Title (en)

ACOUSTIC BENDING CONVERTER SYSTEM AND ACOUSTIC DEVICE

Title (de)

AKUSTISCHES BIEGEWANDLERSYSTEM UND AKUSTISCHE VORRICHTUNG

Title (fr)

SYSTÈME DE TRANSDUCTEUR ACOUSTIQUE ET DISPOSITIF ACOUSTIQUE

Publication

**EP 3739904 A1 20201118 (DE)**

Application

**EP 19174497 A 20190514**

Priority

EP 19174497 A 20190514

Abstract (en)

[origin: WO2020229466A1] The invention relates to an acoustic bending transducer system (1, 2) with a plurality of bending transducers (3, 4, 5), which are designed in such a way that deformable elements (31, 32, 41; 32, 34, 42; 31, 32, 3'1, 3'2) of the bending transducers (3, 4, 5) oscillate in a coplanar manner in a common planar layer (10), the bending transducers (3, 4, 5) having different resonant frequencies and different extensions of the deformable elements (31, 32, 41; 32, 34, 42; 31, 32, 3'1, 3'2) along a common longitudinal axis which is transverse to an oscillation direction of the deformable elements (31, 32, 41; 32, 34, 42; 31, 32, 3'1, 3'2). Furthermore, the invention relates to an acoustic device with such an acoustic bending transducer system (1, 2).

Abstract (de)

Die Erfindung betrifft ein akustisches Biegewandlersystem (1, 2) mit einer Vielzahl von Biegewandlern (3, 4, 5), die derart ausgebildet sind, dass verformbare Elemente (3<sub>1</sub>, 3<sub>2</sub>, 4<sub>1</sub> ; 32, 3<sub>4</sub>, 4<sub>2</sub>; 3<sub>1</sub>, 3<sub>2</sub>, 3'<sub>1</sub>, 3'<sub>2</sub>) der Biegewandler (3, 4, 5) komplanar in einer gemeinsamen ebenen Schicht (10) schwingen, wobei die Biegewandler (3, 4, 5) unterschiedliche Resonanzfrequenzen und unterschiedliche Ausdehnungen der verformbaren Elemente (3<sub>1</sub>, 3<sub>2</sub>, 4<sub>1</sub> ; 3<sub>2</sub>, 3<sub>4</sub>, 4<sub>2</sub>; 3<sub>1</sub>, 3<sub>2</sub>, 3'<sub>1</sub>, 3'<sub>2</sub>) entlang einer gemeinsamen Längsachse aufweisen, die quer zu einer Schwingungsrichtung der verformbare Elemente (3<sub>1</sub>, 3<sub>2</sub>, 4<sub>1</sub> ; 3<sub>2</sub>, 3<sub>4</sub>, 4<sub>2</sub>; 3<sub>1</sub>, 3<sub>2</sub>, 3'<sub>1</sub>, 3'<sub>2</sub>) ist.Des Weiteren betrifft die Erfindung eine akustische Vorrichtung mit einem solchen akustischen Biegewandlersystem (1, 2).

IPC 8 full level

**H04R 19/00** (2006.01); **H04R 17/02** (2006.01)

CPC (source: EP US)

**H04R 17/025** (2013.01 - EP US); **H04R 19/005** (2013.01 - EP US); H04R 2201/003 (2013.01 - EP US)

Citation (applicant)

- WO 2012095185 A1 20120719 - FRAUNHOFER GES FORSCHUNG [DE], et al
- WO 2016202790 A2 20161222 - FRAUNHOFER GES FORSCHUNG [DE]
- DE 102015206774 A1 20161020 - FRAUNHOFER GES FORSCHUNG [DE]
- DE 102017114008 A1 20181227 - USOUND GMBH [AT]
- DE 102017108594 A1 20181025 - USOUND GMBH [AT]
- DE 19612481 A1 19971002 - SENNHEISER ELECTRONIC [DE]

Citation (search report)

- [Y] WO 2010133782 A1 20101125 - DIDSON [FR], et al
- [Y] EP 3279622 A1 20180207 - SAMSUNG ELECTRONICS CO LTD [KR]
- [Y] DE 102015210919 A1 20161215 - FRAUNHOFER GES FORSCHUNG [DE]
- [Y] EP 2986024 A1 20160217 - SAMSUNG ELECTRONICS CO LTD [KR]
- [Y] WO 0041432 A2 20000713 - SARNOFF CORP [US]

Cited by

EP4156712A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 3739904 A1 20201118**; CN 114073103 A 20220218; TW 202102008 A 20210101; US 2022070591 A1 20220303; WO 2020229466 A1 20201119

DOCDB simple family (application)

**EP 19174497 A 20190514**; CN 202080036103 A 20200512; EP 2020063187 W 20200512; TW 109115901 A 20200513; US 202117524577 A 20211111