

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
5 October 2006 (05.10.2006)

PCT

(10) International Publication Number
WO 2006/103655 A3

(51) International Patent Classification:
F41H 11/12 (2006.01)

(21) International Application Number:
PCT/IL2006/000377

(22) International Filing Date: 26 March 2006 (26.03.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
167740 30 March 2005 (30.03.2005) IL

(71) Applicant (for all designated States except US): **RAFAEL - ARMAMENT DEVELOPMENT AUTHORITY LTD.** [IL/IL]; P.o.box 2250, 31021 Haifa (IL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **NACHSHON, Yehuda** [IL/IL]; 6 Halon St., 23840 Timrat (IL).

(74) Agent: **FRIEDMAN, Mark**; 7 Jabotinsky St., 52520 Ramat Gan (IL).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

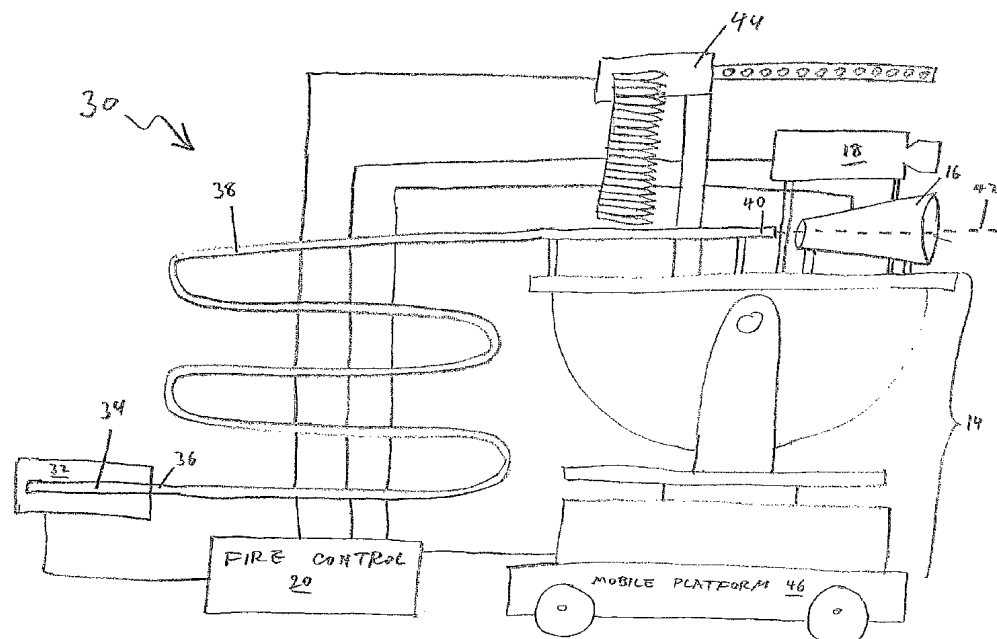
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
30 April 2009

(54) Title: FIBER LASER DEVICE FOR NEUTRALIZING UNEXPLODED ORDNANCE



(57) Abstract: A device for directing a beam of radiation at a target. The device includes a fiber laser for producing the beam of radiation, an aiming mechanism, for aiming the beam of radiation at the target, that moves independently of the fiber laser, and an optical fiber for conveying the beam of radiation to the aiming mechanism.

WO 2006/103655 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IL06/00377

A. CLASSIFICATION OF SUBJECT MATTER

IPC: F41H 11/12(2006.01)

USPC: 89/1.11,1.13;102/402,403

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)

U.S. : 89/1.11, 1.13; 102/402, 403

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)

BRS text searches conducted on 10/6/2007 and 10/8/2007.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,508,760 A (Kobayashi et al.) 16 April 1996 (16.04.1996), (figs. 1 and 2 and associated written description)	1, 5-12, 14-16, 20, and 22-23
Y	US 2002/0149836 A1 (Jovanovic et al.) 17 October 2002 (17.10.2002), (paragraphs 0009 and 0013)	1, 5-12, 14-16, 20, and 22-23
Y	US 2005/0041697 A1 (Seifert et al.) 24 February 2005 (24.02.2005), (paragraph 0048)	2-4 and 21
Y	US 2004/0008744 A1 (Okazaki et al.) 15 January 2004 (15.01.2004), (see fig. 1 and associated written description and paragraph 0044)	17-19
Y	US 5,901,267 A (Lee) 04 May 1999 (04.05.1999), (see col. 1, line 65 to col. 2, line 9)	17-19
Y	US 5,301,594 A (Argazzi et al.) 12 April 1994 (12.04.1994), (see fig. 5 and associated written description)	24-26
Y	EU 0 305 556 A1 (Hoogen et al.) 29 August 1987 (29.08.1987) (see abstract)	24-26



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:		"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

Date of the actual completion of the international search

08 October 2007 (08.10.2007)

Date of mailing of the international search report

22 FEB 2008

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

Stephen M. Johnson

Telephone No. 571-272-6877