

Title (en)

Ultrasonic transducer with asymmetric radiation characteristic.

Title (de)

Ultraschallwandler mit asymmetrischer Strahlungscharakteristik.

Title (fr)

Transducteur à ultrason ayant une caractéristique de radiation asymétrique.

Publication

**EP 0678853 A2 19951025 (DE)**

Application

**EP 95105504 A 19950412**

Priority

DE 4413894 A 19940421

Abstract (en)

The transducer is used as an electroacoustic flexure transducer, with a membrane of a piezoelectrically inactive material, coupled to a piezoelectric plate, arranged centrally on the inside face of the membrane. The opposing radiating surface of the membrane has at least one circular segment recess (7, 8) as its peripheral edge. Pref the membrane is cap shaped with a cylindrical sidewall incorporating a peripheral groove (2) and a radiating front face with a pair of circular segment recesses at diametrically opposite points, with a depth which is sufficient to reach the level of the peripheral groove. <IMAGE>

Abstract (de)

Die Erfindung betrifft einen Biegewandler für Abstandswarngeräte in Kraftfahrzeugen. Um die erwünschte, parallel zur Bodenfläche fächerförmig verlaufende Strahlungscharakteristik zu erhalten, wird aus dem membranseitigen Ende des Wandlertopfes in Einbaurichtung oben und unten jeweils ein kreissegmentförmiges Stück herausgenommen. <IMAGE>

IPC 1-7

**G10K 9/12**

IPC 8 full level

**G10K 9/12** (2006.01); **G10K 9/122** (2006.01); **G10K 13/00** (2006.01)

CPC (source: EP)

**G10K 9/122** (2013.01)

Citation (applicant)

- DE 3221935 A1 19840216 - M W STOELZEL KG INDUSTRIEVERTR [DE]
- DE 3812182 A1 19891026 - SWF AUTO ELECTRIC GMBH [DE]
- EP 0048958 A1 19820407 - GELHARD EGON
- DE 3441684 A1 19860515 - SWF AUTO ELECTRIC GMBH [DE]
- US 4437032 A 19840313 - GELHARD EGON [DE]
- EP 0308899 A2 19890329 - SIEMENS AG [DE]
- US 4437032 A 19840313 - GELHARD EGON [DE]
- DE 3301848 A1 19840726 - SIEMENS AG [DE]
- DE 3826799 A1 19900208 - SWF AUTO ELECTRIC GMBH [DE]
- DE 3939387 A1 19910606 - SWF AUTO ELECTRIC GMBH [DE]

Cited by

EP1906383A1; EP1096469A3; CN102113047A; US6322532B1; EP1443342A1; US8671762B2; US10136224B2; WO9901234A3; WO9726646A1; WO2010012533A1; WO2016046412A1; US7009326B1; US6465935B1; JP2011529652A

Designated contracting state (EPC)

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DOCDB simple family (publication)

**EP 0678853 A2 19951025; EP 0678853 A3 19970521; EP 0678853 B1 20010718;** DE 4413894 A1 19951026; DE 4413894 C2 20021212; DE 59509415 D1 20010823; ES 2158008 T3 20010901

DOCDB simple family (application)

**EP 95105504 A 19950412;** DE 4413894 A 19940421; DE 59509415 T 19950412; ES 95105504 T 19950412