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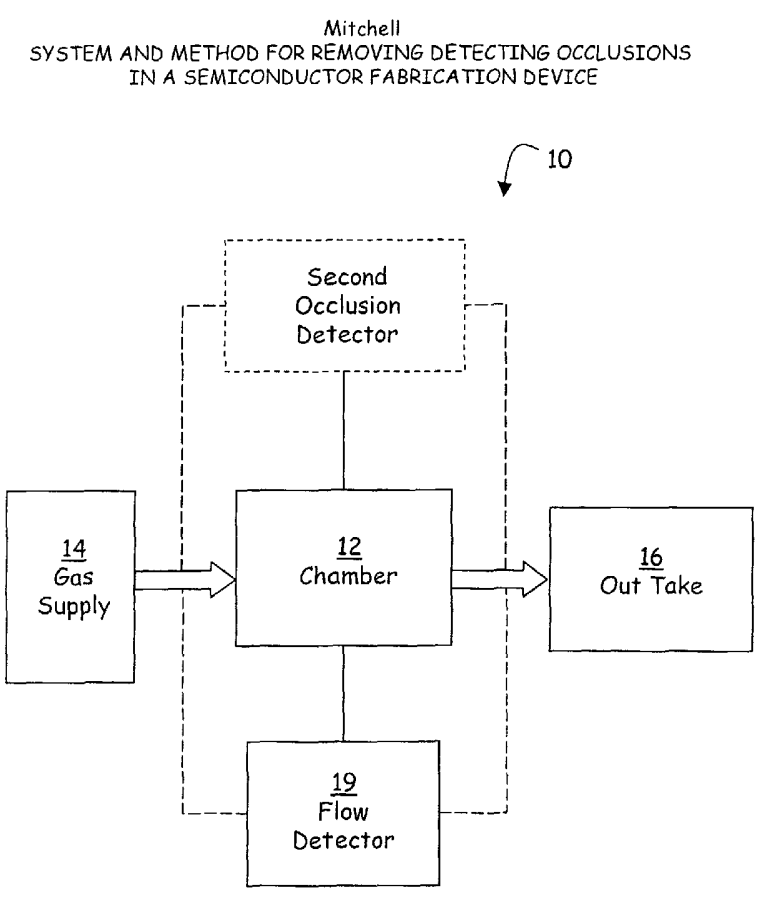
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM AND METHOD FOR DETECTING OCCLUSIONS IN A SEMICONDUCTOR MANUFACTURING DEVICE



(57) Abstract: A blockage detector for a system that produces integrated circuit structures on semiconductor wafers via a semiconductor manufacturing system (10) is described. The system has a chamber for placing the semiconductor wafers, and the chamber (12) is environmentally coupled to a gas source through a gaseous flow path. The detector has a flow detector (19), interposed in the gaseous flow path, that determines a flow rate of gas flowing from the gas supply (14) towards the reaction chamber and eventually the outlet or outtake (16). A flow comparator, communicatively coupled to the flow detector, compares the detected flow rate of the gas to a baseline flow rate of gas. A decrease in the flow rate of the gas is indicative of an occlusion build-up and/or blockage in the gaseous flow path, as would also be indicated by monitoring the output from the second occlusion detector in Figure 1.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G01F 1/68, 1/66; G01N 7/02

US CL :073/25.01, 28.01, 204.15, 204.21, 196; 137/486

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. : 073/25.01, 28.01, 204.15, 204.26,204.11, 204.21, 196, 40.00, 40.5R; 137/486

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

NONE

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

Please See Extra Sheet.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,062,077 A (AZIMA) 16 May 2000 (16.05.2000), see entire document.	1, 6-7, 11-13, 15, 22-27, 29, 32-33, 36-39, 41, 43 & 47-50
A	US 3,507,146 A (WEBB et al.) 21 April 1970 (21.04.1970), see entire document.	1, 15, 29 and 41
A	US 4,685,331 A (RENKEN et al.) 11 August 1987 (11.08.1987), see entire document.	1-2, 4, 6-7, 11-13, 15-16, 18, 22-27, 29, 32-33, 36-39, 41, 43 & 47-50

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

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier document published on or after the international filing date	"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
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

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Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer Shawn J. Hoppe DAVID JOHN WIGGINS Telephone No. (703) 305-4884

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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 4,335,605 A (BOYD) 22 June 1982 (22.06.1982), see entire document.	1, 6-7, 11-13, 15, 22-27, 29, 32-33, 36-39, 41, 43 & 47-50
A	US 6,053,054 A (WUSTERBARTH et al.) 25 April 2000 (25.04.2000), see entire document.	1-2, 4, 6-7, 11-13, 15-16, 18, 22-27, 29, 32-33, 36-39, 41, 43 & 47-50

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B. FIELDS SEARCHED
Electronic data bases consulted (Name of data base and where practicable terms used):

APS type of STN/CAS search terms: blockage, obstruction, impeding or clogging; flow, stream, passage or channel; flowmeter or flow detector; comparison of correlation; gas, vapor or fluid; temperature; flow regulator or controller; thermal, heat or temperature change; heat gradient or heat flux; sensor, detector, sensing, probe or gauge; heating element or heater; flow rate.