

# (19) United States

## (12) Patent Application Publication (10) Pub. No.: US 2023/0232160 A1 Shen et al.

### Jul. 20, 2023 (43) **Pub. Date:**

### (54) PIEZOELECTRIC SPEAKER

(71) Applicant: AAC Kaitai Technologies (Wuhan) CO., LTD., Wuhan (CN)

(72) Inventors: Yu Shen, Shenzhen (CN); Qiang Dan,

Shenzhen (CN); Yiwei Zhou, Shenzhen (CN); Shiyang Cheng, Shenzhen (CN);

Yang Li, Shenzhen (CN)

(21) Appl. No.: 17/880,695

Filed: (22)Aug. 4, 2022

(30)Foreign Application Priority Data

Jan. 19, 2022 (CN) ...... 202210060171.8

#### **Publication Classification**

(51) Int. Cl. H04R 17/00 (2006.01) (52) U.S. Cl. CPC ...... H04R 17/00 (2013.01)

#### (57)ABSTRACT

The invention discloses a piezoelectric speaker, including a substrate with a cavity therethrough a supporting structure covering the cavity a first drive structure stacked on the supporting structure, including alternately stacked first electrode layers and first piezoelectric layers a transmission structure stacked on the first drive structure, and a separation slot penetrating the supporting structure and the first drive structure to separate the first drive structure into a first piezoelectric driving part and a second piezoelectric driving part. A rigidity of the transmission structure is less than or equal to a rigidity of the first drive structure, and the rigidity of the first drive structure is less than or equal to a rigidity of the supporting structure. Compared with the prior art, the sound pressure level generated at the same moment is higher.

