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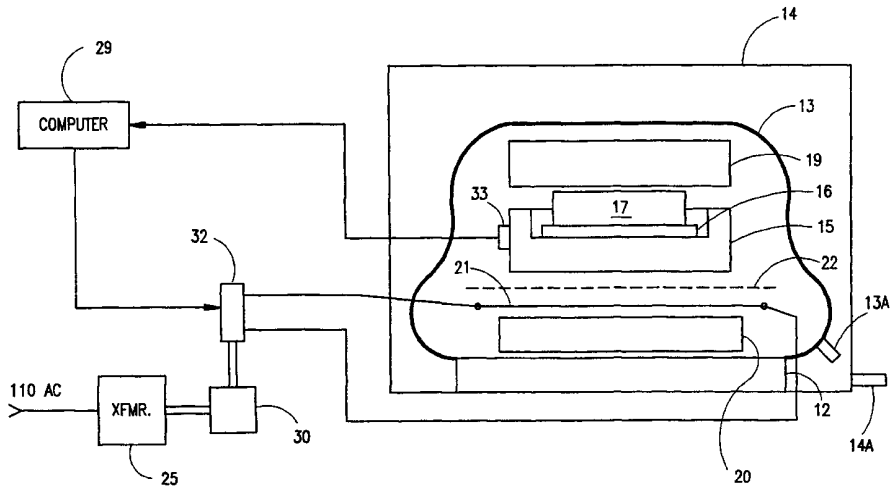
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HEATED TOOLING APPARATUS AND METHOD FOR PROCESSING COMPOSITE AND PLASTIC MATERIAL



(57) Abstract: A method and apparatus for heating composite or plastic materials (16) which are formed into a final product. Heat is generated from a carbon fabric (21) which may be embedded in a ceramic tool base using conventional ceramic molding techniques. The generated heat is uniformly distributed over the surface area of the carbon fabric (21), and the heat transfer from the ceramic tool base to the composite or plastic material (16) may be controlled to maximize heat flow into the composite or plastic material. The heat source and material being formed may be placed in a vacuum environment to aid in the formation of the material about a mold surface. The temperature of the material being formed may be maintained at a constant temperature by controlling the current supplied to the carbon fabric in proportion to a measured temperature. The heat source may include cooling channels which permit the ceramic tool to be cooled.

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INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :B29C 33/02, 33/38, 70/44, 70/48
US CL :249/78, 79, 111; 264/225, 226, 404, 571, 604, 654; 425/389, 390
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. : 249/78, 79, 111; 264/225, 226, 404, 571, 604, 654, Dig.46; 425/389, 390, Dig.13

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 --- Y	US 5,656,231 A (BLACKMORE) 12 August 1997, see figures 7-11; col. 4, lines 29-46; col. 8, lines 44-67.	12, 13, 22-25 ----- 22
Y	US 5,236,646 A (COCHRAN et al) 17 August 1993, see figure 3 and col. 5, lines 45-64.	22
A	US 5,863,452 A (HARSHBERGER, JR. et al) 26 January 1999, see figures 1-2.	1

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

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