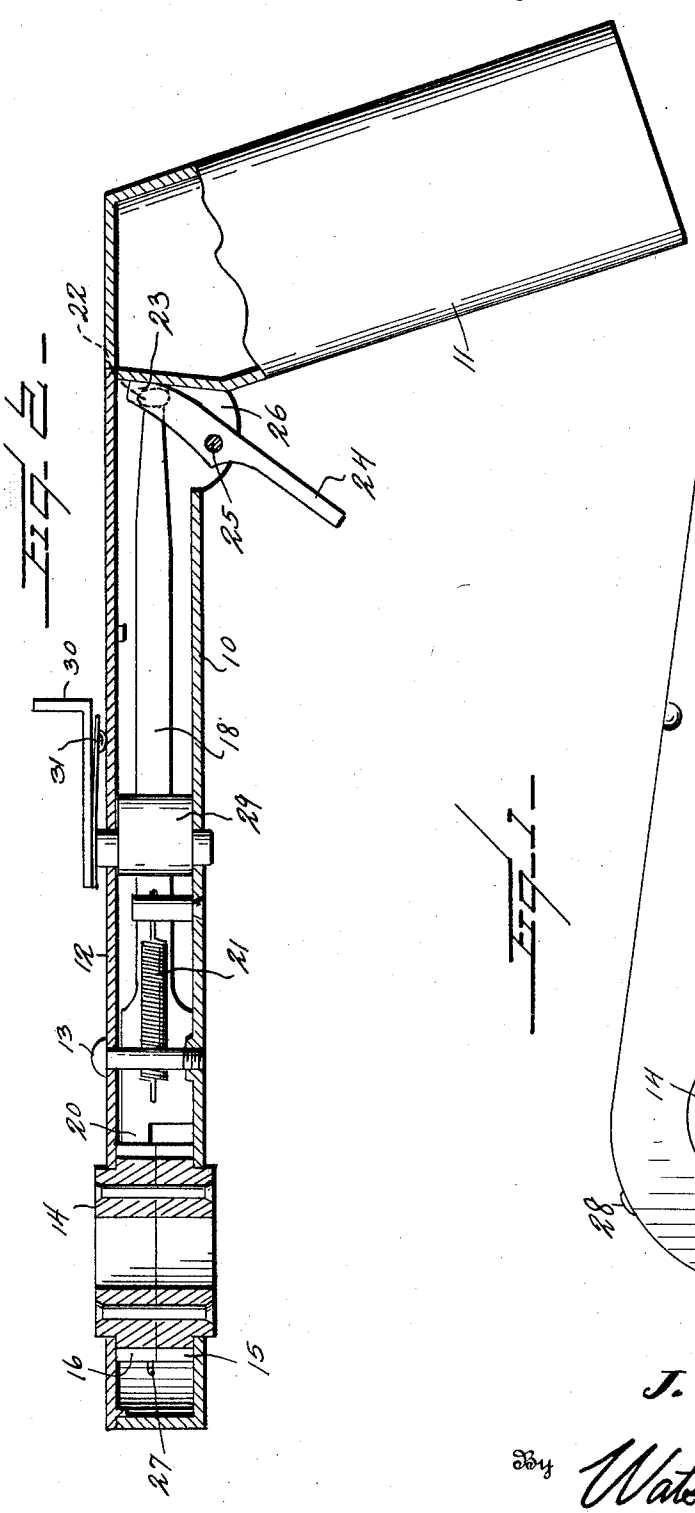
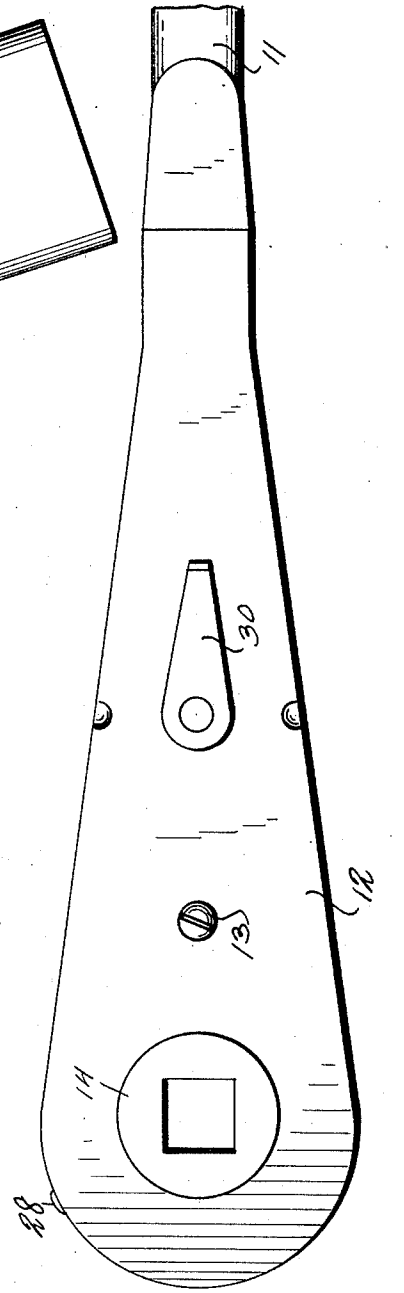
June 13, 1933. J. O. HEALD 1,913,669

