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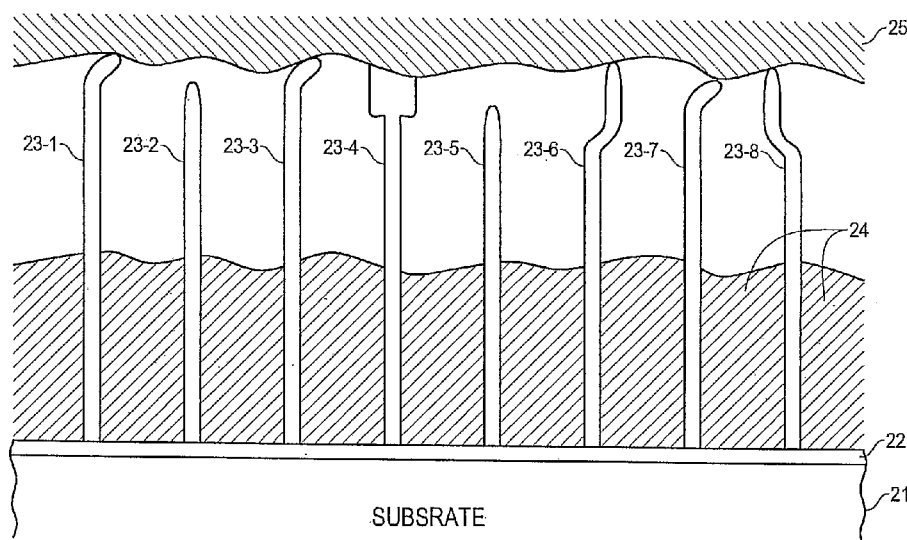
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
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(54) Title: **NANOENGINEERED THERMAL METATERIALS BASED ON CARBON NANOTUBE ARRAY COMPOSITES**



(57) Abstract: A method for providing for thermal conduction using an array of carbon nanotubes (CNTs). An array of vertically oriented CNTs is grown on a substrate having high thermal conductivity, and interstitial regions between adjacent CNTs in the array are partly or wholly filled with a filler material having a high thermal conductivity so that at least one end of each CNT is exposed. The exposed end of each CNT is pressed against a surface of an object from which heat is to be removed. The CNT-filler composite adjacent to the substrate provides improved mechanical strength to anchor CNTs in place and also serves as a heat spreader to improve diffusion of heat flux from the smaller volume (CNTs) to a larger heat sink.

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