

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 November 2006 (02.11.2006)

PCT

(10) International Publication Number
WO 2006/115923 A3

- (51) International Patent Classification:
G01B 21/04 (2006.01)
- (21) International Application Number:
PCT/US2006/014672
- (22) International Filing Date: 19 April 2006 (19.04.2006)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0508273.0 25 April 2005 (25.04.2005) GB
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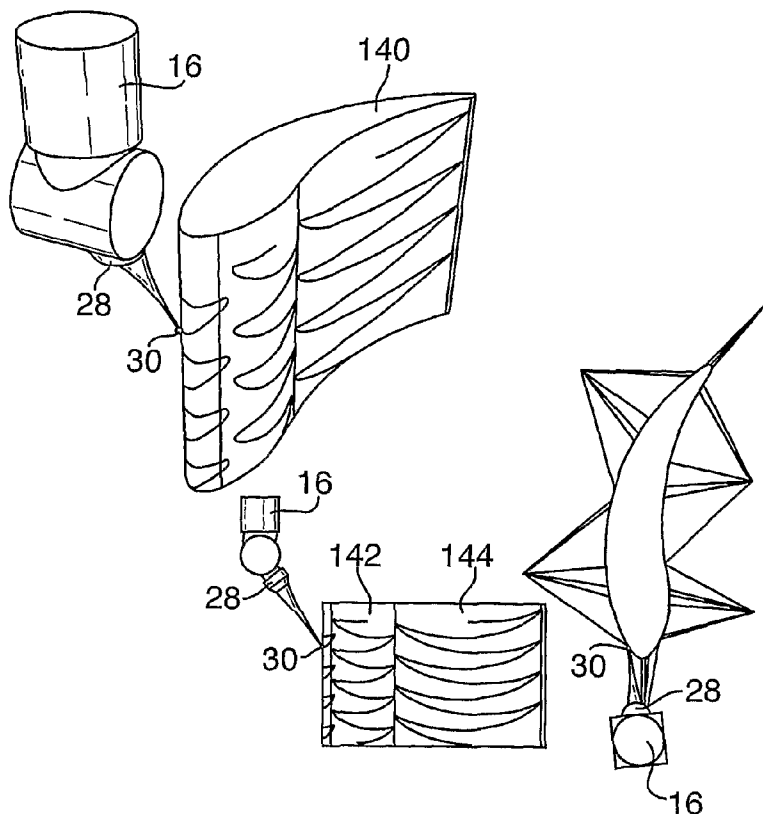
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: METHOD FOR SCANNING THE SURFACE OF A WORKPIECE



(57) Abstract: A method for measuring a surface profile using a surface sensing device mounted on an articulating probe head in which the probe head is moved along a nominal path relative to the surface profile, an at least approximation of the surface normal of the surface profile, the surface profile is sensed with the surface sensing device and the distance or force of the surface sensing device relative to the surface profile substantially in the direction of the surface normal. The surface normal may be determined by approximating at least one section to a curved profile which can be mathematically parameterised.

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European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
8 February 2007

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/014672

A. CLASSIFICATION OF SUBJECT MATTER
INV. G01B21/04

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)
G01B G05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y Y	US 6 154 713 A (PETER ET AL) 28 November 2000 (2000-11-28) figures 1,5,6 column 2, line 25 - line 45 column 2, line 63 - column 3, line 37 column 4, line 26 - line 39 column 6, line 5 - line 15 column 7, line 37 - column 9, line 8 column 9, line 54 - column 10, line 43 column 11, line 10 - column 12, line 3	1-19, 32, 33 14 20-26, 28-30, 34
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Further documents are listed in the continuation of Box C.

See patent family annex.

* 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 document but published on or after the international filing date
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- "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

19 October 2006

Date of mailing of the international search report

02/11/2006

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2006/014672

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 436 735 A (FANUC LTD) 17 July 1991 (1991-07-17) column 1, line 37 - column 2, line 33 column 3, line 13 - column 4, line 20 column 4, line 49 - column 5, line 37 claim 1	1,3,8,9
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A	US 5 471 406 A (BREYER ET AL) 28 November 1995 (1995-11-28) figures 1,3 column 2, line 29 - line 61 column 3, line 57 - column 4, line 1 claim 1	1,4
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X	US 6 701 278 B1 (BARG JUERGEN [DE] ET AL) 2 March 2004 (2004-03-02) figure 5	20-23,28
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2006/014672

Box 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 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 additional sheet

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 an additional fee, this Authority did not invite payment of any additional fee.
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.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-19,32,33

Method and apparatus for measuring surface profile, adjusting the probe inclination according to the predetermined or measured surface normal.

2. claims: 20-31,34

method for determining a multidimensional path by blending a plurality of path sections, and apparatus for carrying out the method.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2006/014672

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