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Yantchev et al.(10) **Pub. No.: US 2022/0376669 A1**(43) **Pub. Date: Nov. 24, 2022**(54) **SOLIDLY-MOUNTED
TRANSVERSELY-EXCITED FILM BULK
ACOUSTIC DEVICE AND METHOD**(71) Applicant: **Resonant Inc.**, Austin, TX (US)(72) Inventors: **Ventsislav Yantchev**, Sofia (BG);
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Jesson John, Dublin, CA (US)(21) Appl. No.: **17/520,688**(22) Filed: **Nov. 7, 2021****Related U.S. Application Data**

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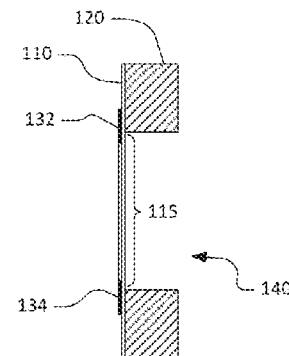
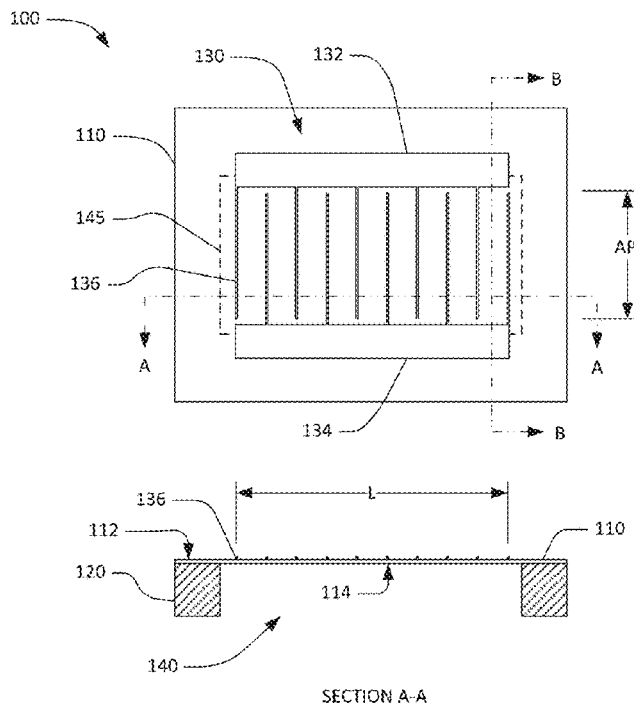
sional application No. 62/741,702, filed on Oct. 5, 2018, provisional application No. 62/748,883, filed on Oct. 22, 2018, provisional application No. 62/753,815, filed on Oct. 31, 2018, provisional application No. 62/830,258, filed on Apr. 5, 2019, provisional application No. 62/881,749, filed on Aug. 1, 2019, provisional application No. 62/904,416, filed on Sep. 23, 2019.

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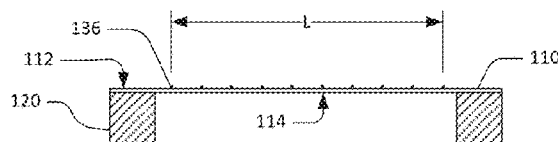
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ABSTRACT

Methods of fabricating resonator and filter devices. A first conductor pattern formed on a front surface of a piezoelectric plate includes a first plurality of contact pads and an interdigital transducer (IDT). The IDT and the piezoelectric plate are configured such that a radio frequency signal applied to the IDT excites a shear primary acoustic mode within the piezoelectric plate. An acoustic Bragg reflector is between a substrate and a back surface of the piezoelectric plate, the acoustic Bragg reflector configured to reflect the shear primary acoustic mode. A second conductor pattern including a second plurality of contact pads is formed on a back surface of the interposer. The first plurality of contact pads is directly connected to respective contact pads of the second plurality of contact pads. A perimeter of the acoustic resonator chip is sealed to a perimeter of the interposer.



SECTION B-B



SECTION A-A