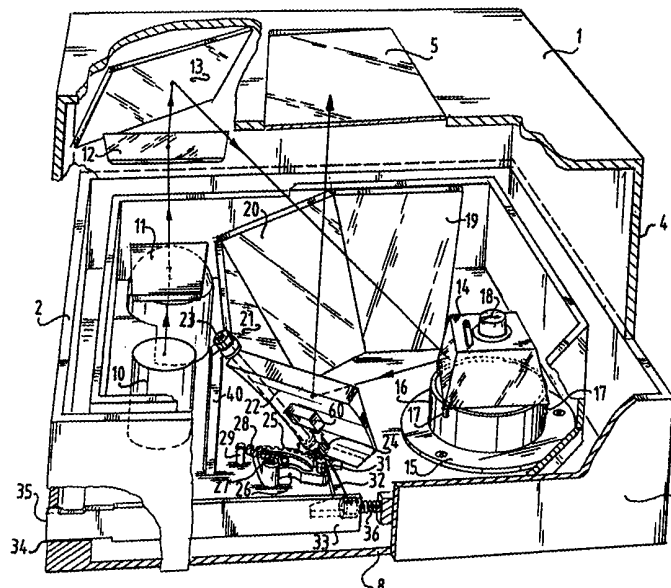


INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : G06K 7/10	A3	(11) International Publication Number: WO 00/16237 (43) International Publication Date: 23 March 2000 (23.03.00)
(21) International Application Number: PCT/NL99/00565 (22) International Filing Date: 10 September 1999 (10.09.99) (30) Priority Data: 1010088 14 September 1998 (14.09.98) NL (71) Applicant (for all designated States except US): SCANTECH B.V. [NL/NL]; Uraniumweg 23, NL-3812 RJ Amersfoort (NL). (72) Inventors; and (75) Inventors/Applicants (for US only): SCHONENBERG, Cornelis, Reinier, Johannes [NL/NL]; Prins Clauslaan 13, NL-3818 ZC Amersfoort (NL). NUNNINK, Laurentius, Wilhelmus [NL/NL]; Het Ruim 15, NL-3823 SG Amersfoort (NL). (74) Agent: LAND, Addick, Adrianus, Gosling; Sweelinckplein 1, NL-2517 GK Den Haag (NL).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, 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, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, 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), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>In English translation (filed in Dutch).</i> (88) Date of publication of the international search report: 3 August 2000 (03.08.00)

(54) Title: DEVICE FOR READING A BARCODE**(57) Abstract**

The present invention relates to a device for scanning and/or recognizing one or more barcodes, comprising: a laser light source (10) for transmitting laser light; a rotatable polygonal mirror (14) for reflecting the transmitted laser light; a number of fixedly disposed flat mirrors (13, 19, 20, 21) for reflecting laser light; a pick-up element for picking up laser light scattered by a barcode; a compact housing in which the laser light source, the polygonal mirror, the flat mirrors and the pick-up element are arranged, which compact housing is constructed from a substantially flat bottom side, a top side and standing walls arranged therebetween and wherein the distance between the standing walls amounts to 3-14 cm.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

INTERNATIONAL SEARCH REPORT

International Application No

PC1/NL 99/00565

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06K7/10

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)

IPC 7 G06K

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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 28512 A (PSC INC) 7 August 1997 (1997-08-07) page 1, line 2 - line 10 page 3, line 6 -page 5, line 9 page 8, line 27 -page 9, line 13 page 22, line 25 -page 25, line 26	1-3, 19-23
A	figures 3,4,6,14 ---	4-10
A	US 5 691 528 A (GOREN DAVID ET AL) 25 November 1997 (1997-11-25) column 1, line 65 -column 7, line 19 ---	1-3
A	US 5 214 270 A (RANDO JOSEPH F) 25 May 1993 (1993-05-25) column 3, line 52 -column 5, line 20 -----	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in 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 document 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.

"Z" document member of the same patent family

Date of the actual completion of the international search

23 December 1999

Date of mailing of the international search report

22.05.2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

GOOSSENS A.M.J.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/NL 99/00565

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

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 fee, this Authority did not invite payment of any additional fee.
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.:

1-11, 19-23

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/NL 99/00565

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-11,19-23

Device for scanning and/or recognizing one or more barcodes, comprising a compact housing having a flat bottom side and a method therefor.

2. Claims: 12,13,19-23

Device for scanning and/or recognizing one or more barcodes, comprising a mirror foldable between two positions and a method therefor.

3. Claims: 14-23

Device for scanning and/or recognizing one or more barcodes, comprising drive means for driving a rotating support member and a method therefor.

INTERNATIONAL SEARCH REPORT

Information on patent family members

Intr National Application No

PC I/NL 99/00565

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9728512 A	07-08-1997	DE 19781569 T GB 2324634 A	11-03-1999 28-10-1998
US 5691528 A	25-11-1997	US 5504316 A US 5478997 A US 5408081 A US 5235167 A US 5280165 A US 5168149 A US 5099110 A JP 8241364 A US 5925872 A CA 2136046 A EP 0653723 A JP 7254041 A US 5581067 A US 5637856 A US 5861615 A US 5763863 A US 5988508 A US 5821521 A CA 2097361 A EP 0574024 A JP 7006198 A US 5705799 A US 5569901 A US 5525788 A US 5608202 A US 5665954 A US 5866894 A CN 1109615 A,B EP 0615207 A JP 6274670 A US 5436440 A US 5446272 A US 5581072 A US 5545888 A US 5619028 A US 5612531 A US 5783813 A US 5952644 A US 5902989 A US 5621371 A US 5581070 A US 5917173 A US 5825013 A US 5923025 A US 5874720 A US 5945659 A US 5561283 A US 5600119 A AT 184123 T CA 2060763 A	02-04-1996 26-12-1995 18-04-1995 10-08-1993 18-01-1994 01-12-1992 24-03-1992 17-09-1996 20-07-1999 18-05-1995 17-05-1995 03-10-1995 03-12-1996 10-06-1997 19-01-1999 09-06-1998 23-11-1999 13-10-1998 13-12-1993 15-12-1993 10-01-1995 06-01-1998 29-10-1996 11-06-1996 04-03-1997 09-09-1997 02-02-1999 04-10-1995 14-09-1994 30-09-1994 25-07-1995 29-08-1995 03-12-1996 13-08-1996 08-04-1997 18-03-1997 21-07-1998 14-09-1999 11-05-1999 15-04-1997 03-12-1996 29-06-1999 20-10-1998 13-07-1999 23-02-1999 31-08-1999 01-10-1996 04-02-1997 15-09-1999 15-12-1992
US 5214270 A	25-05-1993	NONE	