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[Continued on next page]

(54) Title: METHOD FOR OPTICALLY SCANNING AND MEASURING AN ENVIRONMENT

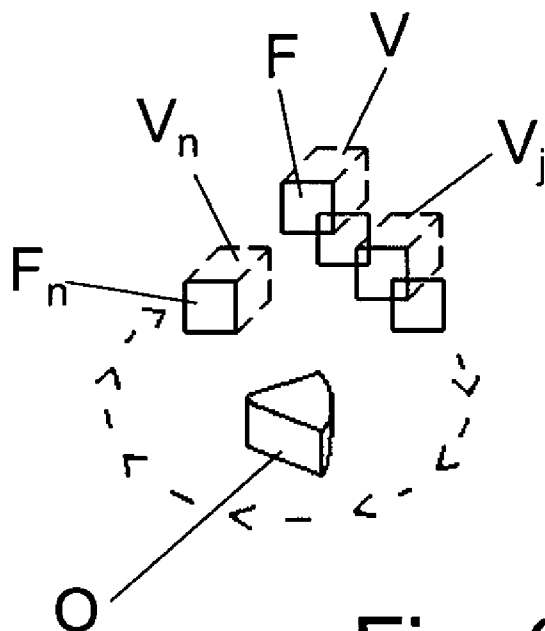


Fig. 6

(57) Abstract: With a method for optically scanning and measuring an environment by means of a hand-held scanner (100) for producing 3D-scans, wherein the hand-held scanner (100) produces, by means of at least one projector (121, 122), at least one pattern (X, X') onto an object (O) in the environment and records, by means of at least one camera (111, 112, 113), images of the object (O) which is provided with the pattern (X, X'), with a plurality of frames (F), for finding a ring closure in the plurality of frames (F), a frustum (V) is formed for each frame (F) in a first step, and, in a second step the latest frustum (V<sub>n</sub>) which is assigned to the latest frame (F<sub>n</sub>), is compared with a plurality of the last frusta (V), by means of forming the intersection, wherein the frustum (V<sub>j</sub>), with which there is the largest intersection, is selected.

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# INTERNATIONAL SEARCH REPORT

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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> INV. G06T7/00 ADD.				
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<b>B. FIELDS SEARCHED</b>				
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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, COMPENDEX, INSPEC, WPI Data				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	MAY S ET AL: "Robust 3D-mapping with time-of-flight cameras", INTELLIGENT ROBOTS AND SYSTEMS, 2009. IROS 2009. IEEE/RSJ INTERNATIONAL CONFERENCE ON, IEEE, PISCATAWAY, NJ, USA, 10 October 2009 (2009-10-10), pages 1673-1678, XP031581042, ISBN: 978-1-4244-3803-7 abstract Section IV	1,7-10		
X	----- US 2012/194644 A1 (NEWCOMBE RICHARD [GB] ET AL) 2 August 2012 (2012-08-02) abstract paragraph [0028] - paragraph [0035] paragraph [0047] paragraph [0062] - paragraph [0063] ----- -/--	1-10		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <span style="margin-left: 100px;"><input checked="" type="checkbox"/> See patent family annex.</span>				
* Special categories of cited documents : <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none; vertical-align: top;">                             "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                         </td> <td style="width: 50%; border: none; vertical-align: top;">                             "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                              "&amp;" document member of the same patent family                         </td> </tr> </table>			"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
"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			
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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  Salvador, Elena			

## INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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