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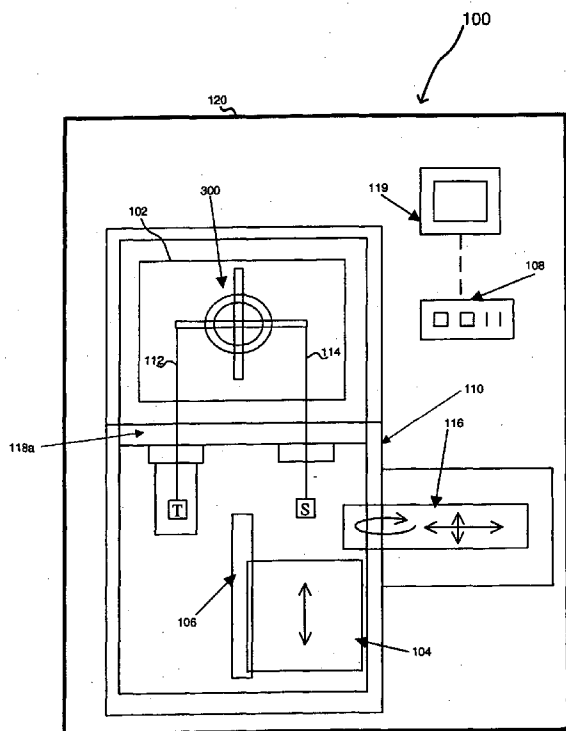
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(54) Title: SYSTEM AND METHOD FOR A THERMOGRAVIMETRIC ANALYZER HAVING IMPROVED DYNAMIC WEIGHT BASELINE



(57) Abstract: Systems and methods for minimizing extraneous forces and calculating corrected weights of samples based on buoyancy factors for a thermogravimetric analyzer (TGA). The TGA includes a balance chamber and a furnace configured to heat a sample. A null balance is provided in the balance chamber and is used to measure the sample weight change during heating. The furnace includes a cylinder open at the top to receive a sample. The bottom of the cylinder is closed except for a small hole that allows a thermocouple to pass through. An infrared heat source may be provided to heat the cylinder. The balance chamber can be thermally isolated from the furnace using an actively cooled plate and a system of heat shields disposed between the furnace and balance chamber. A thermocouple disk is further provided to limit gas flow in the furnace and increase reliability of sample weight measurements.

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A. CLASSIFICATION OF SUBJECT MATTER
 IPC: G01N 25/00(2006.01);G01N 17/00(2006.01)
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 USPC: 374/14,10,11,12,45
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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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 WEST:thermogravimetric, thermomechanical, thermal analyzer, balance,weight, mass, moisture, dew

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5509733A (Danley) 23 April 1996, entire doc.	3
X,P	US 20060120431A1 (Monceau et al.) 06 June 2006, entire doc.	1-2,4-8
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Y	US 3470732 A (Welhoelter) 27 December 1966, entire doc.	21
Y	US 5826983 A (Nakamura et al.) 27 October 1998, entire doc.	9
Y	US 5055264 A (Czarnecki) 08 October 1991, entire doc.	10-13,16-22
Y	US 6302577 A (Jennings et al.) 16 October 2001, entire doc.	11

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

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"O" document referring to an oral disclosure, use, exhibition or other means		
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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.
Y	SU 572739A (Gavryushch) 28 September 1977, entire doc.	22
A	US 5493078 A (Uchiike) 20 February 1996, entire doc.	1-45
A	US 7048435 B2 (Shdaimah et al.) 23 May 2006, entire doc.	1-45