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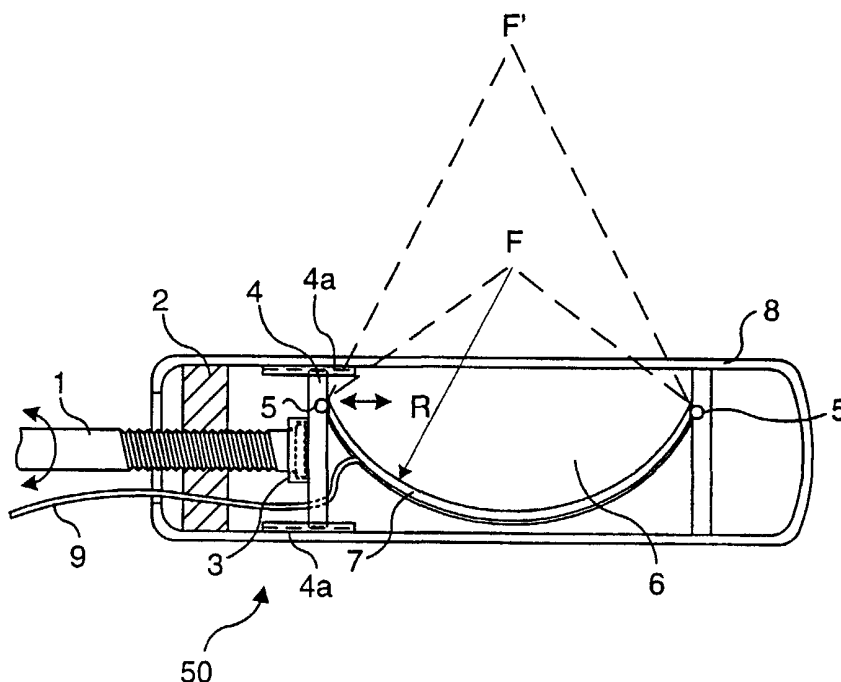
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(54) Title: **ULTRASOUND TRANSDUCERS FOR IMAGING AND THERAPY**



(57) Abstract: Ultrasound applicators able to both image a treatment site and administer ultrasound therapy include an array of transducer elements (102) that can be focused. In several embodiments, an electronically phased array (102) is used for controlling the focal point of an ultrasound beam. The ultrasound beam produced thereby can also be electronically steered. To reduce the quality factor or Q of the array (102) when the array (102) is used for imaging, an electronic switch (171) is selectively closed, placing a resistance in parallel with each of the array elements (102). A flexible array (102) is employed in several embodiments and is selectively bent or flexed to vary its radius of curvature and thus control the focal point (132) and/or a direction of focus

of the array (102). In another embodiment, each of the transducer elements (102) comprising the array (102) are individually mechanically pivotable to steer the ultrasonic beam produced by the transducer elements.



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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.*

# INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61B 17/22

US CL : 600/439

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. : 600/439; 601/2-4

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)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,957,099 B1(Hassler) 18 September 1990, see entire document	43-49
A,P	US 6,182,341 B1 (Talbot et al.) 06 February 2001, see entire document	1-60
A	US 5,243,988 B1 (Sieben et al.) 14 September 1993, see entire document	1-60
A	US 5,738,635 B1 (Chapelon et al.) 14 April 1998, see entire document	1-60
A	US 4,484,569 B1 (Driller et al.) 27 November 1984, see entire document	1-60

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

☐ See patent family annex.

* Special categories of cited documents:	
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"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
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