



(51) International Patent Classification:
G06F 21/20 (2006.01)

(21) International Application Number:
PCT/IB2012/053884

(22) International Filing Date:
30 July 2012 (30.07.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
13/194,971 31 July 2011 (31.07.2011) 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, IS, JP, KE, KG, KM, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: ADVANCED CAPTCHA USING IMAGES IN SEQUENCE

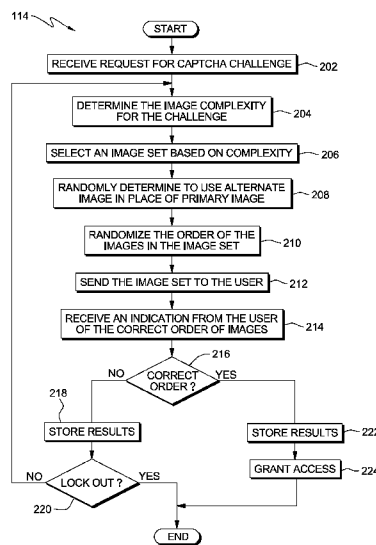


FIG. 2

(57) Abstract: A CAPTCHA challenge tool for determining if a user of a computer is a human or an automated program. The tool presents a set of images. At least a portion of the set of images suggests a chronological sequence when organized correctly. The tool receives a suggested order from the user of the computer. If the suggested order matches the correct order, the tool assumes that the user is a human, if the suggested order does not match the correct order, the tool assumes the user is an automated program.

WO 2013/018019 A3



Published:

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

28 March 2013

- *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

International application No.
PCT/IB2012/053884

A. CLASSIFICATION OF SUBJECT MATTER

G06F 21/20 (2006.01) i

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: G06F; H04L

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)

WPI; EPODOC; CNPAT; CNKI: CAPTCHA, image? or picture?, chronolog+, human, automated w program

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US2011150267A1 (DISNEY ENTERPRISES, INC.) 23 Jun. 2011(23.06.2011) see claims 1, 11, description paragraph [0015] - paragraph [0024], figures 1, 3, 4	1-24
A	US2009235327A1 (PALO ALTO RESEARCH CENTER INC.) 17 Sep. 2009(17.09.2009) see the whole document	1-24
A	US2007143624A1 (MICROSOFT CORPORATION) 21 Jun. 2007(21.06.2007) see the whole document	1-24
A	CN1271432A (CASIO COMPUTER CO., LTD.) 25 Oct. 2000(25.10.2000) see the whole document	1-24

Further documents are listed in the continuation of Box C.

See patent family annex.

<p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“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)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p>	<p>“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</p> <p>“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</p> <p>“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</p> <p>“&” document member of the same patent family</p>
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Date of the actual completion of the international search 10 Dec. 2012(10.12.2012)	Date of mailing of the international search report 17 Jan. 2013 (17.01.2013)
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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/IB2012/053884

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
US2011150267A1	23.06.2011	EP2339497A2	29.06.2011
		CN102103670A	22.06.2011
US2009235327A1	17.09.2009	NONE	
US2007143624A1	21.06.2007	NONE	
CN1271432A	25.10.2000	WO9921073A1	29.04.1999
		JP11126191A	11.05.1999
		AU9464298A	10.05.1999
		EP1027639A1	16.08.2000
		TW406222A	21.09.2000
		KR20010015737A	26.02.2001
		DE69812141E	17.04.2003
		ES2192336T3	01.10.2003