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(54) **DIELECTRIC ELASTOMER VIBRATION SYSTEM AND POWER SUPPLY DEVICE**

(57) A dielectric elastomer vibration system A1 includes: a dielectric elastomer vibrator 1 including a dielectric elastomer layer 11 and a pair of electrode layers 12; and a power supply device 2 that produces a potential difference across the pair of electrode layers 12. The dielectric elastomer vibrator 1 exhibits a relationship between the potential difference across the pair of electrode layers 12 and an amount of deformation induced by the potential difference, the relationship having: a high-response region S1 in which a relatively large deformation is induced in response to change of the potential difference; a low-response region of lower-potential difference S2 corresponding to a lower potential difference than the high-response region S1 and in which a relatively small deformation is induced in response to change of the po-

tential difference; and a low-response region of higher-potential difference S3 corresponding to a higher potential difference than the high-response region S1 and in which a relatively small deformation is induced in response to change of the potential difference or in which a break point of the dielectric elastomer layer 11 is included. The power supply device 2 produces the potential difference by applying a vibration signal voltage V across the pair of electrode layers 12. The vibration signal voltage V is generated by combining a waveform voltage V1 that is an alternating current voltage with a bias voltage V2 that is a direct current voltage corresponding to a potential difference falling in the high-response region S1. This configuration ensures the system to vibrate more appropriately.

FIG.2

