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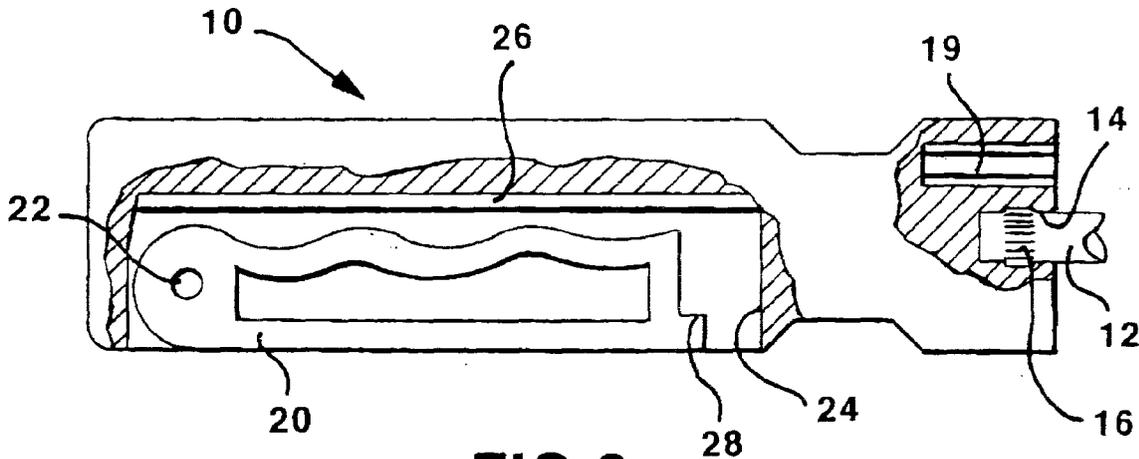
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(54) **A tool handle with a pivotable gripping member**

(57) A high torque tool handle comprises a handle 10 having a longitudinal axis and further having a tool end and a distal end. The handle 10 includes an elongate recess 24 aligned parallel to the longitudinal axis of the handles. An elongate gripping member 20 is sized

to be received within the recess and positioned therein. The gripping member 20 is pivotally connected to the handle 10 by way of a pin 22 whereby the gripping member may be pivoted about one end of the gripping member out of the recess to an extended position.



**FIG.3**

## Description

The invention relates to a tool handle.

Tool handles are available for receiving tools from a range of different tools. Such tool handles generally comprise a body in which a tool may be placed. An advantage of such a tool handle is that it enables a single handle to be used with a range of different tools, thus reducing the physical size of a craftsman's tool kit without reducing the range of tools available to the craftsman. Such tool handles are commonly, but not exclusively, used with a rotatable tool such as a screw driver.

The present invention aims to provide an improved tool handle.

According to one aspect of the invention there is provided a high torque tool handle comprising: a handle having a longitudinal axis and further having a tool end and a distal end; the handle including an elongate recess aligned parallel to the longitudinal axis of the handle; an elongate gripping member sized to be received within the recess and positioned therein; a pin means positioned in the recess adjacent the distal end of the handle and connected to a corresponding end of the gripping member for pivotally connecting the gripping member may be pivoted about one end of the gripping member out of the recess to an extended position.

According to another aspect of the invention there is provided a tool handle comprising a body for receiving a rotatable tool and a lever arm mounted to the body, the lever arm being extendible from the body to enable a greater turning force to be applied through the tool handle to a tool received in the body and being retractable to a storing position substantially within the body.

The above and further features of the invention are set forth with particularity in the appended claims and together with advantages thereof will become clearer from consideration of the following detailed description of an exemplary embodiment of the invention given with reference to the accompanying drawings.

In the drawings:

Figure 1 is an elevational view of a tool handle embodying the present invention;

Figure 2 is a left side view of the tool handle shown in Figure 1;

Figure 3 is a similar view of the tool handle as shown in Figure 1 with a hand grip retracted and with parts broken away;

Figure 4 is a left hand view of the tool handle shown in Figure 3;

Figure 5 is a right hand view of the tool handle shown in Figure 3;

Figure 6 is a cross-sectional view of a hand grip taken along the line 6-6 in Figure 1;

Figure 7 is a cross-sectional view of a tool holder and tool taken along the line 7-7 in Figure 1 and with all the handle parts removed;

Figure 8 is a second embodiment of a tool holder

shown in Figure 1 and Figure 7 with all the handle parts removed;

Figure 9 is a cross-sectional view of the second embodiment taken along the line 9-9 in Figure 8; and Figure 10 is a right hand view of the tool holder shown in Figure 8.

