

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
5 July 2001 (05.07.2001)

PCT

(10) International Publication Number
WO 01/48729 A2

(51) International Patent Classification⁷: **G09G 3/00**

(21) International Application Number: PCT/US00/34682

(22) International Filing Date:
21 December 2000 (21.12.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/474,667 29 December 1999 (29.12.1999) US
Not furnished 20 December 2000 (20.12.2000) US

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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

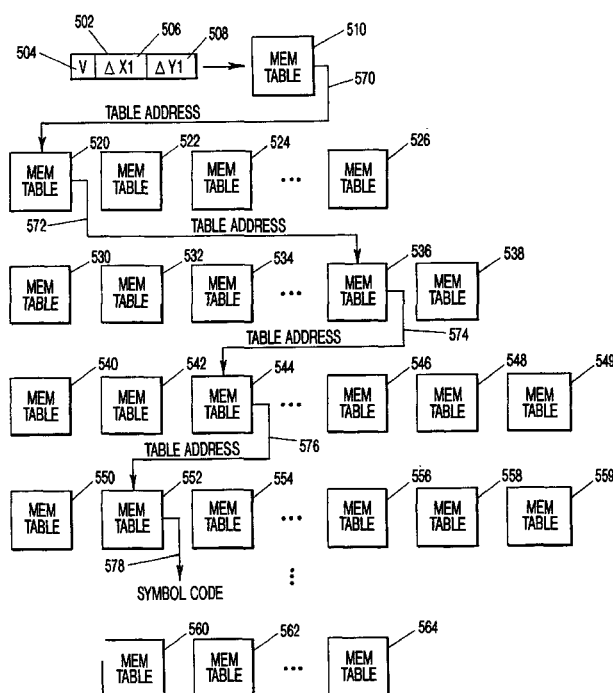
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— Without international search report and to be republished upon receipt of that 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.

(54) Title: SYSTEM, METHOD AND APPARATUS FOR PATTERN RECOGNITION WITH APPLICATION TO SYMBOL RECOGNITION AND REGENERATION FOR A CALIGRAPHIC DISPLAY



(57) Abstract: The invention provides a technique for pattern recognition that employs a state machine that incorporates a sequence of table-look-up operations. A sequence of input parameters, derived according to an application-specific algorithm, generates a corresponding sequence of memory addresses for these operations. The memory tables are organized in a hierarchical structure that corresponds to the input sequence. Table data is designed to recognize a specific library of input patterns. An input sequence traces an input-specific path through the memory tables until one of the patterns in the library is recognized (578) or until it is determined that the input sequence is inconsistent with any of the library patterns. For each library pattern, the table data is designed to accommodate the variations in the input values that are specific to the application (e.g., variations due to noise and/or tolerances). Table data can be derived by analysis, simulation, learning or a combination of these methods. The invention can replace neural networks or DSP correlation techniques in real-time applications. It achieves very high performance by comparing the input sequence to all of the patterns in the library simultaneously. The invention can be employed to improve the image quality of a caligraphic display system that uses flat-panel display technology. A method for improving the performance of display systems that employ

image memories to refresh a computer generated image is also disclosed.