(19) World Intellectual Property Organization

International Bureau





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

(10) International Publication Number WO 2006/115598 A3

(51) International Patent Classification: G06F 17/27 (2006.01) G06F 17/28 (2006.01)

(21) International Application Number:

PCT/US2006/009147

(22) International Filing Date: 14 March 2006 (14.03.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

25 April 2005 (25.04.2005) 11/113,612

- (71) Applicant (for all designated States except US): MI-CROSOFT CORPORATION [US/US]; One Microsoft Way, Redmond, Washington 98052-6399 (US).
- (72) Inventors: POTTER, Douglas W.; One Microsoft Way, Redmond, Washington 98052-6399 (US). HART, JR., Edward C.: One Microsoft Way, Redmond, Washington 98052-6399 (US). IGARASHI, Hisakazu; One Microsoft Way, Redmond, Washington 98052-6399 (US). SCHMID, Patricia M.; One Microsoft Way, Redmond, Washington 98052-6399 (US). RAMSEY, William D.; One Microsoft Way, Redmond, Washington 98052-6399 (US).
- (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), 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).

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))

Published:

- with international search report
- (88) Date of publication of the international search report: 16 October 2008

(54) Title: METHOD AND SYSTEM FOR GENERATING SPELLING SUGGESTIONS

(57) Abstract: A computer implemented method of suggesting replacement words for words of a string. In the method, an input string of input words is received [202]. The input words are then matched to subject words of a candidate table [218]. Next, candidate replacement words and scores from the candidate table corresponding to the matched subject words are extracted [220]. Each score is indicative of a probability that the input word should be replaced with the corresponding candidate replacement word. Finally, replacement of the input words with their corresponding candidate replacement words is selectively suggested based on the scores for the replacement words [226]. Another aspect of the present invention is directed to a spell checking system that is configured to implement the method.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/09147

A. CLAS	SSIFICATION OF SUBJECT MATTER G06F 17/27(2006.01),17/28(2006.01)			
USPC: 704/9,4 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) U.S.: 704/9,4				
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) USPTO-EAST				
C. DOCT	JMENTS CONSIDERED TO BE RELEVANT			
Category *	Citation of document, with indication, where a	ppropriate, of the relevant passages	Relevant to claim No.	
Ÿ	US 6,424,983 B1 (SCHABES et al.) 23 July 2002 (2 Figs. 3-4, col. 8, line 46 to col. 9, line 50; col. 10, lin 57-64; col. 10, lines 44-47; col. 2, lines 55-56; col. 8 line 10; col. 11, lines 9-20	es 2-33; col. 11, lines 22-67; col. 3, lines	1-10,18-20	
Y	US 6,889,361 B1 (BATES et al.) 03 May 2005 (03.05.2005): 1-10,18-20 Firs. 1A and 15-16; col. 3, lines 57-64; col. 10, lines 44-67; col. 2, lines 55-56; Fig. 10			
Y	US 6,374,210 B1 (CHU) 16 April 2002 (16.04.2002) 5,19			
Y	Col. 7, lines 1-12; col. 6, line 66 to col. 7, line 10 US 2005/0080772 A1 (BEM) 14 April 2005 (14.04.2005) Fig.7; p69-p70; p103		6	
Y	US 2002/165873 A1 (KWOK et al.) 07 November 2002 (07.11.2002) 7 P62-p63; p65		7	
Y	US 2004/0111475 A1 (SCHULTZ) 10 June 2004 (10 P109; p103 and abstract	0.06.2004)	20	
Further documents are listed in the continuation of Box C. See patent family annex.				
Special categories of cited documents: "T" later document published after the international filing date or priority				
"A" document particular	defining the general state of the art which is not considered to be of relevance	date and not in conflict with the applicati	on .	
"E" earlier application or patent published on or after the international filing date		"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		
"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)		"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		
"O" document	referring to an oral disclosure, use, exhibition or other means	obvious to a person skilled in the art	such combination being	
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent fan	nily .	
Date of the actual completion of the international search Date		Date of mailing of the international search	report	
17 June 2008		$1 \frac{1}{16} \frac{1}{10}$	= 2008 /	
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Boy 1450		QI HAN Telephone No. (571)-272-7602	Ward	
DOTTO MILE TO CONTROL OF THE PROPERTY OF THE P				

Form PCT/ISA/210 (second sheet) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US06/09147

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:		
; –	aims Nos.: cause they relate to subject matter not required to be searched by this Authority, namely:	
be	aims Nos.: cause they relate to parts of the international application that do not comply with the prescribed requirements to such extent that no meaningful international search can be carried out, specifically:	
]	aims Nos.: cause 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: Please See Continuation Sheet		
sea	all required additional search fees were timely paid by the applicant, this international search report covers all archable claims.	
	As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.	
	only some of the required additional search fees were timely paid by the applicant, this international search report vers only those claims for which fees were paid, specifically claims Nos.: 1-10 and 18-20	
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 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.	

Form PCT/ISA/210 (continuation of first sheet(2)) (April 2007)

International application No. INTERNATIONAL SEARCH REPORT PCT/US06/09147 BOX III. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING 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, claim(s) 1-10 and 18-20, drawn to a method and/or system of suggesting replacement words for a word string, classified in class 704, subclass 9. Group II, claims 11-17, drawn to a method for generating a candidate table, classified in class 704, subclass 10. The inventions listed as Groups I-II 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: For Group I and Group II, they are distinct inventions. Further, It can be seen there is no common features between independent claim 1 (or claim 18) of Group I and the independent claim 11 of Group II. Therefore they are lack of unity of invention. Note: In response to the lack of unity stated above, the applicant's representative, Ms. Sharon Rydberg, through a telephone conversation on 6/17/2008, informed the examiner that a provisional election was made to prosecute only invention Group I, claims 1-10 and 18-20.