A high-torque tool handle 10 is shown in Figure 1 of the accompanying drawings. Handle 10 at one end has a bore 14 with a tool holder 12 rigidly held within the bore 14. As seen in Figure 3, tool holder 12 has ridges 16 raised from the circumference adjacent one end and sized slightly larger than bore 14 so that tool holder 12 can be held rigidly with handle 10. As shown in Figures 1 and 2, a Phillips head screw driver tool 18 may be held with tool holder 12. As best seen in Figure 5, additional hexagonal bores 19 are offset from bore 14 so as to hold spare hexagonal tools 18 whenever the spare tools are not in use.

Adjacent the opposite end of a handle 10, a rotatable hand grip 20 rotates about a spring-pin 22, which is sized to maintain the grip 20 in any desired rotated position through friction. Hand grip 20 can be extended for additional leverage when rotating the handle 10 and thus serves as a lever arm, or can be retracted into a recess 24 in the handle. At the bottom of recess 24, ledges 26 extend along handle 10 beneath hand grip 20 whenever the hand grip is retracted. Ledges 26 act as a stop for hand grip 20 as the hand grip rotates into handle 10 whenever hand grip 20 is retracted. Recess 24 is also sized in length so as to permit easy access for a finger to engage lip 28 so as to lift the hand grip from the handle and extend the hand grip whenever desired. As shown in Figure 6, the hand grip has an I-section.

Tool holder 12 at one end has a hexagonal opening 30 for accepting a tool 18. As shown in Figure 7, adjacent the bottom of hexagonal opening 30 is a magnet 32 for holding tool 18 within opening.

An alternate embodiment of tool holder 12 is shown in Figure 8. Adjacent one end are ridges 16 sized to be slightly larger than bore 14 in handle 10 so that the tool holder can be held rigidly within the tool end of the handle. The tool holder 12 comprises a shaft having a tool receiving opening 30. A movable sleeve 34 is slidably mounted on the shaft and can lock or unlock a ball detent 36 mounted on the shaft adjacent the tool receiving opening 30. The ball is movable from a position outside the opening to a position inside the opening to hold a tool received by the tool receiving opening. The sleeve 34 cooperates with the ball detent 36 to move the ball detent from the outside position to the inside position when the sleeve slides over the ball. Thus, ball detent 36 is used to lock another tool 18 within hexagonal opening 30. This locking mechanism is the same as that shown in Figures 4A and 4B in U.S. Patent No. 5,470,180 to Jore and described therein.

Having thus described the present invention by reference to preferred embodiments it is to be well under-

stood that the embodiments in question are exemplary only and that modifications and variations such as will occur to those possessed of appropriate knowledge and skills may be made without departure from the scope of the invention as set forth in the appended claims.

