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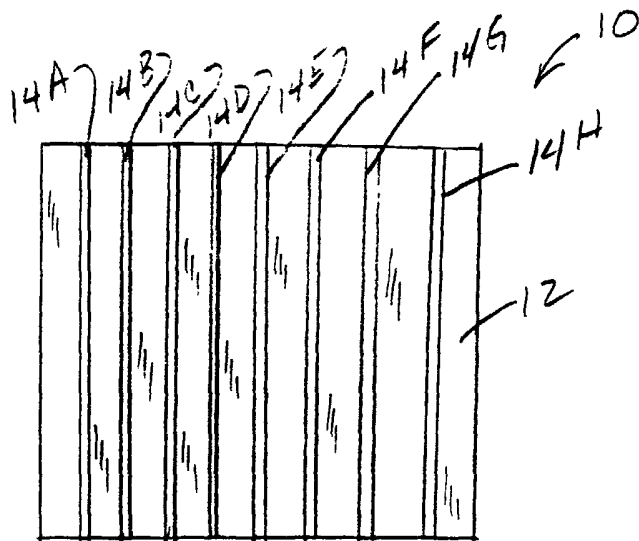
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(54) Title: COMPOSITE HEAT SINK WITH METAL BASE AND GRAPHITE FINS



(57) Abstract: A composite heat sink apparatus includes a metal base which has a thermal conductivity of at least about 200 W/m<sup>2</sup>K. The metal base is preferably constructed either of copper or aluminum. The heat sink apparatus further includes a plurality of fins attached to the base, the fins being constructed of anisotropic graphite material having a direction of relatively high thermal conductivity perpendicular to the base.

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**INTERNATIONAL SEARCH REPORT**

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**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC(7) : F28F 7/00  
 US CL : 165/80.3; 185  
 According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**  
 Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 165/80.3; 185

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category *    | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|---------------|---|-----------------------|
| X<br>---<br>Y | US 6,085,830 A (MASHIKO et al.) 11 July 2000, see col. 14, lines 30-34; col. 4, lines 33-52.                                      | 1-5<br>-----<br>6-12  |
| Y,P           | US 6,503,626 B1 (NORLEY et al.) 07 January 2003, see col. 2, lines 63-65; col. 8, lines 50-65; col. 11, lines 42-col. 12, line 44 | 6-12                  |
| A,P           | US 2002/0157818 A1 (NORLEY et al.) 31 October 2002, see entire document.  | 1-12                  |
| A,P           | US 2002/0108743 A1 (WIRTZ) 15 August 2002, see entire document.   | 1-12                  |
| A             | US 5,390,734 A (VOORHES et al.) 21 February 1995, see entire document.  | 1-12                  |
| A             | US 5,077,637 A (MARTORANA et al.) 31 December 1991, see entire document.  | 1-12                  |
| A             | US 4,867,235 A (GRAPES et al.) 19 September 1989, see entire document.  | 1-12                  |
| A             | US 3,913,666 A (BAYLISS) 21 October 1975, see entire document.  | 1-12                  |

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