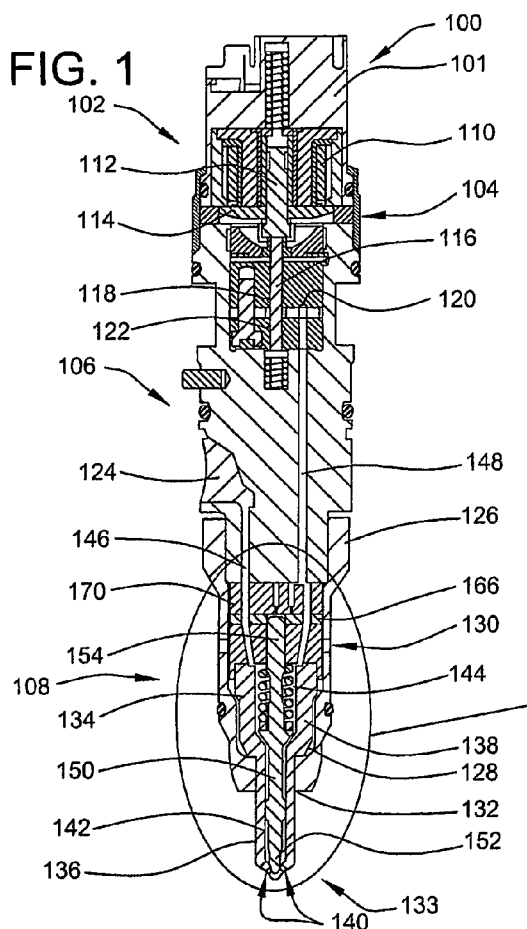




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[Continued on next page]

(54) Title: FUEL INJECTOR AND METHOD OF ASSEMBLY THEREFOR



(57) Abstract: A fuel injector (200) and a method of assembly includes a determination of various flow areas through clearances (282) or openings formed in various components of the injector (200). With the various flow areas determined, the various components can be classified according to their flow areas such that sets of components can be selected having desirable flow area characteristics for assembly of the fuel injector (200).





EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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A. CLASSIFICATION OF SUBJECT MATTER

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USPC - 239/533.9

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)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 239/584, 585.5, 533.2, 533.3, 533.4 (text search - see terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST(USPT,PGPB,EPAB,JPAB); Google Scholar; Google Patents

Search Terms: fuel, injector, clearance, distance, needle, plate, orifice, guide, additional, second, flow, area, matched, set, predetermined, method, assembling

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,027,037 A (Murakami et al.) 22 February 2000 (22.02.2000), col 2, ln 1-5, ln 64-67 to col 3, ln 1, col 9, ln 28-33, col 16, ln 21-22	1-7
Y	Blessing et al. "Analysis of flow and cavitation phenomena in diesel injection nozzles and its effects on spray and mixture formation." SAE Transactions 112 (2003), (url:<http://cat.inist.fr/?aModele=afficheN&cpsid=16124886> downloaded 16 March 2009 (16.03.2009)), abstract.	1-7

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"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

"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

"&" document member of the same patent family

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