### Claims

1. A high torque tool handle comprising:
  - a handle having a longitudinal axis and further having a tool end and a distal end;
  - the handle including an elongate recess aligned parallel to the longitudinal axis of the handle;
  - an elongate gripping member sized to be received within the recess and positioned therein;
  - a pin means positioned in the recess adjacent the distal end of the handle and connected to a corresponding end of the gripping member for pivotally connecting the gripping member to be pivoted about one end of the gripping member out of the recess to an extended position.
2. The high torque tool handle according to claim 1, wherein the pin means further includes frictional means for frictionally maintaining the gripping device at a desired extended position.
3. The high torque tool handle according to claim 1 in combination with a tool holder connected to the tool end of the handle, the tool holder comprising a shaft having a tool receiving opening at one end thereof, a sleeve slidably mounted on the shaft, a ball detent mounted on the shaft adjacent the tool receiving opening and movable from a position outside the opening to a position inside the opening to hold a tool received by the tool receiving opening, the sleeve cooperating with the ball detent to move the ball detent from the outside position to the inside position when the sleeve slides over the ball detent.
4. A tool handle comprising a body for receiving a rotatable tool and a lever arm mounted to the body, the lever arm being extendible from the body to enable a greater turning force to be applied through the tool handle to a tool received in the body and being retractable to a storing position substantially within the body.
5. A tool handle as claimed in claim 4, wherein the body contains a tool holder for releasably receiving a tool therein.
6. A tool handle as claimed in claim 5, wherein the tool holder comprises a tool-receiving bore and one or more tool-storing bores.
7. A tool handle as claimed in claim 6, wherein the bores are of hexagonal section to receive similarly sectioned tools therein.
8. A tool handle as claimed in claim 5, wherein the tool holder comprises a shaft secured at one end thereof to the body and having at the other end thereof a tool receiving opening and detent means for releasably securing a tool at the tool receiving opening.
9. A tool handle as claimed in any of claims 4 to 8, wherein the lever arm is pivotally mounted to the body.
10. A tool handle as claimed in any of claims 4 to 9, wherein the lever arm is frictionally mounted to the body by way of a spring pin to enable the lever arm to be maintained in a desired extended position.
11. A tool handle as claimed in any of claims 4 to 10, wherein the body is formed to define a recess in which the lever arm is received in the storing position, the recess and the lever arm being dimensioned to enable the lever arm to be accessed by a finger.
12. A tool handle as claimed in any of claims 4 to 11, wherein the lever arm is substantially an I-section.

