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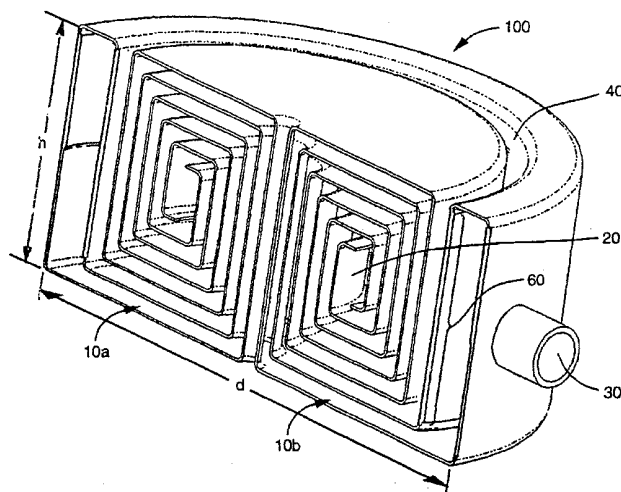
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(54) Title: MICROCOMBUSTOR AND COMBUSTION-BASED THERMOELECTRIC MICROGENERATOR



(57) Abstract: A generally toroidal counterflow heat exchanger is the main element of a combustor that operates at a micro scale. The combustor includes a central combustion region with openings to a reactant gas channel and an exhaust gas channel. The reactant channel and exhaust channels are coiled around each other in a spiral configuration that reduces heat loss. An electric current microgenerator is similar and also includes a thermoelectric active wall composed of n-type and p-type thermoelectric elements as part of a channel wall of the microcombustor. The thermoelectric active wall includes fins configured to increase the temperature differential across the thermoelectric elements relative to the temperature difference between the thermoelectric elements and the reactant and exhaust gases. A method of monolithically fabricating such microdevices by electrodepositing multiple layers of material is also provided.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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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)
IPC 7 H01L

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 practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	US 3 858 646 A (NAYLOR HARRY E) 7 January 1975 (1975-01-07) column 1, line 28 - line 43; figure 3 ---	1,17
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A	FR 2 055 216 A (SIEMENS AG) 7 May 1971 (1971-05-07) figure 2 ---	1,2,17, 23
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Patent family members are listed in annex.

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