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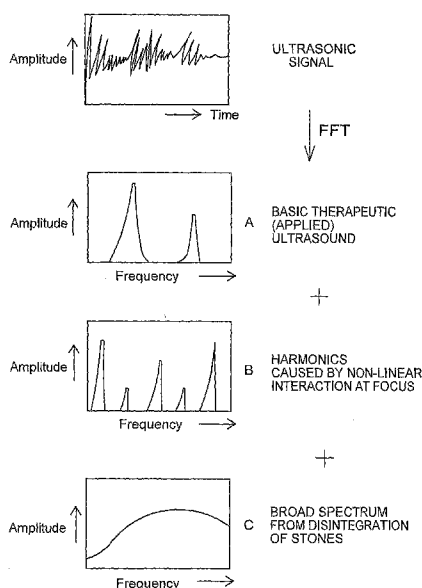
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(54) Title: APPARATUS FOR THE TREATMENT OF GALSTONES AND KIDNEY- STONES

FIGURE 1



(57) Abstract: Apparatus for treating medical conditions such as a gallstone or kidney stone in a patient, comprising a transmitter operable to focus sound waves on the medical condition within the patient to cause a reduction in the medical condition, a detector operable to receive a treatment sound signal generated in the process of the reduction of the medical condition, and a signal processor adapted to provide an output signal to an operator indicative of the advocacy of the treatment of the medical condition dependent on the treatment sound signal detected by the detector.



WO 2008/068509 A3

INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B17/22

ADD. A61B19/00

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)

A61B

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 449 138 A (TOKYO SHIBAURA ELECTRIC CO [JP]) 2 October 1991 (1991-10-02) column 9, line 24 - column 10, line 28; claim 1; figure 4	1,7, 10-14
X	US 2004/059319 A1 (BOHRIS CHRISTIAN [DE]) 25 March 2004 (2004-03-25) paragraphs [0048] - [0052]; claim 1	1,10-12
X	EP 0 460 536 A (TOKYO SHIBAURA ELECTRIC CO [JP]) 11 December 1991 (1991-12-11) column 6, line 30 - column 7, line 10; claims 1,2; figure 1b	1,11,12
A	DE 103 04 904 A1 (SIEMENS AG [DE]) 5 August 2004 (2004-08-05) paragraphs [0008] - [0014]; claim 1	1-14
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☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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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.
A	EP 0 548 048 A (TOKYO SHIBAURA ELECTRIC CO [JP]) 23 June 1993 (1993-06-23) the whole document -----	1-14

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2007/004700

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.: 15-17
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
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:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment or additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers 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.:

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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
EP 0449138	A	02-10-1991	DE	69123864 D1	13-02-1997
			DE	69123864 T2	14-08-1997
			US	5311869 A	17-05-1994
US 2004059319	A1	25-03-2004	AT	392187 T	15-05-2008
			DE	10234144 A1	05-02-2004
			EP	1384444 A1	28-01-2004
			JP	4101711 B2	18-06-2008
			JP	2005000633 A	06-01-2005
EP 0460536	A	11-12-1991	DE	69104551 D1	17-11-1994
			DE	69104551 T2	24-05-1995
			US	5243985 A	14-09-1993
DE 10304904	A1	05-08-2004	JP	2004237091 A	26-08-2004
			US	2004186397 A1	23-09-2004
EP 0548048	A	23-06-1993	NONE		