

Title (en)  
LOUDSPEAKER AND SOUND OUTPUTTING APPARATUS HAVING THE SAME

Title (de)  
LAUTSPRECHER UND TONAUSGABEVORRICHTUNG DAMIT

Title (fr)  
HAUT-PARLEUR ET APPAREIL DE SORTIE DE SON LE COMPRENANT

Publication  
**EP 3665907 A4 20200819 (EN)**

Application  
**EP 18884089 A 20181107**

Priority  
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• KR 20180092298 A 20180808  
• KR 2018013443 W 20181107

Abstract (en)  
[origin: KR20190062144A] Disclosed is a sound output apparatus which comprises: a plurality of loudspeakers; and a main body for receiving the plurality of loudspeakers. Each of the plurality of loudspeakers includes: a sound transformation unit for generating a sound wave; and a sound guide unit for directionally outputting the sound wave via a plurality of openings. A diameter of each of the plurality of openings can be increased as a distance from the sound transformation unit increases.

IPC 8 full level  
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CPC (source: EP KR)  
**H04R 1/2803** (2013.01 - KR); **H04R 1/2857** (2013.01 - EP); **H04R 1/323** (2013.01 - KR); **H04R 1/288** (2013.01 - EP); **H04R 1/345** (2013.01 - EP); **H04R 5/02** (2013.01 - EP); **H04R 2205/022** (2013.01 - EP)

Citation (search report)  
• [XYI] WO 2016134861 A1 20160901 - PSS BELGIUM NV [BE]  
• [XP] EP 3334182 A1 20180613 - SAMSUNG ELECTRONICS CO LTD [KR]  
• [Y] JP 2009296153 A 20091217 - MITSUBISHI ELECTRIC ENG, et al  
• [A] US 5552569 A 19960903 - SAPKOWSKI MECHISLAO [VE]  
• See references of WO 2019107781A1

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)  
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