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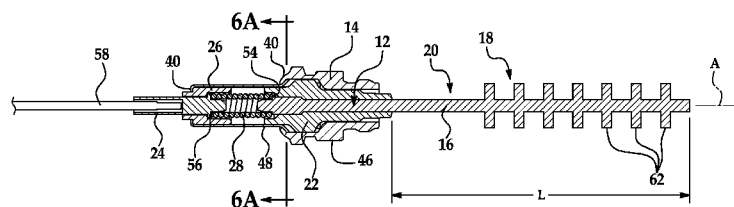


FIG. 4

(57) Abstract: Exemplary embodiments of the present invention relate methods and devices for measuring flow rate of particulate matter within an exhaust gas stream. In one particular exemplary embodiment, a sensor for detecting and monitoring particulate matter within an exhaust flow path of an engine is provided. The sensor includes a housing having an attachment for mounting the sensor. The sensor also includes a sensing rod supported by an insulating base. The sensing rod is attached to the housing and includes a probe adapted to be placed within the exhaust flow path. The probe includes a section having an increased surface area per unit length as compared to at least one other section of the probe. The sensing rod is configured to detect particulate matter flowing through the exhaust component and generates a signal based thereupon. The sensor further includes an electrical connector in communication with the sensing rod. The electrical connector is configured to transmit the signal generated by the sensing rod to a controller.

A. CLASSIFICATION OF SUBJECT MATTER***F01N 11/00(2006.01)i, F01N 9/00(2006.01)i, G01F 1/56(2006.01)i***

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)

IPC 8: F01N 11/00, F01N 9/00, G01F 1/56

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

Korean Utility models and applications for Utility Models since 1975

Japanese Utility Models and applications for Utility Models since 1975

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

KOMPASS (KIPO internal) & keywords: "exhaust gas", "rod", "probe", "insulating base", "stepped collar"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007-050384 A2 (RHODES et al.) 3 May 2007	1, 6-11
Y	See the abstract; Figs. 1a-3; paragraphs [0022]-[0033].	2-5, 12-16
Y	KR 10-0504020 B1 (SONG) 27 July 2005 See the abstract; Figs. 1-3; page 3, lines 2-53.	2-5, 12-16
Y	US 6758082 B2 (GEIER et al.) 6 July 2004 See the abstract; Figs. 1, 2; column 3, line 32 - column 5, line 28.	4, 5, 14
A	US 2007-0137177 A1 (KITTELSON et al.) 21 June 2007 See the abstract; Figs. 1-4; paragraphs [0023]-[0028].	1-16



Further documents are listed in the continuation of Box C.



See patent family annex.

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