

Title (en)
Multiple cone electroacoustic transducer

Title (de)
Elektroakustischer Wandler mit mehreren Konussen

Title (fr)
Transducteur électroacoustique à cônes multiples

Publication
EP 0771133 A1 19970502 (EN)

Application
EP 96307675 A 19961023

Priority
US 54947295 A 19951027

Abstract (en)
A loudspeaker comprises a motor stator (12) defining an air gap (32). The stator provides a magnetic field in the air gap. A former (14) supports a voice coil (30) through which current to be transduced into audio is to be passed in the air gap. A first diaphragm (34) is fixed to the former at a first position a first distance (38) from the front plate (20) of the stator along the length of the former. The first diaphragm has a first outer perimeter (56). A first compliance (54) for permitting relative movement between the first outer perimeter and an outer frame (16) couples the first outer perimeter to the frame (16). A first opening (40) in the frame vents air from a first face (44) of the first diaphragm. A second opening (46) in the frame vents air from a second face (48) of the first diaphragm. A second diaphragm (134) is fixed to the former at a second position a second distance (138) from the front plate (20) of the stator greater than the first distance along the length of the former. The second diaphragm has a second outer perimeter (156). A second compliance (154) permitting relative movement between the second outer perimeter and the frame couples the second outer perimeter to the frame. A third opening (140) in the frame vents air from a first face (144) of the second diaphragm. A first partition (64) disposed between the second face of the first diaphragm and the first face of the second diaphragm provides a fourth opening (66) through which the former extends. The fourth opening lies between the first and second positions. <IMAGE>

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Citation (applicant)
• US 4118605 A 19781003 - KOBAYASHI FUMIO
• US 4567959 A 19860204 - PROPHIT DAVID A [US]
• US 4590333 A 19860520 - STROHBEEN JOHN [US]
• US 4908601 A 19900313 - HOWZE BRUCE W [US]
• US 5097513 A 19920317 - JORDAN JON C [US], et al
• US 5119431 A 19920602 - HAMBY WILLIAM H [US]
• US 5295194 A 19940315 - CHRISTENSEN EUGENE J [US]
• US 5327985 A 19940712 - PORZILLI LOUIS [US]
• US 4531025 A 19850723 - DANLEY THOMAS J [US], et al
• US 4757547 A 19880712 - DANLEY THOMAS J [US]
• US 4763358 A 19880809 - DANLEY THOMAS J [US]
• US 5140641 A 19920818 - DANLEY THOMAS J [US], et al
• US 5313127 A 19940517 - DANLEY THOMAS J [US], et al
• US 5317642 A 19940531 - DANLEY THOMAS J [US], et al
• US 4554414 A 19851119 - HOUSE WILLIAM N [US]
• US 1913645 A 19330613 - CONRAD STENGER WILLEBALD

Citation (search report)
• [XY] US 4039044 A 19770802 - HEIL OSKAR
• [XY] US 4107479 A 19780815 - HEIL OSKAR
• [Y] US 4552242 A 19851112 - KASHIWABARA AKIHIKO [JP]
• [Y] US 4206832 A 19800610 - YOCUM THOMAS A [US]
• [A] US 3636278 A 19720118 - HEIL OAKAR

Cited by
CN104717589A; CN103813244A; AU2002216597B2; KR100896738B1; DE19936411A1; DE19936411C2; FR2895201A1; CN103813245A; US6466676B2; US9838797B2; WO2022157255A1; US8180076B2; US10149064B2; WO202052892A1; WO0160114A3; WO2005122637A1; WO2017007093A1; US7983436B2; US8396240B2; US9462388B2; US7551749B2

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