

Title (en)  
ULTRASOUND ACTUATOR FOR CLEANING OBJECTS

Title (de)  
ULTRASCHALLAKTOR ZUR REINIGUNG VON OBJEKTEN

Title (fr)  
ACTIONNEUR À ULTRASON DESTINÉ AU NETTOYAGE D'OBJETS

Publication  
**EP 1984125 A1 20081029 (DE)**

Application  
**EP 07721911 A 20070209**

Priority  
• DE 2007000243 W 20070209  
• DE 102006007459 A 20060217  
• DE 102006033372 A 20060719

Abstract (en)  
[origin: WO2007093153A1] The present invention relates to an ultrasound actuator for cleaning objects, having a propagation volume (3, 4, 13) for ultrasound, on which one or more ultrasonic transducers (5) are arranged. The propagation volume (3, 4, 13) is delimited by an acoustic coupling-out window (8) with a coupling face for acoustically coupling an object (1, 12) to be cleaned and by one or more reflection faces (6, 7) for coupled-in ultrasound. The ultrasonic transducers (5) are arranged on the propagation volume (3, 4, 13) such that the coupled-in ultrasound exits the propagation volume (3, 4, 13) via the coupling-out window (8) only after one or more reflections at the reflection faces (6, 7). The reflection faces are designed such that a predeterminable distribution of the ultrasound energy without intensity peaks results at the coupling-out window (8). The present ultrasound actuator is used to achieve gentle cleaning of the objects with economic use of cleaning liquid.

IPC 8 full level  
**B08B 3/12** (2006.01); **B06B 3/04** (2006.01)

CPC (source: EP KR US)  
**B06B 3/04** (2013.01 - KR); **B08B 3/12** (2013.01 - EP KR US); **B08B 7/028** (2013.01 - EP US); **H01L 21/67057** (2013.01 - EP US)

Citation (search report)  
See references of WO 2007093153A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**DE 102006033372 A1 20070823**; **DE 102006033372 B4 20100429**; EP 1984125 A1 20081029; JP 2009526637 A 20090723; KR 20080098422 A 20081107; TW 200800425 A 20080101; US 2009165830 A1 20090702; WO 2007093153 A1 20070823

DOCDB simple family (application)  
**DE 102006033372 A 20060719**; DE 2007000243 W 20070209; EP 07721911 A 20070209; JP 2008554589 A 20070209; KR 20087022566 A 20080916; TW 96102887 A 20070125; US 22404107 A 20070209