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(54) Title: GAS VALVE PIN MECHANISM

(57) Abstract: A valve-gate mechanism for use with gas-assisted plastic injection molding systems. A moveable pin mechanism is positioned in a bushing or machine nozzle to regulate the injection of plastic material into a mold cavity. The pin mechanism has an outer pin member and an inner pin member. Movement of the inner pin member relative to the outer pin member allows gas to be injected into the plastic in the mold cavity. A spring member, such as a Belleville washer, biases the inner pin member to a closed position relative to the outer pin member. Gas pressure from the gas source overcomes the force of the spring member allowing gas to enter into the mold cavity.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B29C 45/20
 US CL : 425/130; 264/572

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. : 425/130; 264/572

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 5,770,237 A (SAYER et al) 23 June 1998, Figures 1-4.	1, 4-13, 16-22, 25, 28-34 ----- 2-3, 14-15, 23-24, 26-27, 35-36
Y	US 5,334,010 A (TENG) 02 August 1994, Figure 2 and col 1, lines 40 - col 2, line 2.	2-3, 14-15, 26-27
Y	US 5,939,101 A (GREEN) 17 August 1999, Fig 1A and col 3, lines 21-33.	2, 14, 26
Y	US 4,917,594 A (GELLERT et al) 17 April 1990, Fig 5, col 2, line 66 - col 3, line 4.	23-24, 35-36
Y	US 5,101,858 A (KLOTZ et al) 07 April 1992, Figures 2 and 3, col 4, lines 53-57.	1, 4-13, 16-22, 25, 28-34
Y	US 5,135,703 A (HUNERBERG et al) 04 August 1992, Figure 1A, col 4, lines 48-56.	1, 4-13, 16-22, 25 and 28-34

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

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