is then given a partial turn until an obstruction or the like prevents further rotary movement when the handle is withdrawn from the notch in which it is engaged by moving the same into axial alinement with the socket member, which position is shown by dotted lines, Fig. 2, it being then

moved into the next succeeding notch or groove and given another partial turn, and so on, until the nut is turned into place. Of course, if no obstruction is present the socket member may be moved continuously.

In Fig. 5, which discloses another application of my improvement, I have illustrated the rotatable member as having a bolt portion or screw-threaded shank 10'. Integral with the bolt 10' is a handle-receiving socket member having a spherical seat 12' formed by projections 13' which are turned inwardly toward each other and over the ball, after the ball 17 of the handle is placed therebetween, so as to prevent withdrawal of the ball from the spherical seat 12.

In Fig. 6 is a structure similar to that disclosed in Fig. 5, except that in place of a bolt the rotatable member consists of a nut 10'' having a screw-threaded socket 19 to receive the end of a bolt, or the like.

It is, of course, to be understood that my device is applicable to other uses than those disclosed and the rotatable member may be changed as desired depending on the use to which my device may be put.

My device is susceptible of various modifications and changes which would be within the spirit of my invention without departing from the scope of the following claims.

What I claim is:—

1. In combination, an operating member and a rotatable member, one of said members having an enlarged portion, and the other of said members having a socket receiving said enlarged portion, one of said members also having a plurality of notches any one of which is adapted to receive the other member when the members are in position for turning the rotatable member.

2. In combination, an operating member and a rotatable member, one of said members having an enlarged portion, and the other of said members having a socket receiving said enlarged portion, the member having said socket also having a plurailty of notches any one of which is adapted to receive the other member when the members are in position for turning the rotatable member.

3. In combination, an operating member and a rotatable member, one of said members having an enlarged portion, and the other of said members having a socket for receiving said enlarged portion, said member having said socket also having projections thereabout against any one of which said member having said enlarged portion is adapted to engage to permit turning of the rotatable member.

4. In combination, a handle having an enlarged end, and a rotatable member having a socket receiving said enlarged end, said rotatable member also having a plurality of notches in any one of which said handle is adapted to engage to permit turning of said rotatable member.

5. In combination, a handle having an enlarged end, and a rotatable member having a socket for receiving said enlarged end, and projections about said socket against any one of which the handle is adapted to engage to permit turning of said rotatable member.

6. In combination, a handle having a spherical ball at one end thereof, and a rotatable member having a spherical socket to receive said ball, said rotatable member having notches in the wall of said socket any one of which is adapted to receive said handle to permit turning of the rotatable member.

7. In combination, a handle having a ball at one end thereof, a rotatable member having a socket opening to receive a nut or the like, a spherical socket on said rotatable member for said ball, and grooves or notches in the walls of said socket to receive said handle to permit turning of the rotatable member.

8. In combination, a handle having a ball, a rotatable member having a through opening large enough to allow said ball to pass therethrough, a socket at the end of said opening for the reception of the ball and notches in said socket adapted to receive the handle to permit turning of the rotatable member.

9. In a wrench, a handle having an enlarged end, a socket member having a socket opening to receive a nut or the like, and a spherical seat for said enlarged end having notches in its walls for the reception of the handle to permit turning of the rotatable member.

10. In a wrench, a handle having a spherical ball at one end, a socket member having a socket opening to receive a nut or the like and through which the ball is adapted to pass, a spherical seat at one end of said socket member adapted to receive said ball and having notches in its walls for the reception of the handle to permit turning of the rotatable member.

11. In combination, a handle having a ball at one end thereof, a rotatable member having a through socket opening to receive a nut or the like and through which the ball is adapted to pass, a spherical socket on said rotatable member for said ball and having grooves or notches in its walls to receive said handle to permit turning of the rotatable member, and means to prevent displacement of said ball from its spherical socket.

12. In combination, a handle having a ball at one end thereof, a socket member having a socket opening to receive a nut or the like and through which the ball is adapted to pass, a spherical seat for said

ball having notches in its walls for the reception of the handle to permit turning of the rotatable member, and a pin passing through said socket opening to prevent displacement of the ball from its spherical seat.

In testimonv whereof I have hereunto set my hand in presence of two subscribing witnesses.

OREN F. BALTZLEY.

Witnesses:
C. E. ALLERT,
D. ELMER WOLF.