Aug. 6, 1929. O. C. WEBER 1,723,223

RATCHET TOOL

Filed Dec. 27, 1928

Fig. 1.

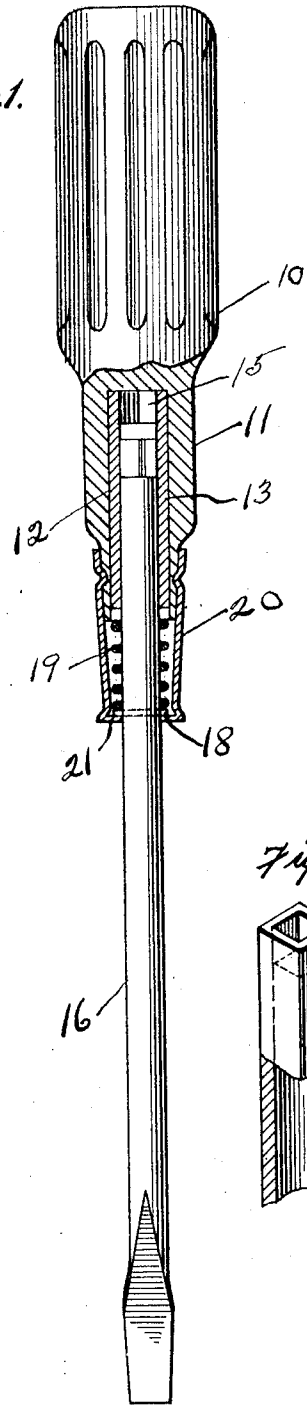


Fig. 2.

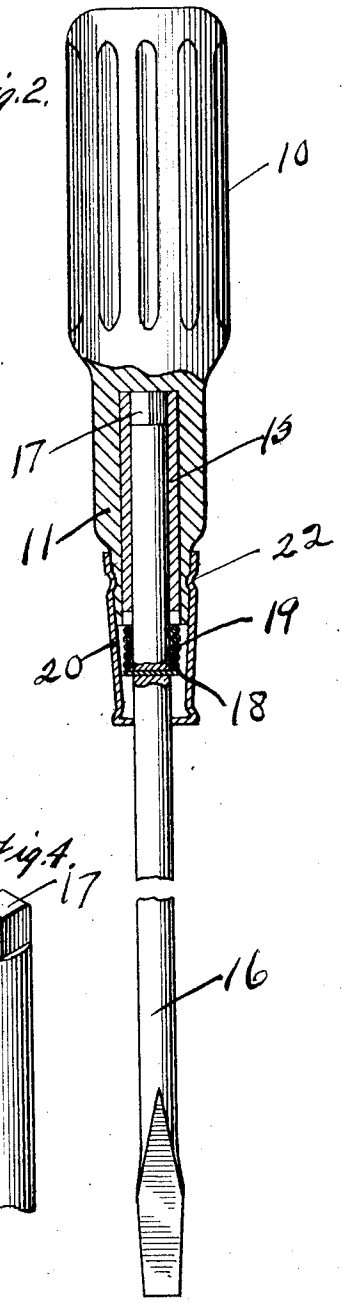


Fig. 3.

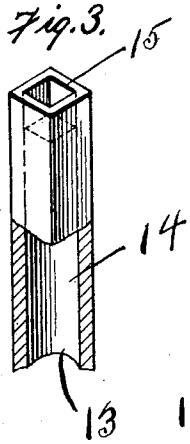


Fig. 4.

Otto C. Weber, INVENTOR

BY Merlin M. Evans

ATTORNEY

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UNITED STATES PATENT OFFICE.

OTTO C. WEBER, OF COLUMBIANA, OHIO.

RATCHET TOOL.

Application filed December 27, 1928. Serial No. 328,657.

This invention relates to new and useful improvements in tools and more specifically to that type known as the ratchet tool.

An object of the invention comprehends the provision of a ratchet mechanism operable in both directions.

An additional object of the invention contemplates a spring element for the tool shank to normally hold same out of engagement with the ratchet mechanism.

A further object of the invention consists of locking portions carried upon the adjacent portions of the ratchet and tool shank proper.

More specifically stated the ratchet mechanism is so shaped and arranged within the tool body that no fastening elements are necessary to facilitate application thereof or to prevent distortion after being initially applied.

With the above and other objects in view, the invention further consists of the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawing and pointed out in the appended claims.

In the drawing:—

Figure 1 is an elevation of my improved type of ratchet tool partly broken away to illustrate the construction thereof with the ratchet mechanism disengaged.

