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[Continued on next page]

(54) Title: COLOR SIMILARITY SORTING FOR VIDEO FORENSICS SEARCH

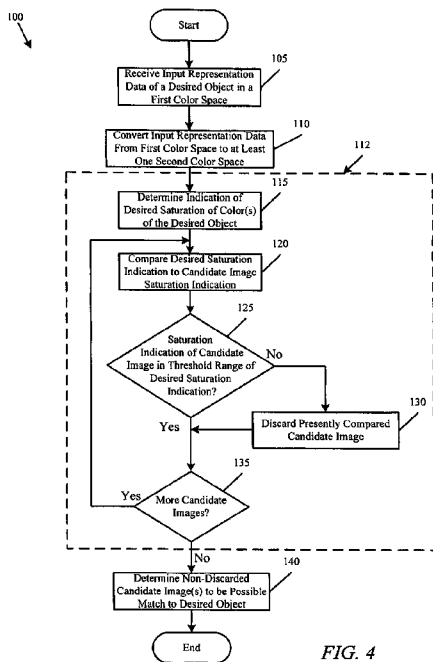


FIG. 4

(57) Abstract: Systems and methods of sorting electronic color images of objects are provided. One method includes receiving an input representation of an object, the representation including pixels defined in a first color space, converting the input image into a second color space, determining a query feature vector including multiple parameters associated with color of the input representation, the query feature vector parameters including at least a first parameter of the first color space and at least a first parameter of the second color space and comparing the query feature vector to multiple candidate feature vectors. Each candidate feature vector includes multiple parameters associated with color of multiple stored candidate images, the candidate feature vector parameters including at least the first parameter from the first color space and at least the first parameter from the second color space. The method further includes determining at least one of the candidate images to be a possible match to the desired object based on the comparison.

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**A. CLASSIFICATION OF SUBJECT MATTER****G06K 9/46(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)

G06K 9/46; G06T 17/00; H04N 1/60; G06K 9/00; H04N 5/14; G06T 5/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords: "color, similarity, sorting, video, forensics, serch, saturation, indication, RGB, HSV, query, vector"

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002-0181767 A1 (YINING DENG et al.) 05 December 2002 See abstract; claims 1-10, 20; and figures 1-4.	1-21
A	US 2005-0047657 A1 (JAE-MOON LEE) 03 March 2005 See abstract; claim 1; and figures 1-5.	1-21
A	US 06084595 A (BACH; JEFFREY R et al.) 04 July 2000 See abstract; claims 1-19; and figures 1-5.	1-21
A	US 7386170 B2 (RONK LAWRENCE J. et al.) 10 June 2008 See abstract; claim 1; and figures 1-9.	1-21
A	JP 2001-211339 A (FUJI PHOTO FILM CO., LTD.) 03 August 2001 See abstract; claims 1-3; and figures 1-9.	1-21

 Further documents are listed in the continuation of Box C. 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

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"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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

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Date of mailing of the international search report

**24 JULY 2012 (24.07.2012)**

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002-0181767 A1	05.12.2002	EP 1395953 A1 JP 2004-538555 A TW 550518 A US 6580824 B2 WO 02-093484 A1	10.03.2004 24.12.2004 01.09.2003 17.06.2003 21.11.2002
US 2005-0047657 A1	03.03.2005	KR 10-0708111 B1 US 7583838 B2	16.04.2007 01.09.2009
US 06084595A A	04.07.2000	None	
US 7386170 B2	10.06.2008	US 2002-057343 A1	16.05.2002
JP 2001-211339 A	03.08.2001	US 7034959 B1	25.04.2006