



(43) International Publication Date
9 August 2012 (09.08.2012)

- (51) International Patent Classification:
H04M 1/22 (2006.01)
- (21) International Application Number:
PCT/US2012/023331
- (22) International Filing Date:
31 January 2012 (31.01.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
61/439,132 3 February 2011 (03.02.2011) US
- (71) Applicant (for all designated States except US): **BAYER HEALTHCARE LLC** [US/US]; 555 White Plains Road, Tarrytown, New York 10591 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **PRAIS, Eugene** [US/US]; 114 Dockerty Hollow Road, West Milford, New Jersey 07480 (US).
- (74) Agents: **DUGAN, Brian M.** et al.; Dugan & Dugan, PC, 245 Saw Mill River Road, Suite 309, Hawthorne, New York 10532 (US).
- (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, 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.

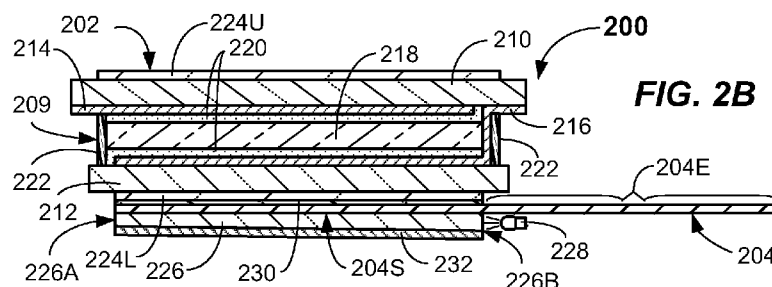
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, 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).

Published:

- 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))

(88) Date of publication of the international search report:
8 November 2012

(54) Title: COMPONENT ILLUMINATION APPARATUS, SYSTEMS, AND ELECTRONIC DEVICES AND METHODS OF MANUFACTURING AND USING THE SAME



(57) Abstract: Apparatus for illuminating one or more components of an electronic device having a visual display (202) (e.g., a backlit display), such as one or more keys of keyboards, one or more interface ports, or one or more external surfaces are disclosed. In one or more embodiments, a component illumination apparatus has a visual display and a light guide (204) optically coupled to the visual display and that is adapted to illuminate one or more components external to the visual display. Methods of component illumination and illumination systems are described, as are other embodiments.



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/023331

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04M1/22
ADD.
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)
H04M G02B

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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/052066 A1 (FUNAMOTO TATSUAKI [JP] ET AL) 18 March 2004 (2004-03-18)	1,2,4,7, 14,17-20
Y	paragraph [0007] - paragraph [0055]; figures 1-5	5,6,8
X	US 5 975 711 A (PARKER JEFFERY R [US] ET AL) 2 November 1999 (1999-11-02)	1-4,9, 10,12, 14-20
Y	column 2, line 33 - column 6, line 54; figures 1-9	5,6,8
X	JP 2001 358816 A (CITIZEN ELECTRONICS) 26 December 2001 (2001-12-26)	1-4,9, 12,14, 17-20
Y	abstract; figure 1	5,6,8
	----- -/--	

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
- "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

Date of the actual completion of the international search

17 April 2012

Date of mailing of the international search report

14/09/2012

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

Frisch, Anna Maria

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2012/023331

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/259939 A1 (RINKO KARI [FI]) 24 November 2005 (2005-11-24) paragraph [0049] - paragraph [0050]; figures 8b,8c,9a -----	5,6,8
Y	US 2009/059618 A1 (ONIKIRI AKIRA [JP] ET AL) 5 March 2009 (2009-03-05) paragraph [0054]; figure 1 -----	5,6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/023331

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:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because 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:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

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.:

1-10, 12, 14-20

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- 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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-10, 12, 14-20

Subject 1 relates to illumination apparatuses and systems where a light guide is coupled to a visual display and extends beyond the display to illuminate other components of the apparatus, to details of a sandwich position of the lightguide in the visual display, to keypads illuminated via the extended parts of the lightguide and coupled thereto via holes or outcoupling surface features, and corresponding methods.

2. claim: 11

Subject 2 also relates to illumination apparatuses and systems where a light guide is coupled to a visual display and extends beyond the display to illuminate other components of the apparatus, and to details of particular shape of the lightguide extension.

3. claim: 13

Subject 3 also relates to illumination apparatuses and systems where a light guide is coupled to a visual display and extends beyond the display to illuminate other components of the apparatus, and to details of a non-planar light guide extension.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2012/023331

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004052066	A1	18-03-2004	JP 4352609 B2 28-10-2009
			JP 2001313163 A 09-11-2001
			US 2001021107 A1 13-09-2001
			US 2004052066 A1 18-03-2004

US 5975711	A	02-11-1999	DE 69835719 T2 13-09-2007
			EP 0884525 A2 16-12-1998
			JP 4779065 B2 21-09-2011
			JP 11015393 A 22-01-1999
			TW M262652 U 21-04-2005
			US 5975711 A 02-11-1999

JP 2001358816	A	26-12-2001	JP 4407856 B2 03-02-2010
			JP 2001358816 A 26-12-2001

US 2005259939	A1	24-11-2005	AU 2005239889 A1 17-11-2005
			BR PI0510509 A 30-10-2007
			CA 2579217 A1 17-11-2005
			CN 1997922 A 11-07-2007
			EP 1751593 A2 14-02-2007
			JP 4739327 B2 03-08-2011
			JP 2007535790 A 06-12-2007
			US 2005259939 A1 24-11-2005
			US 2008266863 A1 30-10-2008
			WO 2005107363 A2 17-11-2005

US 2009059618	A1	05-03-2009	NONE
