

Reference Number: 025418/0042

Title of the Invention

VIBRATION ENERGY HARVESTER

Invention

The present invention relates to energy harvester (1), which enables to meet the energy requirement of a system by using the ambient oscillation energy in environments wherein oscillation takes place, and is basically characterized by at least one body (2), at least one piezoelectric adjustable beam (3) which is arranged on the body (2) as a protrusion and protrudes outwards from the body (2), at least one piezoelectric fixed beam (4) which is arranged on the body (2) as a protrusion and protrudes outwards from the body (2), at least one piezomotor (5) which is placed on the adjustable beam (3), at least one shaft (6) which is coupled to one end of the piezomotor (5) and to which movement is transferred, at least one mass (6) which is coupled to the end of the shaft (6).

The components in the figures are given reference numbers as follows:

1. Energy harvester
2. Body
3. Adjustable beam
4. Fixed beam
5. Piezomotor
6. Shaft
7. Mass

Contact:

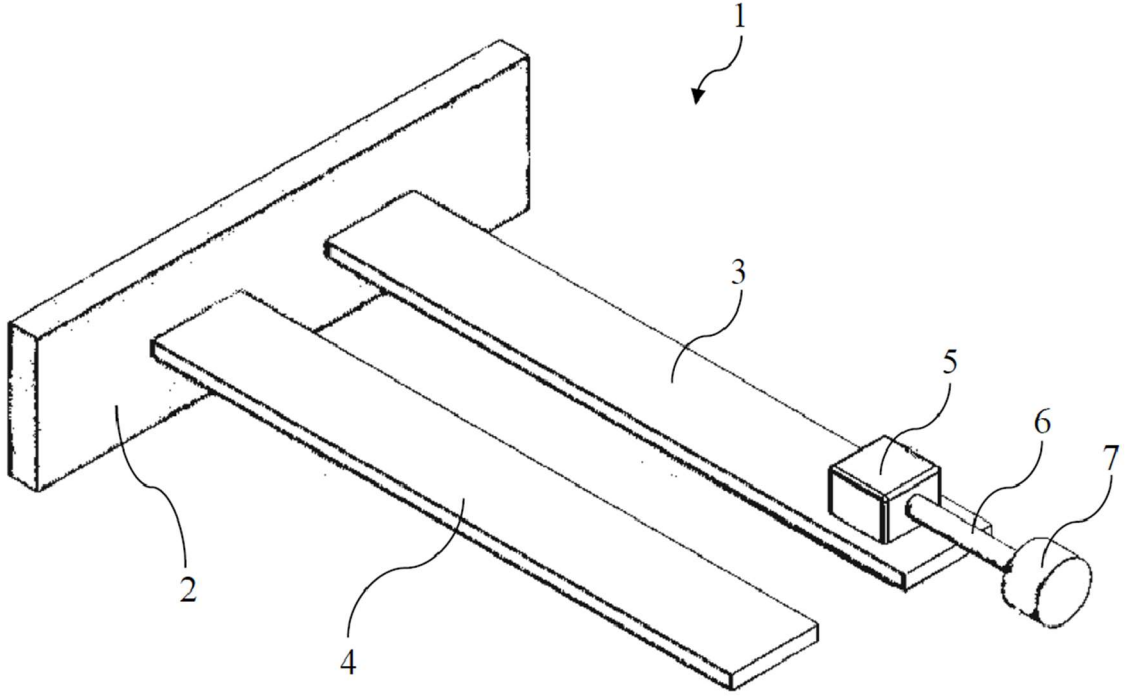
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Advantages

Thanks to the fact that the energy harvester has the feature of self-locking by means of its method, the actuator is enabled not to consume energy in cases where the ambient vibration is in fixed frequency and thus the system is enabled to be operated more efficiently. Furthermore, by means of the method run in the control unit, the energy harvester has high-energy production and can be operated with high efficiency independent of amplitude.

The way of operation of the method operated in the control unit comprises;

- activating (wake) the control unit which is in sleep mode,
- interrogating whether there is sufficient energy in the energy storage unit

By the help of these properties the systems enables to produce sustainable and controlled energy production

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The advantage of this patent is to produce the energy needed by the mechanical systems by itself by help of using the oscillating energy in the environment.

Current Status

TURKEY: Registered
EPO: Registered
UK: Registered
GERMANY: Registered

Keywords

Sustainable and controlled energy production from vibration energy

TRL: 4

Prototype is completed, required tests are unfinished.

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