RATCHET WRENCH

Filed Sept. 24, 1931 2 Sheets-Sheet 1





Inventor

J. O. Heald

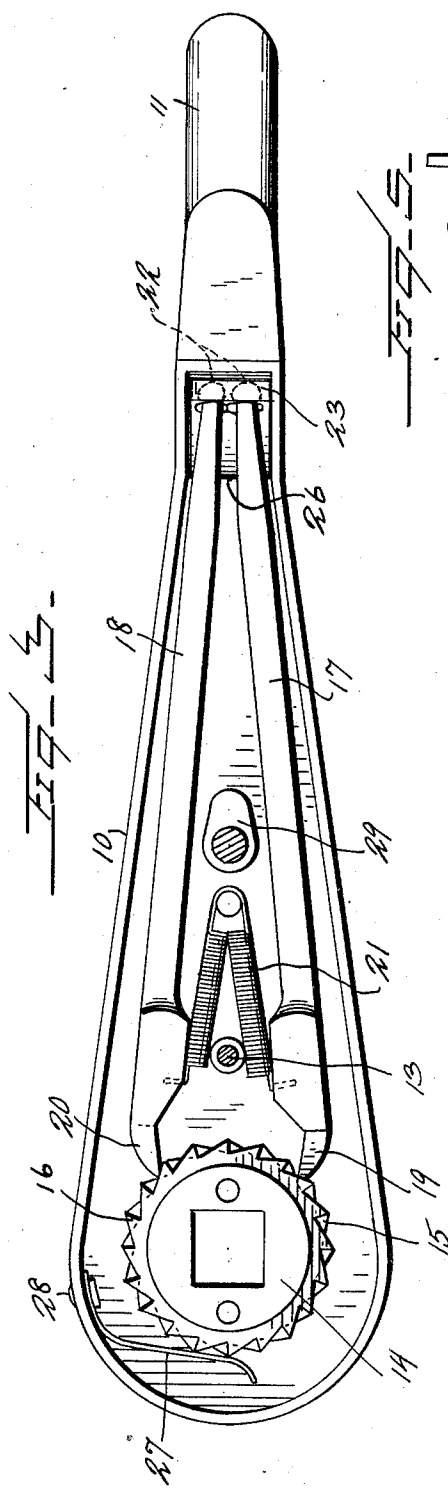
By Watson E. Coleman

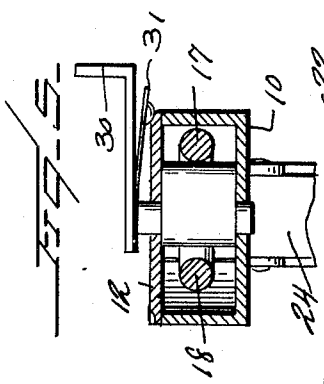
Attorney

June 13, 1933. J. O. HEALD 1,913,669

RATCHET WRENCH

Filed Sept. 24, 1931 2 Sheets-Sheet 2





Inventor

J. O. Heald

By Watson E. Coleman

Attorney

Patented June 13, 1933 1,913,669

UNITED STATES PATENT OFFICE

JOSEPH O. HEALD, OF LARAMIE, WYOMING

RATCHET WRENCH

Application filed September 24, 1931. Serial No. 564,874.

This invention relates to ratchet wrenches and particularly to socket wrenches.

The general object of this invention is to provide a socket wrench of such character that a nut or plug can be loosened and removed without the hands touching the nut or plug, thus making the wrench particularly adapted for use at filling stations and garages where crank cases have to be drained, thus eliminating burning the fingers with the hot plugs or oil.

A further object is to provide a device of this character having therein a rotatable socket adapted to receive the end of a plug or receive a nut, this socket being provided with ratchets and provide a hollow shank with opposed pawls engaging the ratchet teeth, either of which pawls may be thrown out of action and provide a handle with a finger piece on the handle whereby the pawls may be actuated to rotate the socket member in one direction or the other independently of any rotation of the shank itself.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a top plan view of my improved wrench;

Figure 2 is a longitudinal sectional view;

Figure 3 is a top plan view with the cover plate removed and showing both pawls in engagement with the ratchets;

Figure 4 is a like view to Figure 3 but showing only one pawl in engagement with the corresponding ratchet;

Figure 5 is a section on the line 5—5 of Figure 4.

