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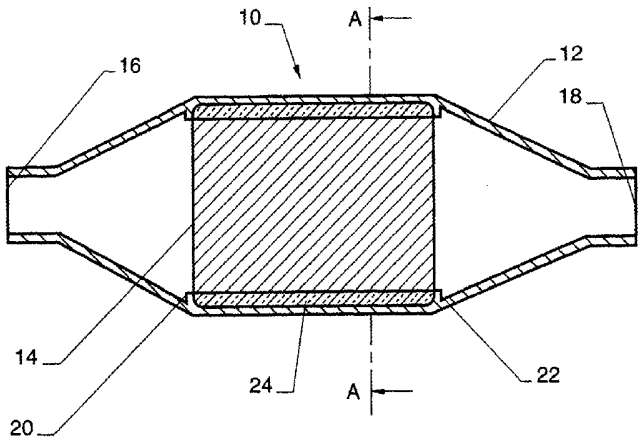
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(54) Title: METHOD OF MANUFACTURING CATALYTIC CONVERTER



(57) Abstract: A method of manufacturing a catalytic converter (10) for purifying exhaust gases from an internal combustion engine wherein the converter includes monolithic ceramic substrate (14) surrounded by a supporting mat. The method includes the steps of: wrapping the substrate (14) in a sufficient amount of supporting mat material and inserting the wrapped substrate into the metal shell (12); forming a cylindrical metal shell having an inner surface exhibiting substantially the same curvature as the wrapped substrate; compressively closing the metal shell around the wrapped substrate to an optimized mat density range thereby resulting in the supporting mat exhibiting a substantially uniform and maximum safe compressive stress on the substrate; and, securing together metal shell to provide a gas tight seal and to hold the compressive stress. The optimized mat density range determined by plotting the mat density-mat holding pressure relationship and the mat density-retained cyclic strength ratio relationship of the supporting mat material on a common graph and selecting an optimized range on the mat density-mat holding pressure, and thereafter obtaining the corresponding optimized mat density range.

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INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :B01 D 53/34; B 21 D 53/00; F01N 3/10

US CL :29/890, 515, 506, 520; 422/179, 180

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. : 29/890, 515, 506, 520; 422/179, 180

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.
A	US 4,070,158 A (SIEBELS) 24 JANUARY 1978, SEE ENTIRE DOCUMENT	ALL
A	US 4,148,120 A (SIEBELS) 10 APRIL 1979, SEE ENTIRE DOCUMENT	ALL
A	US 4,400,860 A (NONNENMANN ET AL) 30 AUGUST 1983, SEE ENTIRE DOCUMENT	ALL
A	US 4,865,818 A (MERRY ET AL) 12 SEPTEMBER 1989, SEE ENTIRE DOCUMENT	ALL
A	US 4,343,074 A (BAILEY ET AL) 10 AUGUST 1982, SEE ENTIRE DOCUMENT	ALL
A	US 5,096,111 A (ISHIKAWA ET AL) 17 MARCH 1992, SEE ENTIRE DOCUMENT	ALL

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

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Date of the actual completion of the international search

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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.
A	US 5,119,551 A (ABBOTT) 9 JUNE 1992. SEE ENTIRE DOCUMENT	ALL
A	US 5,329,698 A (ABBOTT) 19 JULY 1994. SEE ENTIRE DOCUMENT	ALL
A	US 5,346,675 A (USUI ET AL) 13 SEPTEMBER 1994. SEE ENTIRE DOCUMENT	ALL
A	US 5,302,355 A (FUJIKURA ET AL) 12 APRIL 1994. SEE ENTIRE DOCUMENT	ALL
A	US 5,666,726 A (ROBINSON ET AL) 16 SEPTEMBER 1997. SEE ENTIRE DOCUMENT	ALL
A	US 5,729,902 A (WIERES ET AL) 24 MARCH 1998 SEE ENTIRE DOCUMENT	ALL