



- (51) International Patent Classification:
G01N 29/22 (2006.01) G10K 11/32 (2006.01)
- (21) International Application Number:
PCT/US2014/033754
- (22) International Filing Date:
11 April 2014 (11.04.2014)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
13/861,173 11 April 2013 (11.04.2013) US
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

[Continued on next page]

(54) Title: CONICAL ULTRASONIC PROBE

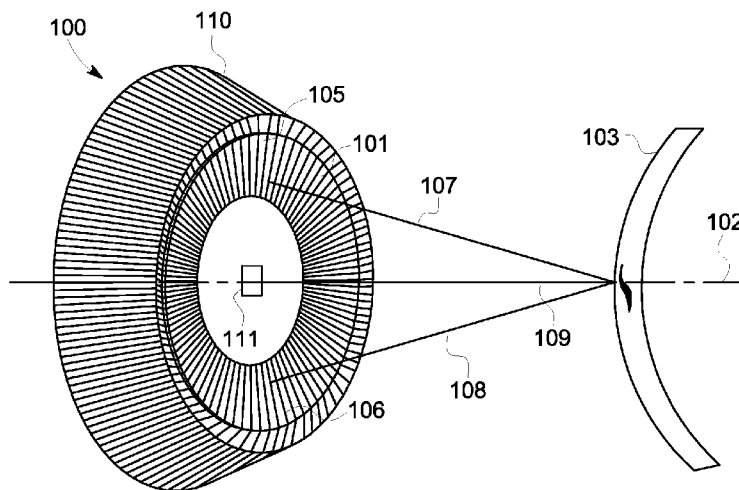


FIG. 1

(57) Abstract: An array of ultrasonic transducers in a conical formation emits pulses of ultrasonic simultaneously so that an anomaly of any orientation in a test object can be detected efficiently.





— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))* — *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))*

Published:

— *with international search report (Art. 21(3))*

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

18 December 2014

INTERNATIONAL SEARCH REPORT

International application No PCT/US2014/033754
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A. CLASSIFICATION OF SUBJECT MATTER INV. G01N29/22 G10K11/32 ADD.				
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) G01N G10K B06B				
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 practicable, search terms used) EPO-Internal, WPI Data, INSPEC, COMPENDEX, IBM-TDB				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	EP 0 538 110 A1 (AEROSPATIALE [FR]) 21 April 1993 (1993-04-21) column 1, lines 1-7 column 4, lines 10-18, 37-45 column 6, lines 27-36; figure 3 column 6, line 57 - column 7, line 52 column 8, lines 43-55 -----	1,2,6,15		
X A	US 2004/016299 A1 (GLASCOCK DAVID [US] ET AL) 29 January 2004 (2004-01-29) paragraphs [0001], [0010], [0013], [0014], [0017], [0019], [0020], [0022], [0051], [0052], [0055], [0059], [0066], [0067]; claims 8,11,12; figures 11,12 ----- -/--	1-4,6-8,15,20,9-14,16-19		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.</td> <td style="width: 50%; border: none;"><input checked="" type="checkbox"/> See patent family annex.</td> </tr> </table>			<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> 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 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	Date of mailing of the international search report			
17 October 2014	23/10/2014			
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Filipas, Alin			

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2014/033754

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 228 343 A (SCHOENEN MANFRIED [DE] ET AL) 20 July 1993 (1993-07-20) column 3, lines 22-49 column 4, lines 3-34 column 6, lines 22-35; figures 3,4,6 column 7, lines 3-11 -----	1,2,6, 15,20
X	US 4 712 428 A (ISHII YUGORO [JP] ET AL) 15 December 1987 (1987-12-15) column 3, line 38 - column 4, line 12 column 4, lines 47-61; figure 6A -----	1,2,6, 15,20

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/033754

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.: 5
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:
see FURTHER INFORMATION sheet PCT/ISA/210

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 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 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.:

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 2, 6(completely); 1, 15(partially)

An ultrasonic testing system (as well as a corresponding method) comprising an array of transducers arranged in conical formation and electronic processing circuitry for simultaneously triggering the emission of an energy pulse by all of said transducers, wherein the transducers are equally distributed in a circular arrangement and are oriented so that their energy beams converge.

2. claims: 3, 4, 7-14, 16-19(completely); 1, 15(partially)

An ultrasonic testing system (as well as a corresponding method) comprising an array of transducers arranged in conical formation and electronic processing circuitry for simultaneously triggering the emission of an energy pulse by all of said transducers, wherein the processing circuit identifies the transducer(s) which detected an echo with a greater amplitude than the other transducers.

3. claims: 20(completely); 15(partially)

An ultrasonic testing method comprising the use of an array of transducers arranged in conical formation and electronic processing circuitry for simultaneously triggering the emission of an energy pulse by all of said transducers, wherein a transducer positioned in the centre of the conical array emits an ultrasonic pulse in a direction perpendicular to an exterior surface of the tested object.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 5

Claim 5, depending on claim 1, defines an embodiment with contradictory features: on the one hand the array of transducers is arranged in a conical formation (according to claim 1) which is by implicitly multi-dimensional, but on the other hand the array of transducers is one-dimensional (according to claim 5).

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guidelines C-IV, 7.2), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2014/033754

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0538110	A1	21-04-1993	DE 69216043 D1 30-01-1997
			DE 69216043 T2 26-06-1997
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			EP 0472252 A1 26-02-1992
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