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(51) International classification	:H02K7/18, H02N2/18, H02J7/00, H02J15/30, F03G5/06	(71) <b>Name of Applicant :</b> <b>1)Chitkara University</b> Address of Applicant :Chandigarh-Patiala National Highway, Village Jhansla, Rajpura, Punjab - 140401, India. Rajpura Punjab India
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(57) Abstract :

A portable energy harvesting and power generation device, comprising a housing 101, a cranking arrangement to provide high-power electrical generation during manual rotation by the user, a flywheel 103 to store and stabilize rotational mechanical energy, an electrical generator 104 to convert mechanical rotational energy into electrical energy, a plurality of piezoelectric elements 105 to convert mechanical vibrations generated by shaking the housing 101 into electrical energy, a TEG (thermoelectric generator) unit to generate electrical power from a temperature difference between a user's hand and the surrounding environment, a power conditioning circuit 106 to receive, rectify, regulate, and combine electrical energy from the multiple energy sources into a usable direct-current output, a dual energy storage arrangement to generate a regulated output voltage, and a USB output port 108 to supply a stable output power to external electronic devices.

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