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- (72) Inventor; and
- (71) Applicant : **RICHARDSON, Brian, E.** [US/US]; 1506-B Dell Avenue, Campbell, California 95008 (US).
- (74) Agents: **KLINE, Keith** et al.; Carr & Ferrell LLP, 120 Constitution Drive, Menlo Park, CA 94025 (US).
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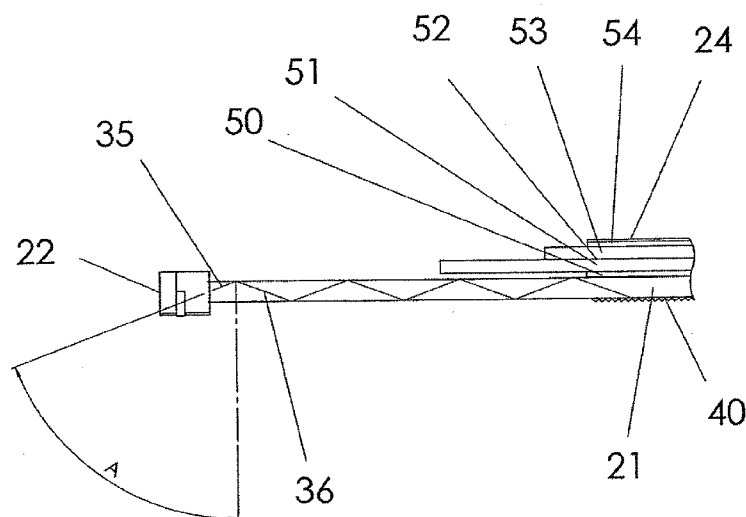


Fig. 5

(57) Abstract: A brightness enhancing reflector (40) to accurately control the light exiting the guide (21) achieves accurate control of the reflected light by extracting light from a limited area of the light guide. The configuration of the reflectors used for the selective extraction determines the nature of the output light. The reflectors are preferably located on a side of the light guide opposite to an output side of the light guide and in conjunction with an electronic display (53).

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

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G02B G02F

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/109105 A1 (NAGAKUBO HIDEAKI [JP] ET AL) 10 June 2004 (2004-06-10)	15,18-21
A	paragraph [0061] - paragraph [0070]; figure 1	1,8,22
X	----- EP 0 867 747 A2 (SONY CORP [JP]) 30 September 1998 (1998-09-30)	15,18-21
A	column 7 - column 8; figure 1	1,8,22
X	----- US 2004/076396 A1 (SUGA YOSHINORI [JP]) 22 April 2004 (2004-04-22)	15,18-21
A	paragraph [0114] - paragraph [0126]; figures 1,2 paragraph [0134] - paragraph [0137]	1,8,22
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European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Andreassen, Jon

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1 215 526 A1 (MITSUBISHI CHEM CORP [JP]; YUKADENSHI CO LTD [JP]) 19 June 2002 (2002-06-19)	15,18-21
A	paragraph [0020] - paragraph [0034]; figures 1,2	1,8,22
A	----- US 2007/176887 A1 (UEHARA SHIN-ICHI [JP] ET AL) 2 August 2007 (2007-08-02) paragraphs [0101] - [0105], [0142], [0154]; figures 4,11,17 -----	1,8,15, 22

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 2004109105	A1	10-06-2004	CN	1504807 A		16-06-2004
			JP	2004179116 A		24-06-2004

EP 0867747	A2	30-09-1998	US	6266108 B1		24-07-2001

US 2004076396	A1	22-04-2004	CN	1489710 A		14-04-2004
			DE	10296330 T5		22-04-2004
			WO	02065173 A1		22-08-2002
			TW	574509 B		01-02-2004

EP 1215526	A1	19-06-2002	WO	0205022 A1		17-01-2002
			US	2002135996 A1		26-09-2002

US 2007176887	A1	02-08-2007	CN	101013211 A		08-08-2007
