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(54) Title: MULTI-LAYER POLYMER COMPONENT, APPARATUS AND METHOD

(57) Abstract: A process and apparatus utilize a multi-layer material (101) and a section molding process in which a multi-layer length of material having a primary layer (110) and at least one additional layer (112) has a portion that is section molded through a zone heating method creating a molten zone (35) in at least the primary layer. The molten zone is aligned with a section mold to mold only that portion of the multi layer length of material. The section molded portion (20) cools forming a section molded feature. Although exemplary multi-layer components (101) are described herein, a variety of components may be produced utilizing the apparatus and method described by varying the shape of either the primary layer (110), the at least one additional layer (112), or the section molded component (20), or all.



WO 2004/094134 A3

# INTERNATIONAL SEARCH REPORT

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<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC(7) : B29C 45/16 US CL : 264/138, 296, 241, 234, 320, 322 According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 264/138, 296, 241, 234, 320, 322 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)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,379,802 (WEAVER et al.) 12 April 1983 (12.04.1983), column 3, lines 43-48, 52-64;	1-15, 19-20, 32
---	column 4, lines 27-40, 55-63; column 10, lines 13-28; column 11, lines 36-46, 49-51.	-----
Y		16-18, 21-31, 33-41
Y	US 5,770,124 (MARECKI et a) 23 June 1998 (23.06.1998), column 7, lines 11-26	16, 21-22
Y	US 5,488,766 (GERRY et al) 6 February 1996 (06.02.1996), column 2, lines 22-26; column 3, lines 12-17; column 4, lines 19-22, 58-60.	17-18, 23-27
Y	US 4,311,533 (ROCHE) 19 January 1982 (19.01.1982), column 2, lines 41-66.	28, 33-41
Y	US 4,902,557 (ROHRBACHER) 20 February 1990 (20.02.1990), column 13, lines 53-66.	29-31
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230		Authorized officer Mike Colaanni <i>[Signature]</i> Telephone No. 571-272-1700 <i>[Signature]</i>