

Title (en)
An acoustic transducer system.

Title (de)
Akustischer Wandler.

Title (fr)
Système transducteur acoustique.

Publication
EP 0039986 A1 19811118 (EN)

Application
EP 81300378 A 19810129

Priority
US 14201480 A 19800421

Abstract (en)
A broadly tuned directional acoustic transducer system for transmitting and receiving airborne sound, which provides enhanced efficiency and reduced cost without undue narrowing of bandwidth, makes use of an acoustic transducer element (2) coupled to a vibratable member (10), e.g. a plate, having a higher order flexural mode resonance at approximately the desired frequency of operation, the vibratable member being coupled to the air through low-hysteresis acoustic propagation material having an acoustic impedance much less than that of the vibratable member and much greater than that of the air. The material is disposed so that in the desired direction of propagation there is no substantial reduction of sound intensity in the far field resulting from cancellation occasioned by interaction of sound radiated from adjacent antinodal zones. Preferably the thickness of the material is such that it acts as an efficient acoustic impedance matching transformer. Preferably, the transducer element is piezoelectric and coupled to the centre of a disc-shaped vibratable member (10) to which the coupling material is applied in rings (16, 18, 20).

IPC 1-7
G10K 11/02

IPC 8 full level
G10K 11/02 (2006.01); **H04R 17/00** (2006.01)

CPC (source: EP)
G10K 11/02 (2013.01)

Citation (search report)
• FR 1546591 A 19681122 - UNIV OHIO STATE
• US 4078160 A 19780307 - BOST JONATHAN ROBERT
• Research Disclosures-Product, Licensing Index, June 1971, No. 86, Havant, GB "Ultrasonic Apparatus", pages 38-39 * whole article *

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