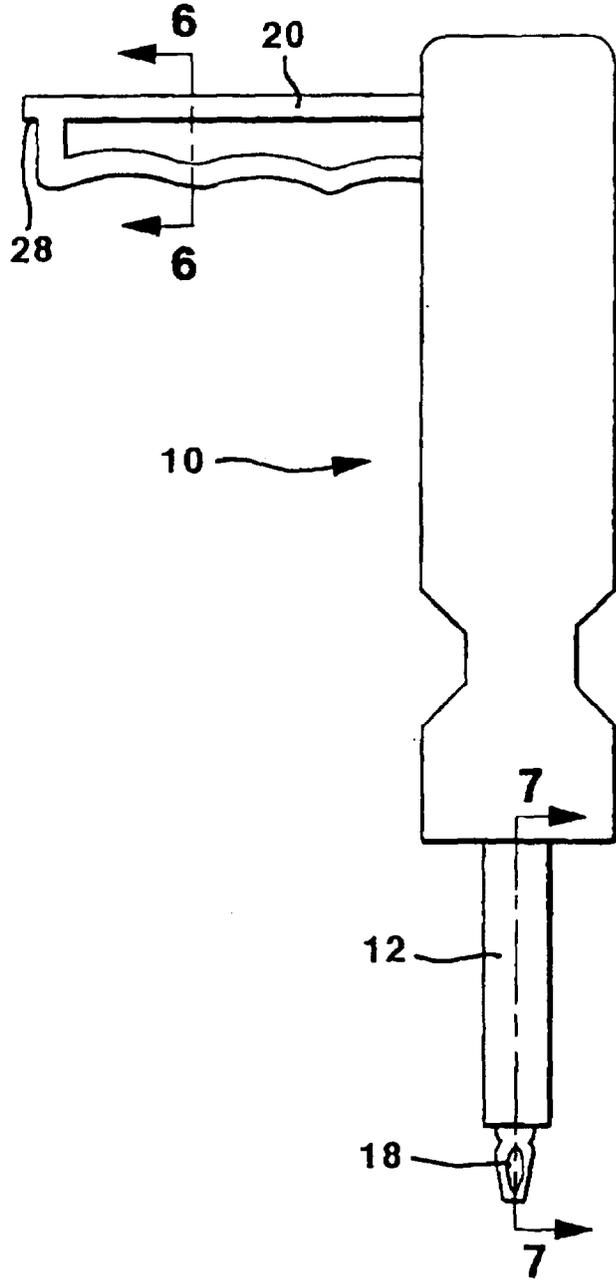


FIG. 1

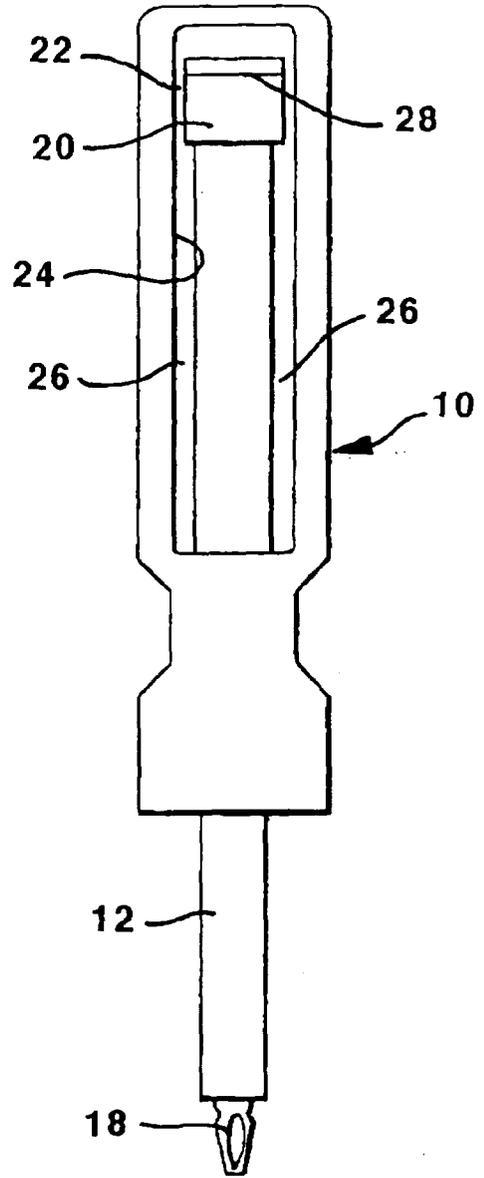
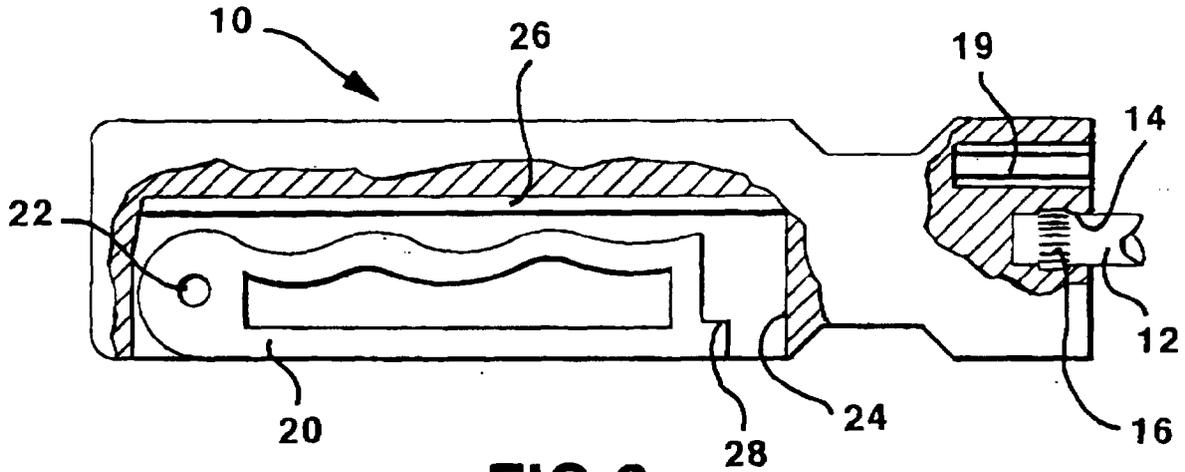
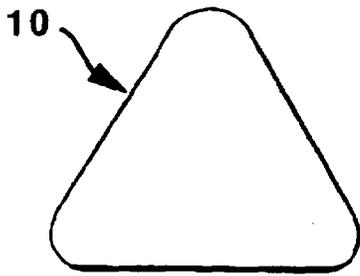