Figure 2 is a view similar to Figure 1 illustrative of the working positon of the tool showing the ratchet mechanism engaged for use.

Figure 3 is a fragmentary perspective view of the ratchet member adapted to be arranged within the tool body.

Figure 4 is a view similar to Figure 3 illustrating the portion of the tool shank adapted for selective operative engagement with the ratchet member.

Referring to the drawing in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates the conventional form, shape or type or handle generally used in screw drivers, awls, automatic drills and the like. The reduced extension 11 for the tool handle projecting therefrom is provided with a socket opening 12 disposed axially of the longitudinal centers of the extension and handle, the purpose of which will be presently apparent.

The ratchet member, as mentioned in the foregoing, comprises a tubular member 13 including a cylindrical bore 14 extended throughout the major portion of its length. From the illustration of the ratchet or tubular member 13 in Figure 3 of my drawing, it is noted that same is of rectangular shape in cross section and which, when inserted within the socket opening 12 in the reduced extension 11 of the handle member 10 and which corresponds in shape to the cross section of the tubular member, will be held against rotation in either direction. The innermost projecting end of the ratchet or tubular member 13 terminates to provide a rectangular shaped socket opening 15 in communication with the cylindrical bore 14.

In the employment of the present invention for use upon and in conjunction with screw drivers, the shanks 16 thereof are preferably provided with squared or rectangular portions 17 upon the attaching portions thereof and which is passed through the cylindrical bore 14 of the ratchet or tubular member 13 for selective operative engagement with the tubular member or ratchet when disposed within the socket opening 15 thereof, as shown in Figure 2 of the drawing.

A pin member 18, passed horizontally through the screw driver shank 16 and projecting for appreciable distances at its ends beyond the adjacent outer surfaces of the shank proper, is adapted to seat the adjacent end convolution of a compression spring 19 thereon. Said spring is adapted for contacting engagement at its opposite end with the adjacent extremity of the reduced extension 11. A ferrule 20, having an apertured end wall 21 to facilitate accommodation of the shank 16 and to permit sliding action of the latter therethrough, is adapted for engagement upon the inner surface thereof with the aforementioned ends of the cross pin 18 in oppositely disposed relation to that of the first mentioned end convolution of the compression spring 19.

The opposite portion of the ferrule 20 is outwardly flared to facilitate insertion of the adjacent portion of the reduced extension 11; the outer side wall of the ferrule is then machined or otherwise treated to provide an annular depression 22 whereby displacement of the ferrule will be prevented from the body and handle of the tool and no fastening elements are needed as it would unnecessarily weaken the tool if employed.

Although I have shown, described and illustrated my double ratchet mechanism as

being arranged upon the handles of screw drivers for engagement with the shanks therefor, it is obviously understood that the ratchet construction could be effectively employed for automatic drills, auger braces, awls, and etc.

A little pressure on the handle brings the clutch or ratchet together so that when the handle is turned the blade upon the end of the shank will also turn in the same direction, turning in either direction, is therefore facilitated and release of pressure on handle will allow the clutch or ratchet to become disengaged. The blade on the end of the shank will remain within the kerf of a screw driver head which is a saving of labor and time to any one using a screw driver in a precarious position.

Constant engagement of the blade of the shank within the kerf or slot in a screw driver will also prevent distortion of same therein to prevent marring of the adjacent surfaces of the work and destruction of said kerf. The handle may be made solid to permit striking with a hammer or mallet.

The annular depression or ring in the ferrule 19 will compress the walls of the socket opening 12 in the reduced extension 11 against the outer sides of the tubular member or ratchet member 13.

The invention is susceptible of various changes in its form, proportions and minor details of construction, and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having thus described the invention, what is claimed is:—

A ratchet tool comprising a handle including a reduced extension upon one end having a socket opening projecting an appreciable distance therein, an elongated tubular member of cross section of rectangular shape receivable within said socket opening, a tool shank slidably revolvably mounted within the bore of the tubular member, the innermost end of the tubular member having a socket opening in communication with the bore thereof, a locking portion arranged upon the slidably mounted end of the tool shank within the tubular member for selective locking engagement with the socket opening therein, a spring element carried upon the shank and engageable with the extension to normally hold the locking portion of the shank out of registration with the socket opening in the tubular member, a cross pin carried by the shank beyond the extension and engageable with the adjacent end of the spring element, a ferrule carried and extended from the extremity of the extension, and an apertured wall comprising one end of the ferrule slidably receiving the tool shank therein to house and seat the spring and cross pin therefor.

In testimony whereof I affix my signature.

OTTO C. WEBER.