

Title (en)

ULTRASONIC TRANSDUCER WITH ASTIGMATIC TRANSMISSION-RECEPTION CHARACTERISTICS

Publication

**EP 0308899 A3 19900314 (DE)**

Application

**EP 88115485 A 19880921**

Priority

DE 3732410 A 19870925

Abstract (en)

[origin: EP0308899A2] Ultrasonic transducer (1) whose astigmatic transmission/reception characteristic is based on grooves or slots (3, 13) which are aligned in parallel in one direction (4) in the diaphragm (2). <IMAGE>

IPC 1-7

**G10K 13/00**; **G10K 11/32**

IPC 8 full level

**H04R 17/00** (2006.01); **G10K 9/122** (2006.01); **G10K 11/32** (2006.01); **G10K 13/00** (2006.01)

CPC (source: EP)

**G10K 9/122** (2013.01); **G10K 11/32** (2013.01); **G10K 13/00** (2013.01)

Citation (search report)

- [Y] EP 0037620 A1 19811014 - PHILIPS CORP [US]
- [YD] EP 0075302 A1 19830330 - GELHARD EGON
- [A] FR 2293844 A1 19760702 - BARCUS LESTER [US]
- [A] US 2716708 A 19550830 - GEOFFREY BRADFIELD
- [A] PATENT ABSTRACTS OF JAPAN, Band 102, Nr. 90 (P-503), 2. Oktober 1982; & JP-A-59 230 224 (HITACHI LTD) 28-05-1986

Cited by

DE102010002282A1; EP1906383A1; DE3939387A1; DE10138892A1; DE102015205950A1; EP0393225A1; US5229748A; EP0678853A3; DE4413894C2; CN114728311A; EP0678853A2; WO2017089609A3; WO2016184952A1; WO2011104185A1; US9340167B2; US12019155B2

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