Referring to these drawings, 10 designates a hollow shank having angularly extending from it the hollow handle 11. This shank 10 is formed of one piece of metal having the cover 12 held in place by a through bolt 13. The handle and cover 12 are apertured for a double socket member 14 having two series of ratchet teeth 15 and 16. On each side of the ratchet teeth 15 and 16, the socket member is formed with hubs fitting within the apertures in the plate 11 and in the shank. This socket member is thus held in place between the body of the shank and the plate 12. Disposed within the tapered body 10 of the shank are the two rods 17 and 18, the rod 17 having at its end a tooth 19 engaging with the teeth 15 and the rod 18 having at its end a tooth 20 engaging with the teeth 16. Springs 21 urge these rods to a retracted position. The rods are disposed on opposite sides of the shank 10 with their teeth on opposite sides of the socket member 14. The rear ends of these rods are formed with balls 22 engaging in sockets formed in a transverse bar 23 forming part of and carried by a finger piece 24 which is pivoted at 25 and which extends down parallel to the pistol butt handle 11 so that this finger piece may be actuated to push the member 23 forward by a retraction of the finger piece.

Of course, the casing or shank 10 is apertured at 26 for the passage of this finger piece 25.

Disposed within the large end of the shank is a leaf spring 27 which bears upon the rotatable socket member 14 and tends to check its movement, this spring 27 being held in place by the bolt and nut 28. Mounted upon the cover plate 12 and extending inwardly therefrom is a cam 29 whose stem extends out through the cover plate and is provided with an angular handle 30. A leaf spring 31 is attached to this handle and bears against the cover plate and frictionally resists movement of the cam.

The operation of this device is as follows:—

When the cam is in a neutral position, both of the pawls 17 and 18 will engage both series of ratchet teeth on the socket member 14, but when the cam 28 is turned in one direction, one of these pawls 17 or 18 will be shifted laterally to carry its tooth 19 or 20 out of engagement with the corresponding ratchet teeth on the socket member. Reciprocation of the pawl by means of the finger piece 24 will cause a step by step rotation of the socket member as a depression of the finger piece 24 will cause both pawls to advance and that pawl which is not thrown out of action by the cam 29 will engage the teeth on the socket member 14 and upon an oscillation of the shank, the socket member 19 will be rotated.

Thus the device will act in the manner of the usual ratchet wrench.

If the cam be in a neutral position and the pawls both advanced, they will both engage the oppositely directed series of ratchet teeth on the socket member so that this socket member cannot rotate relative to the shank and then the wrench may be used in the manner of a crank wrench to remove the plug, nut or like article.

While I have illustrated a specific embodiment of my invention, I do not wish to be limited thereto as obviously many minor changes might be made therein within the scope of the appended claims.

I claim:—

1. A wrench comprising a shank having a handle, a rotatable socket member mounted on the shank at the end opposite the handle and having two sets of oppositely directed ratchet teeth, two longitudinally extending, longitudinally and laterally movable pawls disposed within the shank, each having a tooth engageable with one of the sets of ratchet teeth, independent springs acting to longitudinally retract and urge said pawls toward each other, a pivoted finger piece mounted upon the shank adjacent the handle and operatively engaged with said pawls to shift them longitudinally in the same direction toward the socket member when the finger piece is retracted, and manually operable means for shifting one or the other of the pawls laterally out of coactive relation to the corresponding teeth.

2. A wrench comprising a shank having an angularly disposed pistol grip handle, a socket member rotatably mounted within the shank at the end opposite the handle and having two sets of oppositely directed ratchet teeth, two longitudinally extending, longitudinally and laterally movable pawls disposed within the shank, each having a tooth engageable with one of the sets of ratchet teeth, independent springs acting to longitudinally retract said pawls and urge the pawls laterally toward each other, a pivoted finger piece mounted upon the shank adjacent to and movable toward or from the handle and operatively engaged with said pawls to shift both pawls simultaneously in the same direction longitudinally toward the socket member when the finger piece is retracted, and a cam mounted upon one wall of the hollow shank and disposed between the pawls and adapted when rotated in one or the other direction to shift one or the other of the pawls laterally out of coactive relation to the socket member, said cam having an exterior handle whereby it may be manipulated.

3. A wrench comprising a hollow shank having a handle, a socket member rotatably mounted with the shank at the end opposite the handle and having two sets of oppositely directed ratchet teeth, a finger piece pivotally mounted at the handle end of the shank, two longitudinally extending pawls disposed within the shank and both mounted upon the finger piece for lateral swinging movement, each pawl having a tooth engageable with one of the sets of ratchet teeth, contractible springs disposed between the forward ends of the pawls and converging with relation to each other, the springs acting to urge the pawls rearward and inward, and a cam mounted within a hollow shank and disposed between the pawls and adapted, when rotated in one or the other directions, to shift one or the other of the pawls laterally outward and out of coactive relation to the ratchet teeth on the socket member, said cam having exterior means whereby it may be manipulated.

In testimony whereof I hereunto affix my signature.

JOSEPH O. HEALD.