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[54] **MICRO-HOTPLATE DEVICES AND METHODS FOR THEIR FABRICATION**

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3743398 7/1989 Germany 338/34

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[51] Int. Cl.⁶ **H05B 3/00; G01F 1/68; H01C 1/012**

[52] U.S. Cl. **219/544; 219/543; 338/307; 437/918; 73/204.26**

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[57] ABSTRACT

A design and fabrication methodology, for silicon micromachined micro-hotplates which are manufactured using commercial CMOS foundries techniques with additional post-fabrication processing. The micro-hotplates are adaptable for a host of applications. The methodology for the fabrication of the micro-hotplates is based on commercial CMOS compatible micromachining techniques. The novel aspects of the micro-hotplates are in the design, choice and layout of the materials layers, and the applications for the devices. The micro-hotplates have advantages over other similar devices in the manufacture by a standard CMOS process which include low-cost and easy integration of VLSI circuits for drive, communication, and control. The micro-hotplates can be easily incorporated into arrays of micro-hotplates each with individualized circuits for control and sensing for independent operation.

31 Claims, 7 Drawing Sheets