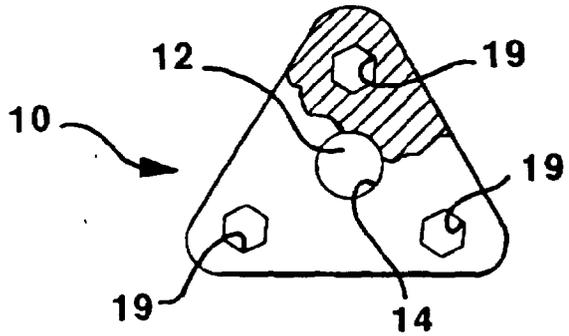
FIG. 2



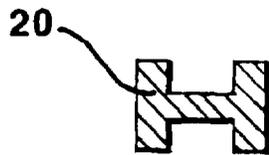
**FIG. 3**



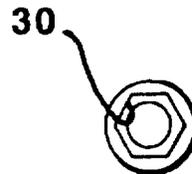
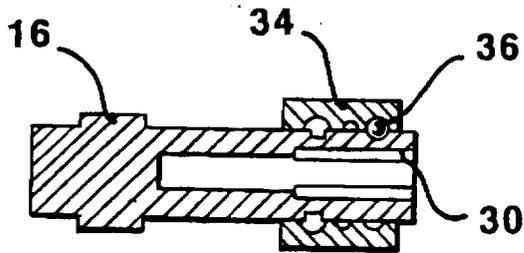
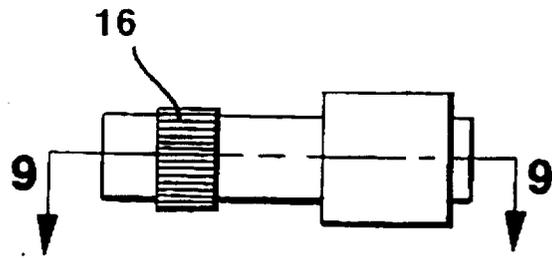
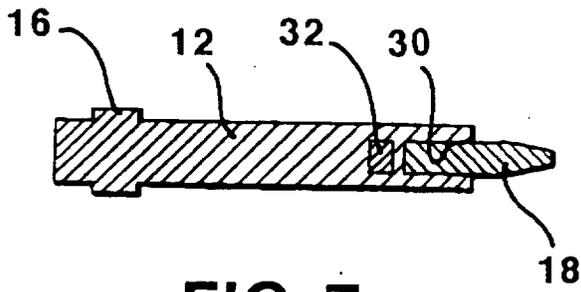
**FIG. 4**



**FIG. 5**



**FIG. 6**





European Patent  
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EUROPEAN SEARCH REPORT

Application Number  
EP 97 30 6361

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US 4 235 269 A (KRAUS HANS)	4-6,9,11	B25G1/00
Y	* the whole document *	1	B25G1/08
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X	US 4 893 529 A (LIN SCHIH-CHANG)	4-7,9	
A	* the whole document *	1,8	
	---		
X	US 4 541 310 A (LINDENBERGER PAUL H)	1,4,9,11	
	* the whole document *		
	---		
X	US 3 656 523 A (MCGEE ANDREW T)	4,9,11	
	* the whole document *		
	---		
X	GB 2 243 570 A (WELLS TREVOR)	4,9,11	
	* abstract *		
	* page 4, last paragraph *		
	---		
Y	DE 36 01 129 A (VOSWINKEL EGON)	1	
	* column 10, line 11-16; figure 1 *		
	---		
A	DE 36 24 680 A (HAIN HORST)	1,4	
	* the whole document *		
	---		
A	DE 27 15 379 A (METZGER GUENTHER)	2,10	
	* page 2, paragraph 2; figure 1 *		
	---		
A	US 4 799 407 A (MIYAMOTO YOSHIKAZU)	3	
	* column 2, line 66 - column 3, line 9; figure 2 *		
	---		
A	US 5 280 659 A (PARK NO K)	8	
	* figure 2 *		
	---		
A	US 5 456 278 A (MORRIS JEFFREY B ET AL)	12	
	* abstract; figures 1,2 *		
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A	FR 1 121 144 A (O.R.D.I.C.)		
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A	DE 94 10 176 U (CHEN CHUNG MING)		
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The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		17 November 1997	Petersson, M.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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Application Number  
EP 97 30 6361

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	US 5 101 696 A (NEFF) -----		
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>17 November 1997</b>	Examiner <b>Petersson, M.</b>
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone                      Y : particularly relevant if combined with another document of the same category                      A : technological background                      O : non-written disclosure                      P : intermediate document</p> <p>T : theory or principle underlying the invention                      E : earlier patent document, but published on, or after the filing date                      D : document cited in the application                      L : document cited for other reasons</p> <p>&amp; : member of the same patent family, corresponding document</p>			

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