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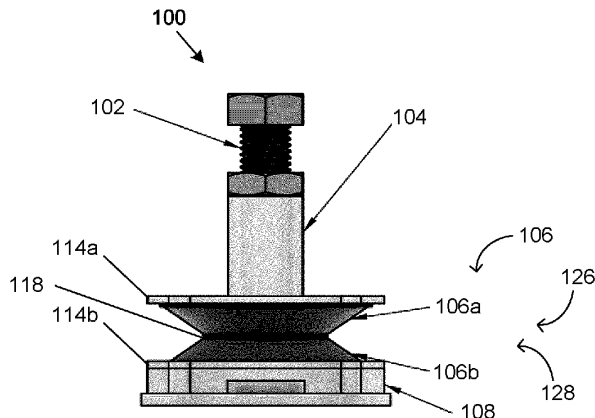


FIG. 1A

(57) Abstract: Devices and methods are provided for harvesting kinetic energy. The devices can include a plurality of dielectric elastomeric membranes, a rigid connector rod, and a mountable support base. Membrane layers have a funnel-shape with a narrow opening portion and a wide perimeter portion. Membrane layers are adjacent to other membrane layers having an opposite orientation defined by the narrow opening portion and the wide perimeter portion. The narrow opening portions are coupled to a first end portion of the connector rod. The wide perimeter portions are fixed in relation to the support base. Application of linear force at a second end portion of the connector rod in a first direction causes at least a first membrane layer to stretch. Application of the force in a second direction opposite to the first direction causes at least a second membrane layer adjacent to the first membrane layer to stretch.

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