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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: WIRELESS TOOL SYSTEM

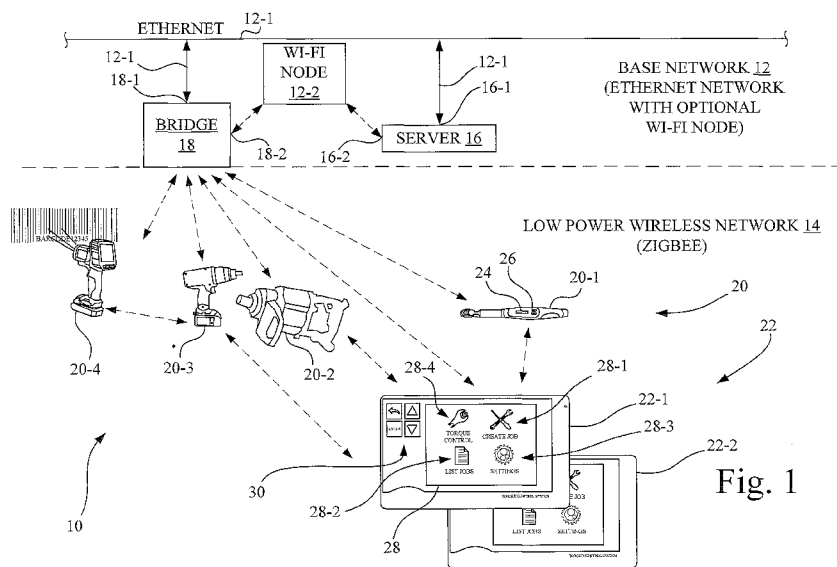


Fig. 1

(57) Abstract: A torque wrench includes a solenoid driven release mechanism and a transceiver for wirelessly transmitting and receiving parameter set.

**Published:****(88) Date of publication of the international search report:**

12 March 2015

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

PCT/US2014/042113 15-01-2015

International application No.

PCT/US2014/042113

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - B25B 13/46 (2014.01)

CPC - B25B 13/461 (2014.11)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - B25B 13/46, 23/143, 23/159, 23/142, 23/144, 23/00, 23/14, 21/00, 23/14, 23/145, 23/151; B23Q 5/26, G01L 5/24 81/46(2014.01)
USPC - 81/467,483, 479, 52; 173/2, 20, 171, 182, 217; 73/862.23, 862.31, 862.333, 862.22; 91/59Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
CPC - B25B 13/461, 23/1425, 23/1427, 21/00, 23/1456, 23/1456; Y10S 173/02 (2014.11) (keyword delimited)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Orbit, Google Patents, Google Scholar.

Search terms used: torque, wrench, release, wireless, wifi, radio, rf, trasnceiver, receiver, cam, axial, strain gauge, strain, ratchet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---	US 6,276,243 B1 (JENKINS) 21 August 2001 (21.08.2001) entire document	1-2,6-8 ---
Y	US 2009/0217788 A1 (HUNTER) 03 September 2009 (03.09.2009) entire document	3-5, 9
Y	US 2009/0217788 A1 (HUNTER) 03 September 2009 (03.09.2009) entire document	3
Y	US 2010/0154599 A1 (GAREIS) 24 June 2010 (24.06.2010) entire document	4 and 5
Y	US 2011/0180517 A1 (SCHNEIDER) 28 July 2011 (28.07.2011) entire document	5
Y	US 6,463,834 B2 (KEMP et al.) 15 October 2002 (15.10.2002) entire document	9

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

23 December 2014

Date of mailing of the international search report

15 JAN 2015

Name and mailing address of the ISA/US

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
see last page

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-9

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-9, drawn to a torque wrench comprising a cam disposed for axial movement

Group II, claims 10-15, drawn to a torque wrench comprising a release configured for axial movement

Group III, claims 16-18, drawn to a tool

The inventions listed as Groups I, II and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention: a cam disposed for axial movement; a strain gauge disposed in the handle tube; means for inputting a parameter set; a controller circuit board coupled to the strain gauge as claimed therein is not present in the invention of Groups II and III. The special technical feature of the Group II invention: a release configured for axial movement, the release including a wedge and a plurality of balls, the balls moving transverse to the longitudinal axis in response to longitudinal movement of the wedge as claimed therein is not present in the invention of Groups I or III. The special technical feature of the Group III invention: a mechanism coupled to the housing for performing a job; a display coupled to the housing for presenting parameter set information as claimed therein is not present in the invention of Groups I or II.

Groups I, II and III lack unity of invention because even though the inventions of these groups require the technical feature of a torque wrench comprising a handle tube having a longitudinal axis; a ratchet head; and the means for inputting, this technical feature is not a special technical feature as it does not make a contribution over the prior art.

Specifically, US 4,665,756 A (SNYDER) teaches a torque wrench (torque wrench, abstract) comprising a handle tube having a longitudinal axis (fig.1 shows a handle tube 26 having a longitudinal axis, col. 2, lines 39-40); a ratchet head (ratchet mechanism, col. 2, lines 45-47); and the means for inputting (input drives 36 and 38, col. 2, lines 46-48).

Since none of the special technical features of the Group I, II or III inventions are found in more than one of the inventions, unity of invention is lacking.