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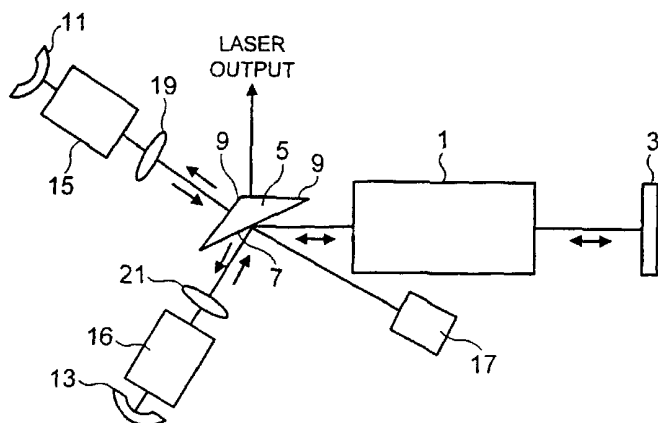
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PULSE LASER RESONATOR



(57) Abstract: A laser (2) includes a gain medium (10), a switch element (12) and a pulse controller (14). In one embodiment laser light of differing polarisations pass along respective paths and a pulsed laser output is generated via an electro-optical element. In another embodiment light of differing polarisations passes in differing directions through a cyclical path. The invention can make use of a prism-shaped polariser having a polarisation selection face and two further faces. Yet further initial pulses can be controlled to reduce energy for example by progressively increasing the period or amplitude of successive pulses. As a result an efficient and high power laser apparatus is realised.



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INTERNATIONAL SEARCH REPORT

International Application No
PCT/gB 01/04118

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01S3/11 G02B5/30

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 H01S

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)

EPO-Internal, INSPEC, 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 4 841 528 A (SIPES JR DONALD L ET AL) 20 June 1989 (1989-06-20) abstract	1,6,7, 10-15, 25-31, 33,34
X	US 3 564 454 A (HOOK WILLIAM R ET AL) 16 February 1971 (1971-02-16) figures 1-3	3,6,7, 10,16, 22,23, 26-29

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.

"&" document member of the same patent family

Date of the actual completion of the international search

5 December 2001

Date of mailing of the international search report

01.03.02

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INTERNATIONAL SEARCH REPORT

International Application No

PC1, GB 01/04118

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 370 620 A (SPECTRA PHYSICS) 30 May 1990 (1990-05-30) cited in the application	1,2,4,5, 17,24, 30,32, 34-38
X	abstract; figure 2	3,6-8, 16,22, 23,28
Y	--- US 4 380 073 A (WAYNE ROBERT J) 12 April 1983 (1983-04-12) abstract	24,37
Y	--- GOODNO G D ET AL: "Investigation of beta -BaB/sub 2/0/sub 4/ as a Q switch for high power applications" APPLIED PHYSICS LETTERS, 27 MARCH 1995, USA, vol. 66, no. 13, pages 1575-1577, XP002184817 ISSN: 0003-6951 abstract	1,2,4,5, 17,30, 32, 34-36,38
A	--- US 3 928 818 A (WHITE MATTHEW B) 23 December 1975 (1975-12-23) figure 2 -----	1-36

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 01/04118

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:

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 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.:

1-39

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- 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: 1-39

An y-shaped cavity dumped laser resonator

2. Claims: 40-49

A prism shaped polariser

3. Claims: 50-69

A pulsed laser having a pulse controller to reduce laser pulse energy at start up

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 01/04118

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4841528 A	20-06-1989	NONE	
US 3564454 A	16-02-1971	NONE	
EP 0370620 A	30-05-1990	US 4872181 A	03-10-1989
US 4380073 A	12-04-1983	NONE	
US 3928818 A	23-12-1975	NONE	