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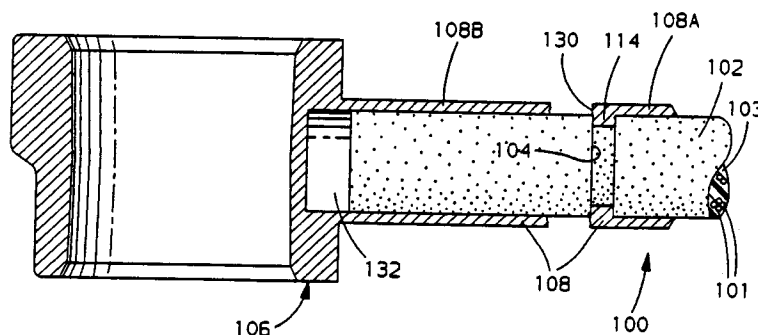
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01.02.95 Bulletin 95/05(71) Applicant: **GENERAL MOTORS CORPORATION**
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Patent Section
1st Floor
Gideon House
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Bedfordshire LU1 2SE (GB)(54) **Fail-safe composite-cast metal structure and method.**

(57) A method for manufacturing a structural component (100) includes forming a groove (104) in an outer surface of a fibre-reinforced body (102). Molten metal is introduced to an exposed surface of the groove (104) and to a predetermined portion of the outer surface of the body (102). The cast metal (106) is cooled in a controlled manner to thermally alter sufficient resin (103) in the body (102) so as to create a secure interconnection of the cast metal

(106) on the body (102). The cast metal (106) adjacent the groove (104) is sized so that it will fail prior to separation of the cast metal (106) from the body (102) under excessive tensile loads. A portion (108A) of the cast metal (106) remains on the body (102) so that elongation of the component significantly exceeds ultimate elongation of the fibre-reinforced body (102) and the cast metal (106).

**FIG. 14****EP 0 605 915 A3**



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EUROPEAN SEARCH REPORT

Application Number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 93203492.9
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y, D	<u>EP - A - 0 501 537</u> (GENERAL MOTORS CORP.) * Totality * --	1, 2	B 22 D 19/04 B 22 D 19/14
Y	<u>US - A - 4 648 921</u> (NUTTER) * Fig. 4-7; claims 1-4 * --	1, 2	
A	<u>WO - A - 86/04 650</u> (THE SECRETARY OF STATE) * Fig. 1, 2; claims 1-3 * --	1-3	
	<u>GB - A - 2 129 342</u> (HONDA) * Fig. 1, 2; abstract * --		
A	<u>AT - E - 4 139</u> (SKF) * Fig.; claim * --	3	
A	<u>US - A - 4 566 519</u> (BAN et al.) * Abstract; fig. 1 * --	1-3	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	<u>US - A - 4 990 207</u> (SAKAI et al.) * Abstract * ----	1	B 22 D F 16 C
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 22-11-1994	Examiner RIEDER
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			