





## The Director

of the United States Patent and Trademark Office has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this United States

grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, products made by that process, for the term set forth in 35 u.s.c. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 u.s.c. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Acting Director of the United States Patent and Trademark Office



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## (12) United States Patent

#### **Fathollahi**

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#### (54) AUDIO SPEAKER

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(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 19/066,928

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(65) **Prior Publication Data** 

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	H04R 1/02	(2006.01)
	H04R 1/24	(2006.01)
	H04R 7/04	(2006.01)

(52) U.S. Cl.

(58) Field of Classification Search

CPC ...... H04R 1/2803; H04R 1/025; H04R 1/028; H04R 1/24; H04R 7/045; H04R 2307/023

#### (56) References Cited

#### U.S. PATENT DOCUMENTS

	10/2020	Shin B06B 1/0607
,,		Kim H04R 3/12 381/333
, ,		Kim H04R 17/00 381/333
11,747,905 B2 *	9/2023	Ham H04R 1/028

#### FOREIGN PATENT DOCUMENTS

CN	206993387	U	*	2/2018	 G02F	1/1333
WO	WO-2019073401	A1	*	4/2019		

<sup>\*</sup> cited by examiner

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#### (57) ABSTRACT

Provided herein are high-fidelity, free-standing, wireless, glass speaker systems with a curved glass that is wide at the base and narrow on top, the width being gradually reduced all the way to the top, and having three slots at the top to reduce the mass of the glass. The shape of the glass is configured to create a dynamic range of sound, to allow low frequencies to resonate more prominently at the bottom, and high frequencies to be more prominent at the top of the glass, and the mid frequencies to resonate more prominently in the middle section of the glass.

#### 20 Claims, 13 Drawing Sheets

### What is

# Dynamic Seperation



