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(12) **United States Patent**
Kessler

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(54) **ACOUSTIC MICRO IMAGING DEVICE
HAVING AT LEAST ONE BALANCED
LINEAR MOTOR ASSEMBLY**

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(51) **Int. Cl.**
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(57) **ABSTRACT**

(52) **U.S. Cl.** **73/620; 73/625; 73/633; 73/634**
(58) **Field of Classification Search** **73/633, 73/634**

A scanning acoustic microscope including an ultrasonic transducer and a balanced linear motor assembly is disclosed. The balanced linear motor assembly includes a counterweight that is mounted for movement along a linear path that is parallel to the first linear path on which the transducer travels. The counterweight has a mass that is generally equal to the mass of the rotor and the transducer. The counterweight is being adapted to be moved, when the scanning acoustic microscope is used to interrogate a sample, along the second linear path at the same time that the rotor and transducer are being moved along the first linear path to allow the transducer to accelerate and decelerate without creating vibration.

See application file for complete search history.

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22 Claims, 7 Drawing Sheets

