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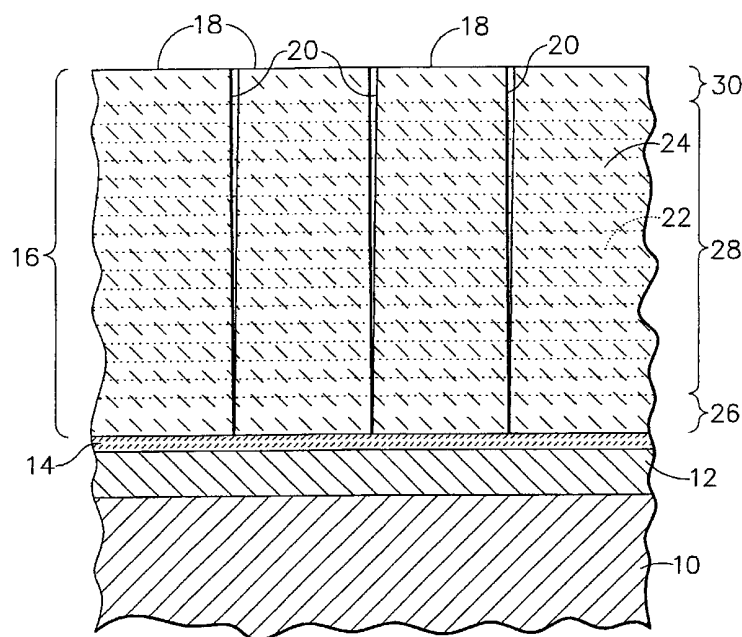
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(54) Title: **LOWER CONDUCTIVITY THERMAL BARRIER COATING**



(57) **Abstract:** A thermal barrier coating for superalloy articles such as turbine engine vanes and blades that are exposed to high temperature gas is disclosed. The coating includes a columnar grained ceramic layer applied to an aluminide or MCrAlY bond coat by electron beam physical vapor deposition. The ceramic layer is comprised a plurality of layers of zirconia stabilized with 20 percent yttria and the interfaces between the layers are decorated with particles selected from a group consisting of Ta₂O₅ and alumina. Though not essential to the invention a layer of tetragonal zirconia may be deposited both under and over the ceramic coat. An improved electron physical beam vapor deposition process for applying this ceramic layer is also disclosed.

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INTERNATIONAL SEARCH REPORT

International Application No

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A. CLASSIFICATION OF SUBJECT MATTER

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B. FIELDS SEARCHED

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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, WPI Data, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 059 095 A (KUSHNER BURTON A ET AL) 22 October 1991 (1991-10-22) column 2, line 29 - line 53 column 3, line 15 - line 62 claims 1-9,11,12,15; example 5 ---	1,7,9
P,X	WO 01 18274 A (SIEMENS WESTINGHOUSE POWER) 15 March 2001 (2001-03-15) page 3, paragraph 2 -page 4, paragraph 2 page 5, paragraph 3 page 6, paragraph 2 -page 8, paragraph 2 page 9, paragraph 3 - paragraph 4 ---	1,7,9
A	EP 0 783 043 A (GEN ELECTRIC) 9 July 1997 (1997-07-09) the whole document --- -/--	1,7-9

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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C.(Continuation) 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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INTERNATIONAL SEARCH REPORT

Information on patent family members

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