

Title (en)
PIEZOELECTRIC TRANSDUCER

Publication
EP 0421286 A3 19920603 (DE)

Application
EP 90118633 A 19900928

Priority
DE 3932959 A 19891003

Abstract (en)
[origin: EP0421286A2] A piezoelectric transducer is described for generating focused ultrasound shockwaves for application in lithotripsy, whose ultrasound shockwaves, emitted in a pulsed manner, can be transmitted via a coupling medium (20) to the body of a patient. It consists of a multiplicity of individual piezoelectric transducer elements (2), of ceramic, which are connected to the terminals of a pulse generator (7) and are fixed in the form of a mosaic on a carrier (8) and are laterally insulated electrically from one another, the acoustic termination of the transducer elements (2) being essentially reflection-free. It is proposed that there be provided between the transducer elements (2) and the coupling medium (20) an intermediate medium consisting of at least one layer (3, 4, 5) whose acoustic impedance is between that of the ceramic of the transducer elements (2) and that of the coupling medium (20) and that the thickness d of the layer (3, 4, 5) be dimensioned such that the relationship $d > \tau_k \times c_{LA}$ is true, τ_k being the propagation time of the sound in the piezoceramic material of the transducer elements (2) and c_{LA} being the speed of sound in the respective intermediate medium. <IMAGE>

IPC 1-7
B06B 1/06; **G10K 11/00**

IPC 8 full level
B06B 1/06 (2006.01); **G10K 11/02** (2006.01)

CPC (source: EP US)
B06B 1/0622 (2013.01 - EP US); **G10K 11/02** (2013.01 - EP US)

Citation (search report)

- [Y] EP 0118837 A2 19840919 - SIEMENS AG [DE]
- [Y] EP 0183236 A2 19860604 - EISENMENGER WOLFGANG
- [YP] EP 0372198 A2 19900613 - DORNIER MEDIZINTECHNIK [DE]
- [A] EP 0173864 A1 19860312 - SIEMENS AG [DE]
- [A] DE 2926182 A1 19810122 - SIEMENS AG
- [A] EP 0033071 A1 19810805 - SIEMENS AG [DE]

Cited by
EP0436809A3; CN111940098A; DE4117638A1; FR2662884A1; US5247924A; WO9627408A1

Designated contracting state (EPC)
BE DE FR GB IT

DOCDB simple family (publication)
EP 0421286 A2 19910410; **EP 0421286 A3 19920603**; **EP 0421286 B1 19941109**; DE 3932959 C1 19910411; DE 59007688 D1 19941215; US 5111805 A 19920512

DOCDB simple family (application)
EP 90118633 A 19900928; DE 3932959 A 19891003; DE 59007688 T 19900928; US 57433190 A 19900828